

Global Maternal and Perinatal Research: the next 25 years

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The same evidence of effectiveness and safety should be required for both drugs and non-drugs forms of care including health policies and service administration

- **Summarising evidence**
- **Generating evidence**
 - **Research priorities**
 - **Outcomes**
- **Utilisation of research**

Summarising evidence: the future of literature review

Systematic reviews of **trials**: challenging issues

- **up-dating**
- **Heterogeneity - to pool or not to pool?**
- **publication bias**
- **combining individual and cluster
randomisation trials**
- **meta-analysis of small trials: over
optimistic ?**

Systematic reviews **beyond trials!**

Incidence/prevalence

WHO systematic review,
maternal morbidity
(completed 2003)

Effectiveness of screening

WHO systematic review,
screening for pre- eclampsia
(completed 2004)

Pathophysiology/aetiology

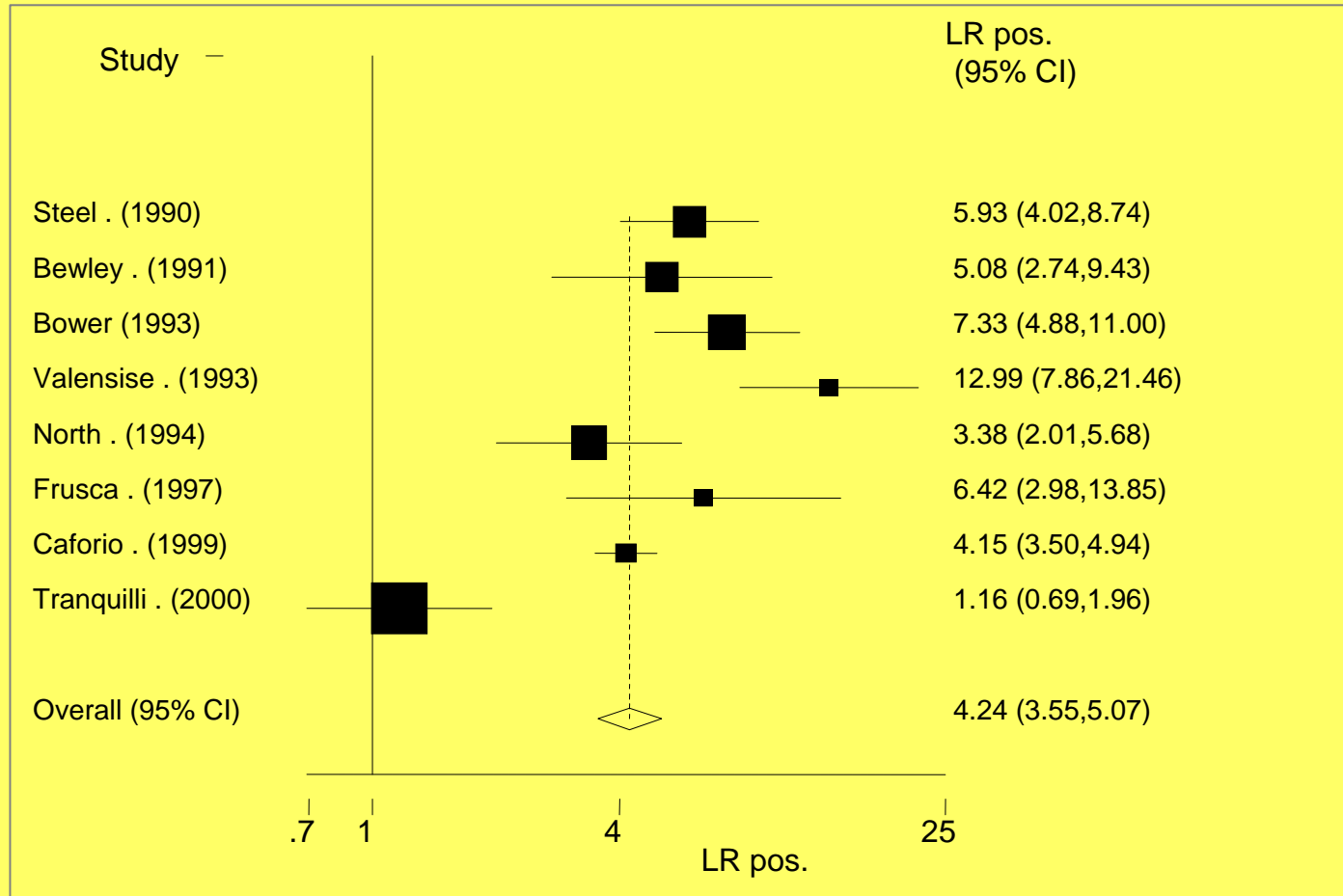
WHO systematic review of
aetiology of pre-eclampsia :
1) Homocysteine in pre- eclampsia
(completed 2004)

