



2018 International Conference on Stillbirth, SIDS and Baby Survival

7th - 9th June 2018
Glasgow, UK

www.babysurvival2018.org

**Abstract
E-book**

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Table of Contents

Welcome Letter.....	3
Committees.....	4
Scientific Program.....	6
June 7, Thursday.....	6
June 8, Friday.....	14
June 9, Saturday.....	22
Supporting Organisations & Sponsor.....	31
Abstracts of Invited Speakers.....	32
Abstracts of Oral Presentations.....	62
Abstracts of Poster Presentations.....	237
Company Profile.....	309

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7th - 9th
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Welcome Letter

On behalf of the Scottish Cot Death Trust, we welcome each and every one of you to Glasgow. Enjoy all that Glasgow and Scotland has to offer you.

ISPID, ISA and the various committee members have done an excellent job in bringing this Conference together. It promises to offer you something valuable which you will want to build on. We have brought together the most inspiring and knowledgeable individuals and the most passionate groups from over 24 countries in the world, within an environment which promotes energy and creativity.

Many parents ask, and have asked, for so many years, “Why did my baby die?” To find the answer to this question is a responsibility befalling charitable organisations such as the Scottish Cot Death Trust.

These answers may only come through working collaboratively, which is why these joint conferences are so important and why we wanted to host the 2018 International Conference on Stillbirth, SIDS and Baby Survival.

We need you to bring your experiences to Glasgow, share your knowledge and enlighten others attending. To take on board the initiatives you hear about, which have proven to effectively reduce the numbers of infant deaths. Be inspired by innovations which you can implement in your practice, use to inform your research, ensure better support for bereaved families and help in our joint endeavours.

Keep in mind, always, that the statistics you hear and read about are not just numbers. They are children not with their families, children who will not play, learn, grow and give back to local communities. Listen to the stories you hear from families and let their voices determine that you will make a difference.

Have a wonderful Conference.

Lynsay Allan
Executive Director
Scottish Cot Death Trust

Dr. Mary Ray
Chairman
Scottish Cot Death Trust

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Organising Committee



Dr Pete Blair, Co-Chair



Dr Alex Heazell, Co-Chair



Mrs Lynsay Allan



Mrs Francine Bates



Mrs Jane Brewin



Prof Alan Cameron



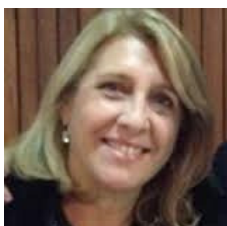
Prof Vicki Flenady



Dr Clea Harmer



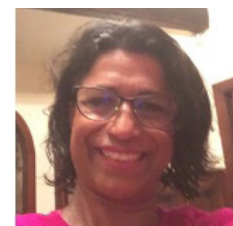
Prof Fern Hauck



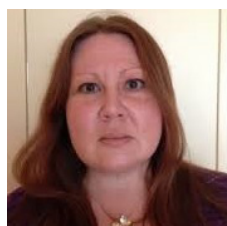
Prof Virginia Kanopa



Dr Betty McEntire



Dr Mary Ray



Mrs Claire Storey



Dr Tom Turner

2018 International Conference on Stillbirth, SIDS and Baby Survival

7th - 9th
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Scientific Committee



Prof Alan Cameron, Co-Chair



Prof Jane Norman, Co-Chair



Dr Marta Cohen



Prof Fern Hauck



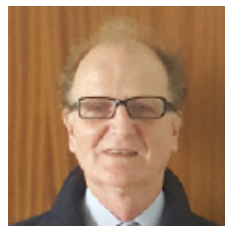
Mrs Barbara Himes



Prof Rosemary Horne



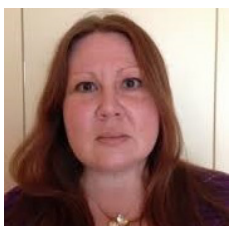
Dr Alison McFadden



Prof David Tappin



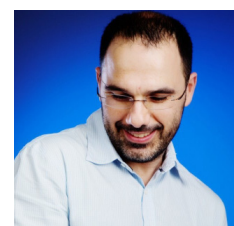
Ass Prof John Thompson



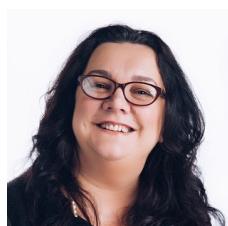
Mrs Claire Storey



Prof Vicki Flenady



Dr Dimitrios Siassakos



Ms Margaret M. Murphy



Dr Adrienne Gordon

2018 International Conference on Stillbirth, SIDS and Baby Survival

7th - 9th
June 2018
Glasgow, UK

Scientific Program

Time	Auditorium ABC	7 TH JUNE, THURSDAY
08:00-08:15	Opening Welcome	
08:00-08:05	SCDT Welcome	
08:05-08:15	ISPID&ISA Chairs Welcome	
08:15-08:20	2016 Conference - What we learned Virginia Kanopa Almada, Uruguay and Alejandro Jenik, Argentina	
08:20-10:00	Plenary Session 1 - Inclusiveness and Reducing Disparities Chair: Alan D. Cameron, UK Co-Chair: Claire Storey, UK Introduction: Nicola Sturgeon	
08:20-08:40	What causes wellness and the implications for families Harry Burns, University of Strathclyde, UK	
08:40-09:00	Resentment and Loss Glen Pettigrove, Glasgow University, UK	
09:00-09:20	Care after stillbirth: evidence-based support for parents throughout their journey. Dimitrios Siassakos, Academic Centre for Women's Health, University of Bristol, UK	
09:20-09:40	A Voice of a Vilomah Nicole Bowles, Parent Speaker, UK	
09:40-10:00	Questions	
10:00-10:20	Break/Exhibitors/Posters	
10:20-12:00	Parallel Session 1 A Chair: Vicki Flenady, Australia	
10:25-10:40	O-085 Improving, but could do better: Trends in gestation-specific stillbirth in Australia, 1994-2015 Vicki Flenady, Stillbirth Centre of Research Excellence, Mater Research Institute-University of Queensland, Australia	
10:40-10:55	O-001 Consequences of perinatal death among midwives, obstetricians and assistant nurses: Results from a qualitative study in Norway Beate André, Norwegian University of Science and Technology (NTNU), Norway	
10:55-11:10	O-002 National Review of Perinatal Bereavement Services in Irish Maternity Hospitals Riona Cotter, National Implementation Group for the Bereavement Standards, Ireland; Cork University Maternity Hospital, Ireland	
11:10-11:25	O-003 The value of time and space - experiences from a unit for perinatal loss Dorte Hvidtjørn, Aarhus University Hospital, Denmark; University of Southern Denmark, Denmark	
11:25-11:40	O-004 A research concerning the different cultural rituals and conventions of bereaved parents after the loss of a child. {Case: Make a Memory} Wieke Eefting, Utrecht University, The Netherlands	

2018 International Conference on Stillbirth, SIDS and Baby Survival

7th - 9th
June 2018
Glasgow, UK

Scientific Program

Time	Auditorium ABC	7 TH JUNE, THURSDAY
12:00-12:50	Lunch / Exhibitors/ Posters	
12:50-15:20	Plenary Session 2- Policy and Public Health Chair: Peter S. Blair, UK Co Chair: Katherine Gold, USA	
12:50-13:20	Findings from the New Zealand SUDI case-control study Edwin Mitchell, University of Auckland, New Zealand - Keynote Speaker	
13:20-13:50	The Power of partnership for global stillbirth prevention Helga Fogstad, PMNCH, WHO, Switzerland - Keynote Speaker	
13:50-14:10	Reducing stillbirth in Scotland-changing culture and practice, a success story Catherine Calderwood, CMO Scottish Government, UK - Keynote Speaker	
14:10-14:30	Each Baby Counts - a UK initiative to reduce intrapartum harm Alan D. Cameron, Glasgow University, UK	
14:30-14:50	2016 American Academy of Pediatrics safe sleep guidelines: What's new? What's Controversial? Rachel Moon, University of Virginia School of Medicine, USA	
14:50-15:20	Questions	
15:20-15:40	Break /Exhibitors/Posters	
15:40-17:00	Parallel Session 2A Chair: Rachel Y Moon, USA	
15:40-15:55	O-036 Preliminary Results from a Survey of US Parents' Perceptions of a Baby Box Trina C Salm Ward, University of Wisconsin, USA	
15:55-16:10	O-037 Baby boxes may not prevent sleep-related infant death: A collective case study of socially vulnerable families Karen M Benzie, University of Calgary, Canada	
16:10-16:25	O-038 Attitudes and experiences of U.S. home visitors on the distribution and use of baby boxes Amanda M Bagin, Children's Health Alliance of Wisconsin, USA	
16:25-16:40	O-039 Pōpi-pods™ (plastic bassinet-sized containers) for a safe infant sleep? Overnight video, maternal questionnaire and physiological evaluation of Pōpi-pods™ as a sleep device for babies at increased risk of sudden unexpected death in infancy Sally A Baddock, Otago Polytechnic, New Zealand	
16:40-16:55	O-040 It's Just a Box: Pregnant Women's Perceptions of Boxes for Infant Sleep Carolyn R Ahlers Schmidt, University of Kansas School of Medicine, USA	
17:00-17:30	Poster Session for other delegates at Exhibition Area	
19:00-20:00	Remembrance Evening Programme - Glasgow Cathedral	

2018 International Conference on Stillbirth, SIDS and Baby Survival

7th - 9th
June 2018
Glasgow, UK

Scientific Program

Time	Level 1 Auditorium	7 TH JUNE, THURSDAY
10:20-12:00	Parallel Session 1B Chair: Alison McFadden, UK	
10:20-10:40	O-005 What are parents' and healthcare professionals' experiences of care after stillbirth in low and middle-income countries Clare Shakespeare, University of Bristol, UK	
10:40-10:55	O-006 Australian men's experiences of support following pregnancy loss Kate Louise Obst, University of Adelaide, Australia	
10:55-11:10	O-007 The victimization in absence of a culprit. "The limbic victim" Eva Imperato, Association SUID & SIDS Italy Omlus, Italy	
11:10-11:25	O-008 Exploring social isolation and disconnectedness resulting from child death Lynsay Clair Allan, Scottish Cot Death Trust, UK	
11:25-11:40	O-009 Pregnancy and Infant Loss Network: Bereavement care and education in Ontario, Canada Michelle La Fontaine, Pregnancy and Infant Loss Network, Sunnybrook Health Sciences, Canada	
11:40-11:55	O-010 Sudden unexpected death in infancy and the disparity experienced by Māori Melanie E MacFarlane, University of Auckland, New Zealand	
12:00-12:50	Lunch/ Exhibitors/ Posters	
15:40-17:00	Parallel Session 2B Chair: Lynsay Clair Allan, UK	
15:40-15:55	O-041 Role Modelling Safe Sleep Practices with Pre-schoolers through Doll Play - "Face Up, Face Clear Clear, Safe Place" Sharon Ayto, Department of Woman's and Children's Health, Southern District Health Board, New Zealand	
15:55-16:10	O-042 Are children in the care of foster parents dying suddenly and unexpectedly when exposed to unsafe sleep circumstances? Ian Mitchell, Alberta Children's Hospital Research Institute, Canada	
16:10-16:25	O-043 Sleep safety in day care centers: An awareness campaign in Belgium (Flemish Community) using virtual reality as an educational tool Kim Huyghe on behalf of Greet Wissels, Departement of Child Care, Child and Family, Belgium	
16:25-16:40	O-044 Infant care practices employed by Queensland caregivers: are safe sleeping messages being translated into practice? Roni Cole, University of the Sunshine Coast, Australia; Sunshine Coast Hospital and Health Service, Australia	
16:40-16:55	O-144 Nurses' Knowledge and Delivery of Infants' Safe Sleep Practices and SIDS Risk-reduction Messages - A Binational Study Anat Shatz, Shaaree Zedek Medical Centre, Israel	

2018 International Conference on Stillbirth, SIDS and Baby Survival

7th - 9th
June 2018
Glasgow, UK

Scientific Program

- 17:00-17:30 Ask the Experts Q&A Session
Chair: Alan D. Cameron
Experts: David Tappin
ISPID: Fern Hauck and John Thomson
ISA: Vicky Flenady, Robert Silver, Jan Jap Erwich
- 17:00-17:30 Poster session for delegates
- 19:00-20:00 Remembrance evening programme - Glasgow Cathedral

Time	Room 1	7 TH JUNE, THURSDAY
10:20-12:00	Parallel Session 1C Chair: Marta C Cohen, UK	
10:25-11:25	W-001 WORKSHOP Taking Consent and Information Giving in Fetal and Neonatal Loss Elspeth Helen Whitby, University of Sheffield, UK	
11:25-11:40	O-011 Post Mortem Consent - The Impact of Deprivation and Ethnicity Margaret J Evans, Royal Infirmary of Edinburgh, UK; University of Edinburgh, UK; University of Leicester, UK	
11:40-11:55	O-012 Should Written Consent Be Required before Fetal Membrane Stripping Especially among GBS Carriers? James A. McGregor, Group B Strep International, USA	
12:00-12:50	Lunch/ Exhibitors/ Posters	
15:40-17:00	Parallel Session 2C Chair: Vicki Flenady, Australia	
15:40-15:55	O-045 Failures in the Emergency Obstetric and Neonatal Care Referral Chain and High Rates of Intrapartum Stillbirth in Southwestern Uganda Elizabeth A Mccue, Eck Institute for Global Health, University of Notre Dame, USA	
15:55-16:10	O-046 Why Are Babies Dying in the First Month after Birth? A Study of Neonatal Mortality in Jordan 2016 Rakan Ahmad Aburoman, Jordan	
16:10-16:25	O-047 Variations in stillbirth and early neonatal mortality associated with different polluting fuel types in Bangladesh Monjura Khatun Nisha, The University of Sydney, Australia	
16:25-16:40	O-048 Survival of Very low birth weight neonates for age 0-7 days among deliveries in St. Paul's Hospital millennium medical college, Addis Ababa, Ethiopia, one year cross sectional study Tizita Abraham Basha, St Paul's Hospital Millennium Medical College, Ethiopia	
17:00-17:30	Poster Session for delegates	
19:00-20:00	Remembrance evening programme - Glasgow Cathedral	

2018 International Conference on Stillbirth, SIDS and Baby Survival

7th - 9th
June 2018
Glasgow, UK

Scientific Program

Time	Room 2	7 TH JUNE, THURSDAY
10:20-12:00	Parallel Session 1D Chair: Betty McEntire, USA	
10:25-10:40	O-013 Developmental changes in 125I-Epipatidine binding to nicotinic receptors in the brainstem ascending arousal system in the Sudden Infant Death Syndrome Arunniah Vivekanandarajah, Boston Children's Hospital, Harvard Medical School, USA, For the PASS Network; The University of Sydney, Australia	
10:40-10:55	O-014 5-HT1A Binding Deficiencies in the Rostral Serotonergic Raphe System of the Sudden Infant Death Syndrome Michael R McConville, Boston Children's Hospital and Harvard Medical School, USA	
10:55-11:10	O-015 Diagnostic classification effects on brain pathology data in a cohort of SUDI cases Rita Machaalani, University of Sydney, Australia	
11:10-11:25	O-016 Blue Baby Blues - A Case Report. Implications of Maternal Selective Serotonin Reuptake Inhibitor Use for Sudden Infant Death Syndrome Alexander Simpson, Royal Hospital for Children, UK	
11:25-11:40	O-017 The Victorian Perinatal Autopsy Service (VPAS): Insights into Clinical Governance and program development Kerryn Frances Ireland Jenkin, Royal Women's Hospital, Australia	
12:00-12:50	Lunch / Exhibitors /Posters	
15:40-17:00	Parallel Session 2D Chair: Clea Harmer, UK	
15:40-15:55	O-050 Risk Factors for Antepartum and Intrapartum Stillbirth: An exploration using Western Australian linked data, 2005-2015 Brad Mark Farrant, The University of Western Australia, Australia	
15:55-16:10	O-051 Maternal sleep during pregnancy and poor fetal outcomes: A scoping review of the literature with meta-analysis Jane Warland, University of South Australia, South Australia	
16:10-16:25	O-052 Alerting Pregnant Women and Their Families as to the Lack of Efficacy and Danger of "Alternative Treatments" for Prevention of Group B Streptococcal (GBS) Invasive Disease in Babies James A. McGregor, Group B Strep International, USA	
16:25-16:40	O-054 Reduction in dosage of misoprostol for induction of labour for stillbirth: a before and after study Abi Merriel, University of Bristol, UK	
16:40-16:55	O-152 Alive and kicking. "Feel life" - information campaign to help pregnant women to monitor their baby's movements Line Schrader, Norwegian SIDS and Stillbirth Society, Norway	
17:00-17:30	Poster Session for delegates	
19:00-20:00	Remembrance evening programme - Glasgow Cathedral	

2018 International Conference on Stillbirth, SIDS and Baby Survival

7th - 9th
June 2018
Glasgow, UK

Scientific Program

Time	Room 3	7 TH JUNE, THURSDAY
10:20-12:00	Parallel Session 1E Chair: Monique Pauline L'Hoir, The Netherlands	
10:25-10:40	O-018 Epidemiological findings of SIDS from England: the Oto Acoustic Signals Investigation Study (OASIS) 2016-2017 Peter S Blair, University of Bristol, UK	
10:40-10:55	O-019 2017 Survey of prevalence of protective and risk factors for SIDS in The Netherlands Adèle C Engelberts, Zuyderland Medical Center, The Netherlands	
10:55-11:10	O-020 An analysis of sleep scene reconstruction photographs of SUDI infants compared with controls Jessica Wilson, The University of Auckland, New Zealand	
11:10-11:25	O-021 Social vulnerability among the Queensland SUDI population and the factors prevalent in vulnerable groups Rebecca Ann Shipstone, University of the Sunshine Coast, Australia	
11:25-11:40	O-022 Sleeping environment in Sudden Unexpected Infant Death cases: a population-based study in France Karine Levieux, Nantes University Hospital, France	
11:40-11:55	O-023 Reducing Sudden Infant Death Risk Factors in Sheffield - A Partnership Approach Julia Thompson, Public Health, Sheffield City Council, UK	
12:00-12:50	Lunch / Exhibitors /Posters	
15:40-17:00	Parallel Session 2E Chair: Jeri E Wilson, USA	
15:40-16:40	W-002 WORKSHOP Healing Arts: Writing Through Grief Alexis Marie Chute, University of Alberta, Canada; Lesley University, USA	
16:40-16:55	O-055 River's Gift - Breathing life into SIDS research Alexandra Hamilton, Australia	
17:00-17:30	Poster Session for delegates	
19:00-20:00	Remembrance evening programme - Glasgow Cathedral	

Scientific Program

Time	Room 4/5	7 TH JUNE, THURSDAY
10:25-10:40	Parallel Session 1F Chair: Katherine Gold, USA	
10:25-10:40	O-024 Stillbirths in Ghana: Determining Cause of Death Abdul Razak Shuaib Abdul Mumin, Komfo Anokye Teaching Hospital, Ghana	
10:40-10:55	O-025 Towards reducing newborn deaths in Cross River state, Nigeria: Impact of Essential Newborn Care Course (ENCC) on quality of care Kazeem Adisa Arogundade, Pathfinder International, Nigeria	
10:55-11:10	O-026 Counting and reviewing babies born dead in low resource settings: Stillbirth surveillance in Sri Lanka Kapila Jayaratne, Family Health Bureau, Ministry of Health, Sri Lanka	
11:10-11:25	O-027 Experiences, perceptions and practices of women and families around stillbirth: a qualitative exploration in urban and rural districts of Kabul province, Afghanistan Aliko Christou, The University of Sydney, Australia	
11:25-11:40	O-028 Defining disrespect and abuse of newborns and stillborn infants: a review of the evidence and an expanded typology of respectful maternity care Emma Sacks, Johns Hopkins University, USA	
11:40-11:55	O-029 Socio-demographic, maternal, and health care factors associated with stillbirth in Afghanistan: analysis of the 2010 Afghanistan Mortality Survey Aliko Christou, The University of Sydney, Australia	
12:00-12:50	Lunch/Exhibitors/Posters	
15:40-17:00	Parallel Session 2F Parent Activity Chair: Christine Ikponmwonba, USA Self Confidence and Resilience Rose Goodenough and Marilyn Gordon, Inner Space, Glasgow, UK	
17:00-17:30	Poster Session for delegates	
19:00-20:00	Remembrance evening programme - Glasgow Cathedral	

2018 International Conference on Stillbirth, SIDS and Baby Survival

7th - 9th
June 2018
Glasgow, UK

Scientific Program

Time	Room 6/7	7 TH JUNE, THURSDAY
10:20-12:00	Parallel Session 1G Chair: Anat Shatz, Israel	
10:25-10:40	O-030 Attitudes and Social Norms Associated with Maternal Decisions about Infant Sleep Location: Results from the SMART Study Rachel Y Moon, University of Virginia School of Medicine, USA	
10:40-10:55	O-031 Fifteen years of infant care and safe sleeping messages: have parental care practices changed? Roni Cole, University of the Sunshine Coast, Australia; Sunshine Coast Hospital and Health Service, Australia	
10:55-11:10	O-032 Safe sleeping campaign - Are we really successful? Ursula Kiechl Kohlendorfer, Medical University of Innsbruck, Austria	
11:10-11:25	O-033 The Effect of Social Network Types and Social Norms on Infant Sleep Practices Rebecca Carlin, George Washington University School of Medicine, USA	
11:25-11:40	O-034 Evaluation of the Pāpi-Pod® Program through the lens of Australian Indigenous ethical principles Jeanine Young, University of the Sunshine Coast, Australia	
11:40-11:55	O-035 Qualitative Evaluation of Embedding Safe Sleep in Prenatal Education Carolyn R Ahlers Schmidt, University of Kansas School of Medicine, USA	
12:00-12:50	Lunch/Exhibitors/Posters	
15:40-17:00	Parallel Session 2G Chair: Peter S Blair, UK	
15:40-15:55	O-056 Psychiatric disorder and risk of sudden infant death syndrome: Results of a clinical survey Jeffrey Sverd, North Shore Child and Family Guidance Center Roslyn Heights, USA; Department of Psychiatry Nassau County Medical Center Hempstead, USA	
15:55-16:10	O-057 Sudden Unexpected Infant Deaths (SUID) with Use of U-Shaped Pillows in the Sleep Area — United States, 2004-2015 Carrie K Shapiro-Mendoza, Centers for Disease Control and Prevention, USA	
16:10-16:25	O-059 Factors associated with age of death in sudden infant death syndrome Kelty Allen, Microsoft, USA	
16:25-16:40	O-060 Prevalence of and Factors Associated with Maintaining Smoking Cessation after Pregnancy Eve Colson, Yale School of Medicine, USA	
17:00-17:30	Poster Session for delegates	
19:00-20:00	Remembrance evening programme - Glasgow Cathedral	

2018 International Conference on Stillbirth, SIDS and Baby Survival

7th - 9th
June 2018
Glasgow, UK

Scientific Program

Time	Auditorium B/C	8 TH JUNE, FRIDAY
08:30-10:10	Plenary Session 3- Global Health SUDI Chair: Fern R Hauck, USA Co-Chair: David Tappin, UK	
08:30-08:50	Pathology and SUDI Roger Byard, University of Adelaide, Australia	
08:50-09:10	Cribs for Kids National Safe Sleep Hospital Certification Program Michael Goodstein, Wellspan Health York Hospital, USA	
09:10-09:30	Changing policy on smoking in pregnancy and post-partum: is research evidence enough? Linda Bauld, Stirling University, UK	
09:30-09:50	CDC's SUID Case Registry, Challenges in Classifying SUID, and the Diagnostic shift Carrie Shapiro-Mendoza, Centers for Disease Control and Prevention, Atlanta, USA	
09:50-10:10	Questions	
10:10-10:40	Break / Exhibitors / Posters	
10:40-11:55	Plenary Session 5 - Prediction and Prevention STILLBIRTH Chair: Vicki Flenady, Australia Co-Chair: Marta C Cohen, UK	
10:40-11:00	The contribution of local hospital review to preventing stillbirth Jenny Kurinczuk, Director of the National Perinatal Epidemiology Unit (NPEU), UK	
11:00-11:20	Placental causes of stillbirth Robert M. Silver, University of Utah, USA	
11:20-11:40	How stillbirth personally impacts physicians, nurses, and the hospital staff and effective strategies for coping with death and bereavement in clinical care Katherine Gold, University of Michigan, USA	
11:40-11:55	Questions	
11:55-12:00	P-001 Predictors of mothers' contact with the baby following intrauterine death Paul Richard Cassidy, Universidad Complutense de Madrid, Spain	
12:05-13:30	Parallel Session 3A Chair: David Tappin, UK	
12:10-12:25	O-061 Media Sources of Infant Care Information Accessed by US Mothers, 2011-2014 Fern R Hauck, University of Virginia School of Medicine, USA	
12:25-12:40	O-062 The use of a photo database in the prevention of Cot Death Wieke Eefting, Wieke Eefting Fotografie, Netherlands	
12:40-12:55	O-063 Oto Acoustic Signals Investigation Study (OASIS) - Preliminary findings Peter S Blair, University of Bristol, UK	

2018 International Conference on Stillbirth, SIDS and Baby Survival

7th - 9th
June 2018
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Scientific Program

Time	Auditorium B/C	8 TH JUNE, FRIDAY
12:55-13:10	O-064 'Through the tubes' adapted for the Netherlands Monique Pauline Lhior, Wageningen University & Research (WUR), The Netherlands	
13:10-13:25	O-065 SUDI: Infant sleeping position is still not reliably reported in death scene investigations Jeanine Young, University of the Sunshine Coast, Australia; Queensland Paediatric Quality Council, Australia	
13:30-14:30	Walk around, lunch, viewing posters with announcement of poster prizes	
14:30-16:00	Parallel Session 4A Chair: Dimitrios Siassakos, UK	
14:35-14:50	O-092 Should Somatostatin used as first-line agent in management of Congenital Chylothorax? Therese Mary William, University Hospital Lewisham, UK	
14:50-15:05	O-093 Bereaved parents as active partners in stillbirth research Daniel Nuzum, University College Cork, Ireland	
15:05-15:20	O-094 Development of a Core Outcome Set and identification of outcome measurement tools for interventions after stillbirth Danya Bakhbakhi, University of Bristol, Bristol, UK; North Bristol NHS Trust, UK	
15:20-15:35	O-095 Causes of Stillbirths at autopsy in North East London: a 5-year retrospective audit Mohammad H Haini, The Royal London Hospital, UK	
15:35-16:50	O-168 Maternal perception of fetal movements and risk of late stillbirth: findings from the New Zealand Multi Centre Stillbirth Study Billie Bradford, University of Auckland, New Zealand	
14:30-20:00	Free Afternoon, sightseeing for international delegates OR Option to stay for local delegates	

2018 International Conference on Stillbirth, SIDS and Baby Survival

7th - 9th
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Scientific Program

Time	Auditorium A & Level 1 Auditorium (Via A/V Link)	8 TH JUNE, FRIDAY
08:30-10:10	Plenary Session 4 - Global Health STILLBIRTH Chair: Dimitrios Siassakos, UK Co-Chair: Hannah Blencowe, UK	
08:30-08:50	Stillbirths: Cross-cultural perspectives Maria Luisa Tejada de Rivero Sawers, Stillbirth Advocacy Working Group (SAWG), Mexico	
08:50-09:10	Providing humane care for women following stillbirth Tina Lavender, University of Manchester, UK	
09:10-09:30	Where is stillbirth on the global stage? What's holding us back and what we can do about it Susannah Hopkins Leisher, Mater Research, University of Queensland and Columbia University, USA	
09:30-09:50	Making stillbirths visible and moving to action Vicki Flenady, University of Queensland, Australia	
09:50-10:10	Questions	
10:10-10:40	Break / Exhibitors / Posters	
10:40-12:05	Plenary Session 6 - QUALITY AND SAFETY SUDI Chair: John Thompson, New Zealand Co-Chair: Adrienne Gordon, Australia	
10:40-11:00	A Web-tool to assess sudden unexpected death in infancy risk and provide targeted advice at the six-week check in primary care Christine McIntosh, University of Auckland, New Zealand	
11:00-11:20	Is sleeping our preterm babies prone whilst in the neonatal unit good for their brains? Rosemary S C Horne, Monash University, Australia	
11:20-11:40	Unexpected infant deaths: What have we learned in the past 40 years, what difference has it made, and where do we go from here? Peter John Fleming, Bristol University, UK	
11:20-11:40	Questions	
11:55-12:00	P-002 Positive changes in the family functioning after the death of child Anna Liisa Aho, University of Tampere, Finland	

2018 International Conference on Stillbirth, SIDS and Baby Survival

7th - 9th
June 2018
Glasgow, UK

Scientific Program

Time:	Auditorium A	8 TH JUNE, FRIDAY
12:05-12:25	Parallel Session 3B Chair: John Thompson, New Zealand	
12:10-12:25	O-066 Child protection serious case reviews after sudden unexpected death in infancy Joanna Garstang, Birmingham Community Healthcare Trust, UK; Warwick Medical School, UK	
12:25-12:40	O-067 Do the Recommendations of Public Fatality Inquiries Really Protect Vulnerable Children placed in the care of the state? Mary Claire M Verbeke, Queen's University, Canada	
12:40-12:55	O-075 An audit of compliance with UK national statutory guidance for the investigation of Sudden Unexpected Death in Infancy Gabrielle Cropp, Birmingham Community Healthcare Trust, UK	
12:55-12:10	O-069 Recurrent sudden unexpected infant deaths in families: causes and concerns Joanna Garstang, Birmingham Community Healthcare Trust, UK; Warwick Medical School, UK	
13:10-13:25	Industry Sponsored Talk	
13:30-14:30	Walk around, lunch, viewing posters with announcement of poster prizes	
14:35-15:35	Parallel Session 4B Chair: Alan D Cameron, UK	
	W-004 WORKSHOP Each Baby Counts: Listening Exercise Each Baby Counts Project Team, Royal College of Obstetricians and Gynaecologists, UK	
14:30-20:00	Free Afternoon, sightseeing for international delegates OR Option to stay for local delegates	

2018 International Conference on Stillbirth, SIDS and Baby Survival

7th - 9th
June 2018
Glasgow, UK

Scientific Program

Time:	Level 1 Auditorium	8 TH JUNE, FRIDAY
12:05-13:30	Parallel Session 3C Chair: Jane Warland, Australia	
12:10-12:25	O-070 Head to heart experiential learning in perinatal bereavement care for healthcare professionals Daniel Nuzum, University College Cork, Cork, Ireland; Cork University Hospital, Ireland	
12:25-12:40	O-071 Maternal Sleep Position: Is Left Really Best? An MRI Study of Maternal Haemodynamics During Late Pregnancy Aimee Humphries, The University of Auckland, New Zealand	
12:40-12:55	O-072 Comprehensive review of the evidence regarding the effectiveness of community-based primary health care in improving neonatal health Emma Sacks, Johns Hopkins University, USA	
12:55-13:10	O-073 Inequalities and stillbirth: A meta-narrative systematic review Carol Kingdon, University of Central Lancashire, UK	
13:30-14:30	Walk around, lunch, viewing posters with announcement of poster prizes	
14:30-15:35	Parallel Session 4C Chair: Mary Ray, UK	
14:35-14:50	O-096 The use of CSF urea level in investigation of sudden infant and child death Melanie Joy Newbould, Royal Manchester Children's Hospital, UK	
14:50-15:05	O-097 Comparison of oxygen saturation values recorded from ex-preterm and term infants using newer generation pulse oximeters Cliodhna Godden, Princess Royal Maternity Hospital, UK	
15:05-15:20	O-098 Young Mothers: Their perceptions of risk for SIDS and associated infant-care practices Catherine Ellis, University of Warwick, UK	
15:20-15:35	O-099 Reducing Sudden Unexplained Death in Infants in NHS Greater Glasgow & Clyde: An Information Pathway for Staff Lesley Nish, NHS Greater Glasgow & Clyde, UK	
14:30-20:00	Free Afternoon, sightseeing for international delegates OR Option to stay for local delegates	

2018 International Conference on Stillbirth, SIDS and Baby Survival

7th - 9th
June 2018
Glasgow, UK

Scientific Program

Time:	Room 1	8 TH JUNE, FRIDAY
12:05-12:25	Parallel Session 3D Chair: Peter John Fleming, UK	
12:10-12:25	O-058 Factors Associated with Maternal Choice to Roomshare, Not Bedshare Ann Lenox Kellams, University of Virginia, USA	
12:25-12:40	O-076 Profile of Sudden Unexpected Deaths in Childhood (SUDC): the OASIS study 2016-2017 Peter John Fleming, University of Bristol, UK	
12:40-12:55	O-077 Can a self-assessment method of impact and evaluation in bereavement support be useful in understanding and supporting families bereaved by SIDS? Jennifer Ward, The Lullaby Trust, UK	
12:55-13:10	O-078 The role of Sodium Channels in Sudden Unexpected Death in Pediatrics Anne M. Rochtus, Boston Children's Hospital, USA; Harvard Medical School, USA	
13:10-13:25	O-079 Using peer education to support young parents to reduce the risk of SIDS Charlene Crossandra Annon, The Lullaby Trust, UK	
13:30-14:30	Walk around, lunch, viewing posters with announcement of poster prizes	

Time:	Room 2	8 TH JUNE, FRIDAY
12:05-13:30	Parallel Session 3E Chair: Susannah Hopkins Leisher, USA	
12:10-13:10	W-003 WORKSHOP Preventing stillbirth; best practice in identifying and managing women with risk factors as part of routine antenatal care Vicki Flenady, The University of Queensland (MRI-UQ), Australia	
13:10-13:25	O-080 Development of a bundle of care to reduce stillbirths in Australia; a survey of Australian maternity hospitals Vicki Flenady, The University of Queensland, Australia	
13:30-14:30	Walk around, lunch, viewing posters with announcement of poster prizes	

2018 International Conference on Stillbirth, SIDS and Baby Survival

7th - 9th
June 2018
Glasgow, UK

Scientific Program

Time:	Room 3	8 TH JUNE, FRIDAY
12:05-13:30	Parallel Session 3F Chair: Marta C Cohen, UK	
12:10-13:10	TP-001 THEMED PANEL What can the placenta tell us about stillbirth? Irene Scheimberg, The Royal London Hospital, UK	
13:10-13:25	O-081 Introduction of the water method for preservation of the deceased fetus Ilona KF Tiemens-van Putten, GGZ Rivierduinen, The Netherlands	
14:30-17:00	Parent Activity Shattered by Lisa Nicoll Meeting Time: 14:30	
14:30-20:00	Free Afternoon, sightseeing for international delegates OR Option to stay for local delegates	

Time:	Room 4/5	8 TH JUNE, FRIDAY
12:05-13:30	Parallel Session 3G Chair: Alan D Cameron, UK	
12:10-12:25	O-082 Environmental Tobacco Smoke Exposure is Associated with Increased Late Stillbirth: Findings from the Collaborative Individual Participant data (IPD) Sleep and Stillbirth (Cribss) Meta-Analysis Lesley E M McCowan , University of Auckland, New Zealand	
12:25-12:40	O-083 Determinants of antepartum and intrapartum stillbirths in a large population-based assessment of births in the Indian state of Bihar Rakhi Dandona, Public Health Foundation of India, India; University of Washington, USA	
12:40-12:55	O-084 Monitoring stillbirths in NHS Trusts and Health Boards across the UK Ridhi Agarwal, University of Leicester, UK	
12:55-13:10	O-053 Evaluation of Stillbirth Rates following Implementation of NHS England's Saving Babies' Lives Care Bundle by Maternity Services in England Alexander EP Heazell, University of Manchester, St Mary's Hospital, UK	
13:10-13:25	O-086 Improving parents' experiences of care and support following stillbirth: a review of reviews Alison Mcfadden, University of Dundee, UK	
13:30-14:30	Walk around, lunch, viewing posters with announcement of poster prizes	
14:30-15:30	Parallel Session 4F Chair: Claire Storey, UK	
14:30-15:30	W-005 WORKSHOP Post-Mortem Authorisation - Parent to Parent Nicola Welsh, SANDS-Lothians, UK	
14:30-20:00	Free Afternoon, sightseeing for international delegates OR Option to stay for local delegates	

Scientific Program

Time:	Room 6/7	8 TH JUNE, FRIDAY
12:05-13:30	Parallel Session 3H Chair: Rosemary S C Horne, Australia	
12:10-12:25	O-087 Application of an Algorithm for Sudden Unexpected Infant Death Classification Carrie K Shapiro-Mendoza, Centers for Disease Control and Prevention, USA	
12:25-12:40	O-088 Aerodynamic Parameters Governing Carbon Dioxide Rebreathing in Infants David Greenblatt, Technion - Israel Institute of Technology, Israel	
12:40-12:55	O-089 May unfavorable gene polymorphisms induce ineffective autoresuscitation, hypoxia and brain edema in SIDS? Siri Hauge Opdal, Oslo Universtiy Hospital, Norway	
12:55-13:10	O-090 Genetics of Sudden Unexpected Death in Pediatrics Ingrid A Holm, Robert's Program on Sudden Death in Pediatrics, Division of Genetics and Genomics, USA; Boston Children's Hospital, USA; Harvard Medical, USA	
13:10-13:25	O-091 Comparison of the longitudinal effects of persistent periodic breathing and apnoea on cerebral oxygenation in term and preterm-born infants Rosemary S C Horne, Monash University, Australia	
13:30-14:30	Walk around, lunch, viewing posters with annoucement of poster prizes	

2018 International Conference on Stillbirth, SIDS and Baby Survival

7th - 9th
June 2018
Glasgow, UK

Scientific Program

Time:	Auditorium ABC	9 TH JUNE, SATURDAY
09:00-10:40	Plenary Session 7 - Prediction and Prevention Chair: Rosemary S C Horne, Australia Co-Chair: Jane Norman, UK	
09:00-09:20	Effects of alcohol, smoking and related adverse prenatal exposures on infant physiology William Fifer, Columbia University, USA	
09:20-09:40	Screening for fetal growth restriction: the future Gordon Smith, Cambridge University, UK	
09:40-10:00	The contribution of midwifery can to reducing preterm birth, stillbirth, and newborn deaths Jane Sandall, Kings College London, UK	
10:00-10:25	Questions	
10:25-10:40	Break/Exhibitors/Posters	
10:40-13:00	Parallel Session 5A Chair: Alan D Cameron, UK	
10:45-11:00	O-102 Maternal going-to-sleep position, interactions with indicators of fetal vulnerability and the risk of late stillbirth: the collaborative individual participant data (IPD) sleep and stillbirth (CRIBSS) meta-analysis Robin Sarah Cronin, University of Auckland, New Zealand	
11:00-11:15	O-100 The risk of late stillbirth and population attributable risk associated with small for gestational age birth according to customised and Intergrowth 21 (IG-21) birthweight centiles Lesley M E Mccowan, University of Auckland, New Zealand	
11:15-11:30	O-101 Altered fetal movements during pregnancy: How can we best educate women about getting to know their baby? Claire Sheryn Foord, Still Aware, Australia	
11:30-11:45	O-103 National consensus and pilot of parental engagement in the perinatal mortality review process (The PARENTS 2 Study) Danya Bakhbakhi, University of Bristol, UK; North Bristol NHS Trust, UK	
11:45-12:00	O-104 My Baby's Movements: Women's experiences of a mobile phone application aimed at reducing stillbirth by increasing awareness of fetal movements in pregnancy. Glenn Gardener, The University of Queensland, Australia	
12:00-13:00	TP-002 THEMED PANEL Quality Improvement to save lives: One baby at a time Bernadette Mcculloch, Cheryl Clark, Angela Cunningham, Colin Peters, Maternity & Children Quality Improvement Collaborative, Scottish Patient Safety Programme, Healthcare Improvement Scotland, UK	
13:00-14:00	Lunch/Exhibitors/Posters	

Scientific Program

Time:	Auditorium ABC	9 TH JUNE, SATURDAY
14:00-15:15	Plenary Session - 8 Innovation Chair: Alexander E P Heazell, UK Co-Chair: Carrie K Shapiro-Mendoza, USA	
14:00-14:20	New Ways of Communicating Safe Sleep Messages: Results from the Social Media and Risk-reduction Training of Infant Care Practices Study Fern Hauck, University of Virginia School of Medicine, USA	
14:20-14:40	Does monitoring fetal movements reduce the risk of stillbirth – findings from the AFFIRM study Jane Norman, University of Edinburgh, UK	
14:40-15:00	Smoking Cessation interventions for pregnant women David Tappin, University of Glasgow, UK	
15:00-15:15	Questions	
15:15-15:35	Break/Exhibitors/Posters	
15:35-17:00	Parallel Session 6A Chair: Rosemary S C Horne, Australia	
15:35-15:50	O-141 Stillbirth and Dual Prenatal Exposure to Alcohol and Cigarettes: Report of the Safe Passage Study Hein J Odendaal, Stellenbosch University, South Africa	
15:50-16:05	O-140 Combined Prenatal Alcohol and Smoking Increases the Risk for SIDS: Report of the Safe Passage Study Robin L Haynes, Boston Children's Hospital, USA	
16:05-16:20	O-142 Stillbirths preceded by reduced fetal movements are more frequently associated with placental insufficiency Madeleine Georgette ter Kuile, University of Manchester, UK	
16:20-16:35	Using Investigations after Perinatal Death to Inform Care in Future Pregnancies Alexander E P Heazell, University of Manchester, UK	
16:35-16:50	O-132 Australian Maternity care providers knowledge and messaging regarding supine sleep position Jane Warland, University of South Australia, Australia	
17:00-17:30	Closing Ceremony, Awards and Annoucement of 2020 by ISPID and ISA Chairs.	

Scientific Program

Time:	Level 1 Auditorium	9 TH JUNE, SATURDAY
10:40-13:00	Parallel session 5B Pathology Symposium Sponsored by SIDS International and American SIDS Institute Chairmen: Roger Byard, Australia and Betty McEntire, USA Moderator: Betty McEntire, USA	
10:45-11:00	Introductions & Why Pathology is Important Betty McEntire, American SIDS Institute, USA	
11:00-11:20	Neuropathology and SUID Rita Machaalani, The University of Sydney, Australia	
11:20-11:25	Questions	
11:25-11:45	Genetics and SUID Torleiv Rognum, Norway	
11:45-11:50	Questions	
11:50-12:10	Pathology of Co-Sleeping Infant Deaths Roger Byard, University of Adelaide, Australia	
12:10-12:15	Questions	
12:15-13:00	Panel Discussion Rick Goldstein, Marta C Cohen-UK, Rita Machaalani-Australia, Roger Byard-Australia, Torleiv Rognum-Norway	
13:00-14:00	Lunch/Exhibitors/Posters	
15:35-17:00	Parallel Session 6B Chair: Tom Tuner, UK	
15:35-15:50	O-143 Infant Mortality and Prenatal Care in the US Urszula Chajewska, Microsoft, USA	
15:50-16:05		
16:05-16:20	O-145 Making safe sleeping practical and achievable for all parents: implications for recommendations that relate to shared sleep environments Jeanine Young, University of the Sunshine Coast, Australia; Queensland Paediatric Quality Council, Australia	
16:20-16:35	O-146 The English Joint Agency Response unexpected child deaths: parents' experience and the quality of investigations Peter John Fleming, University of Bristol, UK	
16:35-16:50	O-147 Economic evaluation of the 'Baby Box' intervention in preventing sudden infant death syndrome in Alberta Delshani Yasodara Peiris, Cumming School of Medicine, Canada	

2018 International Conference on Stillbirth, SIDS and Baby Survival

7th - 9th
June 2018
Glasgow, UK

Scientific Program

Time:	Room 1	9 TH JUNE, SATURDAY
10:40-13:00	Parallel Session 5C Chair: Claire Storey, UK	
10:40-11:45	Expecting Sunshine Documentary Film Screening Alexis Marie Chute, University of Alberta, Canada; Lesley University, USA	
11:45-13:00	Parent Activity Mindfulness in times of difficulty, an introduction Angie Cameron	
13:00-14:00	Lunch/Exhibitors/Posters	
15:35-17:00	Parallel session 6C Chair: Mary Ray	
15:35-15:50	O-148 Intermittent hypoxia during conditions related to an increased risk for SIDS/SUDI Henning Wulbrand, The Eppendorf Center for Child Neurology, Germany	
15:50-16:05	O-149 Cultivating Community Collaborations Judith A Bannon, Cribs for Kids, USA	
16:05-16:20	O-150 Maternal Sleep Practices and Stillbirth: Findings from an International Case-Control Study Louise M O Brien, Sleep Disorders Center, Michigan Medicine, USA	
16:20-16:35	O-151 SUID prevention strategies in France Inge Harrewijn, Montpellier University Hospital, France	

Scientific Program

Time:	Room 2	9 TH JUNE, SATURDAY
10:40-13:00	Parallel Session 5D Chair: Margaret M Murphy, Ireland	
10:45-11:00	O-105 Re-assessing Services Provided for Bereaved SIDS Parents: Professional and Parental Perspectives Jeri E Wilson, San Diego Guild for Infant Survival, USA	
11:00-11:15	O-106 Changing through pain - stories about posttraumatic growth Trine Giving Kalstad, Norwegian SIDS and Stillbirth Society (LUB), Norway	
11:15-11:30	O-107 Analysis of fifty YouTube videos in memory of stillbirth children. The new role of social websites as public virtual cemeteries Livia Sani, University of Strasbourg, France	
11:30-11:45	O-108 This isn't a miscarriage: A qualitative interview study to understand parents' experiences of losing a baby between 20 and 24 weeks in the UK Lucy K Smith, University of Leicester, UK; Lisa Hinton, University of Oxford, UK	
11:45-12:00	O-109 Deciding on pregnancy after loss and hoping for a born alive baby: the experiences of couples in pregnancy after stillbirth Margaret M Murphy, University College Cork, Ireland; Cork University Maternity Hospital, Ireland; International Stillbirth Alliance	
12:00-12:15	O-110 How to support parents after stillbirth - systematic literature review Anna Liisa Aho, University of Tampere, Finland	
12:15-12:30	O-111 The Pregnancy After Loss Journey Alexis Marie Chute, University of Alberta, Canada; Lesley University, USA	
12:30-12:45	O-112 Returning to work while grieving Trine Giving Kalstad, Norwegian SIDS and Stillbirth Society (LUB), Norway	
13:00-14:00	Lunch/Exhibitors/Posters	
15:35-16:35	Parallel session 6D Chair: Jillian Cassidy, UK	
15:35-16:35	TP-003 THEMED PANEL What can the autopsy tell us about stillbirth? Marta C Cohen, University of Sheffield, UK	

Scientific Program

Time:	Room 3	9 TH JUNE, SATURDAY
10:40-13:00	Parallel Session 5E Chair: Adrienne Gordon, UK	
10:45-11:00	O-113 Comprehensive review of the evidence regarding the effectiveness of community-based primary health care in improving maternal health to reduce stillbirths Emma Sacks, Johns Hopkins School of Public Health, USA	
11:00-11:15	O-114 Analysing antenatal care pathways prior to stillbirth: A pilot study exploring the antenatal care experiences of bereaved mothers in Australia Danielle Pollock, University of South Australia, Australia	
11:15-11:30	O-115 Can A Previous Stillbirth Always Be A Predictor For Future Stillbirth ? - A Retrospective Study Sparsha Agrawal, Delhi University, India	
11:30-11:45	O-116 Reducing Risks of Stillbirth (SB) and Other Adverse Pregnancy Outcomes Among African Americans (AAs) Using Evidence-Based, Simple, Safe, Available and Actionable Personal Behavioral Life Course, Life Style, and "Self-Care" Oriented Information James A Mcgregor, California Hospital Medical Center, USA	
11:45-12:00	O-117 So you want to improve your care of the woman who has had a pregnancy loss? Education in Perinatal Bereavement for Clinical Staff in the Republic of Ireland Karen Mcnamara, Cork University, UK; The Irish Centre for Fetal and Neonatal Translational Research (INFANT), University College Cork, UK	
12:00-12:15	O-118 Maternal Obesity and Sociodemographic Risks for Late Stillbirth: Findings from the Collaborative Individual Participant data (IPD) Sleep and Stillbirth (Cribs) Meta-Analysis Adrienne Gordon, University of Sydney, Australia	
12:15-12:30	O-119 Trends on Late term Stillbirth in the US Sushama Murthy, Microsoft Corporation, USA	
12:30-12:45	O-120 Measuring the silence: development and validation of the Stillbirth Stigma Scale Danielle Pollock, University of South Australia, Australia	
12:45-13:00	O-121 Genetic investigation of fetuses before and after intrauterine fetal death - A retrospective single-center cohort study Dana Muin, Medical University of Vienna, Austria; The University of Manchester, UK	
13:00-14:00	Lunch/Exhibitors/Posters	
15:35-17:00	Parallel Session 6E Chair: Peter S Blair, UK	
15:35-15:50	O-153 Safer sleep advice: what parents and professionals want to know Lucy Anne Lyus, The Lullaby Trust, UK	

2018 International Conference on Stillbirth, SIDS and Baby Survival

7th - 9th
June 2018
Glasgow, UK

Scientific Program

Time:	Room 3	9 TH JUNE, SATURDAY
15:50-16:05	O-154 Steps to turn SUDI into a public health problem in a developing country: the Colombian experience Maria Luisa Latorre, Juan N Corpas University Foundation, Colombia	
16:05-16:20	O-155 Impact of training on a safe sleep toolkit on quality of provider and caregiver discussion Stephanie Kuhlmann, University of Kansas School of Medicine, USA	
16:20-16:35	O-156 Charlie's Kids and the Intercept of Safe Sleep Education and Childhood Literacy: An Effective Approach for Timely Messaging Samuel Hanke, Charlie's Kids Foundation, USA; Cincinnati Children's Hospital, USA	
16:35-16:50	O-157 Sudden Unexpected Infant Death in Mexico 2016 Gonzalo Arroyo Diaz, University of Guanajuato, Mexico	

Time:	Room 4/5	9 TH JUNE, SATURDAY
10:40-13:00	Parallel Session 5F Chair: Francine Loudon Bates, UK	
10:45-11:00	O-122 Managing families with recurrent SIDS: international collaboration, new diagnoses and ethical challenges Joanna Garstang, Birmingham Community Healthcare NHS Trust, UK; Warwick Medical School, UK	
11:00-11:15	O-123 Research priorities in sudden infant death: using the international consensus Francine Loudon Bates, The Lullaby Trust, UK	
11:15-11:30	O-124 Safe-Sleep-Baby Campaign: Influencing parental education behaviors' for maternal-child healthcare workers in remote areas Shereen Hamadneh, Al-alBays University, Jordan	
11:30-11:45	O-125 State Variations in Sudden Unexpected Infant Death Codes Richard Johnston, Microsoft Corporation, USA	
11:45-12:00	O-126 Safe Sleep campaign in health center waiting rooms Allegra Bonomi, Semi per la SIDS Onlus, Italy	
12:00-12:15	O-127 The social determinants of health for Indigenous peoples and "Triple-Risk Model" for SIDS: a socio-ecological health perspective for safe sleep education Delshani Yasodara Peiris, Cumming School of Medicine, Canada; University of Calgary, Canada	
12:15-12:30	O-128 Immunization status and occurrence of Sudden Unexpected Infant Death (SUID) Karine Levieux, Nantes University Hospital, France	
12:30-12:45	O-129 Infections and sudden unexpected infant death: a cohort study in France Floriane Ducert, Aix-Marseille University, France	

Scientific Program

Time:	Room 4/5	9 TH JUNE, SATURDAY
12:45-13:00	O-130 The impact of implementing a sudden infant death syndrome education package in Jordan Shereen Hamadneh, Al-alBayt University, Jordan	
13:00-14:00	Lunch/Exhibitors/Posters	
15:35-17:00	Parallel Session 6F Chair: Glenn Gardener, UK	
15:35-15:50	O-158 Development of a standardised approach to classification of stillbirth and neonatal death in data-rich settings: The Cork Classification Consensus 2017 and Glasgow 2018 Progress Jessica Sexton, The University of Queensland (MRI-UQ), Australia	
15:50-16:05	O-159 Identifying subgroups of women most at risk of stillbirth in England using Latent Class Analysis Ruth J Matthews, University of Leicester, UK	
16:05-16:20	O-160 Pathways of association between first trimester haemoglobin concentration and risk of stillbirth: a path-analysis of data from a multi-ethnic maternity population in England, suggesting possible new areas for investigation David Churchill, The Royal Wolverhampton NHS Trust, New Cross Hospital, UK	
16:20-16:35	O-161 Prenatal-onset Group B Strep (POGBS) Sepsis Is a Distinct Cause of Perinatal Mortality/Morbidity James A. McGregor, Group B Strep International, USA	
16:35-16:50	O-162 Pre-Discharge Screening Trans-Cutaneous Bilirubinometry in Newborns in Rooming-in Cesar Ivan Garcia Gonzalez, University of Guanajuato, Mexico	

Scientific Program

Time:	Room 6/7	9 TH JUNE, SATURDAY
10:40-13:00	Parallel Session 5G Chair: Tom Turner, UK	
10:45-11:00	O-131 Straight Talk for Safe Infant Sleep Barbara Ann Himes, First Candle, USA	
11:00-11:15		
11:15-11:30	O-133 Safer Sleep Week: a national SIDS awareness-raising campaign Lucy Anne Lyus, The Lullaby Trust, UK	
11:30-11:45	O-134 Impact of a Safe Sleep Intervention on Mothers Falling Asleep While Feeding Ann Lenox Kellams, University of Virginia, USA	
11:45-12:00	O-135 Three cases of life-threatening positional asphyxia Alessandro Vigo, Regina Margherita Children Hospital, Italy	
12:00-12:15	O-136 Conversations about safe sleep: perspectives from mothers and health professionals Anna S Pease, University of Bristol, UK	
12:15-12:30	O-137 The Dutch 11th safe sleeping survey; factors with a potential risk for suffocation Monique Pauline Lhoir, Wageningen University & Research, The Netherlands	
12:30-12:45	O-138 An Evaluation of the Cribs for Kids® Model: Ten Year Review of Outcomes for Pack 'N Play Use and Safe Sleep Michael Howard Goodstein, York Hospital, USA	
12:45-13:00	O-139 Leveraging the Safe Sleep Instructor Infrastructure to Expand Community Baby Showers State-wide Christy Schunn, Kansas Infant Death and SIDS Network, USA	
13:00-14:00	Lunch/Exhibitors/Posters	
15:35-17:00	Parallel Session 6G Chair: Barbara Ann Himes, USA	
15:35-15:50	O-163 The impact of birth and death registration in the UK on parents' experiences of losing a baby between 20 and 24 weeks of pregnancy: A qualitative interview study Lucy K Smith, University of Leicester, UK; Lisa Hinton, University of Oxford, UK	
15:50-16:05	O-164 No time to say goodbye: does medicolegal infant death investigation provide adequate care for suddenly bereaved parents? Rebecca Ann Shipstone, University of the Sunshine Coast, Australia	
16:05-16:20	O-165 Parents tell their stories Dirk Gerardus Ploegmakers, VOWK, Dutch Parent Association, The Netherlands	
16:20-16:35	O-166 Sudden unexpected infant death - a study of the impact on intergenerational relationships Lynsay Clair Allan, Scottish Cot Death Trust, UK	

2018 International Conference on Stillbirth, SIDS and Baby Survival

7th - 9th
June 2018
Glasgow, UK

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**2018 International Conference on
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7th - 9th
June 2018
Glasgow, UK

Abstracts of Invited Speakers

Abstracts of Invited Speakers

What causes wellness and the implications for families

Harry Burns

University of Strathclyde, UK

Sir Harry's principal interest is in using Improvement Science to transform the lives of people, particularly children and young people living socially difficult lives. Sir Harry uses evidence to support his argument that adversity in early years can have considerable, biological consequences in later life.

More widely, his focus is on how societies can create "wellness" - where health is a state of complete physical, mental and social wellbeing, not merely the absence of illness. By looking at the association of social patterns and health, it is possible to develop interventions which are aimed at narrowing health inequalities and enabling individuals to find meaning and have a sense of coherence in their lives.

To be effective, this requires collaboration across health, education, social services, academia and government. Sir Harry's work reflects this range and scope.

Abstracts of Invited Speakers

Resentment and Loss

Glen Pettigrove

Glasgow University, UK

There is a lively debate regarding whether or not losing a child increases the likelihood of the parents divorcing. Some studies have found it does, others that it does not. But one thing is beyond dispute. Losing a child puts an incredible strain on the family members left behind. It takes a toll on their academic and employment performance, their health, and their relationships. The last of these tolls will be the focus of this session. Survivors feel estranged from friends and loved ones who have not been through the same experience. Their grief is often coupled with resentment - of their spouse, their remaining children (or parents), and even of the child they have lost - which puts a strain on their relationships even with those who understand best what they are going through. On top of the other challenges survivors face, then, is the additional challenge of dealing with resentment. We shall explore three questions relating to this resentment. Why do survivors experience resentment after the loss of a child? How should they deal with it? And why is it so difficult to overcome?

Abstracts of Invited Speakers

Evidence-based care after stillbirth / perinatal death

Dimitrios Siassakos

University of Bristol, UK

I will summarise evidence-based care derived from systematic literature reviews, including for the Lancet Stillbirth Series, and original studies from both high and low/middle-income settings.

- What are the problems with care after perinatal death and why?
- Reducing global stigma after stillbirth – is there an easy win?
- Controversial issues including seeing and holding the baby
- Role and optimal support for partners
- Support for staff
- Integrated care pathways including the new UK National Bereavement Care Pathway(s) – will they work?
- Involving parents in perinatal mortality reviews – learning from deaths together with partners

I will summarise core and aspirational principles of care for high and low/middle-income settings: how must we start, what are the challenges?

Abstracts of Invited Speakers

A voice of a Vilomah

Nicole Bowles

Parent Speaker

Back in 2012 our world came crashing down around us in a matter of seconds. Our beautiful baby boy, Ben, was involved in a freak accident. An accident which caused irreparable damage. After doctors spending hours trying to save his life, it became obvious that he was brain dead and we had to make the heart breaking decision to allow Ben to pass away, peacefully, in our arms.

Over the next few years we tried to find our way in the “new world” we had been thrown into. We negotiated life without Ben in it, trying to parent our eldest son, Alistair, and keeping his, and our, memories of Ben very much alive. We’ve gone on to have 2 more rainbow babies but the hole that has been left by Ben can never, and will never, be filled.

Our family photo will never be complete.

We’ve been ejected from “normal life”, people no longer know how to talk to us. We have lost close friends because they do not know what to say. We’ve had potential new friends walk away mid conversation because we have been honest when they have asked “How many children do you have?”. We have become the elephant in the room, and have been treated like the grim reaper. People don’t mean to, but they have made us feel that if they associate with our family that they run the risk of losing their child as well.

It was when surrounded by this isolation that I began to think.

I wanted to create a way of allowing people to talk about child loss more openly. A way of people being able to recognise that we want to talk about ALL of our children. A way of bringing this amazing community, that we have now found ourselves part of, closer and more unified. I had the vision of a badge which could help unify and identify those who are grieving for their child. A simple symbol that doesn’t isolate, define or exclude. A symbol that can help sign post people to the amazing charities and organisations that are out there already supporting bereaved families. A symbol that can help educate those who haven’t lost and teach them how to approach those who have.

When Ben died our hearts were broken. He took a piece of us that we could never get back. We carried on, but we would never be the same. Over time our hearts have got used to the hole he’s left and we can function again, with its constant presence, but nothing will ever fix it or replace him. The badge creates a positive, constructive, conversation.

It lets everyone know that it’s OK to talk about them, it’s OK to ask and it’s OK to say their name. The badge is a symbol, one which is designed to give back control to bereaved parents. They can wear it whenever they want, everyday, special days or never. Just knowing that it is out there may be enough to break the silence. I want everyone to be able to take something away from the badge even if they don’t want to wear it.

In my years of searching for the “box” we now fit in, I stumbled across the term Vilomah. It is a Sanskrit word meaning “against the natural order”.

It is a simple word but it finally gives the answer to “What am I now?”. When you leave the hospital without your child, without the future you’ve hoped for and dreamed of. When you walk back through the door of the home you no longer recognise. At least you now have a label for what you are.

You are a Vilomah.

When you have nothing a simple word, or a symbol, can be everything. It may only be a small pin badge, but it can change the world for the better.

Abstracts of Invited Speakers

Findings from the New Zealand SUDI case-control study

Edwin Mitchell

The University of Auckland, Auckland, New Zealand

Background: Mortality from Sudden Unexpected Death in Infancy (SUDI) has decreased considerably in New Zealand from the late 1980s. However, there are considerable disparities in SUDI rates with higher rates seen in Maori and those with socioeconomic disadvantage.

Aim: To examine risk factors for SUDI with particular emphasis on the sleep environment.

Methods: A three year (1 March 2012-28 February 2015) nationwide case-control study was conducted. Cases included clear asphyxia occurring during sleep, unsafe sleeping, congenital anomalies and infection insufficient to explain the death, unascertained and unexplained causes (SIDS). Controls were selected so that they were similar to cases over hospital of birth, ethnicity and age, i.e. high risk controls.

Results: There were 137 SUDI cases (rate 0.71/1000 live births). The rate for Maori was 1.41/1000 and non-Maori non-Pacific (predominantly European) 0.50/1000. The parents of 97% of the SUDI cases were interviewed. 649 controls were selected and 258% (40%) were interviewed. The two major risk factors for SUDI were maternal smoking in pregnancy (adjusted OR=6.0, 95% CI=3.0-12.1) and bed sharing (aOR=5.0, 95% CI=2.5-9.6). There was a significant interaction between bed sharing and maternal smoking in pregnancy ($p=0.002$). Infants exposed to both risk factors had a markedly increased risk of SUDI (aOR=32.8, 95% CI=11.2-95.8) compared with infants not exposed to either risk factor.

Conclusions: Many risk factors that were identified in the original New Zealand Cot Death Study (1987-1990) are still relevant today, as are the prevention messages. These messages should be reinforced.

Abstracts of Invited Speakers

The power of partnership for global stillbirth prevention

Helga Fogstad

PMNCH, WHO, Switzerland

Unacceptable levels of newborn mortality and stillbirths impede the realization of healthy and sustainable societies. Every day more than 7,300 babies are stillborn, with ninety-eight percent of stillbirths occurring in low and middle-income countries. However, increasing global attention is being paid to stillbirths, through the Every Newborn Action Plan, the new Every Woman Every Child Global Strategy for Women's, Children's and Adolescent Health (2016-2030) and monitoring framework, the development of dedicated advocacy working groups and strong networks for quality, equity and dignity of care. There is growing recognition of the need for strengthening care around the time of birth, reaching the hardest to reach, working with empowered parents, families, and communities, and improving data for decision making and accountability. By bringing together different constituencies – governments, health professionals, the private sector, civil society, the UN and others -- The Partnership for Maternal, Newborn & Child Health is driving collective action for stillbirth prevention and stillbirths in the wider context of improving the survival and well-being of women, children and adolescents.

Abstracts of Invited Speakers

Reducing stillbirth in Scotland- changing culture and practice, a success story

Catherine Calderwood

CMO Scottish Government, UK

My talk will describe the journey which Scotland has made to reduce the stillbirth rate by >20% in 4 years. The country now has the lowest stillbirth rate in the UK, having previously had the highest. I will discuss the influence of parents and charities in raising awareness with pregnant women and staff, reducing inequalities, the change in culture in maternity hospitals and the interventions which made this change possible. All stemming from a determination not to accept the status quo.

Abstracts of Invited Speakers

Each baby counts - a UK initiative to reduce intrapartum harm

Alan D. Cameron

Glasgow University, UK

Each Baby Counts is the Royal College of Obstetricians and Gynaecologists' (RCOG) national quality improvement programme to reduce the number of babies who die or are left with severe disability as a result of incidents occurring during term labour. Each Baby Counts has an ambitious aim to reduce by 50% the incidence of stillbirth, neonatal death and severe brain injury as a result of incidents during term labour by 2020.

Stillbirths, neonatal deaths and brain injuries occurring due to incidents in labour are initially investigated at a local level. The Each Baby Counts programme brings together the results of these local investigations to understand the bigger picture and share the lessons learned. The results presented are based on analysis of the data submitted along with in-depth thematic analysis of several key topics.

The aim of this report is to share the lessons from the care of Each Baby Counts babies born in 2015. In any individual maternity unit, these incidents are rare and it may be difficult to see the clear patterns or best ways to avoid them. The Each Baby Counts programme utilises a multidisciplinary approach which provides us with the opportunity to learn from parents, midwives and doctors. Together we will continue to work hard to ensure that each baby receives the safest possible care during labour.

Key Recommendations from the full analysis of the babies born in 2015 are listed below

Intermittent Auscultation

Women who are apparently at low risk should have a formal fetal risk assessment on admission in labour irrespective of the place of birth to determine the most appropriate fetal monitoring method. The development of IT tools that bring together data from across a trust's systems to support accurate, easily accessible risk assessment should be prioritised.

NICE guidance on when to switch from intermittent auscultation to continuous cardiotography (CTG) monitoring should be followed. This requires regular reassessment of risk during labour.

Continuous monitoring (CTG)

Staff tasked with CTG interpretation must have documented evidence of annual training.

Key management decisions should not be based on CTG interpretation alone. Healthcare professionals must take into account the full picture, including the mother's history, stage and progress in labour, any antenatal risk factors and any other signs the baby may not be coping with labour.

Human Factors

All members of the clinical team working on the delivery suite need to understand the key principles (perception, comprehension, projection) of maintaining situational awareness to ensure the safe management of complex clinical situations. A senior member of staff must maintain oversight of the activity on the delivery suite, especially when others are engaged in complex technical tasks. Ensuring someone takes this 'helicopter view' will prevent important details or new information from being overlooked and allow problems to be anticipated earlier.

Decision making is more difficult when staff feel stressed and/or tired. A different perspective improves the chances of making a safe decision. Clinical staff should be empowered to seek out advice from a colleague not involved in the situation who can give an unbiased perspective (either in person or over the phone). When managing a complex or unusual situation involving the transfer of care or multiple specialities, conduct a 'safety huddle' - a structured briefing for the leaders of key clinical teams. This will ensure everyone understands their roles and responsibilities and shares key clinical information relevant to patient safety.

Neonatal care

If therapeutic hypothermia is being considered, continuous monitoring of core temperature must be undertaken. Early efforts to passively cool the baby should also be considered (turn off the heater, take off the hat). The paediatric/neonatal team must be informed of pertinent risk factors for a compromised baby in a timely and consistent manner.

Abstracts of Invited Speakers

2016 American Academy of Pediatrics safe sleep guidelines: What's New? What's Controversial?

Rachel Y. Moon, M.D.

University of Virginia School of Medicine, USA

The American Academy of Pediatrics' Task Force on SIDS published updated safe infant sleep guidelines in November 2016. New evidence was presented for skin-to-skin for newborn infants, use of bedside and in-bed sleepers, sleeping on couches/armchairs and in sitting devices, and use of soft bedding after 4 months of age. The controversies arising after publication of the guidelines will be discussed.

Abstracts of Invited Speakers

NEW PATHOLOGICAL FINDINGS IN SUDI.

Roger W. Byard.

Forensic Science SA, Adelaide, Australia.

SUDI, or sudden unexpected death in infancy, is an umbrella term that has been very effective in identifying all cases of sudden and unexpected infant deaths for researchers and epidemiologists. The term assists in countering the potentially confounding effects of variations in pathological diagnoses with a case being classified as SUDI even if it has initially been listed as SIDS, “undetermined” or asphyxia. Pathological features clearly vary between cases depending on whether death has been due to a definable natural disease, an accident or a homicide. However, for those cases where the mechanisms of death remain an enigma, exciting new pathological markers in the brain are emerging. These vary from morphological abnormalities of the hippocampus that may be detected on macroscopic or routine microscopic examination, to far more subtle changes in neurotransmitters that require specialized staining and measurements. The specific significance of hippocampal malformation and deficiencies in serotonin and substance P will be discussed.

Abstracts of Invited Speakers

Cribs for Kids® National Safe Sleep Hospital Certification Program™

Michael Goodstein, MD, FAAP.

WellSpan York Hospital. York, PA

The National Hospital Certification Program™ was developed by Cribs for Kids® in 2015 and over 250 hospitals have achieved certification. Numerous studies have shown that hospitals and healthcare providers often fail to consistently promote SIDS risk reduction education and that these messages can have an impact on safe sleep behaviors in the home. The certification program was developed as a tool to establish a systematic way to promote consistent messaging and modeling of safe infant sleep in the hospital setting. It provides hospitals with a road map for success in developing and maintaining a culture of sleep safety using an evidence-based approach. The program recognizes hospitals that promote safe sleep education and best practices, demonstrating a commitment to community leadership. This session will review the history of the program and explain the certification process. There are three levels of certification including: Safe Sleep Hospital™ (bronze level), Safe Sleep Leader™ (silver level) and Safe Sleep Champion™ (gold level). These levels make success achievable, with step-wise goals that allow hospitals to expand at their own pace. Cribs for Kids® provides training on how to develop an institutional safe sleep program using the transtheoretical model and diffusion of innovation theory. The training also provides hospitals with all the materials needed for success, including: a sample hospital safe sleep policy, audit tools, staff education, family education, posters, brochures, DVDs and door hangers. All the information for developing a hospital-based safe sleep program and the application for certification is available on-line at the Cribs for Kids® website. The requirements for each level of certification is broken down to explain the criteria, necessary documentation and available resources. The program coordinator reviews applications, obtains additional information to clarify and resolve any areas of controversy with a hospital's practices. Hospitals with successful applications receive a certificate to document their achievement and press release materials are provided.

Abstracts of Invited Speakers

Changing policy on smoking in pregnancy and post-partum: is research evidence enough?

Linda Bauld

Stirling University, UK

Smoking in pregnancy remains the major modifiable risk factor for maternal and infant morbidity and mortality in the UK and many nations of the world. Despite this, effective interventions to reduce smoking in pregnancy are few and where evidence exists (for example for financial incentives for cessation) its application is controversial. This presentation will outline what we know about interventions and policies that can reduce smoking in pregnancy and in the post-partum period and reflect on the international experience of applying research evidence to practice. It will outline recommendations from the World Health Organisation on how health professionals and others can support women to stop smoking and some of the challenges of applying these recommendations, including in low and middle income country settings. In addition, Professor Bauld will outline recent experience in the UK to bring together a multi-agency advisory group to address this issue and work with government to achieve targets for reductions in smoking in pregnancy. This experience, and the progress made, highlights the importance of researchers and others building links with policy-makers and wider civil society, including the media, to better communicate the risks of smoking in pregnancy, make the case for investment in services, and for research funding to conduct studies that can provide evidence on new approaches and technologies (including tobacco harm reduction products) which could be used to inform policy and practice in the future.

Abstracts of Invited Speakers

CDC's SUID Case Registry, Challenges in Classifying SUID, and the Diagnostic shift

Carrie K. Shapiro-Mendoza, PhD, MPH

Centers for Disease Control and Prevention

In 2004, the Centers for Disease Control and Prevention (CDC) and its partners initiated activities aimed at improving the accuracy and consistency of the reporting and classification of sudden unexpected infant deaths (SUID), including sudden infant death syndrome. These activities included the development of a revised standard investigation reporting form, implementation of training for conducting a thorough SUID death scene investigation, and a trend analysis of SUID mortality that showed a diagnostic shift. In 2010, CDC facilitated population-based SUID surveillance in 5 US states building upon existing child death review programs. This surveillance system, known as the SUID Case Registry, aimed to complement surveillance using death certificates. In 2018, the SUID Case Registry has expanded to 16 states and 2 jurisdictions, covering 30% of all US SUID cases. The Registry information enables researchers and programmers to more effectively monitor SUID incidence and associated risk factors, which may ultimately lead to the development of more effective risk reduction strategies. Registry information can also be used to evaluate and improve investigation and reporting practices.

Specifically, the presentation's objectives are to:

- Describe US trends in SIDS and other sudden unexpected infant death (SUID) mortality rates
- Discuss challenges with classification
- Describe the SUID Case Registry and its classification system
- Provide examples about how surveillance data are being used

Abstracts of Invited Speakers

Stillbirths: Cross-cultural perspectives

Maria Tejada de Rivera Sawers

Stillbirth Advocacy Working Group (SAWG), Mexico

In 2010, I went from being a care provider in a high-income setting to being a bereaved mother in a middle-income setting and learned a few lessons along the way about socio-cultural differences about stillbirth across income settings, and from the point of view of the provider versus the point of view of the mother. So today, I would like to tell you my story. Based on my professional experience of stillbirth, I had certain expectations on how stillbirths should be dealt with and even about how I, being an obstetrician, would deal with it, if it happened to me. I had never considered how stillbirths in middle-income countries, even in high-end private hospitals, were treated. I also had never really considered how my practice and the training I received were, on one hand amazing, yet also had so many shortcomings. I discovered that shame and stigma around stillbirth were prevalent in both settings but for different reasons. By contrasting my professional and personal experience as well as the experience of stillbirths for women in Mexico and in Switzerland, I hope to shed light upon social and cultural differences and similarities and their impact on the experience of stillbirth.

Abstracts of Invited Speakers

Providing humane care for women following stillbirth

Tina Lavender

University of Manchester, UK

Globally, 2.6 million babies die just before or during birth each year; 98% of stillbirths occur in low and middle income countries. Stillbirth is a tragedy for women and families, who suffer long lasting grief for their baby and are at high risk of anxiety, depression and posttraumatic stress disorder; most have little support and care. In low income countries, including Sub-Saharan Africa, over half of stillbirths happen during labour. Many women also have associated health problems, e.g. obstetric fistula, a hole between the vagina and rectum or bladder as a result of obstructed labour causing incontinence of urine faeces or both after birth. Unfortunately progress in preventing stillbirth is slow and many women still do not receive basic humane care after their baby dies.

This presentation will discuss the work of the NIHR Global Health Research Group on Stillbirth Prevention and Management in Sub-Saharan Africa, The University of Manchester. This multidisciplinary team works collaboratively with the Lugina Africa Midwives Research Network (LAMRN), which was established in 2012 to support evidence based practice. LAMRN comprises 6 countries: Kenya, Tanzania, Malawi, Uganda, Zambia and Zimbabwe and has trained over 200 midwives in research methodology and clinical audit.

This presentation will discuss the overall work of the group which includes a) gaining understanding of the issues in improving stillbirth prevention, childbirth and bereavement care in low income settings b) developing culturally relevant studies for further investigation, and c) establishing itself as a catalyst for change.

The presentation will highlight some of the challenges encountered when researching such a sensitive issue in this specific context and will provide insight into the perspectives of key stakeholders on stillbirth care.

Funding: NIHR Global Health Programme, Wellbeing of Women/RCM/ Burdett Trust UK

Abstracts of Invited Speakers

Where is stillbirth on the global stage? What's holding us back and what we can do about it

Susannah Hopkins Leisher

(International Stillbirth Alliance; Department of Epidemiology, Mailman School of Public Health, Columbia University; Stillbirth Centre for Research Excellence, Mater Research Institute, University of Queensland)

At the 2017 International Stillbirth Alliance conference in Cork, Ireland, I gave an overview of stillbirth as a global human rights issue to which insufficient attention is paid. In Glasgow in 2018, I will briefly summarize the extent of the global stillbirth burden, and examine what has changed since Cork and what has stayed the same, viewed through the lens of the Lancet's Ending Preventable Stillbirths Call to Action. Progress has been made on several fronts; for example, 21 countries in sub-Saharan Africa and Asia have set their own stillbirth rate targets, and work has begun on a global consensus for bereavement care after stillbirth. Yet several components of the Call to action have not progressed, for example there is no tracking mechanism for subnational stillbirth rate equity targets, nor is there a consensus on how to measure, reduce and track stigma associated with stillbirths, while parent voice remains sharply limited on national and global stages. Drawing on Dr Jeremy Shiffman's work on how political attention is generated for public health issues, I will suggest some possible reasons both for delay and for progress. The former include continued fatalism, a persistently "silo"-istic view of stillbirths, and limited funding, while the latter include growing UN leadership, improvements in monitoring mechanisms, and evolving norms related to quality-equity-dignity, rights-based language and attention to marginalized populations, which are helping to create a more favorable global environment for eradicating the burden of stillbirth. I will conclude by summarizing the areas in which action will be most important in the coming year, with a particular call to reach across silos and give parents a hand up and a voice out.

Abstracts of Invited Speakers

Making stillbirths visible and moving to action

Vicky Flenady MMedSc, PhD

Centre of Research Excellence in Stillbirth, Mater Research Institute, The University of Queensland (MRI-UQ), Brisbane, Australia

Stillbirth is a tragedy for parents and families with wide-reaching consequences. The Lancet stillbirth series of 2011 brought attention to the hidden tragedy of stillbirth with a global call to action for reducing this loss of lives. In 2016 The Lancet followed up with a series to measure change and a renewed call to action which included respectful care after stillbirth. While some progress was evident more is needed. While 98% of stillbirths occur in the low and middle income countries, with little improvement in stillbirth rates and huge disparities, high income countries must continue to focus attention on the public health tragedy of stillbirths. Variation in stillbirth rates across developed countries clearly show that improvements are possible with potentially preventable if all countries had rates matching the best performing countries.

My presentation will use high income country-specific examples to highlight progress and priorities focusing on initiatives to address disparity, to improve data quality and maternity care. I will also explore the value and challenges of initiatives to raise stillbirth awareness.

Funding source: National Health and Medical Research Council of Australia supports the authors salary and the stillbirth research program in Australia.

Abstracts of Invited Speakers

The contribution of local hospital review to preventing stillbirths

Jennifer J Kurinczuk, on behalf of the PMRT collaboration

MBRRACE-UK/PMRT, National Perinatal Epidemiology Unit, Nuffield Department of Population Health, University of Oxford

Findings from the MBRRACE-UK national confidential enquires into perinatal deaths and the Each Baby Counts (EBC) programme indicate that service improvements have the capacity to prevent babies dying before birth. The recent confidential enquiry identified that in 78% of term intrapartum stillbirths there were improvements in care which may have made a difference to the outcome; in only 8% was the care described as good, with no improvements identified.

It is also clear from the enquiries that there are significant issues with the quality of the local reviews of care. Whilst 95% of the term intrapartum stillbirths underwent local review, only a quarter of these reviews were assessed as good, a quarter were adequate, with the remaining half being judged by the multi-disciplinary confidential enquiry panels as poor.

Poor local review practices lead to poor quality information being provided to parents about why their baby died, limited capacity to plan the management of any future pregnancies, and the opportunity to improve care to prevent future deaths for other parents is lost.

In 2012 the Stillbirths and neonatal death charity, Sands and the Department of Health (England), established a task and finish group to develop the concept of a standardised perinatal mortality review tool. The findings of the task and finish group were incorporated into the commissioning of a national standardised Perinatal Mortality Review Tool (PMRT). The PMRT was released for use in England, Wales and Scotland in early 2018.

The PMRT is designed to support local perinatal mortality review groups to conduct systematic, standardised perinatal reviews of stillbirths and neonatal deaths of babies born at 22+0 week onwards. It includes the capacity to incorporate the parents' perspectives of their care to ensure these are considered in the review process. The PMRT will be presented with an update of its use.

Abstracts of Invited Speakers

Placental causes of stillbirth

Robert M. Silver

University of Utah, USA

Placental insufficiency is a cause or contributing factor to at least 30% of stillbirths. Numerous placental abnormalities such as thrombosis, infarction, inflammation and vasculopathy have been linked to stillbirth. In addition, clinical problems associated with decreased placental function such as fetal growth restriction, oligohydramnios, and abnormal fetal and maternal Doppler studies also increase the risk for stillbirth. Screening for placental function is a large part of routine prenatal care as well as strategies intended to reduce the risk of stillbirth. However, many cases of placental insufficiency are not identified until after stillbirth or other adverse outcomes have occurred. Also, remarkably little is known about placental function and stillbirth. In this talk, we will review available data regarding clinical and histologic placental abnormalities associated with stillbirth. We will discuss screening and diagnostic modalities to assess placental function including clinical history, sonogram, fetal heart rate tracings, biomarkers and MRI. Finally, data regarding medical therapy intended to improve placental function will be evaluated including novel and experimental approaches.

Abstracts of Invited Speakers

How stillbirth personally impacts physicians, nurses, and hospital staff and effective strategies for coping with death and bereavement in clinical care

Katherine J. Gold MD MSW MS

Department of Family Medicine
Department of Obstetrics and Gynecology
UM Depression Center
University of Michigan, Ann Arbor, MI, USA

Clinicians are on the front lines of diagnosing stillbirths and helping parents manage the aftermath of a devastating loss. Such work can cause enormous stress among physicians, nurses, and other clinical staff and lead to emotional exhaustion and burnout. The challenge of coping with loss is often exacerbated by inadequate clinical education and lack of training around unexpected death and bereavement.

The personal experience of loss may be very different depending on the frequency of stillbirth in any given country. In high income countries, clinicians may experience an unexpected death as a profoundly traumatic event while in low income countries with a high volume of stillbirths, clinical staff may become numb to the frequent losses and feel powerless. There is a spectrum of coping strategies for managing loss and grief among clinical staff. These range from externalizing to internalizing blame and can promote positive personal growth or depersonalization and detachment. Researchers have identified several maladaptive coping strategies physicians and nurses frequently employ which can include self-criticism, withdrawal, and disengagement from families in both subtle and explicit ways. While clinicians may be unaware of the behaviors they are using to cope, maladaptive methods can contribute to personal burnout and emotional distress and may adversely impact families who sense abandonment or lack of empathy from their caregivers.

