

Modifiable intrapartum factors - their impact on Caesarean birth

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Objectives

1. To present the evidence on factors that influence the need for Caesarean section
2. To present the modifiable factors based on the evidence
 - active management
 - hospital admission
 - pain management ...
3. To present possible provincial strategies to modify the effect of these on the Caesarean section rate

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Factors that influence the need for Caesarean section

- Labour physiology 101
 - The powers
 - The passage
 - The passenger

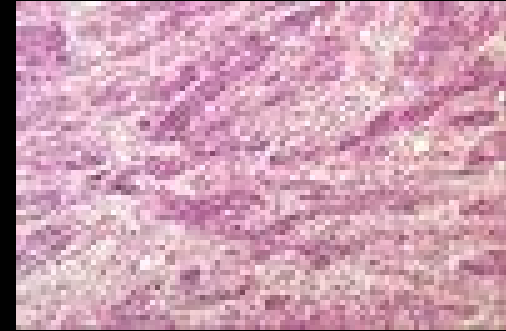
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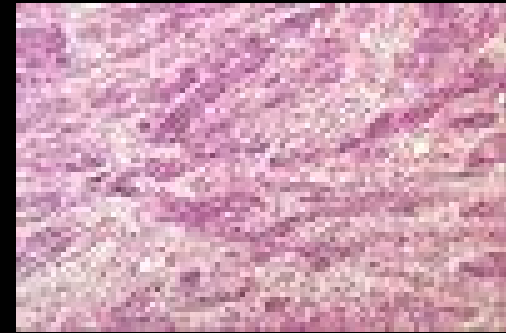
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 - Smooth muscle with gap junctions
 - Number of gap junctions increased by
 - oestrogens
 - PGE₂
 - oxytocin
 - Functional syncytium
 - neural co-ordination of contractions improved by head-to-cervix pressure
- **Expulsive efforts**
 - Potential implications for regional blocks

The powers



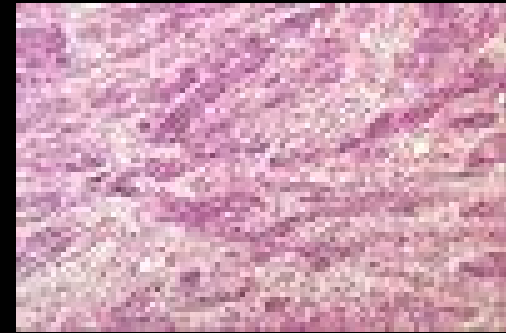
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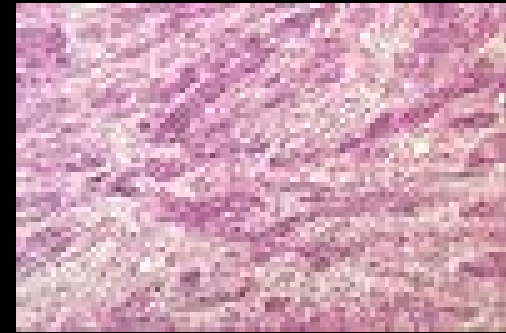
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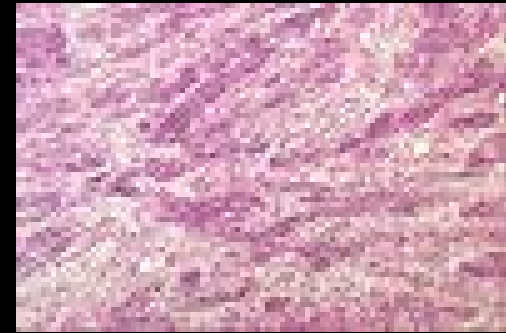
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The passage

- **CBTF Report, p19**
 - “Dystocia was the most common primary indication for Caesarean section in BC”
- **What is the veracity of that statement in the absence of active management of labour with 1:1 care?**
- **Ricketts, for example, is no longer a significant health issue in the Developed World**