WHO systematic review of screening for preeclampsia , 2003

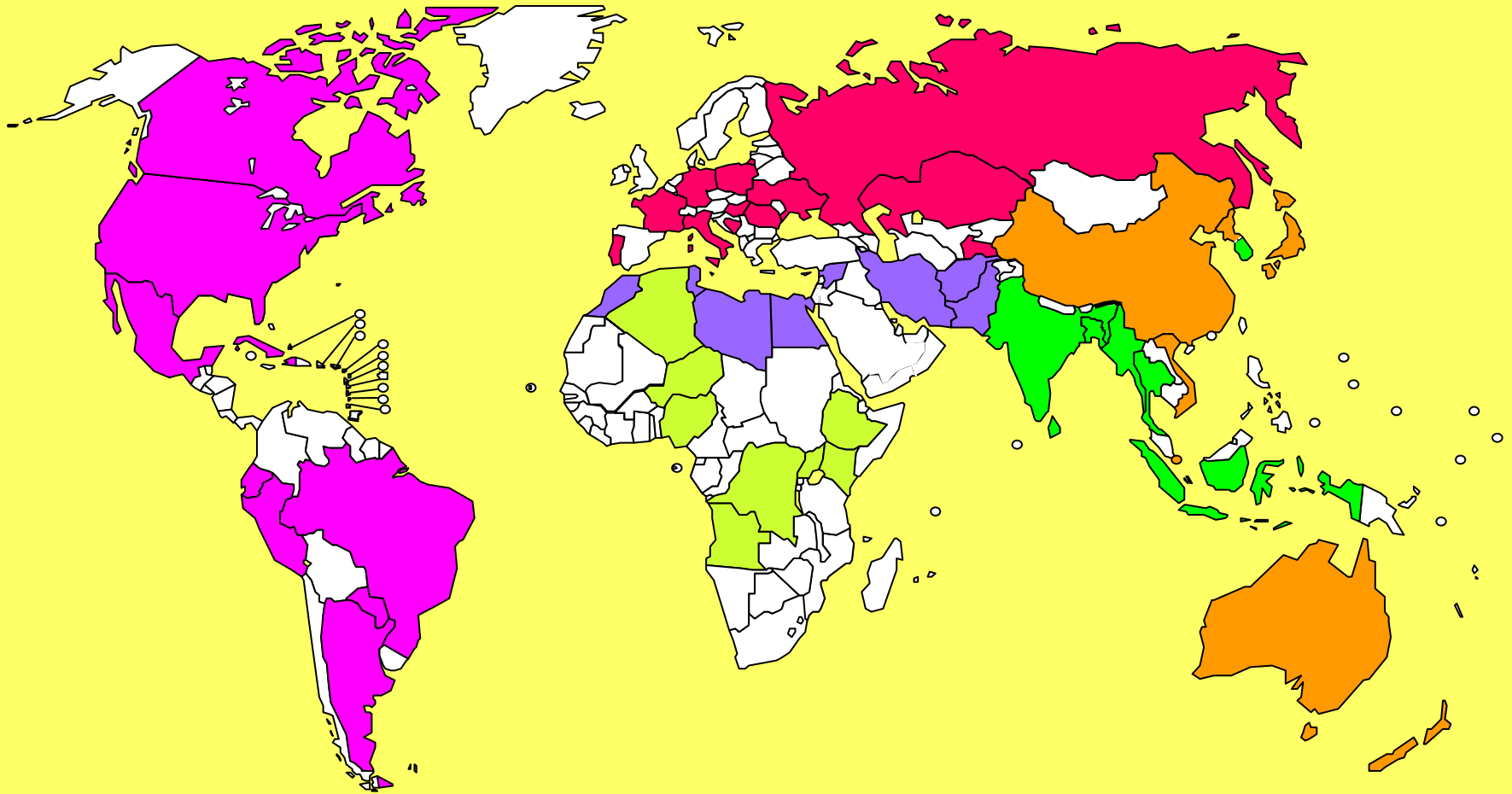
- Reports from electronic search 7191
- Detailed evaluation 214
- Included in data set 88