This talk will focus on the research around clinician experiences and training around how to cope with loss and bereavement in clinical care. We will explore common coping strategies which may not be recognized and focus on promoting personal coping strategies shown to be more helpful for recovery and growth in the setting of caring for families with loss. We will also review the impact of different types of coping on patient experiences and emphasize strategies which are most helpful for patients. Finally, the talk will highlight the growing concern about clinician burnout and focus on ways in which coping strategies around loss and grief can promote burnout or enhance clinician well-being.

Abstracts of Invited Speakers

A WEB-TOOL TO ASSESS SUDDEN UNEXPECTED DEATH IN INFANCY RISK AND PROVIDE TARGETED ADVICE AT THE SIX-WEEK CHECK IN PRIMARY CARE

Christine McIntosh^{*1,2}, John Thompson¹, Bob Carpenter³, Ken Leech⁴, Edwin A Mitchell¹

1 Department of Paediatrics - Child and Youth Health, The University of Auckland, Auckland.

2 Counties Manukau Health District Health Board, Auckland.

3 London School of Hygiene and Tropical Medicine, London († deceased)

4 Procon, Auckland.

Background: Sudden Unexpected Death in Infancy (SUDI) is preventable by addressing the risks that contribute to a baby's vulnerability and by providing a safe sleep environment every time a baby sleeps. There are complex interactions between risk factors making it difficult to estimate the magnitude of risk and to know what intervention will make the most impact. The aim of this research was to develop a webtool for assessment of SUDI risk and to pilot it's use in Primary Care at the infant six-week check.

Methods: Individual level data from five major case-control studies was used to develop an algorithm to calculate the absolute risk of SUDI from maternal, infant and infant care practices that contribute to SUDI. This risk assessment web-tool is called the Safe Sleep Calculator (SSC). The SSC is completed at the six-week infant check and the result is illustrated through use of a risk scale. Factors that reduce risk are identified along with the risk reduction achieved by modifying each factor. The SSC is linked to a clinical support pathway. The SSC result is stored in the infants file and non-identifiable data are sent to an accumulating data set.

Results: Practice nurses report that the SSC enables them to confidently screen for SUDI risk and prioritise factors that will have the most impact on reducing the risk. More than 500 calculations are now on the dataset. One fifth of calculations show a higher risk ($\geq 0.4/1000$) and most have modifiable risk.

Conclusion: The SSC is a useful tool to enable targeting of additional education and support to families at increased risk of SUDI. The data from the SSC can help us to understand what is required of SUDI prevention programmes of care.

Funding: Cure Kids

Abstracts of Invited Speakers

Is sleeping our preterm babies prone whilst in the neonatal unit good for their brains?

Rosemary SC Horne PhD, DSc

The Ritchie Centre, Hudson Institute of Medical Research and Department of Paediatrics, Monash University, Melbourne, Australia.

Background: Sleeping infants in the prone position or on their tummies is a major risk factor for Sudden Unexpected Death in Infancy (SUDI) including Sudden Infant Death Syndrome (SIDS). The recommendation that all infants are slept in the supine position has reduced SIDS by over 80% worldwide. In addition, prone sleeping has not been shown to improve the long-term outcome of preterm infants. In healthy term infants, we have previously shown that the increased risk of SIDS with prone sleeping likely is associated with a range of adverse effects imposed by this position, including reduced cerebral oxygenation and blood pressure, impaired autonomic cardiovascular control and altered neural function (as evidenced by reduced arousability from sleep). We have recently studied ex-preterm infants longitudinally after discharge home and found that the adverse effects of prone sleeping on cerebral oxygenation is even worse in these babies than in term-born infants across the first 6 months of post-term corrected age. In contrast to the safe sleeping recommendations when babies are slept at home, it is common practice for preterm infants in a hospital neonatal intensive care unit (NICU) or special care nursery (SCN) to be slept prone for $\geq 50\%$ of the time. This is because it is commonly thought believed that prone sleeping improves respiratory function. However, studies have shown conflicting results as to whether prone sleeping in preterm infants improves respiratory function in the short-term. The aim of the current study was to assess the effects of sleeping position and sleep state longitudinally on cerebral and cardiovascular parameters in stable preterm infants born at a range of gestational ages (GA) in the NICU and SCN environments. We hypothesised that preterm infants sleeping in the prone position would have reduced cerebral oxygenation, impaired cardiovascular control and impaired cerebral autoregulation, when compared to sleeping supine. Furthermore, these cardiovascular and cerebral circulatory deficits will be most prominent in the preterm infants born at earlier gestational ages and at younger postnatal ages.

Methods: Fifty-six preterm infants (28 F/28 M) born between 24-34 weeks GA with mean birthweight 1307g (range 715-2133g) were recruited and studied with the first observation at 1 week of age and continued on a weekly basis until term age, transfer or hospital discharge. Infants were divided into 2 groups: extremely preterm - GA 24-28 weeks (n= 23) and very preterm - GA ≥ 29 -34 weeks (n= 33). Infants were studied for 1-2 hours in both the supine and prone sleeping positions. Cerebral tissue oxygenation index (TOI %, NIRO 200NX spectrophotometer, Hamamatsu Photonics KK, Japan), arterial oxygen saturation (SaO₂, Masimo, Australia), mean arterial blood pressure (FinometerTM, Finapres Medical Systems, Netherlands) and heart rate (HR) were recorded. Cerebral fractional tissue extraction (CFOE) was calculated as $CFOE = (SaO_2 - TOI) / SaO_2$.

Results: In contrast to our hypothesis both extremely and very preterm infants exhibited only small effects of sleep position and sleep state on TOI and CFOE. This may have been because oxygen levels were adjusted clinically to maintain oxygen saturation and thus maintain cerebral oxygenation.

Conclusions: Currently, recommendations are to sleep stable preterm infants supine from 32 weeks of age, however there is no research to support this recommendation. Knowing how sleep positioning may influence cerebral physiology may help to optimise care of preterm infants and provide valuable insight on early brain development.

Abstracts of Invited Speakers

Unexpected infant deaths: What have we learned in the past 40 years, what difference has it made, and where do we go from here?

Peter Fleming

Bristol University, UK

In the 40 years since I first presented a scientific paper on infant developmental physiology and its possible relevance to unexpected infant deaths our knowledge has advanced and the numbers of such deaths have fallen considerably throughout the western World.

In this talk I will review the advances in our knowledge and understanding in the areas of

1. The needs and care of families
2. Environmental and developmental physiology, and
3. Epidemiology and Public health,

And attempt to identify key areas in which further development, research and implementation may help us to further the aim of improving the survival, health and well-being of all infants.

Abstracts of Invited Speakers

The Safe Passage Study: Effects of Adverse Prenatal Exposures Including Alcohol and Smoking on Infant Physiology

Fifer, WP*, Myers, MM, Elliott, AJ, Odendaal HJ, Willinger M, and the PASS Network

*Columbia University, NY, NY, USA

Background:

The Prenatal Alcohol in SIDS and Stillbirth (PASS) Network was formed to investigate prenatal alcohol exposure and risk for sudden infant death syndrome, stillbirth and fetal alcohol spectrum disorders. The network recruited nearly 12,000 subjects from sites in North and South Dakota and in Cape Town, South Africa. The network's Safe Passage Study assessed subjects from pregnancy through one year of age. The primary hypotheses were that prenatal alcohol exposure increases risk for SIDS, stillbirth and fetal alcohol spectrum disorders¹.

Objective: Secondary hypotheses of the Safe Passage Study were aimed at investigating effects of prenatal exposures on central and autonomic nervous system (ANS) function in the fetus and infant prior to development of adverse outcomes.

Methods: A standardized protocol assessed fetal heart rate and movement at three time points during pregnancy (20 - 24 weeks, 28 - 32 weeks, 34 - 38 weeks gestational age). Fetal heart rate, movement and heart-rate variability measures were analyzed as a function of sleep state. A standardized infant physiological protocol was carried out at birth and one-month of age in which ECG, respiration and BP were recorded during a 10-minute baseline period and in response to three rapid 45° head-up tilts while the infant was in the prone position. Alcohol and cigarette consumption were captured at each visit using a modified timeline follow-back interview for alcohol exposure and self-reported frequency and quantity of tobacco cigarettes for smoking exposure. Group-based trajectory modeling was used to categorize pregnancies with similar drinking and smoking exposure patterns incorporating quantity, frequency and timing of exposure during pregnancy, adjusted for number of days exposure was defined. Of 18,604 approached, 11,892 pregnancies were enrolled, representing 10,088 women and 12,029 fetuses.

Results: ANS measures showed significant differences as a function of smoking and alcohol exposure. Effects of exposure varied by sex, sleep state, timing of exposure and other maternal and environmental factors.

Conclusion: The Safe Passage Study was successful in characterizing physiology in a large number of fetuses and infants at sites known to have elevated risks for SIDS and stillbirth. Results demonstrate significant effects of exposure in cardiac-respiratory and somatic activity and autonomic function during the fetal and early postnatal period.

Abstracts of Invited Speakers

Screening for fetal growth restriction: the future

Gordon Smith

Cambridge University, UK

Fetal growth restriction (FGR) is a major cause of perinatal morbidity and mortality. Universal screening of women for FGR using ultrasound has not been shown to improve outcomes in randomised controlled trials and, when implemented nationally in France, appeared mostly to change outcomes for the worse through the effect of iatrogenic prematurity on false positives. Research is currently focused on trying to develop screening tests with higher sensitivity and specificity. The diagnostic tests employed should be identified through high quality research investigating the diagnostic accuracy of the tests, and this will usually involve blinding of the results. Therefore, future trials of screening and intervention will require careful planning. Moreover, if trials are to be powered for perinatal death large sample sizes will be required.

Abstracts of Invited Speakers

The contribution of midwifery to reducing preterm birth, stillbirth, and newborn deaths

Jane Sandall

Kings College London, UK

Increasing continuity of midwife care has been identified as a key priority for maternity services in the UK. A Cochrane review found that women who receive care by one named midwife or a small group of midwives throughout pregnancy, birth and postnatal periods are 24% less likely to experience a preterm birth, and 19% less likely to experience foetal loss before 24 weeks gestation. Women were more likely to have better maternal and infant outcomes, have more positive experiences of care and use resources more effectively. This is particularly important considering increasing rates of preterm births worldwide and their adverse infant outcomes in terms of survival, quality of life, psychosocial impact on the family and costs to society. Further research on quality of care, women's experiences of care and psycho-social influences provides insight into the mechanisms of action on maternal physical, psychosocial, neonatal health. There is an interest to use this model of care for women with social and medical risk factors. However, there is a paucity of evidence for the most effective model of care for this group of women, and I will discuss issues from our ongoing POPPIE trial involving women at higher risk of pre-term birth. In terms of core organisational and delivery elements of implementing the model, including adaptation to meet the needs of this population of women and the midwifery workforce.

Abstracts of Invited Speakers

New Ways of Communicating Safe Sleep Messages: Results from the Social Media and Risk-reduction Training of Infant Care Practices Study

Fern R. Hauck

University of Virginia School of Medicine, USA

There has been a slowing in the decline in rates of Sudden Unexpected Deaths in Infancy (SUDI) in the U.S. due to inadequate adherence to safe sleep recommendations. The objective of this study was to assess the effectiveness of two separate, complementary interventions to promote safe sleep practices when compared to control interventions. Mothers of healthy term newborns were recruited from 16 US hospitals with >100 births annually for a 4-group cluster randomized clinical trial. All participants received advice from nursing staff through a quality improvement campaign in infant safe sleep practices (intervention) or breastfeeding (control) at their birth hospital. Enrolled mothers then participated in a 60-day mobile health program, in which they received frequent emails or text messages containing short videos with educational content about infant safe sleep practices (intervention) or breastfeeding (control) and queries about infant care practices. The primary outcome was adherence to 4 infant safe sleep practices--sleep position (supine), sleep location (roomsharing without bedsharing), soft bedding use (none), and pacifier use (any)--collected by maternal survey when the infant was 60-240 days old. 1263 (78.9%) of the 1600 mothers who signed written informed consent and were randomized to one of four groups (400/group) completed the survey. Maternal mean age was 28.1 years (SD 5.8 years); 32.8% were non-Hispanic White, 32.3% Hispanic, 27.2% non-Hispanic Black, and 7.7% other race/ethnicity. Mean infant age was 11.2 weeks (SD 4.4 weeks); 51.2% were female. In adjusted analyses, mothers receiving the safe sleep mobile health intervention, compared with the control mobile health intervention, had higher 1) prevalence of placing their infants supine (89.1% vs. 80.2%; adjusted risk difference [aRD] 8.9%, 95%CI=5.3%-11.7%), 2) roomsharing without bedsharing (82.8% vs. 70.4%; aRD 12.4%, 95%CI=9.3%-15.1%), 3) no soft bedding use (79.4% vs. 67.6%; aRD 11.8%, 95%CI 8.1%-15.2%), and 4) any pacifier use (68.5% vs. 59.8%; aRD 8.7%, 95%CI=3.9%-13.1%). The independent effect of the nursing quality improvement intervention was not significant for all outcomes. Interactions between the two interventions were only significant for supine sleep. Among mothers of healthy term newborns, a mobile health intervention, but not a nursing quality improvement intervention, improved adherence to infant safe sleep practices, compared with control interventions. Whether widespread implementation of the mobile health intervention is feasible or cost-effective, or if it can reduce SUDI deaths, remains to be studied.

Abstracts of Invited Speakers

Does monitoring fetal movements reduce the risk of stillbirth – findings from the AFFIRM study

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There is a clear association between reduced fetal movements (RFM) and stillbirth. RFM is associated with a 2.37- 14.1 odds in the increase of stillbirth and with fetal growth restriction and placental abnormalities. Many authorities are suggesting that RFM awareness should be used as a strategy to reduce stillbirth, despite a Cochrane review of kick counting which shows no impact on stillbirth. In contrast, a recent health care improvement project in Norway has shown that the introduction of a care package (increasing women's awareness of the need for prompt reporting of reduced fetal movements [RFM] with standardised management including timely delivery) reduces the rate of stillbirth by 30%.

The AFFIRM study was a stepped wedge cluster trial conducted in the UK and Ireland to test a similar package of care. We randomised 37 government hospitals in 8 groups, at 3 month intervals, to the timing of introduction to care package. Outcomes were derived from observational maternity data collected between 1st Jan 2014 and 31st Dec 2016. The study was registered NCT01777022 and the protocol published (Heazell et al BMJ Open 2017).

We showed a non significant reduction in rates of stillbirth: stillbirth rate was 4.40 per 1,000 births in the control and 4.06 in the intervention group: adjusted odds ratio (AOR) 0.90, 95% CI 0.75-1.07, p = 0.23. There were smaller proportions of babies small for gestational age ([SGA] < 10th centile customised for gender) undelivered by 40 weeks: 1.5% and 2.0% respectively, AOR 0.86, 95% CI 0.79 - 0.95. The rates of caesarean section and induction of labour were greater in the intervention group.

We conclude that benefit of promoting RFM awareness to reduce stillbirth remains unproven. The study design is likely to be useful in other trials of pregnancy interventions.

Abstracts of Invited Speakers

Smoking Cessation Interventions During Pregnancy

David Tappin

University of Glasgow, UK

Most women who give up smoking by age 45 years, during their childbearing years, will retain a near normal life expectancy. Those who continue smoking throughout will lose on average 10 years of life. Infants born to women who smoke during pregnancy suffer damage in utero, risking the pregnancy itself, as well as early infant and long term morbidity and mortality. Therefore cessation during pregnancy has at least double the impact on health outcomes 'treating' both mother and unborn child.

Over the last 40 years, general population smoking rates have fallen from 45% to less than 20%. However much of this reduction has occurred among the more affluent leaving behind the poorest population groups and therefore widening the health inequalities gap between rich and poor. The advantage for new smoking cessation interventions is that they now naturally target the poor.

Within a severely fiscally constrained health and social care service, new interventions have to compete with older more established treatments, such as statins, for the limited funding available for prevention. New interventions in the UK generally have to cost less than £20,000 per Quality Adjusted Life Year (QALY) to be considered for widespread use within the UK National Health Service.

Trials of interventions for smoking cessation during pregnancy have been published over the last 40 years and have been categorised as: counselling, health education, feedback, incentives, exercise, social support and pharmaceuticals. Combinations of categories are often employed together.

Health Education, Exercise, Social Support and Pharmaceuticals have not proved so far to be effective in trials undertaken with pregnant smokers. However these interventions are still being examined in clinical trials and remain candidates for use during pregnancy.

Many counselling interventions have been used by many different health care groups. Only one fair quality trial has reported a counselling intervention with a concurrent health economic analysis where the outcome was positive. This involved one 90 minute psychotherapy session followed by bi-monthly prenatal telephone calls from the therapist and monthly calls after delivery. The cost was £268 per QALY.

Feedback interventions are those where a mother is provided with feedback information such as a carbon monoxide or cotinine test result or for instance the results of an ultrasound scan. Those formally tested, particularly 'close to patient' immediate feedback of cotinine test from maternal urine, are effective. This is in contrast to routine carbon monoxide testing undertaken by many maternity services where formal feedback does not take place.

Financial incentives appear to be effective, more than doubling the quit rate towards the end of pregnancy. They are cost effective at a cost per QALY of £579 compared with traditional prevention interventions such as statins that cost £15,000 per QALY. Financial incentives also resulted in a clinically significant increase in birth weight of 145g for infants born to pregnant smokers who want to stop but cannot without the help of financial incentives.

My current best buy for smoking cessation during pregnancy would be a combination of counselling as described above with feedback using near patient urine cotinine testing supported by financial voucher incentives.

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**Abstracts of
Oral
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Abstracts of Oral Presentations

O-001

Consequences of perinatal death among midwives, obstetricians and assistant nurses: Results from a qualitative study in Norway

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BACKGROUND: Healthcare personnel's experiences of grief and painful emotional involvement facing perinatal death has attracted woefully little research or attention. Emotional responses of healthcare personnel facing perinatal death are surrounded by a conspiracy of silence and denial within the profession.

OBJECTIVES: The aim of this study is to determine the factors that characterize the experiences of midwives, obstetricians, and assistant nurses when children die in connection with childbirth.

METHOD: Qualitative study with in-depth interviews. Midwives, obstetricians and assistant nurses (N=20) from two Norwegian hospitals participated in an in-depth interview. The inclusion criteria were that the healthcare personnel were present in a minimum of two situations when the child died during the period around birth. The material from the interviews was systemized and worked through and the researchers following Kvale's approach to qualitative analysis.

RESULTS: The findings were organized in four themes with subcategories that emerged from the data. These are: system/ management/ organizational, self-blame and guilt, personal reactions, and privacy. Many of the informants described the "culture of blame", as one stated: "Experience being blamed where you know you are innocent—feeling more insecure next time". Feelings of guilt and self-blame were described by the informants, as stated: "It is easy to blame yourself. Have I done something wrong? Have I done well enough?". The informants described their tracks and reminders in different ways, as one stated: "I keep it all the time; it is in me. I remember". Some of the informants expressed the challenge of dealing with their own feelings while simultaneously dealing with the parents' feelings: "It is challenging with the balance between your own feelings and professionalism".

CONCLUSION: The informants described organizational issues, such as a blaming culture and a lack of attention from supervisors, for their emotional challenges in these situations. However, the most serious findings are the statements of post-traumatic stress, including lack of sleep and weight loss, as consequences of dealing with these situations and having inappropriate mechanisms for handling their feelings and experiences. Formal processing of these experiences is needed in order for personnel at maternity departments to be able to achieve a healthy processing of their personal feelings and experiences in connection with perinatal death.

Keywords: Perinatal death, self-blame, guilt, management, contrast

Abstracts of Oral Presentations

O-002

National Review of Perinatal Bereavement Services in Irish Maternity Hospitals

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Background

The Health Service Executive (HSE) National Incident Management Team (NIMT) 50278 (2013) recommended that providing bereavement care is an integral part of maternity services. The Executive concluded that it should have a consistent approach to bereavement care in all 19 Irish Maternity Hospitals. The National Standards for Bereavement Care Following Pregnancy Loss and Perinatal Death were published in August 2016. The implementation programme commenced in March 2017.

Objectives

One of the aims of the implementation programme was to review the perinatal bereavement services in all of the Maternity Hospitals in Ireland.

Methods

All 19 Maternity Hospitals were visited by the implementation lead and programme manager over a 4-month period. A detailed assessment of each hospital's bereavement care against the Standards was undertaken. This assessment was undertaken in 3 sections; 'People', 'Place' and 'Processes'.

Results

Bereavement Clinical Midwife/Nurse Specialists were in post in 13 hospitals (13/19;68%), while 7 hospitals named a Clinical Lead for perinatal bereavement (7/19;37%). Almost all hospitals had dedicated chaplaincy services (17/19; 89%), but only 12 hospitals (12/19;63%) had Maternity Social Workers. Of most concern, only 4 hospitals had a resident Perinatal Pathologist (4/19;21%); the remainder either used occasional Locum services or had no access. Dedicated inpatient bereavement rooms were in place in 5 hospitals (5/19; 26%) whereas 16 had use of dedicated counselling rooms (16/19;84%), and 10 had family rooms in their neonatal units (10/19;53%). All maternity hospitals ran an annual service of remembrance, and 14 (14/19;74%) managed a hospital-based book of remembrance. While all hospitals used a bereavement symbol from the Irish Hospice Foundation, 7 hospitals had developed their own symbol (7/19;36%). Nine hospitals utilised an admission card (9/19;47%). All hospitals offered memory-making opportunities and used charity-provided memory boxes; however 3 hospitals had developed personalised mementos for parents (3/19;16%). Only 4 hospitals ran a specific pregnancy loss and/or miscarriage clinic (4/19;21%). Across this review, the commitment of frontline staff to perinatal bereavement care was evident, and a number of good practices were observed. Detailed feedback from these assessments was sent to the Senior Management Team at each Hospital, along with recommendations for change and suggested prioritisation of issues. Hospitals were requested to provide quality improvement plans to the Implementation team within certain timeframes.

Conclusions

Perinatal bereavement care is central to Maternity Hospitals. While many good clinical practices were observed in this review, key components of care remain to be standardised. The Bereavement Standards must be fully implemented across all Hospitals by 2019. Funding Source: Health Services Executive, Ireland

Keywords: Bereavement Care, National Standards, Policy, Maternity Hospitals, Implementation

Abstracts of Oral Presentations

O-003

The value of time and space - experiences from a unit for perinatal loss

[Dorte Hvidtjørn](#)

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Experiences from a midwifery led unit for perinatal loss

Parents who lose a child during pregnancy or childbirth are in a vulnerable situation and need empathic and professional care. At Aarhus University Hospital, Denmark, a small ward was initiated in August 2011, dedicated to parents with perinatal loss. It is midwifery led and the staff includes a group of 6 midwives with specific training in the field of bereavement. The midwives carry out induction of labour, delivery and post partum care. The unit is shielded from the labour ward and the maternity department and has two rooms with double beds and dining tables. Both parents are admitted and visiting hours are free. They are admitted for as long as they need (usually 1-4 days) and the dead child is in the room with them as much as wanted. After discharge the same group of midwives offer bereavement support groups and antenatal visits in subsequent pregnancies. Our experience is that specializing the care for bereaved parents generates higher quality and improves the treatment provided. This talk is a presentation of clinical practice. It highlights experiences and knowledge gained at the unit for perinatal loss over the last six years and based on more than 500 cases. With growing practice the staff develops a high sensitivity towards the parents needs, they grow familiarised with spending much time in silence and patience, allowing the couple to take their time in the grief process and containing their despair. As all people mourn in their own way, individual care is the main priority and familiarity with a wide range of reactions and emotional expressions also helps the staff to maintain a calm and reassuring attitude in an often very chaotic situation. Likewise practical skills in dealing with the dead body and collecting mementoes facilitate developing new ideas of how to support the attachment between the parents and the dead child. Research and quality development is a high priority and a midwife with a PhD degree is allocated to the unit 8 hours per week, performing clinical and epidemiological research, quality work, networking and teaching.

Keywords: Specialized care, time, space, midwifery led care

Abstracts of Oral Presentations

O-004

A research concerning the different cultural rituals and conventions of bereaved parents after the loss of a child. Case: Make a Memory

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BACKGROUND:

The Dutch NGO Make a Memory offers free bereavement photography to families who suffer the loss of their child (age 23 weeks of pregnancy up to age 17). 90% of the children who are photographed are babies who have passed away before, during or shortly after birth. These pictures are of enormous value to the mourning process of the family. The Netherlands is becoming more and more a diverse society, where many different cultures meet in varied situations. This culturally diverse society is translated into the families the photographers encounter during their work. Photographers increasingly are faced with a variety of cultural rituals concerning grief. Uncertainty about these rituals and conventions can affect their work negatively.

OBJECTIVES:

Explain what the causes are for intercultural misunderstanding in a medical context, to provide insights in how to overcome misunderstandings and create mutual understanding. Ultimately, resulting in best practices and tips for social workers/health practitioners.

METHODOLOGY:

Iterative, qualitative research method. By means of 18 semi-structured, in-depth interviews with a research population characterized by triangulation the researcher was able to answer the research question and provide an advice. The population consisted of photographers, bereaved parents, medical experts, an imam and a priest. By using an institutional, ethnographic approach, the researcher was able to create an outline of the situation. The outcomes were visualized into a praxeogram, displaying the interconnections and actions occurring in the process.

Results

- 1) Families who appeal for a photo session are characterized by superdiversity
- 2) In some cultures, bereavement photography may still be a taboo
- 3) Cultural and religious rituals, can work contra productive for the photographer/care-taker, as a result of misunderstanding or miscommunication.
- 4) Varied views on 'good grief' are a cause of misunderstanding between photographer and client
- 5) Use of strategies for avoiding loss of face may be influenced by culture, and lead to misunderstanding.

Conclusions

Due to a vastly globalizing world social workers are confronted with intercultural situations that may lead to misunderstanding. In the case of bereaved parents, these miscommunications can cause serious harm. It is evident that professionals should learn how to cope with these unfamiliar, intercultural situations.

- Train intercultural interactions competences such as contextual awareness and empathy
- Apply a dynamic and dialogic approach when in contact with bereaved parents
- Reflect upon misunderstandings
- Be aware of the differences but emphasize on what we have in common: focus on the individual, instead of a cultural group.

Funding:

No external funding sources

Keywords: intercultural communication, bereavement photography, stillbirth, misunderstanding, intercultural competences

Abstracts of Oral Presentations

O-005

What are parents' and healthcare professionals' experiences of care after stillbirth in low and middle-income countries

Clare Shakespeare¹, Abi Merriel¹, Danya Bakhbakh¹, Ruth Báñezová¹, Olivia Mensah², Clare Storey³, Dimitrios Siassakos¹, On Behalf Of The Bereavement Care Global Expert Consensus Group⁴

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BACKGROUND: Experiencing a stillbirth has a profound impact on a woman and her family. Effective bereavement care is vital for preventing negative short and long term outcomes. The 2016 Lancet Ending Preventable Stillbirth Series called for a 'global consensus on a package of care after a death in pregnancy or childbirth... for the affected family, community and caregiver in all settings'

OBJECTIVES: To identify themes which could be used to inform training, guidelines, and a subsequent consensus on global bereavement care principles in low and middle income countries.

METHODS: Systematic searching of electronic databases and relevant conference abstracts and data extraction were undertaken in duplicate to identify all papers investigating care after stillbirth in low and middle income countries. A metasummary was performed and frequency effect sizes calculated for each thematic sentence (proportion of studies that included the theme).

RESULTS: Thirty-four studies were identified from 2491 search hits. Thirteen thematic sentences were developed, by the research team, from the data identified in the systematic review.

- Positive community support, as opposed to stigmatisation and blame, can improve bereavement experience. (FES 68%)
- Women's' experience of grief has multiple manifestations often unrecognised by the healthcare community and wider society.(FES 65%)
- Awareness of, and support for, appropriate coping mechanisms can assist grieving. (FES 65%)
- Access to timely and culturally appropriate psychological support is valued.(FES 59%)
- Women want information, advice and individualised discussions about future pregnancies(FES 53%)
- Addressing health system barriers is important for provision of respectful care. (FES 53%)
- Women may experience devaluation and stigmatization as a result of cultural practices and beliefs. (FES 47%)
- Supporting proper investigation to understand causes of stillbirth may contribute to reducing stigma (FES 44%)
- Women and staff believe that specialised bereavement care is important (FES 35%)
- Knowledge and information about stillbirth will empower women to take control of their own health. (FES 35%)
- Comprehensive staff training and support systems for staff are prerequisite to improving care. (FES 24%)
- Women value supportive family presence throughout care. (FES 21%)
- Women value follow-up care and advice to help them return to health (FES 15%)

CONCLUSIONS: Women experience a broad range of manifestations of grief following stillbirth which may not be recognised by healthcare workers, or in their communities. This exacerbates negative experiences of stigmatisation, blame, devaluation, and loss of social status. Positive attitudes and support during bereavement from family, communities and healthcare workers improves bereavement experience.

Keywords: Bereavement care, LMICs, experience of care

Abstracts of Oral Presentations

O-006

Australian men's experiences of support following pregnancy loss

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BACKGROUND: An unexpected pregnancy loss is a potentially overwhelming and distressing experience for expecting parents. In Australia, approximately one in every 177 babies are stillborn, and 15-20% of all recognised pregnancies will end in miscarriage. Research indicates that high levels of emotional distress immediately following a pregnancy loss are common, with enduring levels of distress and grief occurring for many parents. Correspondingly, support providers have produced guidelines to inform care practices and improve psychological outcomes for parents who experience pregnancy loss. However, the majority of the literature and subsequent care guidelines focus largely on the experiences of heterosexual women, with limited research pertaining solely to theories of men's grief and their health and psychological outcomes, especially in the Australian context. **OBJECTIVES:** This study aimed to explore men's experiences of grief and both formal and informal supports received following a female partner's pregnancy loss, with a view to providing evidence concerning best practice support options. **METHODS:** This study employed a qualitative research design using individual in-depth interviews with eight men and seven support providers. Interview data was analysed using thematic analysis. **RESULTS:** Findings indicated that fathers require emotional support following a loss, however the specific structure varies, so support options need to be flexible. Although some men may find support groups and individual counselling helpful, others may benefit more from informal support options, such as having another trusted man to confide in, or the opportunity to 'give back' and help others. Additionally, while participants who accessed support services were largely satisfied, others were unaware of services, perceiving a lack of appropriate support options. **CONCLUSIONS:** There is a need for more active recognition of men throughout the pregnancy journey and early in their grief following a loss, especially in the hospital setting. In addition to experiencing grief, our findings suggest that male-specific challenges also exist, and future research is required to further explore and extend existing theories of men's grief.

Keywords: Men, miscarriage, stillbirth, grief, support

Abstracts of Oral Presentations

O-007

The victimization in absence of a culprit. “The limbic victim“

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The victimization in absence of a culprit
“The limbic victim“

INTRODUCTION

The term “limbic victim” comes from the will to give a name to the people who suffered a great loss without receiving any support or acknowledgment.

We are talking about the parents who suffered the trauma of the unexpected and sudden loss of a baby. In most cases of Sudden Death events (SUIDS SIDS) the intervention of Criminal Police has created the necessity to characterize, on a psycho-judicial level, the figure of parents victims of these events, who, by analogy, show many similarities with those victims that Criminology calls in-credible victims. Hence the definition of “limbic victims”, referring to all people feeling they suffered a loss which they can neither name, nor classify nor explain. Those people feel and live feelings of guilt that I would rather call “sense of responsibility”. They have such strong feelings of guilt towards the victim (that is to say, the baby who died suddenly) that they get to blame themselves, even though they committed no crime. They feel responsible for what had happened, that is why I call it “sense of responsibility”. Interviewed right after the event, they might even declare themselves guilty of what happened (generally speaking, the awareness of not being the “culprit” can be facilitated by the result of an autopsy).

MATERIAL AND METHODS

Many parents, from different Italian regions have been interviewed at different times from the event. Some even quite recently. Their emotions, their attitude, the changes in their daily lives have been collected and filed. So have their thoughts and their recurring questions. The answers we got pinpoint some differences according to where those parents belong to, yet we found no differences as to their needs. The interviews showed that the victims could be analyzed through an already existing model used for the analysis of the victimization, namely “The Circular Model” by M. Monzani.

RESULTS

Consequently it can be said that all the interviewed victims carry out a “victimization” path, which varies according to the kinds of the (support) activities or treatment available in the area where the event occurred. This accounts for the high degrees of differentiation of victimization. This implies the magnitude of differentiation in the stages of victimization according to the (kind) of treatment provided by medical and juridical institutions.

CONCLUSIONS

If we want a correct psychological elaboration process to take place, it is necessary to work deeply on the clinical-judicial management of the event. For this reason, we need a psychological-judicial approach, aimed at avoiding the limbic victim (that is to say, a parents) to remain trapped in a process of discomfort, guilty feeling, sufferance and shame.

Keywords: limbic, victim, victimization, circular model

Abstracts of Oral Presentations

O-008

Exploring social isolation and disconnectedness resulting from child death

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BACKGROUND: The impact of social and emotional isolation is a risk for developing or worsening poor mental health and poor health and wellbeing. The experience of being separated may result from being physically removed from others or it can result from the perception of being removed from a community, such as when a person feels socially or emotionally isolated. Social isolation is distinct from the experience of solitude—simply the state of being alone—usually by choice. Being alone can be a healthy experience that allows us to reconnect with our own needs, values and feelings. When a person feels socially isolated, feelings of loneliness, social anxiety, helplessness, or depression may develop. It can also lead to negative outcomes by increasing poverty through inability to remain employed or seek employment. Feeling alone may be a normal part of grief but is sometimes not well understood by professionals in a position to have a positive impact. It can increase the incidence of alcohol and drug misuse as a strategy to cope with the emotional and sometimes physical pain associated with grief. Engagement with health and social services may cease or become erratic so that optimum care cannot be delivered. With child death, especially one which is sudden and unexpected, families can be left feeling tremendous guilt. They may perceive their local community is apportioning blame and that professionals may be judging them as parents, which increases their withdrawing from activities and a perception that child death is taboo.

OBJECTIVES: To raise awareness of social isolation and break down barriers which can lead to poor mental health and the effect of this on physical health and long term outcomes. The project explores the relationship between social isolation and health by considering two forms of isolation at once: social disconnectedness, marked by a lack of social relationships and low levels of participation in social activities, and perceived isolation, defined by loneliness and a perceived lack of social support.

METHODS: A play is being written following workshops and interviews with families across Scotland who have experienced the death of a child. Using a research based approach to bring an often taboo subject into the fore with the public, exploring the impact of social isolation and mental health of family members.

RESULTS: The research aspect of this project will provide measurable factors to assess current bereavement support and identify gaps in service for improvement. The final output (play) will be in a format that will educate the wider public about the issues of social isolation. The play may also be used as a resource in schools.

CONCLUSION: The play will launch during the conference. It is intended to be a thought provoking experience which will be a platform for Q&A sessions held in communities throughout Scotland where the play will tour. The qualitative research may be used to inform targeted public health messages.

Keywords: bereavement, support, care, mental-health, isolation, communities

Abstracts of Oral Presentations

O-009

Pregnancy and Infant Loss Network: Bereavement care and education in Ontario, Canada

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Description:

37,000 families across Ontario, Canada, experience pregnancy and infant loss each year. Most of these families grieve without receiving the best possible information and support. New local legislation now protects the needs of families experiencing perinatal loss. The Pregnancy and Infant Loss Awareness, Research and Care Act became law in Ontario in 2015 and is the first law of its kind in North America. This legislation and subsequent funding has enabled the Pregnancy and Infant Loss (PAIL) Network to grow from a volunteer organization to a program funded by the Ministry of Health and Long Term Care. This has resulted in the expansion of peer support programs for parents across the province and the enhancement of education to health care professionals interested in learning about compassionate care. PAIL Network's plan for expansion included a province wide on-line survey and 14 focus groups with families and 14 with health care providers in rural, First Nations and urban settings across Ontario from January to March 2017. The focus groups and online survey were aimed at understanding the experiences of both families and clinicians with respect to bereavement care, support, and services and to identify current gaps in services. This presentation will highlight the results of the survey and focus groups. Results showed that families were not provided with information for follow up care, interactions with care providers were not as compassionate as families needed them to be, and stigma was experienced by families from their health care provider. Key areas of strategic focus for PAIL Network will also be presented, including pregnancy and infant loss education for the health care team, a clear need identified by both families and health care providers.

Keywords: peer support, bereavement, family, education, legislation, assessment

Abstracts of Oral Presentations

O-010

Sudden unexpected death in infancy and the disparity experienced by Māori

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BACKGROUND: Sudden Unexpected Death in Infancy (SUDI) is the leading cause of post-neonatal mortality in New Zealand. The rate in the indigenous Māori population is more than two-fold that of non-Māori.

OBJECTIVE: To examine the disparity in SUDI rates between Māori and non-Māori in New Zealand.

METHODS: A nationwide prospective case-control study was implemented between March 2012 and February 2015. Parents/caregivers of cases and controls were interviewed by specially-trained SUDI Liaison investigators. Data on the exposure to established risk factors for SUDI were analysed to investigate whether they accounted for the disparity experienced by Māori. Prioritised ethnicity allocated a single ethnic group to each mother. Māori was prioritised over other ethnicities. Non-Māori contains all ethnicities except Māori, including Pacific, Asian, NZ European and Other.

RESULTS: There were 137 cases and 649 controls. The Māori SUDI rate was 1.41/1,000 live births compared to 0.53/1,000 for non-Māori. 133 cases (97%) and 258 controls (40%) were interviewed. Smoking during pregnancy was associated with an increased SUDI risk that was equal for Māori (adjusted OR=8.11, 95% CI=2.64, 24.93) and non-Māori (aOR=5.09, 95% CI=1.79, 14.47), as was bed-sharing (aOR=3.66, 95% CI=1.49, 9.00 versus aOR=11.20, 95% CI=3.46, 36.29). Although the prevalence of bed-sharing was similar, more Māori controls smoked during pregnancy (46.7%) than non-Māori controls (22.8%). The most important contributory factor relating to increased SUDI risk for Māori and non-Māori infants is the combination of prenatal smoking and bed-sharing.

CONCLUSION: The association between known SUDI risk factors, including bed sharing and prenatal smoking, or both, and the risk of SUDI is the same regardless of ethnicity. Māori infants are exposed more frequently to the combination of both behaviours because of the higher smoking rate among Māori. These findings support the current New Zealand Ministry of Health's focus on bed sharing and maternal smoking.

Keywords: Māori, indigenous, SUDI, bedsharing, smoking, case-control

Abstracts of Oral Presentations

O-011

Post Mortem Consent - The Impact of Deprivation and Ethnicity

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BACKGROUND: Post-mortem with detailed placental histology and comprehensive clinical investigations (e.g. haematology, immunology biochemistry and microbiology) has been regarded as the gold standard for investigating stillbirths; providing information for families regarding the cause of death and informing management of subsequent pregnancies. Despite detailed post-mortem (PM) and full investigation the cause of death may remain unexplained in ~20% of cases, though this number falls when detailed placental pathology is included. In the past, mother's ethnicity has been regarded as the main barrier to engagement with the PM process. **OBJECTIVES:** To examine factors which may influence offer and consent for PM, such as deprivation, age, educational attainment, gestation at birth.

METHODS: Data on all UK stillbirths (≥ 24 weeks), late fetal losses (22-23 weeks) and neonatal deaths (≥ 22 weeks) excluding termination of pregnancy, born between 1st January 2013 to 31st December 2015 were obtained from the Mothers and Babies: Reducing Risk through Audits and Confidential Enquiries throughout the UK (MBRRACE-UK). Information on offer and consent for PM and place of death were obtained alongside mother's socio-demographic data including area-based deprivation, educational attainment, age at birth and ethnicity. **Main Outcome Measures:** Percentage of mothers offered and/or consenting to PM by socio-demographic category.

RESULTS: Data were available on 16258 perinatal deaths in the UK. Overall post-mortem examination was offered in >95% of deaths with little variation with regard to deprivation, ethnicity, mother's age or educational attainment (ranging between 95% and 97%). PM was less likely to be offered for neonatal deaths where the baby was admitted to a neonatal unit (91%) than for stillbirths (97%). Consent for PM varied significantly with deprivation: 55% in the least deprived decile compared to 38% in the most deprived ($P < 0.0001$); and ethnicity: White 50%, Black 33% and Asian 47%. The effect of deprivation varied significantly with ethnicity, with a large deprivation gap among White and Black ethnic groups (least v most deprived: White: 54% v 41%; Black: 47% v 20%) but less so associated with Asian ethnicity (47% v 41%). **CONCLUSIONS:** Socio-economic deprivation and Asian or Black ethnicity are associated with the lowest rates of consent for post mortem, and these mothers are at significantly increased risk of perinatal death. This leads to inadequate information on cause of death to implement interventions to reduce mortality. While there was no variation with deprivation or ethnicity regarding offers of post-mortem, information surrounding post-mortem examination may be provided in a way that does not meet the needs of these mothers. We need to consider how such information is imparted to certain groups and how this might inform health care messaging in the future.

Keywords: Post mortem Consent, Deprivation, Ethnicity

Abstracts of Oral Presentations

O-012

Should Written Consent Be Required before Fetal Membrane Stripping Especially among GBS Carriers?

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BACKGROUND:

Fetal membrane stripping or sweeping (FMS/S) is a “traditional” obstetrical procedure intended to induce labor, shorten gestation, or, more recently, reduce the occurrence of prolonged gestation (> 42 weeks). Among pregnancy providers, FMS/S is considered a long-accepted procedure which 1) does not require procedural explanation or patient consent prior to performance and 2) does not have any known billing code or electronic medical record (EMR) category. This procedure has not been evaluated with rigorous scientific methods to demonstrate effectiveness and determine risk (including patient discomfort and potentially inoculating the lower uterine segment with microorganisms known to cross intact membranes causing fetal injury and death) vs. benefit ratios.

OBJECTIVES:

METHODS:

1) We surveyed obstetric and midwife providers employed at the University of Colorado Anschutz Medical Center and group B strep (GBS) parents through a parent-interest group (Group B Strep International [GBSI]), using both internet and personal contacts to determine the current use of FMS/S procedural consents or patient informational “handouts” prior to the procedure. Semi-qualitative methods were used.

2) We reviewed recognized criteria for patient-informed consent for clinical procedures.

RESULTS:

No providers or GBS parents reported use of any procedural consent, information sheet, or generation of a patient bill. Three GBS mothers reported feeling violated that such an invasive procedure was performed without any forewarning in the course of a routine cervical exam.

CONCLUSIONS:

We proposed a procedural consent and companion information statement for providers to inform patients about the potential risks vs. benefits of FMS/S and obtain patient consent prior to the procedure.

Keywords: group B strep, consent, membrane stripping

Abstracts of Oral Presentations

O-013

Developmental changes in ¹²⁵I-Epipatidine binding to nicotinic receptors in the brainstem ascending arousal system in the Sudden Infant Death Syndrome

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BACKGROUND: A leading hypothesis for SIDS is that it is due to a failure of arousal to life-threatening challenges during sleep, e.g. asphyxia in the prone sleep position. A major risk factor for SIDS is prenatal exposure to smoking, but its mechanism of risk is unknown. Nicotine in cigarette smoke crosses the placenta and the fetal blood brain barrier to bind to the nicotinic acetylcholine receptors (nAChRs) in the fetus. These receptors are located (not exclusively) in nuclei of the ascending arousal system in the human rostral pontine reticular formation, e.g. the locus coeruleus (LC) which contains source neurons of the noradrenergic arousal subsystem and the pontis oralis (PO), which contains source neurons of the glutamatergic arousal subsystem. We propose that nicotine in maternal smoke binds to the nAChRs, mainly the $\alpha 4\beta 2$ nAChRs, in the key subsystems of the pontine arousal system and adversely affects the pre- and postnatal development of these systems and results in impaired arousal, thereby making the infant vulnerable to challenges to arousal during sleep. Similarly, alcohol binds to these same receptors thus suggesting an effect of prenatal alcohol on nicotinic receptor development. **OBJECTIVE:** To test the hypothesis that ¹²⁵I-Epipatidine ligand binding to nAChRs is altered in nuclei of the rostral pontine ascending arousal system in SIDS cases compared to autopsy controls in the cohort of the Safe Passage Study. The Safe Passage Study is an international, prospective study designed to determine the effects of prenatal cigarette smoke exposure and/or prenatal alcohol exposure upon SIDS. **METHODS:** Using tissue receptor autoradiography, we measured ¹²⁵I-Epipatidine binding (as it preferentially binds to the $\alpha 4\beta 2$ nAChRs) in 15 nuclei of SIDS cases (n=12) and controls (n=20) related to cardiorespiratory control (medulla) and the pontine ascending arousal system. Quantitative densitometry of autoradiographs was performed blinded to the study group. To reduce the impact of outliers and promote normality, log₁₀ transformations of binding values were taken and analysis of covariance was used to compare mean log₁₀ binding by study group adjusted for postconceptual age. **RESULTS:** There was a statistically significant difference in mean binding in the rostral mesopontine nuclei by study group (SIDS vs controls). Specifically, adjusted mean log₁₀ binding is significantly lower, 12% in locus coeruleus (LC) and nucleus pontis oralis (PoO) in SIDS (LC: 0.93, PoO:0.96) as compared to controls (LC:1.10, PoO:1.09), (both p-values<0.04). **CONCLUSIONS:** There is significantly decreased ¹²⁵I-Epipatidine binding in SIDS in the mesopontine reticular formation sites that form part of the ascending arousal system. Future analysis is needed to link this abnormality to prenatal exposure to smoking and/or alcohol. **FUNDING:** NIAAA, Eunice Kennedy Shriver NICHD, and NIDCD; The River's Gift.

Keywords: Sudden Infant Death Syndrome ¹²⁵I-Epipatidine binding Mesopontine nuclei Nicotinic acetylcholine receptors Brainstem ascending arousal system

Abstracts of Oral Presentations

O-014

5-HT_{1A} Binding Deficiencies in the Rostral Serotonergic Raphe System of the Sudden Infant Death Syndrome

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BACKGROUND: The brainstem hypothesis is a leading premise in Sudden Infant Death Syndrome (SIDS) research. It posits that sleep-related sudden deaths result from developmental abnormalities in brainstem reflexes that protect against homeostatic challenges, e.g., asphyxia in a sleep period. Yet, the extent of the brainstem involvement in the pathogenesis of SIDS is uncertain. Our group has reported four independent datasets that demonstrate abnormalities in the caudal serotonin (5-HT) system in the medulla oblongata of the brainstem in SIDS cases compared to autopsy controls. This caudal 5-HT system is involved in a number of homeostatic and autonomic processes including cardiorespiratory control and arousal. In this fifth independent dataset, we tested the hypothesis that abnormalities are present in the rostral 5-HT system of the brainstem, i.e., the median raphe (MR) and dorsal raphe (DR) of the pons. The rostral 5-HT system and the synaptically interconnected caudal 5-HT system form a key arousal network, but the involvement of the rostral system in SIDS has been uncertain. **OBJECTIVES:** To: 1) measure 5-HT_{1A} receptor binding in nuclei of the rostral pons and medulla of SIDS and control cases adjusted for postconceptional age and 2) assess 5-HT levels in the MR and extra raphe of the pons.

METHODS: 5-HT_{1A} receptor binding was measured using autoradiography with the 5-HT_{1A} receptor ligand [³H]-8-OH-DPAT. 5-HT levels in the MR and extra raphe were measured with high performance liquid chromatography (HPLC).

RESULTS: We identified decreases in 5-HT_{1A} receptor binding in SIDS cases (n=25) compared to controls (n=15) in the MR (mean [SE], 69.0 [5.3] vs. 89.3 [6.9] fmol/mg tissue, respectively; p=0.028) and in the DR (mean [SE], 89.7 [6.6] vs. 114.2 [8.5] fmol/mg tissue; p=0.034) but not the pontis oralis or locus coeruleus of the rostral pons. In the rostral medulla, significant decreases in SIDS (n=29) compared to acute controls (n=9) were found in the gigantocellularis (p=0.02), the paragigantocellularis lateralis (p=0.03), and marginally in the dorsal accessory olivary nucleus (p=0.05) and intermediate reticular nucleus (p=0.06). There were no significant differences in 5-HT levels between SIDS and controls in the MR or extra raphe of the pons.

CONCLUSIONS: This fifth independent dataset shows that the rostral raphe nuclei in the pons are deficient in 5-HT_{1A} receptor binding in SIDS. Previous findings of 5-HT_{1A} deficits in medullary nuclei in the core region of the medullary reticular formation were replicated. When viewed in the context of our lab's past work, the finding of a pontine 5-HT defect in SIDS suggests that the 5-HT system is extensively involved in SIDS beyond the medulla. Caudal and rostral deficits in 5-HT could be involved in the pathogenesis of SIDS by affecting arousal and homeostatic processes. This study confirms an additional 5-HT defect in the SIDS brainstem and adds mounting evidence for the brainstem 5-HT hypothesis in SIDS.

Keywords: Brainstem, homeostasis, arousal, autoradiography, pathogenesis, HPLC

Abstracts of Oral Presentations

O-015

Diagnostic classification effects on brain pathology data in a cohort of SUDI cases

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BACKGROUND: The diagnosis of SIDS is one of exclusion, and remains an ongoing problem with an increasing number of forensic pathologists opting for the classification of 'undetermined', despite guidelines developed in 2004 to help overcome such classification. The Krous et al., (San Diego) classification was developed in 2004 to help guide scientific studies so that all infants who died suddenly and unexpectedly, could be included in any study analyses. **OBJECTIVES:** 1- To study the expression of the cell death markers caspase-3 and TUNEL in the brainstem medulla and hippocampus of infants who died suddenly and unexpectedly, 2- determine whether a change in diagnostic classification alters result outcomes, and 3- whether a pathological difference is evident by separating SIDS I from SIDS II; as per the San Diego classification. **METHODS:** Brain tissue from infants who died suddenly and unexpectedly during the years 2008-2012, was obtained from The Department of Forensic Medicine, Glebe, NSW, and stained for active caspase-3 and TUNEL. All regions of the hippocampus, the lateral geniculate nucleus (LGN), and 9 nuclei of the brainstem rostral medulla were quantified. Statistical analyses were performed according to the Coroner's initial diagnosis, and then repeated using the San Diego classification applied by an expert panel. This expert panel included the authors of this abstract (RM- SIDS scientist; KW- pediatrician) as well as a neuropathologist, and forensic pathologist. **RESULTS:** Case division based on Coroner's initial diagnosis included 27 SIDS, 12 non-SIDS (known cause of death) and 29 "undetermined". After the panel applied the San Diego classifications, the groups were 7 non-SIDS and 57 SIDS, including 8 SIDS I and 49 SIDS II cases. Analysis for caspase-3 and TUNEL showed that for caspase-3, SIDS infants have an increase in the hypoglossal (XII) nucleus of the medulla and this finding was irrespective of diagnostic shifting or sub-classification. For TUNEL, using the initial diagnosis, there was an increase in the CA3 region of the hippocampus, subiculum, LGN, XII and Cuneate nuclei of the medulla. Using San Diego classifications, the increase in TUNEL in the CA3 region was not sustained, but for all other regions, the increased TUNEL were in the SIDS II group. **CONCLUSIONS:** The diagnostic sub-classification as proposed by Krous et al., 2004 was successful from a pathological perspective, with our results showing for the first time, that the abnormal pathology of brain cell death in SIDS, is predominant amongst SIDS II infants. This group are distinguished by the presence of known risk factors, suggesting that cell death in the SIDS brain may be an acquired rather than an inherent phenomenon.

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Keywords: apoptosis, SIDS, neuropathology, diagnosis, hippocampus, brainstem.

Abstracts of Oral Presentations

O-016

Blue Baby Blues - A Case Report. Implications of Maternal Selective Serotonin Reuptake Inhibitor Use for Sudden Infant Death Syndrome

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Background

A girl was born at 38 +2 weighing 3026g. The pregnancy was uneventful. The mother took fluoxetine 20mg daily. Baby was admitted on day 3 following incidents of cyanosis. Investigations

Respiratory studies revealed significant hypoxia with episodes of hypoventilation and apnoea. Time spent below 94% saturation was 19%, 68 dips /hour >4%, pCO₂ was raised at 7 kPa. Causes of hypoventilation were excluded with a normal cranial MRI and negative genetics testing for Congenital Central Hypoventilation Syndrome.

Outcome

Incremental increases in low flow oxygen normalised her study. She was discharged on day 14 with an oxygen prescription for 0.5lpm. Parents and other family members were taught basic life support and they were provided with an apnoea monitor. Follow-up at 5 months shows baby is thriving and the FiO₂ has been reduced to 0.3lpm.

Discussion.

The 'triple-risk model' for Sudden Infant Deaths Syndrome (SIDS) describes three important risk factors; a critical development period, an exogenous stressor and an underlying vulnerability¹. This underlying vulnerability may be accounted for by abnormalities of the serotonin system, as found in post-mortem analysis of SIDS infants². In utero exposure to a Selective Serotonin Reuptake Inhibitors (SSRI) could superimpose this vulnerability onto healthy infants. Indeed, mouse models have demonstrated down-regulation of the respiratory response to acidosis in association with maternal fluoxetine use^{3,4}. A population-based health registry study found exposure to an SSRI in utero increased the rate of neonatal death, although a causal relationship could not be established⁵. Our case has shown significant hypoventilation in an otherwise healthy infant exposed to maternal fluoxetine during pregnancy with no primary cause identified. This may represent an important link between maternal SSRI use and SIDS, and may have implications for future practice.

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Keywords: Sudden Infant Death Syndrome, SIDS, Selective Serotonin Reuptake Inhibitors, SSRI, Fluoxetine, Hypoventilation

Abstracts of Oral Presentations

O-017

The Victorian Perinatal Autopsy Service (VPAS): Insights into Clinical Governance and program development

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In 2015, a cluster of up to eleven potentially avoidable stillbirths and perinatal deaths was identified to have occurred at one outer metropolitan maternity service in Melbourne, Australia. In the aftermath of this healthcare crisis, a suite of recommendations and healthcare changes were made, to mitigate against a similar crisis occurring again. One of the resulting programs was the creation of a high-quality centralised statewide perinatal autopsy service, the Victorian Perinatal Autopsy Service (VPAS). The service, currently in its third year of operation, links services across three existing high-quality perinatal pathology services, providing a service to the entire state. This presentation discusses aspects of program development, in particular the development of a comprehensive Governance Framework for the service, that seeks to partner with consumers, and enables the service to meet the needs of referring practitioners, and to monitor itself effectively. Insights into development of an accountability framework and service measures are discussed. This presentation would be of interest to anyone who is involved in setting up a new health program or service, or wishes to learn about clinical governance.

Keywords: Clinical Governance, Consumers, Autopsy, Leadership

Abstracts of Oral Presentations

O-018

Epidemiological findings of SIDS from England: the Oto Acoustic Signals Investigation Study (OASIS) 2016-2017

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Background

This is the fourth in a sequence of observational SUDI studies from England (Aims study 1984-89, CESDI study 1993-6, SWISS study 2003-6 and OASIS study 2016-17). Given the continued and welcome almost year on year reduction in SUDI rates in England the prospective collection of case data used in the earlier studies was not an option. Our interpretation of the preliminary findings is therefore cautious given the retrospective nature of the case data collection, absence of face to face interviews with the parents and anticipated low case recruitment levels.

Objectives

To monitor the demographic characteristics and risk factors associated with SIDS for confirmation or major departures from previous observational findings.

Methods

Families who had suffered the unexpected death of an infant or child up to the age of 4 since 2008 were recruited via the Lullaby Trust charity between July 2016 and October 2017. After obtaining verbal consent to be included in the study we conducted a telephone interview with the parent(s) using a semi-structured questionnaire. Cause of death for this investigation was established using a multi-disciplinary review panel with the information from the interview, coroners' reports and autopsy. Control families were recruited during the same period from the maternity wards of hospitals in Bristol and Birmingham and followed up with a pre-arranged telephone interview to reflect the age distribution of the SIDS cases and designated reference sleep using the same semi-structured questionnaire.

Results

We contacted and recruited 91 (89.2%) of the 102 bereaved families who made initial contact with the Lullaby Trust, 64 deaths were under 1 year old (SUDI) and 60 remained unexplained (SIDS). Of the 220 control families who consented to take part, 194 (88.2%) follow-up interviews were conducted. The strongest predictors of SIDS in the multivariable model were bed-sharing in hazardous (infant sleeping next to a carer who smoked or drank alcohol or slept on a sofa) circumstances (35% vs 3% controls, $p < 0.0001$), infants found prone (33% vs 3% controls, $p < 0.0001$) and infants whose health in the final week was not 'good' (53% vs 9% controls, $p < 0.0001$). Other significant factors in the model were multiple births (8% vs 1% controls, $p = 0.0002$), feeding less than usual in the final week (33% vs 6% controls, $p = 0.009$) and low maternal educational achievement (50% vs 17% controls, $p = 0.01$). Notably the prevalence of maternal smoking during pregnancy among the SIDS mothers (20% vs 10% controls) was much lower than previous studies and not a multivariable marker.

Conclusions

It is now more than 25 years after our initial 'Back to Sleep' campaign. A renewed campaign underlining this initial message along with when it is inappropriate for parents to sleep with the infant needs to be conducted.

Funding source: The Lullaby Trust Project number 268

Keywords: SIDS, Epidemiology, Case-Control Study, Prone positioning, Hazardous Bed-sharing

Abstracts of Oral Presentations

O-019

2017 Survey of prevalence of protective and risk factors for SIDS in the Netherlands

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BACKGROUND: From 1987 on, surveys have been conducted in the Netherlands to monitor baby care habits and target safe sleeping prevention campaigns. The last survey was conducted in 2011. In the Netherlands, the 2016 incidence of SIDS (R95) was 0.075/1000 live births (n=13); taking into account adjacent categories the SUDI incidence was 0.15/1000 (n=26). This low incidence, the lowest in the Western world, may result in decreased parental awareness of SIDS risks and complacency regarding preventive messages. Therefore, a new survey was conducted. **OBJECTIVES:** 1) To measure the prevalence of protective and risk factors for SIDS in the Netherlands in 2017 including new customs of baby care. 2) To compare 2011 prevalences with 2017. 3) To investigate why parents do not follow recommendations regarding safe sleep position and location. **METHODS:** A cross-sectional study was conducted using an online questionnaire (52 questions). The study population encompassed parents/caregivers of infants up to 1 year of age living in the Netherlands. Between February 12 - April 30, 2017, invitations with a link to the questionnaire were distributed to 9000 parents visiting 17 child healthcare organizations. In healthcare centers in socially more deprived neighborhoods research assistants helped parents fill out the online questionnaire. In May and June, invitations to participate were also communicated using social media. We used SPSS 24 to calculate prevalence rates and performed a content analysis of answers on open-ended questions on reasons for not following SIDS prevention advice. **RESULTS:** In total 1289 questionnaires were filled out, of which 80 were excluded, mostly because the child was too old. The study population was comparable to the Dutch population in terms of sex ratio, preterm infants, and parents with a lower education. First-born infants and parents with a higher education were overrepresented, families with a migration background were underrepresented. Sleeping prone increased from 3.1% of infants when 0-2 months old to 13.6% at 9-11 months. Infants aged 0-2 months slept in a separate room in 31.5%, roomshared with parents in 52.3%, slept in an attached bedside sleeper in 9.7% and with their parent(s) in bed in 6.3%. For age 7-8 months this was respectively 71.2%, 15.2%, 4.0% and 8%. Only 4.5% of infants used a duvet. The typical Dutch sleeping sack (wearable blanket) was used for 55.8% of infants. Only 50% of infants 0-2 months and 23.6% of infants 5-6 months were breastfed exclusively. Of all mothers, 4% had smoked during pregnancy; of all infants 21.3% were exposed to parents' smoking. **CONCLUSIONS:** The number of infants that sleep prone is comparable to 2011, with still significant room for improvement. Roomsharing with infants 0-2 months has increased significantly since 2011, but so has bedsharing. These data are important for future preventive campaigns.

Keywords: risk factors, preventive factors, prevalence, the Netherlands

Abstracts of Oral Presentations

O-020

An analysis of sleep scene reconstruction photographs of SUDI infants compared with controls

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BACKGROUND: Death scene investigation and reconstruction is now a common part of protocols in relation to sudden unexpected death in infancy (SUDI). They provide potentially valuable information about the environment and surroundings in which the death took place as well as information that can inform in relation to the cause of death. **OBJECTIVES:** The objective of this analysis was to assess the scene reconstruction photographs of the position the infant was placed and found to describe sleeping practices and positions and how they differed between cases and controls. In particular, we looked at bed type, co-sleeping, sleeping position, and movement in the bed from when the baby was placed to sleep to when they were found and number of pillows and/or other objects in the bed. We also undertook to ascertain the agreement of information obtained from the reconstruction photographs and information from in-depth interviews with the caregiver(s). **METHODS:** The New Zealand SUDI Case Control study took place between 1 March 2012 and 28 February 2015. There were 137 cases and 258 controls matched by hospital and ethnicity. Caregivers were interviewed soon after the death or a nominated date by trained SUDI liaison officers, and sleep scene reconstruction photographs were taken as part of a coronial investigative process. **RESULTS:** Bed type was classified as appropriate (cot, bassinet, wahakura or pepi-pod) or inappropriate (double bed, single bed, couch or car seat). Cases were more likely than controls to be placed in an inappropriate bed (62.1% vs. 22.4%, OR 5.7, 95% CI (2.6, 12.4)). Cases tended to move to another part of the bed more often than controls (30.2% vs. 15.6%, OR 2.3, 95% CI (1.0, 5.7)) and this was irrespective of whether they were in an appropriate bed or not. Cases were more likely to have moved / turned over in the bed than controls (56.6% vs. 18.8%, OR 5.7, 95% CI (2.5, 13.0)), and more likely to be found prone (39.6% vs. 7.8%, OR 7.7, 95% CI (2.7, 22.5)), even though there was no significant difference in the number placed prone (10.9% vs. 4.6%, OR 2.5, 95% CI (0.6, 10.6)). Cases were more often co-sleeping than controls (55.4% vs. 12.5%, OR 8.7, 95% CI (3.5, 21.5)). Cases were more likely than controls to have pillows in the bed (67.9% vs. 25.0%, OR 6.4, 95% CI (2.8, 14.3)), but less likely to have other objects (e.g. soft toys) in the bed (15.4% vs. 37.5%, OR 0.3, 95% CI (0.1, 0.8)). Agreement between the interview and scene reconstruction photos was high (100% agreement on bed type, 98% agreement on position placed, and 97% agreement on position found). **CONCLUSIONS:** Death scene reconstruction photos are useful for clarifying the death scene and immediate surroundings of the infant. This study shows that cases were more likely to be placed in an unsafe environment, more likely to move in the last sleep, and whilst not more likely to be placed prone were more likely to be found prone, given the opportunity provided by the environment. **Keywords:** Death scene photos, sleep environment

Abstracts of Oral Presentations

O-021

Social vulnerability among the Queensland SUDI population and the factors prevalent in vulnerable groups

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BACKGROUND: Many studies have reported a significant association between SUDI and disadvantage, most using single markers of social position. Recent research has suggested that multiple social circumstances should be analysed simultaneously to better understand their influence on health. Within the social sciences, social exclusion has emerged as a paradigm influencing how disadvantage is conceived and researched. It has been identified as holding promise for measuring inequalities in health research. Concepts of social exclusion have been adapted to develop a multidimensional model for measuring social vulnerability in the Queensland SUDI Study. **OBJECTIVES:** To gauge the extent and severity of social vulnerability among families who experienced a SUDI, by applying an original instrument for measuring social vulnerability. **METHODS:** SUDI cases between 2010 and 2014 in Queensland (n=239) were coded for 35 vulnerability indicators (pre-defined in a framework capturing a characteristic when displayed by at least one family member). Following examination of the distribution of indicators, cases were grouped into three categories; lowest vulnerability (≤ 7 factors, bottom 50% of SUDI population), moderate (8-12 factors, next 25%), and highest vulnerability (≥ 13 factors, top 25%). Prevalence of each indicator by vulnerability group was assessed, and indicators with highest prevalence in each group identified. An algorithm for assessing likelihood of accidental suffocation was applied to test for an association between vulnerability group and likelihood of suffocation. **RESULTS:** Results showed 5 indicators in the lowest vulnerability group with a prevalence $\geq 14\%$ (limited resources, unemployment, poor antenatal care, lack of access to health services, and prior infant/fetal loss). These indicators showed increasing prevalence in the moderate and high vulnerability groups. An additional 7 indicators with high prevalence ($\geq 25\%$) in the moderate group were identified (transience, overcrowding, substance use, mental ill-health, criminal offending, domestic violence, and <18 years at first birth). Of these, 6 showed increasing prevalence in the high vulnerability group. Four indicators had high prevalence ($\geq 50\%$) in the highest vulnerability group (alcohol abuse, long term unemployment, long term criminal offending, and children not in care of parents). A significant association between vulnerability and number of stressful life events was found ($p < 0.0001$). No association was found between vulnerability and likelihood of suffocation ($p = 0.92$). **CONCLUSIONS:** Measures of vulnerability important in the least vulnerable group increase in prevalence in more vulnerable groups. Several serious items only appear in the most vulnerable group. Stressful life events increase in prevalence with increasing vulnerability. Applying this model of social vulnerability may assist researchers to understand the main stressors facing vulnerable families beyond clinical indicators of risk.

Keywords: Sudden Unexpected Death in Infancy (SUDI), Sudden Infant Death Syndrome (SIDS), disadvantage, social vulnerability, Queensland SUDI Study

Abstracts of Oral Presentations

O-022

Sleeping environment in Sudden Unexpected Infant Death cases: a population-based study in France

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BACKGROUND: Sudden unexpected infant death (SUID) remains the leading cause of postneonatal mortality in developed countries despite preventive campaigns targeting its modifiable risk factors since the 1990s. Suboptimal implementation of the recommendations for a safe infant sleeping environment (SISE) has been suggested as a cause of avoidable SUID. No national data are available in France regarding the implementation of SISE recommendations. **OBJECTIVE:** We aimed to describe sleep environment characteristics of infants who died from SUID in France.

Design and METHODS: We used data from the recently launched French national SUID registry (Observatoire national des Morts Inattendues du Nourrisson; OMIN), which collects data for all infants younger than 1 year old admitted for SUID in one of the 35 French referral centers since May 2015. Mobile intensive care teams, pathologists and physicians of the referral centers prospectively collect data regarding socio-environmental and parental characteristics; medical history; clinical, biological, radiological and autopsy findings; and cause assigned to death after a thorough case investigation. We estimated the frequency of implementation of each recommendation of the American Academy of Pediatrics SISE endorsed by French authorities. **RESULTS:** Between May 2015 and December 2017, 291 cases of SUID were taken in charge in referral centers, 266 (91%) included and analysed in the OMIN registry. The median age of infants was 90 days (IQR 47-150), 55% of cases were male, and 16% were born preterm. At the time of death, the SUID risk factors were prone or side sleeping position (30%); co-sleeping in an adult bed (19%); sleeping on couches (2%); lack of room-sharing (83%); presence in the bed of a blanket (25%), a pillow (18%), >1 stuffed animals (17%) or a bumper pad attached to the crib (11%); and tobacco smoke exposure (39%). In 22% of cases, the assigned cause of death was suffocation, asphyxia, or entrapment. **CONCLUSIONS:** Implementation of several SISE recommendations was suboptimal for many SUID cases in France, which suggests that a substantial portion of these deaths were potentially avoidable. More studies are needed to evaluate the frequency of implementation of SISE recommendations in the general population in France and barriers to optimal implementation.

Keywords: Sudden unexpected infant death Safe infant sleeping environment French national SUID registry

Abstracts of Oral Presentations

O-023

Reducing Sudden Infant Death Risk Factors in Sheffield - A Partnership Approach

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Following a visit by the Department of Health's Infant Mortality National Support Team (IMNST) in 2010 Sheffield developed an Infant Mortality Strategy and Delivery Plan with specific action on Sudden Infant Deaths in Infancy (SUDI) in light of rates being twice the national average. The position was complex and challenging and whilst work was already being taken forward to address related risk factors, particular issues included:

- Significant and persistent inequalities in the city
- Incidence of infant mortality in both Asian and Black ethnic groups more than double that of the white ethnic group
- Known SUDI risk factors present in 90% of the deaths
- Maternal smoking in 90% of deaths, both parents 63%
- 90% of mothers aged 20 years or younger at the birth 1st child
- Final sleep position and place of sleep unsafe in the majority of cases

The significance of these issues as a measure of the population's health and wellbeing was instantly recognised and Chief Executive Officer and senior management commitment was secured from the outset to support the development and implementation of the Strategy. The Public Health Team was asked to lead this work and held an initial stakeholder event to agree a shared vision and develop a detailed delivery plan. A wide range of agencies were involved including midwifery, health visiting, paediatric services, early years, the police, community and voluntary sector representatives.

From this a multi-agency group and delivery plan was established to help the city achieve its vision of 'Reducing the Sudden Infant Death (SID) rate in Sheffield from 0.77/1000 live births to 0.40/1000 live births by 2020 (Current national average 0.3/1000 live births). Members of the group worked collectively to identify what actions they could take to raise awareness of safer sleep guidance and help families reduce associated risk factors and an action plan was defined including:

- Safer sleep promotional campaigns
- Multi-agency training (including induction and refresher training)
- Targeted interventions to identify 'at risk' babies and support families
- Work to reduce smoking in pregnancy and in the household
- Breastfeeding support

Through committed action the sudden infant death (SIDS) rate in Sheffield has steadily decreased and is now standing at 0.27 per 1000 live births (figures for 2010 - 2014), which is on target to be below the national average by 2020 and is below the regional rate for Yorkshire and Humberside.

Keywords: SUDI Risk Factors, Safer Sleep Awareness, Infant Mortality, Public Health

Abstracts of Oral Presentations

O-024

Stillbirths in Ghana: Determining Cause of Death

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PURPOSE: More than 7,000 stillbirths occur each day across the globe - 98% in low and middle-income countries. Despite this alarming rate, research on stillbirth and the implementation of impactful solutions has been sparse, particularly in low-resource settings. In Ghana, little data has been published on the cause of death among stillbirths, and estimates of the national stillbirth rate vary from 13 to 35 stillbirths per 1,000 births. One barrier to obtaining meaningful data is the wide variation in cause of death classification systems for stillbirth, most of which were designed for high-income countries where diagnostic testing and comprehensive records are available. There are upwards of 30 stillbirth classification systems, and there is a lack of consensus in the international stillbirth research community about the best system to use. We sought to classify cause of death for stillbirths in a major teaching hospital in Ghana through the application of the Perinatal Society of Australia and New Zealand's Perinatal Death Classification system. **METHODS:** During 12 consecutive months in 2011-2012, a physician (A.R.) reviewed all stillbirth charts within a week of delivery at Komfo Anokye Teaching Hospital (KATH) and completed a detailed questionnaire with patient demographics, maternal health, prenatal care, and labor history. One investigator (J.A.) created case summaries based on the questionnaire data. The summaries were independently reviewed by the two co-principal investigators to determine cause of death for each case using the Perinatal Society of Australia and New Zealand's Perinatal Death Classification system. Conflicting classification by coders were reviewed jointly and resolved. **RESULTS:**

Cause-of-death was analyzed in 465 cases of stillbirth. The leading causes of death by general category were hypoxic peripartum death (N=105, 22.6%), antepartum hemorrhage (N=67, 14.4%), hypertension (N=52, 11.2%), and perinatal infection (N=32, 6.9%). Thirty-three percent of stillbirths analyzed were classified as unexplained antepartum deaths (N=157). The agreement rate among reviewers was 77%.

CONCLUSIONS:

This study demonstrates the high rate of neonatal mortality associated with hypoxic intrapartum events, placental abruption, pre-eclampsia, and unspecified bacterial infections at a tertiary care center in Kumasi, Ghana. These results could help guide the development of focused interventions to improve clinical care and outcomes, as well as direct future research and the creation of informed policies. Additionally, the large proportion of stillbirths classified as unexplained illustrates the need for an improved system for stillbirth cause-of-death classification in low-resource settings.

Keywords: stillbirths, causes, low resourced area

Abstracts of Oral Presentations

O-025

Towards reducing newborn deaths in Cross River state, Nigeria: Impact of Essential Newborn Care Course (ENCC) on quality of care

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Background

According to the World Health Organization, about 3 million newborns die each year globally and 2.6 million babies are still born. In Nigeria, 267,000 babies die in their first month of life accounting for more than a third of all under-five deaths. Cross River State is estimated to have one of the highest Neonatal Mortality Rate (NMR) in Nigeria. The high rate of NMR could be linked to a number of factors including poor capacity of skilled birth attendants on essential newborn care including helping baby's breath as well as lack of basic neonatal resuscitation equipment. Leading causes of newborn deaths in Nigeria include Birth asphyxia, severe infections, prematurity, neonatal jaundice and bleeding disorders

Objective
To reduce pre-discharge newborn mortality rate by 10% from institutional baseline data using evidence-based interventions

Methods

Saving Mothers Giving Life Initiative-SMGL (USAID/Merck for Mothers funded project) in collaboration with Government of Cross River state assessed 812 health facilities in the year 2015 to identify readiness for provision of comprehensive and integrated maternal and newborn health services including Essential Newborn Care services. Findings from health facility assessment revealed NMR of 160 per 1000 live births. 60% of staffs were skilled birth attendants and majority lack the capacity to provide full scale of Emergency Obstetric and newborn care services including neonatal resuscitation. Furthermore, less than 5% of these facilities had functional newborn resuscitation equipment at baseline. Based on these findings, the initiative in collaboration with Federal Ministry of Health, Nigeria and Nigerian Society of Neonatal Medicine conducted a well-structured, modularized and interactive ENCC training package in conformity with national/global standards and best practices on newborn care for frontline health workers in Cross River state

Results

The capacity of over 240 skilled birth attendants (Doctors, Nurse/Midwives and CHEWs) from supported health facilities were improved on essential newborn care including helping baby's breath. 73 health facilities were supported with functional newborn ventilator and resuscitative equipment, Job aids and training models. As at September 2017, the skilled births attendants have successfully resuscitated 65% of newborns not breathing at birth compared to 15% at baseline. The pre-discharge perinatal death reduced from institutional baseline of 58 to 46 representing a 20.6% decrease from baseline.

Conclusions

The SMGL initiative has shown by improving the skills of HCWs in essential newborn care, increasing the pool of newborn advocates and ensuring the availability of functional newborn ventilators, preventable newborn deaths can be reduced to a barest minimum. To sustain the early gains, there is a need to strengthen partnership among health professional groups that care for newborns and train more skilled birth attendants

Keywords: Newborn, Essential Newborn Care, Neonatal mortality

Abstracts of Oral Presentations

O-026

Counting and reviewing babies born dead in low resource settings: Stillbirth surveillance in Sri Lanka

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BACKGROUND: Sri Lanka is a low and middle-income country with better health indices in South Asia. With high levels of antenatal care (99%) and hospital deliveries (99.9%), the country reports low maternal (33.8 per 100000 live births) and infant (8.2 per 1000 live births) mortality in the region. In a context of more focus on perinatal care, stillbirths emerge as a priority area. **OBJECTIVES:** To count and review stillbirths of the country in the year 2016 for action **METHODS:** National Perinatal Mortality Surveillance system (NPMS) was launched in 2006. All specialized hospitals (with an obstetrician/paediatrician) are required to document all stillbirths and early neonatal deaths, review them monthly at a hospital stakeholder meeting and send a monthly report to Ministry of Health.

In 2016, NPMS was further improved with the addition of quality dimensions. A structured data collection format was introduced with a variable set recommended by World Health Organization (WHO). Gestation more than 28 weeks (or weight >1000g) were taken as stillbirths and the causes of death were classified based on the latest WHO ICD-Perinatal Mortality Classification. Revised individual and monthly reporting formats with specific guidelines were also made available. Guidelines on conducting pathological post-mortems were developed and necessary equipment were distributed among hospital networks. Registration of stillbirths with the civil registration and vital statistics (CRVS) system was also facilitated. **RESULTS:** Data were received from 81 specialized government hospitals, covering 269,575 live births throughout the country. Considering the total live births reported by Civil Registration System (331,073), coverage of live births in this study was 81.4% (n= 269,575). There were 1470 stillbirths reported to compute a national stillbirth rate of 5.4 per 1000 total births. Male sex was identified in 40.7% of stillbirths. Primi mothers contributed to 7% (n=105) of stillbirths. A proportion of 61.2% were registered with CRVS. Lessons learnt were discussed at several platforms including national technical advisory committees and translated into action at hospital, district and national levels. Actions included; organized prepregnancy care, addressing first delay, introducing kick count charts, strategies on birth defects prevention and provision of CTG machines. **CONCLUSIONS:** Sri Lanka, being a low and middle income country, reports a low stillbirth rate and implements an organized NPMS to translate the outcome for meaningful interventions.

Keywords: stillbirths, Sri Lanka

Abstracts of Oral Presentations

O-027

Experiences, perceptions and practices of women and families around stillbirth: a qualitative exploration in urban and rural districts of Kabul province, Afghanistan

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Background

Stillbirths in Afghanistan have remained relentlessly high over the past two decades, receiving little attention nationally. An understanding of the experiences, perceptions and practices of women and family members affected by stillbirth can elucidate some of the reasons why these deaths occur, and important elements at play that could be affecting their prevention. It is also unknown to what extent social, cultural and other factors may affect the disclosure of pregnancy loss, which is important for increasing the visibility of stillbirth.

Objectives

To explore the perceptions, experiences and practices around stillbirths among women and families in Afghanistan.

Methods

We did in-depth semi-structured interviews with women that had a recent stillbirth (n=22) and men (n=9) whose wives had a recent stillbirth, female elders (n=3), and community health workers (n=5). Participants were purposively recruited from three maternity hospitals in Kabul, with additional recruitment through rural health clinics via community health workers.

Results

Multiple pregnancy losses were frequent with high fertility rates playing somewhat of a coping mechanism to overcome the stillbirth; however, the emotional impact of the loss was apparent many months on. Families had little opportunity to express their grief, and no support services were available through the formal health system. Men expressed deep sadness about their loss but had no outlet to openly discuss it and conveyed a desire to know more about prevention and pregnancy care in general. Women's awareness of the biomedical causes and risks for stillbirth was high, although religious practices and witchcraft were also perceived to play a part. Stress and mental health issues from the ongoing conflict forcing displacement of families as well as exposure to chemicals and radiation from weapons of war were felt by participants to be contributing factors. Although the concept of fatalism existed, many women believed the death of their baby could have been prevented. Care-seeking during pregnancy especially for problems was low, with mothers having little say on decisions around their health and pregnancy. Some blame was directed toward the mother for the stillbirth but mainly from mother-in-law's, but we did not find any prevailing stigma or discrimination against mothers who had a stillbirth. Despite being against the accepted cultural and religious practices, naming a stillborn baby held personal importance for mothers especially, who generally kept it to themselves.

Conclusions

Afghan women demonstrated resilience but there is need for support services for those affected, particularly in a context where conflict and trauma are so widespread. The absence of social repercussions around stillbirth suggests great potential for open discussion and behaviour change interventions with both men and women regarding stillbirth and pregnancy care that could reduce the burden.

Keywords: Stillbirth, pregnancy loss, Afghanistan, qualitative

Abstracts of Oral Presentations

O-028

Defining disrespect and abuse of newborns and stillborn infants: a review of the evidence and an expanded typology of respectful maternity care

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BACKGROUND:

Amid increased attention to quality of obstetric care and respectful maternity care globally, insufficient focus has been given to quality of care and respectful care for newborns in the postnatal period. Especially in low and middle income countries, where low utilisation of obstetric and neonatal services is of concern, it is plausible that poor quality of care or mistreatment of newborns or stillborn infants will influence future care seeking, both for the health care needs of the growing infant and for subsequent pregnancies. Preliminary evidence indicates that mistreatment of newborns and stillbirths exists, both in the immediate and later postnatal periods. Definitions have been developed for instances of mistreatment of women during labour and delivery, but how newborns and stillbirths fit into the categorisations and critical questions around how to conceptualise dignified care for newborns and stillbirths have not been well addressed. The WHO recently published “Standards for improving quality of maternal and newborn care in health facilities”, which provides a series of clinical and experiential standards that health facilities should strive to provide for all patients.

METHODS:

Presented here are a number of the experiential measures, as well as health system requirements, which could be further developed to encompass the explicit needs of newborns and stillborn infants, and their families. Specific WHO Standards that require more attention for newborns are those related to effective communication, informed consent and emotional support (including for bereaved families). Using seven categories previously developed for respectful maternity care generally, a literature review was conducted on mistreatment of newborns and stillbirths. The review revealed examples of mistreatment of newborns in six of the seven categories. Common occurrences were failure to meet a professional standard of care, stigma and discrimination, and health system constraints. Many instances of mistreatment of newborns related to neglect and non-consented care rather than outright physical or verbal abuse. Two additional categories were also identified for newborns related to limited legal accountability and lack of bereavement care.

CONCLUSIONS: More research is needed into the prevalence of disrespect, abuse, and stigmatisation of newborns and stillbirths and further discussions are needed about how to provide quality care for all patients, including the smallest and most vulnerable.