Dystocia

- **Functional**
 - **Unripe cervix**
 - the risks of accelerating the latent phase of labour
 - the risks of IOL
- **Real**
 - **Increasing maternal BMI**
 - **Increasing fetal weight ('passenger')**

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The passenger(s)

- Malpresentation
- Malposition
 - have these rates changed?
- Multiples
- Macrosomia
- IUGR

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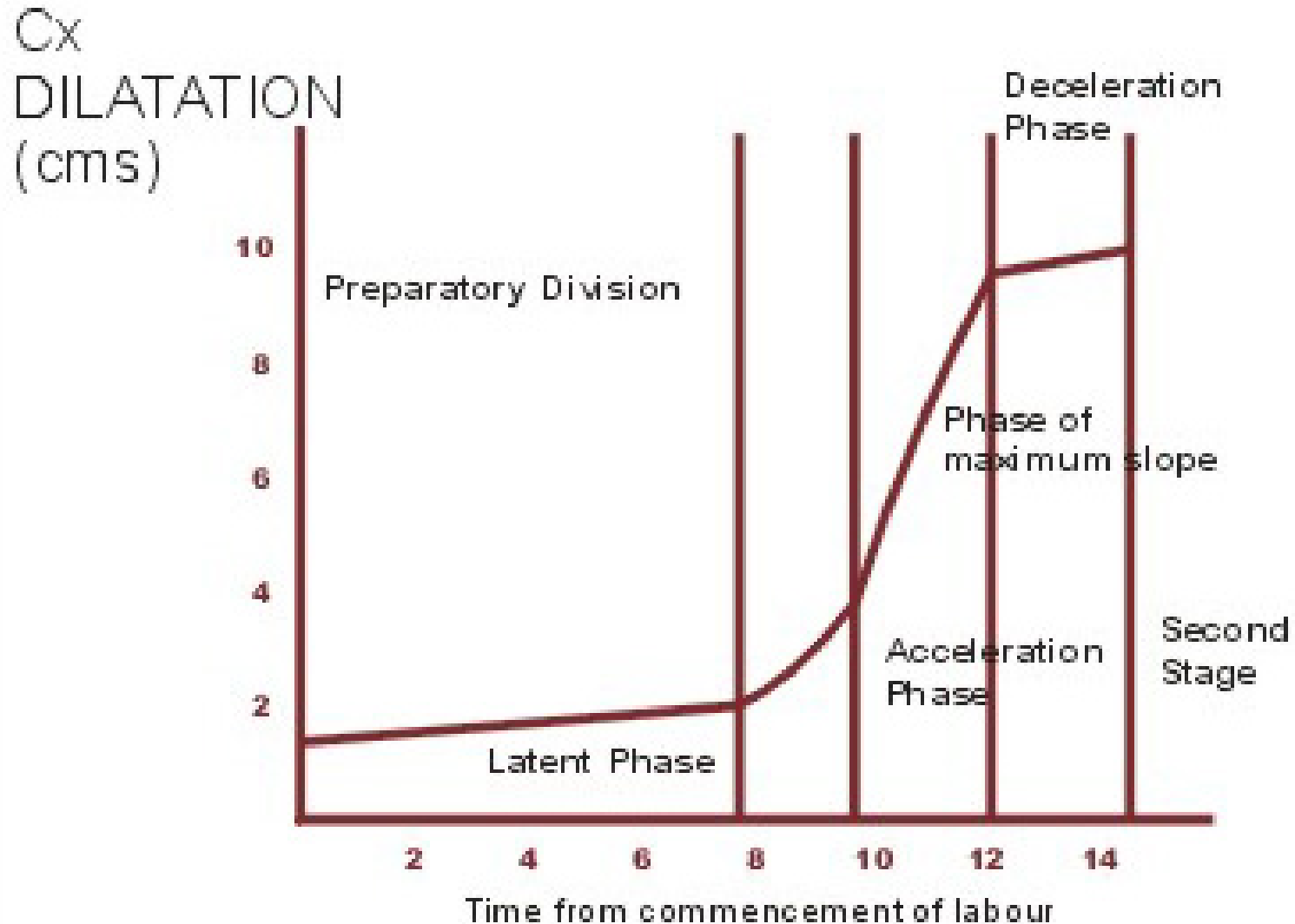
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Patterns of labour