WHO systematic review of screening for pre-eclampsia

Abnormal waveform ratio in low-risk women



We still need large, focused epidemiological studies : the WHO 500,000 women survey of mode of delivery



GENERATING EVIDENCE

Knowledge Available For Pregnancy-specific Conditions

	ETIOLOGY	PRIMARY PREVENTION	TREATMENT	EMERGENCY
Pre-eclampsia and Eclampsia	No	No	some	Yes
Preterm delivery	No	No	No	Yes
PROM	No	No	No	Yes
Miscarriage	Some	No	No	Yes
Postpartum haemorrhage	some	~ 4% > 1,000 ml	Yes	Yes
IUGR	some	No	No	Yes
Postpartum depression	No	No	Yes ?	Yes
Obstructed labour	Yes ?	Yes ?	Yes	Yes
Rh (-) Isoimmunization	Yes	Yes	Yes	Yes

The molecular and genetic
revolution should
provide the basis for new
preventive
and therapeutic strategies.....

Global Program to Conquer Preeclampsia / Eclampsia



From basic science to implementation



The Global Preeclampsia / Eclampsia Collaboration and
Department of Reproductive Health and Research, World Health Organization
2002

British Journal of Obstetrics and Gynaecology
December 1998, Vol. 105, pp. 1244–1247

Randomised trials in maternal and perinatal medicine: global partnerships are the way forward

Recent Multicentre Trials and Follow-ups

	<i>CENTRES</i>	<i>PARTICIPANTS</i>	<i>STATUS</i>
Antenatal care	5	24,678	Published
Prevention Postpartum Haemorrhage	9	18,530	Published
Treatment preeclampsia (Magpie Trial)	28	10,141	Published
Reduction of unnecessary caesarean section	5	149,206	In press
Evaluation of Reproductive Health Library	2	76,053	Completed
Primary prevention of preeclampsia (calcium)	7	8400	Completed
Primary prevention of preeclampsia (antioxidants)	4	3,500	On going
Secondary prevention of preeclampsia (treatment moderate hypertension)	6	1,600	In preparation
Treatment of postpartum haemorrhage	4	1,000	In preparation
Screening and treatment asymptomatic bacteriuria	4	18,000	On going

First, Do the Trials Then, Do No Harm

By David Brown

Sunday, August 4, 2002;
Page B01, The Washington
Post

O N L I N E

What are the research
priorities?

Estimated pre-eclampsia and eclampsia cases per year

	Developing countries (n=179)	Industrialised countries (n=44)
Births/year*	118 766 000	13 227 000
Incidence of pre-eclampsia (range %)	1.3 – 6.7	0.4 – 2.8
Estimated N of pre-eclampsia /year	1 543 958 – 7 957 322	52 908 – 370 356
Incidence of eclampsia among women with pre-eclampsia** (%)	2.3	0.8
Estimated N of eclampsia /year	35 511 – 183 018	423 – 2963

* Source:World Population Prospects: 2000 Revision

** Magpie Trial, 2002

Obstetric morbidities in the South East Thames Region (48,865 deliveries)

- **Severe obstetric morbidity 1.2%**
- **Severe haemorrhage 0.8%**
- **Severe preeclampsia ,
sepsis, uterine rupture 0.4%**