Keywords: respectful maternity care, mistreatment; bereavement; systematic review; neonatal health

Abstracts of Oral Presentations

O-029

Socio-demographic, maternal, and health care factors associated with stillbirth in Afghanistan: analysis of the 2010 Afghanistan Mortality Survey

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BACKGROUND: Stillbirth rates in Afghanistan have shown little decline in the past two decades with no data to understand why these deaths continue to occur at such a high rate. Across most low-income settings, there is limited nationally representative data to understand risk factors for stillbirth, as many births occur in the home. In most national, population-based surveys in these settings, data collection for stillbirths is very limited. Women's health care utilisation and complications during pregnancy and delivery are rarely collected, and this is a major limitation to understanding country-specific causes and risk factors. The 2010 Afghanistan Mortality Survey is one of the few surveys with such data available for stillbirths. **OBJECTIVES:** To examine the socio-demographic, maternal and health care utilisation factors associated with stillbirth in Afghanistan.

METHODS: We used data from the 2010 Afghanistan Mortality Survey, a nationally representative household survey. The analysis included 17,374 women aged 12-49 years with a pregnancy outcome in the preceding five years (17,012 live births, 362 stillbirths). We restricted the analysis to women's last pregnancy, and examined the association between socio-demographic characteristics, maternal, foetal, and health care utilisation factors with stillbirth using multivariable logistic regression. Stillbirth was defined as a pregnancy loss at ≥ 7 month.

RESULTS: We found that, after adjusting for confounders, the odds of having a stillbirth was over three times higher among women residing in the Central Highlands region (aOR: 3.2; 95%CI: 1.47-7.23) and over 13 times higher among the Nuristan ethnic population (aOR: 13.6; 95% CI: 3.6-51.4). Previous pregnancy loss (aOR: 2.95 95%CI: 1.95-4.44), multiple pregnancy (aOR: 3.67; 95% CI: 1.90-7.08) and being a first pregnancy (aOR: 2.51; 95%CI: 1.56-4.03) was also associated with an increased the odds of stillbirth. Women not receiving any antenatal care had 3 times the odds of stillbirth (aOR: 3.13; 95% CI: 1.84-5.35). Complications during pregnancy including bleeding, possible infection and reduced foetal movements increased the odds of stillbirth. Stillbirth was also associated with delivering in a health facility (aOR: 1.81; 95% CI: 1.29-2.55) and reduced foetal movements during delivery (aOR: 18.8; 95% CI: 6.69-18.7). **CONCLUSIONS:** Understanding why stillbirth risk is so high among particular regions and ethnic groups in Afghanistan will be important to reducing the overall rate. Access to health care is likely to be playing a role and may require targeted interventions to reduce stillbirths. Complications during pregnancy and delivery need to be identified and managed appropriately by encouraging use of antenatal care and timely care seeking for problems during pregnancy.

Keywords: stillbirth, risk factor, perinatal death, Afghanistan

Abstracts of Oral Presentations

O-030

Attitudes and Social Norms Associated with Maternal Decisions about Infant Sleep Location: Results from the SMART Study

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BACKGROUND: In the SAFE study, we reported that maternal attitudes and social norms are important factors associated with maternal infant care practices and in the SMART study, reported that, compared to a breastfeeding control intervention, a safe sleep intervention of videos sent via text or email (mHealth) results in higher rates of use of the supine sleep position and roomsharing without bedsharing.

OBJECTIVES: To describe the impact of the SMART mHealth safe sleep intervention on attitudes and social norms regarding choice of infant sleep position and location.

METHODS: 1600 mothers of healthy newborns at 16 US hospitals received either a safe sleep intervention (SSI) or control breastfeeding promotion intervention (BFI). Educational videos were sent to mothers via email or text from the time of birth hospital discharge for a 60-day period. Mothers completed a survey about attitudes, practices, and social norms when the infant was 2-6 months old. We examined differences in these factors by intervention group and by usual sleep position and location using chi-square testing.

RESULTS: Compared to BFI mothers, SSI mothers were more likely to have positive attitudes (safer, more comfortable) and social norms (support from family/friends) regarding supine sleeping and less likely to have positive attitudes and social norms regarding both side and prone sleeping (all p-values <0.01). SSI mothers were less likely than BFI mothers to have positive attitudes about sleeping with their baby (bedshare) (all p-values <0.0001).

There was a strong association between positive maternal attitudes and influence of friends, family, medical team, and media and the sleep location she chose for her infant.

CONCLUSIONS: The mHealth intervention had a significant impact on maternal attitudes and perceived social norms regarding choice of infant sleep position and location. These results suggest the potential importance of educational efforts using mobile technology to foster positive attitudes and social norms regarding infant care practices.

Keywords: SIDS, safe sleep, education, intervention

Abstracts of Oral Presentations

O-031

Fifteen years of infant care and safe sleeping messages: have parental care practices changed?

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INTRODUCTION: Incidence of sudden unexpected death in infancy (SUDI), a major contributor to post-neonatal infant mortality in Australia, declined dramatically after the first national safe sleeping campaign in 1991. However, rates have plateaued with little change in incidence since 2004 despite two further public health campaigns in 2002 and 2012. **OBJECTIVE:** To determine what changes, if any, in infant care practices and lifestyle behaviours used by primary infant caregivers have occurred between 2002 and 2017 and if these are consistent with changes in public health campaign messages during this time. **METHODS:** A comparative study exploring changes in prevalence of infant care practices between retrospective (2002) and contemporary cohorts (2017) was conducted. This study's retrospective cohort comprises data collected prospectively using a cross-sectional survey design sampling Queensland caregivers (April 2002) with infants aged approximately 3-months (n=4000). The 2002 questionnaire was updated with inclusion of practices known to influence safe sleep and infant care. Contemporary cohort data collection was similar to retrospective cohort methods, with the Queensland Registry of Births, Deaths and Marriages used as the sampling frame to offer participant families (baby aged 3-months) either an online or postal questionnaire response option (target n=10,200 April-May 2017 birth cohort). **RESULTS:** Analysis used retrospective (n=2534) and contemporary on-line responses (n=933). Comparative analysis of prevalence indicates some improvement between the two surveys. Between 2002 and 2017, reductions occurred in routine use of non-supine positions: 38% to 17% (prone 12%-9%; side 22%-8%); maternal smoking during pregnancy: 20%-3%, postpartum: 22%-4%. Positive message uptake included: breastmilk exclusivity at 3 months: 38% to 61%; room-sharing with adult: 56% to 69%; feet-to-foot practice to reduce head covering: 38% to 68%; no household smoking improved: 63% to 80%. Minimal change occurred in shared sleep: 46% to 48%. Use of pillows, soft bedding, shared sleeping in presence of risk factors, sofa sharing and sleep spaces not designed for infants, persist. Emerging nursery products present challenges to safe sleep messages. **CONCLUSIONS:** Despite two public health campaigns and apparent improvement in several SUDI risk factors, considerable opportunities remain to improve uptake of safe sleep recommendations into practice in contemporary Australian families. Strategic approaches that clearly identify evidence-practice gaps and specify behaviour change needed to reduce the gap are needed to support families with young infants. Further investigation of the enablers and barriers to implementation of safe sleep advice, from both parent and health professional perspectives, is required to inform future health campaigns and reduce infant mortality.

Keywords: Infant care, safe sleeping recommendations

Abstracts of Oral Presentations

O-032

Safe sleeping campaign - Are we really successful?

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INTRODUCTION: Aim of the study was to investigate whether there was a significant increase in safe sleeping practices in Tyrol over the last years, and to assess predictors associated with non-adherence to safe sleep guidelines.

MATERIAL-METHODS: In an ongoing cohort study data on child care practices at four weeks of age including sleeping position, co-sleeping, breastfeeding, smoking during and after pregnancy as well as sociodemographic variables have been collected by questionnaire for all infants born in the Tyrol (study period 2010-2016, n = 31.348, response rate 61%). Recommendations for safe sleeping include personal communication before discharge from maternity ward and during well-child visits, parental education programs and public information campaigns. **RESULTS:** Prevalence rates for prone and side sleeping significantly increased from 3.4% in 2010 to 4.3% in 2016 for the prone position (p=0.024) and from 19.9% to 21.6% for the side position (p=0.045). Mothers who laid their infant prone or side were younger, were more likely to smoke during and after pregnancy and to practice co-sleeping. Moreover, also co-sleeping prevalence significantly increased (28.5% in 2010 vs. 33.6% in 2016; p<0.001). Co-sleeping mothers were more likely to put their infant in the prone or side sleeping position. In addition, breastfeeding was more common in co-sleeping mothers than in those not co-sleeping. **CONCLUSIONS:** Despite recommendations and public health efforts to promote safe sleeping unsafe practices have continued. Further efforts and new ways of communication are necessary to achieve a safer sleeping environment for all infants.

Keywords: Information campaign, risk predictors, safe sleeping environment

Abstracts of Oral Presentations

O-033

The Effect of Social Network Types and Social Norms on Infant Sleep Practices

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BACKGROUND: Social network types have been associated with health outcomes in older adults, but they have not been classified in pediatrics. Individuals' social networks influence descriptive (perceptions of "normal") and injunctive norms (perceptions of "acceptable" behavior); one is more likely to behave in a fashion perceived as normal and acceptable to avoid social stigma. Social networks and norms influence parenting practices, such as breastfeeding initiation and continuation, and vaccinating children, but little is known on their effects on infant sleep practices. **OBJECTIVE:** To characterize the common social network types for new mothers and to analyze the impact of social networks and social norms on safe sleep practices **METHODS:** Mothers of newborn infants completed surveys about their social networks, infant care practices, and demographics when the infants were <3 months and >3 months of age. We assessed structural features of mothers' social networks by asking about network members, frequency of contact, and interconnectedness of network members to each other. We assessed characteristics of network members (e.g., relationship type, gender, age, race/ethnicity, parenthood status) that may affect their level of influence. Latent Class Analysis (LCA), binary analysis, path analysis, logistic regression were performed. **RESULTS:** 345 mothers were enrolled; 72% were African-American. Mothers had a mean age of 28.9 years and 44% were college graduates. LCA identified 3 social network types: 1) Expansive: Large, weak (shorter duration) ties, sparse, young, non-familial. 2) Exclusive: Small, strong (longer duration) ties, dense, young, mixed with respect to kin/non-kin. 3) Extended: Large, sparse, older, kin-based. Social norms within individuals' networks were highly predictive of parental practice. When infants were <3 months of age, mothers for whom the social norm was to not place infants supine were less likely to do so ($p < 0.01$), regardless of covariates. Mothers for whom the social norm was bedsharing were more likely to bedshare ($p < 0.01$). First-time mothers were more likely to bedshare independent of the norm ($p = 0.03$); however, older mothers, despite the norm of bedsharing, were less likely to bedshare ($p = 0.03$). Mothers for whom the social norm was to use soft bedding were more likely to use soft bedding ($p < 0.01$). In particular, African-American mothers ($p < 0.01$) and first-time mothers ($p = 0.04$) were more likely to adhere to the social norm and use soft bedding. **CONCLUSIONS:** There are different types of social networks for new mothers. Social norms within networks are strong influences on safe sleep practices. The type of network a mother has will likely impact the effect of these norms on mothers. Since social networks may influence behaviors; any efforts to modify behavior should consider the potential impact of the social network and potential to alter the social norm.

Keywords: Social Norms, Social Networks, SIDS prevention, Infant Sleep Practices

Abstracts of Oral Presentations

O-034

Evaluation of the Pūpi-Pod® Program through the lens of Australian Indigenous ethical principles

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Background

Australian Indigenous infants are 3-4 times more likely to die suddenly and unexpectedly than non-Indigenous babies. Strengths-based approaches that capitalise on protective factors inherent to Aboriginal and Torres Strait Islander culture, including extended kinship ties and community commitment, and prioritise direct involvement by Indigenous peoples, have demonstrated greater success in uptake of health promotion messages.

Objectives

To evaluate an innovative health promotion strategy (the Pūpi-Pod® Program) to reduce infant mortality within Australian Indigenous communities in Queensland against ten ethical principles for conduct of research with Aboriginal and Torres Strait Islander populations that support a strengths-based approach.

Methods

The Queensland Pūpi-Pod® Program, shared by NZ Change for our Children, comprised a portable sleep space, safe sleep education and safety briefing; and family sharing of safety messages within social networks. The Program was delivered to families with identified SUDI risks through local services (n=13) across Queensland's metropolitan, regional and rural/remote areas by local maternal and child health staff known to families. Staff completed Program training to become community Safe Sleep Champions. Pūpi-Pod® Program resources and system processes were tailored to meet cultural and community needs in consultation with partners and with ethical approvals. Ethical principles for best practice in Indigenous communities (Gwynn et al. 2015) were used to inform Program implementation and evaluation.

Results

All participating service sites (n=13) self-selected into the study. Specific strategies were developed in collaboration with service participants to uphold ethical principles of self-determination, mutually respectful partnerships, capacity building (of services, workforce and families), flexibility, respect for communities pre-existing experience of research, recognising diversity, timelines, Indigenous turnover, supporting community ownership, and systems that facilitate partnership management in multicentre studies. Most successful implementation of the Pūpi-Pod® Program has occurred within service sites that had culturally appropriate maternal and child health care provision into which the Program was embedded by local Indigenous health care providers. Flexibility, negotiation of community needs through transparent communication, and local adaptation to promote Program ownership were key to successful integration.

Conclusions

When examining evidence-based health promotion initiatives aimed at addressing identified areas of need, it is important to consider the manner in which initiatives can be delivered in locally relevant and culturally competent ways. Imperative to the process is Indigenous consultation, collaboration and workforce capacity development, which supports community investment and sustainable models of care. Successful partnerships will reduce infant mortality.

Keywords: Aboriginal and Torres Strait Islander peoples, ethical principles, partnership, cultural value, capacity building, Indigenous

Abstracts of Oral Presentations

O-035

Qualitative Evaluation of Embedding Safe Sleep in Prenatal Education

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BACKGROUND: In Kansas, sleep-related death is a key driver of infant mortality and many bereaved mothers do not recall receiving safe sleep information. Baby Talk is a community-based prenatal education program in which high-risk expectant mothers learn about having a healthy pregnancy, postpartum wellbeing, labor and delivery, and infant care. Mothers who attend ≥ 4 of the six 2-hour classes are considered graduates. Baby Talk partnered with the Kansas Infant Death and SIDS Network to embed a 20-minute presentation, 10-minute video and interactive demonstration on the American Academy of Pediatrics Safe Sleep Guidelines. **OBJECTIVE:** Secondary analysis of qualitative data to assess Baby Talk graduates' perceptions of the safe sleep content.

METHODS: Graduates were contacted 4 weeks after their delivery date to participate in a structured interview regarding the impact of Baby Talk on knowledge and communication with their doctors. Interviews were recorded. Transcripts were reviewed for themes related to sleep, SIDS, bed or crib use. The project was approved by the university IRB. **FINDINGS:** Of the 48 women called, 23 completed the interview (48%). Half (52%) were primiparous. Many (61%) described learning important safe sleep information. One stated, "My first session it was about the ABCs of sleeping which is something I didn't know about, and so, I felt like it was teaching me a lot." Several appreciated the interactive nature of the crib activity. Another said, "It's the SIDS session when they had the playpen and they had a whole bunch of stuff...and you got to pick stuff...out of the crib that wasn't supposed to be there. And they made some of 'em kinda tricky...to where you would think it was okay but it wasn't. So that kinda opened up everybody's mind." Of the mothers who talked about safe sleep explicitly (n=14), half reported changing behaviors based on what they learned. Modifications included not bed sharing, removing soft bedding, and back positioning. One stated, "...before I attended Baby Talk, his crib had blankets and bumpers and you know all that stuff so I just took it out." While another said, "Before, I used to co-sleep with all my kids. Now, my most recent one has his own sleeping environment." **CONCLUSIONS:** Postpartum mothers reported safe sleep as an important component of their prenatal education. Many reported behavior changes based on their learning. Findings are limited as no specific questions were asked about safe sleep.

Keywords: Safe Sleep Promotion, Health Education, Qualitative Methods;

Abstracts of Oral Presentations

O-036

Preliminary Results from a Survey of US Parents' Perceptions of a Baby Box

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BACKGROUND: Distribution of baby boxes as a sleep environment for infants has been implemented in Finland since the 1930's as part of a comprehensive effort to reduce infant mortality. In the United States, many states have begun distributing baby sleep boxes as a strategy to promote safe infant sleep and reduce the number of sleep-related infant deaths. However, limited research exists on perceptions and usage of baby boxes by US parents. In the state of Wisconsin, hospitals and community agencies recently began distributing baby boxes statewide. **OBJECTIVE:** To examine the perception of baby boxes in primary newborn caregivers and determine if they use the product as intended.

METHODS: Data are being collected via an online survey. Recruitment began in early 2018 via flyers included with baby boxes and posted by distributing agencies. Preliminary **RESULTS:** We anticipate up to 200 respondents. As of this date, 15 respondents have completed the survey. Preliminary results indicate that all respondents were a biological parent; 40% identified as African American, 47% as White, and 33% as Hispanic. Respondents received boxes from a community agency (27%), hospital (27%), social service/home visiting agency (13%), or health department (7%), as a gift (20%), or purchased the box (7%). Respondents used the baby box for infant sleep during the day (67%), at night (47%), to play or for "tummy time" (33%), and for storage (27%). Most reported their infant always (47%) or often (27%) slept in the box; 2 (13%) never used the box for sleep. Of those who used the box, 85% placed it on the floor, 15% on a couch, and one placed it on a table or counter. For those who used the box, when asked where baby would have slept, 92% would have used a crib, bassinet, or pack n' play and one would have bed-shared. The majority of comments were positive, including the portability of the box which allowed them to keep baby near them, that baby seemed comfortable, and that gifts came with the box. When asked what they liked least, some reported the size of the box was awkward to carry, that it doesn't break down into a more manageable size for transport, and that baby outgrew it too quickly. No safety concerns were noted. Fourteen respondents completed additional questions regarding infant sleep practices: 86% placed infant on back only to sleep and 71% reported no other items in box with infant. When asked about all places infants had slept in the past week, 64% reported only recommended infant surfaces, 29% reported a combination of safe and unsafe locations (such as couch, adult bed, or sitting device), and 1 reported only bed-sharing. Updated results will be presented at the conference in June. **CONCLUSIONS:** While this survey is early in the data collection stage, the majority of respondents to date report a positive perception of the baby box and report using it as intended, however, not all are following safe sleep recommendations.

Keywords: Baby box; SIDS; safe sleep

Abstracts of Oral Presentations

O-037

Baby boxes may not prevent sleep-related infant death: A collective case study of socially vulnerable families

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Sleep-related infant death is the largest category of post-neonatal death. Inconsistent definitions of sleep-related infant death are troublesome. Since implementation of the 'Back to Sleep' campaign in 1993, Canadian rates of sudden infant death syndrome (SIDS) decreased by 50%. In Canada, three infants die of SIDS every week. Widening socio-economic disparities are associated with preventable post-neonatal infant death. Parents may adopt unsafe sleep practices because of knowledge gaps or skepticism about information provided by health care providers, or they may lack space or money to provide a separate infant sleep surface. Individual educational approaches may be insufficient for vulnerable populations, and public health interventions must consider social, cultural and structural contexts in which unsafe infant sleep behaviours occur. In some jurisdictions, 'baby boxes' (i.e., bassinet-sized cardboard box with a mattress) are distributed as a safe infant surface. Indeed, some social entrepreneurs market baby boxes as a product to reduce infant mortality. However, these entrepreneurs fail to consider the health and social systems, which also contributed to reductions in infant mortality. In Alberta, Canada, we conducted two pilot studies evaluating a multiple intervention (Welcome to Parenthood) consisting of neuroscience-based parenting education, mentorship and baby boxes as an engagement tool. The pilot studies included ~550 mother-mentor dyads from the general population, and 68 mother-mentor dyads from a socially vulnerable population. Mentors were specially trained female adults from the families' own social network. All mothers, fathers and mentors received brief, neuroscience-based parenting education with focused information about safe infant sleep. With a specially trained facilitator, parents 'built' the box and reviewed the purpose of evidence-based items, such as a thermometer, sleep sac, nappies, and board book. Of the 550 mothers in the general population, all infants survived to age 6 months (end of the study); of the 68 mothers in the socially vulnerable population, two infants died while sleeping on the chest of an adult. These two deaths occurred despite having specific education about safe infant sleep and a baby box at home. Using data collected for the study, we reviewed the characteristics of the two families that suffered an infant death and describe patterns that may suggest targets for interventions to prevent sleep-related deaths in infants with high social vulnerability. Mothers and fathers in both families had high school education or greater. One family was Canadian-born, the other immigrated to Canada more than 10 years ago. With a total household income of less than the Canadian low-income cut-off, both fathers were employed full-time; both mothers received a disability allowance. Both mothers scored below the clinical cut-off on depressive symptoms; both mothers did not feel loved during their own childhood.

Keywords: Sleep-related infant death, infant, public health, baby boxes, parent education, mentorship

Abstracts of Oral Presentations

O-038

Attitudes and experiences of U.S. home visitors on the distribution and use of baby boxes

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BACKGROUND: Baby boxes have been distributed as part of Finland's Maternity Grants Act since the 1930s. In recent years, there has been increasing interest in the U.S. in the evaluation and use of baby boxes as an alternative sleep surface for infants. In 2016, Children's Hospital of Wisconsin (CHW) implemented a Newborn Nest (baby box) home visiting distribution program to provide a baby box to families who are pregnant or have a newborn < 3 months. Home visitors are trained to provide a consistent message to the families on infant safe sleep and the use of the baby box. Home visitors follow up with the families using a standard evaluation form at 2 weeks and 2 months after the placement of the baby box to determine its use in the home. **OBJECTIVE:** To examine perspectives of home visitors and their supervisors regarding implementation of the CHW Newborn Nest program with the goal of identifying improvement opportunities within the evaluation and training processes.

METHODS: Three focus groups (14 supervisors, 10 home visitors) were conducted with supervisors and home visitors exploring four categories of experiences: 1) introducing, teaching about, and observing baby box use, 2) discussing safe sleep with the baby box, 3) using the current follow-up tools and processes, and 4) receiving training on the baby box. Focus groups were recorded and transcribed, and data were coded using Dedoose software to identify themes. **RESULTS:** Staff identified several barriers and facilitators to discussion about the baby box. Most commonly, 22% (n=6) of respondents referenced difficulty having conversations with family members other than parents, and 22% (n=6) of respondents referenced inadequate training on the assembly of the baby box. The most commonly-cited facilitator (n=10) for introducing the baby box to families was during a conversation on safe sleep. Staff referenced a pre-existing trusting relationship with the family, perceived convenience, and visual appeal of the baby box were part of positive discussions about baby boxes with families. While 33% (n=13) of the responses referenced receipt of training on infant safe sleep, 17% (n=7) referenced uncertainty or minimal training on the distribution of the baby boxes. Supervisors reported receiving more training on safe sleep, distribution of baby boxes, and talking points than reported by home visitors. **CONCLUSIONS:** To increase effectiveness of the baby box program, staff could be better prepared for these conversations, including product assembly and usage instructions and tips for addressing concerns and establishing a trusting relationship prior to introducing the baby box.

Keywords: home visitors, supervisors, safe sleep, baby box

Abstracts of Oral Presentations

O-039

Pēpi-pods™ (plastic bassinet-sized containers) for a safe infant sleep? Overnight video, maternal questionnaire and physiological evaluation of Pēpi-pods™ as a sleep device for babies at increased risk of sudden unexpected death in infancy

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BACKGROUND: In New Zealand Māori babies continue to be over-represented in SUDI deaths. Alternatives to bedsharing, particularly where mothers smoked in pregnancy have been proposed: the wahakura (flax bassinet) developed by Māori as well as the Pēpi-pod™ (plastic bassinet-sized container with a fitted mattress). The Pēpi-pod™ has been provided by some District Health Boards (DHBs) since 2006 and both devices are now being incorporated as part of a National Safe Sleep campaign. **OBJECTIVES:** To identify potential risks and benefits of sleeping infants in a Pēpi-Pod™, distributed to families with high risk of sudden unexpected death in infancy, compared to a bassinet. **METHODS:** Forty five mostly Māori mothers identified through a DHB Safe Sleep Action Project to receive a Pēpi-Pod™ were recruited by a local Māori research nurse. Questionnaires were administered at baseline, 1 and 3 months and at 1 month an overnight sleep study including infra-red video, oximetry and temperature was completed. Bassinet sleeping infants recruited from a similar demographic for a study of sleep in a bassinet or wahakura served as historical controls. **RESULTS:** Participants were mainly Māori (88%), 67% from the most deprived quintile in the NZ Deprivation index, and 67% smoked daily during pregnancy. Mean maternal age was 27 years and 18% had more than 3 children. There was no significant difference between Pēpi-pod™ infants and historical bassinet controls for these characteristics. At 1 month 49% allocated a Pēpi-pod™ slept in the Pēpi-pod™, reducing to 25% at 3 months. The main alternative was the bassinet with some infants sleeping in mother's bed (5% 1mth, 14% 3mth). Infants mainly slept on their back and 46% reported full breastfeeding at 1 month and 30% at 3 months. Intention to treat analysis of questionnaires showed no increase in direct bedsharing but significantly less sharing of the maternal bedroom and mothers reported poorer maternal sleep quality at 1 month. "As-used" analysis of behaviours from overnight video found no increase in direct bedsharing, head covering or prone/side sleep position. Physiological measures showed no significant difference in oxygen saturation or time in the thermal comfort zone, although heart rate was higher in the Pēpi-pod™ group and these infants were in warmer rooms. **CONCLUSION:** While the Pēpi-pod™ provided a separate sleep space, several risk behaviours were identified. Most differences between infants in a Pēpi-Pod™ compared to a bassinet were small with confidence intervals excluding meaningful differences. We noted poorer maternal sleep quality at 1 month and higher infant heart rates in the Pēpi-Pod™ group which may be related to the higher room temperatures. The Pēpi-Pod™ appears physiologically safe and could be promoted for vulnerable infants, as an alternative to bedsharing. Further research is needed to understand how to reduce behaviours such as head covering and prone or lateral sleep where-ever infants sleep.

Keywords: bed-sharing, indigenous, physiology, sudden infant death syndrome, temperature

Abstracts of Oral Presentations

O-040

It's Just a Box: Pregnant Women's Perceptions of Boxes for Infant Sleep

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BACKGROUND: Several states in the US have programs providing cardboard boxes for infant sleep. The idea comes from Finland, where boxes have been used since the 1930's. Finland's infant mortality rate is less than half that of the US and it is theorized that infant sleep boxes could reduce infant mortality in the US. Infant sleep experts express concern regarding the dearth of safety and efficacy research on the boxes. However, the perceptions of infant caregivers have not been assessed. **OBJECTIVE:** The purpose of this study was to assess perceptions of pregnant women regarding use of baby sleep boxes.

METHODS: A convenience sample of pregnant women was recruited from a community-based prenatal education program. Women were administered a brief semi-structured interview about their past knowledge of infant sleep boxes, opinions about the boxes (likes and concerns) and what questions they would have about the use of such boxes. Demographics were also collected. **FINDINGS:** Twenty-eight semi-structured interviews were conducted on the participant's perceptions of the use of baby sleep boxes. For most (54%) this was their first pregnancy. The median length of pregnancy was 29 weeks. Participants self-identified as White (43%), Black (36%), Hispanic (18%) and "other" (4%). Most participants (68%) were publicly insured. Ten subthemes emerged. Of the 36% with previous knowledge of infant sleep boxes, comments related to two themes: boxes being useful for families in need and the historical precedent in other countries. Following a brief description of the boxes, participants identified four positive themes: the box was perceived as portable, compact, affordable, and decorative. Four negative themes were also identified: the box was perceived as low to the ground, having questionable structural integrity/design, lacking stability, and resulting in stigma. Half of participants were willing to consider the box for infant sleep, with 32% specifying naptime only, 11% nighttime only, and 7% both naptime and nighttime. An additional 7% would consider using it only when traveling. Most stated they would put the box in the bedroom: on the floor, on a stand or table, or in the adult bed. Others stated they would move it from room to room. **CONCLUSIONS:** Expectant mothers had varying levels of knowledge of and interest in baby sleep boxes. Research on safety and efficacy could reduce many concerns, but issues of stigma may persist.

Keywords: Safe Sleep, Qualitative Methods, Structured interviews

Abstracts of Oral Presentations

O-041

Role Modelling Safe Sleep Practices through Doll Play - “Face Up, Face Clear, Safe Place”

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BACKGROUND: I attended a wahakura (traditional Maori woven flax infant basket) workshop and observed two pre-schoolers playing with a doll. This ‘play’ included putting ‘baby’ down to sleep in a pram. They did this with much care and attention, then covered ‘baby’ completely with the blankets. With my Public Health Nursing work in Early Childhood Centres (ECC) and my role in Child, Youth Mortality review, this was a moment of inspiration. This everyday play could be shaped to educate preschoolers about safe sleep messages, these messages would then become part of their normal doll-play. Future generations would be brought up with safe sleep practices as their normal behaviour, knowing these are the right things to do in the same manner as knowing to put on a car seatbelt or look both ways when crossing the road.

OBJECTIVES:

- To reduce the incidence of Sudden Unexplained Death in Infancy (SUDI) – presently in New Zealand around 40 infants die each year from SUDI (0.92 per 1000 births).
- To educate early childhood teachers about safe sleep practices and for them to role-model these messages in doll-play.
- Future generations know infant sleep best practice from preschool days thus building the foundation of safe sleep behaviour for the overall population and normalising best practice in homes, initially as children and then as parents/adults.

METHODS: Discussion with 10 Early Childhood facilities to ascertain their present doll-play and safe sleep activities and whether this would be possible. No area practiced this and all supported the idea which would easily fit into preschool life. Discussion with tertiary training provider, they believed role modelling safe sleep practices in preschools fitted well within the ECC curriculum. Entered Southern District Health Board (SDHB) Innovation Challenge to develop an educational video for preschool teachers highlighting SUDI death rates, risk factors, preventive measures, impact on families, the fit with the ECC curriculum and pre-schoolers behaviour before and after role-modelling in doll-play.

RESULTS: The project won the Innovation Challenge enabling creation of the video. It was completed in July 2017 and is being promoted to ECC’s and other infant wellbeing services, agencies and organisations in NZ. 10 days after filming a 3 year old boy who had been part of the video production told me with conviction that “Baby sleeps on his back!”. This was an emotional moment for the centre manager and myself.

CONCLUSIONS: That role-modelling safe sleep practices through Doll-play in ECC’s will bring about positive behaviour change in future generations. This will fit in a global and multi-cultural setting.

Funding source: SDHB Innovation Challenge winner 2015.

Keywords: pre-schoolers, safe-sleep messages, Early Childhood, role-modelling, video

Abstracts of Oral Presentations

O-042

Are children in the care of foster parents dying suddenly and unexpectedly when exposed to unsafe sleep circumstances?

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Introduction. Children are taken into the care of the government for a variety of reasons and always with the intention of protecting the child. Infants taken into care are usually placed with foster parents. Some of these children die. We know that many parents do not follow safe sleep recommendations. We assume that foster parents are instructed and supervised in such a way that infants are offered the highest standard of care. We examined this assumption by comparing the circumstances at death of 2 groups of infants who died suddenly and unexpectedly, those in foster care (FC) and those not in foster care (NFC)..
METHOD: All sudden unexpected deaths in infants in Alberta are reported to the Office of the Chief Medical Examiner (OCME) for a standard investigation, including examination of medical and social records, the scene of the death and a full autopsy are performed. We extracted information from these records and compared information on children dying in foster care (FC) with the larger number who did not die in foster care (NFC). We used standard statistical tests such as Chi Square Test of Independence and t-test.
Results

From 1977 to 2013, 1955 deaths notified to the OCME fit the criteria of a standard definition of SIDS. Of these there were 70 (3.6%) FC and 1885 NFC. In the 70 FC 31 (46.3%) are aboriginal (P=0.000). The mean age in weeks at time of death differ slightly but was not statistically significant, 16.02 weeks FC and 14.19 weeks NFC. In terms of where the infant was found dead, crib 48.4% FC and 47.2% NFC; adult bed 33.9% FC and 38.8% NFC; couch 3.2% FC and 3.3% NFC; makeshift bed 1.6% FC and 2.4% NFC; car seat 4.8% FC and 1.3% NFC. None of the differences where the infant was found were statistically significant except for the car seat (P=0.021). In terms of position the infant was found, not supine 63.2% FC and 68.7% NFC, not statistically significant. We also looked at position found in three-time periods, 1977-91, 1992-99, 2000-2013 and no significant difference between the two groups in the proportion found not supine. 13 FC died while sharing a sleeping surface with an adult.

Conclusion. Children dying in FC do so in similar circumstances to NFC children. This means that children in care - already very vulnerable - may not always be offered standard recommended care. If true, this implies a failure of training and supervision on the part of child welfare authorities.

Keywords: child death prevention, recommendation effectiveness, sudden unexplained death in infants in the foster system.

Abstracts of Oral Presentations

O-043

Sleep safety in day care centers: An awareness campaign in Belgium (Flemish Community) using virtual reality as an educational tool

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The relative number of sleep-related deaths amongst infants is higher in day care centers than at home. On average, every month a child dies while sleeping in a day care center. Over the years Kind en Gezin (Child and Family), a governmental agency in Flanders, places great emphasis on efforts to increase day care providers' awareness and knowledge about the importance of a safe sleeping situation. In 2017 we launched a campaign on sleep safety, as an offshoot of the overall campaign on risk analysis in day care. To begin, we introduced the risk analysis in day care as a new approach to look at child safety, in 2014. Every day care provider makes his own risk analyses, together with his staff, considering all risks that occur in his setting, taking the number of children and their age in account. We developed an instrument that consists of a set of questions. There is a specific questionnaire about sleep safety. To make child care providers aware of the necessity and the benefits of a risk analyses we launch the prevention campaign "More Dino, less risk". The main character of the campaign is a dinosaur toy figure, which is shown in the different tools. We embrace Virtual Reality as an educational tool. By watching the movie "Shrink for safety", one shrinks to the size of a toddler and experiences a day in child care. We organized workshops and the movie is disposable for download: www.kindengezin.be/weerkind. We would be honored to show this movie in your conference. This case movie shows inside to the tool: <https://vimeo.com/201286532>. The following year we focus on sleep safety as part of the general risk analyses. We developed a range of tools to disseminate the preventative message. We developed an e-learning module. It is designed as an interactive, easily-accessible training tool, using images and videos. Using this online application on <https://www.kindengezinacademie.be>, day care providers are informed and trained about the importance of creating a safe sleeping environment. To announce this e-learning module, we wrote a colorful bedtime story, "Dino's dream". Once again the sleep safety measures are brought to the attention of the reader. Following our input over the past few years, we notice that day care providers are paying significantly greater attention to safe sleep. We are also aware that we are, in many cases, preaching to the converted. Therefore, we have made several rules compulsory for those day care providers who remain skeptical or indifferent.

Keywords: risk analysis, e-learning, virtual reality

Abstracts of Oral Presentations

O-044

Infant care practices employed by Queensland caregivers: are safe sleeping messages being translated into practice?

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INTRODUCTION: Since Australia's first national safe sleeping campaign in 1991, Queensland's rate of sudden unexpected death in infancy (SUDI) has remained higher than the national average. While the safe sleep recommendations continue to be revised and disseminated, concordance between public health campaign messages and uptake into contemporary practice remains unknown. **OBJECTIVE:** To measure the prevalence of contemporary infant care practices employed by Queensland caregivers to assess the translation of current public health messages into practice. **METHODS:** A cross-sectional survey of Queensland caregivers with infants approximately 3-months old was conducted (n=10,200). The sample population was identified using the Queensland Registry of Births, Deaths and Marriages Birth Notifications Register. Caregivers were mailed a questionnaire, together with online access, to explore infant care practices adopted and the awareness of safe sleep recommendations.

RESULTS: The survey response rate was 30%. Findings of 933 participants who responded via online survey are described here. Approximately 3000 completed surveys have been received; paper survey data currently being entered. Of families, 4% identified as Aboriginal and/or Torres Strait Islander. Most caregivers reported receiving safe sleeping advice; nurses or midwives were primary sources. Nearly 30% of caregivers indicated difficulty employing one or more recommendations. Placing baby on back to sleep and not sharing a sleep surface were most commonly reported practices by caregivers as difficult to employ. When asked to select the Safe Sleep messages, 76% could identify the six recommendations. Routinely, 17% of infants were placed in non-supine sleep positions. If sleeping in a cot, 68% were placed feet-to-foot; while some babies routinely slept with a pillow (11%) and soft toys (12%). Smoke-free households were self-reported in 81% of families. While 76% of babies room-shared with another person, 8% of these were with siblings. Most common infant sleep spaces were reported to be cots (39%,33%) and bassinets (41%,26%) in the day and night respectively; 19% bedshared most (4-6 nights/week) or every night; with 30% of parents reporting sofa sharing with baby had occurred at some time while sleeping. While 78% of babies were exclusively fed breastmilk at hospital discharge, this was reported to be 61% at 3 months. Parent knowledge deficits were identified relating to sleep position for babies with reflux (55% would tilt sleep surface), and safety precautions in use of slings and teething necklaces. **CONCLUSIONS:** Results indicate despite receiving safe sleeping advice some caregivers still adopt suboptimal infant care practices, known to increase SUDI risk. Innovative, culturally acceptable and practical strategies are needed to effectively disseminate the current safe sleep messages while assisting parents to translate the safe sleep advice into safe infant care.

Keywords: Infant care, Safe sleeping recommendations

Abstracts of Oral Presentations

O-045

Failures in the Emergency Obstetric and Neonatal Care Referral Chain and High Rates of Intrapartum Stillbirth in Southwestern Uganda

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BACKGROUND: Comprehensive Emergency Obstetric and Neonatal Care (CEmONC) services are an essential component of maternal and child health care. When failures or inadequacies exist in CEmONC systems, poor outcomes such as high rates of maternal mortality and intrapartum stillbirth tend to persist. Currently, an alarmingly high number of stillbirths, 40,000 per year, occur in The Republic of Uganda. The multi-donor Saving Mothers Giving Life initiative (SMGL) has implemented a surveillance system known as Birth Weight and Age-at-death Boxes for Intervention and Evaluation System (BABIES) in several Ugandan districts. Here the problem of intrapartum stillbirth in the greater Kibaale region (formerly Kibaale District) of Uganda is assessed using the BABIES methodology.

METHODS: Trends in birthweight proportionate and birthweight specific mortality were examined over the years 2012-2015 at all CEmONC capable facilities in Kibaale. Case-specific review of all intrapartum stillbirth cases at two facilities was conducted and key-informant interviews were conducted with staff at these locations.

FINDINGS: The largest proportion of fetal deaths in CEmONC capable facilities occurred during the intrapartum period. Observed birthweight specific intrapartum stillbirth rates of for infants weighing greater than 2500grams during 2012-2015 were 25.7, 23.4, 21.2, 20.9 per thousand respectively. Kagadi Hospital (the district referral center), and St. Ambrose Charity Health Centre were identified as contributing the most drastically to these high rates with facility specific rates of 22.2 per thousand and 74.2 per thousand in 2015. Systematic review of records for individual intrapartum stillbirth cases at both facilities in 2015 revealed major issues with the CEmONC referral chain. 62.5% of intrapartum stillbirth cases at St. Ambrose Health Centre were referrals from Kagadi Hospital, and 86.7% of the time the patient was admitted with an undetectable fetal heart rate. Major human resource strains and poor intrapartum monitoring at Kagadi Hospital were identified as reasoning for referrals to the lower level private facility and poor outcomes at the district referral hospital.

Interpretation: These findings suggested a need for a major restructuring of the CEmONC referral chain in the greater Kibaale region of Uganda, as well as programs to increase quality of care during delivery.

Keywords: Stillbirth, Fresh Stillbirth, Intrapartum Stillbirth, CEmONC services

Abstracts of Oral Presentations

O-046

Why Are Babies Dying in the First Month after Birth? A Study of Neonatal Mortality in Jordan 2016

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Department moh

INTRODUCTION: Globally 2.6 million children died in the first month of life—approximately 7 000 newborn deaths every day with about 1 million dying on the first day and close to 1 million dying within the next 6 days. Children who die within the first 28 days of birth suffer from conditions and diseases associated with lack of quality care at birth or skilled care and treatment immediately after birth. The vast majority of newborn deaths take place in developing countries where access to health care is low. Most of these newborns die at home, without skilled care that could greatly increase their chances for survival.

Object: To determine neonatal mortality rate, and its associated factors we conduct this study as a basis for the following surveys.

METHOD: all neonatal mortality occurred in Jordan in 1/1/2016-1/1/2017, were considered in this cross sectional study. Data had been recorded in details containing demographic part, and medical records.

RESULT: Recorded neonatal mortality rate in this period was 11.81*1000. Total deaths was 853(53.1% was male and 45.1% are female and 1.2% unknown)of them 677 are die during the first week (early neonatal deaths) and 153(17.9%) die after the first week (late neonatal deaths).539(63.2%) out of 853deaths were weighted less than 2500 grams and 167(19.6%) was normal and 6(0.7)was macrosomia and 141(16.5%)was missing. According education our study shows their parents are 8.4% was middle school and 3% are bachelor and 0.6 are ph.D. about their gestational age 67.9% are preterm and 16.6 was term and 15.5% was missing. The most recorded reasons of neonatal mortality (63.3%) were related to respiratory and cardiovascular disorders specific to the prenatal period, while (8.5%) had congenital malformations of the circulatory system and other congenital malformations was 6.2% while others causes was 22.0%. Most of mothers (96.1%) gave birth in hospital and 99.7% were under supervision of a gynecologist or a midwife. Mean age of mothers were 27.6636.17 years.

CONCLUSION: Despite good access to professional care, we found a high neonatal mortality rate, often due to preventable conditions. These results suggest that to decrease neonatal mortality rate, preventing prematurity is essential.

Keywords: cross sectional, Neonatal Mortality, Jordan 2016

Abstracts of Oral Presentations

O-047

Variations in stillbirth and early neonatal mortality associated with different polluting fuel types in Bangladesh

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Background

Perinatal mortality (stillbirth and early neonatal mortality) is high in Bangladesh at 44 per 1000 pregnancies per year. It is even higher in rural areas, where ~95% households rely on polluting fuels for cooking. Although household air pollution from cooking fuels has been linked with the adverse perinatal outcomes, the association is not been properly investigated.

Objective

To examine the association between household air pollution from use of polluting cooking fuels and perinatal mortality in Bangladesh.

Methods

We analysed the data from the Bangladesh Demographic and Health Surveys (BDHS), 2004, 2007, 2011 and 2014. The two outcome variables were stillbirth and early neonatal mortality. The exposure variable was type of cooking fuel (clean vs. polluting). Bivariate and multivariable analyses were conducted to obtain the crude and adjusted odds ratio (aOR) respectively. The association was adjusted for potential confounders. We also estimated the combined effect of kitchen location and polluting fuels for each of outcomes.

Results

We found a total of 767 stillbirths and 706 early neonatal deaths in the analysis. In the adjusted model the effect of polluting fuel was significant for early neonatal mortality (aOR: 1.46, 95% CI: 1.01, 2.10), but not for stillbirth (aOR: 1.25, 95% CI: 0.85, 1.84). Cooking with agricultural crop waste was significant for stillbirth (aOR: 1.76, 95% CI: 1.10, 2.80), and for early neonatal mortality (aOR: 1.78, 95% CI: 1.13, 2.80) which was also associated with wood as the main fuel (aOR: 1.52, 95% CI: 1.04, 2.21). The combined effect of indoor kitchen and polluting fuel use was significant for stillbirth (aOR: 4.12, 95% CI: 1.49, 11.41).

Conclusion

Cooking with polluting fuels is associated with perinatal mortality. The combined association of polluting cooking fuel and indoor kitchen location was significant for stillbirth. This effect, and the effect of different fuel types need further investigation. Although this is a large sample, there are some limitations with the BDHS data in both recording the exposure and the outcomes. A large prospective trial is needed to determine the precise effect size.

Keywords: Stillbirth, early neonatal mortality, perinatal mortality, Bangladesh, cooking fuel, household air pollution

Abstracts of Oral Presentations

O-048

Survival of Very low birth weight neonates for age 0-7 days among deliveries in St. Paul's Hospital millennium medical college, Addis Ababa, Ethiopia, one year cross sectional study

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BACKGROUND

Very low birth weight babies are neonate with birth weight of 1000-1499gm, which accounts about 4-7% of all live births. These neonates are known to have a high morbidity and mortality. Although there are extensive reports about their survival, less is known from developing countries.

OBJECTIVE

The main objective of the study was to determine early neonatal survival of Very low birth weight neonates, and to determine the prognostic indicators for survival.

METHODOLOGY

Hospital based cross sectional analytic study was used. Neonates with very low birth weight who delivered from January 1st to December 31st, 2016 who fulfill the inclusion criteria were consecutively included. Newborns were followed for the first 7 days of life, or time of discharge or time of death, whichever ever comes first was considered as the last time of data collection. Statistical analysis was carried out using SPSS version 20. Mean, 95% CI, and two tailed p-value were calculated.

RESULT AND CONCLUSIONS

Very low birth weight neonates account for 2.7% of all deliveries. A total of 161 neonates were recruited for the study. Early neonatal survival was found to be 77%. Gestational age, birth weight, and APGAR score were found to be associated with neonatal survival. However, maternal obstetrics complications, antenatal use of Corticosteroids, or management in neonatal ICU was not found to be associated with neonatal outcome.

Keywords: Very low birth weight neonates, preterm

Abstracts of Oral Presentations

O-050

Risk Factors for Antepartum and Intrapartum Stillbirth: An exploration using Western Australian linked data, 2005-2015

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BACKGROUND: There continue to be unacceptably high numbers of avoidable stillbirths in Australia and other high income countries. Although the extant literature is limited, some previous research found differences in the risk factor profiles of antepartum and intrapartum stillbirth. **OBJECTIVES:** The purpose of this study was to further investigate this issue and assess the labour/birth risk factors associated with intrapartum stillbirth, using the broad range of variables that are available using the Western Australian Data Linkage System. **METHODS:** In this population-based cohort study of Western Australian singleton births, we analysed de-identified linked data from core health datasets. Stillbirth was defined as a birth of a baby showing no signs of life, of at least 20 weeks gestation. Data on intrapartum stillbirths were available from 2005 to 2015 while data on antepartum stillbirths were available from 2011 to 2015. Logistic regression was used to calculate the odds (OR) of antepartum and intrapartum stillbirth associated with each risk factor. Adjustment was made for risk factors that had statistically significant bivariate associations at the 5% level. **RESULTS:** For the 2005-2015 period, after medical terminations and cases with birth defects were excluded, complete sets of data were available for a total of 293,430 singleton births with a gestational age of 20 weeks or more. There were 414 antepartum and 180 intrapartum stillbirths. Adjusted analyses indicated that a number of potential markers of placental insufficiency/dysfunction were shared risk factors for both antepartum and intrapartum stillbirth. For example, extreme fetal growth restriction (less than the third percentile) was a significant risk factor for both antepartum (OR=15.1, 95% CI=11.9,19.0) and intrapartum (OR=14.4, 95% CI=9.4,22.1) stillbirth. Similarly, antepartum haemorrhage - placental abruption was a significant risk factor for both antepartum (OR=45.5, 95% CI=28.8,71.9) and intrapartum (OR=18.8, 95% CI=8.0,44.0) stillbirth. In contrast to the findings of some previous research, we did not observe any meaningful differences in the pre-labour risk factor profiles of antepartum and intrapartum stillbirth. Having an antepartum cardiotocography(s) was protective for both antepartum and intrapartum stillbirth. Labour/birth risk factors for intrapartum stillbirth included assisted vaginal breech birth (but not breech presentation) and having a non-vertex and non-breech presentation (e.g., face or brow). **CONCLUSIONS:** These findings highlight the importance of separately analysing the risk profiles for antepartum and intrapartum stillbirth to allow for the assessment of labour/birth risk factors and to guide prevention efforts.

Keywords: Stillbirth, Antepartum stillbirth, Intrapartum stillbirth

Abstracts of Oral Presentations

O-051

Maternal sleep during pregnancy and poor fetal outcomes: A scoping review of the literature with meta-analysis

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INTRODUCTION: Research demonstrates that sleep impacts maternal health during pregnancy, however, little has been published on fetal health. In this study, the available research was collected, evaluated, and presented, in order to explore what is currently known, as well as identify existing gaps to inform future research.

METHODS: This scoping review of the literature included 65 studies published before November 30, 2017. Random effects meta-analysis was conducted to produce summary odds ratios (OR) across studies, grouped by reported fetal outcomes of poor growth (SGA, LBW, FGR) and stillbirth. Studies investigated four main areas of maternal sleep: sleep disordered breathing (SDB), short sleep duration, poor sleep quality, and non-left lateral sleep position. Studies presenting adjusted (aOR), for factors including maternal age, alcohol consumption, and smoking and unadjusted OR were considered separately. Summary OR are presented with 95% Confidence Intervals (CI), and the number of estimates included (n).

RESULTS: The odds of poor fetal growth were significantly increased by the presence of subjectively (aOR=1.6, CI=1.1-2.2, n=14) and objectively (aOR=1.4, CI=1.1-1.9, n=7) measured SDB. Summary effect sizes from unadjusted estimates for the effect of SDB on fetal growth were not significant. The relationship between shorter sleep duration (< 8 hours) and growth was not significant (aOR=1.3, CI=0.9-2.0, n=7) while two studies have suggested association between longer sleep duration (9 hours) and stillbirth. Only four studies (two presenting aOR) investigated sleep quality and growth, and these studies did not support a significant relationship. Methods were variable across studies measuring growth, with a mix of case-control, cohort and cross-sectional studies, and heterogeneity (as indicated by I² statistics) was moderate to high. The odds of stillbirth were significantly increased by reporting of non-left lateral sleep position (aOR=3.1, CI=2.2-4.5, n=6). Five of the six stillbirth studies were case-control studies, and heterogeneity was low.

CONCLUSION: Existing evidence suggests that SDB may be associated with poor fetal growth and that non-left lateral (especially supine) sleeping position is associated with stillbirth. Analyses highlight the need for further studies, particularly investigating maternal sleep duration and quality, and the importance of accounting for confounding variables in analyses.

Keywords: Sleep, Fetal growth restriction (FGR), Small for gestational age (SGA), Low birth weight (LBW), Stillbirth,

Abstracts of Oral Presentations

O-052

Alerting Pregnant Women and Their Families as to the Lack of Efficacy and Danger of “Alternative Treatments” for Prevention of Group B Streptococcal (GBS) Invasive Disease in Babies

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BACKGROUND:

Using Group B Strep International’s special interest website and social media, parents of GBS-infected babies have reported health care provider recommendations or actual instances of use of “alternative” non-recommended strategies to prevent GBS neonatal disease.

OBJECTIVES:

- 1) Review available interventions regarding “alternative” health recommendations given to prevent GBS perinatal invasive disease.
- 2) Apply GRADE criteria to alternative regimes.
- 3) Consider which “alternative” recommendations should receive funding to prove possible efficacy.

METHODS:

We reviewed reports and instances of alternatively recommended strategies to prevent GBS diseases received by the special interest GBS-focused organization, Group B Strep International (GBSI).

RESULTS:

Alternative recommendations included a) various antibiotics by mouth, b) vaginal chlorhexidine or other washes or douches, c) yogurt, d) probiotics, e) blue cohosh, f) evening primrose oil, g) garlic, h) echinacea, i) vitamin C, and j) castor oil

CONCLUSIONS:

- 1) A variety of “alternative” medicine recommendations are prevalent in the US population.
- 2) The main dangers are anecdotal with non use of evidence-based regimens.
- 3) Specific alternative treatments, such as blue cohosh and castor oil, may be associated with significant adverse effects.
- 4) More research is needed to promulgate governmental health guidelines regarding the usefulness or dangers of alternative medicine treatments in regards to perinatal GBS disease prevention.

Keywords: alternative treatment, group B strep, efficacy

Abstracts of Oral Presentations

O-053

Evaluation of Stillbirth Rates following Implementation of NHS England's Saving Babies' Lives Care Bundle by Maternity Services in England

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BACKGROUND: Reducing stillbirth is a mandated objective from the UK government to NHS England. In April 2015 NHS England launched the Saving Babies' Lives (SBL) Care Bundle for maternity care providers which brings together four elements developed from existing evidence-based guidance to reduce stillbirth: 1) Reducing smoking in pregnancy, 2) Improving detection and management of fetal growth restriction (FGR), 3) Improving awareness and management of reduced fetal movements (RFM) and 4) Promoting effective fetal monitoring during labour. However, the effectiveness of SBL in reducing stillbirth has not yet been evaluated.

OBJECTIVES: To evaluate the impact of SBL on perinatal outcomes and maternity services. The objectives were to: 1) Determine current implementation levels of SBL, 2) Compare stillbirth rates before and after SBL, 3) Compare other clinical outcomes before and after SBL, 4) Assess process and outcome measures for each intervention.

METHODS: The study was conducted in 19 NHS Trusts with ranging implementation levels as scored using Trust reported policies. Pre (Apr 2012-Mar 2015) and post (Apr 2015-Oct 2017) implementation clinical outcomes were obtained from hospital databases. Intervention processes were assessed by audit and patient surveys. Outcomes were compared using binomial, Poisson risk or rate-ratio models on aggregated monthly data and interrupted time series.

RESULTS: The median implementation score was 70% (range 25-100%). Elements 1 and 4 were most widely implemented whilst 2 and 3 were lowest; implementation was phased over the whole study period. A total of 467,661 births and 1903 stillbirths were analysed. The stillbirth rate decreased from 4.20 to 3.69 per 1000 births (Relative Risk 0.86, 95% CI 0.77-0.94, P=0.004). Term singleton stillbirths were reduced by 15% (P=0.042). The rate of preterm birth (8%; P<0.001), caesarean deliveries (9%, P<0.001), induction of labour (9%; P<0.001), third trimester growth scans (32%; P<0.001), NICU admissions (21%; P<0.001) and babies therapeutically cooled (28%; P=0.008) were increased. 636 pregnancy notes from small for gestational age (SGA) babies were audited. Antenatal detection of SGA babies increased from 36% to 55% (P<0.001). 2,230 mothers completed the survey before discharge. Among mothers who reported smoking at the start of pregnancy (15%), 56% reported referral to cessation services and 38% said they ceased smoking before birth. Nearly all mothers said they monitored fetal movements (96%). On audit only 12 Trusts had >50% use of both the buddy and sticker system in fetal monitoring.

CONCLUSIONS: Significant improvements in stillbirth rates were observed over the study period. However, as unified adoption of SBL has not yet been achieved it is not possible to conclusively attribute this reduction to SBL. Implementation led to increased resource use and greater service provision is needed to ensure Trusts can deliver the full programme.

Funding: NHS England

Keywords: Stillbirth, Saving Babies' Lives, Small for Gestational Age, Reduced Fetal Movements

Abstracts of Oral Presentations

O-054

Reduction in dosage of misoprostol for induction of labour for stillbirth: a before and after study

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BACKGROUND: Stillbirth is a devastating experience for a woman and her family. Once the diagnosis has been made, she must still give birth to her baby. In 2011 a new RCOG guidelines suggested a reduction in the dose of misoprostol used for induction of deliveries for women experiencing a stillbirth. The main change implemented in our unit, which has over 6000 deliveries per year, was a reduction in the dosage of misoprostol from 800mcg followed by 400mcg over 3 hours, to 200mcg every six hours before 27 weeks and 100mcg every 4 hours after 27 weeks. **OBJECTIVE:** to establish whether the reduction in misoprostol dose for induction of labour for stillbirth has impacted on outcomes for patients.

METHODS: Patients experiencing a stillbirth from August 2009-11 and January 2013-February 2016 were identified using the hospital's electronic database. Where possible their notes were obtained and data extracted to understand their time from induction to delivery, rate of side effects and rate of complications including uterine rupture, PPH and admission to ITU/HDU. Paired t-tests were used for continuous variables and for categorical variables either fishers exact or chi squared tests were carried out. **RESULTS:** Full records of care were obtained for 29 women before the changed guidelines and 54 women after. The groups were similar in terms of age, gestation, number of primips and number of patients with previous caesarean section. The before group had more women with multiple pregnancies. Median time to delivery showed no significant change ($p=0.4$). There were two instances of uterine rupture before compared to none after ($p<0.001$). Although there was a reduction in the number of post partum haemorrhages (8 before, 7 after), this was not statistically significant ($p=0.09$). Three women required manual removal of placenta following the change compared to none before ($p<0.001$). More women experienced symptoms of nausea (5 compared to 19) and vomiting (0 compared to 15) following the change. ($p<0.001$) There was no significant change in number of women with a recorded pyrexia. **CONCLUSIONS:** The new dosage of misoprostol has not resulted in an increased time to delivery following stillbirth. It has reduced significant complications. However alongside this there has been an increase in symptoms commonly associated with misoprostol. More research needs to be done to identify the optimal dosage of misoprostol to balance the risks along with the excess symptoms women experience.

Keywords: Induction of labour, Intrauterine Fetal Death, Misoprostol

Abstracts of Oral Presentations

O-055

River's Gift - Breathing life into SIDS research

Alexandra Hamilton, Karl Waddell

River's Gift was established by Alex Hamilton and Karl Waddell, in honour of their son, River who passed away suddenly and unexpectedly at just 128 days old.

River's Gift has grown to be one of the largest sources of funding for SIDS research within Australia, with partnerships between the University of Adelaide, The Florey Institute of Neuroscience and Mental Health in Melbourne, Sydney Westmead Hospital and Harvard Medical School. Please watch to see our story to date: https://www.youtube.com/watch?v=_SAVQGjY_bQ&t=16s River's Gift's mission is to create a world without SIDS by funding ground breaking scientific research and educating parents on the risk factors which can make a child potentially vulnerable to this heartbreaking syndrome.

Our vision... to SOS (Stamp Out SIDS)

Alex and Karl searched for answers as to how their healthy baby, who was slept safely, could suddenly and unexpectedly lose his life. Engulfed in a world of grief, they felt there was a desperate need to breathe life back into Australian SIDS research and so River's Gift was born. From run training programs, gala balls, golf days to corporate support, River's Gift built momentum and soon became one of Australia's largest SIDS research funding organisations. In 2012 River's Gift sent their first Australian recipient (Dr Fiona Bright) of the River's Gift international SIDS research fellowship to the Kinney laboratory at Boston Children's Hospital. River's Gift has since funded two further researchers to spend valuable time with Professor Hannah Kinney's team, pursuing investigations into 1) genetic implications in SIDS and 2) hippocampal involvement in SIDS. Alex and Karl realised they weren't alone in this heartbreak and developed a program to bring SIDS parents together to honour their own children. "Unite to SOS" has seen families globally raise funds for SIDS research, directing 100% of their funds raised towards finding a cure. In recent months, the SOS Coalition has been formed, with USA families wanting to join River's Gift, ensuring maximum exposure throughout the bereaved parent community, all whilst building our capacity to fundraise.

Within Australia in 2018 we will begin a 3-year funding program with Prof Roger Byard at the University of Adelaide to conduct a world first genetic SIDS study based around the Substance P findings. River's Gift have raised over \$1,000,000 for SIDS research, education and awareness and are rapidly becoming recognised Internationally. Becoming a well-respected name within the field of Sudden Infant Death Syndrome (SIDS), as a scientific research funding, Safe Sleep Education and Advocacy based organisation, River's Gift has over 9000 followers on Facebook, celebrity ambassadors and International partnerships.

We would love the opportunity to tell our story, to strengthen International research partnerships and assist fellow grieving parents in telling their stories of love, loss and hope for a future world where SIDS no longer exists.

Keywords: SIDS Research, Parents, Fundraising, Education, Safe Sleep, Unite

Abstracts of Oral Presentations

O-056

Psychiatric disorder and risk of sudden infant death syndrome: Results of a clinical survey

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There is increasing interest in psychiatric disorder as a risk factor of SIDS. Among the disorders associated with SIDS are schizophrenia, depression, Tourette disorder and autism spectrum disorder. The following clinical survey was conducted to ascertain the frequency of SIDS in families in which psychiatric disorder was present. **METHOD:** The study sample consisted of 294 consecutively evaluated child psychiatric inpatients and outpatients ascertained in the early 1990's. Parents were asked if there had ever been a child in the family who died of SIDS or suffered an unexplained apparent life-threatening event (ALTE). Independent external reports of cause of death were not obtained. Psychiatric diagnoses were made by the author using DSM-IV criteria. **RESULTS:** Probands, full and half siblings (sibs) were counted and totaled 831. Seven cases of SIDS were reported. This is a prevalence of 1 case per 118 (0.84%) live births, a rate 5 times or greater than the population prevalence. Five (71%) victims were male and 2 (28%) were African American. There were 25 African American families and probands and sibs totaled 95, giving a rate of SIDS of 2.1% for this subgroup. The mean age of death was 3.5 months (range 5 weeks to 6 months). Fourteen probands and 15 sibs suffered ALTE and in 24 families, 23 extended members were reported to have died of SIDS and 8 suffered ALTE. An array of psychiatric disorders was diagnosed in probands and reported in family members. In a combined sample of probands stratified by diagnosis of schizophrenia (N=14) and autism spectrum (N=17), the number of probands and sibs totaled 103. There were 2 (1.9%) cases of SIDS and 5 cases of ALTE. Findings of the study, combined with recognition that SIDS and psychiatric disorder share risk factors, suggest a significant relationship. These factors include maternal single marital status, decreased age and education, psychosocial adversity, cigarette smoking, substance use, prematurity, low birth weight and short interpregnancy interval. Among shared genetic, neurodevelopmental factors that may contribute to the association are neurotransmitter dysregulation in serotonergic, dopaminergic, glutamatergic, cholinergic systems and in brain-derived neurotrophic factor, Mash-1, and EN-1 and EN-2 gene systems. Cerebellar abnormalities are associated with SIDS and are present in schizophrenia, attention deficit, Tourette and autism spectrum disorders.

Keywords: sudden infant syndrome, psychiatric disorder

Abstracts of Oral Presentations

O-057

Sudden Unexpected Infant Deaths (SUID) with Use of U-Shaped Pillows in the Sleep Area – United States, 2004-2015

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INTRODUCTION:

Soft objects and loose bedding, including u-shaped pillows, in an infant's sleep area are risk factors for SUID (e.g., sudden infant death syndrome and accidental suffocation). U-shaped pillows are sold commercially and marketed to assist breastfeeding mothers. Warnings on u-shaped pillows state that they should be used under adult supervision and should not be used for infant sleep. The prevalence of u-shaped pillow use in the infant sleep area is unknown.

METHODS:

We describe demographic characteristics of SUID where u-shaped pillows were reported in the sleep area. We also provide detailed summaries of cases where the pillow directly contributed to infant airway obstruction leading to suffocation. To identify SUID cases, we reviewed all infant deaths (<365 days old) in the National Child Death Review Case Reporting System from 2004-2015. Records were searched for evidence of a u-shaped pillow in the infant's sleep area. Search terms included pillows described as u-shaped, nursing, horseshoe, doughnut, as well as product names for u-shaped pillows sold commercially. Cases classified as Explained Suffocations with Unsafe Sleep Factors per the CDC's SUID Case Registry classification system were examined in greater detail.

RESULTS:

Of the 171 infants with a u-shaped pillow reported in their sleep location, 82% were placed to sleep on the u-shaped pillow or with the pillow around their head. Of these, the highest percentage of cases were < 6 months old (88.0%), male (58.2%), non-Hispanic white (53.2%), born at term (66.0%), and had Medicaid insurance (46.8%). Infants from twin gestations accounted for 7.8% of the cases. There were no instances where both twins died. Of the 11 deaths classified as Explained Suffocation with Unsafe Sleep Factors, five were described as having pillows fully obstructing their airways and six described as airway obstructions occurring when the infant rolled off the pillow with his or her face pressed into another soft object or person's body.

CONCLUSION:

All cases described in our analyses occurred when u-shaped pillows were inappropriately used in a sleep location. These results underscore the importance of parents and caregivers following all precautions on product packaging and labeling and following safe sleep recommendations by the American Academy of Pediatrics during every sleep. These recommendations advise caregivers to keep soft objects such as pillows away from the infant's sleep area.

Keywords: u-shaped pillows, SUID, suffocation, American Academy of Pediatrics recommendations

Abstracts of Oral Presentations

O-058

Factors Associated with Maternal Choice to Roomshare, Not Bedshare

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Background and OBJECTIVES: We previously reported, in a nationally-representative sample, that only about half of mothers reported exclusively following recommendations that infants roomshare, not bedshare. To better understand mothers' choice of infant sleep location, we have assessed prevalence and factors associated with maternal intentions and actual practices for infant sleep location. **METHODS:** 3233 new mothers recruited from 32 US hospitals completed a survey at infant age 2-6 months. Queries included usual and all sleep locations in the prior 2 weeks and intended sleep location over the next 2 weeks. Weighted percentages were calculated for all prevalence estimates. To examine adherence to recommendations, we divided mothers into four groups: 1) mothers intending to and reporting exclusively roomsharing, not bedsharing; 2) mothers intending to exclusively roomshare, not bedshare who did NOT do so exclusively; 3) mothers who intended that infants sleep in a separate room; and 4) mothers who intended to bedshare at least some of the time. Multivariable multinomial logistic regression was used to examine associations between the four maternal groups and variables that included: demographics, infant feeding method, physician advice and domains of the Theory of Planned Behavior (attitudes, subjective social norms, and perceived control). **RESULTS:** Group 1 included 45.7% of mothers, with 13.4%, 16.5% and 24.4% of mothers being in Groups 2, 3, and 4, respectively. Factors associated with being in group 4 (i.e., intending to bedshare) included Black race, and exclusive breastfeeding, however, the highest likelihood of intending to bedshare was associated with perceived social norms favoring bedsharing (aOR 5.80, 95% CI 4.12-8.15) and with positive attitudes toward bedsharing (aOR 17.66, 95% CI 11.85-26.3). Women who received doctor's advice to exclusively roomshare, not bedshare were less likely to intend to bedshare (aOR 0.56, 95% CI 0.36-0.85). **CONCLUSIONS:** Many mothers are not following the recommendation to roomshare, not bedshare. Attitudes, perceived social norms, and doctor's advice are factors that are potentially amenable to change and should be considered when designing public health interventions. Innovative solutions are needed in order to address perceived social norms, parental attitudes, and ultimately infant sleep practices.

Keywords: Safe Sleep, Roomshare, Bedshare, Factors, Social Norms

Abstracts of Oral Presentations

O-059

Factors associated with age of death in sudden infant death syndrome

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BACKGROUND

Sudden infant death syndrome (SIDS) is the leading cause of post-neonatal mortality in infants in the United States. Similar to other countries around the world, age of death distributions peak between 2-4 months. In addition to known environmental risk factors at the time of death such as co-sleeping, there are several risk factors present between conception and shortly after birth that have been identified, including maternal smoking during pregnancy, gestational hypertension, and premature birth. Understanding how individual factors within this early time frame shift the distribution of mean age of death compared to the rest of the SIDS population may provide important mechanistic insights into the circumstances leading to SIDS.

OBJECTIVE

The age a child succumbs to sudden infant death syndrome (SIDS) is associated with many factors. While some have been identified, a systematic analysis identifying which factors between conception and hours after birth are significantly associated with a change in the age at death in SIDS remains unexplored.

METHODS

Data were analyzed for 13,446 infants who died in the years 2005-2010 in the United States as identified by death code R95 (SIDS) in the Birth Cohort Linked Birth - Infant Death dataset published by the Center for Disease Control. The distribution of age of death was compared pairwise across 369 factors to determine which variables significantly affect the SIDS age of death. Distributions were compared using the Mann-Whitney u-test and significant results passed the Benjamini-Hochberg procedure to control for false discovery rate in multiple hypothesis testing.

RESULTS

The mean age of death across the SIDS population was 97 days and median age of death was 84 days. Overall, 38 features indicated a significant change in age of death with three main patterns: 1) maternal cigarette smoking during pregnancy correlates with younger age of death, 2) factors associated with prematurity and poor health at birth correlate with older age of death, and 3) factors associated with lower socioeconomic status correlate with younger death. Trends associated with poor health and prematurity at birth were no longer significant or were significantly associated with younger age instead of older when postnatal age was replaced with postmenstrual age. Smoking and features associated with lower socioeconomic status were significantly and consistently associated with a change in age of death for both postnatal age and postmenstrual age.

DISCUSSION

Since the classification of SIDS is an exclusionary process, there are likely multiple mechanistic causes. Results highlight subpopulations with significantly different distribution patterns than the average population, which suggest possible distinct groups and multiple causes of SIDS.

CONCLUSION

Subpopulations with significantly shifted age of death distributions fit within defined categories and provide clues for identifying causes of SIDS.

Keywords: sudden infant death syndrome, SIDS, multiple hypothesis testing, infant mortality, CDC

Abstracts of Oral Presentations

O-060

Prevalence of and Factors Associated with Maintaining Smoking Cessation after Pregnancy

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Background

Many women quit smoking during pregnancy only to return to smoking after giving birth. Pediatricians typically interact more frequently with mothers of young infants than other providers and have a unique opportunity to promote maintenance of smoking cessation.

Objective

To determine the prevalence of and factors associated with maintaining smoking cessation after pregnancy.

Methods

A nationally-representative sample of 3983 mothers, recruited from 32 U.S. maternity hospitals between 01/2011–03/2014, was surveyed twice: (1) during the postpartum hospital stay and (2) 2-6 months postpartum. Multivariable logistic regression models examined associations between maintaining cessation after pregnancy and multi-level variables including: mothers' age, race, ethnicity, education, birth country, marital status, subjective life stressors, trust in healthcare providers, breastfeeding status, smoking intensity prior to cessation, timing of cessation, infant's gestational age and age at follow-up, infant's sleep location, WIC enrollment, household income, other smokers in home, and state cigarette taxes. Analyses were weighted and accounted for the complex survey design.

Results

Among 3960 mothers reporting smoking status at baseline, 78.5% did not smoke in the year prior to pregnancy, 7.3% smoked in the year prior to and throughout the pregnancy, and 14.2% quit before or during pregnancy. Among the 553 mothers who quit smoking before or during pregnancy, 412 provided follow-up smoking status, and of those, 273 (66.3%) reported maintaining cessation at 2-6 months postpartum. Factors associated with a higher likelihood of maintaining smoking cessation included: (1) timing of smoking cessation -- quitting before (vs. during) pregnancy (81.9% vs. 57.4%, aOR 3.27 [1.79, 5.99]); (2) infant feeding practice -- exclusive breastfeeding (versus only formula-feeding) in the two weeks prior to the follow-up survey (89.7% vs. 54.3%, aOR 5.97; 95% CI: 1.96, 18.22); and (3) the absence of other smokers in the home (80.1% vs. 42.1%, aOR 5.65 [3.41, 9.35]).

Conclusions

In this nationally-representative sample, two-thirds of mothers who quit smoking before or during pregnancy had maintained cessation 2-6 months postpartum. Timing of peripartum cessation of smoking, infant feeding practice, and other smokers in the household were associated with the likelihood of maintaining smoking cessation. These findings can inform tailored interventions to promote maternal smoking abstinence.

Keywords: Maternal Smoking, Prevalence, Epidemiology

Abstracts of Oral Presentations

O-061

Media Sources of Infant Care Information Accessed by US Mothers, 2011-2014

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BACKGROUND: Parents receive infant care advice from many sources outside of healthcare, including media. It is important to understand where parents seek information and the nature of the advice.

OBJECTIVE: To assess maternal report of media sources of information and nature of infant care advice received.

Design: Cross-sectional survey of mothers at two-six months after infant birth as part of the SAFE study of infant care practices. 32 US hospitals were selected using a two-stage, clustered design. Participants were a nationally representative sample of 3,983 English- or Spanish-speaking mothers enrolled during their birth hospital stay January 2011-March 2014. Questions asked about all media sources mothers use to get infant care information, the nature of the advice, and whether they planned to follow it.

RESULTS: 3,235 (81.2%) mothers responded to these questions. Sources cited most frequently were internet (74.0%), books (57.2%), magazines (50.5%), TV (26.4%), and social networks (26.1%). All but 31 mothers (99.0%) received information from at least one source and 23.9% received information from ≥ 4 sources. The topics for which advice was most commonly received were: breastfeeding (63.0%), sleep position (40.2%), vaccination (39.5%), sleep location (26.7%), and pacifiers (18.5%). The proportion of mothers who responded that they plan to follow the source's advice ranged from 49.4% (breastfeeding) to 69.9% (sleep position). 10-20% of reported advice was contrary to national recommendations. **CONCLUSIONS:** Mothers commonly seek infant care advice from media, and in many cases, advice received is inconsistent with recommendations. More than half of mothers reported they plan to follow media advice about infant care practices. Having messages in the media be consistent with recommendations may improve maternal adherence to safe infant care practices.

Keywords: Safe sleep, media, advice, infant care

Abstracts of Oral Presentations

O-062

The use of a photo database in the prevention of Cot Death

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Background

Even though the numbers of SIDS are relatively low in The Netherlands, a continuous emphasis on education and information on risk and preventive factors remains necessary in public health. More and more, new (potentially high risk) fashion trends enter the market for newborns: soft duvets, fluffy stuffed animals, fashionable little woolen hats to be worn in bed. These trends make it even more necessary for health workers, medical doctors and nurses to be aware of the latest scientific developments concerning risk factors for cot death and to inform parents about them.

Objectives

To build a database with photos that explicitly illustrate safe and high risk situations in daily life of newborns, in order to support and spread the awareness of safe sleep.

Methods

We invited a group of photographers specialized in newborn and young child photography from the network of the Make a Memory Foundation to produce photos illustrating correct and high risk situations as described by Stefanie Cowan (2017) in daily family life situations. Four photographers were selected to provide various series of images. Two pediatricians, a clinical pedagogue and a photographer made a selection of about 100 photos, based on (1) clarity of the high risk or safe situation, (2) a recognizable daily life family situation and (3) the technical quality of the photo.

Results

A database of about 100 photos are easily accessible through the website on safe sleep <http://www.beeldbankpreventiewiegendood.nl/nl/Home>. All photos can easily be found in searching machines. Further:

1. The images are enriched with key words
2. The images are clearly marked as safe or high risk situations
3. The images can be downloaded free of charge in high resolution for the purpose of prevention and education of safe sleeping

Conclusions

The database provides external parties with a wide variety of representative, easily accessible images that can be used to illustrate safe sleeping conditions. The next step is to elaborate on how the database can be expanded, improved and enriched with new types of images and to investigate the added value of photography in providing information and prevention in this field.

Funding:

PGO fund, organisation for patients and people with disabilities, Ministry of Health, Welfare and Sports, The Hague

Make a Memory Foundation is a Dutch Foundation who offers parents who suffer the loss of a child (from 23 weeks up to age 17), a photo series of their terminally ill, dying or deceased child. These series are made by a professional photographer and are free of charge.

The high risk situations were staged for the purpose of the photo series.

Stefanie Cowan, Change for our children limited, Christchurch, New Zealand (2017)

Keywords: safe sleep, risk factors, prevention, education, cot death, photo database

Abstracts of Oral Presentations

O-063

Oto Acoustic Signals Investigation Study (OASIS) - Preliminary findings

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BACKGROUND:

In 2008 a US study demonstrating differences in the new-born Oto Acoustic Emission (OAE) hearing test among 31 SIDS infants and 31 healthy control infants. The significantly decreased signal to noise ratios at 2000, 3000 and 4000Hz found in the right ear of SIDS infants was surprising, not least as the right ear is usually more dominant than the left. The potential for this to be explained by tobacco exposure in utero has not yet been realised as data on maternal smoking during pregnancy was not collected.

OBJECTIVES:

To investigate whether OAE recording collected as part of the routine hearing screening programme in the early post-natal period are associated with an increased risk of SIDS and whether this can be explained by tobacco exposure in utero.

METHODS:

Families who had suffered the unexpected death of an infant or child up to the age of 4 since 2008 were recruited via the Lullaby Trust charity between July 2016 and October 2017. After obtaining verbal consent we conducted a telephone interview with the parent(s) using a semi-structured questionnaire. Cause of death was established using a multi-disciplinary review panel with the information from the interview, coroners' reports and autopsy. Control families were recruited from the maternity wards of hospitals in Bristol and Birmingham and followed up with a pre-arranged telephone interview and designated reference sleep using the same semi-structured questionnaire. Hearing data was collected from Public Health England in two different data formats.

RESULTS:

Hearing tests were conducted for all but one of the 60 SIDS cases in the study and all of the 194 controls. We have written consent and detailed hearing data for 43 SIDS infants (71.7%) and all 194 controls (100%) with limited information for a further 7 SIDS infants (11.7%). Data from the telephone interviews suggests a greater proportion ($p=0.06$) of SIDS infants (7/55 or 12.7%) had no clear response in the initial hearing test compared to the controls (8/163 or 4.9%). No clear response was also indicated when infants had more than two hearing records (one for each ear). Among the controls a greater proportion had additional records for the left ear (13.1% vs 8.0% SIDS, $p=0.31$) whilst a greater proportion of SIDS infants had additional records for the right ear (16.0% vs 7.4% controls, $p=0.07$). Notably only one of the 9 SIDS infants with additional records for the right ear had a mother who smoked during pregnancy.

Conclusions

These promising preliminary observations will be subject to a more detailed analysis of the hearing test signal recordings data. Potentially such a physiological marker of SIDS (along with already identified epidemiological markers at birth) could identify a small group of families with infants at high risk for whom a targeted intervention over the first year of life could be effective in reducing deaths in this group.

Funding source: The Lullaby Trust Project number 268

Keywords: SIDS, Epidemiology, Physiology, Hearing, High risk families

Abstracts of Oral Presentations

O-064

'Through the tubes' adapted for the Netherlands

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Background

Stephanie Cowan presented at the Amsterdam ISPID Conference in 2012 an education programme 'Through the Tubes'. The focus of this program is to promote oxygen sufficiency for babies in pregnancy and in sleep. By April 2014 there had been 309 peer-facilitated 'Through the Tubes' workshops and 2658 participants through the education programme in NZ. After the introduction of this program the post-perinatal mortality in New Zealand dropped from 2010-2016 from 2.5 per 1000 live births to 1.75. In contrast SUDI in the Netherlands remained similar from 2010 to 2016, namely 0.15 per 1000 live births.

Objectives

The objective of this study is to investigate which adaptations might be needed to implement the programme in the Netherlands.

Method

The translated concept 'Through the Tubes' was submitted to an expert group and questionnaires were used to investigate which changes are needed for implementation in the Netherlands.

Results

The expert group consisted of 12 members of the National Working Group on the prevention of cot death and 58 questionnaires were filled in by 9 pediatricians, 24 youth health care physicians and 25 maternity nurses (n=58). The main results are:

- The concept needs a Dutch name, preferably an appealing name.
- Education about suffocation for professionals should be incorporated in education about sudden infant death from all causes and should initially be delivered by members of the National Working Group.
- First professionals should be educated before parents will be informed about the concept. It is too early to inform the public by websites, instagram, vlogs and blogs; first the concept needs to be developed further.
- Prevention of accidental mechanical suffocation should start during pregnancy. Obstetricians, maternity nurses and youth health nurses who go on prenatal home visits, are the preferred target groups to educate first. In addition, Centering Pregnancy trainers will be educated on this topic.
- New materials that can be used in training sessions, have been developed.
- Education should start in 2018, together with the results of the 11th national survey on Safe Sleeping that was conducted in 2017.

-The education plan should be developed with the National Working Group on the prevention of cot death, the Royal Dutch association of Midwives (KNOV), and the Child Health Knowledge Center.

Conclusion

A relatively simple concept as Through the Tubes that visualizes the risk of suffocation, is usable in the Netherlands as part of prevention of sudden unexpected death in infants. It may have an added value for the hard-to-reach group of parents. New concepts materials have been developed, and will be presented. The prevention should start during pregnancy, because feelings and arguments such as "my baby sleeps better prone", "bed sharing promotes breastfeeding" and "crying reduces in prone position" can then be addressed in time.

Funding

Ministry of Health, Welfare and Sports, The Hague

Keywords: SUDI, cot death, prevention, suffocation, education

Abstracts of Oral Presentations

O-065

SUDI: Infant sleeping position is still not reliably reported in death scene investigations

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BACKGROUND: Infant sleep position and sleep environment are well documented modifiable risk factors in Sudden Unexpected Death in Infancy (SUDI) and documentation is an essential element of the SUDI Death Scene Investigation (DSI). This relies on diligence by investigators and recall by the caregivers who may be overwhelmed by emotional consequences of their infants' deaths. Variable quality of sleep position data will impact on quantifying the efficacy preventive strategies which target unsafe sleep.

OBJECTIVES: To investigate the quality of reported sleep position in death scene investigations, and to examine this further in relation to witness consistency, lividity and infant developmental milestones.

METHODS: We conducted a retrospective review of records of all post-neonatal infants who died in Queensland in 2013. Nine neonates who died suddenly and unexpectedly out of hospital were also included in the series. Of 96 infant deaths reviewed, 34 infants were identified whose SUDI occurred during a sleep event. A multidisciplinary expert panel reviewed health records for both the infant and mother, police death scene investigations, autopsy reports and coroner reports.