Friedman's curve showing phase of maximum slope

Abnormal patterns of labour

- **Prolonged latent phase**
 - 6h in primigravidae
 - 4h in multigravidae
- **Primary dysfunctional labour**
 - a) **Protracted Active-Phase Dilatation**
 - Active phase progress at <1 cm/h before normal active slope has been established
 - b) **Prolonged Deceleration Phase**
 - Progress ≤ 1 cm/3h
- **Secondary arrest**
 - Cervical dilatation ceases after a portion of active-phase dilatation
 - Minimum of 2h of arrest is needed before diagnosis is confirmed
- **Precipitate labour**
 - Maximum slope of dilatation ≥ 5 cm/h

The partogram - 1

PRIMIGRAVID LABOUR RECORD

Name

Time of Admission Date

Pains Show Ruptured Membranes

DELIVERED

FULL 10 cm

9 cm

8 cm

D
I
L
A
T
I
O
N
O
F
C
E
R
V
I
X

7 cm

6 cm

5 cm

4 cm

3 cm

2 cm

1 cm

UNEFFACED

0 1 2 3 4 5 6 7 8 9 10 11 12

HOURS AFTER ADMISSION

F
E
T
A
L

160

150

140

H
E
A
R
T

130

120

110

100

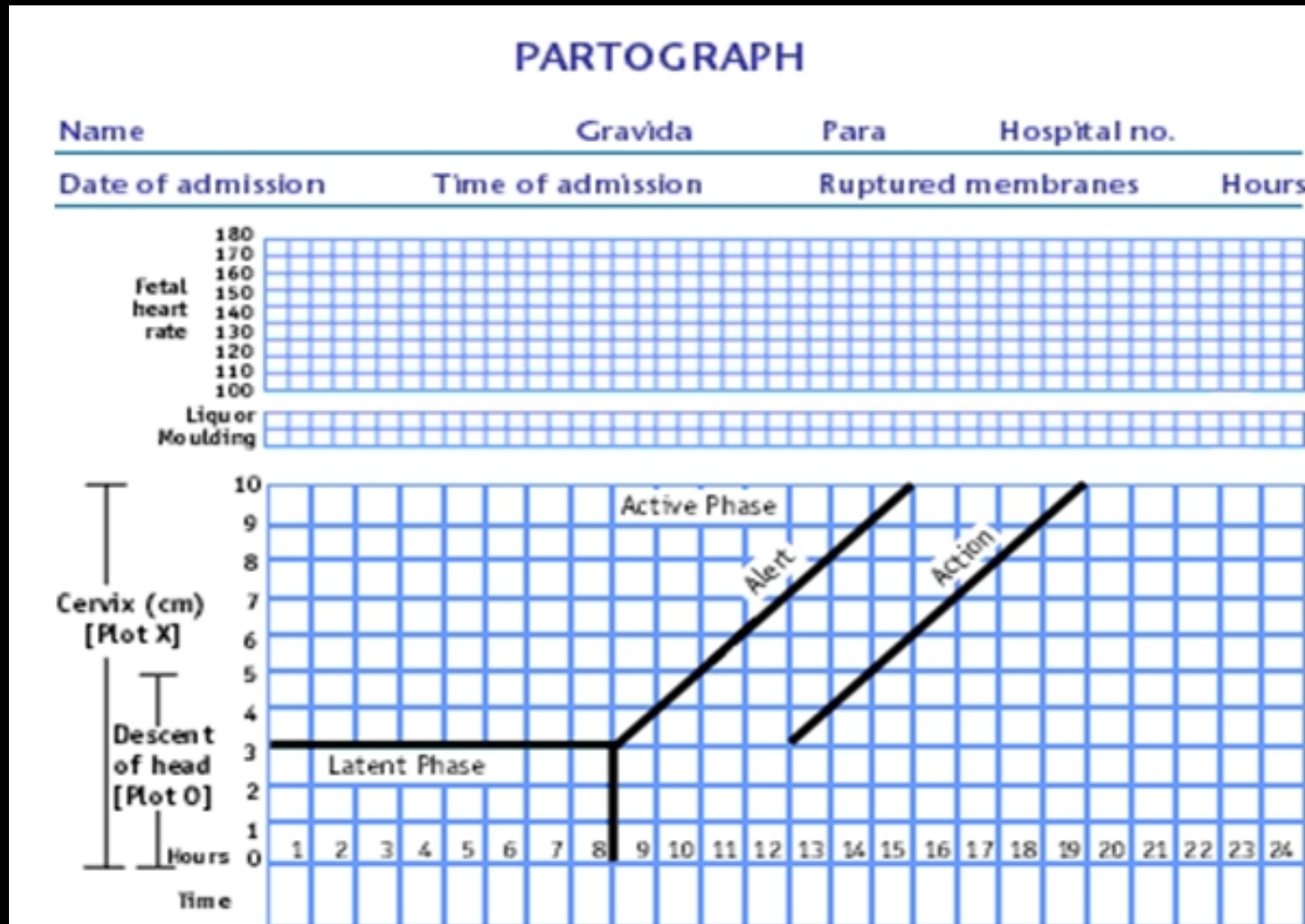
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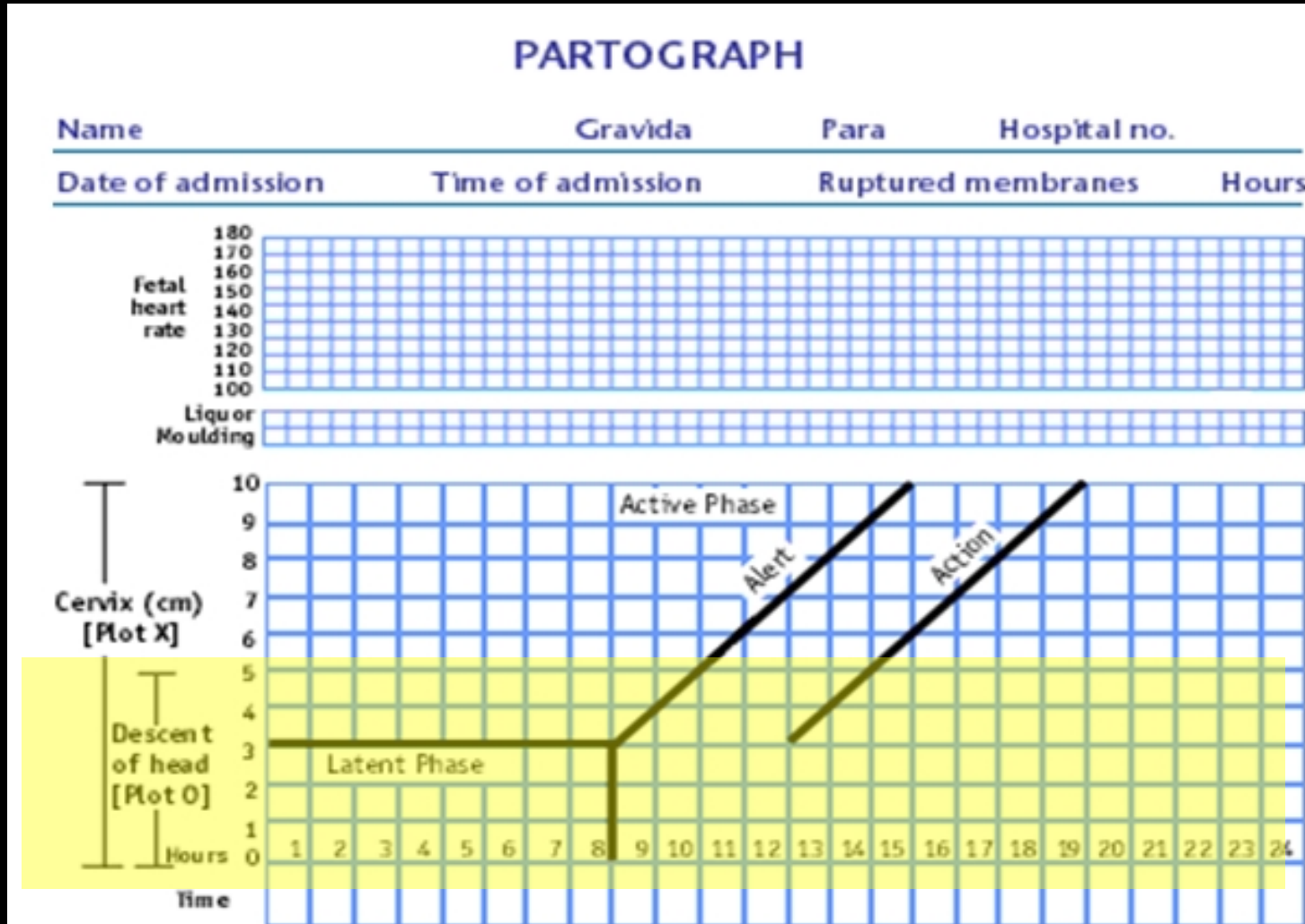
Time of Delivery Method Duration

