

Current Stillbirth Classifications

Vicki Flenady, Frederik Froen, Adrian Charles, Halit Pinar



Purpose of this study

To describe the characteristics of current classification systems for stillbirths to inform the development of an internationally acceptable stillbirth classification.

Why classify?

The aim of any classification must be to derive strategies to understand the reasons for, and ultimately prevent perinatal mortality.

Keeling et al 1989

Specific purposes of stillbirth classification

- **Counselling parents: alleviate anxiety – “what went wrong”, future pregnancies**
- **Education: training and practice improvement**
- **Epidemiology: identification of groups for closer investigation; and ongoing monitoring**
- **Public health: policy development prevention, health service utilisation**
- **Research: finding the answers to reduce the risk**

Jonathan Wigglesworth on ascertaining the main cause of death

“The basic problem in the classification of perinatal deaths is the complexity of the clinical situation within which the fetus (...) dies.”

What makes a good classification?

Classification Criteria by De Galan-Roosen

- Ease of use by clinicians and perinatal pathologists with uniform definitions;
- Ease of expansion in terms of sub classification;
- Good level of agreement (low inter-observer variability);
- Based on clinical factors and autopsy findings including histology of the placenta;
- Explain the underlying cause of death;
- Suitable in stillbirth as well as neonatal death;
- Result in a high percentage of classifiable cases and a low percentage of unexplained cases

One more: ABILITY TO RETAIN ALL IDENTIFIED SIGNIFICANT INFORMATION ABOUT THE DEATH

Methods

Systematic literature search

Sources:

Electronic databases and expert informants.
English language.

Inclusion criteria: Unique classifications systems to determine causes of stillbirth (+/- neonatal)

Published cohorts occurring 1996 onwards

Exclusions: “informal” groupings of deaths, minor modifications of existing classifications

Results

Potentially eligible for inclusion: 11

Excluded: 7

- *Revisions of included systems - 2*
- *Cohorts <1996 - 4*

Included studies: 5

Current classifications

Classification	Country	Population	Factors
Amended Aberdeen (1969)	UK	SB, NND	Maternal, fetal
Extended Wigglesworth (1986)	UK	SB, NND	Maternal, fetal
PSANZ-PDC (2004)	Australia	SB (20wks), NND	Maternal, fetal, limited placental pathology
ReCode (2005)	UK	SB	Maternal, fetal, some placental pathology
Tulip (2006)	Netherlands	SB (16wks), NND, PNND*	Maternal, fetal, some placental pathology

Aberdeen	To identify the factor that probably initiated the train of events leading to the death for the purpose of prevention.
Wigglesworth	To identify the cause of perinatal death to improve understanding for the purposes of prevention.
PSANZ	To identify the factor that initiated the sequence of events leading to the death – for the purposes of prevention.
ReCode	To identify the relevant condition at the time of death. “What went wrong ,not necessarily why”. For teaching, counselling, public health policy.
Tulip	To identify the underlying cause and mechanism of death for the purpose of counselling and prevention.