Intrauterine growth retardation in developing countries, 2000

Indicator	Rate (%) (*)	number of newborns / year (2000)**
LBW <2500 g; all gestational age)	16.4 (5.8-28.3)	19,477,000
IUGR (<10 th percentile all gestational age)	23.8 (9.4-54.2)	28,266,000

* Adapted from de Onis M, Blössner M, Villar J. EJCN; 1998

** UN World Population Prospects; 1995-2000

Population based Perinatal mortality according to birth weight percentile: Chile, all 262681 deliveries in 1999

Gestational age (weeks)	<p5	<p10	p10-90	Ratio <p10 / p10-90
22-25	1000	1000	679	1.5
26-29	616	519	288	1.8
30-33	372	357	116	3.1
34-36	168	128	30	4.3
37-40	19	12	2	6.0
41-43	14	10	2	5.0
Total	110	62	3	20.7

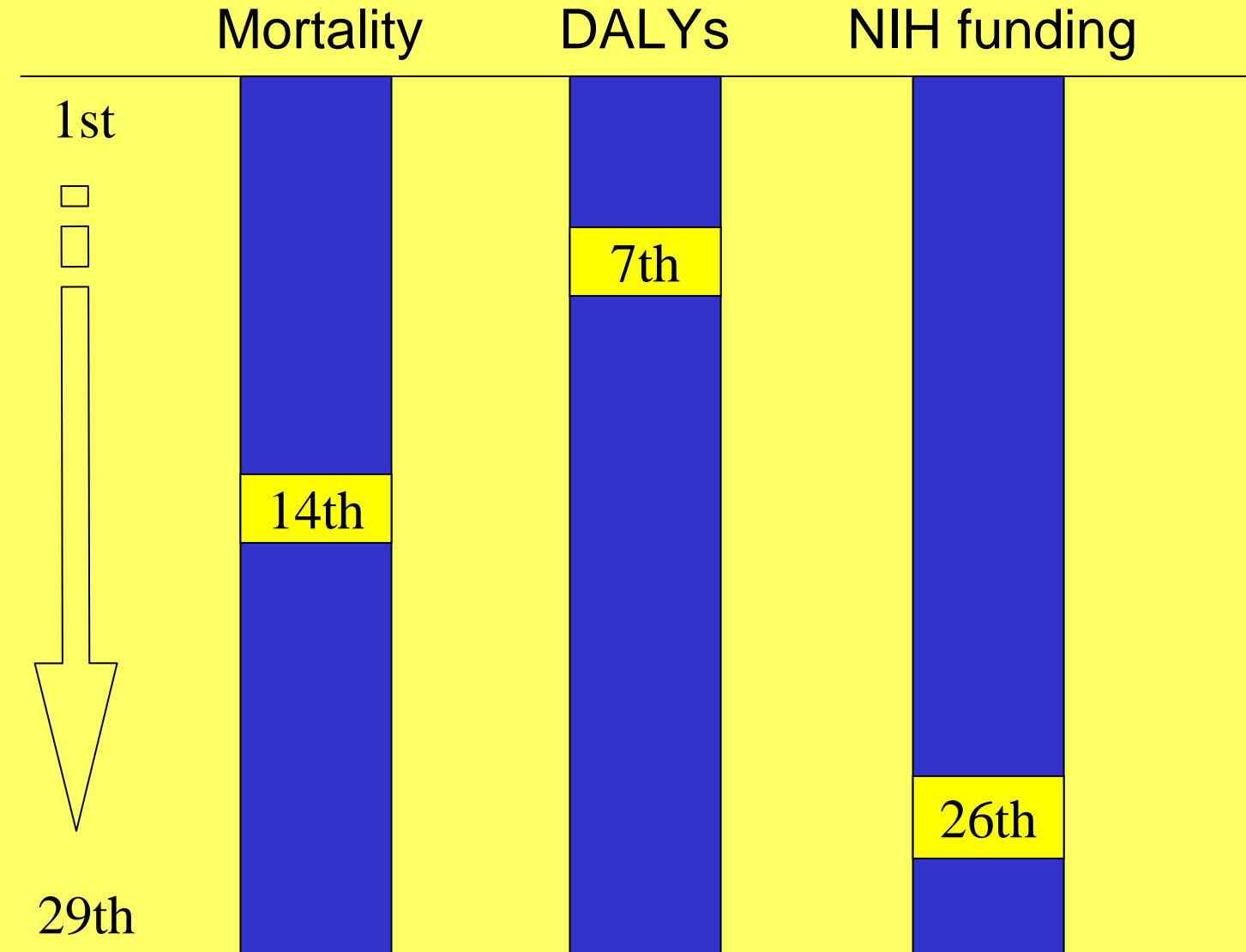
Gonzalez R. personal communication (2003)