RESULTS: Eight of 34 SUDI (23.5%) occurred during a day sleep and 26 (76.5%) during a night sleep. Placed-to-sleep position details were either inadequate or absent in 9 cases (26.5%): in one case the parent/s could not recall the infant's position; for eight cases, checkboxes were blank or details were missing. In 25 cases the following details were reported; 13 infants (52%) were placed to sleep supine, six (24%) were placed prone, three (12%) were placed sidelying, two (8%) were "propped up" and one (4%) was cradled in mother's arms. Position 'found' was more commonly reported; data were missing for five of 34 cases (14.7%). Nine infants were found supine; 12 were found prone. Recent data from a cohort of 3000 infants in the same Australian state suggests that fewer than 83% of families use the recommended supine sleep position. Inconsistencies in witness reports of infant position include a parent describing placed-to-sleep position differently in different reports, and where each parent reported contradicting information. In some cases, the infant was reported to be placed and found supine, however examination of lividity in pathology reports indicate the infant was most likely to have died in a prone position. There were also two cases of neonates (<28 days, unable to roll) being placed to sleep supine but found prone.

CONCLUSIONS: This review revealed substantial gaps in the recording of sleep position at the time of death, acknowledged a decade ago. Further efforts are needed to improve DSI data collection. Study results identify an opportunity to improve accuracy of recording the last moments in an infant's life as this contributes to an understanding why the infant died and identifies modifiable risk factors which, if addressed, may prevent other deaths.

Keywords: death scene investigation, sleep position, modifiable risk

Abstracts of Oral Presentations

O-066

Child protection serious case reviews after sudden unexpected death in infancy

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Introduction

A serious case review (SCR) into multi-agency child protection procedures takes place in England whenever a child dies and abuse or neglect is known or suspected, these may occur after a Sudden Unexpected Death in Infancy (SUDI).

Aims

To develop a detailed understanding of the circumstances of SUDI cases subject to SCR

Research questions

What are the circumstances of death in cases of SUDI that result in a SCR?

What background parental factors and behaviours may have contributed to death?

Methods

SCRs were obtained for SUDI cases dying between 1.4.2011 and 31.3.2014. These were cases (aged 0-2 years) that presented as a SUDI and for which no clear medical or forensic cause of death was found. The SCR reports were analysed qualitatively using thematic analysis with NVIVO 11.

Results

There were 30 SUDI cases subject to a SCR over the three years of which published reports were available for 27. SUDI accounted for 15% of fatal SCR.

The median (range) age at death was 3 (0-13) months.

18/27 deaths occurred in highly hazardous sleep environments, 17/18 involved co-sleeping and 14/17 co-sleeping deaths occurred with parents who were intoxicated with alcohol or impaired by drugs. In 25/27 SCR the rationale for conducting the review was given; these included concerns about neglect and abuse, and professional practices.

19 infants had received support from social care, 10/19 were subject to child protection plans. Neglect was a feature in 15/27 cases.

Background risk factors in families included: alcohol or drug dependency in 18/27, neglect in 15/27, parental mental health problems in 15/27, domestic abuse in 15/27 and parental criminal records in 14/27.

Parents did not engage with professionals in 18/27 cases, involving social care in 14/18, health care in 13/18 and drug and substance misuse services in 5/18.

Conclusion

Most SUDI cases occurred in hazardous sleep environments and are potentially preventable. They occurred in families well known to services with concerns about neglect, substance misuse and poor engagement. Professionals need to find better ways of working with challenging families to protect vulnerable infants.

Keywords: SUDI, child protection, risk factors

Abstracts of Oral Presentations

O-067

Do the Recommendations of Public Fatality Inquiries Really Protect Vulnerable Children placed in the care of the state?

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INTRODUCTION: The fact that children are taken into the care of the government for a variety of reasons and always with the intention of protecting the child is a reality. Infants taken into care are usually placed with foster parents. It is also a reality that some children die while in care. Most governments have mechanisms to ensure transparency around the circumstances of these deaths. In Alberta Canada, the Office of the Chief Medical Examiner investigates all sudden unexpected infant deaths, but public inquiries into infant deaths are not the norm. When the infant concerned is already in care, a public fatality inquiry is called. This public fatality inquiry may not assign blame, but is intended to help prevent similar deaths in the future, and to clarify if there is a need for public protection or clarification of circumstances surrounding a case.

METHODS-RESULTS: We reviewed all Alberta public fatality inquiry reports released between 1995 and 2017 concerning infants. The total number of reports available was 102 and those concerning infants were 7. We listed in each report the cause and manner of death, if so identified, and whether the report made recommendations to prevent future such deaths. We then reviewed subsequent deaths to see whether circumstances amenable to prevention identified in previous reports were present. We confirmed that items identified as important in the recommendations, appeared in subsequent reports. As an example, a 26-week-old baby died from "positional asphyxia" in 2010, while sleeping in a bassinet in her foster home. The fatality inquiry for this deceased baby was held in 2014. The judge concluded the inquiry with a recommendation for the Department of Human Services in Alberta to research, identify, and inform foster parents of the best practices for the use of bassinets and sleeping arrangements for children. In 2011, a 14-week-old boy died suddenly in his foster home crib, and in 2015, the fatality review inquiry for this baby occurred. The judge in this case made the same recommendation that the Department of Human Services outline the best practices for sleeping arrangements for children. There is no evidence to date (2017) that the recommendations made in the 2014 and 2015 inquiries were implemented.

CONCLUSION: The recommendations made by judges after a fatality review involving a child seem not to be followed by action that might prevent similar deaths. We could not identify a system to track, follow, and review the recommendations.

Implications: The implication of our analysis is that lives are needlessly lost. The legislation needs to be amended so that recommendations made in public fatality inquiries lead to action by government agencies. Specifically, in the case of infants in the care of the government, foster parents should adhere to current safe sleep recommendations. The training of foster parents should be of the highest level, and the care of the infant should be monitored.

Keywords: child death prevention, fatality Inquiry, recommendation effectiveness, sudden unexplained death in infants in the foster system.

Abstracts of Oral Presentations

O-069

Recurrent sudden unexpected infant deaths in families: causes and concerns

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Background

The Care of Next Infant (CONI) programme is available in the UK to support families with infants born following Sudden Unexpected Death in Infancy (SUDI). In the event of a death on CONI attempts are made to obtain clinical information from local healthcare teams and families are offered a detailed case review by specialist paediatricians and pathologists.

Objectives

1. To determine the SUDI rate for infants born after a previous SUDI in the same family
2. To establish the causes of death in families with recurrent SUDI
3. To determine the frequency of child protection concerns in families with repeat SUDI

Methods

The case records for all deaths of infants aged less than 1 year registered on CONI between January 2000 and December 2015 were obtained. These records contained information on both (or all 3) deceased siblings. Each case file was reviewed to determine the cause of death and risk factors including: maternal smoking, maternal mental health problems, co-sleeping, maternal alcohol or drug misuse, poor parenting and child protection concerns. To ensure consistency case files were reviewed twice by different pairs of researchers working independently using a standard template, cases were then discussed by the whole team. The cause of death was determined according to information in the case file including parental accounts of events, death scene findings, post-mortem reports and specialist reviews.

Results

There were 6612 live-born infants registered on CONI in the years 2000-15 with 29 deaths in 26 families, 23 with 2 deaths and 3 with 3 deaths. Detailed clinical information was available for 18/26 first deaths and 25/29 sibling deaths.

The mortality rate for infants on the CONI programme was 4.39 per 1000 births. The SUDI rate for infants born in families with a previous SUDI is 3.48 per 1000 births. Of the 26 first deaths, 20 were SIDS or unascertained deaths, 2 accidental asphyxia, 3 medical and 1 homicide. Of the 29 sibling deaths, 17 were SIDS or unascertained deaths, 6 accidental asphyxia, 4 medical and 2 homicides. The medical causes were only diagnosed after the second death and included inherited conditions.

Risk factors for first and second deaths were maternal smoking 15/26 24/29, co-sleeping 9/26 11/29, maternal mental health problems 6/26 13/29, poor parenting 5/26 16/29 and child abuse or neglect 3/26 8/29.

Conclusion

The SUDI rate for siblings is more than seven times higher than the UK SUDI rate of 0.45 per 1000. Homicides were rare, there were two infanticides in one family and one other sibling death was from non-accidental injury. In another family with unascertained deaths there was concern about possible suffocation and surviving siblings were protected by the family courts. Despite the support programme many parents continued to smoke and expose infants to highly hazardous co-sleeping situations with these directly leading to or contributing to the death of 9 siblings.

Keywords: Recurrent SIDS, recurrent SUDI, risk factors, cause of death

Abstracts of Oral Presentations

O-070

Head to heart experiential learning in perinatal bereavement care for healthcare professionals

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Perinatal bereavement is a profoundly difficult experience of grief for parents and family members. How healthcare staff attend to this grief in their care of bereaved families has a considerable impact on the overall experience of care and the subsequent recovery process. Attending to the depth of spiritual and existential pain is an important dimension of overall holistic care where healthcare professionals are required to demonstrate a high level of sensitivity and professional competency in empathic communication skills. Clinical Pastoral Education (CPE) is an experiential reflection-action-integration model of learning used in the education of pastoral care students in healthcare settings. As a pedagogy, the CPE methodology provides a context for clinical experiential learning as applied to perinatal bereavement. One of the goals of the CPE approach in perinatal bereavement is for the learner to empathically embrace the depth of pain and loss so that they can provide transformative bereavement care. This process fosters a journey from learned/ theoretical knowledge (head knowledge) to a sensitive and empathic approach and application to clinical care (heart knowledge). This workshop outlines in an experiential way various multisensory and experiential learning strategies drawing from the theoretical insights of Kolb, Mezirow, Wenger and Cranton to reinforce personal story with action and sensory experience. Building on an appreciation of attachment theory the participants are facilitated to deepen their understanding of loss and grief. This approach enables healthcare professionals to gain a deeper understanding, empathic awareness and learning in the area of perinatal bereavement and loss. The integration of these insights into clinical practice fosters a high standard of professional bereavement care in the midst of profound loss. This workshop is aimed at health professionals and is facilitated by a certified Clinical Pastoral Education Supervisor and Board-certified maternity healthcare chaplain.

Keywords: bereavement education, transformative learning, experiential learning, holistic care, pregnancy loss

Abstracts of Oral Presentations

O-071

Maternal Sleep Position: Is Left Really Best? An MRI Study of Maternal Haemodynamics During Late Pregnancy

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BACKGROUND: Maternal sleep position has been associated as a risk factor for late stillbirth. It has been found that supine sleep position increases the risk of late stillbirth. However, there is conflicting evidence regarding whether the risk is reduced for women who sleep on their left side compared to those who sleep on their right. When a woman in her third trimester lies in the supine position the inferior vena cava (IVC) becomes markedly compressed, causing a reduction in cardiac output and aortic blood flow when compared to lying on the left side. Anatomically, the IVC sits on the right side of the midline. Therefore, it is thought that IVC compression is better relieved by lying on the left side compared to the right. **OBJECTIVES:** To compare maternal haemodynamics and blood flow through major maternal blood vessels in the left and right positions.

METHODS: Ten women between 34–38 weeks gestation underwent magnetic resonance imaging using a Siemens Skyra 3T system in both the left and right lateral positions. Phase contrast images were evaluated to measure cardiac output and blood flow through the abdominal aorta and IVC in each position. Analysis was carried out using paired t-tests and the level of significance was defined at the 5% level.

RESULTS: There were no significant differences found between measurements of cardiac output in the left and right positions (mean difference (md) = -0.12 [95%CI=-0.85,0.61] L/min; P = 0.72). Blood flow through the IVC at the level of its formation did not differ significantly between positions (md = -0.15 [95%CI = -0.47, 0.18] L/min; P = 0.34). However, flow was significantly increased through the IVC at the level of the renal veins on the left side compared to the right (md=1.01 [95%CI = 0.15, 1.87] L/min; P = 0.027). There were no differences in aortic flow at the level of its bifurcation (md = -0.03 [95%CI = -0.34, 0.28] L/min; P = 0.83) nor at the level of the renal veins (md = 0.39 [95%CI = -0.31, 1.09] L/min; P = 0.24).

CONCLUSION: There was a significant difference in blood flow through the IVC at the level of the renal veins with a decrease in IVC flow when lying on the right side during late pregnancy. This may be due to increased IVC compression due to its normal anatomical position. However, there were no differences in cardiac output and aortic blood flow found between the left and right positions. This implies that the degree of compression is not dramatic enough to cause maternal haemodynamic changes. This supports the evidence that sleeping on either side during late pregnancy does not affect the risk of late stillbirth. However, it is uncertain if this conclusion can be generalised to groups of women with at risk pregnancies.

Keywords: stillbirth, sleep position, maternal haemodynamics, aortocaval compression, magnetic resonance imaging, anatomy

Abstracts of Oral Presentations

O-072

Comprehensive review of the evidence regarding the effectiveness of community-based primary health care in improving neonatal health

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BACKGROUND: As the number of deaths among children younger than 5 years of age continues to decline globally, neonatal mortality is becoming an increasingly large proportion of under-5 deaths. Lack of access to safe delivery and postnatal care continue to be challenges. We review the available evidence regarding the effectiveness of community-based primary health care (CBPHC) and common components of programs aiming to improve health in the first 28 days of life. **METHODS:** A database comprising evidence of the effectiveness of projects in improving maternal, neonatal and child health through CBPHC has been assembled as part of a larger project. From this database (N=548), a subset was created from assessments relating to newborn health (N=93). Assessments were excluded if the primary project beneficiaries were more than 28 days of age, or if the assessment did not identify one of the following outcomes: changes in knowledge about or care seeking for newborn illness, utilization of postnatal care, nutritional status of neonates, or neonatal morbidity or mortality. Descriptive analyses were conducted based on study type and outcome variables. **RESULTS:** For projects that reported on health outcomes, twice as many reported an improvement in neonatal health as did those that reported no effect; only one study demonstrated a negative effect. Of those with the strongest experimental study design, almost three-quarters reported beneficial neonatal health outcomes. Many of the neonatal projects assessed utilized community health workers, home visits, and support groups. Several of the interventions used focused on health education (recognition of danger signs), and promotion of and support for exclusive breastfeeding. However, the studies were quite biased in geographic scope, with more than half conducted in South Asia, and many were pilot studies, rather than projects at scale. **CONCLUSIONS:** CBPHC can be effectively employed to improve neonatal health in high-mortality, resource-constrained settings. CBPHC is especially important for education and support for pregnant and postpartum mothers and for establishing community-facility linkages to facilitate referrals for obstetrical emergencies. Further research on this topic is needed in Africa and Latin America, as well as in urban and peri-urban areas. Additionally, more assessments are needed of integrated packages of neonatal interventions and of programs at scale.

Keywords: newborn health; community health; systematic review

Abstracts of Oral Presentations

O-073

Inequalities and stillbirth: A meta-narrative systematic review

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Introduction

Against a background of increasing political, public and professional interest in halving the UK's stillbirth rate by 2025, and significant research effort to prevent stillbirth and improve care, there is longstanding evidence, across high-income countries, that inequalities are widely reported. The aim of this review was to undertake a trans-disciplinary evidence synthesis to understand how structural factors (health system, living in poverty, racism), lifestyle factors (smoking, diet), and bio-clinical factors (fetal growth restriction) intersect to increase stillbirth risk.

Objectives

1. To review existing research investigating inequalities and stillbirth from all relevant perspectives;
2. To provide new knowledge about the intersections between social, individual and clinical factors;
3. To explore the impact of existing interventions on social inequalities;
4. To provide a summary of the review to all relevant groups and organisations working to reduce preventable stillbirth.

Methods

We systematically searched 13 databases (Oct/Nov 2017), undertook manual searches, and contacted key informants to identify relevant studies, of any design, from any research tradition in the natural or social sciences. Identified studies were screened against pre-defined inclusion/exclusion criteria, before quality assessment and data extraction. Narrative synthesis involved first summarising each research tradition (including elements of data aggregation), and secondly, comparing and contrasting the resultant meta-narratives to construct higher order insights.

Results

From 13,610 studies, 29 research traditions investigating stillbirth or inequalities in health in the UK were identified. Nine traditions, (Nursing and Midwifery n=1; Fetal and Maternal Medicine n=1; Public Health n=1; Epidemiology n=30; Audits, Reports and Confidential Enquiries n=11; Health Policy n=1; Call to Action n=2; Medical Sociology n=6; Health Psychology n=1) reported data relating to stillbirth and inequalities. Complete results reporting the historicity and multiplicity of disciplinary narratives, and the intersections between them will be available in April 2018.

Conclusions

This review will add to the evidence-base informing future research and intervention strategies to prevent avoidable stillbirth, while fostering new trans-disciplinary collaborations to tackle the longstanding contribution and complexity of inequalities to stillbirth rates in high-income countries.

Keywords: stillbirth, inequalities, meta-narrative

Abstracts of Oral Presentations

O-075

An audit of compliance with UK national statutory guidance for the investigation of Sudden Unexpected Death in Infancy

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BACKGROUND: The joint agency investigation of sudden unexpected death in infancy (SUDI) by police, health and social care is expected practice in the UK. This includes a joint home visit with death scene analysis, post mortem, interagency discussion and family support with paediatric follow-up. **OBJECTIVES:** To review current local practice for SUDI and establish whether this is in accordance with recommended national guidance.

METHODS: A retrospective audit of records held centrally by the Birmingham child death review team for SUDI cases between 1.1.15 and 31.12.16, aged 0-24 months. Audit standards were based on 2016 Kennedy Guidelines.

RESULTS: 24 cases were included, 16 male and 8 female. Median age at death was 5 months (range 0 - 23 months).

Compliance with audit standards was generally good; joint agency investigation occurred in 22/24 and family support offered immediately after death in 19. A consultant paediatrician gathered history from 12 families and junior doctors from 2. In 5/24 cases a consultant paediatrician examined the infant, a junior doctor did in 4 cases. Joint home visits by police and paediatrician occurred in 14/24 cases with single agency visits in 5/24. An initial joint agency meeting occurred in 20/24. Paediatricians attended 17/20, police 16/20 and social care at 9/20. 1/20 initial meetings occurred within 2 days (median 6.5 days; range 2-15). 15/24 cases had a post mortem. A final case discussion was held in 14/24 cases with 8/14 within 6 months. The median time to final case discussion was 6 months (range 2-28). 10/24 families were offered follow-up after the final meeting, 4 with a paediatrician. The cause of death was known for 20/24 cases, 11 remained unexplained, 5 were medical and 4 traumatic. In 10/24 there were child protection concerns; in 5 these were known before death and in 5 new concerns were identified by the SUDI investigation.

10 sleep related deaths were identified. Co-sleeping occurred in 5, parental alcohol or substance misuse in 2 and prone or side sleeping in 3

CONCLUSIONS: There is good interagency collaboration with the current process facilitating home visits and initial meetings. Strategies are needed to reduce delays in the process; this is in part due to workload pressures and the move to investigate deaths of older children in the same manner. Improved support for families is needed, especially ensuring they are offered an appointment with a paediatrician at the end of the process to discuss the cause of death.

Keywords: SUDI, Infant, Death

Abstracts of Oral Presentations

O-076

Profile of Sudden Unexpected Deaths in Childhood (SUDC): the OASIS study 2016-2017

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BACKGROUND:

Sudden Unexpected Deaths in Childhood (SUDC) that remain unexplained for those aged 1-18 years are much rarer than SIDS but little has been published about these deaths. Studies of unexplained younger SUDC cases have been reported by both the US SUDC research group and the National Paediatric Mortality Register in Ireland. Main characteristics appear to be a male preponderance, a peak age at 1-2 years, deaths slightly more common in the colder months and at weekends whilst most of these children die unobserved during sleep and are found in the prone position.

OBJECTIVES:

To look at the profile of SUDC deaths in England and compare with previous published findings (and data we also collected from 60 SIDS cases where appropriate).

METHODS:

Families who had suffered the unexpected death of an infant or child up to the age of 4 since 2008 were recruited via the Lullaby Trust charity between July 2016 and October 2017. After obtaining verbal consent we conducted a telephone interview with the parent(s) using a semi-structured questionnaire. Cause of death for this investigation was established using a multi-disciplinary review panel with the information from the interview, coroner's reports and autopsy.

RESULTS:

We recruited 91 (89.2%) of the 102 bereaved families who made initial contact with the Lullaby Trust; 27 were deaths of children > 1 year (SUDC) and 25 remained unexplained after review. The median age of the children was 20 months (inter-quartile range: 16-23 months), 64% were male and largely white ethnicity (88%). More of the deaths (72%) occurred in the colder months (October to March) and 52% occurred at the weekend (Friday to Sunday). Unlike the SIDS cases, maternal smoking during pregnancy or vulnerability in terms of low birth weight, prematurity, admission to a neonatal unit or multiple births was less marked among the SUDC cases, although a third of the mothers (32%) were only educated to GCSE standard (16-year level). Unlike the SIDS cases 28% of SUDC cases had a recorded febrile seizure and a further 16% had a history of seizures in close family members. All but one of the 25 SUDC cases died during night time sleep and 23/25 were unobserved. Strikingly although the majority (84%) were placed supine nearly all (92%) were found prone; for over a third of the infants being found prone was unusual. All but one of these children slept alone.

CONCLUSIONS:

These data confirm previous findings including that few of these children are placed non-supine but nearly all are found prone. Further investigation and understanding of these deaths may best be achieved by establishing a national registry and the collection of observations from matched control children.

Funding source: The Lullaby Trust Project number 268

Keywords: SUDC, epidemiology, child deaths,

Abstracts of Oral Presentations

O-077

Can a self-assessment method of impact and evaluation in bereavement support be useful in understanding and supporting families bereaved by SIDS?

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Background

The Lullaby Trust's bereavement support service has been running for over 45 years. Anyone affected by the sudden death of a baby can contact us, predominantly by self-referral. There are high levels of emotional distress, meaning it is difficult to collect feedback about our service directly from users. Conducting questionnaires of service users after such contacts was felt to be a risk to the supportive nature of the service. In 2016 we began a self-assessment model to help inform the continual development of our bereavement support service.

Objectives

The aim of the project was to understand more about our service users and the immediate impact of our support to them. The study also aimed to collect information about additional stressors and vulnerabilities that users openly mention.

Methods

The study used data collected by staff following a bereavement contact in 2017. Random contacts were selected. Staff filled out a specially-designed, anonymous form immediately following the contact. The collection considered who made the contact (bereaved parent, relative or friend), the reasons given for initiating the contact, and any additional vulnerabilities mentioned. There were no prompts to any of the fields collected. Comments made about the impact of the support given were also recorded. The data were analysed for each variable.

Results

Self-assessment was completed for 88 out of 282 possible contacts. The majority were bereaved mothers (69%). The reason given for contact was predominantly that the person was having a 'bad day' (40%). Bereavement in the last month was also a significant reason (24%) as was having had a recent traumatic event (16%).

Additional vulnerabilities and stressors were openly stated in 67% of contacts. Over 1/3 of these identified multiple vulnerabilities, and for 65% of those with multiple vulnerabilities mental health was an issue. All those who stated that they were single had multiple vulnerabilities. There were high levels of drug or alcohol abuse and isolation.

The vast majority of contacts openly stated that they felt supported by the end of the contact (86%), with large numbers being able to access further support resources such as a bereavement support pack (52%), befriender (34%), or signposting for additional support from another agency (38%).

Conclusions

Bereavement support services continue to offer an important support to bereaved families in the UK, particularly where open access with self-referral means contact can be made on the day it is needed. There are clearly limitations to collecting data without direct questions, but the nature of a listening support service dictates that it must always be led by the service users' needs and willingness to disclose personal circumstances. Assuming under-reporting only highlights the multiple vulnerabilities facing families affected by sudden infant death, and the need for services to train and equip staff to support families in such difficulties.

Keywords: Bereavement, impact, vulnerabilities, SIDS

Abstracts of Oral Presentations

O-078

The role of Sodium Channels in Sudden Unexpected Death in Pediatrics

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“Introduction”: Sudden Unexpected Death in Pediatrics (SUDP) is a tragic condition that has a likely multifactorial etiology. While there is recent evidence for genetic risk factors, with genes related to cardiac arrhythmia and epilepsy, the underlying mechanisms of SUDP are under active investigation. SUDP encompasses Sudden Infant Death Syndrome (SIDS) and Sudden Unexplained Death in Childhood (SUDC), affecting children under and over 1 year of age, respectively. SUDP also includes Sudden Unexplained Death in Epilepsy Patients (SUDEP). Our collaborative Program on SUDP, called Robert's Program, discovered developmental hippocampal malformations in the brains of many children with SIDS and SUDC, suggesting that a subset of SIDS and SUDC is linked to epilepsy. Since sodium channels are found in all excitable tissues and mutations in both arrhythmia-mediated and epilepsy-related sodium channels have been identified in patients with SIDS, SUDC and SUDEP, we hypothesized that a subset of our cases with SUDP would harbor mutations in this family of genes. “Materials and Methods”: We performed a candidate specific analysis for sodium channels in whole exome sequencing data of 70 SUDP patients. Candidate pathogenic variants were selected based on population frequency and pathogenicity prediction from Polyphen2 and SIFT. In addition, we summarized all the reported variants in sodium channels in patients with SUDP and we mapped all novel and reported variants on a 3-dimensional structural protein model. “Results”: We identified variants that met our criteria for pathogenicity or potential pathogenicity in “SCN1A, SCN1B, SCN3A, SCN4A, SCN5A” and “SCN9A” in infants with hippocampal abnormalities but no history of seizures that died of SUDP. In addition, we show a structure-based assessment of all novel and reported variants in human sodium channels in patients with SUDP. While “SCN1A, SCN1B,” and “SCN5A” have strong disease association, we considered variants in the above paralogs as well. “Conclusions”: This study provides a molecular overview of sodium channel variants present in cases with SUDP. This study contributes to an improved understanding of the contribution of sodium channels so that prevention strategies may one day be implemented to avoid these untimely deaths.

Keywords: Sudden unexpected death in pediatrics, Sudden infant death syndrome, Sodium channels, Whole exome sequencing, Epilepsy

Abstracts of Oral Presentations

O-079

Using peer education to support young parents to reduce the risk of SIDS

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Background

In England and Wales, mothers under the age of 20 are three times more likely to lose a baby to SIDS than older parents (ONS 2017); are more likely to be socially isolated and deprived; and have worse mental health postnatally and more generally (Public Health England, 2016). Despite the significant decline in teenage pregnancy in the last decade, research indicates a persistent gap between the needs of this vulnerable group and the support currently on offer. To address this need, in 2015 The Lullaby Trust launched Little Lullaby, a peer-support project that specifically targets and supports young parents aged 25 and under.

Objectives

1. Improve young parents' confidence and knowledge about safer sleep practices to reduce the risk of SIDS.
2. Engage professionals in safer sleep training to improve the support provided to young parents.
3. Equip young parents to better support each other, reducing social isolation and improving emotional wellbeing.

Methods

Currently operating in London only, Little Lullaby uses a peer-support model in which volunteer Young Parent Ambassadors facilitate workshops to deliver best-practice safer sleep advice to other young parents. Ambassadors also give training to professionals on how to best support young parents, and provide guidance on the running of the programme and other Lullaby Trust projects via a Young Parents Panel. Little Lullaby uses digital technology to connect parents, with one of the only dedicated young parent websites, and four social media platforms. Over 80% of Little Lullaby's online content is produced by young parents.

Results

Since 2015, 373 London young parents have attended safer sleep workshops, of which 98% said they learned something new and 58% said that they would make changes to their babies' sleep routines. Almost all (97%) of attendees said it was beneficial for another young parent to deliver the workshop. Of the 665 professionals who received training, 98% said they were better equipped to discuss safer sleep with young parents. The Little Lullaby website, launched in 2016, has received 106,625 unique visitors, with 21,357 engaging with safer sleep advice and over 1.2 million people reached through social media. A survey found 80% of young parents who engaged with the project felt less isolated. The project won a Civil Society Charity award (Children and Youth Category) in 2017 and an external evaluation of the project concluded, "Little Lullaby attracts universal praise and fills a significant gap in meeting the needs of young parents" (Gilchrist 2016).

Conclusions

Peer-support models can be successfully applied to educate and empower young parents to sleep their babies more safely and reduce the risk of SIDS. Professionals can also benefit from learning directly from young parents. Future work will look at extending the peer education model nationally and creating bespoke digital campaigns to address rates of smoking and breastfeeding amongst young parents.

Keywords: Peer education, peer support, young parents, social media, SIDS, prevention

Abstracts of Oral Presentations

O-080

Development of a bundle of care to reduce stillbirths in Australia; a survey of Australian maternity hospitals

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BACKGROUND: The stillbirth rate in Australia is approximately 35% higher than the top performing countries globally. In up to 50% of stillbirths, deficiencies in care are identified and in around 20 - 30% the death is avoidable due to these factors. We aim to implement a bundle of care to address the priority evidence practice gaps in stillbirth prevention in partnership with jurisdictional health departments. Phase 1 of the project aims to develop the bundle based on the United Kingdom's Saving Babies Lives bundle. This phase includes consultation with clinicians in Australia to determine the elements of the bundle of care. **OBJECTIVES:** To identify the elements of a bundle of care for stillbirth prevention which are most valued by maternity hospitals in Australia.

METHODS: An on-line survey of hospitals providing maternity services in Australia was undertaken over the period January to March 2018. All jurisdictional health departments across Australia were asked to invite hospitals to participate by identifying a senior clinician at each site to complete the survey. The survey aimed to identify priority practice improvement areas as well as barriers and enablers to providing best practice. The survey questions utilized both Likert scales and open text. Specific questions around current practices and policies for the elements of care included: detection and management of women with fetal growth restriction (FGR) and for women with decreased fetal movements (DFM), smoking cessation support, intrapartum fetal monitoring. Respondents were invited to nominate other areas of importance to their hospital. **RESULTS:** To date 34 hospitals have completed the survey. The top priority areas to reduce stillbirth were identified as: detection and management of women with FGR (>90% of respondents) and DFM (>90% of respondents), intrapartum fetal monitoring (>80% of respondents) and perinatal mortality audits (>80% of respondents). The care practice reported as least important was advice regarding sleeping position in the third trimester of pregnancy. Current hospital policies around the elements of care also differed. Approximately 20% of respondents indicated that specific guidelines were not in place to support the detection and management of women with FGR and for women with DFM. **CONCLUSIONS:** Maternity care providers across Australian hospitals support the need for practice improvement initiatives to reduce stillbirth. The most valued elements of the bundle were: detection and management of women with FGR and for women with DFM. Funding source: National Health and Medical Research Council of Australia; Mater Research Institute Seeding Grant

Keywords: stillbirth prevention, practice improvement, hospital policy

Abstracts of Oral Presentations

O-081

Introduction of the water method for preservation the deceased fetus

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BACKGROUND:

What to do with the fetus after a (spontaneous) abortion or immature birth until the funeral or cremation? Previously, a fetus was often placed on a cellulose mat, a cardboard basin or on a cloth. There was a high risk of damaging the child when moving it. The fetus' colour would get darker and, for most people, less beautiful and recognizable due to softening and deformation. In macerated children, this effect is much faster and more visible. We will describe a way in which the fetus remains presentable for longer so that the parents can say goodbye to their child. OBJECTIVES: Present our new method for preservation of the stillbirth fetus to the world. METHODS: Casereport of a new method to keep the fetus in its most presentable form, even when he or she is deceased for a longer term intrauterine. We describe 2 cases with 4 fetuses in total where the "water method" is introduced.

In the meantime the water method is widely introduced in the Netherlands. I would like to show pictures from stillbirth fetus of different ages which are kept in water after birth.

RESULTS: By putting a stillbirth fetus in cold water after birth:

- The skin lightens, even if the fetus had already discoloured and was darker at birth (fig. 1 and 2).
- The fetus adopts the fetal position
- No distortion will occur
- Showing the fetus to friends and family is easier because he/she looks beautiful, in this way you can really say your goodbyes together
- You can touch the fetus without damaging it
- The method is easy, all you need is a container with a lid, and of course water!

CONCLUSIONS:

The water method is potentially a good way of preserving the young fetus until the funeral or cremation, and deserves further attention.

Funding source: None

Website: www.watermethode.nl

Keywords: Intrauterine death, immature birth, water method, spontaneous abortion, preservation, stillbirth

Abstracts of Oral Presentations

O-082

Environmental Tobacco Smoke Exposure is Associated with Increased Late Stillbirth: Findings from the Collaborative Individual Participant data (IPD) Sleep and Stillbirth (Cribss) Meta-Analysis

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BACKGROUND: Maternal tobacco use during pregnancy is associated with increased risk of stillbirth. There is inconsistent evidence regarding stillbirth risk and environmental tobacco smoke exposure (ETS).

OBJECTIVES: We explored the relationship between late stillbirth risk and ETS using data from the Cribss IPD study.

METHODS: The Cribss IPD study (PROSPERO: CRD42017047703) comprises five case-control studies investigating modifiable risk factors for late stillbirth (≥ 28 weeks') in relation to maternal going-to-sleep position, and includes comprehensive maternal data. The participant level eligibility criteria were: gestation ≥ 28 weeks, singleton and non-anomalous pregnancy, and collected information on ETS. Maternal tobacco exposure was categorised into four groups: non-smokers no ETS, non-smokers with ETS, smokers no ETS; and smokers with ETS. Women who stopped smoking before the end of 1st trimester were regarded as non-smokers as evidence suggests that they have similar risk of stillbirth compared to women who are non-smokers in pregnancy. Women who stopped after the 1st trimester were regarded as smokers. One stage logistic regression was stratified by study and study site, with adjustment of a priori confounders including maternal age, BMI, ethnicity, parity, education level, marital status, pre-existing hypertension and diabetes, recreational drug use, going-to sleep position, fetal movement and baby birthweight centile.

RESULTS: A total of 731 cases and 1755 controls had data available for analysis. Non-smokers with ETS, smokers no ETS and smokers with ETS all had increased late stillbirth risk compared to non-smokers no ETS (table 1). Population attributable risk (PAR) of late stillbirth for non-smokers with ETS, smokers no ETS and smokers with ETS are 6.4%, 3.8% and 6.9% respectively.

CONCLUSIONS: Maternal ETS during pregnancy is associated with increased risk of late stillbirth in women who are non-smokers. Maternal ETS in non-smokers has similar PAR of late stillbirth as maternal smoking with ETS.

Funding: 2016 Trans-Tasman Research Funding Grant by Cure Kids and Red Nose Australia (Grant 6601)

Keywords: Stillbirth, Secondhand smoking, Environmental Tobacco Smoke, Individual Participant data

Abstracts of Oral Presentations

O-083

Determinants of antepartum and intrapartum stillbirths in a large population-based assessment of births in the Indian state of Bihar

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BACKGROUND: India was estimated to have the largest number of stillbirths globally in 2015. The Indian government has adopted a target of <10 stillbirths per 1,000 births by 2030 through the India Newborn Action Plan.

OBJECTIVES: To report on the stillbirth epidemiology and risk factors that are more likely to result in a stillbirth as compared with livebirth in the Indian state of Bihar.

METHODS: Using a multi-stage stratified random sampling, a representative sample of 20,084 women with 20,337 births in the last 12 months were interviewed (84.9 % participation) across all 38 districts of Bihar state. All women irrespective of live or still birth responded to the same set of questions about pregnancy, labour and delivery, and maternal risk factors. Stillbirth was defined as a fetal death with gestation period of >28 weeks wherein the fetus did not show any sign of life. We report on the determinants that were more likely to result in an antepartum or intrapartum stillbirth as compared with livebirth using multiple logistic regression.

RESULTS: A total of 277 stillbirths were identified in 20,337 births resulting in an adjusted stillbirth rate of 15.5 (95% CI 13.3-18.0) per 1,000. Considering the stillbirths with data both on maceration and foetal movement available (87%), 40.2% were categorised as intrapartum and 53.5% as antepartum. The risk of any stillbirth was significantly higher in women with gestation period of >28-31 weeks (OR 25.65, 16.69-39.40) and of >32-35 weeks (10.58, 7.09-15.80) as compared with >36 weeks of gestation, in women with null parity (OR 4.70, 3.37-6.55), women aged ≥35 years (OR 5.15, 2.21-12.01), breech presentation of fetus (OR 3.06, 2.03-4.62), women who gave history of push and pull of the fetus by health provider during delivery (OR 3.80, 2.69-5.38), and women who were carrying more than one fetus (OR 2.11, 1.19-3.76). In addition to these significant risk factors, women living in rural areas (OR 2.83, 1.01-7.90) and those with no antenatal check-up (OR 1.96, 1.19-3.23) were significantly more likely to have an antepartum stillbirth. Similarly, in addition, the risk of intrapartum stillbirth was significantly higher in women with a previous history of stillbirth (OR 2.35, 1.14-4.87) and among those who had delivered at home (OR 2.05, 1.23-3.42). No significant associations were found for any stillbirth with sex of the fetus, maternal hypertension, diabetes or fever in the last 3 months of pregnancy, consumption of IFA tablets, and fetus having cord around the neck. Overall, 14.6%, 2.9%, and 6.1% of births with <36 weeks of gestation, first borns, and breech presentations were stillbirths, respectively.

CONCLUSIONS: This study is among the first from India to provide detailed risk factor epidemiology for antepartum and intrapartum stillbirths within all births in a given population. Findings can be used to plan specific preventive and intervention policies to reduce the burden of stillbirths in India.

Keywords: stillbirth, determinants, India, epidemiology

Abstracts of Oral Presentations

O-084

Monitoring stillbirths in NHS Trusts and Health Boards across the UK

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BACKGROUND

Stillbirths in the UK are monitored by MBRRACE-UK and, currently, stillbirth rates for individual NHS Trusts and Health Boards are reported annually. In 2015, the stillbirth rate varied between 2.21 and 4.92 per 1,000 births. In order to reduce the stillbirth rate through quality improvement initiatives, timelier reporting of stillbirths is vital. MBRRACE-UK are developing methodology that provides monitoring of stillbirths in real-time to identify a significant rise or fall in stillbirths.

OBJECTIVES

To evaluate and recommend for use an individual value and moving range (XmR) chart to continuously monitor the incidence of stillbirths in real-time in Trusts and Health Boards across the UK. The XmR charts are shown to be informative in healthcare, however the summary statistic to use to monitor the incidence of stillbirths is unclear. The incidence of these stillbirths is quantified in three ways: the number of stillbirths each month, the instantaneous stillbirth rate and the number of days between each consecutive stillbirth. The XmR chart for the number of stillbirths each month requires aggregation of stillbirths, whereas the charts for instantaneous stillbirth rate and days between stillbirths examines the stillbirths individually.

METHOD

The incidence of stillbirths between 1st January 2014 and 31st December 2015 was retrospectively monitored using XmR charts for selected low, medium and high volume Trusts and Health Boards. The efficiency of the XmR chart for each summary statistic was assessed to inform the choice of summary statistic to be implemented by MBRRACE-UK.

RESULTS

The XmR chart for the number of stillbirths each month was effective when the average number of stillbirths per month is at least one. However, the small numbers of stillbirths in low volume organisations increased the risk of the chart falsely signalling a significant change in the incidence in stillbirths. The ability of the XmR chart for instantaneous stillbirth rate to detect a significant change in the incidence of stillbirths in low and medium volume organisations is reduced when at least two stillbirths occur in a day. This resulted in an extremely inflated value for the instantaneous stillbirth rate. The XmR chart for days between stillbirths was most effective in detecting significant changes in the incidence of stillbirths and was applicable across organisations of different volumes.

CONCLUSIONS

The XmR charts for the number of stillbirths each month and for the instantaneous stillbirth rate cannot be reliably implemented for Trusts and Health Boards of all sizes. The XmR chart for days between stillbirths can be used to investigate quality improvement initiatives in Trusts and Health Boards, potentially reducing the number of avoidable stillbirths.

Keywords: XmR chart, stillbirths, monitoring, incidence, rate, quality improvement

Abstracts of Oral Presentations

O-085

Improving, but could do better: Trends in gestation-specific stillbirth in Australia, 1994-2015

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BACKGROUND: Stillbirth remains a public health concern in high income countries. Over the past 20 years stillbirth rates globally have shown little improvement and large disparities. The overall stillbirth rate, which measures risk among births at all gestations may mask diverging trends at different gestations.

OBJECTIVE: To investigate trends over time in gestation-specific risk of stillbirth in Australia.

METHODS: Analytical epidemiological study using nationally reported gestational age data for births in Australia, 1994-2015. Average annual change in gestation-specific prospective risk of stillbirth (per 1,000 fetuses at risk (FAR)) was calculated in two epochs: a historical epoch (1994-2009) and the current epoch (2010-2015) among births at term (37-41weeks), moderate/late preterm (28-36 weeks), very preterm (24-27 weeks) and extreme preterm (20-23 weeks) gestations.

RESULTS: The prospective risk of stillbirth at term declined in both epochs. The decline during 2010-2015 from 1.43 to 1.16 per 1,000 FAR, was more rapid than during 1994-2009 (annual trends -0.08 and -0.03 stillbirths per 1,000 FAR respectively); the moderate/late preterm gestations decline during 1994-2009 was not sustained during 2010-2015; among extreme preterm births the prospective risk of stillbirth plateaued in 2010-2015, fluctuating around 3.3 per 1,000 FAR.

CONCLUSIONS: Improvement in the stillbirth rate from 28 weeks gestation aligns with changes in other high-income countries, but more work is needed in Australia to achieve the levels of reduction seen elsewhere. Gestation-specific risk of stillbirth is more informative than the overall stillbirth rate. The message that the overall risk of stillbirth is not changing disregards gains in the later stages of pregnancy and obscures high rates of stillbirth at earlier gestations.

Keywords: Fetus at risk gestation-specific risk

Abstracts of Oral Presentations

O-086

Improving parents' experiences of care and support following stillbirth: a review of reviews

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We conducted a systematic review of reviews to synthesise evidence relating to improving parents' experiences of care and support following stillbirth.

Material and Methods

Publications were eligible for inclusion if they used a structured approach (i.e. had an explicit search strategy and defined inclusion/exclusion criteria) and included primary studies related to parents' experiences of care and support following stillbirth of a single fetus. Searches of 13 electronic databases and the websites of SANDS and the International Stillbirth Alliance were conducted in September 2016. Two reviewers screened records independently. Reviews were critically appraised using the ROBIS tool and data relevant to care and support following stillbirth were extracted by one reviewer and checked by a second reviewer.

Results

The search produced 10,278 original records and 10,198 were excluded. The full texts of 82 papers were screened (two titles were unobtainable) and 17 reviews were included. Three reviews included health care staff as well as parent participants. Four of the reviews included qualitative studies only, three included controlled trials only and 10 included a range qualitative, quantitative and mixed methods studies. The included studies in the reviews were predominantly from high income countries with only one study from a low income country. Three key themes reported in the included reviews were: general experiences of care and support for bereaved parents; choices and decision-making; interactions with healthcare professionals, and the effectiveness of specific interventions. While there were mixed experiences of care and support many women felt unsupported and ignored and would have liked more emotional support, support that was tailored to their individual needs, and continuity of care especially between hospital and community. In terms of decision-making the most common theme was about the option for parents to have contact (seeing and holding) with their baby and memory-making. Other choices related to options for the birth, such as timing of induction and pain relief, post-mortem, and burial. Parents appreciated clear, sensitive information about options, presented in more than one format, with time for both parents to process the information. There was evidence that interactions with health professionals have a memorable impact on parents. Positive behaviours included staying with parents, supporting them to express concerns, treating babies as if they are alive, and honest and clear communication. There was clear need for ongoing and consistent training for health professionals to improve support offered. Generally, there was a lack of robust evidence examining effectiveness of interventions. When trial evidence was available, e.g. for counselling interventions, results were mixed. More promising interventions appear to be those with multiple components that simultaneously target psychological, social and practical issues.

Keywords: Stillbirth, care and support, systematic review

Abstracts of Oral Presentations

O-087

Application of an Algorithm for Sudden Unexpected Infant Death Classification

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Surveillance of Sudden Unexpected Infant Death (SUID) is typically based on vital statistics data, which are subject to variability in coding and lack information on the circumstances surrounding deaths. To address these limitations, the Centers for Disease Control and Prevention (CDC) created the SUID Case Registry, a multi-state/jurisdiction system, built on the national child death review system. To facilitate consistent and objective evaluation of cases based on available evidence, a SUID classification system and algorithm were developed. The algorithm uses criteria to distinguish explained suffocation infant deaths from unexplained SUID and between different mechanisms of explained and possible suffocation. We analyzed deaths from 18 SUID Case Registry states/jurisdictions occurring from 2011-2016. Based on review of Case Registry data, trained staff classified SUID cases into mutually exclusive categories from CDC's SUID Classification Algorithm: No Autopsy/Death Scene Investigation, Incomplete Case Information, No Unsafe Sleep Factors, Unsafe Sleep Factors, Possible Suffocation, or Explained Suffocation. Cases classified as Explained or Possible Suffocation were also assigned mechanisms: Overlay, Soft bedding, Wedging, or Other. Frequencies and percentages of SUID cases by category and mechanism were calculated. We classified 2,803 cases; 40.5% were non-Hispanic white, 34.1% non-Hispanic black, and 13.1% Hispanic. The median age at death was 2 months. Unsafe Sleep Factors (40.0%) was the most common category followed by Incomplete Case Information (27.5%), Explained Suffocation (16.0%), and Possible Suffocation (13.6%). Fewer than 2% of cases were classified as No Unsafe Sleep Factors (1.0%) or No Autopsy/Death Scene Investigation (2.0%). This pattern was consistent across states/jurisdictions. Most Possible Suffocation deaths were attributed to Soft bedding (72.3%) followed by Overlay (17.1%), Other (6.1%), and Wedging (4.6%). Among Explained Suffocation deaths, Soft bedding (67.8%) was most common, followed by Overlay (18.6%), Wedging (11.8%), and Other (2.0%). The CDC SUID classification algorithm allows consistent, objective classification of SUID, which improves surveillance and understanding of epidemiologic trends. Understanding the mechanisms that contribute to suffocation and unexplained infant deaths and their frequency is critical to informing effective interventions and prevention strategies.

Keywords: sudden infant deaths syndrome, sudden unexpected infant death, infant mortality, accidental suffocation, classification, surveillance

Abstracts of Oral Presentations

O-088

Aerodynamic Parameters Governing Carbon Dioxide Rebreathing in Infants

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BACKGROUND: A well-known hypothesis associated with many SIDS cases is that exhaled air is somehow trapped in the vicinity of the nostrils when an infant is placed to sleep in a prone position. This leads to rebreathing of exhaled CO₂, causing death by asphyxia because the infant is unable to extricate himself/herself from the CO₂-rich environment. Despite this credible rebreathing hypothesis, no research has studied the aerodynamic factors that govern rebreathing. **OBJECTIVES:** Our objective is to use aerodynamics principles to determine safe sleep environments for infants and test or develop novel methods for attaining this. This stage of the research is aimed at an understanding of how aerodynamic parameters affect rebreathing. **METHODS:** Experiments were performed using a mannequin in supine and prone positions, with simplified geometry of the nasal cavity, nasal valve and nostrils. The mannequin was submerged in a water-filled Plexiglas tank and experiments were conducted under conditions of dynamic similarity, i.e. correct Reynolds, Strouhal and Froude numbers. **RESULTS:** Reynolds, Strouhal and Froude numbers are all important in determining the percentage of rebreathed air. This means that the infant's tidal volume (weight), mean nostril diameter and breathing frequency are critically important and so is the room temperature. Exhaled air from an infant's nostrils are laminar due to the low Reynolds numbers, as opposed to being turbulent (for adults). In a supine position exhaled air discharges away from the nostrils, leading to minimal rebreathing of CO₂. In a prone position, the exhaled air forms rolled-up vortices that remain near the nostrils, leading to dramatically increased rebreathing. Soft bedding further increases rebreathing by weakening vortex rollup. Increases in the breathing frequency (Strouhal number) leads to increased rebreathing because the rolled-up vortices have less time to escape the vicinity of the nostrils. Usually, exhaled air is less dense than the ambient air and partially escapes from the vicinity of the nostrils due to buoyancy (positive Froude number). However, if sufficient CO₂ is inhaled/exhaled, the exhaled air is denser than the ambient air, and the nostrils are engulfed in a "pool" of CO₂-rich air that further increases rebreathing (negative Froude number). We published a video that graphically shows the difference between supine and prone sleeping positions: www.youtube.com/watch?v=wdO20sLUfAA. A completely new finding is that larger nostril diameters (3.2mm versus 6.4mm) result in a 250% increase in rebreathing because reductions in Reynolds number are accompanied by simultaneous increases in Strouhal and Froude numbers. **CONCLUSION:** Our observations are consistent with SIDS risk factors. A completely new finding is that the infants with larger nostril diameters are at greater risk. This is relatively easy to screen in newborns and may also be a relevant finding for certain ethnic and racial groups. **Keywords:** SIDS, SUID, rebreathing, suffocation, asphyxia, aerodynamic parameters

Abstracts of Oral Presentations

O-089

May unfavorable gene polymorphisms induce ineffective autoresuscitation, hypoxia and brain edema in SIDS?

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INTRODUCTION: It is hypothesized that a subset of cases of sudden infant death syndrome (SIDS) may be caused by abnormalities in serotonin and related neurotransmitters in regions of the lower brainstem, resulting in failure of protective homeostatic responses to hypoxia (1). Genes involved in the serotonergic system, and in brain water homeostasis, brain function and development are proposed as candidate genes predisposing for SIDS (2). The aim of this study was to test whether SIDS cases have a greater "load" of unfavorable gene variants in genes involved in these mechanisms than controls. **MATERIALS-METHODS:** The subjects consisted of 99 SIDS cases and 35 adult controls. The following polymorphisms were investigated: two VNTRs in the serotonin transporter gene (in promoter and intron 2), val66met in the brain derived neurotrophic factor (BDNF) gene, rs17159702 in the aquaporin1 (AQP1) gene, rs2075575 in the AQP4 gene, and four SNPs (rs17375748, rs1130183, rs12133079, rs1186688) in the gene encoding Kir4.1. The genotyping were done by polymerase chain reaction, gel electrophoresis, Sequenom MassArray system, and TaqMan genotyping technology. A scoring system for genetic "load" was developed based on previously findings in SIDS (2-4). A score of zero means no unfavorable genotypes present, a score of eleven indicates unfavorable genotypes in all investigated sites. **RESULTS-CONCLUSION:** The SIDS cases had significantly higher brain gene scores than the controls. 60% of the SIDS cases had scores in the range 5-8, vs 31% of the controls ($p=0.004$). This may indicate that SIDS victims have an inborn vulnerability in genes important for brain function and development. This may be especially unfavorable in a hypoxemic situation, in which the normal infant can recover due to brainstem protective mechanisms. We postulate that a high brain gene score, i.e. a high sum of unfavorable genetic factors, may result in disturbed autoresuscitation and ineffective gasping (5), inducing severe cerebral hypoxia, in the end leading to brain edema and death. A disturbed water homeostasis, due to unfavorable genetic variants in the aquaporins, may add to the development of brain edema. A failure to stimulate breathing activity may also explain our finding of increased levels of the hypoxic marker hypoxanthine in vitreous humor (6, 7). **References**

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Keywords: SIDS, genetic predisposition

Abstracts of Oral Presentations

O-090

Genetics of Sudden Unexpected Death in Pediatrics

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BACKGROUND: Sudden Infant Death Syndrome (SIDS) is the sudden unexplained death of an infant younger than 1 year of age that remains unexplained after a complete investigation. While the collection of materials for potential genetic testing has been advocated as part of a complete autopsy, guidance is lacking for the appropriate approach. "Robert's Program on Sudden Unexpected Death in Pediatrics" is a translational program that investigates SIDS and Sudden Unexplained Death in Childhood (SUDC) under the rubric of Sudden Unexpected Death in Pediatrics (SUDP) based upon common research findings in children vulnerable to such deaths. The Program brings comprehensive phenotyping, enhanced neuropathology, and genomic analysis to the assessment of SUDP. Robert's Program has developed a formal approach to genomic assessment in SUDP. **OBJECTIVES:** To develop a curated list of genes leading to sudden death based on our hypothesis that intrinsic factors include neurodevelopmental, epilepsy-related, cardiac, metabolic, and infectious mechanisms; to apply a genomic approach in SUDP based on whole exome sequencing (WES) focusing on the gene list and a more in-depth approach in parent-proband trios; and to conduct hypothesis-driven burden analysis of variants in SUDP. **METHODS:** We identified genes with known/postulated mechanisms of sudden death. We performed WES on 95 SUDP cases: 61 proband-only, 29 trios, 3 multiplex families, and 2 families with SUDC and epilepsy. In proband-only cases we restricted our analysis to the curated list. In parents-proband trios, because of decreased penetrance in epilepsy and arrhythmias, we considered variants inherited from a parent; in addition, we looked for de novo or compound heterozygous variants in novel genes. To evaluate the burden of de novo genetic variants in SUDP, we analyzed genes with high heart expression, high brain expression, or both in 61 proband-only cases compared to 1100 healthy adult controls, focusing on rare (allele frequency <0.0001) loss of function (LOF) and deleterious missense (DM) variants. **RESULTS:** The final curated list included 200 genes. At least one variant of interest in a gene on the list was identified in every SUDP case. After closer adjudication, in 18% of cases the variant was determined to be reportable. In addition, the trio analysis for de novo or compound heterozygous variants identified many variants of interest, most of which were previously reported in epilepsy or cardiac disease. Burden analysis revealed that cases with hippocampal abnormalities showed significant enrichment of LOF variants (OR 6.4, p=0.0016). Cases with a family history of cardiac disease showed significant enrichment of rare DM variants (OR 13.6, p=0.0108). **CONCLUSIONS:** Elucidating genetic mechanisms in SUDP carries the future promise of contributing to predictive algorithms and genetic markers for those at risk for SUDP. **FUNDING SOURCE:** Robert's Program on Sudden Unexpected Death in Pediatrics Foundation

Keywords: SIDS, SUDC, genomic analysis, neuropathology, epilepsy, cardiac

Abstracts of Oral Presentations

O-091

Comparison of the longitudinal effects of persistent periodic breathing and apnoea on cerebral oxygenation in term and preterm-born infants

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BACKGROUND: Preterm infants are at increased risk for Sudden Unexpected Death in Infancy (SUDI) and early studies suggested that suggested that apnoea and periodic breathing may underpin this increased risk. Periodic breathing and short apnoeas are common in infants, particularly those born preterm. Previously we have shown that Brain tissue oxygenation is lower in preterm compared to term infants. The aim of our study was to assess the incidence and impact of periodic breathing and apnoea on heart rate, oxygen saturation and brain tissue oxygenation index (TOI) in infants born at term and preterm over the first 6 months after term equivalent age. Study design: 24 preterm infants (born at 27-36 weeks gestational age) and 19 infants born at term were studied with daytime polysomnography at 2-4 weeks, 2-3 months and 5-6 months post-term corrected age during sleep. Periodic breathing episodes were defined as ≥ 3 sequential apnoeas each lasting ≥ 3 s and apnoeas as ≥ 3 s in duration. **RESULTS:** Mean duration of periodic breathing episodes was longer in term infants than in preterm infants at 2-4 weeks ($p < 0.05$) and at 5-6 months ($p < 0.05$), however the nadir in TOI was significantly less in the term infants at 2-3 months ($p < 0.001$) and at 5-6 months ($p = 0.09$). Apnoea duration was not different between groups, however the decline in apnoea index with postnatal age observed in the term infants was not seen in the preterm infants. Falls in TOI associated with apnoeas were greater in the preterm infants at all three ages studied. **CONCLUSIONS:** Periodic breathing and short apnoeas were more common in infants born preterm, and falls in cerebral oxygenation were greater than in the term group. The clinical significance of this for the increased risk for SUDI in preterm infants is unknown and warrants further investigation. **Keywords:** preterm infants, cerebral oxygenation, apnoea, periodic breathing, sleep

Abstracts of Oral Presentations

O-092

Should Somatostatin used as first-line agent in management of Congenital Chylothorax?

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INTRODUCTION: Congenital chylothorax is defined as abnormal accumulation of lymphatic fluid in the pleural space and may be either congenital or an acquired condition. Although congenital chylous effusions are relatively rare in infancy, they have serious clinical consequences and can be potentially life-threatening disorder. To the best of our knowledge there are no evidence-based guidelines to support the use of octreotide in chylothorax management as first-line agent. In our case the accumulation of chylothorax has been treated successfully after the administration of octreotide. We aim to provide guidance for the optimal management of Congenital Chylothorax in Infancy. **Case Summary:** Here, we report a case of a premature baby born at 30 weeks gestation, diagnosed antenatally with trisomy 21 syndrome and severe bilateral congenital pleural effusions which subsequently confirmed after birth as chylothorax. Bilateral thoracentesis were performed and bilateral chest tubes were inserted soon after birth due to the size of the effusion which compromised the respiratory system. Quantification of drainage used to determine clinical improvement and also used as a guide to fluid imbalance and replacement of daily losses. Expressed Breast milk and Medium-chain triglyceride(MCT)" formula was introduced in the first week of life. However Chylothoraces re-accumulated which required another bilateral thoracentesis and bilateral chest tubes. Congenital chylothorax was treated successfully after administration of Octreotide infusion along with intercostal decompression of the pleural effusion and total parental nutrition as adjunctive therapy. In our case there was no any complications of with the use of octreotide. **DISCUSSION:** The MCT diets have met with variable success in the treatment of chylothorax. This is because any oral enteral feeding increases lymph flow.(1) Octreotide is a synthetic, long-acting somatostatin analogue, It has been used in conjunction with other modalities "TPN, effusion drainage" in conservative management.(2-4) **CONCLUSION:** This case is of particular interest because it provides an evidence for the efficacy of octreotide in the management of chylothorax. Therefore, octreotide may be used as first-line agent along with adjunctive therapy of parental nutrition and intercostal decompression of the pleural effusion. The early administration of Octrotide may allow the patient to avoid invasive procedures.

Keywords: Trisomy 21 syndrome, Congenital chylothorax, chylomicrons, Medium Chain triglyceride, Octreotide.

Abstracts of Oral Presentations

O-093

Bereaved parents as active partners in stillbirth research

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The opportunity to host the International Stillbirth Alliance in 2017 provided the context to plan a major international conference for clinicians, researchers and parents to advance global initiatives to reduce stillbirth. Alongside a robust scientific programme, the involvement of bereaved parents as key partners in the planning and the running of the conference opened a new level of engagement between the providers and recipients of perinatal bereavement care. A 'parent panel' of six bereaved parents and three bereavement staff (specialist midwife, chaplain and midwifery manager) began a journey of creativity to weave the lived experience of perinatal grief into a scientific programme and to provide for the needs of bereaved parent participants in the conference. This was an initially uncertain process as parents embarked on a somewhat unknown journey. It had the potential to reopen grief, however from the outset the parent panel sought to honour the lives of the babies who had died through stillbirth. The parent panel became a dynamic group looking beyond the immediate experiences of potential delegates to foster an international 'connectedness of remembrance' for those who would not be able to travel to the conference. The development of an online portal for parents to submit the names of their babies for inclusion in our global conference was a poignant expression of this as six hundred names were inscribed on heart-shaped mementos and displayed at the conference service of remembrance. Inspired by the parent panel, each memento was hand-made by conference organisers. One parent wrote "It occurred to me that research cannot happen without parents willing to share their experiences of stillbirth and pregnancy loss. Parents cannot hope for better outcomes in future pregnancies without research being done. Doctors, Midwives and multi-disciplinary teams cannot continue to provide the best care without parents to learn from and evidence based research to inform their practice. Each and every delegate was as important as and to each other, and somehow we needed to create spaces and events that would reflect that." This experience, provided a new model of active engagement, partnership between parents and professionals focussed on improved bereavement care and knowledge. Parents, as the experts in perinatal grief shared their insights and experiences to significantly shape the overall dynamic of the conference. This is turned to a greater presence of parents who made up 20% of ISA 2017 delegates. This process has much potential to enhance the healthcare relationship between science, clinical care and lived experience in what is inevitably a traumatic experience of loss for both families and professionals. We believe that the partnership with bereaved parents at ISA 2017 was an important contribution in this endeavour.

Keywords: bereaved parents; stillbirth; parent engagement;

Abstracts of Oral Presentations

O-094

Development of a Core Outcome Set and identification of outcome measurement tools for interventions after stillbirth

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Background

A wide range of interventions are offered to parents following the diagnosis of stillbirth. Examples include seeing birthing options, counselling and care in subsequent pregnancies. Many of these interventions have not been proven to help parents and overall evidence is limited. Furthermore, researchers do not know how to define and measure the success of these interventions. There is a need to develop and evaluate evidence-based interventions for parents experiencing stillbirth. It is essential to establish a minimum set of outcomes, or core outcome set (COS), that would be acceptable, feasible and reliable to be measured whenever an intervention is implemented for bereaved parents after stillbirth. This will enable studies to be compared and combined.

Aim

Research is currently underway to develop a COS and identify outcome measurement tools for interventions after stillbirth.

Methods

Stage 1: Identifying previously reported outcomes

A systematic review is being undertaken to investigate what outcomes are reported in existing studies investigating the effects of stillbirth on parents and the wider family, and what measurement tools are currently used to measure those outcomes.

Stage 2: Identifying outcomes that are important to parents and healthcare professionals

Capturing patient perspectives is crucial in the development of a COS as they often identify outcomes not considered by other stakeholders or within the literature. Thirty parents from diverse social, ethnic and cultural backgrounds who have experienced stillbirth at a range of gestations will be interviewed. We will investigate parents' experiences and identify the outcomes that are important for them and thus facilitate measuring the success or otherwise of interventions aimed at improve care following stillbirth. Findings will be triangulated with a healthcare professional focus group.

Stage 3: Determining the Core Outcome Set

Parents, doctors, midwives and researchers will participate in a three-round online Delphi study to prioritise outcomes identified from the systematic review and qualitative interviews in order of importance. A consensus meeting will be held to determine the core outcome set.

Stage 4: Determining how core outcomes should be measured

An in-depth quality assessment of outcome measurement instruments using consensus based methodology will be take place on short-listed outcomes derived from the Delphi Study.

Conclusions

The development of a COS and the selection of measurement tools to evaluate interventions after stillbirth will make a significant contribution to advancing the usefulness of research in this field and improving clinical practice. It will enable researchers to focus research and clinical care on important outcomes, to make better use of evidence and develop effective interventions for parents experiencing stillbirth.

Keywords: Stillbirth, Outcomes, Care, Interventions, Core Outcome Set

Abstracts of Oral Presentations

O-095

Causes of Stillbirths at autopsy in North East London: a 5-year retrospective audit

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BACKGROUND: The causes of stillbirth are multifactorial and varied. Studies have shown that the rates of stillbirth in Afro-Caribbean and South Asian mothers are higher than Caucasian mothers. There is a diverse and large population of ethnic minority groups living in northeast London, an area where poor health and health inequalities have remained persistent. The perinatal pathology department at the Royal London Hospital covers a wide geographic area in northeast London. There have been very few studies to look at the demographic profile of mothers and causes of stillbirth in northeast London. **OBJECTIVES:** 1) To evaluate the demographic profile of mothers with stillbirths who consent to autopsies in NE London; 2) To ascertain the causes of stillbirth in northeast London; 3) To compare the causes of stillbirth among the different ethnic groups

METHOD: All stillbirth autopsies from 5 northeast London hospitals were reviewed retrospectively from December 2012 to December 2017. Cases were excluded if they were terminated pregnancies or postmortems limited to the external examination only. Data was collected on the following: demographic details of the mother and baby, ethnicity, timing of death (antepartum or intrapartum) and cause(s) of death including the relevant condition at death (ReCoDe) Classification. **RESULTS:** There were 296 stillbirth autopsies between December 2012 and December 2017. The mean age of the mother was 31 years old. The largest ethnic group was Afro-Caribbean (31.4%), followed by Caucasian (28.4%), South Asian (17.2%) and others not specified (12.8%). Ethnicity was unknown in 10.1%. Mean age of the babies was 33 completed gestation weeks. Fifty-five percent of the babies were male and 44% were female. Sex was undetermined in 1 (0.3%) case. In 291 cases (98%), the parents have consented for a full postmortem. Limited postmortems were performed in only 5 (2%) cases. The most common cause of stillbirth overall was placental related (ReCoDe group C) with 111 cases (37.5%) in total. Placental causes include abruption, maternal vascular malperfusion and delayed maturation. The second common cause of death was fetal related (ReCoDe group A) with 100 (33.8%) cases. These include lethal congenital anomalies, acute infection and fetal growth restriction. Amongst the Afro-Caribbean group, the leading cause of stillbirth was placental related (21%) and the second common cause was umbilical cord related (ReCoDe group B) (14%). **CONCLUSION:** The rates and aetiology of stillbirth are variable among different ethnic groups. In the northeast of London, the majority of mothers with stillbirths are of Afro-Caribbean descent. The most common cause of stillbirth overall was due to placental factors, thus highlighting the importance of placental examination to determine the cause of stillbirths.

Keywords: stillbirth, autopsy, postmortem, ethnic, placenta

Abstracts of Oral Presentations

O-096

The use of CSF urea level in investigation of sudden infant and child death

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Since 2013 we have been taking a sample of CSF taken at post mortem, when possible from infants and children dying suddenly and unexpectedly who came to have a post mortem examination. This has undergone urea estimation. As per usual post mortem protocols, other investigations such as histology, bacteriology, virology, toxicology have also been carried out. Looking at some aspects of a sample of 180 cases of sudden and unexpected or child death investigated between 2013 and 2015, 10 infants died in the first year of life with a history of co-sleeping and had no other positive findings at post mortem. All had CSF urea levels of 5.7 mmol/l or less. The CSF was more variable in infants and children dying suddenly and unexpectedly in the first 1-2 years of life where there was no history given of co-sleeping (but who otherwise had no positive findings at post mortem)- 18 infants had CSF urea between 4.2 and 8.7 mmol/l. This is in contrast to children who had a history of illness prior to death or who had a history of collapse with death occurring some hours afterwards. A group of 10 infants and children with this type of presentation were found to have post mortem diagnoses of one of the following - myocarditis, septicaemia, viral gastroenteritis, cardiac failure, peritonitis, metabolic disease, leukaemia. All had CSF ureas between 11 and 35mmol/l. Six children in this group who were found to have histological evidence of pneumonia (though who had died without obvious observed signs of illness) were found to have more variable urea, ranging from 5 mmol/l to 13.5 mmol/l. One child died very suddenly from anaphylaxis and was found to have a urea of less than 5 mmol/l. Similarly three children dying of presumed SUDEP or sudden cardiac death (on the basis of other post mortem findings) had CSF urea levels between 4.7mmol/l and 8.1mmol/l. From this we conclude that CSF urea can be helpful as an extra test to assist in assessment of sudden and unexpected deaths in infancy and childhood. Infants and children who die very suddenly and unexpectedly seem to rarely have raised CSF urea unless there are other positive findings at post mortem.

Keywords: CSF urea, Sudden unexpected infant death

Abstracts of Oral Presentations

O-097

Comparison of oxygen saturation values recorded from ex-preterm and term infants using newer generation pulse oximeters

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BACKGROUND: Chronic lung disease affects up to a third of extremely preterm infants born in the UK and may necessitate discharge home on supplemental oxygen. Criteria for provision of supplemental oxygen vary between neonatal units and are not evidence-based, with few existing protocols. Newer generation pulse oximeters reveal unsuspected drops in oxygen saturation in otherwise asymptomatic ex-preterm infants, but the significance of this is unknown. **OBJECTIVES:** A pilot study of oxygen saturation values in healthy newborn term infants was designed to define reference values to better inform interpretation of oxygen saturation profiles in ex-preterm infants nearing discharge. To date 31 studies have been completed. We report these, and make comparison with oxygen saturation profiles from ex-preterm babies at term corrected age considered clinically fit for discharge. **METHODS:** Overnight saturation monitoring was undertaken in 31 healthy newborn term babies (>24 hours old) using the MASIMO Radical 7 oximeter. Recordings lasted up to 12 hours and mothers logged pertinent events. Recordings were compared to clinical recordings from 23 babies born before 28 weeks' gestation, shortly before discharge. A 5000 point replicate robust quartile bootstrap methodology was used to determine reference ranges for both term and ex-preterm groups. The oxygen saturation distribution profiles of the groups were compared using a simple unadjusted logistic proportional odds ordinal regression model, and frequency of dips was compared using clustered Poisson generalised estimating equations. **RESULTS:** Preterm infants ranged from 23+3 to 27+6 weeks gestation (postnatal age 36 to 50+5 weeks at test); all were receiving supplemental oxygen at a flow rate of 0.1 or 0.2 litres/minute following oxygen saturation studies undertaken in air, and were considered fit for discharge. In the reference (term) group, median oxygen saturation was 97.7% (inter-quartile range (IQR) 97.1-98.6%), no different to that of the ex-preterm group, 97.9% (IQR 97.1-98.5%), $p=0.94$. The oxygen saturation distribution profiles of the groups showed no difference ($p=0.94$), with overlapping confidence intervals for the two groups for both lower and upper reference limits. However, the ex-preterm infant group had more dips-per-hour below 94% (7 (IQR 4-13) vs 9 (IQR 4-23), $p=0.015$) and below 90% (3 (IQR 1-5) vs 4 (IQR 2-9), $p=0.002$). Despite this, the proportion of time spent below 94% (4.0 vs 3.1%) and below 90% (1.1 vs 1.2%) did not differ significantly between the two groups ($p=0.4$ vs 0.8), suggesting the dips were very brief. **CONCLUSIONS:** The data presented here suggest that, despite the absence of a formal protocol to guide practice, ex-preterm infants on supplemental oxygen at the time of discharge home have overall oxygen saturation profiles very similar to those of newborn healthy term infants; however, they have significantly more frequent, brief desaturations of uncertain clinical significance. **Keywords:** oxygen saturations, preterm, chronic lung disease, home oxygen

Abstracts of Oral Presentations

O-098

Young Mothers: Their perceptions of risk for SIDS and associated infant-care practices

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BACKGROUND: The social construct of young motherhood is typically negative; young mothers are often grouped together and viewed as a social problem, unprepared for the parental role. Poor outcomes are noted for their infants and children ranging from poor health and educational achievement to experiencing abuse and neglect and being more likely to experience infant death. Research has identified that young mothers are at increased risk for SIDS and they are more likely to expose their infants to increased risks in the sleep environment, despite the availability of health education programs.

OBJECTIVES: To understand young mothers' perceptions of safe sleep information and increased risk for SIDS, and their perspective of translating knowledge of risk into the infant sleep environment.

METHOD: As part of a qualitative, phenomenological PhD research project, five young mothers engaged in serial interviews about their experience of becoming a mother. Three interviews, conducted during the ante (1) and post-natal (2) period, illuminated their knowledge and understanding of risk for SIDS, how they translated that knowledge into the infant sleep environment, and what factors influenced their infant-care practices.

FINDINGS: Key themes have begun to emerge from initial analysis: 1. Reactive parenting, 2. Safe sleep information is incomplete, unclear or causes confusion, 3. The infant is required to 'fit into' the life of the young mother, and 4. Infant-care practices demonstrated increased risk between the 4th and 16th post-natal week.

CONCLUSIONS: Consideration of these themes may offer a fresh perspective for health professionals when discussing risk reduction for SIDS with young mothers. Understanding what life is like for these young women may improve their level of engagement with professionals and when young mothers and professionals have a 'shared horizon', outcomes for their children can improve.

Keywords: SIDS, Young Mothers, Infant-care practices

Abstracts of Oral Presentations

O-099

Reducing Sudden Unexplained Death in Infants in NHS Greater Glasgow & Clyde: An Information Pathway for Staff

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Background

Two years worth of data, broken down by Health & Social Care Partnership (HSCP) areas, was compared to review sleeping position in infants at 6 - 8 weeks and to consider associated risks. Objectives

Public Health, Health Visitors, Practice Teachers, Maternity, the Scottish Cot Death Trust and other representatives partnered as a working group to review the data. This group focussed on professional practice and developed an Information Pathway resource for staff. Methods

The pathway has been designed to include key dimensions which were identified by staff who recognised the need to develop a best practice, up to date evidence based, one stop information resource to support staff.

The dimensions of the Information Pathway:

1. A timeline for brief interventions and discussions with every family about SUDI prevention.
2. Key messages for staff to discuss with families.
3. Risk factors that all staff need to understand and be aware of.
4. Information about Smoking, Second-hand Smoke, E-cigarettes, Alcohol and Drugs
5. A list of resources to support brief interventions e.g. Reduce the Risk of Cot Death and the Scottish Cot Death Trust resource and information about accessing these.
6. Information about support for families and the Next Infant Support Programme, SCDT support for families or relatives who have previously experienced a SUDI.
7. Information about Sleeping Positioners or Pods.
8. Literature and evidence for staff to keep updated on the evidence base.
9. Learning and Development options including access to on line and face to face opportunities for staff
10. Links to the SUDI Scotland Toolkit and further support for staff in the event of their involvement with a SUDI

Results

The SUDI reduction pathway houses all relevant information for staff working with families. It provides up to date evidence and information that staff have identified as relevant, required and useful for their everyday practice.

For example, the issue of new products, i.e. sleeping positioners or pods, is one that staff are being asked about on a regular basis and they require to be kept updated with regards to these. The pathway allows staff to keep abreast of this and additional information that they can then discuss with families. Conclusions

The pathway development has resulted in focussed learning opportunities for staff across NHS Greater Glasgow & Clyde (NHSGGC). A Public Health Forum was facilitated in order to share learning and to refine the pathway. HSCP areas have now begun to facilitate face to face learning and development sessions for staff working with children and families, based on the Information Pathway and these will continue to be evaluated across NHSGGC. The pathway has been designed as a PDF to allow staff access electronically and revisions to be made as and when required, at least annually.

Keywords: SUDI, Information, Public Health, Partnership, Prevention

Abstracts of Oral Presentations

O-100

The risk of late stillbirth and population attributable risk associated with small for gestational age birth according to customised and Intergrowth 21 (IG-21) birthweight centiles

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BACKGROUND: Being born small for gestational age (SGA) is a consistent risk factor for late (≥ 28 weeks') stillbirth. There is debate as to which birthweight centile reference should be used to classify size at birth and few studies compare stillbirth risk by different criteria. **OBJECTIVES:** We aimed to investigate the risk of late stillbirth using customised and the IG-21 criteria and compare the population attributable risk (PAR) for SGA stillbirth by these two criteria. **METHODS:** We undertook an individual participant data meta-analysis (IPD) of existing studies that have collected data on maternal going-to-sleep position and late stillbirth risk. The participant inclusion criteria were gestation > 28 weeks, with a singleton and non-anomalous pregnancy. Birthweight centiles were calculated using the online customised and the IG-21 birthweight bulk calculators. The online customised adjusts for ethnicity, maternal weight, height, parity infant sex and gestation, whereas the IG 21 adjusts for infant sex and gestation. The date the mother thought her baby died was used to calculate gestation and if gestation at death was unknown this was estimated as 48 hours before birth. SGA was defined as birthweight < 10 th centile. One stage multivariable analyses adjusted for known confounders for late stillbirth. **RESULTS:**

Individual-level data from five case-control studies, conducted in New Zealand ($n=2$), Australia, UK and an international study were obtained (cases, $n=866$; controls, $n=2284$). The adjusted odds for late stillbirth increased as birthweight centile reduced with the PAR for SGA by customised and IG-21 centiles being 24% and 13% respectively. The lowest risk for late stillbirth occurred with a customised centile between 75-89.9 and for IG-21 the lowest risk occurred with birthweight ≥ 90 th centile aOR 0.64 (0.46-0.89).

CONCLUSIONS:

Babies with birthweight < 50 th centile had increased odds of late stillbirth regardless of centile criteria. More late stillbirths were identified as SGA by customised (33.6%) vs IG-21 (19.4%) centiles with a resulting higher PAR for customised centiles. Birthweight ≥ 90 th centile was associated with borderline increase in risk by customised centiles whereas weight ≥ 90 th by IG-21 was protective suggesting that babies classified as large by IG-21 are not pathologically overgrown. The choice of birthweight centile will influence the proportion of late stillbirths born described as SGA and may impact on the risk associated with large birthweight for gestational age. Funding: 2016 Trans-Tasman Research Funding Grant by Cure Kids and Red Nose Australia (Grant 6601)

Keywords: stillbirth, small for gestational age, birthweight centiles, individual participant data,

Abstracts of Oral Presentations

O-101

Altered fetal movements during pregnancy: How can we best educate women about getting to know their baby?

Claire Sheryn Foord

Still Aware

| BACKGROUND |

Most women will report feeling fetal movements sometime between 18 and 20 weeks (or earlier in multiparous women). Fetal movements are an indication of fetal wellbeing, and are reassuring to both women and maternity health care providers. Conversely, a change in fetal movements; strength, pattern or regularity, can be cause for concern. Decreased or absent fetal movements have been associated with poor perinatal outcomes, including stillbirth, IUGR and preterm birth. Stillbirth affects more than 2700 families in Australia and New Zealand every year. That equates to approximately 6 babies per day; 6 families whose lives are devastated. Many women who experienced stillbirth, perceived a change in their baby's movements prior to the diagnosis. The myth that babies slow their movements towards the end of pregnancy remains a common-held belief. Additionally, new research shows that a rapid or frantic flurry of fetal movements can also be a precursor of a baby at risk of stillbirth

| OBJECTIVES |

The aim of this presentation is to assist delivery of research-based information in laymans terms. To help maternity health care providers to understand women's perception of fetal movement advice and how to best communicate evidence-based advice to women who perceive a reduction or significant change in their baby's movements during pregnancy, provide information to midwives and childbirth and parenting educators about stillbirth prevention, and to ultimately help improve outcomes for women and their babies

| METHODS |

The presentation will share contemporary research, and attempt to dispel common pregnancy myths such as those mentioned previously. And discuss the role of the antenatal and parenting educator in providing clear communication and concise direction to expectant families on the importance of understanding their own baby's fetal movements in pregnancy. Variations in clinical practice and information provided to women antenatally about fetal movements will be discussed, together with consumer and clinical perception of fetal movement advice.

Keywords: Stillbirth, Prevention, Education, Support, Antenatal, Care

Abstracts of Oral Presentations

O-102

Maternal going-to-sleep position, interactions with indicators of fetal vulnerability and the risk of late stillbirth: the collaborative individual participant data (IPD) sleep and stillbirth (CRIBSS) meta-analysis

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BACKGROUND: Maternal supine going-to-sleep position is associated with the risk of late stillbirth (≥ 28 weeks'). However, the association of right side going-to-sleep position and late stillbirth is inconsistent. Individual studies have been underpowered to investigate interactions between maternal going-to-sleep position and indicators of fetal vulnerability. **OBJECTIVES:** We used individual participant data (IPD) from existing studies to assess whether supine and right side going-to-sleep positions are a risk for late stillbirth and test the interaction between maternal going-to-sleep position and indicators of fetal vulnerability. **METHODS:** We undertook systematic bibliographic searches for case-control and prospective cohort studies and randomised trials studies done between 1 Jan 1946, and 26 Jan 2018, that collected data on: maternal going-to-sleep position and stillbirth. The primary outcome was stillbirth. A one stage approach stratified by study and study site was used for meta-analysis. The interaction between going-to-sleep position and indicators of fetal vulnerability (maternal obesity, smoking, second-hand smoke exposure, substance use, alcohol consumption, pre-existing diabetes and hypertension, perception of fetal movement patterns, term or preterm gestation, and small for gestational age infant) was assessed in bi-variable regression models. A multivariable model was developed with adjustment for a priori confounders. The participant inclusion criteria was gestation ≥ 28 weeks, non-anomalous and singleton pregnancy. The study was registered with PROSPERO, number CRD42017047703. **RESULTS:**

Six case-control studies were identified, with individual-level data obtained from five studies (cases, $n=866$; controls, $n=2284$) conducted in New Zealand ($n=2$), Australia, the United Kingdom, and an international study. Maternal supine going-to-sleep position had an increased risk of late stillbirth (aOR 2.6, 95% CI 1.7–4.0) compared with left side. There was no increase associated with right side compared with left (aOR 1.04, 95% CI 0.83 to 1.31). There was no significant interaction between maternal supine going-to-sleep position and indicators of fetal vulnerability. **CONCLUSIONS:**

This IPD meta-analysis confirms that maternal supine going-to-sleep position is independently associated with late stillbirth. There was no difference in risk between left and right side going-to-sleep position. No interaction of maternal non-supine sleep position with indicators of fetal vulnerability were identified. A limitation of the IPD was the small differences in some of the variables between the individual studies, limiting our ability to control for all a priori confounders. Funding: 2016 Trans-Tasman Research Funding Grant by Cure Kids and Red Nose Australia (Grant 6601)

Keywords: stillbirth, fetal death, sleep

Abstracts of Oral Presentations

O-103

National consensus and pilot of parental engagement in the perinatal mortality review process (The PARENTS 2 Study)

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Background

Following a perinatal death, a standardised, multidisciplinary review should take place to investigate the events surrounding the loss of the baby. Learning from these deaths could help improve the quality of care provided to parents, patient safety and could prevent similar events occurring again. Recent confidential enquiries from the United Kingdom have demonstrated that the perinatal mortality review (PNMR) is inconsistent and rarely includes any formal input into the review from bereaved parents. An earlier study found that parents were unaware that a review took place and would welcome the opportunity to give feedback into the PNMR. Focus groups have been conducted with healthcare professionals who agreed parental engagement would be beneficial.

Objectives

This abstract describes the findings of the PARENTS 2 consensus study, including key findings and recommendations on parental engagement in the PNMR.

Methods

A two-round modified Delphi technique was utilised to reach a consensus; including national consensus workshop and an online questionnaire.