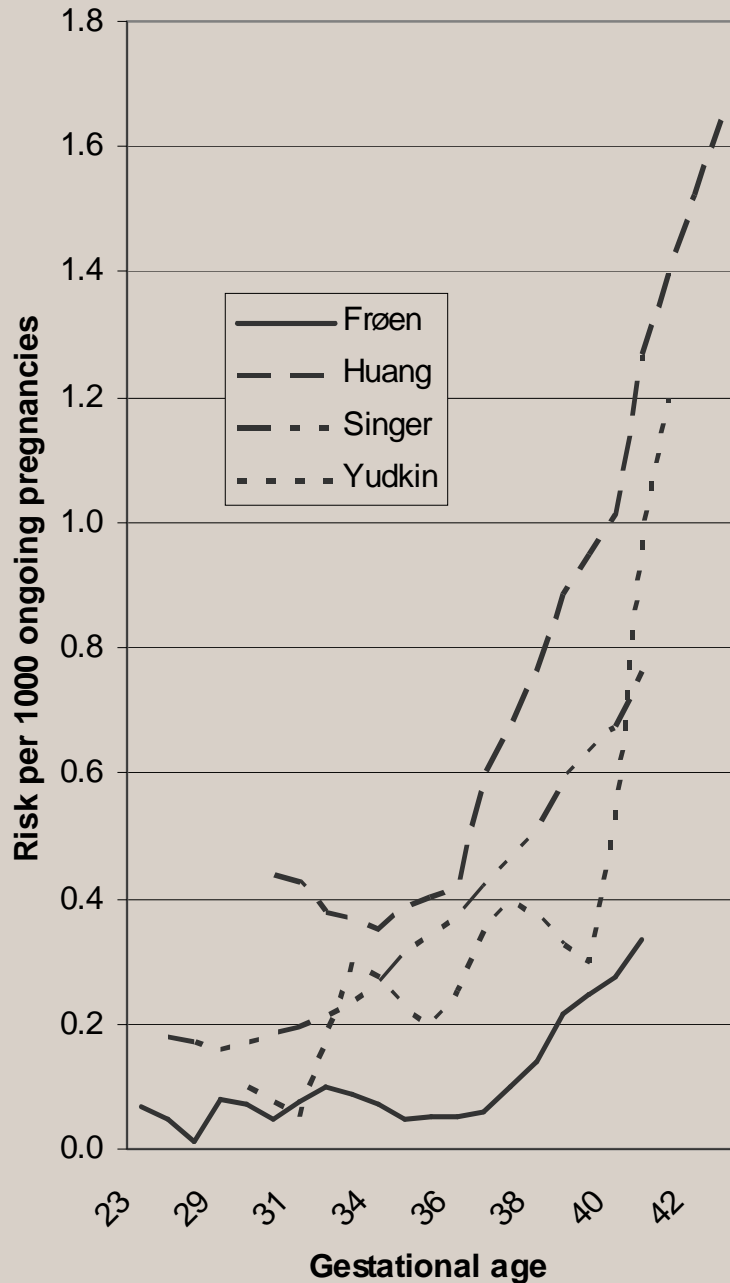
User friendliness and validity....

	Categories Major -Total	Hierarchy	Definitions Guides	Agreement
Aberdeen	8 - 22	Yes	No/Minimal	Good
Wigglesw.	9-3	Yes	No/Minimal	Fair
PSANZ	11-118	Mostly	Yes	Excellent
ReCode	37-39	Yes	Minimal	?
Tulip	6-42	“Not strictly”	Yes	Excellent

Includes categories for

	FGR	Unexplained AP death	Unclassifiable	Assoc. Cond.	IP death
Aberdeen	No	Partially includes, IP deaths, NND	Yes	No	No
Wigglesw.	No	Yes	Yes ("last resort")	No	Yes
PSANZ	Yes	Yes	Partially	Yes	Yes
ReCode	Yes	Yes	Yes	Yes	Yes
Tulip	No	Partially includes NND	Yes	No	No

Risk for unexplained stillbirth



Risk factors for unexplained stillbirth

Late gestation

Overweight / obesity (OR 2.5)

Maternal Age 35+ (OR 3-5)