Pregnancy and Childbirth Trials in the *Cochrane Library*, 2000 *according to primary outcome*

	N = 9014	%
P.P.Haemorrhage	45	0.5
Pre-eclampsia	156	1.7
IUGR/SGA	111	1.2



Ranking of maternal and perinatal conditions among 29 medical conditions

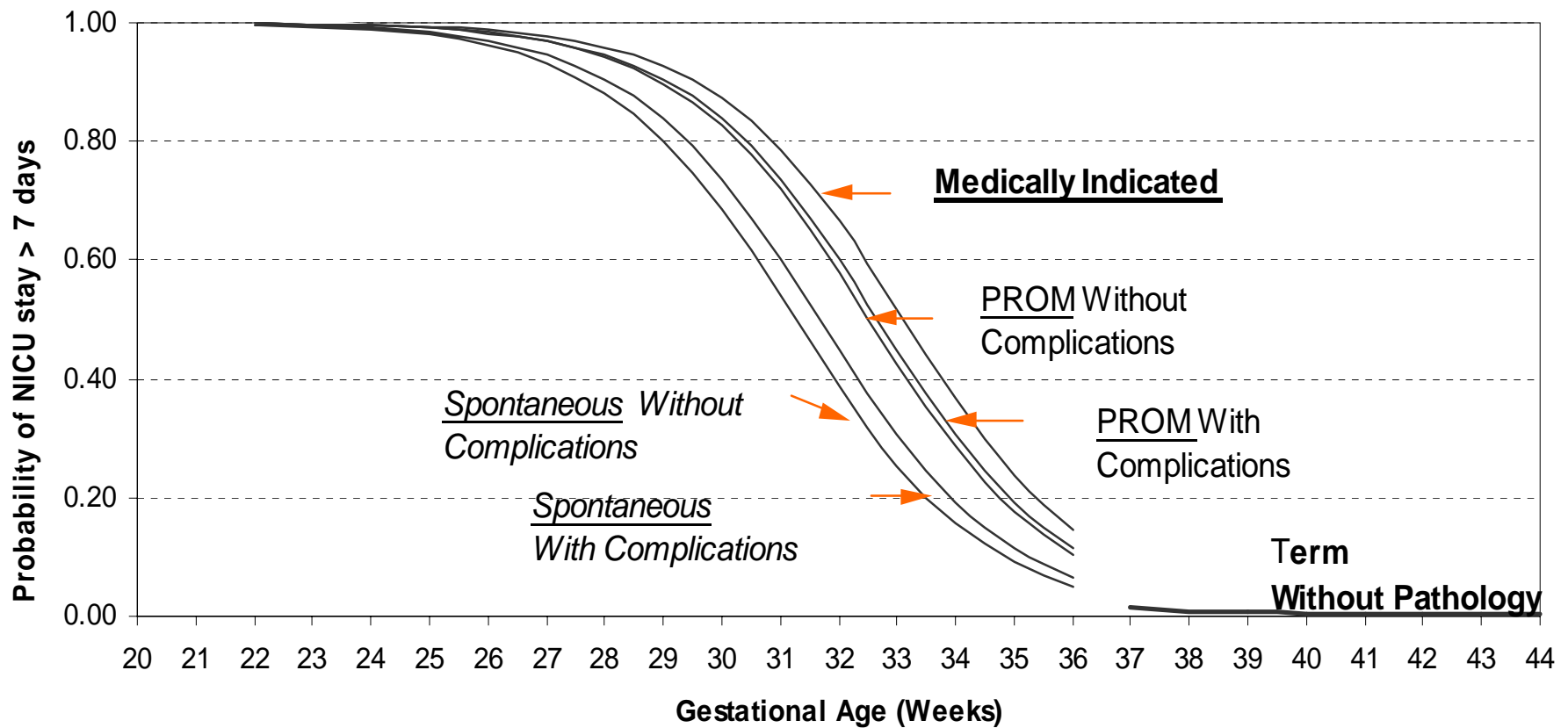