The consensus meeting was attended by a national panel of stakeholders in stillbirth, neonatal and bereavement care (n=17). To develop recommendations of parental engagement, participants discussed four key areas including receiving feedback from parents; format of the PNMR meeting; parental pathway; and challenging aspects of involving parents in reviews. A content analysis was conducted to generate recommendations which were utilised in an anonymous web-based survey. Attendees of the consensus workshop and project advisory board were asked to rank recommendations using a 9-point Likert scale from 1 (not important) to 9 (critical). We established a priori that 'Consensus' would be achieved if over 70% scored the principle as 'critical' (score 7 to 9) and less than 15% scored the principle as 'not important' (score 1 to 3).

Results

Twenty-five stakeholders participated in the online questionnaire in June 2017 (96% response rate). Consensus was reached on 14 key principles. Ninety-six percent (n=24) agreed that it was of critical importance that there should be a face-to-face explanation of the PNMR process; 72% (n=18) considered parents should be offered the opportunity to nominate a suitable advocate; 92% (n=23) thought responses should be formally documented; 96% (n=24) indicated that it was critical for action plans to be made and monitored and 100% (n=25) indicated that it is critical a Plain English summary should be produced for the parents following the meeting.

Conclusions

Key stakeholders were very supportive of parental involvement. We are currently undertaking a six-month pilot of parental engagement in the PNMR and have had over 90% recruitment rate. The findings will be directly used to develop a national standardised perinatal mortality review tool with parental involvement in association with the National Perinatal Epidemiology Unit.

Keywords: Perinatal Mortality Review Process, Perinatal Death, Parental Engagement, Patient Safety, Stillbirth, Neonatal Death

Abstracts of Oral Presentations

O-104

My Baby's Movements: Women's experiences of a mobile phone application aimed at reducing stillbirth by increasing awareness of fetal movements in pregnancy.

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BACKGROUND: Stillbirth is a major global public health problem. Maternal perception of decreased fetal movements (DFM) is associated with stillbirth and other adverse outcomes. The My Baby's Movements (MBM) trial aims to reduce stillbirth rates using a mobile platform to enhance maternal knowledge about DFM and encourage timely health-care seeking behaviour combined with clinician education programs on management of DFM. **OBJECTIVES:** The primary objective of the trial is to assess the effects of the MBM package, compared to routine antenatal care alone on stillbirth rates at 28 weeks or more. Other outcomes include: neonatal morbidity; maternal psychosocial outcomes; and health services utilisation and costs; women's and clinicians' knowledge and perceptions of fetal movements (FM) and the acceptability of the MBM package including women's views on the app. The purpose of the survey within the app is to understand women's experiences of the mobile phone app, and understanding if information provided regarding fetal movements was useful. It is important to collect this to understand if a mobile phone app can be used as both an educational resource, and an awareness tool for women. **METHODS:** This trial uses a stepped-wedge, cluster-randomised design, involving 27 hospitals (8 clusters) and 260,000 women in Australia and New Zealand (ANZ) over a 3-year period and is due for completion in early 2019. Thirteen hospitals are currently engaged with the intervention phase of the trial. This study reports on women's views of the mobile phone app as provided through a survey available to women after they have birthed. **RESULTS:** Of 24,908 pregnant women registered on the trial database, 4,738 have downloaded and used the MBM app (19.0% download rate). Of these, 837 users have completed the survey, reporting that the app increased their awareness of fetal movements (92.7%), provided them with trustworthy information about fetal movements (90.3%), and was easy to use (98.5%). Further, 91.2% of respondents were willing to recommend the app to others during pregnancy. **CONCLUSIONS:** The MBM mobile phone app has been well received by users as a trusted source of information to raise awareness of the importance of FM. Study findings suggest that user factors may be integral to interventions aiming to improve timely reporting of DFM and reduce stillbirth rates. It is noted that a low download rate suggests that trial testing a mobile phone application can be challenging. **Funding source:** National Health and Medical Research Council of Australia
Keywords: stillbirth, mobile application, fetal movements, awareness, pregnancy

Abstracts of Oral Presentations

O-105

Re-assessing Services Provided for Bereaved SIDS Parents: Professional and Parental Perspectives

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BACKGROUND: When a baby stops breathing suddenly and unexpectedly, parents encounter and receive services from hospital staff, first responders, and medical experts whose main focus is to resuscitate the infant or investigate the death. There is no time in the midst of crisis to educate professionals on how to best manage emotionally distraught parents with compassion. At best, assistance for parents who suffer this loss, is provided by non-judgmental, experienced, SIDS-knowledgeable experts. At worst, authorities lacking SIDS knowledge and grief and communication skills may take an accusatory tone. Blame can increase parental distress, impact cognitive appraisal, and result in Persistent Complex Bereavement disorder. **OBJECTIVE:** Our aim in this study is to review, evaluate, and comment on the practices, services and current procedures of authorities during a sudden unexplained infant death. As professionals and SIDS parents ourselves, we seek to investigate not only the emotional impact these interactions and support services have on families struggling to survive their infant's sudden death, but also to establish best practices and sensitive training protocols for first-responders and health-care specialists. **METHODS:** The methods of this qualitative investigation are multifaceted and include: 1) research and review of the history of professional SIDS services offered to bereaved SIDS parents; 2) analysis of training protocols and actions of first responders, health care professionals, and social workers who interact with SIDS parents currently in California; 3) interviews with grieving families and SIDS professionals active in the field for more than a decade; and 4) drawing on our collective 30+ years of professional and personal experiences as social worker, peer advisor, and SIDS parents. **RESULTS:** Grounding our information in a variety of sources, we hold that the professional-parental interaction can impact parental grief, positively or negatively. Successful and ongoing professional support may decrease misplaced guilt experienced by SIDS parents. Disconnects between professionals and bereaved parents, on the other hand, can negatively affect grief outcomes; for example, professionals not trained in the distinction between risk vs. cause. Our results provide a much-needed window into the professional-parent dynamic, shedding light on the functional aspects and disconnects of SIDS care, and offer suggested changes in the protocol for best-practices. **CONCLUSION:** By focusing on professional-parental interactions and the effects these interchanges have on SIDS parents in the aftermath of child loss, we hope to improve the relationship between SIDS professional and parent. Medical research is making headway toward answering specifically the how, and why of SIDS deaths. Until there are definitive answers, let us continue to improve the services provided to grieving parents affected by this tragedy.

Keywords: SIDS, Grief, Professionals, Sudden, Infant, Death

Abstracts of Oral Presentations

O-106

Changing through pain - stories about posttraumatic growth

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Background

Research in posttraumatic growth shows that people often report positive changes after experiencing a trauma or loss. They find a new sense of personal strength often described in different ways of better psychological competence and function. In this project we wanted to expand the perspective of grief and struggles with adversity by giving attention to positive experiences after loss. It can be difficult to talk about this because it can be misunderstood as undermining the severe consequences of grief. Nevertheless up to 70 % experience post-traumatic growth.

Objectives

Communicate knowledge and experiences of post-traumatic growth following major crisis in life to people in general and to bereaved people in particular.

Methods

For two years we worked on a book with a publisher (Abstrakt forlag). The three editors are author (Wold), consultant/bereaved by sudden death (Hansson) and grief therapist in LUB (Kalstad). We interviewed seven men and women reporting to be changed as a person after a trauma; the loss of a spouse in early age, loss of their child due to suicide, stillbirth or SIDS and loss of physical health and function. Their stories represent different struggles and ways of coping. Although trauma is both destructive and distressing, they all talk about changes like increased personal strength, more gratitude and wisdom in life, enhanced relationships with others and a new and deeper understanding of the meaning of life. In addition, two psychologists (Hafstad and Siqveland) from Norwegian Centre for violence and traumatic stress studies (NKVTS) discuss posttraumatic growth in a professional context.

Results

We have achieved three main goals:

1) Produce and publish a book about posttraumatic growth: "Changing through pain - Stories of posttraumatic growth" presenting seven narratives of trauma and post-traumatic change and growth. 2) The book was launched as part of a conference on posttraumatic growth at the House of Literature in Oslo. 3) At LUBs Website part of the book is published and other articles of posttraumatic growth. Royalties from the book constitute a fund to encourage others to write their stories.

Conclusions

We are proud of this book, being one of the first books in Norway bringing together experienced based knowledge with theoretical perspectives of posttraumatic growth. Both the book, the launching conference and interviews in the media has resulted in important discussions, personal reflections and increased knowledge and more accept for addressing this phenomenon. Posttraumatic growth is a result from the struggles with adversity and not the trauma itself. Therefore it is important that the bereaved get the support they need. Posttraumatic growth does not imply that you won't suffer but rather the opposite, people report that pain and grief do coexist with a sense of a deeper meaning and happiness in life. Posttraumatic growth as a concept helps people to describe these changes in life.

Keywords: grief, posttraumatic growth, narratives,

Abstracts of Oral Presentations

O-107

Analysis of fifty YouTube videos in memory of stillbirth children. The new role of social websites as public virtual cemeteries

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Virtual cemeteries are one of the many proofs that testify the increasingly indispensable role of the technological means of our modern society. We live in an era in which information, communication, and sharing of any aspect of our lives is now mechanically via websites and social networks, including grief. As psychologists and researchers whose work mainly concerns mourning, from an initial interest shown by parents, we arrived in many videos available on YouTube dedicated to stillbirths. They could be considered as new ways of mourning's presentation as support groups, special rites and tattoos. This study corresponds to a qualitative analysis of 50 videos published on YouTube since 2008. Keywords as mother, newborn, angel, death, illness, etc. proved to be not very decisive compared to "stillbirth", from which 53,000 results emerged. The videos were selected according to the order of succession proposed by the website.

Among fifty videos, the child's mother was the author of the video in 70% of the cases. The 86% of the children are stillbirths, compared to 14% of babies who lived a few days, with a majority of males. With an average length of 5.52 minutes (SD 2.99), a mean of 242 957,6 views (SD 538 687,4) and 256,3 of comments (SD 497,6542), the videos have some specific characteristics: the second part with black and white photos (64%), background music (96%) and religious references. The videos fall a sort of conformist script. The parents tell the story of their child, from conception to death, focusing on the emotional aspects of the event and leaving out the medical and rational ones, denying any form of guilt or responsibility for the child's death. Our hypothesis is that the available access to the child's "grave", without physical limits, could be a risk for a possible complicated grief. At the same time, through interacting with other bereaved people who publish comments, video therapy can allow parents to find different ways to deal with mourning. YouTube videos originate from an emotional need of the bereaved parent to be able to declare the existence of their child and their grief, keeping his memory alive. It is a sort of social baptism, a rite of presentation of the child to the family and society where it's also clear the author's ideas about death, including religious beliefs. Unlike the adult's body, that of the child does not arouse disgust but tenderness, attracting, through a process of personalization, the viewer's compassion. **Keywords:** Stillbirths; Youtube; New funeral rites; Bereaved parents; Grief; Death.

Abstracts of Oral Presentations

O-108

This isn't a miscarriage: A qualitative interview study to understand parents' experiences of losing a baby between 20 and 24 weeks in the UK

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BACKGROUND: In the UK, babies born showing no signs of life before 24 weeks of gestation are not officially registered as a stillbirth. They are often referred to as a miscarriage, fetal loss or fetal death. Little is known about the impact of this legal limit on parents' experiences. **OBJECTIVES:** To understand the practical and emotional impact on parents of losing a baby just before 24 weeks gestation - the official registration cut-off for stillbirth in the UK. **METHODS:** We undertook a national qualitative interview study to understand parents' lived experiences of losing a baby between 20 and 24 weeks of pregnancy. Parents were recruited from across the UK, via doctors, midwives, charity support groups and social media. We interviewed 38 parents (28 mothers and 10 fathers) with experience of losing a baby before, during or shortly after birth between 20 and 24 weeks of pregnancy. Parents' experience of loss occurred between 6 weeks and 20 years before the interview. Interviews were audio and video recorded, transcribed and then reviewed by the parents. We identified emerging themes using a 'modified grounded theory' approach. These were then verified by each researcher and members of an advisory panel comprising clinicians, support group representatives and parents. Interviews will be published on the Healthtalk website (www.healthtalk.org) **RESULTS:** The parents that we spoke to felt strongly that the word 'miscarriage' was completely inappropriate to describe their loss and did not in any way describe their lived experience. Their babies were born a matter of a few weeks, days or even hours before the official cut-off of 24 weeks. The reality of losing a baby at this gestation was very different to what they imagined a miscarriage to be, especially if this was their first pregnancy. Parents talked about the physical pain of labour and their lack of preparation and shock at giving birth to a "formed, tiny, perfect" baby. Many parents had held their baby in their arms, sung to them, washed and dressed them and had a funeral for them. They felt the commonly used term "miscarriage" prevented friends and family fully understanding what they had been through. Many resented the lack of an official birth and death registration, feeling it meant their baby's life was not counted or validated. There were also practical implications, such as lack of access to maternity and paternity pay and parental leave. **CONCLUSIONS:** Parents felt losing a baby at any stage of pregnancy was devastating but more consideration should be given to the impact of losing a baby so close to the 24 weeks cut off. The use of the word 'miscarriage' meant parents weren't emotionally prepared for the labour and birth and their friends and family and work colleagues were unaware of the significance. This often had a long term impact on their grief.

Funding: National Institute for Health Research, UK (NIHR)

Keywords: stillbirth; miscarriage; qualitative;

Abstracts of Oral Presentations

O-109

Deciding on pregnancy after loss and hoping for a born alive baby: the experiences of couples in pregnancy after stillbirth

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Background

Stillbirth is a baby born having never shown signs of life and remains a complication of pregnancy with almost 3 million stillbirths globally, each year. Pregnancy loss has a major impact on women and their partners particularly if parental grief is unacknowledged and couples are unsupported in their grief. The majority of women proceed to a subsequent pregnancy, often within a short time-frame of their index loss. Therefore, women and men are attempting to bond with a new baby while actively grieving their deceased babies. Pregnancies after loss carry increased risk of complications including stress, fear and anxiety for both partners. Research in this area has focused predominantly on women's experiences with a few small studies focused on men's experiences. Little is known about how the decision to become pregnant again after loss is negotiated or how couples experience a pregnancy after loss. No studies to date have focused on couples as a dyad.

Objectives

The aim of this qualitative study was to explore the experiences of couples, as a dyad, in pregnancy after loss.

Methods

As little was known on this topic, an Interpretive Phenomenological Analysis (IPA) methodology was used. Following full ethical approval, face-to-face dyadic interviews were conducted with eight heterosexual couples in the immediate pregnancy after perinatal loss. Interviews were audio recorded, anonymised and transcribed verbatim. Data were analysed in depth, using IPA principles developed by Smith et al (2009). Superordinate themes evolved from the emergent themes directly from the participant data.

Results

This research was undertaken for a doctoral degree. Thesis submission and viva defence are outstanding therefore; results are limited at this time but will be available for the Conference. Two superordinate themes emerged from the data Hoping for a Born Alive Baby and Journey of Loss. The first theme, Hoping for a Born Alive Baby explored the experiences of planning for and experiencing a subsequent pregnancy as a couple. The second theme explored couples Journey of Loss as they spoke about negotiating their way through their initial loss towards a subsequent pregnancy. The findings from the first theme Hoping for a Born Alive Baby are presented here. They explore couples' experiences of decision making about subsequent pregnancy as well as the experiences of pregnancy after loss as a dyad.

Conclusion

This study offers a unique insight into the experiences of couples' in pregnancy after loss that had not been examined in previous research. It provides insights into how women and men negotiate the decision around subsequent pregnancy after loss. It is the first study to explore the dynamics of couples as a dyad, and how they experience pregnancy after loss. It offers recommendations on how to support couples at the time of loss, planning for, and experiencing pregnancy after loss.

Funding source

None

Keywords: Stillbirth, Pregnancy after loss, Couples, Experiences, Phenomenology

Abstracts of Oral Presentations

O-110

How to support parents after stillbirth – systematic literature review

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BACKGROUND: The stillbirth is sudden incident, which is often associated with traumatic experiences of the parents. Thus, consistent evidence-based practices should be developed to support the parents that have experienced a stillbirth.

OBJECTIVES: To explore the support that the parents wanted and experienced as most helpful for coping with their lost after experiencing a stillbirth.

METHODS: The literature search was systematic conducted in the databases Arto, Medic, Cinahl, Medline, PsycInfo and ProQuest to include a range of disciplines (e.g. Nursing- and Social sciences, Medicine, Psychology and Theology). The included articles were all peer reviewed and published in Finnish, Swedish or English during the years 2000–2017. The search words included: stillbirth, social support, support, counseling, pastoral support, spiritual support, peers counseling, directive counseling, pastoral care, peer group, self-help groups, intervention, strategy, best practice, randomized control trial and randomize clinical trial, that were used either alone or in different combinations. Inductive content analysis was employed by the analysis.

RESULTS: Prior to the parturition parents needed information in particular of the stillbirth and its causes. Furthermore, they wished information about coming stillbirth, the benefits of and reasons for a natural childbirth as well as possibility to be supported by the father or a doula during the labour. Additional themes of information parents expected were pain management, lactation and its staunching. During the stillbirth parents needed emotional support and good pain management. They need to be prepared to the appearance of the death baby, to look the at him/her and to detach themselves from it. After the stillbirth parents need support by remembering and collecting memories of the baby and to say goodbye to him/her. They also needed support by the funeral arrangements. The parents found information about different forms of multi-professional support as helpful for their coping-process. All information should be given both in oral and written form. Information about the special characteristics of grief and mapping the extended family as well as enabling the shared grief with them was brought up by the parents as aspects promoting their coping. They expressed further need of information about supporting the siblings, the effects of still birth to the partnership, family-dynamic and future pregnancies. The concrete support in different forms was also mentioned as helpful for the coping of the parents. The continuity of support, offered from the health care organisation, and reference to peer support were essential for the coping-process of the parents.

CONCLUSIONS: The multiform immediate and long-term support, offered from the health care organisation promotes parents coping after stillbirth. The parents have a need for continuous support from the knowledge of death of the baby until further pregnancies.

Keywords: Stillbirth, social support, parents, systematic review, evidence-based practice

Abstracts of Oral Presentations

O-111

The Pregnancy After Loss Journey

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BACKGROUND: Alexis Marie Chute is a bereaved parent and social researcher. Chute has investigated the evolution of perinatal bereavement trauma through subsequent stages of family growth. **OBJECTIVES:** Educate caregivers on meaningful support for families considering pregnancy after loss, including topics:

- Desire to get pregnant and when
- Psychological triggers
- Individual variances in processing new pregnancy
- Role of faith in loss/new pregnancy
- Coping techniques

METHODS: Alexis Marie Chute conducted social research over the last eight years through her parent-engaged bereavement blog *Wanted Chosen Planned* www.WantedChosenPlanned.com. She used her own experiences as a case study in her memoir and documentary film, *Expecting Sunshine*, through which she interviewed other bereaved parents and experts, and toured internationally visiting hospitals, conferences, support programs and healing art groups. **RESULTS:** Most families are eager to get pregnant after loss, and some do so quickly while others choose a time of mourning and physical healing. Families often realize their new pregnancy does not decrease but in fact amplifies their grief in a season of challenging psychological triggers of their trauma, including the positive pregnancy test, trimester markers, doctor appointments, hospitals, well-wishes, and delivery planning decisions. Many experience anxiety, not enjoyment, in the subsequent pregnancy, as well as difficulty bonding with the unborn child. Learned ways of coping can strain relationships if not communicated. Some discover or reject faith after loss. Some express changing perspectives on identity and shifting social ties. These may remain in flux in the subsequent pregnancy. At the same time, the gestational weeks and resiliency needed to endure them can bring a greater level of self-awareness and peace. Couples express relief and gratitude at opportunities to share their experiences, one critical coping technique. Other techniques included finding communities of people at a similar stages, changing healthcare facilitators/facilities, self-care including exercise, meaningful relationships, reading, art-making, creating keepsakes, and celebrating the child that died. **CONCLUSIONS:** There is opportunity to extend bereavement care to support bereaved families considering a new pregnancy and those already pregnant after loss. Bereavement programs can offer in-person or online sub-groups specific to these individuals. Other ideas include relevant reading lists, programming such as guest speakers and workshops focused on these needs, and resource websites such as *Pregnancy After Loss Support (PALS)*. Alexis Marie Chute is a bestselling, multi-award-winning author, artist, filmmaker, and public speaker. www.AlexisMarieChute.com

Funding: Documentary created by IndieGoGo crowdfunding campaigns.

Keywords: pregnancy after loss, pregnancy after loss support, grief, healing, trying to conceive, bereavement support

Abstracts of Oral Presentations

O-112

Returning to work while grieving

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Background

Most bereaved parents are absent from work for a short or longer period due to strong emotions of grief. Research shows that those returning to work relatively soon after the death of a loved one, often cope better than those who stay home over time with distress, sadness and destructive thoughts. Returning to work has a big potential of bereavement support because our job is an important part of our identity and everyday life. The experience of being needed and productive can be a substantial springboard for healing. But how can you deal with personal grief while remaining productive? How can an employer meet the needs of the bereaved employee? Increased knowledge about how grief influence working capacity and ability can ease the return and increase the well-being and productivity of the bereaved employees.

OBJECTIVES:

Create short films to help both the employees and the employers to facilitate faster and better return to work while grieving. By providing information films we hope to contribute to reduce the sick leave period for bereaved people.

Methods

Seven films communicate both experience-based knowledge and research findings. Two bereaved parents share their stories of returning to work and Atle Dyregrov, grief expert and psychologist, share his knowledge and advices to those who are mourning and their employers. The interviews of the parents are both at home and at their workplace, while Dyregrov is interviewed at his office. The films introduce topics that are further elaborated in LUBs information booklet: "Returning to work while grieving" and on LUBs website lub.no. The films are produced by LUB in cooperation with a professional film-production company. Parents receiving bereavement support from LUB are introduced to these films and the booklet as part of our routine follow-up. We also offer to guide their workplace to use these films (available on lub.no). LUBs facebook page is also an important communication platform.

Results

We have produced seven films, about three minutes each: 1) How grief influence the working capacity, 2) The importance of returning to work, 3) What is it like to be back at work? 4) Leadership over time - how to balance motivating and compassion 5) For how long does grief last? 6) What kind of support does bereaved need? 7) Care that pays off. Even though some of the films talk more directly to either employers or employees, both groups can benefit from watching all of them.

Conclusions

Returning to work is significant for coping with grief. It gives a strong sense of normalizing the situation. With these films we are able to help the employees and their employers to communicate and make plans for the first return and how to cope with grief at work over time. By accepting the need for understanding and the realities of not being able to be as productive as normal both groups can contribute to find the balance between expectations and duties and the need for support, flexibility and patience.

Keywords: grief, work, bereavement support, sick leave, coping

Abstracts of Oral Presentations

O-113

Comprehensive review of the evidence regarding the effectiveness of community-based primary health care in improving maternal health to reduce stillbirths

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BACKGROUND: Although the causes of stillbirth are complex, multifaceted and partially unknown, early and frequent antenatal care, delivery in a health facility, and improved maternal education may reduce the risks. We summarize the findings of assessments of projects, programs, and research studies (collectively referred to as projects) included in a larger review of the effectiveness of community-based primary health care (CBPHC) in improving maternal, neonatal and child health (MNCH). **METHODS:** A database comprising evidence of the effectiveness of projects in improving maternal, neonatal and child health through CBPHC was assembled as part of a larger project. From this larger database (N = 548), 152 assessments met inclusion criteria relating to maternal and neonatal health. **RESULTS:** A total of 1298 discrete interventions were assessed. Outcome measures were grouped into five main categories: maternal mortality (19% of assessments); maternal morbidity (21%); antenatal care attendance (50%); attended delivery (66%) and facility delivery (69%), with many assessments reporting results on multiple indicators. Of the 37 assessments that measured coverage of antenatal attendance as a primary outcome indicator, 34 assessments reported increased attendance for antenatal care (ANC). No assessments observed a decrease in ANC coverage. Three assessments found no change in coverage. 12 assessments measured coverage of the presence of a skilled or trained attendant at delivery as a primary outcome indicator. All 12 assessments reported an increase in the coverage of attended deliveries. Eight assessments measured the percentage of births occurring in a facility as a primary outcome indicator. None of these assessments observed a decrease in coverage; one observed no change in coverage and seven reported an increase. The community-based strategies used to achieve these results often involved community collaboration, home visits, formation of participatory women's groups, and provision of services by outreach teams from peripheral health facilities. **CONCLUSIONS:** This comprehensive and systematic review provides evidence of the effectiveness of CBPHC in improving key indicators of maternal and neonatal health care, including those that may reduce risk of stillbirth. Most projects combined community- and facility-based approaches, emphasizing potential added benefits from such holistic approaches.

Keywords: community health; stillbirth reduction; maternal health; systematic review

Abstracts of Oral Presentations

O-114

Analysing antenatal care pathways prior to stillbirth: A pilot study exploring the antenatal care experiences of bereaved mothers in Australia

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BACKGROUND: Effective models of antenatal care aim to ensure that a woman's social, emotional, physical, psychological, spiritual and cultural needs and expectations are considered, respected and met. Throughout pregnancy, women need to be given information that is not only in an appropriate form to support them in making choices about their care but should empower and enable the mother to advocate for both herself and her unborn baby. Few studies have explored the quality and type of information given to the mother during a pregnancy that ended in stillbirth. This pilot study, aimed to explore antenatal care provision prior to stillbirth and to assess if there were any commonalities

METHODS: An online pilot survey was developed to explore the experiences of women throughout their care both prior to and following their stillbirth. This presentation will focus on the antenatal care experiences of 94 Australian mothers, who had experienced a stillbirth.

FINDINGS: Results show that participants were usually not informed about the possibility of stillbirth occurring in their pregnancy. Only 11 stated they were informed about the possibility of stillbirth occurring, and worse, eight of these were only told after complications arose in their pregnancy. Most of the participants 84 (88%) agreed that they were not given enough information by their care provider to help them detect possible signs of impending stillbirth. Furthermore, 36 (40%) participants stated that they had never been informed about monitoring fetal movements. Those that were informed suggested that they were not educated in what was considered a concerning change. Despite this lack of information many participants still reported satisfaction with the antenatal care they received prior to their stillbirth, with 54% (n=52) stating that they were 'satisfied' or 'very satisfied' with their care. Participants also indicated that felt comfortable in discussing any concerns they may have had in their pregnancy, with 59% (n= 56) responding with 'very comfortable' to 'comfortable.'

CONCLUSION: Many bereaved mothers felt that their antenatal care provision was mostly satisfactory and they felt comfortable in discussing their concerns. However, this study highlights a need for further information to be provided to pregnant women regarding the possibility of stillbirth and especially being informed about the importance of fetal movement monitoring.

Keywords: Antenatal care; stillbirth; prevention; stigma; silence

Abstracts of Oral Presentations

O-115

Can A Previous Stillbirth Always Be A Predictor For Future Stillbirth? - A Retrospective Study

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Introduction-An estimated 2.6 million third trimester stillbirths occurred in 2015. The number of stillbirths has reduced more slowly as compared to maternal mortality or mortality in children younger than 5 years, which were targeted in the Millennium Development Goals. The increased risk for recurrence of pregnancy complications and outcomes is well recognised. However, the literature on stillbirth recurrence is sparse and inconsistent. Some studies report recurrence risks ranging from fourfold to 10-fold whereas others report no increased risk. Although stillbirth is a common obstetric complication, its recurrence is rare and some primary studies lack the power to detect any increase in risk. Also, many causes of stillbirth (for example, placental abruption) are known to recur in subsequent pregnancies, thus increasing the chances of another stillbirth associated with that cause; but, in cases, where stillbirth remains unexplained there is no consensus about the risk of stillbirth in the next pregnancy. Because of the uncertainty surrounding the recurrent risk for stillbirth it is difficult for clinicians to counsel couples and to know what level of care to provide in subsequent pregnancies. **Aims And OBJECTIVES:** - To study the cause of previous and present stillbirths and to try to find out the incidence, cause and risk of the recurrence of stillbirth.

MATERIAL-METHODS: - We are doing a retrospective study of all stillbirths from Oct 2015-April 2018 in Department of Obstetrics and Gynaecology, Maulana Azad Medical college and Lok Nayak Hospital, Delhi to find out the cause of recurrent stillbirth and to find out the ways to reduce the rate of these recurrent stillbirths.

RESULT: - Till this date, we found that a woman who experienced a stillbirth in an initial pregnancy experienced an increase in the incidence of stillbirth in subsequent pregnancies. Even when we had restricted the analysis to first and second pregnancies, the risk of stillbirth in the second pregnancy is definitely increased if the first pregnancy ended in stillbirth and poor antenatal care further adds on the risk. But the final results of the study are awaited as the study will be completed in April 2018.

CONCLUSION: - A stillbirth in an initial pregnancy was associated with an increased risk of a subsequent stillbirth, and pregnancies after a stillbirth should be closely monitored with a view to intervene at the first sign of fetal compromise.

Keywords: Recurrent Stillbirths, Antenatal care

Abstracts of Oral Presentations

O-116

Reducing Risks of Stillbirth (SB) and Other Adverse Pregnancy Outcomes Among African Americans (AAs) Using Evidence-Based, Simple, Safe, Available and Actionable Personal Behavioral Life Course, Life Style, and “Self-Care” Oriented Information

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BACKGROUND: AA families are at highest risk of adverse reproductive outcomes which disproportionally affect child development, lifelong health and earning capacity. Such adverse reproductive outcomes include: stillbirth (SB), intrauterine growth restriction (IUGR), preterm birth (PTB), neonatal and infant as well as maternal mortality. Life course and lifestyle interventions, and use of easily available, over-the-counter (OTC) or self-care products including vitamins and publically available vaccinations may benefit women and their families without reliance upon conventional medical care.

Goals: 1) Review and analyze available information to prepare a logic model (LM) matrix relevant to AA pregnancy in Los Angeles California (LAC).

2) Employ this LM matrix to guide community led preconception and pregnancy learning tools, including passport-like checklists for AA women and families planning pregnancy.

METHODS: 1) We conducted a LM collection and analysis of information related to AA pregnancy;

2) We used Delphi Techniques to discuss and rate possible interventions on the basis of safety, efficacy, affordability, and availability by AA individuals, families and communities in LAC;

3) We rated possible interventions by potential benefit in our large urban community (LAC)

RESULTS: Over 1000 intervention studies were reviewed. We recommend interventions in these “self-care” categories:

A. “Life course”

1. Maternal age >17 yrs., <40 yrs

2. Optimizing body habitus (BMI >19, <32)

3. Interpregnancy interval (> 6 mos, < 72 mos)

B. “Life style”

1. Regular health care

2. Dietary style (Mediterranean, “DASH”, Japanese, Nordic)

3. Avoidance of substance use and exposure (smoking, alcohol, marijuana, inhalants)

4. Easy availability and use of family planning services

5. Lifelong safe sex practices

C. Use of easily available OTC supplements/health resources: prenatal vitamins, Folic Acid and vitamin D, low dose aspirin if at risk for preeclampsia, along with community-sourced, indicated vaccinations

D. Delphi participants recommended that findings be promulgated to the general public as well as encourage operationalization by individual AA family, community and public policy makers.

CONCLUSIONS:

1) Using the LM format enabled a comprehensive set of non-medically oriented personal, family and community recommendations

2) Given the import of these findings we aim to promulgate the information to all LAC AA families and communities. We plan to provide preconception, pregnancy relevant passport-like checklists to Los Angeles AA citizens.

3) We estimate that implementation of these recommended personal practices may reduce risks of stillbirth and PTB by > 50%, to be comparable to other groups (JP Newham, 2017)

Keywords: prevention, stillbirth, African American

Abstracts of Oral Presentations

O-117

So you want to improve your care of the woman who has had a pregnancy loss? Education in Perinatal Bereavement for Clinical Staff in the Republic of Ireland

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Background

A perinatal bereavement is a profoundly difficult time in any woman's life. It is crucially important that she is emotionally and physically supported in her loss at all stages from diagnosis to long term care and subsequent pregnancies. It is equally important that this care extends to other members of her family by providing evidence based and holistic multidisciplinary care. In order to do so clinical staff need to have access to up to date woman and family centred educational programmes. These programmes should range from local continuous education to national and formative programmes.

Objectives

The aim of this study was to establish a national database of all educational programmes offered on the subject of perinatal bereavement in the Republic of Ireland. The objectives were as follows: to identify educational programmes by a process of engagement with all stakeholders in the area, by linking directly with maternity hospitals and hospitals providing maternity care as well as universities and other educational establishments and to confirm this list with a multidisciplinary team with extensive experience in the area of perinatal bereavement.

Methods

As part of a larger review of Irish perinatal bereavement services, all hospitals providing maternity care were visited and interviewed on educational programmes acting locally. Stakeholders were identified and invited to submit notice on programmes. Universities were contacted directly. A provisional list was circulated amongst an experienced multidisciplinary group responsible for implementation of Education and Staff Supports from the Perinatal Bereavement Standards in order to check if the list appeared complete.

Results

Fifty four educational programmes were identified that provided teaching and learning in the area of perinatal bereavement. These programmes were either local teaching in maternity hospitals (n=20), conferences (n=5), national courses (n=21) or formative university teaching at postgraduate certificate to Masters level (n=8). All hospitals provided local teaching in perinatal bereavement care with access encouraged by clinical staff to outside programmes.

Conclusions

Gratifyingly there were a large number of educational programmes available to clinical staff in Perinatal Bereavement care. Development of a "one stop" list of these programmes will allow clinical staff to be aware of the variety and levels of educational programmes, thus allowing them to tailor education to their individual needs based on their roles and interest.

Keywords: Education, Staff support, Perinatal Bereavement

Abstracts of Oral Presentations

O-118

Maternal Obesity and Sociodemographic Risks for Late Stillbirth: Findings from the Collaborative Individual Participant data (IPD) Sleep and Stillbirth (Cribss) Meta-Analysis

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BACKGROUND: Maternal age, weight and ethnicity are known risk factors for stillbirth that have important public health implications. In particular maternal obesity is increasing globally. Previous studies have assessed these risk factors within populations in one country. We explored these risk factors across different countries using data from the Cribss IPD. **OBJECTIVES:** We used individual participant data (IPD) from existing studies to assess whether maternal weight, age and ethnicity are associated with late stillbirth.. **METHODS:** We undertook systematic bibliographic searches for case-control and prospective cohort studies and randomised trials studies done between 1 Jan 1946, and 26 Jan 2018, that collected data on: maternal going-to-sleep position and stillbirth in non-anomalous singleton pregnancies >28 weeks gestation. The primary outcome was stillbirth. A one stage approach stratified by study and study site was used for meta-analysis. Earliest maternal BMI in pregnancy was categorised into five groups. Maternal age was categorised into 6 groups from < 20 to > 40 in 5 year epochs. Ethnicity was categorised as White, Black, South Asian, South East and East Asian, Maori, Pacific and other. A multivariable model was developed with adjustment for a priori confounders. The study was registered with PROSPERO, number CRD42017047703. **RESULTS:** Six case-control studies were identified, with individual-level data obtained from five studies (cases, n=866; controls, n=2284) conducted in New Zealand (n=2), Australia, the United Kingdom, and an international study. There was a dose-response relationship between maternal BMI and late stillbirth risk. Compared to normal BMI, women who were overweight or obese had increased late stillbirth risk (Table 1). Pacific and South Asian women also had increased stillbirth risk. (OR 2.04 (1.33 to 3.12) and 1.86 (1.31 to 2.63) respectively. Risk of stillbirth for women aged 40 or above although increased was not statistically significant (OR 1.51 (0.95-2.38). **CONCLUSIONS:** Maternal obesity has a dose response risk for late stillbirth which is consistent across countries and has implications for population health as even small increments in BMI are associated with increased risk. Both South Asian and Pacific women had increased risk of stillbirth independent of other sociodemographic risk factors. **Funding:** 2016 Trans-Tasman Research Funding Grant by Cure Kids and Red Nose Australia (Grant 6601)

Keywords: late stillbirth, IPD, obesity, ethnicity

Abstracts of Oral Presentations

O-119

Trends on Late term Stillbirth in the US

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BACKGROUND: After declining from 2000-2006, overall and late fetal mortality rates in the US are relatively unchanged for 2006-2012. This lack of reduction in the US is surprising when compared against stillbirth trends of other developed countries. Per the CDC definition, fetal deaths are categorized as Early stillbirth for 20-27 weeks, Late stillbirth from 28-36 weeks and Term stillbirth for more than 37 weeks.

OBJECTIVES: In this study, we present overall stillbirth trends by different attributes such as gender and socio-economic factors related to the mother.

Data and METHODS: This analysis uses 2014 US CDC Fetal Death and Birth Data Files. CDC Birth and Death data represents all births and deaths registered in the 50 United States. The Centers for Disease Control and Prevention's National Center for Health Statistics (NCHS) receives these data as electronic files, prepared from individual records processed by each registration area, through the Vital Statistics Cooperative Program. Data for the U.S. are limited to births and deaths occurring within the United States to U.S. residents and nonresidents and do not include births and deaths occurring to U.S. citizens outside of the United States. The 2014 Birth file contains information on 241 attributes for 4M live birth while the 2014 Death file contains 141 attributes associated with 52K fetal deaths. In total we identified 83 attributes that are common between these two data sets and have sufficient quality of information being captured.

RESULTS:

The US seems to be an outlier in the late term stillbirth trend compared to other developed countries such as NZ, UK and Australia There is a stat sig decrease in male fetal death, corresponding to an increase in female death starting 2011. The 39 week rule has not improved the stillbirth rate for neither overall trend nor by gender.

Keywords: Stillbirth

Abstracts of Oral Presentations

O-120

Measuring the silence: development and validation of the Stillbirth Stigma Scale

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BACKGROUND: Stigma has been identified as an obstacle in raising awareness of stillbirths. Stigma is a complex concept that devalues a person's worth within society. Stillbirth stigma is perpetuated by the world-wide silence surrounding stillbirth. This stigma leaves many bereaved parents unable to share their experiences. Currently, there is meagre research that has conceptualised stigma and stillbirth, despite the world health organisation (WHO), releasing a call to action to reduce stillbirth stigma by 2020. However, only limited mechanisms to achieve this goal have been identified and no tool to measure the extent and types of stigma felt by bereaved parents exists. Without a theoretical underpinning, interventions that could be developed to reduce stigma may be ineffective in assisting bereaved parents. Therefore, this study sought to develop and validate a stillbirth stigma scale (SSS) to measure the extent and type of stigma experienced by bereaved parents to, in turn, conceptualising this obstacle and creating mechanisms to reduce stillbirth stigma. **METHODS:** Items for the initial administration of the SSS were developed by adapting other stigma scales already in general use as well as gathering information from existing literature and end-user consultation. There were initially 83 items in the scale, and after administration of the SSS through an online pilot study of 100 Australian bereaved parents (mothers, n=94; fathers, n=6), and analysis, a 44-item scale was developed.

RESULTS: A factor and correlational analysis indicated four factors associated with stillbirth stigma namely: discrimination, perceived stigma, disclosure and public stigma, with good factor structure, internal consistency, and construct validity. Further analysis on reliability and sensitivity are currently underway. Preliminary findings of the extent and type of stigma affecting bereaved parents to be presented at the conference.

CONCLUSION: The stillbirth stigma scale has the potential to measure the extent and type of stigma experienced by bereaved parents. Preliminary findings suggest that the SSS could provide much needed answers as to the extent and type of stigma experienced by bereaved parents. This information will add to the limited understanding and potentially aid in the development of needed mechanisms to meet the call to action to reduce stillbirth stigma by 2020.

Keywords: stillbirth, stigma, prevention, public policy, advocacy, psychology

Abstracts of Oral Presentations

O-121

Genetic investigation of fetuses before and after intrauterine fetal death - A retrospective single-center cohort study

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INTRODUCTION:

Defining the cause of death helps bereaved parents in their grieving process, elucidates the recurrence risk in future pregnancies, serves mortality statistics and future public health interventions to reduce the number of perinatal loss. Despite extensive evaluation, 10-60% cases of stillbirths remain unexplained. Aim of this study was to investigate, whether genetic testing before and/or after intrauterine fetal death (IUFD) contribute to determination of the cause of death.

METHODS:

Review of all prenatal and postmortem genetic reports of fetuses after IUFD at the Medical University of Vienna between January 2003 and December 2017.

RESULTS:

The study cohort comprises 203 cases of IUFD between 21+0 and 41+3 gestational weeks (GW). In 135 (66.5%) cases no genetic analysis was conducted, whereas a total of 68 (33.5%) cases underwent genetic testing by chromosome analysis and/or microarray. Women, who agreed upon genetic testing of their fetus before or after IUFD (n=68), were significantly older [(mean 3 SD) 33.38 3 6.4 years], than women who declined genetic testing (n=135; 29.6 3 6.4 years; p=0.0003). Furthermore, significantly more women, who agreed upon genetic testing, had a previous stillbirth in their past obstetrical history (0.13 3 0.4 versus 0.04 3 0.2; p=0.04). No difference was seen with regards to the gestational age of IUFD between both groups (30.4 3 0.7 GW versus 30.4 3 0.5 GW; p=0.99). Among the 68 IUFD-cases that underwent genetic testing, 39 (51.5%) cases were performed antenatally by amniocentesis or chorionic villous biopsy, 33 (42.6%) cases were performed post-mortem by fetal muscle-biopsy, of which 4 (5.9%) cases had undergone both antenatal and post-mortem genetic analysis.

In 24 (72.7%) cases of post-mortem genetic testing, insufficient quality of fibroblast culture was noted and no analysis was therefore conducted. A statistically significant correlation was found between higher fetal maceration grade and poor quality of fibroblast culture (p= 0.02; r² = 0.2), yet not with regards to GW of IUFD (p=0.09).

The remaining 44 results of both pre- and post-mortem analysis showed a positive test result in 10 (22.7%) cases and an unremarkable genetic result in 34 (77.3%) cases. Most prevalent cause of death in this subgroup were congenital malformations, as confirmed by prenatal fetal sonography and post-mortem autopsy (n=18; 40.9%), of which 50% had an abnormal and 50% an unremarkable genetic finding, respectively. However, in the group of fetuses with abnormal genetic findings, 90% were found to have congenital abnormalities (p=0.02). Main cause of death in fetuses with normal genetic test results (n=34) was placental dysfunction (n=10; 29.4%).

CONCLUSION:

An abnormal genetic test result was strongly associated with congenital malformations in fetuses with subsequent IUFD. However, post-mortem examination in highly macerated fetuses is a major limitation to genetic analysis from fibroblast culture.

Keywords: Intrauterine fetal death; genetic testing; postmortem investigation; karyotype; microarray.

Abstracts of Oral Presentations

O-122

Managing families with recurrent SIDS: international collaboration, new diagnoses and ethical challenges

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BACKGROUND: Family A is a family from England with four surviving boys and three infants who died from SIDS. One of their living sons developed febrile convulsions at the age of one year. The family was referred to Professor Hannah Kinney and Robert's Program on Sudden Unexpected Death in Pediatrics in Boston by their clinicians. Robert's Program is a multidisciplinary program that investigates sudden unexplained pediatric deaths as undiagnosed diseases using genomic approaches. **OBJECTIVES:** To present a case report demonstrating an undiagnosed disease approach to sudden unexpected death affecting children in the pediatric-age range.

METHODS: The assessment included Robert's Program phenotyping, in-depth neuropathology on the deceased infants, and genetic whole exome sequencing involving parents, the child with febrile seizures, and the SIDS infants. Functional testing of the identified genetic variant was performed for validation.

RESULTS: The SIDS infants all had hippocampal abnormalities now described to be present in sudden unexpected death across the pediatric-age range. These findings included hippocampal maldevelopment, dispersion of the granule cells in the dentate gyrus, hyper-convolution of the dentate gyrus, and degrees of heterotopia. Additionally, the infants had other subtle brain abnormalities including heterotopias, hamartias and brainstem gliosis.

Analysis of the family's DNA revealed a mutation in the KCNB2 gene, present in all the SIDS infants, the father and the sibling with febrile seizures. This mutation is an autosomal dominant variant in a potassium channel gene with incomplete penetrance. Functional testing found the mutation caused a gain of function, implying greater susceptibility to seizures. **CONCLUSIONS:**

This case illustrates the current approach advocated in Robert's Program, relying on careful phenotyping particularly with regard to neuropathology, and gene discovery. It demonstrates the potential for genetic discovery that arises from more specific phenotyping and the importance of functional validation of mutations. The family findings support the conceptualization of SIDS as a multifactorial disorder, with genetically-based vulnerabilities in some cases. The case highlights the complex considerations involved in families with repeated SIDS, including consideration of whether multiple SIDS deaths can be due to natural causes. It brings attention to important implications for living siblings: the risks of recurrent SIDS within families, and the possibility that febrile convulsions may not be benign. New possibilities for answers are accompanied by uncertainties that require a sophisticated dialogue with affected families. This family was helped by the professional networking provided by the IPSID and the SIDS community, benefitting the advancement of scientific knowledge about SIDS and a truer understanding of the risks that some families may face.

Funding: Robert's Program, Boston Children's Hospital

Keywords: SIDS, Sudden unexpected childhood death, epilepsy, neuropathology, genetics

Abstracts of Oral Presentations

O-123

Research priorities in sudden infant death: using the international consensus

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BACKGROUND: The GAPS project was a unique international collaboration that brought together the sudden unexpected death in infancy (SUDI) research community with bereaved parents, to agree where efforts should be focused to make the most effective progress on reducing sudden infant death. Led by The Lullaby Trust, working in close partnership with ISPID, Red Nose (formerly SIDS and Kids) in Australia, and the American SIDS Institute, GAPS achieved consensus on the top 10 SUDI research priorities, and the findings were published in *Pediatrics* in August 2017. An interactive workshop held at the 2016 ISPID-ISA conference shared the top 10 priorities and explored participants' opinions and areas of agreement/divergence. **OBJECTIVES:** Present an overview of the methodology and findings of the GAPS project, and the priorities that were highlighted in the 2016 workshop. Share current progress of how the final research priorities have been used to shape the SUDI research agenda. **RESULTS:** Three overarching themes emerged from the GAPS project: better understanding of mechanisms underlying SUDI; ensuring best practice data collection, management and sharing; and better understanding of target populations and more effective communication of risk. These priorities formed the basis of The Lullaby Trust's new 2017-2027 research strategy, which has been used to help guide funding on two new studies. An accompanying report, *Target SUDI Together*, has been used to leverage support from funders and public health bodies. **CONCLUSIONS:** The GAPS project united the international SUDI community on a number of shared research priorities for reducing SUDI. This consensus has already been instrumental in focusing funding and research efforts.

Keywords: Research prioritisation; consensus; SUDI; international collaboration

Abstracts of Oral Presentations

O-124

Safe-Sleep-Baby Campaign: Influencing parental education behaviors' for maternal-child healthcare workers in remote areas

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BACKGROUND: Currently families in rural providing high-risk infant care practices lead to sudden unexpected deaths. Educating families and changing their high-risk practices can enhance infant survival.

AIMS: To determine whether providing a Safe-Sleep-Baby Campaign (SSBC) would encourage community health professionals in remote areas to improve their family education and training practices regarding safe infant sleeping care.

METHODS: A standardized pre- and the post-survey study was conducted among a sample of community pediatric nurses and midwives who were allocated into control and intervention group; evaluating changes on their awareness level regarding the recommended infant sleeping care, and the regularity of parents' education. The impact of education on infant care practices among parents was also explored.

RESULTS: The SSB resulted on improving community pediatric nurses' and midwives' accessing to appropriate information resources and increased knowledge of recommended infant safe sleep care practices; enhanced their practices in advising families; that lead to improving infant safe sleeping skills among parents following the intervention. Using Facebook posters and WhatsApp SMS messages were indicated as a suitable way for receiving health education among health professionals working in the remote area.

CONCLUSIONS: Health workers in rural and remote areas were identified as an effective education and training group on health promotion programs of their local community. However, reinforcement is recommended for continued their professional development. Governmental stakeholders and politicians need to create policies and procedures that could enhance the role of healthcare providers as educators among their local community. Especially with increasing numbers of refugees and Bedouins live in remote, borders and isolated areas.

Keywords: Sudden Unexpected Death; SIDS, Health Promotion; Learning Strategies; Bedouins; Refugees; Infant Care; Education intervention; Policy

Abstracts of Oral Presentations

O-125

State Variations in Sudden Unexpected Infant Death Codes

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INTRODUCTION:

Due to large variation in classification methods across the United States, actual differences between diagnostic ICD-10 infant death codes R99, R95, and W75 are a matter of debate. Combined, these three codes are referred to as sudden unexpected infant death (SUID) cases. Here, we investigate differences among R99, R95, and W75 codes while attempting to account for differences in state classification. Unexpected infant death diagnoses can vary greatly across individual states in part due to differences in classification method, income, ethnicity, and/or parent's age. Separating out the reasons is a challenging problem without consensus in state classification methods.

MATERIAL-METHODS:

Analyses were generated from the National Center for Health Statistic's cohort linked birth-infant death data files for the years 2001-2004. Specifically infant deaths that were coded R95 (sudden infant death syndrome), R99 (determined to have an unknown cause), and W75 (accidental suffocation and strangulation in bed) and associated variables, including state data, were included in this study. The Benjamini-Hochberg procedure was used to control for false discovery rate.

RESULTS:

There was great variation between SUID diagnostic codes amongst different states. One example pertains to infants' age of death. Overall, for infants younger than 28 days, SUID cases were more likely to be coded R99 or W75 than R95. For instance, in New York, R99 diagnoses was especially frequent, totaling 74% across the entire population and 85% for young cases (<28 days). Mississippi, on the other hand, tended to classify almost all sudden unexpected death cases as R95 (90%) and showed no statistical difference in age groups. Geographic regions tended to correlate across potential explanatory variables (e.g. race) so that potentially significant results were often masked when modeled in aggregate by state classification differences. For example, after analyzing the population across the US, we recorded a barely significant difference in R95 rates between black and white mothers' populations ($p = 0.049$). However, by limiting the model to a single region, the significance increased to $p = 0.03$. In addition, measuring differences across factors could also be confounded when states' variable coding methods differed.

CONCLUSIONS:

Given how dramatically the proportions of each SUID diagnostic code differ across states and regions in the US, a significant effort should be put forth to implement a more uniform method for classifying unexpected infant death diagnoses. In support of this goal, it would be ideal if the National Center for Health Statistics restarted publishing state data with annual reports to better determine differences among states and allow research to more easily account for state effects.

Keywords: SUID, Multivariate analysis, State, Age, Race

Abstracts of Oral Presentations

O-126

Safe Sleep campaign in health center waiting rooms

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Semi per la SIDS Onlus

BACKGROUND: The Italian National Health System never carried out a nationwide campaign of information on Safe Sleep, because all the health services to population are provided regionally and each one of the 20 regions can decide for itself on this kind of investments. Statistics of SIDS and SUIDS for many local administrators do not justify substantial expenses on the topic, so until now less than 50% of the Italian new parents are reached every year by a traditional information campaign. In addition it is very difficult to share best practices among the local administrations since the organization differs from region to region.

OBJECTIVES: Create a replicable format of Safe Sleep advice campaign that could suit any local administration, with a very low impact in terms of costs and administrative burden. The goals were:

1. Reach the largest targeted population
2. Avoiding the distribution of leaflets and the direct involvement of health care providers
3. Ensure a message that was reassuring, clear, effective, easy to memorize and storable on a smartphone.

METHODS: Semi per la SIDS produced a video containing all the Safe Sleep Recommendations following the best performance guidelines (format, length, audio options, choice of images, captions) to catch and keep people's attention. The contents were validated by authoritative Researchers in the field of sudden sleep-related infant deaths and by experts in communication focused on childcare. The video gained the patronage of the Italian Ministry of Health and of the most important scientific associations. Five maternity hospitals were selected as pilots to test the project for 2018. The structures adhered with enthusiasm and now the Safe Sleep video is displayed in the waiting rooms of their maternity and pediatric centers. It plays on a loop on the monitors that the hospitals usually employ to advertise their services or provide general information. The last image of the video is a QR code that the viewer can easily scan with the smartphone in order to download the video and keep it on hand.

RESULTS: The initiative has been well received by the pilot hospitals. Some of them use the video also in their birthing classes. According to some spot interviews, the audience is satisfied and find the video useful, interesting and more pleasant than most of the other videos displayed in the waiting room. The next step is to implement the project in at least 30 new units nationwide and to measure the performance submitting questionnaires to the public.

CONCLUSIONS: Video is the channel of choice for any information campaign when resources are scarce and the ground to cover is vast, because it is replicable at very low costs, it communicates with no need of active effort from the viewer and is very familiar to new generations. Taking advantage of the monitors of waiting rooms can be practical and cheap to reach a preferred audience such as new parents and their relatives.

Funding: Semi per la SIDS

Keywords: Safe Sleep, Italy, Information campaign

Abstracts of Oral Presentations

O-127

The social determinants of health for Indigenous peoples and “Triple-Risk Model” for SIDS: a socio-ecological health perspective for safe sleep education

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Abstract Title: The social determinants of health for Indigenous peoples and “Triple-Risk Model” for SIDS: a socio-ecological health perspective for safe sleep education (working title)
BACKGROUND: Indigenous infants are over represented in the rate of infant deaths in Canada, indicating a health disparity that needs to be addressed with focused health research. The “Triple-Risk Model” focuses exclusively on biological determinants and the physical environment that can contribute to SIDS outcome. But research into the social determinants of health can generate a more holistic model to further expand our understanding SIDS.
OBJECTIVES: 1) to explore in depth the “Triple-Risk Model” for SIDS the socio-ecological model for population health, the relationships among them, including the strengths and limitations in understanding SIDS in Alberta First Nations Communities; 2) to understand the unique social determinants of health, or risk factors, for health experiences and SIDS for Indigenous peoples in Canada to inform the development of targeted safe sleep promotion and SIDS education resources.
METHODS: A literature review was conducted to identify academic and grey literature specific to infant mortality and SIDS mortality in Indigenous communities around the world. Relevant sources of literature were collected using MEDLINE and PUBMED. Key search terms included “SIDS” or “SUDI” and “Aboriginal” or “Indigenous”; “Aboriginal” or “Indigenous”, “health”, and “social determinants” or “determinants”; “Aboriginal” or “Indigenous” and “infant health” or “infant mortality” in titles, abstracts and subject headings, including grey literature (government or organization reports).
RESULTS: The ecological model of population health is a conceptual framework to assess individual and social environmental determinants of health behavior. The ecological model for population health emerged in response to the positivist, individual, and deficit-focused frameworks typical to traditional epidemiology. Retrospective research into SIDS risk factors increased observational data and subsequent knowledge and understanding of SIDS through into the 1980s, and in 1994 the “Triple-Risk Model” for SIDS was published. This model maintains to be the dominant model to conceptualize the pathology of SIDS.
CONCLUSIONS: Traditional SIDS research is risk factor epidemiology. This linear approach does not consider the context or effect of the social environment, and conceptualizes risk in individual terms only. Current safe sleep strategies in Canada do not address the social determinants of health for SIDS. An ecological perspective of SIDS will allow researchers to better conceptualize infant vulnerability and the period of infant critical development to develop targeted safe sleep promotion and SIDS education.
Funding Sources: SIDS Calgary Society
Keywords: SIDS Indigenous Peoples Health Promotion Health Policy

Abstracts of Oral Presentations

O-128

Immunization status and occurrence of Sudden Unexpected Infant Death (SUID)

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BACKGROUND: Even after national “back-to-sleep” campaigns, Sudden Unexpected Infant Death (SUID) continues to be the leading cause of postneonatal mortality in developed countries. In 2015, was initiated the French national SUID registry, “OMIN” (Observatoire national des Morts Inattendues du Nourrisson), to prospectively collect epidemiological data in order to propose some optimized prevention strategies and develop innovative researches in the SUID area. Although some SUID remain unexplained after usual investigations, the infectious origin of SUID is often mentioned in literature. Subsequently, the impact of immunization status was questioning and suggest to be investigated.

OBJECTIVE: The aim of this case-control study was to determine the relationship between immunization status and SUID occurrence in the current context of suboptimal immunization coverage in France.

Design/METHODS: We prospectively included all children younger than 2 years (the upper age limit for SUID in France) who were admitted for SUID at one of the 30 OMIN French referral centers between May 2015 and January 2017. As suggested recently in 2016, untimely vaccination was defined as a 15-day delay after the recommended date for PCV and hexavalent administration. Two leaving controls were selected for each case in emergency departments. A matching on gender and age was operated.

RESULTS: Between 2015 and 2017, 91 cases and 182 live controls were included in 22 SUID referral centers. Regarding hexavalent and conjugate pneumococcal vaccines, untimely vaccination was significantly associated with an increased risk of SUID (OR 1.9 [1.2-2.6] and OR 1.8 [1.1-2.5] respectively) when adjusted for principal risk factors. Low birth-weight (3.3 [2.1 - 4.5]), maternal smoking (1.8 [1.1 - 2.6]), blanket use (1.9 [1-2.8]), pillow use (4.7 [3.6-5.9]), no shared parent’s room (3.9 [3.1-4.8]) and low socioeconomic class (4.1 [2.6-5.7]) were confirmed as risk factors for SUID. Microbiological analysis of post-mortem samples was positive in 62% of the cases (36% virus, 46% bacteria). Respectively, 88% and 65% of positive viral and bacterial samples were from the upper airways.

CONCLUSION: This study provides further support that untimely immunization is associated with an increased risk of SUID. These results underline the importance of the role of infection, especially respiratory infection, in SUID physiopathology and the need for further research in infectious SUID mechanisms.

Keywords: Sudden unexpected infant death French national SUID registry Infection Vaccination

Abstracts of Oral Presentations

O-129

Infections and sudden unexpected infant death: a cohort study in France

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BACKGROUND: In sudden unexpected infant death (SUID), cause of death is found in only 50% of cases despite thorough investigation and autopsy. Epidemiologic and histologic studies in provided an important basis for understanding SUID, and it appears that SUID, infection and inflammation are closely linked. In 1961 a viral cause was already identified in 25% of SUID cases. Others studies found an infectious cause in 50% cases. The link between SUID and infections was described with some common risk factors (male, ethnic group, tobacco exposure, socioeconomic status).

OBJECTIVES: The main objective of this study was to identify the role of infection in SUID

METHODS: 126 children were addressed to the regional referent center of SUID in Provence Alpes Côte d'Azur area in France from January 2005 to December 2016. Data were collected with the child's health record and interrogation of the close family. Various factors were studied: personal and family medical history, sleeping mode, social factors, vaccination status and recent fever. An infectious kit was performed: deep and peripheral samples (from blood, cerebrospinal fluid, nose, pharynx and rectal) were collected for bacteriological and virological investigations (Polymerase Chain Reaction, serology, culture). Autopsy was performed as often as possible. Fresh viscera biopsies were frozen for a genetic and metabolic study. We cross-tabulated infectious and histological data and categorized these results into four categories.

RESULTS: On average 10 cases per year have been included for study. An infectious kit was performed in 95% of cases studied, it was negative in 41% of cases. Autopsy was performed in 74% of cases, 15% of them were forensic. Bacteria were present in 55% of cases, virus in 24% and coinfection was concluded in 21% of the cases. By crossing data, infection was proven in 25% of cases, probable in 4%, possible in 32% and not responsible of death in 37%. Possible infection associated risk factors were identified (sleeping mode, socio-economic factors or predisposing past history) in 90% of cases.

CONCLUSIONS: The infection seems to be a key element in SUID. This study shows that full investigations are needed to conclude on the cause of death. We must interpret with caution results of the infectious kit. The results of an anatomopathological and infectious kit should be compared to differentiate a simple colonization from a real infection leading to death. Systematic autopsy with appropriate specimen collection sent for microbiological analysis and subsequent comparison with results of infectious kit have to be implemented.

Keywords: Sudden unexpected infant death, Infection, Virological, Anatomopathological

Abstracts of Oral Presentations

O-130

The impact of implementing a sudden infant death syndrome education package in Jordan

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AIMS: To determine whether a hospital-based SIDS education intervention program (JSEP), relevant to Jordanian settings, would encourage Jordanian neonatal healthcare providers to revise family education and training practices regarding SIDS prevention. The long-term goal was to reduce the incidence of SIDS by influencing Jordanian lifestyles and infant care practices.

METHODS: This mixed method intervention study included both quantitative and qualitative data collection, conducted at a major education hospital in Jordan. It investigated the development, implementation, and impact of a SIDS Infant Education Package among a sample of neonatal healthcare providers at the hospital using a standardised questionnaire-survey, and used focus groups to explore participants' experience in undertaking the intervention. The JSEP included working effectively with hospital's key-stakeholders and the hospital's health trainers and health educators to achieve the desired behavioural changes. The JSEP included SIDS-educational materials adapted from SIDS & Kids in Australia, American Academy of Pediatrics, American SIDS institute, and National Institute of Child Health and Human Development in USA. All education materials were reviewed to ensure they appropriate to Jordanian culture. Activities during the implementation were managed by the researcher in cooperation with the hospital's Continuous Education Program and the key-stakeholders, and supported by volunteer trainers. The researcher used field notes and feedback reporting strategies to provide a record of events, activities and progress throughout the implementation period.

RESULTS: The JSEP for the neonatal healthcare providers resulted in significant improvement in their accessing to appropriate SIDS information resources and an increase confidence and sufficient knowledge of SIDS risks and prevention practices to advise families.

CONCLUSIONS: Healthcare providers were identified as an effective education and training group for community health promotion. However, challenges were identified including overwork, time limitations, staff shortages, and hospitalisation policies, also resistance from families to adopting SIDS-safe care practice or having a SIDS-safe home environment.

Keywords: SIDS, Education, Strategies, Mixed Method

Abstracts of Oral Presentations

O-131

Straight Talk for Safe Infant Sleep

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BACKGROUND: Sudden Infant Death Syndrome (SIDS) is the leading cause of death on infants between 1 month and 1 year of age. While the rate of SIDS has decreased, the rate of Accidental Suffocation and Strangulation (ASSB) has increased. Public awareness campaigns have traditionally played a key role in informing parent about the importance of a safe sleep environment and of the benefits of breastfeeding in reducing the rates of SIDS and ASSB. A study to be published in the American Academy of Pediatrics (AAP) Journal of Pediatrics in March 2018 relates a 184% increase in ASSB from 1995 to 2015 in the US. To better inform prevention strategies, a paradigm shift is needed to reach at risk populations with high ASSB rates. This shift involves gaining trust and credibility with families and engaging them to resolve issues and change behaviors which prevent a safe sleep environment from being implemented. **OBJECTIVE:** To articulate AAP recommendations, identify potential personal biases and discuss strategies for parent education.

METHOD: Straight Talk for Safe Infant Sleep (STISIS) program is an evidence-based program designed to share with AAP safe sleep recommendations, to explore the trainer's potential personal biases and to involve the family in creating their own best solutions. The program was created based on training developed by the National Action Partnership to Promote Safe Sleep which utilizes the foundation of Ajzen's Theory of Planned Behavior. The two part curriculum consists of a train the trainer section for professionals and a parent section to use with families. This approach differs from a top-down training, takes more time and presents the need for enhanced communication skills to ensure that professionals are equipped to "meet families where they are." The train the trainer section uses role-play and other techniques to help participants gain an understanding of how to create a two-way conversation with parents, to identify family practices and beliefs, provide accurate information about safe sleep and breastfeeding and gain acceptance of these practices. A final and critical aspect is training participants on how to set up and successfully run STISIS parenting classes, providing tools, resources and support so they can apply these skills effectively with families. **RESULTS:** Current findings reflect: 87% of participants learned new information about keeping infants safe during sleep, 75% acknowledged the program was sensitive to cultural beliefs and practices of participants and 90% reported they would share this information with friends, family and other caregivers who take care of babies.

CONCLUSION: Parents are the ultimate decision makers of their infant's sleep and feeding practices. STISIS addresses professional implementation of respectful listening, the "whys" behind the recommendations and support to adopt them. We can achieve more by partnering with families and empowering them to make positive behavior change.

Keywords: Safe infant sleep, planned behavior, parent training, conversation approach, breastfeeding

Abstracts of Oral Presentations

O-132

Australian Maternity care providers knowledge and messaging regarding supine sleep position

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BACKGROUND: Recent research suggests that avoiding the supine position when settling to sleep in late pregnancy may reduce the risk of stillbirth. In order for pregnant women to adopt this position it is important that maternity care providers both give information and support the woman to effectively and comfortably settle to sleep on her side. **METHODS:** An online survey was developed to determine current practices. Participants were recruited via social media, professional newsletters and snowballing. The survey consisted of questions designed to determine the participants knowledge and current practice regarding sleep position in pregnancy through multiple choice, Likert scales, and open text responses. We aimed to recruit at least 400 participants.

FINDINGS: The project is still actively recruiting, to date there have been 86 Australian registered maternity care providers have responded. When asked if they currently give pregnant women any advice regarding sleep position a large percentage (70%) responded that they did. Their comment responses indicate that they suggest the woman avoid supine sleep and instead settle to sleep on their side. However, 35% indicated that they recommend this settling position "from the beginning of the pregnancy" with less than 48% recommending it from 28 weeks. **CONCLUSIONS:** Many Australian maternity care providers seem to be prepared to give women advice to settle to sleep on their side in pregnancy. However, they may be giving this message too early in the pregnancy. Further research regarding the effectiveness of giving these messages and mother's adherence to them, particularly as to whether or not the side to sleep message is needed from the beginning of the pregnancy, is warranted

Keywords: maternity care provider, awareness, modifiable risk, supine sleep, prevention

Abstracts of Oral Presentations

O-133

Safer Sleep Week: a national SIDS awareness-raising campaign

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Background

Annual awareness weeks/days are a popular and cost-effective means to disseminate public health messages to a large number of people in a short space of time. The Lullaby Trust's Safer Sleep Week (SSW) is the first major SIDS awareness-raising campaign in England, Wales and Northern Ireland since Back to Sleep in 1991. The dramatic decline in the rate of SIDS following Back to Sleep suggests the effectiveness of such campaigns, and renewed efforts are needed to ensure rates continue to go down: despite nearly 30 years of awareness of the key SIDS risk factors, safer sleep knowledge can still be lacking, especially in parents at higher risk of SIDS (Pease 2017).

Objectives

To raise awareness of SIDS and safer sleep amongst the general public by reaching as many people as possible

To target anyone with caring responsibilities for a young baby and encourage them to adopt safer sleep practices by providing clear and consistent advice

To support health professionals to work more effectively with parents, particularly vulnerable and high-risk groups

To continue to reduce the number of SIDS deaths and contribute to The Lullaby Trust's goal of reducing SIDS to under 150 by 2020

Methods

SSW is held every March for seven days and focuses on a different theme each year, guided by research indicating a particular need. Messages are developed with input from professionals and other key groups. Activities include national and regional press releases aimed at print, online and broadcast media; social media content designed to be shared, imparting safer sleep advice as well as signposting to other Lullaby Trust services; packs of materials including leaflets and videos for local services such as children's centres to create displays and events; and briefings targeting MPs and local authorities.

Results

SSW is now in its fourth year. Figures for 2018 will be presented, but by 2017 the number of people reached via Twitter trebled to 3.6 million, and there was five times the level of media coverage compared to 2015, 30% of which was national including prime-time TV. A number of high-profile MPs have promoted the campaign, including the Secretary of State for Health. Orders for campaign packs increased year-on-year, enabling professionals to engage with families. Traffic to the Lullaby Trust website was 42% higher during SSW 2017 compared to the weekly average.

Conclusions

SSW appears to be successfully raising awareness of ways to reduce the risk of SIDS. Increasing engagement with the campaign suggests the public are receptive to receiving safer sleep messaging, particularly on social media. Further work on how this awareness might translate into meaningful behaviour change in infant care practices is needed, however the Office for National Statistics specifically credited SSW in its analysis of factors that may have contributed to the record low in SIDS rates in 2015, suggesting more parents may be starting to adopt safer sleep practices.

Keywords: SIDS, prevention, awareness-raising, campaign

Abstracts of Oral Presentations

O-134

Impact of a Safe Sleep Intervention on Mothers Falling Asleep While Feeding

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BACKGROUND: Newborns wake often to feed and new mothers are at risk of falling asleep while feeding their infant. The Social Media and Risk-reduction Training (SMART) study is a randomized trial of 2 separate interventions, one in-hospital, and one in which videos via text/email were received for 60 days after discharge for safe sleep (SS) or control (breastfeeding [BF]). Previously reported data showed that falling asleep while feeding is common, especially in those who are breastfeeding. We assessed factors associated with falling asleep while feeding including receipt of SMART study messaging regarding infant care practices. **METHODS:** 1600 mothers were enrolled at 16 hospitals across the US (100/hospital). Mothers were queried after the infant was ≥ 60 days old about feeding and sleep practices in the past 2 weeks. Following the interventions, 967 mothers responded to the survey at 60-89 days. Multivariate analyses were performed to assess the odds of falling asleep while feeding associated with demographics, feeding practice and assigned study group: BF both in hospital and at home [BF-BF], SS in hospital and BF at home [SS-BF], BF in hospital and SS at home [BF-SS], or SS both in hospital and at home [SS-SS]. **RESULTS:** 28.6% of mothers reported falling asleep while feeding at least once in the previous two weeks. After accounting for maternal feeding practices, there were no significant associations between demographic factors and falling asleep while feeding. Compared to mothers who exclusively breastfed, the odds of falling asleep while feeding were significantly lower among those who used some formula (29.0% vs. 37.5%: AOR 0.63; 95% CI 0.48, 0.83) and who only used formula (15.7% vs. 37.5%: AOR 0.29; 95% CI 0.22, 0.38). After accounting for feeding practices, compared to mothers in the BF-BF group, those in the SS-SS group were less likely to fall asleep during feeding (14.5% vs. 34.5%: AOR 0.34; 95% CI 0.21, 0.58). The Figure shows results stratified by feeding method. Mothers in the SS-SS group were significantly less likely to fall asleep during feeding, regardless of feeding method. Analyses did not show an effect of intervention group on rates of breastfeeding. **CONCLUSION:** Falling asleep during feeding is common in mothers of infants who are peak age for SIDS (i.e., 60-89 days). Safe sleep messaging may decrease the likelihood of falling asleep during feeding for all feeding types, while not negatively impacting breastfeeding rates.

Keywords: Falling Asleep, Breastfeeding, Safe Sleep, Intervention, Messaging

Abstracts of Oral Presentations

O-135

Three cases of life-threatening positional asphyxia

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BACKGROUND: A safe sleep environment is crucial to the prevention of Sudden Unexpected Infant Death.

OBJECTIVES: We report three cases in which three infants suffered from a real life-threatening asphyxia.

METHODS: Medical charts review

Description: Case 1: 50 days old male, born preterm at 32 weeks, found by his mother hypotonic and not responsive even to strong stimulation (as shaking and back-blows) after having slept prone face down on her shoulder after feeding. In the time between the call and the arrival of Emergency Service (ES), the child completely woke up, cried and appeared normal at ES examination. At Emergency Department (ED) Capillary Blood Gas (CBG) analysis revealed pH 7.23, pCO₂ 58 mmHg, HCO₃⁻ 23.6 mEq/L, subsequently normalized with no therapy. Case 2: 60 days old male found by his mother cyanotic with pale lips while he was sleeping prone face down on his pillow. Holding the infant, she felt him hypotonic and not responsive to strong stimulation, including some mouth-to-mouth respiration attempts. In the time between the call and the arrival of ES service the child completely woke up, cried and appeared normal at ES examination. At ED admission CBG was pH 6.9, pCO₂ 52.6, mmHg, HCO₃ 9.3 mEq/L, subsequently normalized with no therapy. Case 3: 60 days old female, found by her father face down on the sofa, where she had been left awake and leaning between the arm and the back of the sofa. The infant was hypotonic, with no perceived respiratory activity and traces of blood around her mouth. The infant started to cry only when the father washed her face. At ED the child was found with 92% SaO₂, temperature 35°, chest indrawing, wheezing, pale colour with perioral cyanosis, low reactivity and tone. The baby also presented a blood vomit during the visit. CBG revealed pH 7.1, pCO₂ 45.6 mmHg, HCO₃ 16.3 mEq/L. She underwent aspiration and oxygen therapy mask with reservoir with resolution of the hyporeactivity. All infants underwent electrocardiogram and 24 hours cardiorespiratory recording, with normal results. Case 2 and 3 also underwent electroencephalogram, brain magnetic resonance imaging, genetic testing for PHOX B2 and complete nocturnal polysomnography in the sleep lab, with normal results. At the two months follow-up visit no death was reported, nor recurrence of the episode and all infants had normal neurologic examination.

CONCLUSIONS: a catastrophic progression was avoided mainly by the elimination of the asphyxiating context. Only case 3 was found ill at the first medical examination, so CBG was crucial to distinguish between physiologic and pathological status: a thorough history collection by the witnesses permitted to explain CBG data as resulting from a previous cardio-respiratory impairment due to positional asphyxia. These cases clearly show the necessity to stress to all parents the importance of a safe baby living context both during sleep and wakefulness.

Keywords: positional asphyxia

Abstracts of Oral Presentations

O-136

Conversations about safe sleep: perspectives from mothers and health professionals

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Background

The primary safer sleep intervention in the UK currently sits with midwives and health visitors who are encouraged to discuss safer sleep for babies with every family under their care. There may be scope for the development of interventions that support both health professionals and families to understand and follow safer sleep principles more consistently thereby increasing protection for babies.

Objective

To understand the perspectives of both mothers and health professionals who engage in conversations about safer sleep.

Methods

Qualitative interviews and a focus group were conducted between February and October 2017. Both mothers and health professionals took part. The mothers (living in Bristol, UK) were recruited from the control group of a larger study. Health visitors and community midwives working in deprived areas of Bristol (as defined by a local government report) were recruited through area team managers. Mothers were asked about their experiences of conversations about safer sleep with health professionals, including advice given, interpretation and impact of that advice. Health professionals were asked about recent conversations with families, guidance and training on safe sleep, changing risky parental practices and future improvements in delivering safer sleep messages.

Results

A total of 14 interviews (10 mothers, 3 community midwives, 1 health visitor) and 1 health visitor focus group took place. Major themes were identified for mothers and health professionals separately. While some mothers gave examples of very supportive and useful conversations with a health professional, others described conflicting advice, feeling guilty, and fear of telling their health professional about their infant care practices.

Health professionals focussed on getting the messages across (increasing knowledge), using positive language to avoid fear based messages, tailoring their advice to family circumstances and following up if they saw something that went against their understanding of the risk reduction messages. Some health professionals had different interpretations of risk reduction messages, especially bed-sharing.

Conclusions

Future research will focus on ways to improve the impact of safer sleep conversations between parents and health professionals. This may include more acknowledgement of stressful nights and ways to minimise risk in all sleeping environments.

Keywords: SIDS, Qualitative, Risk Reduction

Abstracts of Oral Presentations

O-137

The Dutch 11th safe sleeping survey; factors with a potential risk for suffocation

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Background

In the Netherlands, the incidence of Sudden Unexpected Death in Infancy (SUDI: R95, R96, R98, R99, W75, W78, W79) was 0,2 in 2004 and 0.15 per 1000 live births in 2016. Since 2004 the incidence of SIDS/Cot death (R95) is less than 20 infants a year.

As times are changing, new potentially risky infant care behaviors develop, such as bed and sofa-sharing and the use of soft devices etc.

Objective

The aim of this survey is to measure the prevalence of suffocation related risk factors following the methodology put forward by Cowan's 'Through the tubes': cover (soft bedding), pinch (prone sleeping), bend (car seats, wrong use of breastfeeding pillow, baby carrier) and press (bed- or sofa sharing). Furthermore, smoking remains hindering oxygen sufficiency for babies in pregnancy, which is also related to the risk of suffocation.

Methods

From February to April 2017 a random sample survey among parents of infants (0-12) was conducted. 9000 flyers were sent with a request to fill in an online questionnaire (52 questions) were distributed to parents together visiting 139 well-baby clinics throughout the country. To increase the response of parents in disadvantaged neighborhoods, support of a research assistant was offered to fill out the questionnaire in 21 well-baby clinics.

Results

In total 1289 respondents filled in the online questionnaire (14,3%) in of which 1209 were complete. Comparison with national data shows that in this survey first children were overrepresented (55,5% v. 45,3%), the amount of low educated mothers was similar (14,1% v. 13,2%), high educated mothers were overrepresented (57,2 v. 47,8) and mothers with a migration background were underrepresented (13,5% v. 29,3%).

Comparison between the survey of 2017 and 2011 shows that paternal smoking increased, maternal smoking decreased and parents who both smoke decreased. From 2011 to 2017: duvet use increased from 2,2% to 4,5% and use of a pillow from 1,5% to 2,0%. Furthermore, 2,6% used a baby bumper in the baby bed and 37,8 used stuffed animals in bed (cover). Prone sleeping increased from 2,3% in 2011 to 7,2% in 2017 (pinch), bed sharing reduced from 16,7% to 7,8%, and 'falling asleep at the same surface' increased from 36,3% to 46,3%, and incidentally falling asleep on sofa or chair increased from 26,4% to 49,9%. In 2017 7,8% sometimes placed the baby to sleep on a sofa or chair (press). In 2017 13,7% used a co-sleeper or click-bed. Of the parents 41,9% sometimes placed the child to sleep in the stroller, 28,0% in the car seat, 27% in a baby carrier, 6,0% on a feeding pillow and 0,4% on a bean bag (bend). Only 9,3% never placed an infant to sleep on one of these products.

Conclusion

Continuous attention should be given to safe sleeping, with special attention to new fashions and products that may potentially increase the risk of SIDS or accidental suffocation.

Keywords: SUDI, cot death, suffocation, prevention, survey

Abstracts of Oral Presentations

O-138

An Evaluation of the Cribs for Kids® Model: Ten Year Review of Outcomes for Pack 'N Play Use and Safe Sleep

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BACKGROUND: Cribs for Kids® is a US national non-profit organization of over 800 partners whose mission is to provide infant sleep safety education to all and a safe sleep environment for families who don't have the means to provide one for their infant. Established in Pittsburgh, PA in 1998, Cribs for Kids® has provided Pack 'N Plays (PNP) for over 400,000 families in the US over the past 10 years. Indirect epidemiologic data suggest that the program has been successful in reducing SUID in Allegheny County. However, there is little direct evidence of the program's impact. A small study found excellent parental compliance with use of the play yards. In York County, PA, a Cribs for Kids® program was established in 2003 and has distributed approximately 3000 PNPs since inception. The York site has been tracking program quality since 2007. **OBJECTIVES:** The purpose of this study was to review outcomes at a single Cribs for Kids® partner site over a 10-year period.

METHODS: Quality assurance data from 2007-2016 at the York County Cribs for Kids® partner site were reviewed for program logistics and long-term compliance with safe sleep behaviors. Sleep behaviors were compared with PA PRAMS data for available corresponding years. **RESULTS:** During the study period, 2024 families participated in the program and 501 surveys were completed for a response rate of 25%. All surveys were performed by phone and each family was called at least once. Mean age of infants at time of survey was 4.2 months. Families reported high rates of satisfaction with the program: 100% found the paperwork easy, 99% found it easy to obtain the PNP, and 93% said the PNP was easy to set up. 82% of respondents used the PNP every day. 95% of families reported always placing their infant in the supine position for sleep and 88% never shared the bed. These safe sleep behavior rates are significantly better than those reported by PA Pregnancy Risk Assessment Monitoring System during the years 2007-11: supine position (94% vs 75%, $p < 0.001$); no bed sharing (88% vs 47%, $p < 0.001$). **CONCLUSIONS:** Parents find it easy to obtain a PNP through the Cribs for Kids® program. Parents do not find it difficult to set up the PNP and they make use of them on a regular basis to keep their babies safe. Parents who use the Cribs for Kids® program are highly compliant with safe sleep recommendations to place their babies supine for sleep and not bed share. York County program rates of supine sleep and not bed sharing are favorable compared to the general population of PA. The Cribs for Kids® model is a viable option for promoting infant sleep safety behaviors in the home environment in a high risk population.

Keywords: Cribs for Kids, infant sleep safety, Pack 'N Play

Abstracts of Oral Presentations

O-139

Leveraging the Safe Sleep Instructor Infrastructure to Expand Community Baby Showers State-wide

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BACKGROUND: Kansas is a rural, Midwestern state spanning 82,277 square miles. Sudden unexplained infant death, including sleep-related deaths, is tied for the leading cause of infant death. Most of these deaths involve bed-sharing and/or external factors (e.g. loose bedding). Community baby showers have increased maternal knowledge and intention related to the American Academy of Pediatrics safe sleep recommendations.

OBJECTIVE: To evaluate the ability of regional safe sleep instructors (SSIs) to host community baby showers across the state.

METHODS: Thirty-five new and returning SSIs attended a 2-day training by the Kansas Infant Death and SIDS (KIDS) Network. The training covered demonstration of instruction along with expert-led breakout sessions on physiology, research and addressing barriers to safe sleep. SSIs were trained to hold safe sleep community baby showers, including grant writing for funding sustainability and administration of pre- and post-tests to assess knowledge, confidence and intentions of participating mothers.

FINDINGS: Of the SSIs trained, 33 participated in 18 baby showers held in 10 counties across the state. Most engaged community partners, including health departments and churches, and distributed portable cribs and wearable blankets to attendees.