Smokers

Low edu./ socioeconomic status

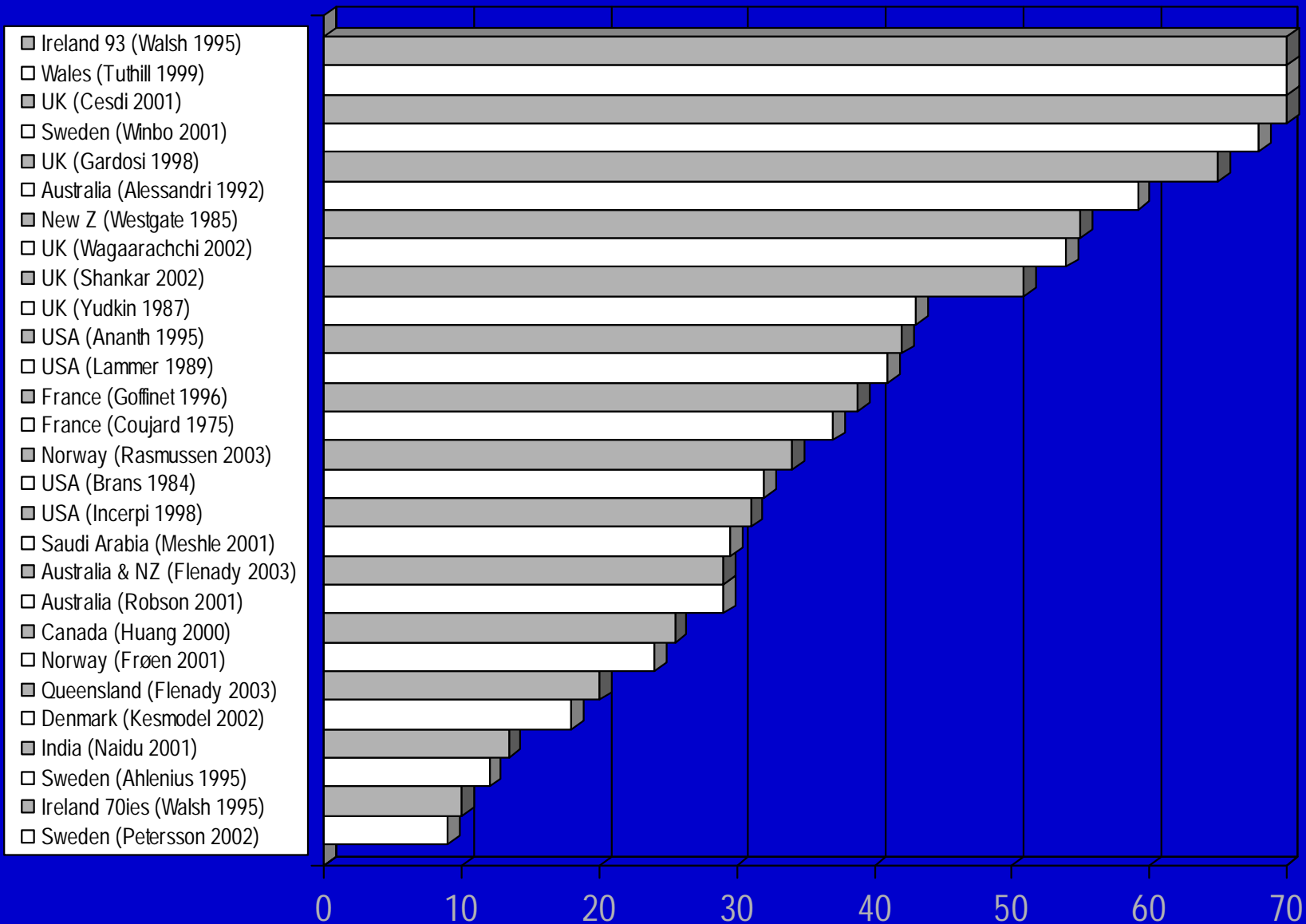
Multiparity
(OR 3-5)

Intrauterine growth restriction
(OR 3)