Emerging topics

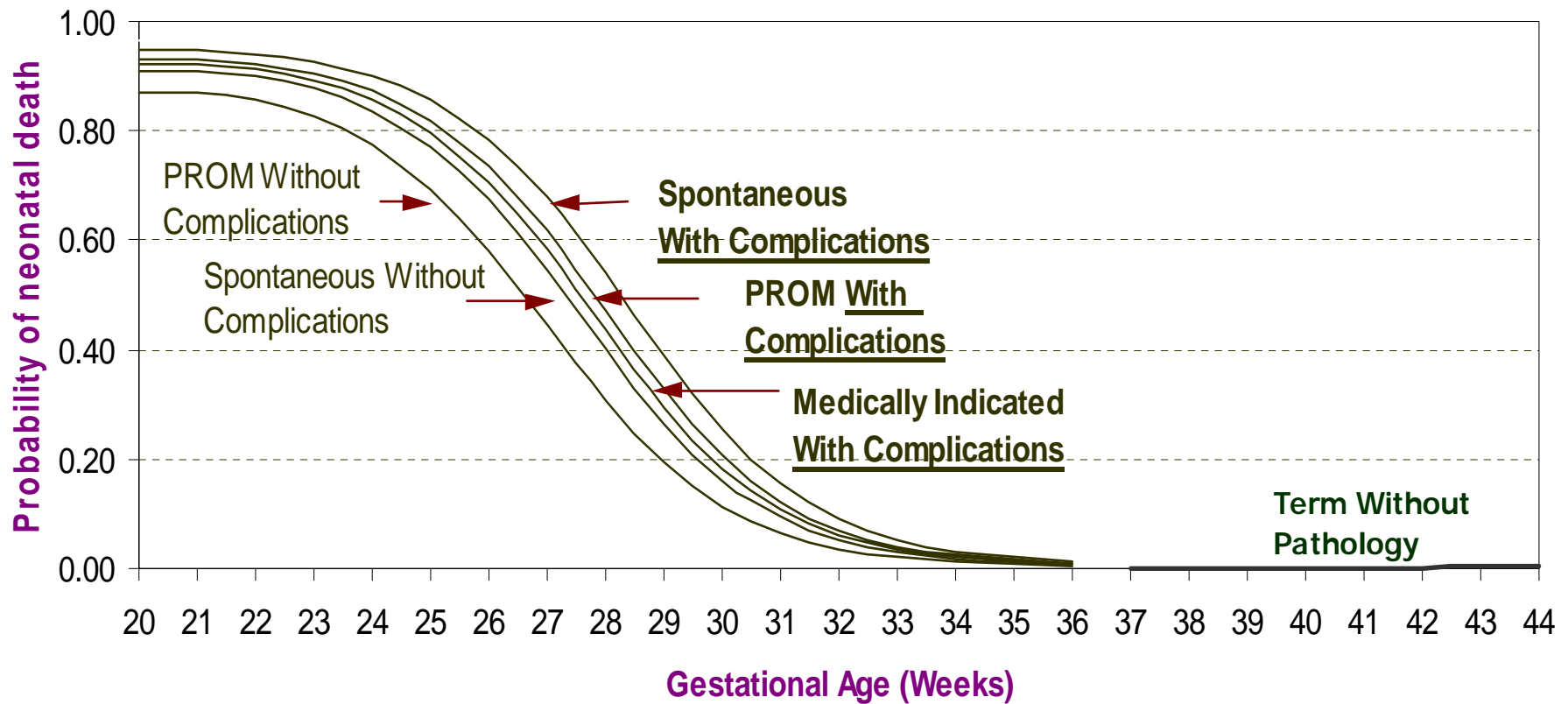
- After the evidences , ...the quality of care
- Personal choices : cloning
- Demographic changes : a new baby boom?
- Migrations and high risk pregnancies
- Caesarean sections for all deliveries ?