In total, 837 mothers participated; 51.8% identified as white, 20.6% Hispanic, 18.9% African American, and 8.7% multiracial or other race. Seventy-six (9.1%) were Spanish-speaking. Most were married (48.0%) or partnered (17.5%), had a high school education (41.0%) or less (18.9%) and had Medicaid (47.3%) or were uninsured (12.0%).

Following the shower, mothers had significant increases in intentions to use prone positioning only (84.8% vs 98.9%), use only safe sleep locations (crib/bassinet/portable crib) (84.9% vs. 97.8%), keep environment free of all items except a firm mattress and fitted sheet (61.5% vs. 88.9%), and share safe sleep information with anyone who might put the baby down to sleep (68.3% vs. 95.4%). The majority of participating mothers expressed increased confidence in their ability to get baby to sleep on its back (86.7%), have baby sleep in the same room but separate bed (82.3%), and to keep loose blankets out of the sleep environment (82.7%). Most attendees were very satisfied (81.4%) or satisfied (16.3%) with the event they attended.

CONCLUSIONS: SSIs were able to facilitate successful community events and to significantly increase maternal confidence and improve intentions to follow the AAP safe sleep recommendations.

Keywords: Safe Sleep, Health Education, Train-the-trainer, rural

Abstracts of Oral Presentations

O-140

Combined Prenatal Alcohol and Smoking Increases the Risk for SIDS: Report of the Safe Passage Study

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BACKGROUND: Prenatal exposures to alcohol and tobacco cigarettes have been identified as independent risk factors for SIDS. These findings suggest that SIDS pathogenesis can originate in pregnancy and is associated with adverse fetal growth and/or development related to these toxic exposures. The Safe Passage Study focused on identifying SIDS risk associated with the timing and quantity of maternal prenatal exposures with prospective collection of detailed drinking and smoking over the course of pregnancy. In addition, the study examined the risk of smoking and drinking simultaneously.

OBJECTIVE: In the following prospective study, we tested the a priori hypothesis that prenatal exposure to alcohol, cigarettes, or both (dual exposure) increases the risk for SIDS.

METHODS: The Safe Passage study was a prospective study conducted between August 2007 and October 2016, enrolling 11,892 pregnant women recruited from Cape Town, South Africa and the Northern Plains, United States, populations at high risk for SIDS and for drinking and smoking during pregnancy. Maternal and fetal/infant dyads were followed throughout pregnancy and continuing to 1 year post delivery. Detailed assessments of alcohol and cigarette exposure were captured at the recruitment interview, at up to three prenatal visits after recruitment (20-24, 28-32 and 34+ gestational weeks), and at 1 month post-delivery using a modified timeline follow-back interview for alcohol exposure and self-reported frequency and quantity of tobacco cigarettes for smoking exposure. Group-based trajectory modeling was used to categorize pregnancies with similar drinking and smoking exposure patterns incorporating quantity, frequency and timing of exposure during pregnancy, adjusted for number of days exposure was defined. Standard pathology protocols were followed to ascertain cause of post-discharge infant death.

RESULTS: One year outcome was ascertained in 94.2% of pregnancies, with 28 SIDS (overall rate: 2.6/1000) and 37 controls with an explained cause of death (3.4/1000). The adjusted relative risk of SIDS was 11.78 (95% CI: 3.41-40.80, p-value < 0.0001) times higher for dually exposed pregnancies as compared to not exposed or quit early. The relative risk of SIDS was increased, 3.95 (95% CI: 0.65-24.03, p-value= 0.1359) for pregnancies exposed to drinking only and 4.86 (95% CI: 1.30-18.13, p-value=0.0188) for pregnancies exposed to smoking only, compared to those unexposed or quit early.

CONCLUSION: Women with dual exposure had nearly 12 times the risk for SIDS as compared to those with no exposure and substantially higher risk than drinking or smoking alone. This message has important implications for the mothers' behavior in prenatal care in public health recommendations and provides important future research directions into how the toxins of alcohol and smoke interact to lead to sleep-related sudden death in a critical postnatal period. Funding; NIAAA, NICHD Eunice Kennedy Shriver, and NIDCD

Keywords: Relative Risk

Abstracts of Oral Presentations

O-141

Stillbirth and Dual Prenatal Exposure to Alcohol and Cigarettes: Report of the Safe Passage Study

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BACKGROUND: Stillbirth is a major problem, in particular in low-income countries. Associated risk factors should be identified and addressed.

OBJECTIVE: To test the a priori hypothesis that prenatal exposure to alcohol, cigarettes, or both increases the risk for stillbirth.

METHODS: The Safe Passage study was a large, prospective, multi-center investigation with data collection between August 2007 and October 2016. Pregnant women were recruited from Cape Town, South Africa and the Northern Plains, United States, populations at high risk for stillbirth and for drinking and smoking during pregnancy.

Alcohol and cigarette consumption were captured at the recruitment interview, at up to three antenatal visits (20-24, 28-32 and 34+ gestational weeks) after recruitment using a modified timeline follow-back interview for alcohol exposure and self-reported frequency and quantity of tobacco cigarettes for smoking exposure. Group-based trajectory modeling was used to categorize pregnancies with similar drinking and smoking exposure patterns incorporating quantity, frequency and timing of exposure during pregnancy, adjusted for number of days exposure was defined. Maternal and fetal/infant dyads were followed throughout pregnancy until delivery outcome. Late stillbirth and any stillbirth were defined as a fetal demise delivered at >28 weeks and >20 weeks gestation, respectively. Of 18,604 approached, 11,892 pregnancies were enrolled, representing 10,088 women and 12,029 fetuses.

RESULTS: Pregnancy outcome was ascertained in 98.3% of pregnancies, with 82 late stillbirths (7/1000) and 145 any stillbirths (12/1000). Sixty percent of women self-reported coloured ancestry, 23.2% white, 16.9% American Indian and 0.9% other. Of the late stillbirths, 51% were not prenatally exposed to drinking or smoking or quit prior to the first trimester (risk of stillbirth 4/1000). After the first trimester, 18.3% drank and smoked (risk of stillbirth 15/1000), 8.8% drank only (risk 10/1000) and 21.9% smoked only (risk 8/1000). The adjusted relative risk of late stillbirth was 2.83 (95% CI: 1.40-5.74) for dually exposed pregnancies as compared to pregnancies not exposed or quitting prior to the first trimester. For any stillbirth, the adjusted relative risk of stillbirth was 1.76 (95% CI: 1.08-2.86).

CONCLUSION: Combined drinking and smoking after the first trimester of pregnancy, compared with no exposure or quitting prior to the first trimester, was associated with a significantly increased risk of stillbirth.

Funding: National Institute on Alcohol Abuse and Alcoholism, Eunice Kennedy Shriver National Institute of Child Health and Human Development, and National Institute on Deafness and Other Communication Disorders: U01 HD055154, U01 HD045935, U01 HD055155, U01 HD045991, and U01 AA016501.

Keywords: Stillbirth, alcohol, cigarettes, dual exposure, autopsy

Abstracts of Oral Presentations

O-142

Stillbirths preceded by reduced fetal movements are more frequently associated with placental insufficiency

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BACKGROUND: Stillbirth prevention remains a challenge in high-income countries and efforts for improvement are needed. Maternal report of reduced fetal movements (RFM) is one way to identify fetal compromise in pregnancy. A correlation between RFM, placental insufficiency and fetal growth restriction (FGR) was found in live births. Currently, there are no studies which investigate the associations of self-reported RFM with different stillbirth causes. **OBJECTIVES:** We explored whether RFM was associated with several pregnancy-related factors in stillbirth, to increase the positive predictive value of self-reported RFM. **METHODS:** A retrospective case-control study was carried out using a database of 301 stillbirths from a UK tertiary maternity unit. This was divided into three groups: 109 women with RFM, 33 women with absent fetal movements (AFM) and 159 who had no evidence of RFM. Maternal, fetal and medical and pregnancy-related factors were recorded. Univariate and multivariate logistic regression was used to determine the strength of associations. **RESULTS:** Stillbirths with RFM were more frequently associated with placental insufficiency as defined as the most relevant condition at death (Odds Ratio (OR) 2.4, 95% Confidence Interval (CI) 1.4-3.9) and were independently less frequently associated with proteinuria (OR 0.2, 95% CI 0.1-0.6) and previous pregnancy loss <24 weeks (OR 0.2, 95% CI 0.1-0.6). RFM was associated with lower gravidity and lower frequency of hypertension. When combined, AFM and RFM were less frequently seen in twin pregnancies and intrapartum stillbirths. No association was found between RFM and FGR. **CONCLUSIONS:** The association between RFM and placental insufficiency was confirmed in cases of stillbirth. This provides further evidence that RFM is a symptom of placental insufficiency. Therefore, RFM should be taken seriously and investigation after RFM should aim to identify placental dysfunction. Funding: Tommy's

Keywords: Stillbirth, reduced fetal movements, placental insufficiency, fetal growth restriction, fetal compromise

Abstracts of Oral Presentations

O-143

Infant Mortality and Prenatal Care in the US

Urszula Chajewska

Microsoft

BACKGROUND: Inadequate prenatal care has been reported to be a risk factor for sudden unexpected infant death (SUID) and overall infant mortality.

OBJECTIVES: In this study, we quantified the risk posed by delayed start to prenatal care to the top ten causes of death in infancy for 2011; we also studied factors correlated with the time of prenatal care start.

METHODS: Using 2011 US Period Linked Birth-Infant Death Data Files, we built a probabilistic model and used it to estimate the risk of delayed prenatal care start to overall infant mortality, the top ten causes of infant death, and SUID. We also calculated correlations between prenatal care start and variables that may affect the access and timing of prenatal care.

RESULTS: Data included 3,961,221 live births, 23,568 of which resulted in deaths within a year of birth, including 4,049 deaths due to short gestation and low birthweight (P07), 3,424 SUID deaths (defined as any of the following ICD10 codes: R95, R96, R98, R99, W75, W78, W79), and 1,574 deaths due to complications of pregnancy (P01).

Delayed start of prenatal care correlated with increased infant mortality overall and with seven out of ten top causes of infant mortality. The risk ratios for 2nd/1st trimester prenatal care start were statistically significant: 1.09 (1.05, 1.12) for overall infant mortality, 1.20 (1.10, 1.31) for SUID, 1.18 (1.04, 1.33) for sudden infant death syndrome (SIDS, R95), 1.16 (1.08, 1.26) for P07, and 1.17 (1.01, 1.35) for P01. For 3rd trimester start, no prenatal care and the unknown care status, the risk ratios relative to 1st trimester start were higher: 1.34 (1.29, 1.40) for overall infant mortality, 1.27 (1.13, 1.43) for SUID, 1.23 (1.05, 1.45) for SIDS, 1.79 (1.63, 1.95) for P07, and 1.63 (1.38, 1.94) for P01. In addition, the risk ratios were statistically significant for P02, P22, and P36. Factors influencing the timing of prenatal care included: insurance type (31% more likely to start prenatal care in the 1st trimester if private insurance vs. Medicaid; 70% more likely if private insurance vs. no insurance), marital status (21% more likely to start prenatal care in the first trimester if married), education (22% more likely to start prenatal care in the first trimester if bachelor's degree vs. high school diploma), and Women, Infants and Children (WIC) program participation. These factors remained statistically significant in the presence of other variables.

CONCLUSIONS: Strong correlation exists between prenatal care and infant mortality as well as between prenatal care and mother's health insurance and other socio-economic variables. Although this observational study cannot prove causation, the findings provide support for encouraging early prenatal care.

FUNDING SOURCE: Aaron Matthew SIDS Research Guild

Keywords: prenatal care, SUID, infant mortality

Abstracts of Oral Presentations

O-144

Nurses' Knowledge and Delivery of Infants' Safe Sleep Practices and SIDS Risk-reduction Messages - A Binational Study

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BACKGROUND: Nurses play a pivotal role in providing families with education regarding SIDS risk reduction and infant safe sleep practices. A study conducted in Israel found 83% of parents follow nurses' advice regarding these practices. However, studies in the US have shown that nurses often have gaps in their knowledge and don't always model safe sleep practices, potentially delivering wrong messages to families. No studies have attempted to compare nursing education and practices across countries to see if there are differences that can help to identify potential practice improvement.

OBJECTIVES: 1. Examine nurses' knowledge regarding "Reduce the Risk" and "Safe Sleep" guidelines, 2. Ascertain what nurses are communicating to new parents, 3. Compare responses between Israeli nurses and nurses in South Central Pennsylvania, USA, 4. Evaluate the impact of seniority (years of experience) and academic qualifications on safe sleep guidelines and clinical practice

METHODS: Questionnaire consisting of 16 items designed to determine nurse knowledge of SIDS risk reduction practices, implementation of these practices and the quality of guidance provided. Participation was voluntary and anonymous. Responses were collected from hospitals and community health centers in Israel between 2014-2016 and in the U.S. during 2017.

RESULTS: 688 nurses working in NICU, Newborn and Maternity wards of hospitals and health community centers responded (285 in Israel and 403 in Pennsylvania) Total percentage of correct answers was higher in the U.S. (84.6 vs. 80.2, $p < 0.001$). There were significant differences in correct responses regarding both knowledge and practices. US nurses were more knowledgeable regarding correct use of a blanket (98% vs 59%), use of a pacifier (91% vs 77%) and not using bumper pads in the crib (98% vs 62%). Israeli nurses were more knowledgeable regarding room temperature (86% vs 62%), use of a firm mattress (99% vs 87%) and the dangers of any cigarettes smoke exposure (97% vs 86%). In Israel there is a negative correlation between seniority and accuracy of information provided regarding breastfeeding, pacifier use, position while awake, and tightly tucked sheets. In the U.S there is a positive correlation between seniority and knowledge regarding infant's sleep location. Nurses with academic qualifications were more knowledgeable. Overall correct answers scores were higher for community, maternity and NICU nurses than for nurses from other departments.

CONCLUSIONS: Although overall nurses' knowledge regarding safe sleep is high, there are still significant gaps representing an opportunity for improvement. Areas of education to focus on may need to be individualized by country, specialty and seniority.

Keywords: SIDS, Sleep, Risk, Nurses, Education, Israel

Abstracts of Oral Presentations

O-145

Making safe sleeping practical and achievable for all parents: implications for recommendations that relate to shared sleep environments

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Background

Researchers remain divided on their stance towards to shared-sleeping and SUDI. While the hazards of bed-sharing in the presence of known risk factors is well recognised, debate continues as to whether it is best practice to support a risk elimination (never bedshare) or a risk minimisation (assessment and informed decision making for individual circumstances). Debate and inconsistency in policy and messaging has negatively impacted evidence-based information provided to families by health professionals.

Objective

To describe shared sleeping environments in a cohort of Queensland infants and maternal and infant characteristics associated with this practice.

Methods

A cross-sectional survey of Queensland caregivers with infants approximately 3-months old was conducted (n=10,200) using the Queensland Registry of Births, Deaths and Marriages Birth Notifications Register for April-May 2017 as a sampling frame. Caregivers were mailed a questionnaire, together with online access, to explore infant care practices and awareness of safe sleep recommendations.

Results

The total response rate was 30%; findings of 933 participants who responded via online survey are described here. Nurses and midwives were the most commonly cited source of safe sleep information (88%). While most babies usually slept in a cot (39%) or bassinet (41%), a double or single bed, or mattress on the floor was the primary sleep surface for 12% of babies; with a further 3% of babies placed in a commercial co-sleeper device or nest on an adult bed. Shared sleeping was common; 76% of babies had shared a sleep surface at some time since birth and 48% had shared sleep during last 2 weeks. Frequency was reported as occasional (≤ 1 night/week, 34.3%); some (2-3 nights/wk, 8.1%); most (4-6 nights/wk, 7%), or every night (12.3%). A considerable proportion (31%) shared sleep for 4 or more hours. Many parents indicated that advice to avoid bedsharing was difficult to implement; while 56% of parents reported that when shared sleep occurred, it was usually unplanned. Over 30% had shared a sofa with baby during sleep at some time. Analysis supported previous studies that suggest bedsharing can be associated with distinct demographic groups: those who bedshare, breastfeed, place infant supine and avoid pacifier use, and a group who comprise mothers who were younger, Indigenous, single, smoked during pregnancy and delivered preterm infants.

Conclusions

Bed-sharing was common in this Australian cohort. Many parents may choose to; don't intend to, but do; or have no option but to, share sleep with their baby. The high proportion of unintentional bedsharing highlights the importance of all parents having an opportunity to engage with a health professional in order to identify and assess individual sleeping environments, discuss likelihood of bedsharing, and share consistent and culturally appropriate, evidence-based safe sleep advice, particularly where shared sleep is likely to occur.

Keywords: bedsharing, shared sleeping, infant care practices, cross-sectional survey, frequency, intention

Abstracts of Oral Presentations

O-146

The English Joint Agency Response unexpected child deaths: parents' experience and the quality of investigations

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Background and Objectives.

Since 2008 all unexpected child deaths in England have been subject to statutory Joint Agency investigations. We report a national study of the experience of families bereaved by such deaths and the quality of the investigations.

Methods.

Families bereaved by unexpected death of a child aged less than 4 years between 2008 and 2017 were invited by the Lullaby Trust to participate in a study of such deaths. Parental telephone interviews were conducted by a paediatrician or paediatric pathologist, and Coroner's Inquest documentation (post-mortem reports, paediatric and police reports) were requested. Each death was reviewed at a multiprofessional meeting.

Results

Reviews were completed for 91 (89%) of the 102 families that made contact. All coroners provided the requested information. Families' experience of the Joint Agency Response varied widely: 76% (69/91) had contact with a paediatrician, 67% (61) on the day the child died; more families (81/91: 89%) had contact with a police officer, 78 (86%) on the day the child died. 78% (71/91) families had a home visit, but only 18% (16) had a joint visit by police and health professional. All children had autopsies, 2 by forensic pathologists only, all others by paediatric pathologists commonly with a forensic pathologist. Bacteriology, virology, radiology and toxicology investigations were conducted on almost all cases. 47% (43/91) families had a follow-up appointment with a paediatrician; at least 8 more were offered but not taken up by families. Families commonly described feeling isolated and unable to ask questions at Inquests and not all families knew when the Inquest had taken place. Seven families were unexpectedly sent post-mortem reports by mail. Several families described feeling "under suspicion" by professionals. Several families who attended tertiary paediatric centres were offered specialist bereavement support but felt that what they needed was information and support from a paediatrician who understood what had happened. Families who had a home visit by a health professional valued this and felt able to ask questions that they had not asked in the hospital. No families had any objection or concern about home visits by health professionals.

Conclusions

Because of the recruitment strategy, these families were a less deprived and more articulate group than most bereaved families; less articulate families are likely to face greater difficulties. There has been a great improvement in quality of investigations over the past decade, but important areas for improvement remain - most importantly the engagement of health professionals in the care and support of bereaved families.

Funding. The Lullaby Trust project 268

Keywords: investigation;SUDI;SUDIC;Joint Agency Response;family support;unexpected deaths

Abstracts of Oral Presentations

O-147

Economic evaluation of the 'Baby Box' intervention in preventing sudden infant death syndrome in Alberta

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BACKGROUND: Since 2016, the 'Baby Box' has been used in several research projects and health promotion programs throughout Canada to address infant and maternal health inequities and support safe sleep education. However, there is no academic or policy research that has measured the clinical or cost effectiveness of the intervention.

OBJECTIVES: To evaluate and calculate the cost/life saved of implementing the 'Baby Box' intervention in Alberta as part of Alberta Health Services Safe Sleep education to prevent SIDS, compared to current safe sleep education in Alberta.

METHODS: A decision tree was used to assess and analyze the cost effectiveness of implementing the 'Baby Box' intervention in Alberta. The evaluation parameters were: Target Population: All babies born in Alberta - population not stratified by sex or infant age; Intervention: Baby Box + "Safe Sleep" Education; Comparators: 1) No Baby Box, "Safe Sleep" education in Alberta only (Standard of Care) 2) No Baby Box, national "Back to Sleep" education only (Control).

RESULTS: The intervention provided the greatest probability of averting a SIDS event, or surviving infancy, at the highest cost. Implementing a universal 'Baby Box' program in Alberta would cost \$4.1 million for every SIDS event prevented; the cost/life saved of the standard of care compared to the control is \$8,600. Implementing a 'Baby Box' program on Alberta First Nations reserve communities would cost \$1.3 million for every SIDS event prevented.

CONCLUSIONS: There is not cohort or observational data that support the 'Baby Box' being used as a SIDS prevention intervention; further research is required to conclude on the cost effectiveness of implementing a universal 'Baby Box' intervention in Alberta. Economic evaluation of health promotion interventions can better inform health policy and direct finite healthcare budgets.

Funding Sources: SIDS Calgary Society

Keywords: Safe Sleep SIDS Health Promotion Economic Evaluation

Abstracts of Oral Presentations

O-148

Intermittent hypoxia during conditions related to an increased risk for SIDS/SUDI

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SIDS victims frequently had a recent history of mild upper airway infections and showed evidence of episodes of repetitive hypoxemia before the final event with peak incidence during the second to third month of life coinciding with physiological anemia. After giving up the tragic recommendation and tolerance to place infants prone for sleep which was related to decreased oxygen saturation due to rebreathing SIDS/SUID rates fell drastically. The hypothesis was that conditions related to an increased risk for SIDS/SUID are related to episodes of intermittent O₂ desaturations. We examined O₂ saturation using a mobile pulse oximeter during overnight recordings in 38 healthy infants with mild upper airway infections and rhinitis sleeping supine. A swab and culture of the nostrils has been performed in all infants. Mean O₂ saturation was 98.7%. Mean time spent below 95% O₂ saturation was about 8.8% of total sleep time (32.6). O₂-dips >4% occurred 7.7/hour (3 6.9) with a maximum of 25/hour. O₂-dips reached a nadir of 81.2 % (37.9) (minimum 63%) correlating with age (p<0.001). Two infants were initially sleeping prone - one of them skin to skin - against medical advice. Mean oxygen was 93,2 and 95,2% coinciding with an increased number of O₂ desaturation dips >4% (22,1 and 28,2/hour) compared with the other infants. The lower the basal O₂ saturation the higher the incidence and intensity of O₂ desaturation dips occur due to physiological conditions of the oxygen binding curve. The mildness of the respiratory infections contrasts the severity of the accompanying O₂ desaturations particularly during the first three months of life. In conclusion increased periods of intermittent hypoxia are occurring during periods of upper airway infections, low alveolar oxygen level during prone sleeping while rebreathing and periods of anemia as examples for typical conditions for an increased risk for SIDS/SUDI. Intermittent hypoxia is related to increased oxidative stress with adverse effects on many organs like the brain or pulmonary vessels. Thus it could cause arousal deficits during sleep which have been hypothesized to be involved in SIDS by failure of escaping a potentially asphyxial sleep position but also might cause changes in the endothelial smooth muscle cells in pulmonary vessels issuing in hypoxic pulmonary vasoconstriction and pulmonary hypertension during the final event in some infants. **Keywords:** SIDS, SUDI, intermittent hypoxia, oxidative stress, arousal, hypoxic pulmonary vasoconstriction

Abstracts of Oral Presentations

O-149

Cultivating Community Collaborations

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Cribs for Kids, Inc., Pittsburgh, Pennsylvania

Cribs for Kids® was created in 1998 by SIDS of Pennsylvania when the organization and the local Child Death Review Team discovered that 90 percent of infants, determined to have died of Sudden Infant Death Syndrome (SIDS) in Allegheny County (Pittsburgh, PA, US), had died in places other than a properly assembled and maintained crib. Thanks to the growth of the Child Death Review System, there is now widespread recognition of the risk factors infants face when they are placed in unsafe sleeping environments. The mission of Cribs for Kids® is to provide infant safe sleep education to the public and give the gift of a crib to families in need.

However, as a national organization, we are also committed to making sure our Cribs for Kids® Partners are given every resource available to carry out their mission. Currently, there are Cribs for Kids® programs operating in 900 communities throughout the United States where infant safe sleep educational materials and cribs have been distributed to over 500,000 families. We have developed an action plan to engage members of our communities to help us with our mission. One of the community collaborations we have developed for our partners is our Public Safety Initiative Program (PSP). Collaborating with local police departments, fire departments and Emergency Medical Services (EMS), the safe sleep message is being disseminated to our families in a variety of non-traditional ways. We have found that these groups have an interest in saving babies' lives as they are the first responders to a call of "baby not breathing", and they welcome the partnership. They become our 'eyes and ears' in the community, always being on the look out for babies who don't have a safe sleeping environment. The PSP consists of training police, firefighters and EMS personnel about the importance of infant safe sleep and safe sleeping environments for infants and supplying their precincts and firehouses with our Cribettes and educational materials. The Cribette is our newly designed play-yard type crib which has the ABC message (Alone, Back Crib) printed on the fabric, turning the unit into a safe-sleep educational tool in addition to a safe place for the infant to sleep up to 30 pounds. Other community collaborations we have developed for our partners are: Hospital Certification Program, Managed Care Organization Program and our Safe Sleep Ambassador Program. These programs are provided to our partners free of charge and the education can be found on our free App: Safe Sleep Academy: www.safesleepacademy.org. We also hold a bi-annual national conference at which our partners can share best practices as they pursue their common goal of saving babies' lives. For more information on Cribs for Kids, Inc., please go to www.cribsforkids.org.

Keywords: SIDS, collaborations, crib, police, firefighter, EMS

Abstracts of Oral Presentations

O-150

Maternal Sleep Practices and Stillbirth: Findings from an International Case-Control Study

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BACKGROUND: Late stillbirth, that which occurs at or after 28 weeks gestation, affects between 1.3 and 8.8 per 1,000 births in high-income countries. Of concern, most of these stillbirths occur in women without established risk factors. Identification of potentially modifiable risk factors that relate to maternal behaviours remains a priority in stillbirth prevention research. This study aimed to investigate, in an international cohort, whether maternal sleep practices are related to late stillbirth.

METHODS: An international internet-based case-control study of women who had a stillbirth ≥ 28 weeks' gestation within 30 days prior to completing the survey (n=153) and women with an ongoing third-trimester pregnancy or who had delivered a live born child within 30 days (n=480). Bivariate and multiple logistic regression was used to determine unadjusted and adjusted odds ratios (OR and aOR respectively) with 95% confidence intervals (95%CI) for stillbirth.

RESULTS: Sleeping more than 9 hours per night in the previous month was associated with stillbirth (aOR 1.75, 95%CI 1.10-2.79), as was waking on the right side (aOR 2.27, 95%CI 1.31-3.92) and non-restless sleep (aOR 1.73, 95%CI 1.03-2.99). Good sleep quality in the last month tended towards significance with stillbirth (aOR 1.64, 95%CI 0.98-2.75). On the last night of pregnancy, not waking more than one time on the last night was associated with stillbirth (aOR 2.03, 95%CI 1.24-3.34). No relationship was found with going to sleep position during pregnancy although very few women reported settling in the supine position (2.4%).

CONCLUSIONS: Long periods of undisturbed sleep are associated with late stillbirth. Maternal sleep practices offer a modifiable risk factor.

Keywords: later stillbirth, sleep duration, awakenings

Abstracts of Oral Presentations

O-151

SUID prevention strategies in France

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BACKGROUND: In 1986, 34 SUID reference centers were created on french territory to face the sharp rise in SUID death cases. In 1994, the french government conducted the « back to sleep campaign », which resulted in a 75% drop of SUID death rates. This prevention campaign has proven worldwide successful in reducing the number of SUID victims, targeting the prone sleeping position as its most important modifiable risk factor. Since then, and despite of french SUID mortality rates that remain relatively high (0,5 per 1000 live births) compared to european death rates (0,25 per 1000 live births), any further effort was made by the Ministry of Health to conduct preventive campaigns targeting other modifiable risk factors.

OBJECTIVE: The French National Association of Reference Centers (ANCRéMIN) was created in 2013 with the aim of increasing public impact on SUID prevention, promoting research, and facilitating contacts with the government.

METHODS: Several strategies aim to promote research: an annually meeting of heads of reference centers, a national conference on SUID, and a National Registry to record all SUID cases (OMIN). In terms of prevention, a national prevention week takes place annually and a support to guide professionals to discuss SUID prevention (Protect me! The golden rules of my first year.) was adopted in France. A working group with the French government has succeeded to have a new law concerning the transport of infants who died of SUID to be adopted

CONCLUSION: Because of still relatively high SUID death rates in France and in the absence of any governmental investment, responsables of the french SUID refernce centers reunited their forces to try to bring down mortality rares of SUID in France. We present you the different actions that have been taken to reach this goal.

Keywords: SUID, Prevention strategies, France, ANCRéMIN

Abstracts of Oral Presentations

O-152

Alive and kicking. “Feel life” - information campaign to help pregnant women to monitor their baby’s movements

Line Schrader, Trine Giving Kalstad

Norwegian SIDS and Stillbirth Society

BACKGROUND

More than 200 children are stillborn each year in Norway. The rate of around 4 per 1000 births has not been reduced the last 15 years. The majority of women (50%) experiencing stillbirth perceive a reduction in fetal movement prior to the diagnosis. There is too little knowledge among pregnant women and in the antenatal care about the importance of women being aware of their baby’s movements every day. Norwegian SIDS and Stillbirth Society (LUB) receive newly bereaved parents where the mum felt reduced fetal movements before their baby died but did not know what to do. Some were told by health professionals to wait and see and some were even reassured that the baby tend to calm down close to birth. According to the Norwegian health card for pregnant women, the doctor/midwife shall ask whether she has felt the baby move, but there is no guidelines on how pregnant women can monitor fetal movements.

OBJECTIVES

The objective is to empower pregnant women by educating them on:

- 1) the importance of being aware of their baby’s movements every day
- 2) how to monitor fetal movements
- 3) what to do if they experience reduced fetal movements

By this we hope to prevent stillbirths as more pregnant women will seek help in time if experiencing reduced fetal movements.

METHODS

In 2015 LUB started an information campaign “Kjenn liv” (feel life) which was developed in consultation with Norwegian and Swedish researchers and clinicians. The main tool is the webpage kjennliv.no which gives information on:

- Fetal movements
- How to monitor your baby’s kicks
- Reduced fetal movements (What it is, what to do, how the health care should react)

The information is in accordance with international guidelines and research on “mindfetalness” by Ingela Rådestad. We suggest two different ways of systematic monitoring: 1) Feel how the baby is moving and describe this, 2) Counting kicks, and monitor the strength of the movements. A 2 minutes animated film gives key messages about why and how to monitor fetal movements. To reach out to immigrants and refugees, the film and a summary of kjennliv.no are translated to Arabic, English, Polish, Somali, Spanish, Tigrinja and Urdu.

The antenatal care has received information and posters by direct mail. We use a Facebook page to reach out to pregnant women and the antenatal care in social media.

RESULTS

“Kjenn liv” is well received by health professionals, pregnant women and the Norwegian health authorities. The two biggest university hospitals link to kjennliv.no in their web information to pregnant women. kjennliv.no is on top of Google search on fetal movements in Norwegian. About 130 000 people have seen the film since it was launched in December 2017 (there are approximately 60 000 births each year in Norway).

CONCLUSION

With the campaign “Kjenn liv” we succeed in guiding pregnant women on how to monitor fetal movements, and how to react if experiencing a reduction in strength or frequency.

Keywords: fetal movements, safe pregnancy, reduced fetal movements, stillbirth

Abstracts of Oral Presentations

O-153

Safer sleep advice: what parents and professionals want to know

Lucy Anne Lyus

The Lullaby Trust, London, UK

BACKGROUND:

The Lullaby Trust has been disseminating evidence-based advice via its information service since the early 1990s. Members of the public including parents and professionals can ask questions about SIDS and safer sleep by calling a dedicated helpline number, emailing, or posting on one of the charity's social media platforms. Recurring topics have helped to direct the charity's work, for example developing a position statement to address the rising number of queries about e-cigarettes. Each query is logged in a database and numbers are analysed on a monthly and annual basis, but as yet data have not been pooled to look at trends over a longer time period, which may be informative to highlight how people are using the service and what they most want to know about safer sleep.

OBJECTIVES:

Analyse The Lullaby Trust's information service data over a three-year period to understand what are the most common queries received, who is making the contact and how, and whether this has changed over time, in order to identify any trends or apparent gaps in the information currently on offer.

METHODS:

Each contact to the information service is recorded in an anonymised form in an Excel spreadsheet. Annual totals from 2015, 2016 and 2017 were compared in terms of query topic, type of person making the contact, and how the contact was made. Only SIDS-related queries were counted; contacts from bereaved parents calling for emotional support or more general queries about the charity were excluded.

RESULTS:

The number of queries made to the information service grew by 15% from 2015 to 2017. The most popular query regarded branded baby sleep products, e.g. nests or sleep positioners, which made up a quarter (25%) of queries over the three-year period and doubled in number from 2015 to 2017. Other popular topics were cots and bedding (20%) and sleeping position (9%). Parents and professionals used the helpline in similar proportions (52% vs 46%) with friends and relatives making up 2%. Contacts from parents increased from 2015 as contacts from professionals decreased. The majority of contacts were made via the information helpline (66%), although this proportion has been declining as email and especially Facebook use have increased. Facebook contacts made up less than 1% of the total in 2015 compared to 12% in 2017.

CONCLUSIONS:

The proliferation of branded baby sleeping products onto the market in recent years has been reflected in the number of queries about them made to the information service. The Lullaby Trust has responded to this by creating a parent guide to products and theming its annual Safer Sleep Week campaign around this topic. Whilst the telephone helpline remains popular with both parents and professionals, more are starting to use online media, especially Facebook, to get information about safer sleep.

Keywords: Safer sleep, Advice, Information service, SIDS

Abstracts of Oral Presentations

O-154

Steps to turn SUDI into a public health problem in a developing country: the Colombian experience

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Juan N Corpas University Foundation

INTRODUCTION:

In 2010 an infant died every day in Colombia because SUDI. Only between 2005 and 2011, the SUDI claimed the lives of 2,664 infants. This is more alarming if we take into account that a large part of these deaths can be prevented by educating parents and caregivers about the risk factors and how to correct them. SUDI are associated with multiple factors of a biological nature, the infant and the environment, some modifiable and others not, and which have been the basis for the development of prevention campaigns in other countries for 2 or 3 decades.

METHODOLOGY:

The SIMS is a public health problem in Bogotá, because it generates negative effects on health in a serious way, in a vulnerable population group such as the child population and complies with the following steps:

The number of people affected: show the magnitude of the problem with figures.

The severity and duration: deadly descendant

The degree of extension in terms of the amount of population at risk

Transmissibility and speed with which it spreads: Every year in Colombia, nearly 700,000 children are born alive (676,835 in 2012), who are at risk of SIMS due to bad practices at bedtime, knowledge that is transmitted from one generation to another. the next one without being corrected according to the scientific evidence.

Duration of the pathology and its sequelae: as the name implies, these are sudden and unexpected deaths. Some unfortunate cases of miscarried SIMS, in which late resuscitation is achieved, can leave serious sequelae in infants due to the hypoxia caused.

Controlability of the causal agent and its contagiousness: The SIMS has no known cause but it can be perceived that it is a causal agent of social or socio-cultural origin, because it involves risk factors and erroneous recommendations given even by health personnel and that has a strong cultural roots difficult to modify. It is possible to control its incidence breaking the chain of transmission of erroneous knowledge.

Efficacy of available measures: there is evidence of safe sleep recommendations that prevent a percentage close to 80% of deaths.

Recommendations on conducting a campaign for the prevention of SIMS in Bogotá and Colombia: Must be led by the National or Local Government

The Academy, the Scientific Associations must participate.

Must include parents

Don't forget that babies from poorer families are those who are at greater risk and those who die in a greater percentage.

Begin with recommendations in which there is no controversy: Put infants face up, smoke free, promote breastfeeding, without pillow or toys or quilts.

RESULTS:

Between 2007 and 2010, en Colombia 1,437 children died from SUDI. And between 2011 and 2014, 829 children died, 608 fewer children.

Keywords: Colombia, public health problem, SUDI

Abstracts of Oral Presentations

O-155

Impact of training on a safe sleep toolkit on quality of provider and caregiver discussion

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BACKGROUND: It has been shown that consistent and repeated messaging helps improve parental adoption of safe sleep practices. The authors have previously designed a clinical toolkit to aid in structuring a conversation with caregivers around safe sleep. Caregivers have previously been demonstrated improved knowledge after interacting with providers using this toolkit.

OBJECTIVE: This study was designed to observe changes to the quality of pediatrician's conversations with caregivers surrounding safe sleep before and after training on a locally-design safe sleep toolkit.

METHODS: A convenience sample of infant pediatric visits (<2 months age) from 4 providers were audio-recorded, transcribed, and evaluated to assess the quality of safe sleep information conveyed. Five visits were sampled before training providers on a safe sleep toolkit and 5 visits after training (40 visits total). Transcripts were evaluated with a structured instrument. The instrument assessed four core safe sleep facets (back positioning, placing the infant in a crib-like environment, keeping soft objects out of the crib, and educating other caregivers) assigning 1 point for information sharing and an additional point for more specific, patient-centered education. **FINDINGS:** All providers discussed safe sleep in some format at every recorded visit. The overall quality of conversation increased following training with 36% of topics receiving '2' score vs. 21% prior to the training. Average of aggregate scores did not significantly improve ($p>0.2$). Discussions regarding placing infants in a crib or bassinet improved substantially with providers discussing the dangers of co-sleeping while promoting room-sharing. Two separate providers described certain swing-like devices as being safe before the training, but only recommend safety approved locations following the training. Further, while additional blankets were initially dissuaded by providers, after the training, providers more readily provided advice about other soft objects and recommended specific clothing and environmental factors after training on the toolkit. Back positioning was not prominently promoted across all visits; it was not discussed at all in 32% of pre-training visits and in 69% after the training. Despite the toolkit explicit reinforcing discussing with others who may put the infant down to sleep, only one provider discussed sharing safe sleep information with babysitters/relatives.

CONCLUSIONS: While all providers discussed safe sleep at every visit, important topics including back positioning were not commonly included in their messaging. This may be due to other topics, light co-sleeping taking greater precedence in their minds or the assumption that most caregivers are aware of back positioning already. While the toolkit may not uniformly improve provider communication, the improved provider knowledge and more robust information sharing are promising findings in the continued development of this tool.

Keywords: Safe sleep; qualitative; pediatrics; health education

Abstracts of Oral Presentations

O-156

Charlie's Kids and the Intercept of Safe Sleep Education and Childhood Literacy: An Effective Approach for Timely Messaging

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Background and METHODS: Studies have demonstrated parents are resistant to adopting the "Safe to Sleep" infant sleep recommendations introduced in 2011. Charlie's Kids Foundation is a nonprofit organization with a mission to provide safe sleep education to families to overcome this resistance and change infant sleep behaviors. This education is primarily provided through bulk distribution of a children's board book, Sleep Baby Safe and Snug (SBSS). This book was developed to provide timely and repetitive safe sleep messaging to parents of all health literacy levels. This abstract summarizes the evidence and outcomes behind this unique educational approach. RESULTS: Since 2013, SBSS has been distributed to over two million newborns mostly in the United States. Distribution was primarily achieved through bulk deliveries to hospitals and state departments of health. Infant care providers and parents provided qualitative feedback around themes of increased knowledge and reported changes to infant sleep practices. These findings were supported in a randomized controlled trial in a high-risk population. This study published by Hutton et al in Academic Pediatrics 2017 demonstrated a two-fold increase in observed adherence to crib use and not bed sharing when SBSS was used for education compared to brochures. Several statewide initiatives in the U.S. demonstrated similar changes to sleep behaviors when SBSS was used in delivery hospitals. Heitmann et al reported in Maternal and Child Health 2017 their results following statewide distribution for all newborns in Tennessee beginning in 2014. They report a hospital intervention, using SBSS as an incentive, was associated with a 46% reduction in infants found observed in unsafe sleep situations ($p < 0.001$). Following implementation in 2014, sleep-related infant deaths in Tennessee decreased by 24% (2012 to 2014). Similarly Ohio distributed SBSS in 2014. This program was stopped after one year due to loss of funding. State data showed a 31% decrease in sleep-related deaths in 2014 compared to 2013. This decrease was not sustained in 2015 when the book was no longer distributed. Finally, Walcott et al reported results from a program in Georgia in the Journal of Community Health 2017. SBSS and other safe sleep material was given to new parents in Georgia starting in 2016. Feedback from hospitals regarding the usefulness of the book was positive to initiate a safe sleep discussion. On parent survey, 91% found SBSS helpful and 83% shared the education with others. Lastly, receiving information in the hospital was strongly correlated with increased safe sleep knowledge and behaviors. CONCLUSIONS: Safe sleep adherence and education are significantly improved when parents receive SBSS. This strategy can be scaled from small at-risk cohorts to large statewide year populations. The distribution of SBSS is associated with decreased sleep-related deaths when distributed as part of statewide campaigns.

Keywords: Best practices, SUID, Intervention, Education, Parent, Prevention

Abstracts of Oral Presentations

O-157

Sudden Unexpected Infant Death in Mexico 2016

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BACKGROUND: Sudden unexpected infant death (SUID) is a term used to describe the sudden and unexpected death of a baby less than 1 year old in which the cause was not obvious before investigation. These deaths often happen during sleep or in the baby's sleep area (CDC). Is the leading cause of death among infants in the first year of age in the developed world. The frequency of SIDS (striking one infant in every 750-1,000 live births) has not significantly declined in recent years. **OBJECTIVE:** Develop a descriptive study of the sudden infant deaths in Mexico following the year 2016. **METHODS:** A descriptive study is carried out, the data collection model is structured by variables such as: newborns under one year of age, classified in neonatal death hebdomadal (0-6 days), late (7-27 days) and postneonatal death (28 to 364 days); risk and number of deaths in Mexico in 2016. Using public data record from the Institute for Health Metrics and Evaluation. **RESULTS:** During the year 2016 in Mexico there were 29,313 deaths in children under one year old of which 1.3% were SUID (385). 84.8% corresponds to the group aged 28 to 364 days of life (326); 15.21% corresponds to the age group of 7 to 27 days of life (58). There is no record of death due to SUID in the age group 0 to 6 days of life. The risk factors for SUID by group of age: from 7 to 27 days of life is 1st born preterm, 2nd under birth weight and 3rd partial breastfeeding. In the other age groups, no associated risk factors were found. **CONCLUSIONS:** It is observed that the highest incidence of SUID is in the group of 28 to 364 days of life, for this reason more attention and prevention should be done in this group. There is a rough classification of the causes of death in children under one year, for which SUID is being classified deficiently in another category, which explains the fact that there is a suboptimal report t of public administrative data.

Keywords: SUID, death, mexico, incidence

Abstracts of Oral Presentations

O-158

Development of a standardised approach to classification of stillbirth and neonatal death in data-rich settings: The Cork Classification Consensus 2017 and Glasgow 2018 Progress

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BACKGROUND: Stillbirth or neonatal death (perinatal death) is a tragedy for parents and families with wide-reaching consequences. The Lancet recently called for improved classification of causes of perinatal death as a priority in stillbirth prevention. In 2016, the World Health Organization released the application of the 10th Revision of the International Classification of Diseases (ICD-10) to perinatal deaths (ICD-PM), focusing on improving data in low income settings. However, high income countries must not be ignored. In these settings, the numerous disparate and suboptimal classification systems is a major barrier to prevention. We have established an international collaborative to address this in a 3 phase initiative: 1 (completed) assessment of existing systems; 2, development of the new system; and 3, evaluation and roll out. Key outcomes of Phase 2 will be presented. **OBJECTIVES:** To define purpose, key principles and main condition categories for a perinatal death classification system for use in data-rich settings. 'Data-rich' is defined as settings with access to relevant perinatal pathology services.

METHODS: The 2017 Cork Classification workshop included 24 participants from six countries across all relevant disciplines and parent representatives. Drawing on Phase 1, we systematically addressed the objectives through discussion and consensus with the assistance of an external facilitator. A Delphi study is underway to confirm the workshop agreements with a wider audience. The Glasgow workshop ahead of the ISPID/ISA Conference 2018 will focus on rules, definitions and mapping to ICD-PM. **RESULTS:** Agreement was reached on: the purpose of the system which was "to inform the development of effective prevention strategies for perinatal deaths in data-rich settings"; ten key principles; and ten major condition categories for the system:

- 1 Congenital anomalies and genetic
- 2 Infection
- 3 Placental and umbilical cord conditions
- 4 Obstetric complications (includes intrapartum events)
- 5 Spontaneous preterm
- 6 Other specific fetal conditions
- 7 Specific neonatal conditions
- 8 Maternal conditions
- 9 Complications of multiple pregnancy
- 10 Unknown

CONCLUSIONS:

This initiative is a key step in addressing the call to action from The Lancet to improve data quality on causes of perinatal deaths. A quality, standardized reporting system across data-rich settings, which enables global reporting through ICD-PM, will allow comparison, inform health policies and interventions designed to prevent perinatal deaths and help ensure that less future families and communities experience this tragic and enduring loss. Funding source: National Health and Medical Research Council of Australia. We wish to acknowledge the support of the organising committees of the International Stillbirth Alliance (ISA) Cork and Glasgow conferences.

Keywords: classification system, ICD-PM, neonatal death, perinatal mortality, stillbirth

Abstracts of Oral Presentations

O-159

Identifying subgroups of women most at risk of stillbirth in England using Latent Class Analysis

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BACKGROUND: Stillbirth rates vary both within the UK and internationally, and the UK has one of the highest stillbirth rates in Europe. In 2017, the Health Secretary for England committed to reducing still birth rates by 50% by 2025. In order to reduce rates, interventions need to be targeted at women who are most at risk. While individual risk factors have been explored, it is important to identify whether there are particular combinations of multiple risk factors that significantly increase the risk of stillbirth.

OBJECTIVES: To identify subgroups of women most at risk of stillbirth on the basis of their combination of risk factors using latent class analysis.

METHODS: Data on all births (≥ 24 weeks excluding termination of pregnancy) in 2015 in England were obtained from MBRRACE-UK. Latent Class Analysis (LCA) was used to identify subgroups of women using a range of risk factors: maternal age, ethnicity and four measures of socioeconomic deprivation (income, education, crime and outdoor environment). Rate ratios (RR) and 95% confidence intervals for differences in rates of stillbirth between groups among 598,146 singleton pregnancies were calculated using Poisson regression models.

RESULTS: Seven subgroups of women were identified: i) White mothers living in less deprived areas (17%); ii) Older mothers with less deprived income and education (8%); iii) White mothers living in less deprived neighbourhoods (14%); iv) Ethnic minority mothers living in more deprived areas (8%); v) Younger White mothers with most deprived income and education (16%); vi) Mothers living in areas without extreme deprivation (29%); vii) Mothers living in more deprived areas with higher ethnic diversity. The lowest rate of stillbirth in singleton pregnancies occurred in the subgroup of White mothers living in less deprived areas (3.1 per 1000 births). Rates were higher for the three groups with mothers living in deprived areas, with the highest rate of still birth occurring in the group of ethnic minorities living in more deprived areas (8.1 per 1000 births). Ethnic minority mothers living in more deprived areas were 2.65 times more likely to experience a stillbirth compared with White mothers living in less deprived areas (95%CI: 2.22 to 3.15). If stillbirth rates were reduced to the rate in the least at risk group, there would be around 500 fewer singleton pregnancies ending in stillbirth per year, a decrease of 22%.

CONCLUSIONS: LCA can be used to identify subgroups of women at risk of stillbirth using a combination of risk factors. The risk of stillbirth was highest in mothers of Black or Asian ethnicity living in deprived areas, and was higher than other groups living in deprived areas, such as younger White mothers. This highlights the increased risk of stillbirth experienced by ethnic minorities from deprived areas. These findings combined with information on cause of death by subgroup may help targeting of interventions to reduce stillbirth rates in the future.

Keywords: stillbirth, age, ethnicity, deprivation

Abstracts of Oral Presentations

O-160

Pathways of association between first trimester haemoglobin concentration and risk of stillbirth: a path-analysis of data from a multi-ethnic maternity population in England, suggesting possible new areas for investigation

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We previously reported an inverse linear association between risk of stillbirth and first trimester haemoglobin (1st Hb) concentration. After adjusting for 11 other risk factors there was a 30% reduction in stillbirth for every 10g/L increase in 1st Hb. By the third trimester, the relationship changed to an increased risk of stillbirth with both high and low Hb.

Objective. To examine the mechanism through which 1st Hb affects stillbirth. 2 pathways were hypothesised; via small for gestational age (SGA) and then through maternal infection. **Methods.** A cohort study of 7175 pregnancies beyond 24 weeks gestation. A theoretical model was constructed and quantified using path analysis. Regression equations were fitted and adjusted for mean and variance. Goodness-of-fit indices were estimated.

Results. There was a significant negative effect on stillbirth via SGA, standardised effect -0.01, ci -0.002 to -0.0004. There was no significant effect via infection. After accounting for these factors there was a residual direct negative effect from maternal Hb on risk of stillbirth, standardised effect -0.14, ci -0.27 to -0.02. There was a good fit between the model and data.

Comment

While the antecedents of stillbirth are well-known the mechanisms through which they exert their effect still remain unclear. Path analysis shows that while some of the influence on risk of stillbirth is through SGA, possibly through a reduced oxygen tension as an adjunct to placental vascular pathology. Other mechanisms include haemoglobin's interaction with nitric oxide (NO), carbon monoxide (CO) and carbon dioxide (CO₂) adversely affecting the placental circulation. But there is a larger residual effect from 1st Hb on risk of stillbirth with no defined mechanisms. Path-models are not causal and therefore our study are hypothesis-generating. We suggest new and novel biological mechanisms through which haemoglobin may be affecting the risk of stillbirth. It is possible that a pregnancy's transition from a hypoxic to an oxygen rich environment with a functional placenta, is affected by low 1st trimester haemoglobin, through deficient oxygen delivery, or maladaptation of the NO driven vascular redistribution through vasodilatation. As well as affecting vascular tone, NO has two other important functions, 1) influencing cell signalling and cellular interactions, and 2) neural function. Both can potentially impact on feto-placental unit, but in different ways.

Alternatively, the mother's concentration of haemoglobin, could be a marker for another 'abnormality' (such as inflammation, autoimmune disease, malnutrition etc). Iron itself plays a pivotal role in several metabolic processes and deficiency at any time in pregnancy may confer a disadvantage on the woman and/or the fetus through gene expression. The imprinting/silencing of some genes via epigenetic mechanisms may adversely affect the foundations laid down in the first trimester and lead to a higher risk pregnancy.

Keywords: Stillbirth, Haemoglobin, risk, first trimester, path-analysis.

Abstracts of Oral Presentations

O-161

Prenatal-onset Group B Strep (POGBS) Sepsis Is a Distinct Cause of Perinatal Mortality/Morbidity

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BACKGROUND:

Intrauterine infection is increasingly recognized as a possibly preventable cause of stillbirth (SB). (McClure, Goldenberg. Semin Fetal Neonatal Med 2009, 14(4):182-9.)

OBJECTIVE:

To justify recognition of distinct Prenatal-onset GBS (POGBS) sepsis, distinct from Early-onset (EO) and Late-onset (LO) GBS infection.

METHODS:

Logic model analysis:

- 1) Conduct an expert systematic review and analysis of group B strep (GBS) disease knowledge in order to justify recognition of distinct Prenatal-onset GBS (POGBS) sepsis, distinct from Early-onset (EO) and Late-onset (LO) GBS infection.
- 2) To correlate patient experiences, we conducted a quasi-experimental "internet commons" inquiry of parent contacts who had suffered GBS SB.
- 3) Computer-based national data bases were utilized to assess knowledge of GBS infectious disease.
- 4) An English-language seven-question patient survey was constructed, pretested, and disseminated to selected Group B Strep International contacts using the internet. No written consent was obtained.

RESULTS:

Much is known about GBS disease. Despite this knowledge, preventative regimes remain inconsistently applied, and in the best of circumstances are incompletely (85-90%) successful in reducing early-onset GBS infection and do not address late-onset or prenatal-onset GBS infections.

CONCLUSION:

- 1) There is sufficient knowledge to support the CDC proposed (MMWR 2010, Volume 59/RR-10) classification of prenatal-onset GBS POGBS sepsis as a distinct entity.
- 2) Our limited, uncontrolled investigation supports clinical notions that a) GBS loss or SB occurs in a bimodal gestational time distribution with the preponderance of cases occurring near term (POGBS); and b) that mothers do not reliably demonstrate fever or "textbook" findings of potentially lethal intrauterine infection. Other observations are precluded by the limited, uncontrolled nature of our retrospective, self-reported sample.

Keywords: prenatal-onset group B strep disease, stillbirth

Abstracts of Oral Presentations

O-162

Pre-Discharge Screening Trans-Cutaneous Bilirubinometry in Newborns in Rooming-in

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BACKGROUND: The term kernicterus was introduced in the early 1900s to refer to the yellow staining of the basal ganglia observed in infants who died with severe jaundice. From the 1950s through the 1970s, because of a high incidence of Rh hemolytic disease and kernicterus, pediatricians were aggressive in treating jaundice. Several studies in the 1980s and 1990s suggested that kernicterus from jaundice was rare and too many infants were being treated unnecessarily. Other studies in these years suggest that the low concentrations of bilirubin may have some antioxidant benefits. Because of these factors, the physicians became less likely to treat jaundice in neonates, which in turn led to an increase of the deadly kernicterus. These changes have stimulated the development of new approaches to the prevention, detection and treatment of hyperbilirubinemia. Actually, the well appearing newborns are rapidly and routinely discharged from hospital limiting the ability of physicians to detect jaundice during the period when the bilirubin concentration is likely to rise. Performing an inexpensive noninvasive pre-discharge screening test for evaluation of jaundice seems to be necessary. **OBJECTIVE:** Measure the prevalence of newborns in rooming-in with hyperbilirubinemia that needs treatment in a Mexican hospital. **METHODS:** It was a prospective study conducted in the "Hospital General Guanajuato", Guanajuato. 241 neonates weighing ≥ 2000 g with gestational age of ≥ 35 weeks were enrolled. A pre discharge transcutaneous bilirubin test (TcB) was performed in all. Serum samples were taken from neonates with TcB over the 75th percentile on the hour-specific Bhutani nomogram. Decision of treatment was made based on serum bilirubin results and the guidelines for phototherapy of the American Academy Of Pediatrics. **RESULTS:** Based on the study protocol, among 241 studied newborns, 46 (19.09%) revealed high TcB, of them 10 (21.74%) showed serum bilirubin in values that needed treatment which is 4.15% of all neonates. Of the 241 neonates, 188 (78.00%) were screened in the first 24 hours of live, of these 30 (15.96%) needed a serum sample. Of them 7 (23.33% of the neonates with serum sample, 3.72% of all in the first day and 2.90 of the total of newborns) needed phototherapy or exchange transfusion. The rest 53 (22.00%) were screened in the second day of live, of them, 16 (30.19%) had high TcB and 3 (18.75% of the neonates with serum sample, 5.66% of all in the second day and 1.24% of the total of newborns) needed phototherapy or exchange transfusion. **CONCLUSIONS:** Perform a pre-discharge screening of bilirubin seems to be necessary in every newborn. It is necessary to carry out more research studies. This study show us that only in the rooming-in we can detect 4.15% of neonates that need treatment. Considering the incidence of this disease is 5% - 10% of all newborns, we can make an early detection of this pathology.

Keywords: Screening, hyperbilirubinemia, transcutaneous, mexico, jaundice, ictericia

Abstracts of Oral Presentations

O-163

The impact of birth and death registration in the UK on parents' experiences of losing a baby between 20 and 24 weeks of pregnancy: A qualitative interview study

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Background

In the UK stillbirths are registered from 24 weeks gestation onwards while neonatal deaths are registered at any gestation. This legal definition has implications for parents in terms of access to financial aid and parental leave from work.

Objectives

To understand the impact of the UK legal definition of stillbirth and neonatal death on parents who experience baby loss between 20 and 24 weeks of pregnancy.

Methods

A national qualitative interview study was undertaken with 28 mothers and 10 fathers to understand parents' lived experiences of losing a baby between 20 and 24 weeks of pregnancy. We recruited parents from across the UK, via doctors, midwives, charity support groups and social media. Parents' experience of losing a baby before, during or shortly after birth occurred between 6 weeks and 20 years before the interview. Interviews were audio and video recorded, transcribed and then reviewed by the parents. Emerging themes were identified using a 'modified grounded theory' approach. These were then verified by each researcher and members of an advisory panel comprising clinicians, support group representatives and parents. Interviews will be published on the Healthtalk website (www.healthtalk.org).

Results

Parents whose baby had died before, during or after birth were unprepared for the experience of giving birth. Mothers felt terms such as "miscarriage" did not describe their experience and they were often shocked that they would go through labour and birth. Only those babies who were born alive before 24 weeks of pregnancy were officially registered as a birth and death. These parents received official certificates of their baby's life and death, making them eligible for parental leave and maternity pay. Parents felt this gave them time to decide when they were ready to return to work and reduced the burden of financial pressures. In contrast the lack of official birth and death registration for babies who died before birth made parents feel that their baby's life was not counted or validated. These parents had to take sick leave from work and many spoke about feeling a "huge pressure" to return to work. Visiting their doctor to extend their sick leave was stressful. These parents often spoke about how unfair the system seemed, as their experience would have been so different if their baby had been born just a few days or even hours later or if they had shown signs of life.

Conclusions

Our research highlighted many common experiences for parents whose baby died before, during or after birth. However the lack of an official birth and death registration had a major practical and emotional impact on those parents whose baby was born showing no signs of life at 20 to 24 weeks of pregnancy. This often reinforced the feeling among parents that society didn't recognise the impact of their loss.

Keywords: Baby loss; stillbirth; miscarriage

Abstracts of Oral Presentations

O-164

No time to say goodbye: does medicolegal infant death investigation provide adequate care for suddenly bereaved parents?

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BACKGROUND: Death of a child is a traumatic event; when unexpected, the effect is more pronounced. The care provided to parents has an enduring influence on their grieving. Saying goodbye with dignity, including time to hold their baby, memorial keepsakes, and being supported by professionals are of utmost importance to suddenly bereaved parents. Current responses to SUDI focus on conducting a comprehensive investigation to determine cause of death but may not incorporate family needs. There is scant scientific research on optimal bereavement support in SUDI.

OBJECTIVES: To examine whether the Queensland medicolegal system of SUDI investigation balances the need for care, support, and timely information to be provided to parents, with the conduct of a comprehensive examination.

METHODS: A record review analysing coronial and Emergency Department records for all SUDI in Queensland between 2010 and 2014 (n=239) was undertaken. Data were extracted regarding processes following the death, including taking the baby to hospital, holding or spending time with the baby, support and counselling provided to parents, removal of items connected with the baby, and time taken to determine cause of death and conclude coronial investigations. Using case study, evident lability in sensitivity and care provided to parents is explored, highlighting poor and exemplary practice.

RESULTS: Despite recommendations that babies found non-responsive at home be taken to hospital, 48% of infants were transported directly to the mortuary. There was a paucity of data on family care at time of death. Information was missing in ≥42% of cases for each of these variables. Cases with adequate data demonstrated that many families lacked support (51%), quiet time (48%), and opportunity to hold their baby (43%) after death. Parents of infants taken to hospital received significantly more support (65% vs 17%, $p<0.006$) and time with their baby (79% vs 15%, $p<0.0001$) than parents of those who were not. In both groups, potentially sentimental items were frequently seized by police during investigation (55%), with 37% including items necessary for family functioning (e.g. shared bedding). Lengthy delays in cause of death certification [median=271 days (IQR=145, 462)] and finalisation of the coronial process [median=377 days (IQR=211, 540)] were evident, with delays in autopsy report findings in a major forensic centre significantly longer than in regional areas ($p<0.0001$). Of families who experienced a SUDI, 37% were previously bereaved, as a result of infant or fetal loss, separation from children, or death of a parent.

CONCLUSIONS: Thorough investigation of SUDI is important for identifying contributory factors. However, the care and support of suddenly bereaved families is of equal importance in non-suspicious deaths. Current evidence indicates the balance between these priorities may be skewed in favour of investigatory processes, and may not adequately address the needs of the family.

Keywords: Sudden Unexpected Death in Infancy (SUDI), Sudden Infant Death Syndrome (SIDS), bereavement, care and support, families

Abstracts of Oral Presentations

O-165

Parents tell their stories

Dirk Gerardus Ploegmakers

VOWK, Dutch parent association

Every parent who has suffered the pain of losing a child carries a story within. This story is a burden, but it might be one they would like to share with the world. People might sympathize with their story. Other grieved parents may find recognition in it, gather new energy or courage from it to proceed with the hard long journey towards “new” happiness. We created a project in collaboration with Vilt, a text writing bureau, that makes it possible for parents to have their stories heard. This company writes concise texts, containing not a word too many, yet fascinating and very explicit. Vilt is run by Bart, who is the uncle of a child that died of cot death. Therefore he has seen and experienced the burden on the parents and the importance of being able to tell your story, and to recognize the parent's feelings. All the stories are presented on our website and in our magazine. The aim is to give parents a chance to let their story be written by a professional and to help other parents by giving them recognition of their feelings and actions. During this project we try to cover all topics parents have to cope with during the grieving process, such as “surviving” the first weeks, the funeral, going back to work and having another child after having lost one. Therefore, every story has a different theme. The parents are free to choose a theme themselves. During a telephone interview parents share their thoughts, feelings and actions on this theme with Bart. Then he writes their story, perfectly to grasp the core. The result of this project are stories that read well, fascinate, but most of all tell a very emotional, gripping and recognizable story.

Keywords: parents, grieve, stories, SIDS, cot death

Abstracts of Oral Presentations

O-166

Sudden unexpected infant death - a study of the impact on intergenerational relationships

Lynsay Clair Allan, Fiona Bisset

Scottish Cot Death Trust, Glasgow, UK

BACKGROUND: A sudden unexpected infant death (SUID) is one of the most traumatic things that can happen within a family. The loss is devastating for the parents, but the abrupt shift in dynamics within a family may result in adverse outcomes in several relationships, sometimes with long lasting consequences. Grandparents can feel doubly bereaved. They grieve for their grandchild and child too, as they are changed by their baby's death. A sibling's experience when an infant dies can have a marked effect on their feelings and behaviour when they become a parent. When a bereaved parent becomes a grandparent many years later, how is their relationship as a grandparent affected?

OBJECTIVES: The aim of this study is to improve our understanding of the intergenerational impact of SUID and to identify any gaps in our current outreach support services. This study is in response to increasing annual referrals from bereaved grandparents seeking support and both siblings becoming parents and bereaved parents becoming grandparents enrolling on the Next Infant Support Service (NISP) - often decades after a baby's death.

METHODS: Journal articles directly related to the intergenerational impact of child death were thematically analysed. An audit of our own support provision was conducted which looked at the extent and duration of community outreach contact, the numbers of counselling sessions provided and peer support activity for newly bereaved grandparents. Activity for siblings and grandparents enrolled on NISP included those services and, in addition, the number of apnoea monitors issued and requests for infant resuscitation was also audited.

RESULTS: Of the 37 reviewed articles, many studied the impact of infant death on bereaved grandparents but none researched the impact on parents bereaved by SUID when they then become grandparents. Similarly no studies examined the effect on a sibling, who had experienced SUID, then having their own baby. Within the Scottish Cot Death Trust over the last two years, 20% of bereavement support referrals have been for grandparents. Siblings enrolled on NISP account for 34% of referrals and grandparents wanting the service for themselves when the baby's parents (bereaved siblings) do not, account for 5%.

CONCLUSION: Despite evidence for continued support of the wider family when a baby dies, there is a paucity of research on the impact that SUID has on intergenerational relationships in both the short and long term. There is a lack of evidence on the effect on bereaved parents becoming grandparents. Our audit shows grandparents often seek and require support for their own anxiety about caring for a baby. Less often, but an important area to understand, are referrals because the parent's child has anxiety about them looking after their baby (grandparent looking after grandchild). NISP is a well-established service for bereaved parents having subsequent children. It is much needed for siblings and grandparents too.

Keywords: bereavement, grandparents, grandchildren, siblings, intergenerational, consequences

Abstracts of Oral Presentations

O-168

Maternal perception of fetal movements and risk of late stillbirth: findings from the New Zealand Multi Centre Stillbirth Study

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BACKGROUND: Maternal perception of decreased fetal movement is associated with adverse pregnancy outcomes including stillbirth. We explored the associations between fetal movement quality and pattern to late stillbirth risk.

OBJECTIVE: To investigate variations in maternal perception of fetal movement strength, frequency and pattern in relation to late stillbirth.

METHODS: We undertook a multicentre case-control study exploring risk-factors for late stillbirth. Cases (n=164) had a late stillbirth of a non-anomalous singleton at ≥ 28 week's gestation. Controls (n=569) were women with ongoing pregnancies in the same region, group matched by gestation. Participants were enrolled between February 2012 and December 2015 from seven different healthcare regions in New Zealand. Data on perception of fetal movements in the two weeks before the stillbirth/interview were collected via interviewer administered questionnaire. We performed multivariable logistic regression and adjusted for known confounders.

RESULTS: In multivariable analysis, maternal perception of decreased frequency of fetal movement was associated with late stillbirth (aOR 2.29, 95%CI 1.31-4.0). Perception of multiple instances of more vigorous than usual fetal movement was protective (aOR 0.52, 95% CI 0.32-0.82), as was daily perception of fetal hiccups (aOR 0.28, 95%CI 0.15-0.52). Maternal perception of increased length of fetal movement 'busy times' was also protective (aOR 0.23, 95%CI 0.11-0.47). Perception of 'quiet or light' movement in the afternoon was associated with late stillbirth (aOR 2.31, 1.19-4.48), as was 'quiet or light' movement in the evening (aOR 3.11, 95%CI 1.16-8.33). **CONCLUSION:** These findings support existing evidence that maternal perception of decreased frequency of fetal movements is associated with late stillbirth. In addition, our study shows that several qualitative aspects of maternally perceived fetal movements are also associated with late stillbirth risk.

Keywords: Fetal movements, Stillbirth.

Abstracts of Oral Presentations

W-001

Taking Consent and Information Giving in Fetal and Neonatal Loss

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As a group of researchers from Sociology and Radiology we have been looking at the role of the post mortem and post mortem imaging in society and the value parents and professionals place on the practice.

The research culminated in an art exhibition shown in London and Sheffield at the end of 2017. We would like to bring some of the exhibits to Glasgow and use them as a focus for a workshop. The workshop will be used to discuss the various themes that evolved from research and will include input from professionals working in the sector.

Intended audience: General audience of professionals and parents.

Learning OBJECTIVES:

At the end of the session the participants should have got an insight into:

- Difficulties experienced by parents when they are requested to consent for a post mortem to their baby
- Options (type of post mortems) available
- Emotions involved in the process of consent
- Results from a study using interview to parents after the loss of their baby
- Experiences from the staff involved in either introducing the subject of post mortem to the grieved parents, conducting the post mortem, and accompanying the parents in their visit to the bereavement suite.

Workshop leaders:

- Dr Marta Cohen, Paediatric Pathologist - Consent options and the minimally invasive autopsy.
- Dr Kate Reed, Medical Sociologist 'It might be the end of one thing but the beginning of something else': exploring professional views of the role of MRI in fetal and neonatal post-mortem
- Dr Elspeth Whitby, Radiologist. The changing role of the radiologist, giving information.
- Dr Julie Ellis, Medical Sociologist. 'And I jumped at that, because I wanted answers': exploring parental views and experiences of MRI in fetal and neonatal post-mortem

We will run an interactive session for people to discuss their experience of consent either giving consent or taking consent. The responses will be used alongside our research data to discuss the issues of consent and how we can improve the process of consent.

We will look at the responses in our research work, many of which reflect on regret at refusing consent and often this was due to the influence of professionals.

This will form an interactive session for audience participation and debate.

A Matter of Fact video was created from responses from professionals involved in the research. This proved to be extremely important to visitors both bereaved parents and professionals at the exhibition. This video will also be used in the workshop and discussions based around the value for parents and professionals drawing on our feedback from the exhibitions and the comments for attendees at the workshop. This will help mould the future of the video and its further use.

Keywords: Post Mortem, MRI, Consent

Abstracts of Oral Presentations

W-002

Healing Arts: Writing Through Grief

Alexis Marie Chute

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Intended Audience: Bereaved parents looking to support themselves and their peers, as well as healthcare professionals desiring resources and techniques to present their clients to relieve grief-related stress, work through residual trauma, and empower positive healing and self-growth. OBJECTIVES: Creativity will be presented as a helpful tool for personal self-expression and self-exploration. The focus will be creative writing as a means to process the loss of a child and uncover new hope for the future. The participants will be guided into a mindful, meditative space, and learn how to suspend external and internal judgement of their creative work, allowing them to get the most out of their writing time. Chute will lead participants through creative writing exercises with revelations on how to break free of destructive grief patterns, reflect on loss in a healthy way, and find personal healing and renewal. At the end of the workshop, participants will leave with writing techniques that can be used personally and/or professionally, that can be adapted, and practiced regularly to better their mental health and the wellbeing of those they care for. Description: Join with award-winning, bestselling author, Alexis Marie Chute as she presents the healing capacities of creativity and how to approach any artistic endeavor with mindfulness and freedom. Creative writing will be the focus of this workshop, with revelations on how to break free of destructive grief, process loss in a healthy way, and find personal healing and renewal. Alexis Marie will share five key writing styles that individuals and healthcare professionals may utilize.

Writing Styles:

1. Journaling
2. Free Writing
3. Memoir
4. Poetry
5. Fiction

These styles will be discussed for their potential for personal expression, self-discovery, and reflection. Alexis Marie will introduce each style and share how-to's to ensure a positive writing experience. She will reveal how she used these techniques in her own exploration of creativity after loss – and the breakthroughs that resulted. This workshop will be spent learning and writing, as participants are given the time to try the different literary styles, as well as share their writing. The only supplies needed are a pen and paper, or a laptop.

Alexis Marie Chute is a bestselling author and award-winning writer, artist, and filmmaker. She has her Bachelors of Fine Arts in Art and Design from the University of Alberta, Canada, and her Masters of Fine Arts in Creative Writing from Lesley University in Cambridge, MA, USA. She has presented keynote speeches and workshops around the world. For her artwork and advocacy, she has been named a “Top 40 Under 40” by Avenue Magazine, an “Emerging Canadian Photographer” by Photo Life Magazine, and bestowed the John Poole Award for Promotion of the Arts. www.AlexisMarieChute.com

Keywords: art therapy, healing art, creative writing, self-care, writing, healing

Abstracts of Oral Presentations

W-003

Preventing stillbirth; best practice in identifying and managing women with risk factors as part of routine antenatal care

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WORKSHOP

BACKGROUND:

Stillbirth is a tragedy for parents and families with wide-reaching consequences. With the majority of these deaths in high income countries occurring prior to the onset of labour, identification and appropriate management of women at increased risk during routine antenatal care is key to prevention. The 2016 Lancet stillbirth series highlighted a lack of clinician awareness of risk factors for stillbirth.

OBJECTIVES:

The primary objective is to improve understanding of important risk factors for stillbirth and best practice in care of women with these risk factors.

Target audience:

Midwives and doctors providing antenatal care. Parents may also find this workshop helpful to better understand risk factors and best practice care.

METHODS:

This is an interactive 60 minute workshop with 4 presenters taking the lead on 6 specific components covering 5 care practices, with an introduction and sum up. The workshop has now been run at four conferences with excellent feedback. Best practice recommendations cater to the local setting and use the same case scenario throughout the session. An on-line app voting system using smart phone devices facilitates engagement and discussion on each key element of care. The workshop commences with 5 mins allocated to instructions on the app voting system (which will also be included in the program and participants asked to download the app before the session commences).

The six sections of the workshop are as follows:

1. Introduction

The Lancet's stillbirth series has brought attention to the need to focus on stillbirth prevention and, in particular for high income country settings, to improve practice based on audits to identify substandard care. Substandard care contributes to 20-30% of all stillbirths. Care factors identified are often around detection and management of risk factors.

2. Identification of risk factors

Case presentation and quiz on numbers of risk factors present.

3. Screening and management of gestational diabetes

Case presentation and quiz on recommendations on screening and management of gestation diabetes.

4. Screening and management of small for gestational age

Case presentation and quiz on recommendations on screening and management of gestation diabetes.

5. Screening and management of reduced fetal movements

Case presentation and quiz on screening and management of women with reduced fetal movements

6. Decision-making around induction of labour et term (and sum up)

Case presentation and quiz on timing of induction of labour

Keywords: stillbirth, prevention, risk factors, clinical practice

Abstracts of Oral Presentations

W-004

Each Baby Counts: Listening Exercise

Sarah Jean Prince, [Each Baby Counts Project Team](#)

Royal College of Obstetricians and Gynaecologists

Each Baby Counts has an ambitious aim to reduce by 50% the incidence of stillbirth, neonatal death and severe brain injury as a result of incidents during term labour by 2020. Stillbirths, neonatal deaths and brain injuries occurring due to incidents in labour are initially investigated at a local level. The Each Baby Counts programme brings together the results of these local investigations to understand the bigger picture and share the lessons learned. The first full Each Baby Counts report was published in October 2017 with a series of key recommendations covering areas including fetal monitoring, human factors and neonatal care. Each Baby Counts are committed to making sure that the recommendations that have come out of the programme so far are implemented. The Each Baby Counts Listening Exercise will enable clinicians to share insights into how they have adopted Each Baby Counts recommendations within their own units, the challenges they have faced and the strategies that have been successful. This will enable a forum for sharing of best practice across hospitals during the workshop and enable the Each Baby Counts team to incorporate these discussions into developing new ways to support the implementation of future recommendations nationally. Participants will be able to discuss how they developed their practice in light of the recommendations, share good practice examples, discuss strategies to overcome barriers and have the opportunity to feedback to the Each Baby Counts team.

Keywords: Each Baby Counts, listening exercise, recommendations, implementation

Abstracts of Oral Presentations

W-005

Post-Mortem Authorisation - Parent to Parent

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BACKGROUND: Post-mortem and placental examination can provide vital information for care in the next pregnancy as well as allaying parental anxiety. Unanswered questions and doubts can lead to negative feelings and can complicate grief. A recent study showed that consent/authorisation to post mortem was influenced by deprivation and ethnicity and raised questions as to the suitability of materials provided to parents when considering post-mortem. **OBJECTIVES:** This study was designed to examine what parents want to know about the process and to involve them in provision of accessible materials which address their concerns. The use of simple language and short “sound bites” within an animation will enable informed decision making regardless of background or reading ability.

METHODS: Bereaved parents who engaged with SANDS-Lothians were asked if they would share their experiences of the autopsy process in order that parental concerns could be addressed in a video designed for parents considering autopsy. Participation was entirely voluntary.

The questions asked were:

- 1) List (briefly) 5 things you would have liked to have known about PM BEFORE making your decision?
- 2) Why you made the decision to have or not have a PM?
- 3) How you feel about your decision now?
- 4) Would you like the video to include some information about the PM process?

The information provided was reviewed and themes extracted. The animator designed a story board which was reviewed by parents and relevant “sound bites” added. The responses were used to create an animated 2 - 3 min video using a Q and A format to address the “real” issues identified by parents alongside an informative illustrated leaflet.

RESULTS: 16 families, 18 babies and a total of 19 parents answered the questions while many others asked to be involved in reviewing the artwork prior to finalising the video and leaflet. The main themes identified were consistent in all the responses received and related to: Why? When? Where and by Whom? Families also needed to know that the body would be treated with dignity and respect, what might happen to the body between the autopsy and the funeral. Would keep-sakes be kept with the body? Could the baby be carried to the mortuary? How long to receive results and from whom? Many also felt they should be told about the likelihood of no cause being identified.

CONCLUSION: The responses from the parents were not as predicted by professionals involved in writing the video script. In view of this we worked closely with families to create the animation using real voices and real opinions.

This study demonstrates the need to listen to parents and be guided by them when creating resources; there is a general need for improved communication between all working in this area including the ability to give parents time to reflect on their loss and on concerns they may have before discussing post-mortem consent in detail

Keywords: Post-Mortem, animation, Informed consent, authorisation, parents

Abstracts of Oral Presentations

TP-001

What can the placenta tell us about stillbirth?

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⁴Siassakos D, Consultant Senior Lecturer in Obstetrics, University of Bristol & Southmead Hospital, Bristol, UK

Objectives Examination of the placenta is a fundamental tool in the understanding of stillbirth and other infant pathology. The purpose of this symposium is to discuss the role of macroscopic and microscopic placental pathology in stillbirth and to analyse the role of maternal obesity, with or without specific placental pathology.

Keywords: stillbirth, placenta, pathology, genomics, obesity

Abstracts of Oral Presentations

TP-002

Quality Improvement to save lives: One baby at a time

Bernadette Mcculloch, Colin Peters, Angela Cunningham, Cheryl Clark, Lesley Macfarlane

Maternity & Children Quality Improvement Collaborative, Scottish Patient Safety Programme, Healthcare Improvement Scotland, Edinburgh, United Kingdom

PROPOSAL

This thematic panel session showcases how improvement science methodology achieves changes and improvements in care

Any of the topics can also be shared as a standalone presentation or as poster exhibits

BACKGROUND

The Scottish Patient Safety Programme (SPSP) is a unique national programme coordinated by Healthcare Improvement Scotland that aims to improve the safety and reliability of healthcare and reduce harm, whenever care is delivered.

The Maternity & Children Quality Improvement Collaborative (MCQIC) is part of the SPSP, which aims to support clinical teams in Scotland to improve the quality & safety of maternity & neonatal healthcare with specific outcome aims to reduce the neonatal mortality and stillbirth rate in Scotland. We focus on process measures (topics below) to address these outcomes

OBJECTIVE

TOPIC 1: INCREASING AWARENESS OF FETAL MOVEMENTS

95% of all pregnant women to have a documented discussion with a midwife about fetal movement
RESULTS:

From March 2014 to December 2016 discussion of fetal movement improved by 21%
By April 2017 > 95% of women are having a documented discussion (Figure 1)

TOPIC 2: SMOKING IN PREGNANCY

Offer 95% of women carbon monoxide monitoring (CO) at booking appointment
Refer 90% of women who have raised CO levels or who say they are smokers to smoking cessation services

RESULTS:

>95% women offered CO monitoring at booking (Figure 2)

90% referral to smoking cessation services (Figure 3)

TOPIC 3: Reduce Central line Associated Blood Stream Infections (CLABSI) in the neonatal unit, Glasgow

RESULT: 65% reduction in CLABSI rate (Figure 5)

TOPIC 4: Preterm Perinatal Wellbeing Package

AIM: reduce preterm death rate with a focus on

Delivery in the appropriate centre

Thermoregulation

Early breast milk administration

Administration of steroids and magnesium sulphate to mothers

Optimal cord clamping

Administration of caffeine to infants

METHOD used for all topics

Breakthrough Series Collaborative model (Figure 6) using national learning sessions
Action periods - teams test on a small scale and implement changes using improvement methodology - The Model for Improvement use of monthly data to confirm if the changes have resulted in an improvement.

Supported nationally via WebEx, feedback, data analysis, support visits to identify barriers to progress and celebrate achievements

Teams are encouraged to share change ideas, progress & monthly data to accelerate learning and improvements

Abstracts of Oral Presentations

CONCLUSION

MCQIC has used improvement science to make changes routine procedure in units. Data demonstrates sustained improvement in process measures resulting in improvement in outcome aims (Figure 5, 7, 8). This takes time.

A national network of clinicians talking about safety and quality improvement has developed. Valuable lessons have been learned in the delivery of a national quality improvement programme and the need to maintain focus on effort to achieve that sustained improvement

Keywords: Quality Improvement, Data, Tests, Process, Outcome

Abstracts of Oral Presentations

TP-003

What can the autopsy tell us about stillbirth?

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The thematic panel will present the audience with: I) the options of full post mortem examination of the non-anomalous foetus; II) the benefits and limitations of the MRI post mortem (PM) and III) interpretation of pathology findings in lay terms.

I. Autopsy of the non-anomalous foetus

BACKGROUND: A great deal of information can be learned from the appropriately conducted stillborn autopsy. The approach to the non-anomalous stillborn can be challenging

OBJECTIVES: at the end of this presentation, participants will be familiar with the findings in stillbirths secondary to acute hypoxia; who have undergone chronic hypoxia; and with the differential diagnosis and approach to the hydropic foetus

CONCLUSION: improved information can be elicited from an appropriately performed stillbirth autopsy, which also permits consultation as indicated

II. The minimally invasive PM: benefits and limitations

Objectives: To determine: the percentage of cases in a series of MRI PMs in which a relevant condition was identified.

M&M: We identified 105 PM MRI cases and analysed the most important element of the minimally invasive PM in providing the diagnosis was the placenta in 65 cases (62%), followed by the MRI in 26 cases (25%) and karyotype in 2 cases (2%). The skeletal survey, whilst providing valuable contributory information, did not provide the main diagnosis in any cases. In 11 cases (10%) no cause of IUFD was identified.

Conclusion: Minimally invasive PMs provide a good alternative to traditional PMs to those families who do not wish to proceed with an invasive PM, providing comparable rates of clinical findings.

III. How to interpret the pathology report in lay terms:

Background: Maternal-fetal-medicine specialists, obstetricians, and other healthcare providers often have difficulty in interpreting pathology results in a meaningful way. For the patients and other laypersons, the task can be very challenging. This presentation will concentrate on interpretation of pathology findings in lay terms.

Objectives: At the end of this participation, participants: will understand: the terminology and the pathology reporting with respect to ischemic or hypoxic changes in the placenta; the pathology findings as they relate immune-mediated mechanisms in causation of stillbirth and will be familiar with pathology findings and terminology related to infectious and inflammatory causes of stillbirth

Conclusion: This will lead to increased understanding of the clinic-pathologic correlation in stillbirth and potentially improve future outcomes.