Reduced fetal movements

Potentially Preventable

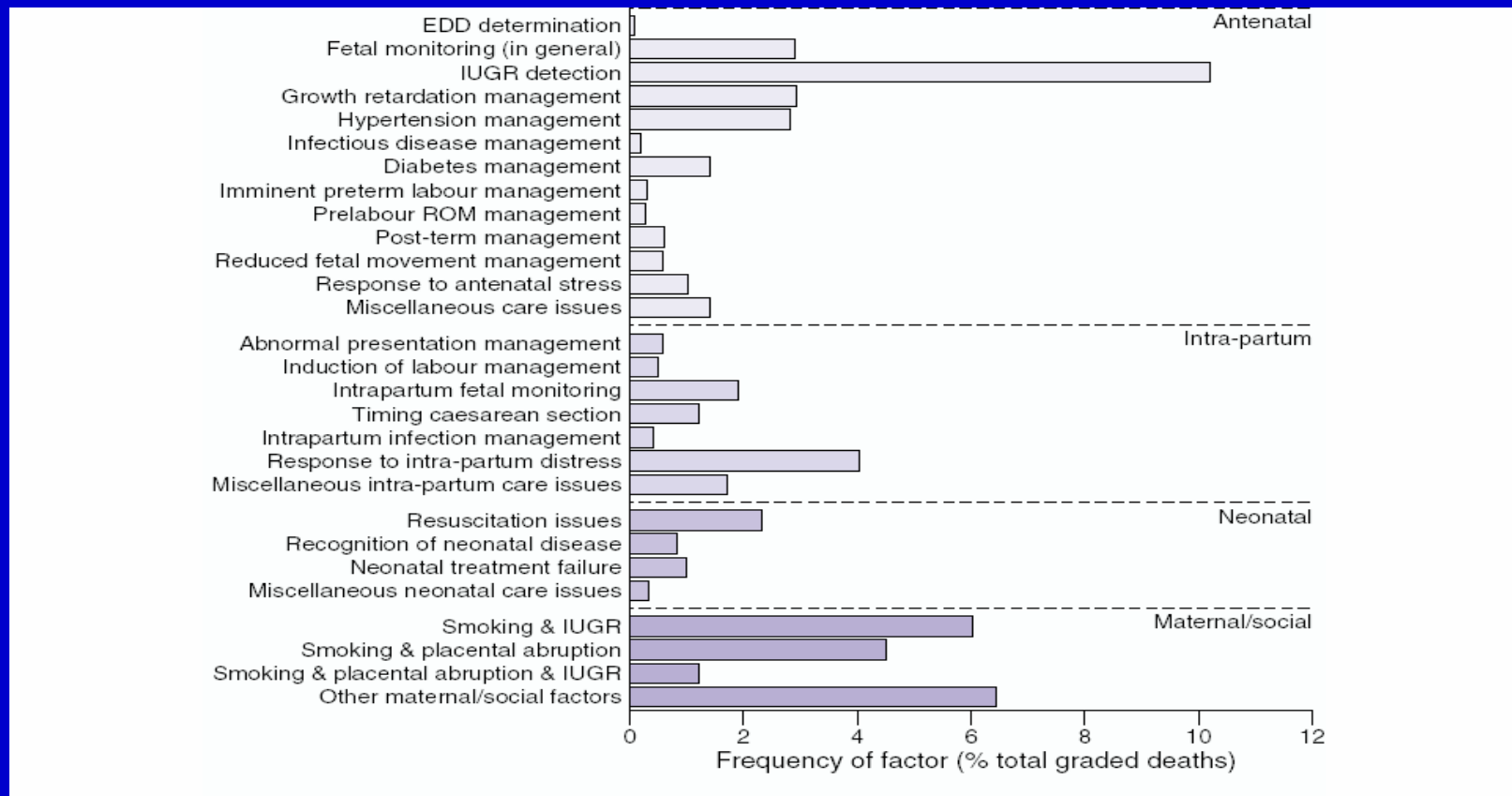
Unexplained: proportion of stillbirths



Main categories of stillbirths

	Unexplained SB %	CA %	Spont. Preterm %	APH %	FGR %	Total major
Aberdeen (CESDI)	50	12		12		74
Wiggles. (CESDI)	70	13				80
PSANZ	28	20	10		8	64
ReCode	15	15			43	73
Tulip	na	na		na		na

Sub optimal care: EuroNatal study



See you at the round table!

Thank you