What are the most
appropriate outcomes ?

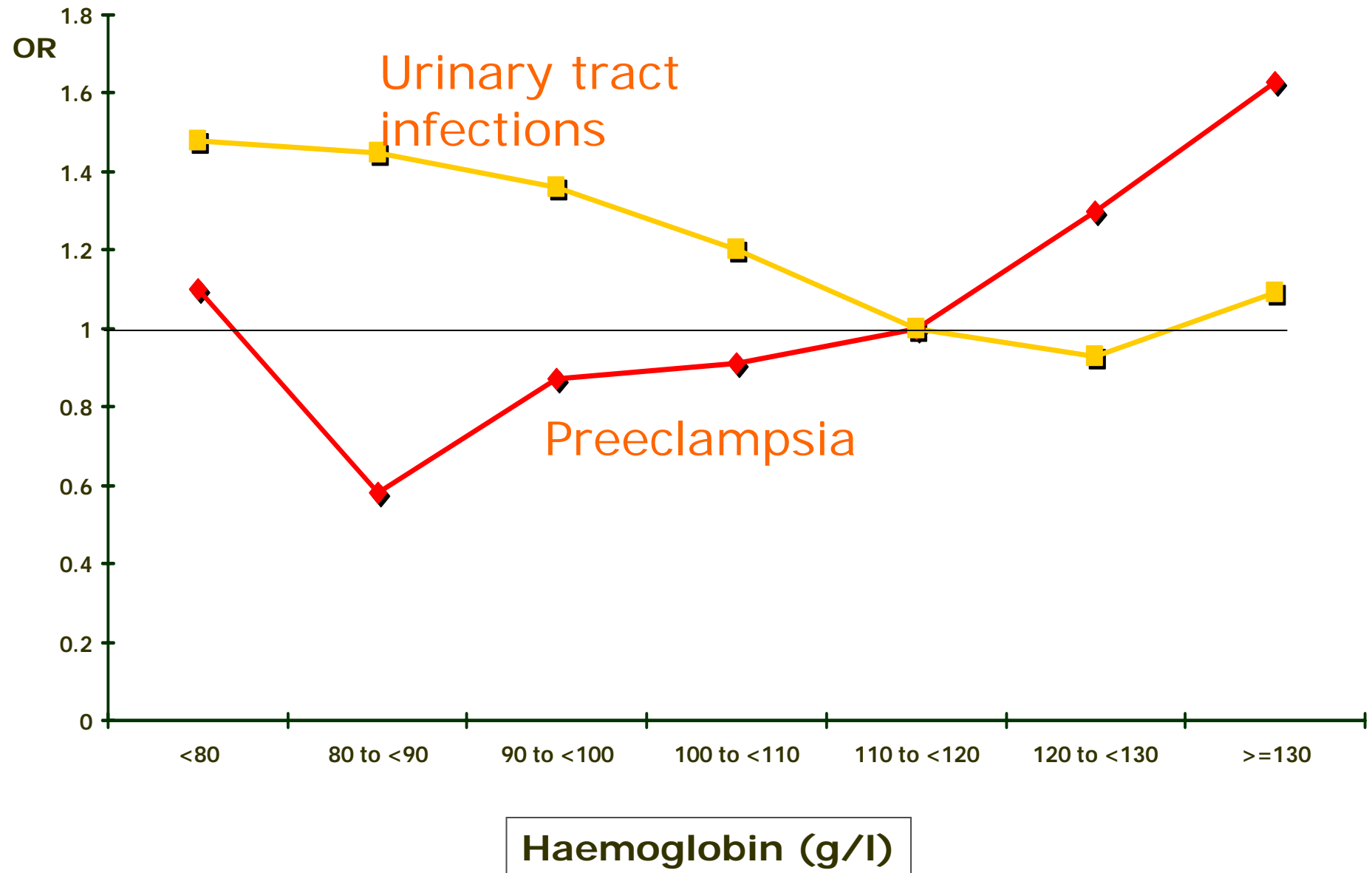
Probability of NICU stay >7 days by preterm delivery subgroups