Keywords: Post mortem, Minimally invasive PM, MRI PM, information

Abstracts of Oral Presentations

F-001

Expecting Sunshine Documentary Film Screening

[Alexis Marie Chute](#)

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Intended Audience: Medical professionals will benefit with an increased awareness of patients care needs. Additionally, the film is a powerful resource for bereaved parents and parent advocates.

OBJECTIVES: The documentary seeks to break the taboo around pregnancy loss by sharing the experiences of bereaved parents and caregivers. It investigates different perspectives on traumatic birth, how loss affects personal identity and faith, and the ways families change, thrive and cope through grief. Also highlighted is the decision-making process around family planning after loss and the unique stresses of those subsequent pregnancies.

The film is 48 minutes long, leaving approximately 10 minutes for questions (given the 60 min time slot for workshops).

Description: Expecting Sunshine Documentary brings to life the award-winning, bestselling memoir by author/filmmaker Alexis Marie Chute, called Expecting Sunshine: A Journey of Grief, Healing and Pregnancy After Loss. The film welcomes viewers into an intimate experience of an actual subsequent pregnancy of the filmmaker following the death of her newborn son, Zachary, at birth from Tuberous Sclerosis Complex. The documentary brings viewers along on real-life medical appointments, introduces them to other bereaved parents and medical professionals through thought-provoking interviews, right through to the delivery room where Chute welcomes her "rainbow baby," the name given by bereaved parents to their child(ren) born after their loss. The film is not a sterile or sentimental expose, but is instead a collaborative and culturally relevant work of art. The filmmaker exposes unseen emotional and psychological challenges, curating them into an artistic presentation that lives on in the minds of viewers long after. With poignant narration about grief and healing journey, the documentary casts fresh light on a private and isolating experience. Expecting Sunshine Documentary will screen at Platform Film Festival in Brooklyn, USA; Central Alberta Film Festival in Red Deer, Canada; and at PLIDA International Perinatal Bereavement Conference in St. Louis, USA. The film was a finalist in the International Women's Film Festival and the US Hollywood International Golden Film Award. It was a semi-finalist in the Hollywood International Independent Documentary Awards. Expecting Sunshine memoir (She Write Press, 2017, www.ExpectingSunshine.com) was a Kirkus Reviews' Best Book of 2017, Top 10 IndieReader's Best Reviewed Books of 2017, First place in the Royal Dragonfly Book Awards, two-time finalist in the Best Book Awards for "Best Non-Fiction" and "Women's Interest," first place winner of the IndieReader Discovery Award for the "Women's Interest" category, winner at the Next Generation Indie Book Awards, and a Canada Book Award winner. Alexis Marie Chute is a bestselling, multi-award-winning author, artist, filmmaker, and public speaker. www.AlexisMarieChute.com

Funding Source: IndieGoGo crowdfunding campaigns.

Keywords: documentary film, stillbirth, pregnancy after loss, grief, healing, traumatic birth

**2018 International Conference on
Stillbirth, SIDS and Baby Survival**

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Glasgow, UK

Abstracts of Poster Presentations

Abstracts of Poster Presentations

P-001

Predictors of mothers' contact with the baby following intrauterine death

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Universidad Complutense de Madrid

INTRODUCTION: The objective of the study was to identify if socio-demographic, pregnancy and care variables predict contact with the baby following intrauterine death. **METHODS:** The study used a cross-sectional descriptive design with an online questionnaire, which included a series of objective and subjective (using a Likert scale) measures of care. The study included women who had experienced fetal death ≥ 16 weeks gestation (stillbirth or termination of pregnancy) and within 5 years prior to participation in the study in Spanish hospitals. The analysis used binary logistic regression to identify a series of pregnancy variables (block 1) and care variables (block 2) that predicted whether the mother had seen the baby or not following the birth. **RESULTS:** Responses from 796 women were analysed. 52.2% of mothers saw their baby following the birth. The final model ($F(10, 774) = 232.13, p < 0.001$) contained 10 variables, which explained between 25.9% and 33.8% of the variance, three of these related to gestational age categories under 34 weeks and each had a negative odds ratios for contact with the baby: "16-19 weeks" (OR: 0.178, 95% C.I. 0.106-0.297, $p < 0.001$), "20-25 weeks" (OR: 0.224, 95% C.I. 0.145-0.345, $p < 0.001$), "26-33 weeks" (OR: 0.328, 95% C.I. 0.207-0.520, $p < 0.001$). Being "primiparous" was also a negative predictor (OR: 0.682, 95% C.I. 0.487-0.957, $p = 0.027$). Controlling for pregnancy variables and time since the loss, 5 care variables were retained in block 2, of which 3 were positive predictors of seeing the baby: "being accompanied by a partner, family member or other during the birth" (aOR: 2.073, 95% C.I. 1.428-3.010, $p < 0.001$), agreeing that "enough information was provided to make a decision about seeing the baby" (aOR: 2.077, 95% C.I. 1.436-3.004, $p < 0.001$), and "at least one professional used the baby's name" (aOR: 3.148, 95% C.I. 1.823-5.434, $p < 0.001$). 2 care variables with paradoxical intentions had negative adjusted odds ratios: women who "felt pressured by HPs to see the baby" (aOR: 0.171, 95% C.I. 0.081-0.360, $p < 0.001$) and those who responded that the "health professionals advised that it was better to not see the baby" (aOR: 0.469, 95% C.I. 0.312-0.704, $p < 0.001$). **CONCLUSIONS:** Gestational age, care practices and the way HPs interact with mothers strongly predict contact with the baby. Accompaniment during the birth, good information and using the baby's name are actions that positively predicted contact. Pressuring was found to be highly counterproductive. In health systems, such as Spain, where perinatal bereavement care is in a developmental phase, it is important that HPs find the right balance in the way they communicate as their actions strongly influence decision-making and care outcomes. **Ethics:** Ethics approval for the project was not required from the author's institution (Universidad Complutense de Madrid, Umamanita) for non-clinical studies. Consent was given through informed participation in the online survey.

Keywords: Seeing and holding, contact with the baby, stillbirth, termination of pregnancy

Abstracts of Poster Presentations

P-002

Positive changes in the family functioning after the death of child

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BACKGROUND: The death of a child affects deeply on every member of the family and their close relatives. Even though the experience of the grief is considered as a strong and negative feeling, there are also positive experiences, such as comfort, happiness and feeling of freedom. **OBJECTIVES:** The purpose of this study was to describe the positive changes that the death of a child brings to family functioning from the parents' point of view. The main goal of the research was to produce information to professionals working with families with experience of deceased child. With this research professionals can recognize and observe the changes in the family function. In addition to this was to increase the knowledge of positive changes in the family functioning after the death of child. **METHODS:** The informants were mothers (n=308) and fathers (n=38) who experienced the death of a child. Request to participate in the study was presented on the websites and members' mailing lists of grief organisations (KÄPY, Surunauha and HUOMA), and also on internet forums where grieving parents were signed on. The data were collected using an electronic questionnaire, which consisted of background variables regarding the informant, the deceased child and their family, and an open-ended question regarding the changes in the family's functioning. Qualitative inductive content analysis was used to analyse the data.

RESULTS: Positive changes that parents experienced after child's death were: improvement in parent's quality of life, slow acceptance of child's death, change in life values, redefining identity, stronger connection between parents, necessity of help, changes in social interaction and improvement in social relationships.

CONCLUSIONS: The results of this research showed that the death of a child created comprehensive positive changes in individual and also in family level. The death of a child started a process of personal growth, that reflected on the parent's relationship. Parents felt closer to each other and relationship changed into a more open and selfless direction. Social relations improved and parent received more help and support than before. The values of life changed into more human-centered and parents felt their quality of life better than before. The study brings new information about supporting and meeting families. Professionals who work with grieving parents should take into account that in addition to negative changes there are also lot of positive ones. The results can be used in education among all different professionals meeting grieving parents.

Keywords: Death of a child, positive change, family, social relations

Abstracts of Poster Presentations

P-003

Wearable and wireless pulse-oximetry-based rescue device to detect a problem during a baby's sleep and interrupt via mild stimulation

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This internationally patented wearable device is a pulse-oximetry based rescue garment worn by an infant on the hand or foot. It communicates wirelessly with a caregiver's table or smartphone, where an application resides with a user interface. The device monitors heart rate and blood oxygenation. Detecting and interrupting dangerous sleep episodes is theoretically the best mechanism of rescue for infants at risk such as premature babies, babies with diagnosed unstable airway conditions or post surgery babies. If the baby experiences a dangerously low blood oxygen saturation and/or low heart rate episode a proprietary algorithm will trigger a transcutaneous electrical nervous stimulation (TENS) that will effectively make him/her react and restore his/her breathing again. The complex algorithm was designed and based on CHIME (Cardiorespiratory Events Recorded on Home Monitors) study to reduce false alarms. The rescue stimulus is minimal so as not to cause undue distress. The cutaneous electrical stimulation is effective for the treatment of apnea of prematurity (Pediatr Res. 1977 Jan;11(1 Pt 1):24-8. Scarpelli EM, Condorelli S, Cosmi EV.). Data is gathered and may be shared wirelessly with physicians on either a real-time, or a scheduled basis. We are seeking FDA authorization to market our wearable with claims for reducing the likelihood of experiencing critical situations on premature babies. A complete wearable, wireless and safe prototype was successfully tested on 2017 using Maxim sensor. Its primary user interface is connected to the device through Low Level Bluetooth and features an Android mobile device app. This project has been recognized by many prestigious hospitals of USA and Argentina. Some of them: FDA Pediatric Device Consortium Children's National Health System, finalist on September 2017. FDA Pediatric Device Consortium Children's Hospital of Philadelphia, finalist 2017. FDA Pediatric Device Consortium University of California San Francisco, two presentations in scientific meetings 2016-2017.

Keywords: Prematurity, apnea, stimulation, hypoxia, bradycardia, pulseoximetry

Abstracts of Poster Presentations

P-004

Using maternity wallets to aid safer pregnancies

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In June 2017 MBRRACE-UK published its findings of the UK Perinatal Mortality Surveillance for 2015. It highlighted that areas for patient information are insufficient, and that an inadequate response to a history of reduced fetal movements contributed to almost 25% of stillbirths in the UK.

Since 2014 MAMA Academy, a charity that aims to improve pregnancy outcomes including stillbirth, has been providing expectant mothers with MAMA Wellbeing Wallets. MAMA Wellbeing Wallets are durable PVC zip-lock pouches designed to protect antenatal notes. They are printed front and back with colourful, easy to read essential health messages - with a particular emphasis on the importance of monitoring babies movements. All information is in line with the Sands and DH safer pregnancy messaging and supported by NHS England. Wallets are given to expectant mothers by their midwife at the booking appointment. The wallet provides space for a main maternity phone number to be written on so mother's know where to call if they experience any problematic symptoms. Currently implemented in HALF of all NHS Trusts and are enabling further maternal discussions regarding:

- staying healthy (smoking, foods to avoid etc)
- signs of infection, preeclampsia and ICP
- when to call the maternity unit without delay
- how to monitor babies movements.

A mothers survey in 2016 revealed that women regularly read the information whilst waiting for appointments and the information (mostly when to call the midwife, signs of labour and babies movements) had prompted further discussions with their midwife. Stillbirth and neonatal death rates were recorded in 11 out of 15 pilot Trusts. 10 Trusts reported a moderate to significant decrease in stillbirth rates, and a significant decrease in stillbirth was noted in 2 Trusts that had not implemented any other new measures or initiatives. Three Trusts reported the prevention of potential stillbirths after the wallet prompted the mother to call with reduced movements, symptoms of preeclampsia and signs of sepsis. NHS England recommends the use of MAMA Wellbeing Wallets to compliment the governments ambition of reducing stillbirth in the UK by 50% by 2025. As more Trusts go digital and paper light, MAMA Wellbeing Wallets will become smaller but will also become even more essential in delivering safer pregnancy messages to expectant parents to reduce stillbirth rates.

Keywords: stillbirth, pregnancy, education, midwifery, maternity, antenatal

Abstracts of Poster Presentations

P-005

46 years with SIDS

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1972 Doctor, a social worker, a St. Louis SIDS parent and a lawyer start a chapter of the National SIDS Foundation.

1974 Awarded Maternal and Child Health funding to develop support for SIDS families in St Louis, Mo.

1977 Doctor uses project as site for NIH funded Collaborative Epidemiological Study of SIDS which fails to find good evidence for sleep position, obstetrical or neonatal factor. But finds evidence for smoking.

1978 Obtained additional State funds to make project more state wide.

1982 Direct federal funding ends. State funds obtained at reduced level for state wide projects.

1984 Lawyer gets "SIDS Resources" name and incorporates as stand-alone state-wide non-profit which sees up to 200 SIDS/yr.

1992 Doctor and social worker attend 2nd international SIDS conference in Sydney Australia where data on sleep position is compelling. NIH begins to focus on sleep position.

1994 Doctor sits on NIH review committees to further study sleep position. Social worker begins safe sleep education..

1995 Funding award by Maternal and Child Health Bureau to conduct education project in very poor "Bootheel" area of Missouri to reduce infant death. Executive Director brought on board.

1997 Healthy Start Grant awarded to increase project in "Bootheel".

2003 Healthy Start Grant turned over to "Bootheel" Local Staff. SIDS Resources focuses on rest of state.

2004 State of Missouri funds SIDS Resources to train nurses in 75 hospitals on the importance of back sleeping for babies.

2005 Doctor works with First Candle and CDC to begin to look at diagnostic criteria for the diagnosis of SIDS. SIDS Resources begins to deal with diagnostic shift. Cases down to about 100/yr.

2006 Executive Director and staff assume control of the existing Safe Crib Program and work with city health departments in St. Louis and Kansas City to get education and Pack and Plays to infants at risk.

2010 Executive Director, social worker, and board work to fund \$300,000 of state wide projects with local grants and fundraising.

2012 Medical Examiners statewide begin to stop diagnosing SIDS and referrals from them decrease. SIDS Resources still provides counseling to families, new and old and education continues. Doctor concerned that research on SIDS will decrease.

2017 Lawyer helps SIDS Resources change its name to INFANT LOSS RESOURCES and continue work.

2018 Doctor sends abstract to International Conference on SIDS hoping to learn more about physiologic risks for SIDS.

Keywords: SIDS, sleep, family support, education, research

Abstracts of Poster Presentations

P-006

Ayrshire Maternity Unit Improving Bereavement Care Project

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NHS Ayrshire and Arran

Aim of project

To improve the quality of care offered to parents and families following the death of a baby by development and integration of a Bereavement Team (BT)

Local background

Ayrshire maternity Unit (AMU) is the only consultant maternity unit within Ayrshire and Arran and covers a very large geographical area. In 2014 we had a delivery rate of 3598 and a stillbirth rate of 4.53 per 1000 births (MBRRACE-UK 2016). Identified gaps in our service were:-
Communication with parents post discharge.
Variation in follow-up care.

Ability to develop staff to be confident in caring for women with pregnancy loss

Project Aim

The aim of the BT was to provide a reliable package of care to all parents following the death of a baby. This included:

- Provide 7 day cover to offer support to bereaved parents
- Provide 7 day cover to offer support to staff

Reliable process to enable delivery of bereavement support following discharge from hospital.

- Inform and give parents the opportunity to be involved in the perinatal review process.
- Development of a dedicated telephone service

This service was launched September 2016 on a very small scale within our labour suite. Initial testing has been between Mon-Fri 9.00 - 17.00, however our vision is to be able to offer this service on a wider scale.

Methodology

We employed Improvement Methodology to support this project. We worked on a project charter and driver diagram to assist us plan and execute improvements. Plan, do, study, act (PDSA) cycles were employed to provide a framework for developing, testing and implementing changes for improvement.

Measuring improvement is essential to determine whether change has had the desired impact or affect therefore we collected and used local data to drive improvements by identifying/selecting appropriate and realistic measures of improvement. We have collected data weekly on the following measures:

- % Compliance with ability to offer parental support
- % Compliance with ability to offer staff support
- % Compliance with use of page access/telephone access
- % Compliance with BT availability

Results/Outcomes

The BT have now been operating for approx 16 months initial parental feedback has been very positive. 9 staff have been recruited to the team however data suggests that this is still not sufficient to cover every shift, every day of the month. A remit of the BT role is to provide support not only to parents but also to staff which has been welcomed by many staff.

Keywords: Bereavement, Bereavement Team, support

Abstracts of Poster Presentations

P-007

Women's awareness of stillbirth and reaction to messaging around stillbirth risk

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BACKGROUND: Women's awareness of stillbirth and reactions to stillbirth messaging were explored.

METHODS: Focus group sessions were conducted involving 40 women with no experience of stillbirth (Table 1). Groups were shown four sample A3 posters and a leaflet. Discussions were independently facilitated, with a note taker behind one-way glass.

RESULTS: Awareness of stillbirth was limited. Although most women considered they 'sort of knew', none could define stillbirth accurately. Pregnant and previously pregnant women recalled being told about alcohol, smoking and healthy eating, and receiving information on miscarriage, cot death and Down's syndrome. Some second- and third-time mothers felt they knew enough and were less likely to read information. One younger woman reported getting all her information from YouTube. Women were surprised by stillbirth statistics. The incidence of stillbirth vs cot death had the most impact, but some women said it simply made them feel less concerned about SIDS. In general, women found statistics scary if they were not linked with advice about risk reduction. Women were surprised that flu was a risk factor, and many thought vaccination would be harmful. There was mixed reaction to information on drinking, with the suggestion that 'overstating' the risk could damage trust in other messages. Women were familiar with the smoking messages, though none realised there was a link with stillbirth. Women agreed that they wanted information on modifiable risk factors only. Women felt information on non-modifiable risk factors such as ethnic group should be 'known' by health professionals.

CONCLUSION: Women across the UK were consistent in their knowledge and preferences. Messaging around stillbirth needs to be subtle, focusing on how to reduce risk and have a safer pregnancy. Imagery needs to reflect positive messaging and not imply loss or bereavement. Statistics should be used with care and not in isolation.

Keywords: Stillbirth awareness, Modifiable risk factors, Pregnant women

Abstracts of Poster Presentations

P-008

Maternal smoking and alcohol consumption effect on infant autonomic response to head up tilt

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Background

Sudden infant death syndrome (SIDS) involves failure of infants' autonomic response to external stressors during sleep. Moreover, exposure to cigarette smoke during pregnancy increases the risk of SIDS, potentially due to the effects of nicotine on 5-HT and/or nicotinic receptors in brain areas involved in autonomic nervous system (ANS) control. There is some evidence to suggest a link between alcohol consumption during pregnancy and the infant ANS development.

Objectives

An established method for testing ANS control is through analysis of the heart rate patterns following a head-up tilt. Our hypothesis is that exposure to smoke and alcohol during the pregnancy impairs infants' response to ANS challenges.

Methods

The subjects analyzed were participants in the Safe Passage study and were recruited at Tygerberg Hospital, Cape Town, South Africa. ECG and breathing were acquired within 48-96 hours after birth. Data were recorded during a 10-min baseline and three rapid (~3-5 sec) 45° head-up tilts, while the infant was sleeping in prone position. Comprehensive questionnaires provided estimates of mothers' tobacco and alcohol consumption during pregnancy. For this analysis, a subset of subjects was divided into two groups: a control group with no prenatal exposure to alcohol or tobacco smoke and a group exposed to both substances during pregnancy. In this report, tilts during quiet sleep were analyzed. Inclusion criteria were: full-term infants (gestational age ≥ 37 weeks), birthweight ≥ 2500 g, South African mixed ancestry, no resuscitation at birth or admission to the NICU, no prenatal exposures to other drugs, no diabetes, hypertension, or pre-eclampsia during pregnancy. Total number of infants for the control group was 15 (GA=39.731.1wks) and for the exposed group was 13 (GA= 39.230.8wks). Vagal reactivity was quantified with time and frequency domain parameters (Root Mean Square of the Successive Differences of the RR series, RMSSD, and high frequency power in the RR series spectrum, HF). Four 30-second segments were analyzed, the first right before tilt and then three immediately following tilt.

Results

Repeated measures ANOVA showed that results for the control group for both parameters were as expected, indicating a vagal withdrawal (RMSSD $p=0.001$, HF $p=0.045$), while in the exposed group no significant difference pre/post tilt was observed (RMSSD $p=0.959$, HF $p=0.942$). Interestingly, pre-tilt parameters did not differ between the two groups.

Conclusions

These results are in line with epidemiological findings of higher risk of SIDS in infants exposed to smoke and alcohol and provide insight regarding the related ANS impairment. Though baseline measures did not differ significantly, different responses occurred after the ANS challenge, perhaps reflecting the risk for some infants who die of SIDS who are apparently healthy but succumb when presented with a common autonomic challenge in prone sleep during a vulnerable period of development.

Keywords: Prenatal Exposure, Smoking, Alcohol, Autonomic Nervous System, Vagal Reactivity

Abstracts of Poster Presentations

P-009

Interprofessional Learning:SUDI Process and Practice

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AIM

To use simulation in conjunction with multimedia presentation to allow staff to experience and discuss the clinical and administrative processes involved in the event of SUDI

BACKGROUND

SUDI is a rare event, so many staff have no experience of it. Lack of awareness of current guidelines meant that incorrect process was followed in our ED department during one SUDI. It was felt that simulation would be a useful way to highlight the issues/guidelines/processes/difficult conversations in a safe environment.

It is a subject often avoided and so overlooked.

METHOD

Simulation involving ED and paediatric medical and nursing staff. Some sessions were also attended by medical and nursing students,child protection/HV and health professionals from Cot Death Trust Scotland.

A short scenario and debrief is then followed by a prerecorded interview with members of Police Scotland explaining their role and the guidance they advise.

There is then a discussion regarding the SUDI pack and paperwork and the clinical and legal processes and signposting to SUDIscotland website for further information.

RESULTS

The feedback was gathered immediately after the session and was predominantly positive with regards to the scenario and the overall learning

CONCLUSIONS

Simulation is an effective, safe,non-threatening environment to allow staff to experience the challenges they will face during what is always a traumatic event. The addition of other learning media enhances the learning

Keywords: SUDI,Interprofessional,simulation

Abstracts of Poster Presentations

P-010

Making The Decision To Have Another Child After A Loss

Michele Ada Houlihan

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When you first began your journey to have a family it is highly unlikely you ever expected to be faced with the loss of your child. No one plans to become a grieving parent faced with the decision whether to have another child.

My journey into the world of infant loss began in 1980 with the SIDS death of my one month old son Joey. Shear devastation was followed by desperation to be a mother. I made the very difficult decision to have another child and two years later my son Kristopher was born.

It was a year filled with agonising fear mixed with sheer joy. A roller coaster of emotions. Two years later I gave birth to another healthy boy we named Nicholas. He was quickly nickname Niko by his two year old brother Kris!

I was still extremely afraid but tried very hard to not live in the fear but to live in the moment. Easier said than done. What happened next was like being hit by a train. At two and a half months old, Nicholas died from SIDS. It was unbelievable!

Doctors and the coroner both told me that although it is rare to loose two children to SIDS it did happen and it was just the 'laws of probability'. That was of little comfort to me. I struggled to hide my devastation from the only little miracle I had, Kristopher. My marriage fell apart and we drifted into a world of single parent challenges. We met them together and healed together. Ten years later I remarried a lovely man who had no children and with great tribulation I made the decision to have another child. I wasn't going to let the terrible losses of my past direct my future. Nearly thirteen years after Nicholas had passed away I gave birth to my sweet daughter Adrienne. Again, it was a long year and filled with intense fear. When I came out the other-side of it I was able to feel that I had made a leap of faith that was mine to make and mine alone. Through my decisions to have subsequent children following my SIDS losses I encountered several issues that, over the years, I have realised were universal in the decision to have another child after a loss. My abstract would include these topics:

When Is The Right Time To Plan a Pregnancy After a Loss?

Moving On? Is there such a thing?

The myth of the Replacement Child.

Milestones.

Managing the Fear and Worry.

Although these subjects are personal they also reflect the conversations and experiences of dozens of parents I have been in support circles with over the past three decades.

Keywords: SIDS, Subsequent Children, Moving on,

Abstracts of Poster Presentations

P-013

The association of second trimester biomarkers in amniotic fluid and fetal outcome

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Funding: The project was founded by Signhild Engqvists Foundation, Sweden

OBJECTIVE: Oxidative stress is considered an important factor for fetal wellbeing. Biochemical markers can be a measure of this. The objective of this study was to identify if the levels of lactic acid (AFL), placental growth factor (PLGF) and vascular endothelial growth factor (VEGF) in amniotic fluid early in pregnancy were different in pregnancies affected of oxidative stress, compared to pregnancies with a normal outcome.

MATERIALS-METHODS: This was a prospective cohort study from Soder hospital in Stockholm. Amniotic fluid was consecutive collected in second trimester at the time of amniocentesis in 109 pregnancies. Fetal outcome at delivery was evaluated from medical files and the association with the level AFL, VEGF and PLGF in amniotic fluid and pregnancy outcome was investigated. In this study AFL was analyzed with an electrochemical test strip and PLGF and VEGF with the ELISA method.

DISCUSSION: A baseline AFL concentration of 6.9 mmol/l (4.1-11.1mmol/l), VEGF of 0.09 (0.06-0.13) and PLGF of 0.21 (0.13-0.30) was found. AFL levels in pregnancies ended with a miscarriage was significant higher (10.1mmol/l) compared to them with a live fetus (6.9mmol/L, p=0.03). The levels of VEGF (p=0.09) and PLGF (p=0.5) were not affected among the miscarriages. In pregnancies with an IUGR fetus the level of AFL was higher compared to pregnancies with a normal fetal growth (9.15 vs.6.8 mmol/l, p=0.03). No significant difference according the factor of VEGF in amniotic fluid was found, but PLGF was significant lower among them with an IUGR fetus (0.16 vs 0.22, p=0.03). **CONCLUSION:** We found that pregnancies ended in a miscarriage or with an IUGR had significant higher values of AFL and lower values of PLGF in the amniotic fluid at the time of amniocentesis compared to normal pregnancies.

Keywords: second trimester biomarkers in amniotic fluid, fetal outcome

Abstracts of Poster Presentations

P-014

Sudden Unexpected Infant death (SUID): Which is the Real Burden of SIDS?

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BACKGROUND Sudden unexpected infant death (SUID) is a major cause of death in infants less than 1 year of age. Sudden infant death syndrome (SIDS) is defined as a SUID that remains unexplained after complete post-mortem examination. Cardiac ion channel mutations are reported in up to 10% of SIDS thus suggesting a diagnostic role for “molecular autopsy”. An obligatory protocol of post-mortem examination has been introduced by law in Italy since 2014 to assess both the prevalence and etiopathogenesis of SIDS and implement research on the topic. The aim of the present study was to compare SUID data before and after the application of a standard autopsy protocol of investigation. **DESIGN** In the time interval 2004-2017, SUID cases occurring in the North-East of Italy, Veneto Region, excluding perinatal death, were referred to the Cardiovascular Pathology Unit. According to the national protocol, after 2014 death scene investigation, review of medical history, post mortem radiological examination and complete autopsy were performed, including gross and microscopic study with ultrastructural, toxicologic and molecular sampling. A neuropathological investigation of the brainstem was carried out in all cases. In presence of histological evidence of an infectious process, molecular tools (PCR and RT-PCR) were applied for detection of the following viruses (AV, parainfluenza, influenza A and B, RSV, EBV, CMV, EV, HHV6). **RESULTS** A total of 37 SUID (27 M, mean age 3.4433.60 months), 22 before and 15 after 2014, were collected. Of 22 autopsies performed during the period 2004-2013, 2 (10%) were SUID, both due to AV-related lymphocytic myocarditis, and 20 (90%) were SIDS. Among 15 SUID cases collected after 2014, SIDS accounted for 4 cases (27%), while a cause of death was found in 11 (73%) ($p < 0.0001$). In the 11 infants with a certain cause of death, the main findings were interstitial pneumonia and bronchiolitis with airway obstruction in 9 (82%) and lymphocytic myocarditis in 2 (18%). Molecular analysis was positive for viruses in 6/11 (54.5%) of cases. **CONCLUSION** Since the application of an obligatory protocol for SUID postmortem investigation, infective pulmonary or myocardial diseases have been the most common causes of ‘explained’ SUID, while SIDS accounts for about 1/4 of cases. Efforts must be made to implement uniform autopsy protocols to provide reliable epidemiological data and to select real SIDS cases for genetic testing of cardiac-associated genes, with important implications for early diagnosis and prevention.

Keywords: Sudden Unexpected Infant Death, SIDS

Abstracts of Poster Presentations

P-015

Bereavement Support and Attachment Based Care in Pregnancy Following Loss

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Bereavement does not end when parents enter a new pregnancy. Rather, due to the loss of naivety that babies die, a new layer of grief surfaces along-side fear to attach. This presentation combines research and clinical practice to explore the complex experience of a pregnancy that follows perinatal loss. The ongoing grief, increased fear, and anxiety parents experience can interfere with attachment to a new baby. Content will address the different experiences of mothers and fathers and a model of clinical intervention that supports the parenting role of a deceased baby while attaching to the new unborn baby who needs their attention now to prevent another perinatal loss.

Keywords: bereavement, pregnancy after loss, support, prenatal attachment, fathers

Abstracts of Poster Presentations

P-016

Mortality in mothers after perinatal loss; a population-based follow-up study

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OBJECTIVE:

To assess whether mothers who lost a child from stillbirth or in the first week of life have an increased overall mortality and cause-specific mortality.

DESIGN:

In a population based follow-up study

SETTING:

Data from Danish national registers.

POPULATION:

All mothers in Denmark were included in the cohort at time of their first delivery from 1 January 1980 to 31 December 2008 and followed until 31 December 2009 or death, whichever came first.

METHODS:

The association between perinatal loss and total and cause-specific mortality in mothers was estimated with hazard ratios (HR) and 95% confidence intervals (95% CI) calculated using Cox proportional hazards regression analyses.

MAIN OUTCOME MEASURES:

Overall mortality and cause-specific mortality.

RESULTS:

During the follow-up period, 838,331 mothers in the cohort gave birth to one or more children and 7690 mothers (0.92%) experienced a perinatal loss. During follow-up, 8883 mothers (1.06%) died. There was an increased overall mortality for mothers who experienced a perinatal loss adjusted for maternal age and educational level, hazard ratio (HR) 1.83 [95% confidence interval (CI) 1.55-2.17]. The strongest association was seen in mortality from cardiovascular diseases (CVD) with an HR of 2.29 (95% CI 1.48-3.52) adjusted for CVD at time of delivery. We found no association between a perinatal loss and mortality from traumatic causes.

CONCLUSIONS:

Mothers who experience a perinatal loss have an increased mortality, especially from CVD.

Keywords: mortality, perinatal loss, population-based follow-up study

Abstracts of Poster Presentations

P-017

Towards enabling finding causes for stillbirth in a tertiary care center in South India

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BACKGROUND: Stillbirth is delivery of a fetus after 22 completed weeks of gestation, weighing 500gms or more with the newborn showing no signs of life after delivery. The stillbirth rate in India was 23/1000 in 2015. ReCoDe (RElevant CONdition at DEath) is a new classification which identifies the relevant condition at time of fetal death. We set out to elucidate rate and causes of stillbirth in a tertiary care centre in South India.

OBJECTIVES: Find out the rate & causes for the year 2017

METHOD: Case sheets of the mothers with stillbirths between 1st January to 31st December 2017 were retrieved and data was collected.

RESULTS: Of the total 14696 deliveries between 1st January 2017 to 31st December 2017, there were 241 stillbirths, a rate of 16.4 per 1000 live births. Maternal factors: 83% were from Tamil Nadu. 154(63.9%) were booked & 36.1% were unbooked. The incidence of severe PIH in booked patients was 24% & 41% in unbooked patients (p 0.005). 34% were in 22 to 27+ 6 weeks & 48% in 28 - 36+6 weeks.

Foetal characteristics: 50.6% weighed <1000gm & 34.4% between 1001-2500 gm. 22.8% of babies had FGR. Majority delivered normally (88.8%). Booked patients had higher anomalies than unbooked patients.(24.7% vs 2.3%) p 0.001

Obstetric factors: 23% with 1 abortion & 7% had >2 abortions.

17(7%) had a prior stillbirth. 6 had bicornuate uterus. **ReCoDe Classification:** We successfully classified 83.3% of stillbirths, 16.2% remained unclassified. Under fetal causes, maximum cases were FGR (22.8%). 16.6% with a lethal congenital anomaly. Placental causes were 31.9% of cases, majority (14.9%) were due to placental abruption. 30% had hypertensive disease & 10% had diabetes.

DISCUSSION: Incidence of stillbirths in 2017 was 16.4 per 1000 live births in our institute. Using ReCoDe, we classified 83.3% cases, leaving 16.2% unclassified. This is similar to the findings of the original authors, where only 15% of cases remained unclassified. Maximum cases were classified under FGR. Lethal congenital anomalies were 40 cases (16.6%), similar to the original authors (14.2%). Abruption accounted for 14.9% cases. There was a significant proportion of women with bicornuate uterus who had abruption. 30% had hypertensive disease. Indian studies found an incidence of about 28%. Notably, the incidence of severe hypertensive disorders among booked patients was nearly half of that in unbooked patients, statistically significant (p 0.005).

CONCLUSION: The incidence of stillbirths in our institute for the year 2017 was 16.4 per 1000 live births. The ReCoDe classification enabled us to classify 83.3% of these cases. The maximum number of cases were due to fetal growth restriction, followed by abruption. Patients with no antenatal check-ups had greater risk of stillbirth due to hypertensive disease. A comprehensive antenatal care system, with emphasis on regular visits may help diagnose antecedent causes of avoidable stillbirths, lessening the burden in our country.

Keywords: ReCoDe 2017, causes for Stillbirth, South India, FGR, Abruption

Abstracts of Poster Presentations

P-018

Coroners and stillbirths - parents' views

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BACKGROUND: In late 2017, the Secretary of State for Health updated the National Maternity Ambition to halve stillbirth rates by pulling forward the target date from 2030 to 2025. One commitment was to explore coronial involvement in stillbirths occurring at term. Currently, coroners in England can investigate the death of a baby who has shown signs of life, and hence stillborn babies are not generally referred. Sands was keen to understand parents' thoughts to inform its response to the proposal.

METHODS: A simple online survey was created using (SurveyMonkey®), and bereaved parents were invited to complete the survey via Sands' social media.

RESULTS: In total, 554 people responded to the survey, 451 of whom identified as parents. Of the parents, 88% had experienced a stillbirth, and for 12% their baby had died neonatally. Overall, 91% of parents thought that coroners' involvement was a good idea. More parents wanted coronial jurisdiction to cover all stillbirths vs all term stillbirths (34% vs 12%), and 45% wanted any decision about investigation to depend on the parents' request. We also asked parents their thoughts on various aspects of coronial involvement:

- coroners' independence from the NHS: 80% very positive/positive
- proceedings are public: 51% very positive/positive; 35% very negative/negative
- parental consent not needed for a post mortem: 72% very negative/negative
- coroners may involve other agencies such as the police: 52% very positive/positive; 15% very negative/negative; 33% uncertain
- witnesses may describe events relating to the baby's death at the inquest: 67% very positive/positive
- inquests may take up to 1 year to conclude: 10% very positive/positive; 75% very negative/negative
- it may take many months to see the final report if a coroner orders a post mortem: 74% very negative/negative

Overall, 15% of parents had experience of a coroner's involvement. Most found it beneficial, with 39% describing it as very helpful and 27% as quite helpful. However, 24% of parents did not find it helpful and 10% were unsure.

CONCLUSIONS: The bereaved parents surveyed were overwhelmingly in favour of coronial jurisdiction being extended to stillbirths. Only a small percentage agreed with the proposal that jurisdiction be extended to all babies stillborn at term.

"We think this should only happen with the parents' consent because of our own dealings. They told myself and my husband that a post mortem was up to us all the way through but as soon as our son was born they tried to tell us the final decision was with the coroner." [Parent A]
"As a parent whose baby was stillborn at term, and who fought a legal case against the NHS which lasted 4.5 years, I think coronial involvement would have and could have given answers, and saved a long drawn out legal case. I never wanted money, I wanted answers." [Parent B]

Keywords: Coroners, Stillbirth, Term, Post mortem, Inquest

Abstracts of Poster Presentations

P-019

Answering a Crowd-sourced Question: What Are the Best Ways to Establish Group B Strep (GBS) as a Likely Cause of Perinatal Morbidity

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²LA Best Babies Network, Los Angeles (CA), USA

BACKGROUND:

Parents requesting assistance or guidance at a GBS-focused parents' website, Group B Strep International (GBSI), desired recommendations for a reliable means to diagnose GBS as the proximate cause of adverse pregnancy outcomes including fetal death, fetal sepsis, or other neonatal morbidities or mortalities.

OBJECTIVES:

Review and analyze evidence or research-based means to "provably" establish GBS or other potentially preventable perinatal infections as the likely cause of perinatal morbidity.

METHODS:

- 1) We did Medline, PubMed and Google searches in the English language focusing on fetal, perinatal, and neonatal morbidities and associated terms.
- 2) We examined specialized perinatal and Pediatric Pathology published monographs/guidelines for determining causes of perinatal death.

RESULTS:

- 1) We found no research-based or "evidence-based" protocols or clinical pathways demonstrating improved patient or provider understanding of proximate causes of adverse pregnancy outcomes possibly caused by infection.
- 2) We found few studies evaluating infection/inflammation related protocols.
- 3) We found testimonial suggestions and innovative approaches including "visual" or "virtual" autopsy of fetuses or neonates as well as fetal membranes, placentas, and umbilical cords.
- 4) We found no protocols aimed at proving microbial causes of death.
- 5) We found multiple factors impairing findings of high quality evidence for determining causes of perinatal death. These factors included societal, parental, provider, administrative, payor, and public health resource ignorance or indifference regarding direct causes of perinatal death.

CONCLUSIONS:

We found NO reliable clinical practices directed at improving knowledge regarding causes of perinatal death and systematic improvements of care in future pregnancies. We suggest that parental and other advocacy groups or other granting agencies mount strategies to societal, professional, legal, and public health entities to improve systematic care of preconception, pregnancy, and early life health care which include perinatal services dedicated to improve counselling of afflicted families and communities.

Keywords: group b strep, stillbirth, likely cause

Abstracts of Poster Presentations

P-020

Advances in Vaccination Practice during Pregnancy Care

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BACKGROUND:

Identify means to reduce or eliminate vaccination injection fear or discomfort in an effort to avoid vaccine-preventable causes of stillbirth and damaged babies at birth.

OBJECTIVES:

- 1) Review possible benefits of reducing vaccination-associated discomfort/pain.
- 2) Review means to actively reduce vaccination pain in clinical practice.
- 3) Consider evidence that reducing pain will reduce fear of vaccination.
- 4) Consider possible benefits of reducing vaccination pain and fear to achieve increased acceptance of vaccination recommendations.

METHODS:

Review and analyze relevant medical literature in English regarding vaccination practices and concerns during pregnancy.

RESULTS:

- 1) Our review of current relevant American Congress of Obstetricians and Gynecologists (ACOG) publications showed no mention of vaccine injection pain and no means to prevent injection pain.
- 2) Recommendations supported by USPHS class I or II evidence include:
 - a) medical providers can provide distractions at the time of injection;
 - b) use of cold or vibration at skin site contralateral to the proposed injection site;
 - c) inject the most painful shot last; and
 - d) do not invoke “man up” imprecations or false reassurances.

CONCLUSIONS:

- 1) Evidence from non-reproductive medicine literature demonstrates effective means to reduce vaccination injection pain.
- 2) The listed United States Public Health Services (USPHS) recommended suggestions can be utilized without cost or difficulty in clinical reproductive care practices.

Keywords: vaccination, pregnancy care, pain, discomfort, stillbirth

Abstracts of Poster Presentations

P-021

Tackling international variation of the definition of “perinatal” for research implications

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BACKGROUND: During the planning of a systematic literature review, it became evident that terminology for deaths within the gestational and neonatal periods are classified in two ways. One group has clear and generally unambiguous operational definitions. The second group consists of definitions that vary depending on the environment and context. These have implications for research spanning these two periods. **OBJECTIVES:** Definitional variation is problematic because it prevents consistency, understanding, and comparison of data and research findings. The lack of definitional parity means that, unless explicitly stated, the audience may have formed incorrect assumptions of the information presented. The objective is to develop terminology that is inclusive and concrete. **METHODS:** Whilst investigating the literature, there did not appear to be any evidence of terminology to encompass all unambiguous and ambiguous deaths (i.e., along the timeline of embryonic, foetal, and baby deaths). Further investigation was required to identify if there was an existing term that was not included in the literature reviewed. **RESULTS:** To illustrate the number of search items found, or ‘hits’, the following Google search statistics are shown as an example of the magnitude of information available on the internet (correct as at 14/12/2017):

1. “miscarriage” 19,500,000
2. “stillbirth” 13,200,000
3. “neonatal death” 5,650,000
4. “perinatal death” 2,990,000

The search results with the most relevant data pertaining to the search term(s) were analysed for evidence of a word that encompassed gestational and neonatal deaths from the time of conception to post 28 days. It was found that the term “perinatal” is used liberally to combine some of these terms, and mostly without any definition. Without a definition, it is impossible to ascertain what the inclusion and exclusion criteria is for the data or information presented. After consultations with bibliographic and content experts further searches of the library databases were undertaken using the same predetermined list of terms. Consistent with the search engine results, it was found that the word “perinatal” is used extensively within any collective context and with varying definitions, if any. **CONCLUSIONS:** To address this problem the two-time periods, “gestation” and “neonatal” will be combined into a new proposed word “gestnatal”. The full and unabridged definition of “gestnatal” is proposed as: “The length of time from conception and continuing through to the first 28 days of life.” The definition of “gestnatal death” is therefore proposed as: “The death of a human life from conception to 28 days’ post-birth inclusive.”

Keywords: Miscarriage, Stillbirth, Neonatal, Perinatal, Research, Definition

Abstracts of Poster Presentations

P-022

The “Safe to Sleep” campaign in the Tuscany Region: a targeted intervention

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BACKGROUND: A back-to-sleep campaign (BTS) was initiated in the Tuscany Region in 2002, while a multiagency group for the management of Sudden Unexpected Infant Deaths (SUDI) cases was set up in 2009. The BTS was organized by adopting a “Precede-Proceed” model. The “precede” phase aimed at educating healthcare professionals on the importance of the “reduce-the-risk message” at three meetings held in the three “vast areas” forming part of the Tuscany Region. A multiagency group was then created which included the regional healthcare department, the court, the Regional SIDS Center, the parents’ association ‘Seeds for SIDS’, a family pediatrician, a representative of the regional emergency departments and three pathologists. This task force established an algorithm for the management of SUDI cases (Regional Decree N.1164 dated 14-12-2009). **OBJECTIVES:** In line with this conceptual framework, we now plan to evaluate the effects of the campaign and reinforce the back-to-sleep message. Our project foresees the holding of three more meetings in the same “vast areas” to discuss the risk factors and communication strategies with healthcare providers involved in the “birth process”. **METHODS:** Before starting this new educational operation we evaluated the prevalence of risk factors in our region in order to carry out a targeted campaign. **RESULTS:** 55 SUDI cases (33 M, 17 F; 105.8 ± 86.7 days) occurred from 2009 to 2017 in the Tuscany region, with an incidence of 0.2‰. Included in this group, there were 37 (28 M, 7 F; 91.3 ± 66) Sudden Infant Death Syndrome (SIDS) cases. Autopsies were performed in 47 (85.5%) cases at a time interval between death and the examination which ranged from 0 to 3 days (mean ± SD: 1.4 ± 1.2). Interestingly, autopsies have been performed in 95% of cases over the last three years, demonstrating an increase in efficacy of the system. There were 7 SIDS infants (18.9%) found in the prone position while the number of infants sharing the sleeping surface at the time of death was 14 (25.5%), 3 of whom (21.4%) were multiple bed sharers. The etiologic fraction of the prone sleeping position and bed-sharing in 37 SIDS cases and in 2 SUDI cases (due to accidental suffocation and strangulation) was equal to 8.8% and 20.2% respectively, indicating that bed-sharing is a crucial target for our new reduce-the-risk campaign. There were 23 infants of non-Italian ethnicity (41.8%) in the SIDS cases. **CONCLUSIONS:** All in all, while we observed a low incidence of SIDS (0.14 ‰), the high prevalence of this syndrome in infants with non-Italian parents and the high etiologic fraction for bed-sharing induce us to focus our action specifically on these aspects.

Keywords: SIDS, Precede-Proceed model, back-to-sleep campaign, etiologic fraction

Abstracts of Poster Presentations

P-023

The incidence of perinatal mortality in Ireland according to the Robson Ten Groups Classification System

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OBJECTIVE: To estimate the national incidence of perinatal mortality in the Robson Ten Groups. **Design:** The Perinatal Mortality Audit in Ireland collects anonymised data from the 19 Irish maternity units. **METHOD:** Thirteen of the nineteen maternity units classified 50,296 deliveries in 2016 using the Robson Ten Groups Classification System (TGCS). These thirteen units contributed data to the national PMAudit. **RESULTS:** The perinatal mortality rate in Ireland for 2016 is 5.8 per 1,000 births and 3.6 per 1,000 births when corrected for congenital malformation. Thirteen of the nineteen maternity units in Ireland constituted (n=50,296) constituted 80% of the total number of women delivering in 2016. These 13 units accounted for a similar proportion of the country's 374 perinatal deaths in 2016 (n=309, 82.6%) and their overall PMR was 6.1 per 1,000 women delivered. Groups one through five accounted for 90% of the women delivered (n=45,188, 89.8%) but only one in four of the perinatal deaths (n=82, 26.6%). The perinatal mortality rate (PMR) across these five groups ranged from 0.6 per 1,000 for Group one women to 3.6 per 1,000 for Group four women in contrast to the overall PMR of 6.1 per 1,000. Groups six through ten accounted for 10% of the women delivered whereas three in four perinatal deaths were associated with one of these groups (n=226, 73.4%). Each of these groups had a greatly elevated PMR, ranging from 26.3 per 1,000 for Group eight women to 58.5 per 1,000 for Group ten women. Thus, these groups had a PMR that was four to ten times the overall PMR. Prematurity is strongly associated with perinatal mortality. This is made especially clear by the Ten Group Classification System. Group ten contains all single cephalic pregnancies delivered preterm. This group contained 4% of the maternities, it had the highest PMR and contributed 2.4 per 1,000 to the overall PMR of 6.1 per 1,000, i.e. 40%. Groups six through nine accounted for 34% of the overall PMR (2.1 of 6.1 per 1,000). The very high PMR in these groups was also strongly associated with prematurity as the vast majority of the perinatal deaths occurred preterm.

CONCLUSION: The use of Robson TGCS allows for the assessment of a range of perinatal outcomes. The Robson classification allows additional factors to be incorporated to further examine the dynamics of each group e.g. maternal age.

Keywords: Robson Ten Groups Classification, Classification Maternity Services, Perinatal Mortality

Abstracts of Poster Presentations

P-024

The Interface Among Poverty, Air Mattress Industry Trends, Policy, and Infant Safety in the USA

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BACKGROUND: The City of Milwaukee Fetal Infant Mortality Review in Wisconsin, U.S.A. reviewed several infant deaths that occurred on an air mattress. Air mattresses pose a suffocation risk for infants, even when the mattress is fully inflated.

OBJECTIVES: To examine direct and indirect evidence of trends in the bedding industry, safe sleep policies, and sleep-related infant deaths on air mattresses.

METHODS: We requested data from the U.S. National Child Death Review Case Reporting System to assess the incidence of sleep-related deaths relating to air mattresses, examined U.S.A. bedding industry trends, and other indirect public health issues (such as poverty and the bed bug epidemic).

RESULTS: Despite recent changes to improve air mattress safety labeling, the U.S. National Child Death Review Case Reporting System found that between 2004 and 2015 across 24 states, an air mattress was the incident sleep place for 108 infants whose deaths were either during sleep or in a sleep environment. At the same time, design components such as inflatable headboards and memory foam pillow tops potentially increase the hazard to infants, and marketing changes represent air mattresses as a preferred low-cost primary sleep environment. For example, many U.S. cities have recently experienced bed bug epidemics, which require costly treatments and replacing bedding to eradicate. For families living in poverty, air mattresses may be a low-cost solution to combat an infestation of bed bugs. Our review of position statements and parent infant sleep education materials from multiple national organizations and agencies reveal that almost no materials specifically mention air mattresses as a hazard. **CONCLUSIONS:** The interfacing issues of poverty, the bedbug epidemic, and changes in the design and marketing of air mattresses in the U.S. may be increasing consumer use of air mattresses as primary sleep environments and thus increasing the potential for infant death. To address this issue, we recommend: 1) specifically addressing the danger of air mattresses in infant safe sleep public education campaigns, 2) disseminating more explicit warnings on air mattress products, and 3) improving surveillance and risk data collection to better track these trends (for example, include "air mattress" as a choice for sleep surface in case reporting systems). The results of this analysis were published in the American Journal of Public Health in June 2017.

Keywords: infant suffocation; SIDS/SUID; air mattresses; policy; poverty

Abstracts of Poster Presentations

P-025

Supporting staff to provide equitable high quality care for bereaved families: development of a new West of Scotland Guideline for Neonatal Death & End of Life Care

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BACKGROUND: The delivery of compassionate and individualised, family-centred end of life care is an essential part of neonatal practice. 'The Best Start: A Five-Year Forward Plan for Maternity and Neonatal Care in Scotland' recommends that bereaved families are supported by integrated end of life care pathways to enable choice. Key administrative and practical tasks must also be undertaken in order to fulfill all legal and clinical governance obligations. Clinical staff in the West of Scotland, particularly doctors in training, rotate through a number of different hospital sites and neonatal transport teams transfer babies across the region and further afield in Scotland. Timely access to relevant up to date information is crucial to help all those encountering neonatal death. **OBJECTIVES:** To create an up to date, comprehensive clinical guideline for neonatal staff relating to neonatal death and end of life care, aimed at giving bereaved families in the West of Scotland equitable, high quality care.

METHODS: Users of the 2010 NHS Greater Glasgow & Clyde Guideline for Neonatal Death were surveyed about their familiarity with and use of the document and to identify areas of unmet need. Staff clearly valued the existing guideline but asked for more information about specific areas including neonatal palliative care, organ donation, procurator fiscal involvement and bereavement support resources, all in an online user-friendly format. Face-to-face, telephone and email consultations were conducted with key stakeholders including neonatal medical and nursing staff, pathology, chaplaincy, mortuary staff, clinical psychology, bereavement support services, paediatric palliative care services, organ donation services, the SCOTSTAR neonatal and paediatric transport service, and partner charitable organisations. Key documents including The Death Certification (Scotland) Act 2011 and guidance from the Crown Office and Procurator Fiscal Service were referred to. The guideline was reviewed then approved by the West of Scotland Neonatal Managed Clinical Network (MCN) Clinical Guideline Group. **RESULTS:** The new guideline was launched in September 2017. It consists of a checklist of key tasks to be considered before and after death, linked to more detailed guidance. To raise awareness of the guideline and support its implementation, a regional Neonatal Death & End of Life Care Education Event was held in December 2017. The event focused on the new or updated parts of the guideline. Feedback from attendees was positive; further training events are planned. **CONCLUSIONS:** The new West of Scotland Neonatal MCN Guideline for Neonatal Death and End of Life Care provides comprehensive guidance for staff across the region to support delivery of high quality individualised care for neonates and their bereaved families. Evaluation will be ongoing, with plans to eventually extend the guideline across all neonatal units in Scotland.

Keywords: neonatal death, guideline, bereavement care, end of life care

Abstracts of Poster Presentations

P-026

Preliminary analysis of respectful care after stillbirth: results from a multi-country survey (US, Canada, Australia and New Zealand)

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BACKGROUND: Stillbirth is traumatic for families yet the study of respectful care after stillbirth, especially as related to dignified care of the infant who is stillborn, is still very new.

Methods

Secondary analysis was conducted on data from an international, online survey of parents who experienced stillbirth, disseminated primarily through member organisations of the International Stillbirth Alliance. The survey covered topics relating to experiences of stillbirth and included quantitative metrics asking whether parents and stillborn infants were treated with respect, as well as open-ended questions about care experiences. Analyses included descriptive statistics and thematic analysis.

Findings

A total of 906 mothers residing in Australia (n = 416), New Zealand (n = 44), US (n = 391) and Canada (n = 55) completed the questionnaire. The majority (approximately 80%) reported being treated with kindness and respect “always” or “most of the time”, but almost 20% experienced respectful care either “never” or “only sometimes”. Patterns were similar across the four countries; the only statistically significant difference was respondents from the US less frequently reporting respectful care of the stillborn infant (p = 0.05). Surprisingly, mothers with losses later in pregnancy (40+ weeks’ gestation) reported less respectful care. However, in more recent stillbirths (within last 5 years) mothers reported fewer negative experiences, suggesting improvements over time. Qualitatively, mothers largely expressed wanting more time with their stillborn infants and many felt rushed without good explanation for the urgency. Mothers commonly stated that many of their questions were not answered, including why certain events occurred, options for burial/cremation, autopsies and concerns over their own health.

Conclusions

While care practices are improving, many mothers reported non-respectful care at some point. Lack of communication, including lack of informed consent, is critical to improving care after stillbirth. More research is needed on the burden of disrespectful care (including in low-income settings) and the care practices desired by families.

Ethics statement:

Ethics approval was granted by the Mater Health Services Human Research Ethics Committee on 29th November 2013 (Ref #HREC/13/MHS/121) and by the University of British Columbia Office of Research Services, Behavioural Research Ethics Board on 22nd December 2014 (Ref #H14-02784). Completion of the anonymous online survey indicated consent to participate in the study.

Keywords: survey; qualitative; respectful care; care after stillbirth; multi-country

Abstracts of Poster Presentations

P-027

Whole Genome Sequencing and Genomic Copy Number Analysis in a Well-Characterised Cohort of Sudden Unexpected Death in Infancy (SUDI)

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BACKGROUND: Sudden unexplained death in infancy (SUDI, synonymous with sudden infant death syndrome SIDS) is a post-mortem diagnosis of exclusion that has a prevalence of 1 in 2000 live births with a peak between 2-4 months of age. The disorder has shown a significant secular decline in incidence since the introduction of the Back to Sleep campaign in 1991 in the UK (and many other countries) following strong epidemiological data of the protective effect of supine sleeping from Hong Kong. However, in spite of this SUDI remains one of the major causes of death under 5-years of age. In most cases no satisfactory molecular cause is identified. The coincidence of three factors is crucial; an environmental trigger, a critical developmental period, and a vulnerable host. Environmental risk factors include; sleep position, co-sleeping and parental smoking. The critical period relates to a period of instability of many physiological functions in infants aged 2-4 month. The role of human genetic analysis in SUDI must primarily focus on the concept of the vulnerable host; Single gene disorders causing metabolic and cardiac conduction anomalies which may present as SUDI. **OBJECTIVE:** The aim of this study was to look for over expression of genetic variants which may be disease causing in a specially selected cohort of SUDI with no other known factors. **METHOD:** With research ethics approval in place we established a bank of high-quality DNA from 600 affected individuals with a remit to help understand the genetic basis of sudden unexplained death in infancy. Array CGH performed on 120 of the cases did not yield any significant copy number variants. WGS is an attractive technique as it can identify cryptic infections and aneuploidy in addition to single gene metabolic and cardiac conduction anomalies in a single test. DNA samples from 29 cases selected from our cohort as having no predisposing factors for cot death eg co-sleeping or sharing a sleep surface and with no evidence of compromise eg infection, metabolic disorder, neuronal gliosis or malformation following detailed PM were prepared for sequencing using TruSeq Nano High Throughput library preparation kits (Illumina). We identified 136 target genes associated with cardiac disease, loss of respiratory drive or epilepsy. We analysed these genes for rare (allele frequency < 0.1 % in public databases), high quality (Phred-like genotype quality score of 20 with a minimum of 5 reads supporting the alternative allele) loss of function variants (LoF) and variants previously reported as pathogenic in ClinVar. **RESULTS:** Four samples (of 29) were found to harbour variants matching these criteria. 2 of the variants were regarded as benign (TMPO and PLCB1) with the two others (SCN5A and KCNE1) of unknown significance.

CONCLUSION: Our results show an interesting overrepresentation of subtle variants in known disease causing genes in an enriched population.

Keywords: SUDI, Array CGH, Whole genome sequencing.

Abstracts of Poster Presentations

P-028

Morphological abnormalities in the hippocampus of the Sudden Infant Death Syndrome

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BACKGROUND: Recently, hippocampal asymmetry, microdysgenesis and the key feature focal granule cell bilamination (FGCB), have been reported as increased in a population of infants who died from Sudden Infant Death Syndrome (SIDS). These features were interpreted to be morphological markers of an underlying vulnerability and hypothesized to be indicative of possible subclinical seizures. The same markers are well established in temporal lobe epilepsy, with the hippocampus being a region that is affected by seizures. **OBJECTIVE:** To determine the prevalence of these morphological features in the hippocampus in an independent Australian cohort of infants who died from SIDS spanning from 2008-2012. **METHOD:** 7 Qm thick stained hippocampal sections were analysed microscopically for the presence of several dentate gyrus abnormalities including: focal granule cell bilamination (FGCB), focal split at the DG, clusters of ectopic granule cells, and granular heterotopia. The study group included infants who died of an explained sudden unexpected death in infancy (eSUDI) (n=7) and a group who died from SIDS. The SIDS group were sub-categorised by an expert panel using the San Diego criteria into SIDS I (n=8) and SIDS II (n=49). Statistical analysis was performed using Pearson's Chi square test. **RESULTS:** The only abnormal feature with a frequency that was statistically different amongst the diagnostic groups, was granular heterotopia. This was present in 38% (3/8) of SIDS I compared to 6% (3/49) of SIDS II and 0% eSUDI group (p=0.012). **CONCLUSIONS:** These preliminary findings show that granular heterotopia in the dentate gyrus, is more common in 'classical' SIDS infants (i.e. SIDS I) with no predisposing risk factors present. We suggest that these infants may have an impaired forebrain network, supporting the hypothesis that these infants have a developmental vulnerability in the brain that increases their autonomic/respiratory instability or leads to subclinical seizure(s). We are expanding this study using special stains to examine more morphological features and to assess correlations with other risk factors. **FUNDING:** Miranda Belshaw Foundation and The SIDS Stampede. **References:**

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Keywords: Sudden Infant Death Syndrome Hippocampus Dentate Gyrus Focal Granule Cell Bilamination Granular heterotopia

Abstracts of Poster Presentations

P-029

Functional recovery from neonatal breathing abnormalities in 5HT-deficient Pet-1 knockout mice following developmental exposure to nicotine

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BACKGROUND: The underlying pathology of SIDS is not known, yet the suddenness of death suggests catastrophic cardiorespiratory failure. Maternal smoking is a major risk factor for SIDS. Moreover, SIDS has been strongly associated with decreased brain serotonin (5HT) levels. However, the link between maternal smoking, cardiorespiratory function, 5HT deficiency and SIDS is not clear. **OBJECTIVES:** We used the Pet-1 knockout (KO) as a mouse model to assess the effects of developmental nicotine exposure on postnatal breathing behavior in a 5HT-deficient context. Pet-1 gene deletion leads to a selective 70% loss of central 5HT neurons and specific breathing deficits in mouse neonates, including reduced breathing frequency, more frequent spontaneous apneas, delayed autoresuscitation responses to experimentally induced apnea, and higher neonatal mortality compared to wild-type (WT) littermates. We hypothesized that developmental exposure to nicotine would exacerbate the postnatal breathing deficits of Pet-1 KO mice and increase neonatal mortality. **METHODS:** We exposed developing mice from heterozygous crosses to either saline (control) or nicotine (60 mg/kg dam body weight/day) from day 5 of gestation via osmotic mini-pump implants in pregnant dams. We then compared resting ventilation and autoresuscitation responses to experimentally induced apnea in 4-day-old WT and KO neonates using body plethysmography. **RESULTS:** Relative to WT saline-treated mice, saline-treated Pet-1 KO mice had depressed resting ventilation, more frequent apneas, and delayed autoresuscitation responses, as expected. Unexpectedly, however, all of these breathing deficits were reversed in KO mice following nicotine exposure despite an even higher neonatal mortality in this group. Nicotine exposure had no effect on breathing parameters in WT mice, nor did it influence body weight in either genotype, suggesting that the nicotine dose used did not produce more general developmental defects. Analysis of 5HT neuron number in the caudal raphe nuclei (the main source of 5HT for brainstem respiratory control areas) showed identical (~70%) 5HT neuron losses in nicotine- and saline-treated KO mice. Therefore, functional recovery of breathing behavior was not due to a nicotine-induced “rescue” of 5HT neurons. **CONCLUSIONS:** We conclude that a full complement of 5HT neurons usually promotes but is not absolutely necessary for normal resting ventilation and autoresuscitation responses in mouse neonates. However, the underlying mechanism by which nicotine exposure can compensate for a 5HT neuron deficit is unclear and will require further study. We speculate that the high neonatal mortality of 5HT-deficient Pet-1 KO mice may be due to abnormal cardiac function, rather than breathing dysfunction per se. These findings may contribute to a better understanding of the underlying etiology of human SIDS. **Funding:** Supported by CJ Foundation for SIDS and TCNJ Support of Scholarly Activity (SOSA) awards.

Keywords: Pet-1, gene deletion, serotonin, 5HT deficiency, breathing, autoresuscitation

Abstracts of Poster Presentations

P-030

Parents who bedshare with their infants do not belong to the bad parent's club

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Maternal-infant bedsharing is a common but controversial practice. "Never bedshare" sounds great on paper but it is very difficult to implement and the number of parents sharing a bed with their infants has doubled in the past two decades. Dr. Jenik A and Conti R ex chairperson and president respectively of the Sudden and Unexpected Infant Death Task Force and the Subcommittee on Breastfeeding of the Sociedad Argentina de Pediatría with the other members of both groups have issued updated recommendations on bedsharing with the parents. Sleeping with the mother maximizes breastfeeding, which is protective against Sudden Infant Death. There is a small group of infants that have been associated with an increased risk of Sudden Infant Death and fatal sleeping accidents in certain circumstances: sleeping with a non-caregiver, prone position, maternal tobacco use, unsafe sleep surface. infants with low birth weight for gestation, preterm infants, sedating drugs or medication and alcohol consumption prior to sleep and sofa sharing situations. Bedsharing by breastfeeding mothers with their infants, in the absence of the above-mentioned risk factors, and with parents aware of how to ensure a safe infant sleep environment has not been shown to be associated with increased risk of Sudden Infant Death. This guidance does not advise on telling parents that they must never sleep with the baby, but rather instructs health professionals to give parents balanced advice to allow informed decision making, emphasizing the concept that parental room sharing without bedsharing is the safest place for the babies to sleep.

Keywords: sids, bedsharing

Abstracts of Poster Presentations

P-031

Should the “Back to Sleep” campaign be advocated for 1 year old children?

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Introduction

Sudden Infant Death Syndrome (SIDS) is one of major cause of infant death in developed nations. Back to Sleep Campaign (BSC) that initiated in many countries succeeded in reduces the mortality not only of SIDS but also of Sudden Unexpected Death in Infant (SUDI). Through the mechanism of it has still unknown, this fact suggested that prone position is one of the major risk factor for sudden death. In spite of the most of infant over one year old can roll supine to prone during sleep, the incidence of SUDI over one year old down to 10 percent that of under one year old. American Academy of Pediatrics (AAP) recommended that once an infant can roll, the infant can be allowed to remain in the sleep position that he or she assumes. However, several surveys of SUDI of infants over one year of age have reported that more than 70 % case of SUDI was found in prone position, suggesting that the prone position may be a risk factor of SUDI even for infants over one year of age. In 1996 when BSC was started in Japan, BSC happened to be applied to infants aged one year old and over.

Objection

By reviewing the annual change in SUDI mortality of over one year old, we evaluated the effect of BSC on preventing infant from sudden death.

Methods

Population data for infants by age as well as infant deaths was obtained from national statistics compiled by the Ministry of Health, Labor and Welfare of Japan. The mortality rate per 1000 infants was calculated for each cause of death covered by SUDI for infants less than 1 year of age and each cause of death covered by SUDI for infants of 1 and 2 years of age. This SUDI category includes infant deaths coded as ICD-10 R95, R99, and W75. The ethics committees of the Tama-Hokubu Medical Center approved the study protocol (No. T28-21) and all procedures were carried out in accordance with the approved guidelines.

Results

The SUDI mortality rate of less than 1 year infant showed a declining trend over the study period and the most significant decrease was recognized in 1998 when two years after the BSC was initiated. The incidence of SUDI of 1 year old was roughly 10% of that of less than one year old infant. The trace of annual SUDI mortality of one year old exhibited very similar trend that of under one year old, it showed downward trend during investigation period and dramatic decline was recognized in next year when BSC was started. While the mortality rate of SUDI of 2 year old infant does not show a downward trend. The results of analysis with moving average method revealed downward trend in SUDI mortality of one and less than one year old infant while no remarkable change was exhibited that of two year old.

Conclusion

Our study suggested that prone sleeping position may be a risk factor of SUDI even for one year old infant.

Keywords: SUDI, Prone, one year old infant

Abstracts of Poster Presentations

P-032

Investigation of Sleep Environments in Japanese Healthy Infants

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Introduction

Sudden infant death syndrome (SIDS) is one of leading causes of infant deaths. To reduce the incidence of SIDS, supine sleep position, avoiding soft bedding, keeping soft objects and stuffed toys out of the baby bed, room sharing, prohibition of smoking, alcohol, or drug during pregnancy and after delivery, breast feeding, and using pacifier are recommended in many countries. The purpose of this study is to investigate the differences in the habits of infant sleep in some countries in order to adapt the recommendations given to new parents about sudden infant death risks taking into account the different cultural settings.

Material and Methods

Questionnaire on infant sleep environment was carried out from November 2017 to January 2018 for the mothers with the babies from 7 months up to 18 months old who visited pediatric units of Kitakyusyu City Yahata Hospital, Yonaha General Hospital and Mitaki General Hospital in Japan. The Questionnaire includes type of feeding, type of beddings, room sharing, use of pacifier, brightness of the baby's sleeping room, co-sleeping at the age of 1-2 months, 3-6 months, after 7 months old. The questionnaire is anonymous and participation to the study is voluntary. The study protocol was approved by the ethical committees of each hospital.

Results

The number of respondents for the questionnaire was 178 in Kitakyusyu City Yahata Hospital, 37 in Yonaha General Hospital and 21 in Mitaki General Hospital. Totally, 236 responses were analyzed. A Half of the babies was breast-feeding, 30% was artificial feeding, and 20% was mixed feeding. Almost 60% of the babies sleep in the same room with parents, 30% sleep in the same room only with mother. No baby sleeps in the independent room. The room with dark lighting was 60% and full darkness was 30%. Approximately, 55% of the babies sleep in the baby bedding, 45% was in the adult bedding at the age of 1-2 months. At the age of 3-7 months old, 45% sleep in baby bedding and 55% was in adult bedding. After 7 months old, 30% was in baby bedding and 70% was in adult bedding. The rate of co-sleeping in the same bed was one third at the age of 1-2 months, and increased according to baby's age, up to 60% after 7 months old. Almost 80% of the babies never have used pacifier.

Conclusions

Co-sleeping is not recommended to reduce SIDS or SID. In this study, the ratio of co-sleeping was low at the younger age, but it tended to increase according to the baby's age. These results seem that most of parents take care of their babies thinking about the physical development of the baby. The reason why pacifier was not used commonly in Japan is that pacifier use seems to be considered to effect breast-feeding or the alignment of the teeth.

Keywords: sudden infant death, SIDS, sleep environment

Abstracts of Poster Presentations

P-033

A promising approach to improve statistical discrepancies in categorizing sudden unexpected death in infancy between Japan and other countries

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BACKGROUND: Variability in categorizing the causes of sudden unexpected death in infancy (SUDI) makes it challenging to compare incidences between different countries, and therefore produce a national strategy for SUDI reduction. Japan has been known for one of the lowest incidence of sudden infant death syndrome (SIDS) in the world. However, a recent international-comparison study suggested that Japan's SIDS rates are so low because appropriately half of SUDI cases have been categorized as other sudden death, cause unknown rather than SIDS, obscuring true SUDI rates in Japan, which are slightly higher than those of other developed countries. **OBJECTIVES:** To investigate the reason for this high proportion of unknown cause deaths, and propose a solution to obtain more reliable SUDI statistical data in Japan. **METHODS:** Respective number and rates per 1000 live births (LB) of SIDS, accidental asphyxia, and unknown cause infant deaths were compared among 47 prefectures in Japan. Total SUDI rate was calculated as the sum of these incidences. Publicly available national vital statistics data was used to identify the overall number of births and then the number of deaths associated with these causes in all prefectures from 2012 to 2016. Pearson's correlation test was used to study the relationship between the number of unknown causes and autopsy rates. The drift between the diagnoses in accordance with two different criteria was studied in 47 consecutive, unselected SUDI autopsy cases performed at our institution; one criteria defined SIDS diagnoses only by complete exclusion of accidental asphyxia in accordance with Japan standard criteria, while the other defined unsafe sleep environment as a risk factor for SIDS as described in Triple Risk Model theory. **RESULTS:** We identified a large regional variability in the number and rate per 1000 LB of SIDS and accidental asphyxia, ranging from 0 to 72 cases and 0 to 0.48 (mean 3 SD, 0.13 3 0.11), respectively, in SIDS and from 0 to 32 cases and 0 to 0.20 (0.07 3 0.05) in accidental asphyxia. The variability was diminished in total SUDI rate by including data of unknown cause; they ranged from 0.26 to 0.84 (0.50 3 0.11). The incidence of unknown cause was not related to the autopsy rates ($r = -0.03$). These results suggest that the impossibility of complete exclusion for accidental asphyxia in unsafe sleep environment may drift the diagnosis from SIDS to unknown cause under Japan's standard criteria, resulting in a smaller number of SIDS diagnoses. After reforming unsafe sleep environment as a risk factor in 47 SUDI cases at our institution, the numbers of unknown cause deaths declined, while the number of SIDS cases increased, resulting in an increase in SIDS ratio from 9% to 43%. **CONCLUSIONS:** Using the total SUDI rate would allow for a better understanding of SIDS statistical data in individual countries, enabling the development of appropriate interventions. **Funding:** Departmental funding from Kyoto University
Keywords: SIDS diagnosis, SUDI category, total SUDI rate, Variability

Abstracts of Poster Presentations

P-034

DAISeS Study: Decisions Around Infant Sleep after Sudden Unexplained Death in Infancy

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BACKGROUND: Little is known about how parents who have previously been bereaved make decisions about infant care for a subsequent child.

AIM: The study aims to understand how parents, who have previous experience of SIDS, make decisions surrounding safe sleep practices. A secondary aim was to explore their experience of being on the Care Of Next Infant (CONI) programme in the UK, which supports parents who have been bereaved by SIDS; and the CONI plus programme which support parents who have experienced the infant death of sibling or family member.

METHOD: Participants were recruited via the CONI programme, and were eligible if they had previous experience of SIDS and were currently looking after an infant under one year of age. Five semi-structured interviews were completed using a topic guide to aid discussion and analysed using Interpretative Phenomenological Analysis.

FINDINGS: Four themes emerged from the data: influences on decision making, experience with the CONI programme, parenting after infant death, and interpreting safer sleep guidelines. Results suggest there may be ambiguity interpreting the safer safe sleep guidelines, suggesting that previous experience of an infant death promotes greater adherence to guidelines. Parents described the anxiety they feel when caring for a subsequent child. This was often managed by keeping a strict sleep routine. Further findings suggest some areas of the CONI programme which could be improved, such as dissemination of information to parents and overall awareness of the scheme. **CONCLUSION:** Decisions are influenced by the needs of the family and infant, with the previous experience of SIDS strongly influencing the decision to follow guidelines. Future research should focus on partners' experiences of SIDS and decision making, as well as focusing on the differing needs of CONI and CONI plus families.

Keywords: SIDS, Sudden Infant Death Syndrome, CONI, Care of Next Infant, Decision, Decision making

Abstracts of Poster Presentations

P-035

Let's Talk About Sleep! A UK feasibility study of a NZ approach for improving infant sleep safety

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Background

For two decades the UK took an authoritative approach to safe sleep promotion, emphasising risk elimination. However, new approaches are now needed for addressing less easily modifiable sleep-related risks such as hazardous co-sleeping. Risk-minimisation approaches involving tailored education and intervention to suit more varied family situations are now being devised and tested.

Objectives

The 'Let's Talk About Sleep!' feasibility study used a safer sleep leaflet to encourage parents and health professionals (HPs) to talk about why babies sleep in different places and how to keep babies safe during sleep. Parents were also given an infant safer sleep box (modelled on the successful NZ Pepi-Pod) designed as a 'safe-sleep enabler' to be placed on the parents' bed. Parents were free to choose whether or not they used the box.

Methods

Mothers in the Fife and Sunderland area were eligible to take part if they:

- Were under age 25
- Smoked during pregnancy
- Were substance/methadone users

Participants were recruited as two consecutive groups:

- Control: standard sleep safety information
- Intervention: additional information via a trained HP using leaflet and receiving a box.

All parents completed sleep diaries for five nights when their baby reached one and two months and took part in a short telephone interview. Feedback from HPs was gathered via an online survey.

Results

149 parents were enrolled (70 control; 79 intervention), with 80 completing the study (38 control; 42 intervention). Boxes were used by 23 babies for a mean of 27 hours over the 10 night data collection period. Some parents also reported to have used the box outside of the parental bed. The leaflet was praised for encouraging realistic SIDS and safer infant sleep discussions between parents and HPs. Not all parents used the box and feedback from parents was mixed. Some parents identified barriers to using the box or preferred a different sleeping arrangement. HPs had some reservations about the acceptability of the box and a few potential safety concerns were raised. As this was a feasibility study statistical analyses were limited. Pooled analysis of both sites found less co-sleeping in the intervention group compared with the control group (mean 6.8 hrs compared with mean 2.6 hrs at infant age of 2 months (n.s.)). The intervention appeared to have some effect on sofa-sharing (23% of controls vs 6% of intervention participants slept on a sofa with their baby at 1 month in Sunderland). In Fife, the intervention had little effect on aspects of hazardous co-sleeping but the control group in Fife was particularly small.

Conclusions

While the leaflet appears to have been effective, the box may require some modification to become more acceptable and attractive to parents in the UK. Further work is needed to separate the effects of the education programme from the effects of the baby bed box.

Funding

Fife: Scottish Gov

Sunderland: Durham ESRC IAA Award, The Lullaby Trust

Keywords: SIDS, co-sleeping, bed-sharing, sofa-sharing, safer sleep box, intervention

Abstracts of Poster Presentations

P-037

Learning from each other and working together with families in mind: Perinatal Bereavement Education for Medical and Midwifery students in the Republic of Ireland

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Background

The loss of a baby at any stage of pregnancy or after delivery is a profound tragedy. Women and their families deserve respectful evidence-based care. As doctors and midwives may be involved in the care of a woman who has experienced a perinatal loss at any stage of their careers, education in perinatal bereavement should start in university and continue throughout their professional careers.

Objectives

The aim of this study was to establish a curriculum for perinatal bereavement education for both medical and midwifery students. The objectives were to study what was currently available and then to develop a curriculum based on both current practice and expert opinion.

Methods

Six universities in Ireland provide education to medical or midwifery students. Each were contacted in the first stage of the study to establish what was their curriculum in perinatal bereavement by asking "How do you approach the teaching of perinatal bereavement?". Responses were collated to form a "master curriculum" which was then circulated to a multidisciplinary expert group for their opinion. Suspecting that with the open ended question that many universities had under-reported what they teach, a second survey was circulated asking specific questions (e.g. do you teach about miscarriage? Ectopic pregnancy? Perinatal autopsy? Self care for staff?).

Results

All the midwifery schools and all but one medical school responded to the questionnaires. A master curriculum was developed that was divided into basic (theory and practice) and advanced (theory and practice) subjects. In the specific questioning of subjects, all schools taught subjects such as different types of pregnancy loss, breaking bad news and postnatal care. Under-represented subjects in perinatal bereavement education included perinatal autopsy, staff self care, role of the coroner and spiritual/religious care.

Conclusions

We have developed a curriculum for perinatal bereavement education for medical and midwifery school that may provide the groundwork for future doctors and midwives to provide care to women experiencing pregnancy loss. The results of the study will be circulated to all universities in order to provide feedback for future curriculum development.

Keywords: Education, Perinatal Bereavement

Abstracts of Poster Presentations

P-038

Pathology Information Workshop for Advocacy & Support Groups – International Stillbirth Alliance (ISA) Cork 2017

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INTRODUCTION: Bereaved parents frequently have questions about the pathology investigation process following a miscarriage, stillbirth or neonatal death and at times a lack of clarity about this process can add to their grief and not allow closure. Parents often turn to volunteers in support organisations or bereavement midwives to address their concerns but due to the technically specialised nature of the investigation process it can be difficult for volunteers, in particular, to answer these questions. **Aim and METHODS:** In order to assist support groups the local organising committee of ISA Cork 2017 provided a pathology information workshop run by two perinatal pathologists in an informal, interactive format. The main purpose was for the pathologists to share information with experienced members of support groups and bereavement midwives so they could provide more accurate information to parents regarding the pathologist's role in determining, if possible, what happened to their baby, and to enable them to disseminate this knowledge to other volunteers. Potential support group participants, who were identified through local knowledge and conference registration records, received an email invite with an opportunity to submit questions, surveyed from their members, in advance of the workshop for a "frequently asked question (FAQ) session". Participants were surveyed after the workshop to obtain feedback. **Outcomes:** Of the attendees, 100% of respondents thought that the teaching style and presentation of materials was appropriate, that the FAQ session met their expectations and that the workshop should be included in future ISA programmes. Participants also felt that they subsequently had a greater understanding of the principles of stillbirth investigation. Some participants found the presence of both bereaved parents and staff members in the same workshop to be challenging and may have preferred separate workshops. Overall, participants valued the open, informal nature of the process and the direct access to perinatal pathologists. **CONCLUSIONS:** The format of the workshop met the needs of participants in improving their knowledge of the pregnancy loss investigation process. It may be argued that participation in such workshops should be a requirement for support groups as part of a potential accreditation process to ensure that parents are receiving accurate information during counselling.

Keywords: Pathology, support group, bereavement midwife, workshop, stillbirth investigation

Abstracts of Poster Presentations

P-039

Developing a global consensus on bereavement care following stillbirth

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BACKGROUND: A stillbirth has a profound impact on women, families, communities and healthcare workers. The burden is highest in low and middle income countries (LMICs) where an estimated 98% of stillbirths occur. There is an important need to provide excellent, patient centred care to meet the needs of women and families who suffer a bereavement. **OBJECTIVES:** To reach a global consensus for the basic principles of bereavement care following stillbirth

METHODS: Expert stakeholder engagement meeting, based on a systematic review of the literature, as part of a policy Delphi. The meeting took place within the ISA conference 2017. Themes were derived with framework analysis.

RESULTS: Ten themes emerged from the discussions.

PUBLIC AWARENESS: Public education about stillbirth should be promoted to raise awareness.

RESPECTFUL CARE: Staff should provide respectful care to bereaved women, in accordance with WHO statement on respectful maternity care.

ACKNOWLEDGE LOSS AND GRIEF: Healthcare workers should acknowledge the breadth of grief associated with stillbirth, across all settings.

INFORMATION FOR DIAGNOSIS AND DELIVERY: Parents should be provided with clear and understandable information about management options and delivery.

INVESTIGATIONS AND POST-MORTEM: An effort should be made to investigate and provide an explanation to parents for the loss of their baby, within resources available.

PSYCHOLOGICAL SUPPORT: Healthcare workers should acknowledge that grieving is a natural response to the loss of a baby and offer appropriate emotional support to all women.

FOLLOW UP:

- All parents need appropriate postnatal care addressing physical and psychological needs, and follow up encounters to provide information and assess wellbeing.
- Bereaved parents should be given adequate information before discharge from healthcare setting, including a single point of contact in the follow-up period.
- Women should receive adequate information about their future reproductive health, including family planning if desired.

TRAINING FOR HEALTHCARE STAFF: Healthcare staff should be offered basic training in the care of bereaved parents, including evidence-based principles of care and management, and communication skills, and be aware of processes/guidelines in their own unit.

CONCLUSIONS: It is possible to develop broad principles of care for women experiencing bereavement across settings. These recommendations can then be locally adapted and implemented. The themes identified by this stakeholder group are an excellent starting point for developing this work further.

Keywords: Bereavement care, consensus

Abstracts of Poster Presentations

P-040

Proportion of preeclampsia in women under 35 years in Guanajuato during 2016

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BACKGROUND: Hypertensive disorders of pregnancy represent the most common complication in pregnancy, affecting approximately 15 percent of pregnancies and accounting for almost 18 percent of all maternal deaths in the world, with an estimated 62,000 to 77,000 deaths each year. Preeclampsia is the state that is characterized by the presence of hypertension and significant proteinuria, which occurs for the first time after week 20 of pregnancy, during childbirth or puerperium. It is also preeclampsia when there is hypertension in pregnancy and a criterion of severity even when there is no proteinuria demonstrated at first. **OBJECTIVE:** To describe the proportion of preeclampsia in women under 35 in the state of Guanajuato during 2016. **MATERIAL-METHODS:** A descriptive and retrospective study was carried out. The following variables were incorporated into the hospital discharge data collection model based on ICD-10 (O10, O11x, O12, O13x, O14, O16x) such as: age group, reason for leaving in Guanajuato during 2016. Using the registry of the General Directorate of Health Information of the Ministry of Health 2018 of hospital discharges. **RESULTS:** 3,497 hospital discharges were reported with diagnosis of hypertensive diseases of pregnancy in women aged 10 to 49 years in the state of Guanajuato during 2016. Of which 2,997 (85.70%) correspond to women under 35 years of age from the total of cases. Preeclampsia as a diagnosis of discharge was reported in 1,332 cases (38.09% of hypertensive diseases of pregnancy). In women aged 10 to 14 years, 29 (0.43%) hospital discharges with a diagnosis of hypertensive diseases of pregnancy were reported, of which 15 had preeclampsia as a discharge diagnosis (1.13% of patients with preeclampsia) which has the lowest proportion of discharges diagnosed with preeclampsia. In women aged 20 to 24 years, 951 (12.21%) hospital discharges of hypertensive diseases of pregnancy were reported, of which 427 (32.06% of patients with preeclampsia) had preeclampsia as a diagnosis of discharge. This age group is the one that counts with the highest proportion of hospital discharges diagnosed with preeclampsia during 2016. **CONCLUSIONS:** Proportion of preeclampsia leads to consider adequate diagnostic and therapeutic measures to prevent and minimize maternal-fetal morbidity and mortality. Preeclampsia is one of the most important risk factors for perinatal mortality.

Keywords: Preeclampsia, hypertensive disorders, morbidity, mortality.

Abstracts of Poster Presentations

P-041

Maternal body position and placental localisation affects uterine arterial blood flow velocity: relevance to position related stillbirth risk

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BACKGROUND: Maternal sleep position in late pregnancy is associated with risk of stillbirth. We have previously shown that maternal position affects fetal behavioural state, maternal cardiac output and venous collateral blood flow. There is anatomical asymmetry between left and right sides in the vascular system. The effect of maternal position and placental site on uterine arterial blood flow is unclear.

OBJECTIVES: To investigate the effects of maternal position and placental site on the right and left maternal uterine arterial pulsatility index (PI) and peak systolic blood flow velocities (PSV).

METHODS: Maternal right and left uterine PI and arterial PSV was assessed by Doppler ultrasound in 4 randomly allocated positions (left lateral, right lateral, supine and semi-recumbent) in 30 normal pregnancies between 34-38 weeks gestation. The subjects were all studied under standardised conditions and were maintained in each position for 30 minutes. Placental location was determined by ultrasound. Standard methodology was used to record flow velocity waveforms from which the PSV and pulsatility indices were derived. The effect of maternal position and placental site on changes in PSV were assessed using generalised linear models.

RESULTS: Across all positions the PSV was higher in the left uterine compared to the right (139 vs 127, $p=0.0003$) as was the PI (0.85 vs 0.78, $p<0.0001$). When assessing the effect of maternal position controlled for inter subject variation compared with the left lateral position (referent), there was an increase in PSV in the left uterine artery in all other maternal positions ($p<0.0001$), the PI was significantly higher in supine compared to left. In the right uterine artery, compared to left lateral all other positions were associated with smaller but significant reductions in the PSV, the PI was significantly lower in right and semi-recumbent ($p<0.0001$) but not supine.

Additionally assessing the effect of placental site showed no change in the effects of maternal position suggesting that their impact was independent.

In the left uterine artery, placental position was associated with significant changes in PSV, with anterior, left and posterior positioned placentae all having significantly higher PSV compared to a placenta on the right ($p<0.0001$). No significant changes were seen in the right uterine artery in relation to placental site.

CONCLUSIONS: The results show that maternal position and also placental site affect the PSV and PI most notably in the left uterine artery. We speculate that whilst there may be an element of mechanical compression of the uterine arterial flow depending on maternal position, the anatomical asymmetry of major arteries and veins and changes in the venous return to the heart may affect cardiac output and hence uterine PSV. These position effects may not influence stillbirth risk in healthy pregnancy, but in complicated pregnancies changes in blood flow could adversely affect the fetus.

Keywords: stillbirth, maternal position, uterine arterial blood flow, placental position

Abstracts of Poster Presentations

P-042

Sudden infant death in forensic context, Tierra del Fuego, Argentina 2007-2017

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Death of a child 1 year old or younger is an event that deeply affects the whole society. There are confusing feelings about it. Mixed pain, guilt, impotence, frustration and bewilderment affect parents and pediatricians, who assist them. Cross-accusations frequently arise. And in the midst of so much controversy the autopsy emerges as a disruptive event, with a role often misinterpreted by the family, underestimated by health and / or justice officers, and unfortunately discouraged by some health workers themselves. Before 2014, autopsies in Tierra del Fuego, were performed by non-pathologist forensics and Histopathology and social interview were not mandatory. By that time, the province had no facilities for forensic Pathology to be locally done. From 2014 on, Histopathology together with social report became the rule. A research was carried out to find out the number of infant deaths, and their diagnosis, in Tierra del Fuego, Argentina, from January 2007 to January 2017. The idea was to find out incidence of Sudden Infant Death Syndrome (SIDS), to contrast this with mortality and birth rates and to weight the effectivity of forensic work.

The entire autopsy protocols produced within this period were reviewed, and available Histopathology reports were checked. Birth and mortality rates were obtained through National Statistics Bureau.

During the study period, 35,015 children were born in Tierra del Fuego, and a total 135 children aged 1 and under died. Twenty three of them required forensic intervention. Twelve cases were categorized as SIDS, but only 4 of them were fully evaluated. Three of them met SIDS criteria, and in one case, the justice officers denied the possibility of a complete autopsy. The cases diagnosed as SIDS were 6 boys and 6 girls. Most of them occurred in winter and spring. In 5 children the cause of death was attributed to broncoaspiration (1 girl and 4 boys). This diagnosis was considered final and Histopathology was not recommended. A girl died because of a necrotizing enteritis, a boy was killed in a traffic accident and three boys were categorized dead by abusive trauma. These last ten children mentioned, were studied prior to 2014 by non- pathologists, and some of their diagnosis might need review. One boy dead in 2016 had a positive effusion culture for *Moraxella catarrhalis*, and is still under justice consideration. In Latin America, forensic doctors are not necessarily pathologists. In Argentina only in recent years, pathologists have turned to forensics. At the same time, there is growing government concern on SIDS. According to our findings, an average 4 of every ten thousand children born in Tierra del Fuego, has died from SIDS. However, this number might show increase with more exhaustive study. SIDS remains the mayor cause of death in children aged 1 and under, under forensic scenario in Tierra del Fuego.

Keywords: SIDS, Tierra del Fuego, Argentina, Pathologist, forensic

Abstracts of Poster Presentations

P-043

Community perceptions, beliefs and practices of birthweight in rural Bangladesh: a qualitative study

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Background

Birthweight is an important determinant of stillbirth and neonatal mortality. Globally, low birthweight infants (<2.5 kilograms) contribute up to 80% of neonatal mortality. In Bangladesh birthweight is not measured, but rather based on maternal perceptions of the baby's birth size. Little is known about how birthweight is perceived, and if it is considered an important measure of a newborn health in resource limited settings.

Objective

To understand the overall perceptions of birthweight in a rural community of Bangladesh.

Methods

We conducted a qualitative study in a rural setting of Bangladesh, including 32 in-depth interviews (11 with pregnant women, 12 with recently delivered women, 4 with men whose wives were pregnant or had a recent delivery, 5 with elderly women whose daughters or daughters-in-law were pregnant or had a recent delivery), 2 focus group discussions with men and 4 key-informant interviews with community health care providers. We used a thematic analysis to index the data into themes and develop an analytical framework.

Results

Pregnant and recently delivered women and their families did not perceive birthweight as an indicator of newborn health, though there was a desire for a healthy baby. The perceived criteria of a healthy baby included crying right after birth; having proper shape and movement of the limbs; free from disease; being able to be breastfed and able to defecate. Most of the participants classified birth size into four categories- very small, small, normal and large, only a few mentioned very large. These classifications were mostly based on previous observation of newborns at birth, holding them and comparing the newborn's birthweight with birthweight of a newborn who was being weighed in hospital. Participants referred maternal poor nutrition, lack of blood, illness during pregnancy, maternal short stature, small size uterus, mother's being too thin or obese and influence of supernatural power as causes of very small birth size. Again, some participants associated maternal overnutrition, overweight, overeating, mother's inadequate movement during pregnancy period, sins in previous life, influence of supernatural power with a very large birth size baby. Most of the participants reported a preference for a baby with small birth size to avoid caesarean section, which sometimes led the women to perform potential harmful practices; such as avoiding nutritious food, or doing physical work during pregnancy. Most common measures suggested to deal with a very low birth size baby included oil massage, seeking health care provider's advice, providing vitamins and feeding nutritious food.

Conclusion

Our study highlights that community people are not concerned about birthweight in rural Bangladesh. Strategies are needed to promote awareness related to birthweight and reduce harmful practices among pregnant women and their families to improve infant health and reduce low birthweight in developing settings.

Keywords: Birthweight, birth size, newborn, Bangladesh, perceptions, community

Abstracts of Poster Presentations

P-044

Grandmothers' Grief after the Loss of a Grandchild

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BACKGROUND: When discussing the death of a child, the emphasis is usually placed on the special relationship between the parent and the child. However, there is a paucity of studies focusing on the grief of grandparents. People become grandparents when a grandchild is born, but they also remain parents to their children, the parents of the grandchild. It is however understood that following the death of a grandchild, grandparents experience pain for the loss of their beloved grandchild.

OBJECTIVES: The aim of the study was to describe grandmothers' grief after the death of a grandchild. The results increase our understanding of the grief grandmothers experience after the death of a grandchild and can assist in developing support mechanisms to help them cope with their grief.

METHODS: The data was collected from grandmothers (n = 20) who had lost a grandchild. No restrictions were placed on the age or the cause of death of the grandchild. The data was gathered through an electric questionnaire comprising background variables and an open-ended question asking the grandmothers to describe their grief. The data were analysed through inductive content analysis.

RESULTS: Grandmothers' grief formed a continuum from inconsolable grief to lifelong yearning. The continuum of grief comprised crushing emotions, manifestations of grief, loss of energy and a permanent change in one's life. The crushing emotions included inconsolable yearning, disappointment, shock and anger. Among the manifestations of grief were mental and physical symptoms and tearfulness. Loss of energy was manifested as joylessness, powerlessness, feelings of unconscionable loss, difficulty describing one's emotions and double grief. The permanent life change involved one's life inexorably changing and long-term yearning.

CONCLUSIONS: Grandmothers' grief after the death of a grandchild occurred on a continuum from inconsolable grief to a lifelong yearning. Grandparents dismiss their grief and bury it inside them, primarily to support the parents and the siblings of the deceased child.

Keywords: Grandmother, death of a child, grief, bereavement

Abstracts of Poster Presentations

P-045

Waiting in No-Man's-Land; Enhancing Bereavement Support at Diagnosis of an Intra Uterine Death:A Developmental Change Project

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BACKGROUND:

Carrying death instead of life is the ultimate paradox and represents a huge psychological challenge for expectant parents. The devastating nature of losing a baby cannot be altered; however, appropriate interventions can help facilitate an uncomplicated grief trajectory. The need for written information following the diagnosis of an intra-uterine death has been highlighted in the literature. Being informed of what happens next is something all parents describe as being important and yet insufficient following diagnosis, with this lack of information being perceived as an obstacle to parents' participation and control. The vision is to ensure bereaved parents receive evidenced based written information which is practical, sensitive and compassionate with the potential to enhance adaptive adjustment to loss.

OBJECTIVES: To enhance the support given to parents at the time of diagnosis of intra-uterine death through the provision of information booklet specifically tailored to meet parents' immediate needs.

1. Evaluate the effectiveness of providing parents with an information booklet to guide them with relevant and practical supportive information following diagnosis until delivery.
2. Provide a clear pathway for parents awaiting hospital admission and induction of labour.
3. Provide a tool to health care professionals in the provision of bereavement care.

METHODS:

The HSE Change Model (2008) was deemed most appropriate to guide the initiative as its design fits the specific challenges of maternity care. The model guided navigation through the change process in a structured and disciplined manner. The vision for change was outlined which translated into a meaningful description of what the change would look like at local level juxtaposed with the current position. This promoted a creative problem solving tension accessing drivers and degree of urgency. Engaging organisational and frontline staff boded well for linking local structures and processes to positively influence initiative delivery in order to build an improved service for bereaved parents.

RESULTS:

The current focus is implementing and monitoring the project plan as it is too early to evaluate. Objectives are continuously being reviewed to ensure the process is on target. SPO framework will be used to evaluate outcomes.

CONCLUSIONS: The Irish maternity sector has embraced significant change in recent years. These changes have been varied and dynamic driven by power, politics and patients' voices. This initiative is a small but significant change to support the most vulnerable patients in the maternity setting. The vision is that this booklet will be a stepping stone in the pathway for meeting the unique needs of parents in a moment in time when their lives have been shattered. Funding Source: The National Maternity Hospital and NMH Foundation, Dublin 2, Ireland.

Keywords: information, shock, what next?, compassion, sensitivity

Abstracts of Poster Presentations

P-046

Negative changes in the family functioning after the death of a child

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BACKGROUND: It has been indicated that the death of a child will bring positive and negative changes to the parents and their wellbeing. However, there is lack of knowledge what kind of changes death of a child cause to whole family and family functioning.

OBJECTIVES: The purpose of this study is to describe the negative changes that the death of a child brings to family functioning.

METHODS: The informants were mothers (n=248) and fathers (n=26) who had experienced the death of a child. Request to participate in the study was presented on the websites and members' mailing lists of grief organizations in Finland (KÄPY, Surunauha and HUOMA), and also on internet forums where grieving parents were signed on. The data were collected using an electronic questionnaire, which consisted of background variables regarding the informant, the deceased child and their family, and an open-ended question regarding the changes in the family's functioning. Qualitative inductive content analysis was used to analyze the data.

RESULTS: As negative changes in family functioning, the parents described difficulties in the family's internal relationships, coping in every-day life and controlling emotions, as well as a decrease in enjoying life and the wavering of life's values.

CONCLUSIONS: In conclusion, the death of a child brings various changes to family functioning, weakening the cohesion in the family and decreasing quality of life. The study brings new information on family functioning after the death of a child. The results can help recognize and consider the changes a child's death brings to family functioning.

Keywords: family, death of a child, change, qualitative study

Abstracts of Poster Presentations

P-047

Parent's experiences of group peer support leaders after the death of child

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BACKGROUND: Social support has been shown to have a positive relationship with the grieving of parents. In particular, peer support has been experience to promote in the grief. There are few studies on the parent's experience of group peer support, however there are only few research parent's experiences of support leaders. The results increase knowledge and based of this we could to develop group support for experienced parents in the death of a child. **OBJECTIVES:** The purpose of this study was to describe parents' (N=106) experiences of peer support group leaders after death of a child and the factors that are associated with the experience. **METHODS:** Parents had participated in peer support groups organized by KÄPY - Child Death Families Association. The data were collected using an online questionnaire that contained parent's, family's, dead child's and peer support group's background variables and a questionnaire including 12 items to measure peer support group leader's expertise and one question about parents' perception of the peer group leaders. Parents' opinions were measured using Likert scales. The data were analyzed using statistical methods. **RESULTS:** Two-thirds of the parents felt that enrollment was fluent to peer support group. Half of the parents agreed on that information regarding support group, day and duration of support group meetings were appropriate. As a result, communications concerning the peer support group, venue, day and duration of the peer support group meetings were associated for more positive perceptions of the peer support group leaders. Parents' overall perceptions from the peer support group leaders were good. **CONCLUSIONS:** The results can be utilized development of both peer support group and training of the group leaders. Furthermore, greater emphasis should be put on planning and organizing peer support groups in the future.

Keywords: Peer support group, peer group support, support group leader, death of a child

Abstracts of Poster Presentations

P-048

Who is Accessing the SUDI Toolkit? Identifying Awareness of the SUDI Resource

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BACKGROUND: Since 1999 and the introduction of the Back to Sleep Campaign, there has been a decline in SUDI (Sudden Unexplained Death in Infancy) and as a consequence professionals have become less familiar with procedures surrounding investigations. In 2009 a SUDI toolkit was developed by NHS Quality Improvement Scotland (NHS QIS), as part of a Scottish Government initiative, to standardise the procedures across Scotland providing:

- Guidance on the roles and responsibilities of the team
- Guidance on necessary documentation
- Guidance on support for bereaved parents

OBJECTIVES:

- To establish the current knowledge of the toolkit and whether there is a need to increase awareness of it through training packages specifically designed for professionals involved in SUDI
- To establish attendance at SUDI reviews by all professionals involved in cases thus affording the best opportunity to identify causes / contributing factors, identify lessons to be learned and arrange suitable support for families

METHOD: We developed a questionnaire, in conjunction with Scottish Cot Death Trust, and sent it to departmental managers in NHS Lothian to distribute to staff involved in SUDI, the Crown Office Procurator Fiscal Service, Police Scotland and University of Edinburgh Forensic Pathologists. The completion of the questionnaire was voluntary and anonymised. 65 respondents completed the questionnaire including:

- Anatomical Pathology Technologists (14%)
- Bereavement Officers (3%)
- Chaplains (6%)
- Crown Office Procurator Fiscal (5%)
- Family Liaison Officers (15%)
- Pathologists (5%)
- Medical Photographers (2%)
- Medical Staff (15%)
- Nursing Staff (27%)
- Radiographers (8%)

RESULTS:

- 56% are unaware of the SUDI toolkit
- 20% have accessed the toolkit
- 17% have attended a SUDI review

Of those who were aware of the toolkit almost 60% have been employed for more than ten years; 43% of those who accessed it found the information useful when offering support and advice to parents. In spite of this 29% found the documentation difficult to complete and it was not always prepared in time for post mortem. 39% of respondents had been called to deal with a SUDI during the last five years but only 22% were permitted time off to attend a review.

CONCLUSIONS: The SUDI toolkit is not being utilised to its full potential. SUDI are rare and as health professionals become less aware of the procedures it has greater value. We advocate working with Scottish Cot Death Trust to increase awareness of the toolkit through Continuing Professional Development, LearnPro modules or study days to ensure that staff have the required knowledge to provide accurate and consistent information to bereaved families. In addition, we feel that staff should be given protected time to prepare for and attend reviews.

Keywords: SUDI, Toolkit, Documentation, SUDI Review

Abstracts of Poster Presentations

P-050

Working to Establish Birth Equity in The African American Family, The Necessary Equation: Father + Mother = Healthy Baby

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BACKGROUND: Since the inception of safe sleep intervention research, mothers have been educated on evidence-based recommendations for reducing Sudden Unexpected Infant Death (SUID). The Eunice Kennedy Shriver National Institute of Child Health and Human Development embarked on a partnership with Kappa Alpha Psi Fraternity, Incorporated, to develop an educational outreach initiative to teach fathers, grandfathers, uncles, brothers, and other caregivers and community stakeholders about ways to reduce the risk of SIDS and other sleep-related causes of infant death. The partnership as provided an opportunity to focus on enhancing the knowledge of African American males and begin to evaluate their ability to practice and promote infant safe sleep practices

OBJECTIVES: To evaluate if an increase in knowledge among African American males may lead to a reduction of African American Sudden Unexpected Infant Deaths.

METHODS: Infant safe sleep training is a required component of the Membership Training Academy for Kappa Alpha Psi Fraternity, Incorporated. Pre- and post-testing was administered to 420 prospective new members of Kappa Alpha Psi Fraternity, Incorporated at the South Western Province Council meeting in Jackson, Mississippi in 2017.

RESULTS: We found a statistically significant difference between ($p=0.05$) the pre- (prior to the education) and post- (after the education) test used to test the SIDS knowledge of African American males. In the pre-test, 87.5 percent of participants strongly agreed or agreed that the safest place for baby to sleep is in the same room as the caregiver but in his or her own crib or bassinet. In the post-test, 94.6% of the participants strongly agreed or agreed that the safest place for baby to sleep is in the same room as the caregiver but in his or her own crib or bassinet. Participants were also asked about the best position to place a baby while sleeping. In the pre-test, 82% agreed or strongly agreed that putting baby on his or her back to sleep is important to reduce the risk of SIDS. In the post-test, 90.4% strongly agreed or agreed that putting the baby on his or her back to sleep is important to reduce the risk of SIDS.

CONCLUSIONS: The results indicate an increase in knowledge among African American males and may lead to a reduction in African American SIDS rates.

Funding source: Global Infant Safe Sleep Center, Kappa Alpha Psi Fraternity, Incorporated.

Keywords: African American Males, Safe Sleep Education, Community Engagement

Abstracts of Poster Presentations

P-051

CuddleCot - An underused resource in improving bereavement care in Obstetrics?

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Bereavement in obstetrics is an indiscriminate diagnosis affecting many women and their families. Whether it be a stillbirth or a compassionate induction of labour, care should be tailored using services available. It is therefore vital that medical and midwifery staff caring for such patients have the necessary knowledge and understanding of all available services. Our aim as healthcare professionals should be to provide the highest standard of care for these women and their families during such difficult circumstances. The CuddleCot™ by Flexmort allows women and families to spend time with their baby and allows women to choose to take their infant home for a period of time. It is a cooling pad that can be placed in any Moses basket or cot which preserves the baby at an ideal temperature and slows the expected physiological changes following death. Its use is internationally encouraged by midwives and bereavement practitioners because it is recognised that having this time to bond with their baby and to grieve their loss improves the psychological outcome for the parents. The aim of our study was to improve the understanding and use of the locally available CuddleCot™. We first assessed how comfortable midwifery and medical staff involved in these women's care were in providing information on the CuddleCot™ through a survey and found that a significant proportion of staff in NHS Tayside felt unable to offer and counsel women regarding the use of a CuddleCot™ due to a lack of confidence and knowledge. An education session was provided addressing these issues highlighting particularly the use, set up and rules of care. These sessions also allowed staff time to ask questions about how to open dialogue with women about its use and discuss whether it would be appropriate/beneficial for them. The same cohort of staff were then resurveyed, using the same survey, which demonstrated an improvement in knowledge of the CuddleCot™ use and an increased willingness to offer its use. This will hopefully improve local obstetric bereavement care. Although only one aspect of bereavement care, the ability to take a baby home following a pregnancy loss could immensely improve a family's journey through their grief. Education of services available for bereaved parents can facilitate improved counselling and positively impact on the psychological outcome of parents following the loss of their baby.

Keywords: CuddleCot, Bereavement

Abstracts of Poster Presentations

P-052

Assessment of routine data quality for birth outcomes in Bangladesh, Tanzania, and Nepal

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BACKGROUND:

Globally the vast majority of the estimated 2.6 million stillborn babies are born in Low and Middle Income Countries, in settings with the least data, “the inverse data law”. The Every Newborn Measurement Improvement Roadmap seeks to count every baby, including stillbirths and for that measurement to facilitate progress in reducing these deaths to a target <12/1000 total births by the year 2030. Classifying type of stillbirth by timing (antepartum or intrapartum) is critical for effective programming, yet 130 countries have no useable data. With increasing facility delivery rates, more data from labour and delivery registers is aggregated up the health system from facility to district and national levels. The quality of the routine documentation of birth outcome data will directly affect the programming to reduce these largely preventable deaths.

OBJECTIVES:

To assess the quality of birth outcome data in routine delivery registers for 5 comprehensive Emergency Obstetric and Neonatal Care Facilities in the high stillbirth settings of Tanzania, Bangladesh and Nepal.

METHODS:

At the start of “Every Newborn Birth Indicator Research Tracking in Hospitals” (EN-BIRTH) observational study of >20,000 births, existing delivery registers were assessed for quality. Data routinely recorded from Jan to Dec 2016 was entered into a database and analysed for quality measures for key indicators, including birth outcome, gestational age, birth weight and gender.

RESULTS:

Data was extracted for 22,307 births (10,776 Nepal, 6,425 Bangladesh, 4,420 Tanzania). Birth outcome as a discrete measure was recorded for 19,980 (90%) of which 490 (2%) were stillborn. Type of stillbirth was only recorded in 3 of the 5 facility datasets. No facility recorded details of timing of stillbirth (antepartum or intrapartum), rather proxies were used: 91 (18%) were recorded as fresh stillbirth, 155 (31%) as macerated and 247 (50%) were unknown type. Gestational Age was available for 11,830 (38%) of livebirths and 258 (37%) of stillbirths. Baby’s gender was recorded for 19,466 (100%) of liveborn babies and 486 (98%) of stillbirths. Baby’s weight was documented for 19,218 (97%) of livebirths and 384 (75%) of stillbirths.

CONCLUSIONS:

The wide range of data quality for birth outcome in routine facility registers will affect programming and monitoring in high stillbirth rate settings. Of the stillborn babies represented in this sample, 50% did not have details of their timing (or a proxy measure) recorded and 25% were not weighed. Improving data quality is critical to target appropriate programming and monitor progress towards saving the lives of these babies.

FUNDING SOURCE: The Children’s Investment Fund Foundation are the main funder of this research which is administered via The London School of Hygiene & Tropical Medicine.

Keywords: Stillbirths, Metrics, Monitoring, Data Quality

Abstracts of Poster Presentations

P-053

Analysis of the Results of Sentinel Surveillance of the Extreme Neonatal Morbidity, Bogota, Colombia, 2015-2016

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Title: Analysis of the results of sentinel surveillance of the extrema neonatal morbidity, Bogotá, Colombia, 2015-2016

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BACKGROUND: This is a descriptive study of the results of the Sentinel Surveillance of Extreme Neonatal Morbidity performed on fifteen (15) health institutions with Neonatal Intensive Unit Care (UCIN in Spanish) in Bogota, Colombia, during 2015 and 2016.

OBJECTIVE: Describe the preliminary results of the surveillance in order to understand the characteristics of the Extreme Neonatal Morbidity in the city.

MATERIALS-METHODS: The information of a total of 1,583 newborns was collected from two different sources: 1) record-keeping history of the newborn at the hospital, and 2) interview with the mother or guardian. A total of 1,425 cases were collected using the two data collection sources, and this data was used for the analysis.

RESULTS: It was observed a total of 97 cases of newborns with Asphyxia (7% of the population), 1,193 cases of preterm births (84%), and 135 cases of Sepsis (9%). A total of 129 newborns died (9%) Around 92% (n=897) of the newborns was born in a private institution. Around 66% (n=938) were affiliated to a health insurance, 28% (n=402) were affiliated to a subsidized health insurance, 0.2% (n=3) were affiliated to a special health care access, and 6% (n=82) were not affiliated to any health insurance. Around 87% of the mothers (n=1,236) had no difficulty to access health services. CONCLUSIONS: The cases identified with the Sentinel Surveillance of Extreme Neonatal Morbidity shows the group of mothers with the highest risk factors followed what is found in the literature. These factors are extreme ages, low educational attainment, and low income. It can be observed from the data that most of the mothers had high school degree, an income of maximum two minimum wages, and live in the districts of the city with the highest vulnerability. Around 5% (n=66) of the mothers have all these previous risks factors together. Similarly, 5% (n=67) of the mothers had more than four pregnancies, and a time between pregnancy below 24 months (2 years) or higher than 72 months (6 years). Though neonatal asphyxia and sepsis are surveilled found that these two pathologies are the most common comorbidities in preterm babies, especially sepsis. The results of the present analysis show similar results to others studies developed in Colombia and other countries of the region, thus contributing useful information for the construction of probabilistic models to understand risks factors associated to the child and neonatal morbidity.

Founding source: Secretaria Distrital de Salud de Bogotá

Keywords:PublicHealthSurveillance,PretermBirths,NeonatalSepsis,NeonatalAsphyxia,RiskFactors

Abstracts of Poster Presentations

P-054

Inflammatory blood parameters in women after intrauterine fetal death versus selective termination to a singleton pregnancy – A retrospective single-center cohort study

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INTRODUCTION:

In the United Kingdom (UK), stillbirth describes the death of a fetus above 24 gestational weeks. In 2015, the UK-stillbirth rate was 3.87 per 1000 total births. The cause of fetal death should be carefully elucidated in every case, as it influences national statistics, guide future research proposals and assist bereaved parents in their grieving process. Whilst the value of placental histology and fetal autopsy has been acknowledged widely, national guidelines still differ in their recommendations of maternal examinations within the frame of the post-mortem workup. As potential contributor to placental dysfunction, villitis of unknown aetiology (VUE) has been proposed. VUE defines a placental inflammatory process with focal lymphohistiocytic infiltrate of maternal T cells and fetal macrophages amidst a normal appearing villous stroma. About 5-15% of term placentas show signs of VUE. The exact aetiology of villitis is unclear, but an infectious component has been suggested. A study by Girard et al. showed that signs of VUE in high risk pregnancies with reduced fetal movements are reflected by a significant elevation of cytokine IL-1Ra in maternal blood (n=39; p<0.01). Aim of this study was to elucidate, whether intrauterine fetal death (IUFD) predispose women to a higher level of silent inflammation than selective termination of a singleton pregnancy (feticide).

METHODS:

In this retrospective cohort study, we examined maternal inflammatory parameters prior to delivery and compared results on C-reactive protein (CRP), neutrophils and leucocytes between women after IUFD versus feticide. Cases with apparent maternal or fetal infection were excluded.

RESULTS:

The study cohort comprises 180 cases of IUFD between 21+0 and 41+3 gestational weeks (GW), as well as 148 feticides between 17+0 and 36+5 GW. Maternal age (mean \pm SD) of women after IUFD was 31.37 \pm 0.49 years and 30.67 \pm 0.51 years after feticide, respectively (p=0.33). CRP was found to be significantly higher in women after IUFD compared to feticide (1.80 \pm 0.2 vs. 0.68 \pm 0.06; p < 0.0001), as were the absolute neutrophil counts (7.73 \pm 0.2 vs. 7.2 \pm 0.17; p=0.04). Also, leucocytes were significantly higher in women after IUFD compared to feticide (11.4 \pm 0.29 vs. 9.92 \pm 0.22; p < 0.0001).

CONCLUSION:

In this study, we show that women after IUFD elicit higher values of inflammatory parameters, compared to women after feticide.

Keywords: Intrauterine fetal death; feticide; inflammation; C-reactive protein; maternal examination.

Abstracts of Poster Presentations

P-055

Talking groups as a way to provide assistance after perinatal loss.

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Association Naitre & Vivre, France

Background: Naitre et Vivre is a French association involved in the support of parents facing a perinatal loss. The association offers different supporting actions, among which is a supporting group. The perinatal mourning is not recongnized to the same extent that the mourning of a child: as a baby is very young. The society tends to minimize his loss and reacts as if the mourning period should be limited to the age of the baby. The actions of the association are based especially on experiences gathered in the book from A.Ernoult and D.Davous. Objective: We will share with you how this group is highly valuable in supporting (and bringing follow-up care to) the parents. Parents share their experience with the group and find here a genuine ressource in their mourning.

Method: This group welcomes all parents, according to predefined terms: parents seeking help, parents trying to get accustomed to the absence of their baby, parents who wish to continue their life experience despite the loss of their child. The talking group gather parents around an animation team made of a psychologist and trained parents. Meeting are scheduled at fixed places and hours. The speech is free and each participant speaks whenever he wants. Results: This group provides a dedicated experience sharing time. It promotes human solidarity emerging from pain. (Spoken) words may often be difficult to hear when related to this suffering. Nevertheless these words can be heard and accepted, as they come from other bereaved parents. The presence of other parents at a different stage of bereavement provides a concrete and true proof that it is possible to go through this ordeal: hope is allowed. The talking groups offers a supporting place when the parents can't find strength anymore to face their infant death or when society encourage the bereaved parents person to « go ahead » quickly. It is a space where the parents will keep talking, in their own time, without worrying their relatives. Non directed speech reveals in everyone a movement towards a search for meaning, a search for life even when death happens. A shared ordeal facilitates a mutual understanding and contributes to breaking down isolation and favors a feeling of belonging. A feeling of conviviality developps and a relationship is encouraged by the climate of respect, by a non jugmental attitude and by the confidentiality of the discussions. The parent can find there the comfort of stabilizing relationships, when death created a lost of points of reference, of social and professional network. The group helps to reveal unexpected personnal resources. Unlike a follow-up with a therapist, this peer-to-peer relationship considerably promotes the feeling of being understood. Conclusion: The progression on this path, both alone and in groups allows everyone to find the strength survive the ordeal and to discover how « wider » their life as grown in this listening (movement) attitude that consists in making room for death in life.

Keywords: Psychology, health, bereavement support, talking group, group therapy

Abstracts of Poster Presentations

P-056

Commentary on the 2016 national statistics for Sudden Unexplained Death in Childhood in England and Wales and the task ahead for new charity SUDC UK

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The incidence of Sudden Unexplained Death in Childhood (SUDC) remains constant and we are currently unable to predict or prevent a child dying suddenly with no known cause. This commentary provides detail on the 2016 statistics provided by the Office of National Statistics for England and Wales which were released in 2017. It provides a clear rationale behind a call to action for improved awareness and funding for research in the UK. In 2016 there were 446 deaths of 1-4 years olds in England and Wales. 5.6% of which were sudden unexplained deaths, more than deaths due to fires and drowning. This means that, for all healthy children in this age group (not including underlying congenital malformation) SUDC is the 3rd leading cause of natural death in England and Wales. Are we doing enough to reduce these deaths and optimise care?

While we have measures in place to curtail the risks of death by SIDS, fire or drowning, there is currently nothing that can be done to minimise the risk of your child being affected by SUDC. Families affected by SUDC in the UK need a voice among professionals to advocate for improved care and to support funding of research to reduce these unexplained deaths. To undertake this mission a new charity, SUDC UK, has been formed by three bereaved parents. SUDC UK, an affiliate of the SUDC Foundation, hopes to complement the fantastic work done by related national charities. However, as the only registered UK charity dedicated solely to SUDC it takes responsibility for uniting the UK SUDC community, raising awareness and working closely with families, the NHS and professionals to affect change.

Keywords: SUDC, SUDC UK, Statistics, UK, Charity, Childhood

Abstracts of Poster Presentations

P-057

The Perinatal Mortality Review Tool implementation support - 'review once, review well'.

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The perinatal mortality review tool (PMRT) commissioned by the Health Quality Improvement Partnership (HQIP) on behalf of the Department of Health (England) and the Welsh and Scottish governments is a national standardised review tool to enable high quality local reviews of stillbirths and neonatal deaths. Designed to facilitate systematic, multidisciplinary reviews with parental involvement where a clear understanding of why each baby died and whether with different actions the death of their baby might have been prevented. The implementation support available via the PMRT website helps with developing a review process within individual units. The collaborative team has outlined the key processes in setting up a review process, the team who should be involved and how meetings can be run including developing a terms of reference. The process of involving external reviewers is discussed with examples of how this can be achieved in different units. Information on how to use the tool, common questions and the use of 'tool tip's' which summarise the national guidance through the process are discussed. Working with Sands information on how to approach and involve parents in the review process is outlined. A series of training presentations and videos outline the process of root cause analysis, helping units to identify system errors and how to develop strong action plans that result in organisational learning with examples. The tool is iterative and we welcome feedback on how it can be improved.

Keywords: PMRT, perinatal, mortality, review, stillbirth, tool

Abstracts of Poster Presentations

P-058

Exome sequencing of selected genes in SIDS - what can the genes reveal?

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INTRODUCTION: A previous study on gene expression in sudden infant death syndrome (SIDS) has revealed mRNA status on genes in heart, liver and brain tissue. The study suggests an altered expression of several genes in SIDS victims compared to controls. Several of these genes are involved in the inflammatory process, including Myd88 which was found downregulated in the brain. These findings confirm an immunological vulnerability in SIDS. The aim of the present project was to sequence genes that were differently expressed in SIDS cases compared to controls, with the goal to identify a pattern of genetic variants predisposition to sudden unexpected infant death. This will potentially provide an opportunity to develop genetic screening test to identifying children at risk, so that they may be given additional follow-up. **MATERIALS-METHODS:** The cases included in this study are 81 SIDS cases and 14 adult controls. The SIDS cases were diagnosed according to Nordic SIDS criteria. In addition we used genotype frequency information from the 789 subjects in the norgene database of norwegian germ-line variation. As additional controls we used the germ-line variation data bases ExaC. For exome sequencing 24 selected genes involved in the immunresponse previously reported with altered expression in SIDS, together with important pathway genes, were analyzed. The sequencing was completed at the Norwegian Genomic Consortium, using target re-sequencing with Illumina TruSeq custom amplicon. **Results and CONCLUSION:** Total base pair coverage was 177 843, with 34573 overlapping base pairs between the amplicons. After the filtration steps there were a total of 76 variants, which were further reduced to 36 variants after curation. Based on the summary-table for allele frequencies of rare variants, it is clear that overall occurrence of rare variants for all the SIDS samples were lower than for the healthy norgene population. Based on the results from this study we were therefore unable to uncover a large number of rare variants in SIDS. In addition, each gene were tested individually using Fisher Exact test to asses if the total number of variants in each gene was higher than expected given no association to SIDS. However, none of the genes was found to have a higher number of rare variants in the SIDS samples, compared to the norgene database. In conclusion, this study therefore indicates that in the included genes we did not find any genetic pattern specific for SIDS. However, due to the methodology, the occurrence of SIDS associated mutations in the covered region might be too few to be detected by this study. Although not statistically significant, the results showed that three of the SIDS cases had a rare variant in the MyD88 gene. The significance of this is subject of further studies.

Keywords: SIDS, Exome, Sequensing, DNA

Abstracts of Poster Presentations

P-059

Safe Sleep Campaign in Uruguay. 2017

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The purpose of this presentation is to show what is done in Uruguay about Sudden Unexpected Infant Death (SUID) prevention. The Ministry of Health (MS) and the Directory of "Uruguay Crece Contigo" (UCC) of the Ministry of Social Development (MIDES), with the support of UNICEF and the Study and Prevention on SUID Committee of the Uruguayan Society of Pediatrics (SUP), launched the "Safe Sleep" campaign on November 2017., aimed at parents, caregivers and health personnel to inform and educate for a safe sleep environment. iSUID is the death of an infant under one year of age that occurs suddenly and unexpectedly, whose cause is not obvious before investigation. Sudden infant death Syndrome (SIDS) is defined as the sudden unexplained death of an infant under a year which cause remains unexplained after a complete autopsy, death scene investigation and review of clinical history. In Uruguay there is a decline in infant mortality rates in the last 5 years below 10/00. SUID is observed in younger than 6 months.Cases have been described in newborns from the first day of life. The prevention should begin as soon as possible, since pregnancy. SUID is associated with one or more risk factors, which can be modified. In 2006 a safe sleep campaign recommended back to sleep position during sleep, breastfeeding, avoid smoke exposure and overheating. The MS's "MIL Program" diagnosed the cause of death of infants in cases of SUID by a systematic autopsy notarized by a Paediatrician and Forensic pathologist and the discussion by a multidisciplinary team. In 2017, from 591infants rolled in that Program, 57% were explained deaths, 43% were undetermined and classified as Grey Zone (GZ) and SIDS. 242 were GZ and 10 cases were SIDS. 91% of the GZ in <4 months old cases had an unsafe sleeping environment. Bed sharing was observed in 72% of the <4 month cases; it was multiple or associated with prone sleeping position and other risk factors. In new-borns, 81% of ZG cases had sleep related risk factors. It is necessary to avoid risk associated factors to promote a safe sleep culture. In 2017 the new campaign emphasize that the safest place for the baby to sleep is in a crib next to their parents' bed. It includes a safe sleep, breastfeeding and parenthood training plan on maternities and health services and also cards and stickers with recommendations for a safe sleep. The delivery of cribs for emergency situations and safe cots to more vulnerable families adapted to the environmental conditions will be done. In conjunction with the Design Center School of the Faculty of Architecture, the project "Sleep Safe Cribs" is developed, which contemplates conditions of safety, hygiene and resistance that they must have for sustained use in the community

Keywords: Safe sleep Campaign,Sudden iunexpected infant death, Risk factors, Sudden infant death Syndrome;

Abstracts of Poster Presentations

P-060

Assessing Implementation of Safe Sleep Education in Illinois Hospitals

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BACKGROUND: Illinois law mandates that hospitals educate parents of infants on safe sleep. The Illinois Infant Mortality Collaborative Improvement & Innovation Network (CollIN) conducted a survey to understand Illinois hospitals' policies on infant sleep and practices related to safe sleep education.

OBJECTIVE: To determine how hospital departments that care for infants (i.e. mother/baby, Neonatal Intensive Care Unit (NICU)/nursery, pediatrics, and emergency) implement safe sleep education.

METHODS: An online survey was developed to capture the awareness of the law; methods, frequency, and documentation of safe sleep education for parents; the methods and frequency of staff training on safe sleep; and the use of policies/guidelines on safe sleep education. All maternity hospitals, children's hospitals/pediatric departments, and hospitals with emergency departments that treat infants were eligible. Data were analyzed using simple frequencies by department.

RESULTS: Mother/baby departments had the highest response rate (67%), and pediatric departments had the lowest (10%). Awareness of the law was >85% for all departments except emergency (53%). In-person bedside teaching was the most common method for educating parents with 87% of mother/baby and NICU/nursery departments and 57% of pediatric departments reporting using it "almost always". Informational packets and brochures were also common. Only 13% of emergency departments reported "almost always" using in-person bedside teaching and fewer reported using informational packets or brochures. Safe sleep education was mostly documented in nurses' notes, and most departments reported never auditing that documentation (57-74% of departments). Pediatric (57%) and NICU/nursery (45%) departments were most likely to have a policy on safe sleep practice. Thirty-seven percent of mother/baby departments had a policy and 22% had written guidelines. Of those without a policy, 59% intended to write one. Emergency departments were the least likely to have a policy (5%) or written guidelines (5%), and few (14% of those without a policy) intended to write one. In all departments, nurses were the most commonly trained staff (37-94% of departments) on safe sleep and physicians were the least common (5-32% of departments).

CONCLUSIONS: Implementation of the law varied across hospital departments that care for infants. Mother/baby and NICU/nursery departments more frequently provide safe sleep education, have written policies or guidelines, and train nursing and other staff on safe sleep compared to pediatric and emergency departments. Emergency departments were least likely to have safe sleep policies or provide safe sleep education. There are opportunities to improve implementation in pediatric and emergency departments and reach at-risk infants after the newborn period. Training materials/activities should educate hospitals on key time points, departments, and scenarios where staff may reach at-risk infants.

Keywords: Policy, Education, Hospitals, Safe Sleep

Abstracts of Poster Presentations

P-061

Perinatal Loss: the voice of midwives

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OBJECTIVE: To explore how midwives and students perceive the assistance to bereaved parents and to find out how this event affects their personal and professional life.

Design: Qualitative interviews based on focus group technique.

Setting: University of Padua (at Treviso headquarters) and Oderzo Hospital.

Participants: seven midwives and seven midwifery students who have a previous experience in supporting parents affected by a perinatal loss.

METHOD: Content and information analysis. To analyze the data was used the cut and paste technique and the job of code and retrieve was done manually.

RESULTS: The most common reported feelings of midwives and students during the assistance of bereaved parents were: anger, pain, fear and a deep sense of inadequacy. They also expressed some personal difficulties in assisting these parents, suggesting that the personal background about grief and loss may play a role and could directly influence the management of the assistance. Professionals are strongly influenced by the context, by the gestures and by the words of the persons who are around them, especially from colleagues and relatives. The focus group participants highlighted also the importance of both verbal and non-verbal communication between professionals and bereaved parents, suggesting that if an empathic relationship is established parents will give a positive return to the midwives and this return enable them to process better the whole critical situation. On the other hand, students expressed the need to receive help and support from their obstetrician tutor. If this figure is not present, the fear and the sense of difficulty increase a lot.

Assisting these couples is a strong experience which remains in the memory after the working hours. A proper training on this topic and the possibility to share the experience and to talk about it with other professionals and colleagues in an appropriate context are requested by our sample. All these needs could be offer both at professional and university level.

CONCLUSION: It's important to consider not only the pain of the parents, but also the impact of perinatal loss and perinatal loss management on midwives. To be able to assist properly these families professionals need theoretical and practical skills, and also a great emotional intelligence. Midwives and students, in fact, need to face their feelings and their personal background on grief and grieving. It's important that midwives are enabled to take care of bereaved parents without being overwhelmed by their own pain.

Our work recognizes the necessity for midwives to understand, to be confident and to face their difficulties in order to overcome them.

This awareness would help midwives and students not only at the professional level, but also at the personal one and the quality of the assistance to these families would improve.

Keywords: stillbirth, perinatal loss, professionals education, focus group, support, qualitative study

Abstracts of Poster Presentations

P-062

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OBJECTIVE: Stillbirth is a severe stressful life event with a deep impact on both families and professionals. In the past years, some guidelines have been developed in order to allow the best care for bereaved parents and to enable professionals to have an active role in the management of this traumatic event. Nevertheless, despite the increasing body of literature, only a small number of bereaved parents receives a proper support as suggested by international guidelines. In Italy, many professionals are currently unaware of stillbirth guidelines: stillbirth management remains mainly based on personal knowledge and opinions on grief and grieving. CiaoLapo Charity, after a revision of the guidelines adopted in other countries, developed a simple checklist, CLASS, which resumes the most important actions for stillbirth management. **METHOD:** CLASS checklist (CiaoLapo Stillbirth Support checklist) is a practical instrument developed by the authors after ten years of work with both Italian professionals and bereaved parents. Between 2009 and 2015, 750 professionals routinely involved in perinatal care were administered a specifically developed questionnaire, called "Lucina" and about 1000 bereaved parents were administered Memory box Interview to explore professionals' awareness of guidelines and parents' perception of the quality of care received. **RESULTS:** Professionals highlighted mainly the need of proper training and specific debriefing sessions in order to improve the quality of their care and parents highlighted clearly their needs; half of them described also the poor assistance received. After these results, we developed a simple six-point checklist in order to summarise the best evidence from international guidelines and to allowed professionals to increased their knowledge and to improve their daily practice. In CLASS checklist, recommendations are divided in six sections loosely based on PSANZ guidelines, integrated with those of Canadian Pediatric Society, those of the Health Services Executive Ireland and of WHO-UNFPA-UNICEF. CLASS is composed by six sections exploring a specific part of the assistance: Respect (R), Communication (C), Birth Options (B), Hospital Stay (H), Mementoes (M) and Aftercare (A). Here we summarize the respectful attitudes towards stillborn babies and their parents, the communication skills, the approaches towards birth options, the actions to help parents in creating memories, the appropriate care and support after delivery. **CONCLUSIONS:** management of stillbirth and the support of bereaved parents may be very stressful for professionals, especially when they are not trained and they are not aware of available international guidelines. CLASS checklist resumes the current best practice in six different sections, in order to enable professionals to improve their knowledge on stillbirth management CLASS checklist can be used as a simple tool for professionals training and also as memorandum for daily practice.

Keywords: stillbirth, guidelines, grief, assistance, epidemiology

Abstracts of Poster Presentations

P-063

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BACKGROUND: 2.6 million families suffer from stillbirth every year. It is known that two-thirds of stillbirths occur in rural families and 98% of stillbirths occur in low- and middle-income countries. Mortality rate of newborn in Zambia was reported to be 2.9% in 2013 by Unicef; however, the accurate rate is uncertain. Although attempts have been made to improve the situation of stillbirth and neonatal death in Africa, the availability of these solutions depends on each country and area. **OBJECTIVES:** The aim of this study was to evaluate the rate of stillbirth and neonatal death in a local hospital in Zimba, Zambia to provide the basic statistics for future intervention. **METHODS:** All deliveries from January through December in 2017 at Zimba Mission Hospital, Zambia were enrolled in this study. Total number and type of delivery, total number of babies, live birth, stillbirth, and neonatal death were analyzed. **RESULTS:** Among the 1,712 deliveries, 1,413 (82.5%) were vaginal delivery and cesarean section was performed in 299 (17.5%) cases. Total number of babies was 1,756 with 1,716 (97.7%) live births, 27 (2.5%) fresh stillbirths, and 11 (0.6%) macerated stillbirths. Birth asphyxia occurred in 153 cases (8.7%). Neonatal death in the first 4 weeks at the hospital occurred in 45 cases (2.6% of live birth), of which 44 cases (97.8%) occurred in the first week after birth. **CONCLUSIONS:** Situation on the baby survival at a local hospital setting in a developing country was evaluated. Factors associated with these conditions need to be identified to enforce effective intervention in preventing stillbirth and neonatal death.

Keywords: stillbirth, neonatal death

Abstracts of Poster Presentations

P-064

Risk factors in infants under one year of age died from sudden unexpected infant death in Uruguay

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Introduction- The Sudden Unexpected Infant Death [SUID) constitutes a public health problem as it contributes to increase the infant mortality rates. For decades it has been discussed which were the main risk factors that determine Sudden Infant Death Syndrome (SIDS) with the aim of decrease the risk of that avoidable death and to give the recommendations to prevent this. SUID is the sudden death of a child under one year of age without an evidential cause before forensic and medical investigation. This is a descriptive definition, not diagnostic. The cause of SUID may be explained or undetermined. The explained deaths are usually associated with unsafe sleep environments.

Objective - To characterize the main risk factors linked to SUID enrolled in the MIL Program in Uruguay from 2010 to 2014.

Material and methods - A descriptive cross sectional study with a retrospective data collection was carried out. The population and sample of the study included all cases enrolled at the MIL Program with all data completed. That Program belongs to the Ministry of Health and studies all the deaths of children under a year of age who died at home or before the arrival to a health center. In those cases a protocolized autopsy is performed by a pathologist and a forensic and each case is discussed at a multidisciplinary team. When it is possible, a questionnaire with data of the child and parents, pregnancy, growth and development, habits, sleep environment and last sleep scene, is made to the parents. The variables analyzed include: sex and age of the child, maternal age, education, pregnancy, addictions, feeding, health controls, sleep position, bed sharing, sleep position at time of death and diagnosis of the cause of the death.

Results- 141 cases enrolled at the MIL Program, with completed parent's interviews were included. 89% were younger than 6 months; 80% were under 3 months age. In 58%, tobacco exposure at home was confirmed. In 75 infants (53,2%) bed sharing was practiced. 75% of the infants did not sleep in the recommended position. The diagnosis of the cause of the death was defined as an explained death (ED) in 85 cases (60,2%), 39 (27,6%) Grey Zones (GZ) and 9 cases (6;3%) as SIDS. In both ED and GZ deaths the main diagnosis were respiratory infections and suffocation - asphyxiation.

Conclusions - Although it is not possible to establish causal relations because this study's methodology it is possible to affirm that SUID is multi causal and also to describe the variables analyzed as smoking, bed sharing practice well as maternal age and age of the deceased. It is possible to establish recommendations and to create health policies focused in those modifiable risk factors to avoid these infant deaths. More studies will be necessary to improve the knowledge about the association of those variables and SUID in Uruguay.

Acknowledgments: MIL Program Members.

Keywords: Sudden Unexpected Infant Death, Risk Factors

Abstracts of Poster Presentations

P-065

Reaching bereaved fathers through smartphone technology: SMS4dads

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Men “become” fathers of a stillborn baby through learning that their baby has died, making decisions with their partner about the necessary practical steps, and deciding who to inform. Finding recognition as a grieving father and managing grief while being supportive to a grieving mother can lead to stress, post-traumatic stress disorder and depression. In the months before birth fathers typically focus on supporting the mother while maintaining the family infrastructure and income and, although they frequently attend the ultrasound scans and birth, fathers are not usually recognised as clients of the health service. In the event of a stillbirth, social stigma and fathers’ secondary role in the birth processes, as well as a reluctance to seek help for psychological distress can leave fathers isolated from information, treatment and support. Unaddressed paternal grief can lead to continuing mental health problems, relationship breakdown and difficulties in the event of a subsequent pregnancy.

However, the widespread adoption of mobile phones and the relatively low cost of text messaging has created an avenue for supporting male partners throughout the perinatal period. SMS4dads is a web-based, phone-optimised program that delivers 14 texts per month to fathers’ mobile phones from 20 weeks into the pregnancy until the baby is 24 weeks of age. The brief text messages target three main areas: father-infant connection, father-mother co-parenting, and fathers’ self-care. The messages contain tips, information, prompts to action and links to online services. Fathers enter their expected date of delivery at enrolment and the messages are timed to the stage of development of the foetus or infant so that the topics are relevant to the issues facing parents. Dads also regularly receive a Mood Tracker interactive text asking “How’s it going?” timed to coincide with common challenges for fathers such as Lack of exercise, Concerns about being a good father, Taking Responsibility, Managing infant crying, Sleep deprivation, Regaining intimacy and Balancing work and family. Highly distressed fathers are escalated to a national helpline for telephone contact. In a feasibility study (n= 520) and a randomised controlled trial (n=788), currently underway, fathers were not asked to indicate when their baby was born. Since exiting the program requires only sending a text to say ‘STOP’ the messages were not considered to be a risk in the event of an adverse event and only two fathers texted that “baby died please stop”. However in a new pilot study of 250 fathers-to-be messages commencing in March 2018 fathers are requested to notify the arrival of the baby and a protocol for texts and links to online resources in the event of a notification of prematurity or stillbirth is under development. This poster will describe fathers’ responses and the protocol for supporting fathers who may be grieving the loss of their baby via text messages linked to support services.

Keywords: fathers, grieving, text, web-based,

Abstracts of Poster Presentations

P-066

The creation of the first al amal bereavement service in abu dhabi

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BACKGROUND: Corniche hospital is a tertiary mother and baby hospital, with 8,000 deliveries per year. High risk facility, taking referrals both country wide and regional. Prior to this project, there was no bereavement services available within Corniche hospital or the wider Abu Dhabi community. We wished to establish a pioneering 'bereavement service' throughout the continuum of care. Providing Ihsan, family centered, individualized end of life care, with acknowledgement of grief, and medical expertise, in alignment to cultural respect and sensitivity. Inclusive of support following a late miscarriage, stillbirth or neonatal death, care during a pregnancy, birth of a baby with a lethal abnormality or care in subsequent pregnancies after a sad outcome.

OBJECTIVES: 1. To transform the culture of the hospital, raising bereavement awareness, importance of empathy and compassion in every patient encounter. 2. Our intention was to provide gold standard bereavement services and develop a specialized 'Al Amal' (Arabic for 'Hope') bereavement clinic and team.

METHODS: project time line December 2016-December 2017. We utilized the following methods GANTT chart, focus groups, fish bone analysis, SWOT analysis, RADAR analysis.

RESULTS: (Summary of achievement results) established a bereavement multi-professional taskforce, the formation of Al Amal bereavement clinic (to include referrals of over 350 patients in 16 months), implementation of bereavement staff education and support, enhancement in communication pathways and matrix (documentation and visual), policy implementation, standardization of bereavement tools and development of memory resources, patient family engagement and development of community partnerships.

CONCLUSIONS: This pioneering Al Amal Bereavement Service has been sustained and continues to grow with the appointment of a bereavement midwife. This service has been extremely successful and the government health sector of Abu Dhabi wish to expand this service across all the government hospitals in the Emirate.

Keywords: pioneering-bereavement-service-Ihsan-Abu-Dhabi

Abstracts of Poster Presentations

P-067

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INTRODUCTION: Objects related to the baby (hand/footprints, photographs) are highly valued by parents and play an important role in bereavement, helping to affirm identity, continue bonds and processes of meaning making. The objective of the study was to explore in greater depth the role that objects play in grief in order to develop further understandings of the complexities of perinatal bereavement.

METHOD: 11 narrative style interviews were undertaken with parents (3 couples and 8 mothers) whose baby had died following stillbirth, termination of pregnancy or in the neonatal period. Informed written consent was given prior to the interviews, which were recorded, transcribed and analysed using discourse and qualitative analysis techniques.

RESULTS: As parents tried to give meaning to death and reconstruct their lives, objects were found to play benevolent, ambiguous and malevolent roles, which presented different possibilities and challenges. A spatial and time based dimension is evident in the way parents:

1) consolidate the material world, hold on to and protect valuable/benevolent objects, often those related to positive or happy memories (past) of the pregnancy or those directly associated with the baby, often thought of as his/her 'belongings'. These objects are very diverse, and often surprisingly mundane, and are an important source of support, solace and continued bonds/presence. They also help to establish parental identity and personhood and provide resources for conversing about the baby and/or resisting social stigma;

2) defer decisions about objects with ambiguous meaning, i.e. those that have no strong place in the family's history or that aren't thought to 'belong' to the baby, but may still have some social value (e.g. a gift from a family member). Hence the postponing of action until meaning can be established;

3) contract parts of the material world, i.e. getting rid of malevolent objects whose meaning is too strongly associated with an absent future and whose presence is too distressing. In some cases these can be converted to positive objects, e.g. through donation;

4) expand the material world through the purchase or fabrication of new objects, which often occurs in response to problems or dilemmas presented by other objects and is strongly related to evolving meaning making focused on the future.

At an overall level each of these 4 actions often requires collective negotiation and decision-making showing that grief and reconstruction has a strong social dimension.

CONCLUSIONS: (Re)ordering the material world is part of social and personal grief processes that are embedded in family histories and broader socio-cultural values. Objects are important because once invested with value they oblige social action (material and discursive) and provide resources for parents to take control of a disordered world and work towards the future while keeping parts of the past (letting go/holding on) firmly in the present.

Keywords: Grief, bereavement, stillbirth, termination of pregnancy, neonatal death, objects

Abstracts of Poster Presentations

P-068

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INTRODUCTION: Sedative administration in the hospital following perinatal bereavement has been reported in a number of studies. Sedatives are believed to interfere with the grief process, though the evidence for or against is scant. The objectives of the research were to examine the incidence of sedative administration during the hospital stay and to test for any relationship to complicated grief, measured using a 12-item sub-scale of a Spanish validated version of the Perinatal Grief Scale.

METHODS: The study used a cross-sectional descriptive design with an online questionnaire. The sample included women who had experienced fetal death ≥ 16 weeks gestation (stillbirth or termination of pregnancy for fetal anomaly) within 5 years prior to participation in the study, in the Spanish health system. Women were asked if they had been given medication that “sedated or tranquilized (not analgesics, epidural anesthetic or sleeping pills)” during the hospital stay. While controlling for a series of other independent predictor variables, the analysis used binary logistic regression to test for a statistically significant ($p < 0.05$) adjusted odds ratio (aOR) for complicated grief.

RESULTS: Responses from 788 women were analysed. 48% of women stated that they had been given sedatives at least once during the hospital stay. Sedative and non-sedative groups were not significantly different in terms of socio-demographics or pregnancy variables. While controlling for “time since the death”, “level of social support”, “post-loss religious/spiritual belief”, “having had a living child since the death”, “being pregnant at the time of the study” and “type of birth (caesarean or vaginal)”, sedative administration during the hospital stay was found to significantly predict being above the mid-point on the complicated grief sub-scale for the whole 5 year sample (aOR 2.16; 95% C.I.: 1.50-3.11, $p < 0.001$), the ≤ 1 year group (aOR 2.13; 95% C.I.: 1.32-3.42, $p = 0.004$) and the 2-5 year group (aOR 3.42; 95% C.I.: 1.56-7.53, $p = 0.002$).

CONCLUSIONS: Sedative administration during hospitalization following intrauterine death predicted complicated grief. The results cannot be interpreted as implying causality, but given that the known side-effects of sedatives (antegrade amnesia and impairment of cognitive functions such as concentration and acquisition of new information) are antithetical to bereavement care objectives (making informed decisions and creating memories related to seeing, holding, etc.), they raise serious concerns that sedatives interfere in care processes and hence bereavement, providing support to previous qualitative research and professional opinion. This area merits more in-depth qualitative and quantitative investigation. **Ethics:** Ethics approval for the project was not required from the principal author’s institution (Universidad Complutense de Madrid) for non-clinical studies. Consent was given through informed participation in the online survey.

Keywords: Stillbirth, termination of pregnancy, bereavement care, sedatives, complicated grief

Abstracts of Poster Presentations

P-069

Resuscitation training to meet the needs of bereaved parents enrolled on the Scottish Next Infant Support Programme

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BACKGROUND: The Next Infant Support Programme (NISP) is available during subsequent pregnancies following a sudden unexpected death of a baby. Infant resuscitation training is available in hospitals, usually in neonatal units and in community settings, often through voluntary sector organisations as group sessions. An apnoea monitor is provided as part of the NISP and although it will not prevent a baby from stopping breathing, parents report reassurance that they will be alerted if it happens. Anecdotally parents have reported additional trauma at not knowing when their baby died, having discovered them some time after they have stopped breathing. Whilst the outcome may have been the same, they feel it matters that they should have known as soon as baby stopped breathing and started Cardio Pulmonary Resuscitation (CPR) immediately. **OBJECTIVES:** CPR training available through hospitals in a clinical setting can remind parents of their attendance at hospital when their baby died. It is likely that at least one parent initiated resuscitation on their now deceased child. Some parents enrolled on NISP who have attended such training have had trauma triggers which required them to access trauma counselling therapy. Attending a group session with others who are there to further their own knowledge without having experienced the trauma of a child dying suddenly and unexpectedly is not supportive. A resource was needed that addressed both of these issues. **METHODS:** Resuscitation training is an important part of the NISP. Knowing that it will bring back some painful memories of the time they tried to revive their baby, it should be delivered to families in as sensitive a way as possible. A video has been produced where the training session can take place watching a demonstration either using a mannequin or flashcards only. The training exercise was filmed in a family home where two emergency medicine consultants acted the role of a resuscitation trainer and a bereaved mother. **RESULTS:** The information provided is accurate but is delivered in a style which acknowledges a families previous experience and allows the training to happen in an environment where they can feel more in control. Parents and any of their extended family members who may also be anxious about caring for the new baby can attend the session as it is provided in the family home. The session takes places at a pace determined by the client and includes NISP resources in addition to the CPR training. **CONCLUSIONS:** In response to families reporting that hospital training was too clinical and community training not appropriate, a tailored resuscitation training resource was produced which better meets their need. They can watch a video during a support visit by our community support worker with whom they already have a positive relationship. Anxiety, for some will mean they are too upset to see or touch a mannequin, and this has been addressed whilst still providing the necessary information.

Keywords: Resuscitation, risk factors, bereavement, person-centred, bespoke, prevention

Abstracts of Poster Presentations

P-070

An analysis of 15 years of Scottish stillbirth data and associated infant mortality

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Healthcare Improvement Scotland

BACKGROUND:

Over the past 5 years, the Maternity & Children Quality Improvement Collaborative (MCQIC) has sought to reduce the number of stillbirths in Scotland by undertaking a whole-nation structured approach to Quality Improvement. Improving the recognition and response to the compromised fetus displaying reduced movements in utero might be expected to reduce the likelihood of stillbirth. A consequence of greater vigilance and intervention might also be that fewer infants are born alive only to die as a result of hypoxic injuries.

OBJECTIVE:

To determine whether a correlation exists between Scottish stillbirths and neonatal deaths as a result of hypoxic ischaemic injury

METHODS:

Data were obtained from the National Records of Scotland (NRS) for the period 2002-2016. Stillbirth data include infants of 24 weeks gestation and above. As neonatal deaths only cover the first 28 days of life, data relating to infant deaths were considered so as to prevent exclusion of affected infants dying after this period. Causes of death specific to the neonatal period and coded within the dataset as due to "Intrauterine hypoxia" or "Birth asphyxia" were included for analysis. Analyses were undertaken both as time periods of one year and in 3 year rolling averages given the small number of infant deaths. The data are presented as numbers affected.

RESULTS:

A 24% reduction in the number of stillbirths was seen between the epochs 2002-04 and 2014-16 (mean 297 vs 225 per year). In the same periods, attributed neonatal deaths fell 46% from a mean of 8 per year to 4.3. A moderate correlation was identified (Pearson's correlation co-efficient 0.57). When yearly data was considered a co-efficient of 0.45 was calculated.

DISCUSSION:

It is important to recognise a correlation does not indicate causation and reduction in neonatal mortality attributed to Intrauterine hypoxia or birth asphyxia may be due to other causes. The data are submitted to NRS and reflect the cause of death identified by clinicians and coders. Differences in coding and an appropriate change in terminology away from "Birth Asphyxia" may be enough to skew the data.

CONCLUSION:

The numbers of stillbirths and neonatal deaths attributed to perinatal hypoxia have fallen in Scotland over the past 15 years and programmes to reduce the former may have contributed to reducing the latter. Further analysis of the number of infants with a diagnosis of Hypoxic Ischaemic Encephalopathy Grade 2 or 3 may give additional information regarding reduction in harm.

Keywords: Stillbirth, Neonatal Death

Abstracts of Poster Presentations

P-071

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Background

Evidence suggests that healthcare professionals often feel underprepared when dealing with aspects of family bereavement particularly those involving the death of a baby or infant. The need for openly accessible and engaging educational resources designed to support safe and person-centred conversations between professionals and families who are bereaved was identified.

Objectives

As part of an innovative toolkit designed by NHS Education for Scotland (NES) four short video based animations were proposed. These were directly aimed at helping healthcare staff support families before, during and after an intrauterine death, unsuccessful neonatal resuscitation, authorised (hospital) post mortem examination and the unexpected, unsuccessful resuscitation of an infant.

Methods

Four short, engaging and high quality animated films related to specific areas of communication were produced, following the identification of these topics as particularly challenging for healthcare staff. Each film was scripted and developed in a process of robust engagement with clinical staff and subject experts. Multiple rounds of review ensured content which was both clinically relevant and of high educational value. Accompanying written resources including handouts/ posters were designed to further enhance learner engagement.

Results

The films; Breaking the news of intrauterine death; Dealing with unsuccessful neonatal resuscitation, Discussing authorised (hospital) post mortem examination after stillbirth or neonatal death and Supporting families during the resuscitation of a baby or child, are all openly accessible (www.sad.scot.nhs.uk) on any device. They have received extremely positive feedback from UK/ international trainers/ trainees since their launch and they account for almost a quarter of the approximate 12,000 views that NES' bereavement-related animated films have gathered overall. The short length and scenario based focus of these animations enhances learning and relevance within already busy clinical and educational environments.

Conclusions

Use of video animation as a tool to support practitioners to enhance their communication skills in challenging death related situations is an innovative educational approach. Its versatile application as both a structured and independent learning resource makes it an ideal format to deliver training in a busy clinical environment.

Keywords: Bereavement, video, animation, educational, babies, infants

Abstracts of Poster Presentations

P-072

Innovation in Supporting Families Pregnant After Loss: The Subsequent Pregnancy Program in Ontario, Canada

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BACKGROUND TO ISSUE

Parents' experiences of pregnancy are profoundly altered by previous perinatal death, demonstrated by reports of anxiety, increased interactions with the healthcare system, and lack of trust in a good outcome. Families consistently report experiencing emotions such as fear, vulnerability, and worry, and desiring competent and sensitive obstetrical care, including timely access to a knowledgeable and skilled interprofessional team. There is growing evidence that existing pregnancy care models do not meet the needs of these families.

PROCESS OF DEVELOPING/IMPLEMENTING/EVALUATING INNOVATION/CHANGE

Originally started in response to a local gap identified by families who had difficulty finding adequate support and resources in a pregnancy after a late term loss or neonatal death, a tertiary centre's high risk obstetrical program in Ontario, Canada, offers an innovative model of care for this unique population. Based on a literature review, family feedback, and global collaboration, an innovative care model has been developed with the goal of providing expert clinical care with sensitivity and continuity. A strong focus was placed on family participation and individualized matching of resources and care options to provide comprehensive and seamless care through the childbearing year.

Some care options include:

- Timely access to care providers between scheduled visits with an individualized antenatal visit schedule
- Assistance with preparing birth plans
- Peer support through local community partner (Pregnancy and Infant Loss Network)
- Antenatal consultation with a lactation consultant
- Antenatal referral to public health and community supports
- Interprofessional care that prioritizes familiar care providers, including sonographers
- Mental health support
- Individualized education throughout pregnancy and the postpartum period

Ongoing feedback from the over 130 families who have been through the program indicates that families are satisfied with this new model of care and that best practices include identifying strategies that promote the strengths of families, system navigation, interprofessional collaboration, and prioritization of familiar care providers with knowledge of the pervasive impact of perinatal loss on families.

IMPLICATIONS FOR PRACTICE

Participants will be able to identify possible innovations that can be used in their own settings to best support families pregnant after loss, as strategies learned from this quality improvement project are adaptable to different practice locations and processes.

Keywords: Pregnancy, Stillbirth, Psychosocial Support, Subsequent Pregnancy, Pregnancy After Loss, Maternal Health

Abstracts of Poster Presentations

P-073

The Role of Sonographers in Supporting Families Pregnant After Loss: A Quality Improvement Project

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Objective

Parents' experiences of pregnancy are profoundly altered by previous perinatal death, demonstrated by reports of anxiety, increased interactions with the healthcare system, and lack of trust in a good outcome. Families consistently report experiencing emotions such as fear, vulnerability, and worry preceding and during the scan. As fetal growth measurements often play an important role in positive pregnancy outcomes and additional scans are common, sonographers play a crucial role in offering skilled and compassionate care to these families.

Methods

In response to a local gap in care identified by families in Ontario, Canada, the Subsequent Pregnancy Program was initiated to better offer expert care by knowledgeable care providers, including sonographers. Based on literature findings and family feedback, sonographers work as part of the interprofessional team to provide unique care options. Sonographers are given the family's history prior to performing the scan and families are given tools to advocate for their unique needs during ultrasounds. Team learning opportunities are provided and Program feedback is regularly reviewed.

Results

All families received additional ultrasounds in their pregnancies after loss. Feedback from families indicates satisfaction with certain care options, such as when they are scanned by the same sonographer who is skilled and caring, they can avoid repeating their history of loss, and explanations are given for delays. Suggestions for ongoing improvements include tailoring ultrasound to individual needs, starting the ultrasound scan by locating the fetal heartbeat, having a better system for identifying qualifying families, and prioritizing the same sonographer.

Conclusions

There is an urgent need to improve the ultrasound experience of families pregnant after loss. Sonographers have a major role in the provision of skilled, informed, and sensitive care. Innovation plays a key role in the provision of care, and strategies learned from this Quality Improvement Project are adaptable to different practice locations and processes.

Keywords: Pregnancy, Stillbirth, Pregnancy After Loss, Subsequent Pregnancy, Maternal Health, Interprofessional Care

Abstracts of Poster Presentations

P-074

Determining the Prevalence of, and Risk Factors for, Sudden and Unexplained Death in Childhood (SUDC) in Australia

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BACKGROUND: Sudden unexplained death in childhood (SUDC) is defined as death of a child over the age of 12 months which remains unexplained after a thorough case investigation. There is little information available regarding SUDC and the prevalence of SUDC in many countries including Australia remains unknown.

OBJECTIVE: To determine the prevalence of SUDC in Australian youngsters. In addition, we aimed to explore whether there were risk factors and vulnerabilities associated with children whose death was attributed to SUDC.

METHODS: Following ethics approval the National Coronial Information System (NCIS) Australia was used to access stored national data for all deaths of children aged 1 to 4 years of age over the period 2010 to 2014 inclusive. Cases were segregated into cases where 1) the cause of death was determined and 2) the child died suddenly and unexpectedly and the cause of death remained undetermined. The number of cases for each category was then compared to population data (Australia Bureau of Statistics) to determine the number of deaths per 100,000 children. Categorical information was extracted for each case to determine risk factors associated with cause of death. Differences were analysed using a student's unpaired t-test, and for multiple comparisons a one-way ANOVA. Data are presented as rates, percentages, means or means of means \pm 3 SEM; $p < 0.05$ was considered significant. Statistics and graphs were generated using GraphPad Prism7.

RESULTS: The overall rate of death in Australian children for whom coronial data was available on the NCIS and were aged 1 to 4 years from 2010 to 2014 was 9.69/100,000 children. A cause of death was determined in 87% of cases with the average rate of death in this group being 8.49/100,000. Death remained undetermined in 13% of cases; this included children with an associated illness such as epilepsy. The study determined that the SUDC rate in Australian children aged 1 to 4 years was 0.017/100,000 children. However, this rate may be as high as be 0.402/100,000 children should further investigation be undertaken. These children tended to be 18-20 months of age and male ($p < 0.05$ compared to females), with death occurring primarily while prone during a sleep period in cooler months, thus having similar characteristics to sudden infant death syndrome (SIDS) and those reported in other international SUDC studies. However, there is clear evidence that many forensic pathologists/medical examiners are preferentially using terms such as "undetermined" and "unascertained" as opposed to SUDC as many of the "potential SUDC" cases in this study are likely to fit the Krous definition of SUDC.

CONCLUSIONS: We believe that determining the SUDC rate and risk factors associated with potential SUDC deaths in Australia is the first step in trying to understand this devastating issue for Australian children.

Funding: We would like to acknowledge the gracious support of the Cooper Trewin Memorial SUDC Research Fund.

Keywords: SUDC, Australia, undetermined, prevalence, risk factors

Abstracts of Poster Presentations

P-075

The effect of Group Prenatal Care on birth outcomes in a resource poor setting: evidence from Bangladesh

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Background

Maternal and neonatal mortality still remain as a high public health concern in Bangladesh especially due to limited accessibility and poor knowledge. A need-based implementation is thus required to improve health outcomes. It is evident that group prenatal care (GPC) could improve birth outcomes that suit in developing countries. A GPC model has introduced in a resource poor setting in the context of Bangladesh.

Objective

The purpose of the study was to examine the impact of Group Prenatal Care (GPC) on birth outcomes compared to existing Traditional Care (TC)

Methods

The study was quasi-experimental in design and conducted in Chandpur district of Bangladesh. A total of 643 pregnant women aged 18-42 years with less than 20 weeks of gestational age were randomly assigned to either group. Women with other medical condition requiring special care were excluded. The intervention (GPC) group received group prenatal care while the control (TC) group received existing individual prenatal care as provided by the public facilities. Each group consisted of 6-10 women with same gestational age and they meet 4-6 sessions throughout the pregnancy period. Each sessions lasts for two hours and consists of delivering BCC materials and regular follow up of the participants including physical assessment. Structured interview was conducted within 24 hours and 2 months after delivery to collect data on pregnancy outcome.

Result

Mean (3SD) age of the mother was 23.19 (34.60) and 23.47 (34.42) for intervention and control group respectively. No significant difference was observed regarding age, education, occupation, household size and income between two groups. The prevalence of preterm birth (<37 weeks) for the women of group care was 14% (95% CI: 11%-19%) that was lower than traditional care mothers (19%, 95% CI: 15%-24%). Similarly, the prevalence of post term birth was 4% (95% CI: 3%-8%) for GPC which was less compared to TC mothers (7.9%, 95% CI: 5.4%-11.6%). The average birth weight of the newborn of mothers who received GPC was 3,041 grams and significantly higher than the control group (2,925 grams). The prevalence of low birth weight among the newborn for GPC mothers (8.6%) was lower than the TC mothers (12.5%). Furthermore, 64% of GPC mothers had reported that their newborn were exclusively breastfeeding which was significantly higher than the TC mothers (37%) after two months of delivery. However, no significant difference was observed regarding stillbirth (prevalence was approximately 1.8% for both groups).

Conclusion

The findings reveals that GPC has potential effect on reducing preterm birth, post-term birth and low-birth weight among newborn with increase breastfeeding rate. This innovative model is doable in resource poor setting which permits more time for provider-patient interaction. Large scale intervention including different geographical areas is recommended that might contribute to improve overall birth outcome nationally.

Keywords: GPC, TC, preterm, birth-weight

Company Profiles

Snuza

Snuza has been developing baby movement monitors, using leading edge bio-sensory technology, since 2007. Our monitors are aimed at monitoring a baby's breathing movement and alerting parents of any incidents where the breathing movement has stopped. Snuza is a young, innovative and dynamic company, and the first baby tech company to have successfully introduced a portable baby movement monitor and also the world's first portable baby breathing monitor. The Snuza team consists of motivated and dedicated individuals driving the development and distribution of baby monitors that speak for babies who are unable to at their most vulnerable moment - when they're alone in their crib and unable to breathe.



Charlie's Kids Foundation

Charlie's Kids Foundation is a U.S.-based nonprofit organization with the mission to provide safe sleep education to families to change infant sleep behaviors. This education is achieved primarily through the bulk distribution of a children's board book Sleep Baby Safe and Snug. This book was developed to provide timely and repetitive safe sleep messaging to parents of all literacy levels, using the guidelines as established by the American Academy of Pediatrics.

Since 2013, SBSS has been distributed to over two million newborns mostly in the United States by hospitals, health systems and state departments of health.



Child Bereavement UK

Child Bereavement UK is a national charity which supports families and educates professionals when a baby or child dies or is dying, or when a child is facing bereavement.

As well as working to develop new, and enhance existing, bereavement initiatives around the UK, Child Bereavement UK offers direct support at several locations nationwide, including Maryhill in Glasgow.

We were recently commissioned by NHS Greater Glasgow and Clyde, with funding from Glasgow Children's Hospital Charity, to provide bereavement support for families bereaved of a baby or child, as well as training to support NHS Greater Glasgow and Clyde staff.



Children's Hospices Across Scotland

We're Children's Hospices Across Scotland. But most people know us as CHAS. For over twenty years we've been offering a full family support service for babies, children and young people with life-shortening conditions. This includes palliative care, family respite and support - through our hospices, homecare services and hospital presence.



Company Profiles

Happiest Baby

Happiest Baby is a mission-driven company dedicated to helping parents succeed at their most important job – raising healthy, happy children. The company invented SNOO, the world's first smart infant sleeper, created by Dr. Harvey Karp (renowned pediatrician and author of *Happiest Baby on the Block*). SNOO improves sleep with responsive motion and white noise, adding 1-2+ hours sleep/night. Its unique design prevents rolling over, making SNOO the safest baby bed ever made!



River's Gift

For the family of a Sudden Infant Death Syndrome (SIDS) victim, the unexplained nature of the death is beyond heartbreaking. The unanswered questions exacerbate and prolong the grief.

River's Gift was established in November 2011 by two devastated, yet focused and determined parents who were searching for answers surrounding the sudden and unexpected death of their 4 month old son, River.

It has now evolved into a global movement, with thousands of supporters across the world and the formation of a dedicated research partnership that is committed to finding a cure.

River's Gift has raised just over \$1 million since it's foundation and has fast become Australia's leading source of SIDS research funding.

We are an Edinburgh based community charity, providing compassionate care for families, following the death of their baby, through specialist bereavement services, including befriending and counselling.



SANDS Lothians

When a family's baby dies, it is incredibly traumatic and extremely lonely time as parents struggle to find others who understand the confusing feelings and overwhelming emotions they experience. We have a range of services to support bereaved parents through this by phone, email, 1-2-1 and group befriending, as well as counselling. We are the only charity in Edinburgh specialising in baby bereavement counselling and all our services are free and open ended.



Sands (Stillbirth and Neonatal Death Society)

Sands is the stillbirth and neonatal death charity. We operate throughout the UK focusing on three key areas; supporting anyone affected by the death of a baby; working in partnership with health professionals to try to ensure that bereaved parents and families receive the best possible care and; promoting and funding research that could help to reduce the loss of babies' lives.



Company Profiles

SiMBA

“SiMBA is here to support anyone who has been affected by the loss of a baby during pregnancy or close to the time of birth. We gift 3 sizes of Memory Boxes, each catering for a specific gestational loss - under 14 weeks, 14-24 weeks and 24 weeks into the neonatal period. To date SiMBA has donated over 16,500 Memory Boxes to 231 hospital units across the UK and Ireland. We refurbish Family Rooms in hospitals and provide vital equipment for them. We offer free advanced Bereavement and Palliative care study days and drop in training days for hospital staff and students. We also run monthly support groups, offer 24 hour on-line support and instal life-sized copper Trees of Tranquillity, where each leaf represents a baby who has died.”



Smallprint

In 2004 Maija Pykett became the originator of the fingerprint jewellery concept - a range of silver keepsakes capturing a loved one's fingerprint in silver forever. In this brief Q&A, find out a bit more about Smallprint - the world's premier silver keepsake company - and how it got started.



Scottish Cot Death Trust

A baby dies every nine days of cot death in Scotland and the majority of families will never know why their healthy baby has died, for no apparent reason. The Scottish Cot Death Trust is the only dedicated cot death charity in Scotland trying to find the answers through funding research. The Scottish Cot Death Trust provides a bespoke range of services for bereaved families including one-to-one support with a dedicated bereavement support worker, who will visit them at home and keep in regular contact, one-to-one peer support (befriending), counselling and an online peer support group. We support parents and close family members, with a grandparents online support group and one-to-one befriending available too. Grandparents can also access counselling if they require it. Sibling support is important to us, and we have a beautiful sibling support book, Rory's Star for them, When children need extra support we will either refer them to one of our play therapists or work with other specialist services to support them.



Scottish Stillbirth and Bereavement Group

Scottish Government is the devolved government for Scotland: responsibilities range from education to rural affairs. The Improving Health and Wellbeing division, as part of the Children and Families Directorate, is responsible for improving the health and wellbeing of children in Scotland. Maternal and Infant Health is a key area for the Division. The Scottish Government led expert Stillbirth Group continues to look at ways to help Health Boards reduce stillbirth and improve bereavement care, with particular focus on improvement measures. The Maternity and Children Quality Improvement Collaborative (MCQIC) aims to reduce serious harm incidents across maternity, neonatal and paediatric care.