Probability of neonatal death by preterm delivery subgroups



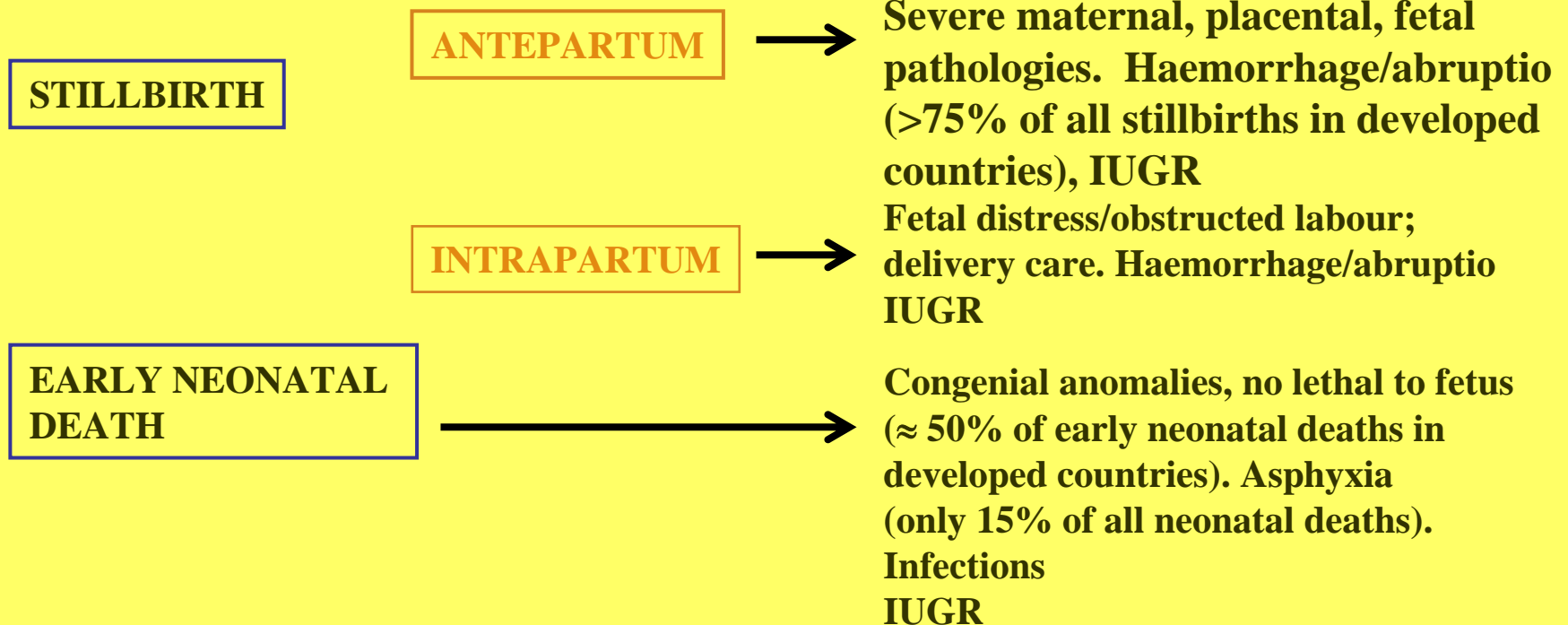
Pregnancy outcomes according to Hb values



Aetiological differences in perinatal mortality

Outcome

Aetiological factors



Major pregnancy and perinatal entities are heterogeneous

- **Preeclampsia /eclampsia**
 - **IUGR**
 - **Preterm delivery**
 - **PROM**
-
- **Stillbirth**
 - **Perinatal mortality**
 - **Maternal Mortality**

Identifying better continuous medical education and research utilisation strategies



Cartoon published in Latin America