The partogram – 2



The partogram – 2

bimanual examination



Factors discussed in the CBTF Report

- Maternal age
- BMI
- Wt gain
- Parity
- Previous Caesarean section
- Multiple pregnancy
- Preterm birth
- Hypertension
- DbM
- Dystocia
- 'Fetal distress'
- Malpresentation
- IOL
- Epidural
- Caregiver

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Active management of labour

- Early diagnosis, following strict criteria, by a senior midwife
- VE q1h for 3h, then q2h
 - rate of progress to be plotted on a partogram
- Amniotomy 1h after admission
- Augmentation with syntocinon if not dilating at $\geq 1\text{cm/h}$
- Women not in labour should be sent home
 - 50% are readmitted within 24 hours
- Personal, psychological support for the woman
- Liberal use of epidural anaesthesia
- Regular rounds by the obstetrician
- Antenatal education classes
- Regular audit of labour ward process and outcomes

Modified from K O'Driscoll

Antenatal support of women at increased risk for LBW infants

- 9 trials, n = 5108
 - RR (Caesarean) 0.88 [0.79, 0.98]

Hodnett ED, Fredericks S. CDSR 2007

ECV for breech presentation at or near term

- ECV reduces risk of non-cephalic presentation
- EECV may further improve the rate of cephalic presentation
- Impact on (semi-)elective Caesarean rate in the post-Term Breech Trial era

Labour assessment programmes

- One RCT: 209 women - excellent quality
- Women randomised to the labour assessment unit:
 - less time on DS (WMD -5.20 hours [-7.06, -3.34])
 - less likely to require augmentation (OR 0.45 [0.25, 0.80])
 - less likely to require analgesia (OR 0.36 [0.16, 0.78])
- Women in the labour assessment group reported higher levels of control during labour (WMD 16 [7.5, 24]).
- There is insufficient evidence to assess effects on rate of:
 - Caesarean section
 - other important measures of maternal and neonatal outcome

Labour support

- **Continuous support before active labour**
 - 5 RCTs, n = 1745; RR (Caesarean) 0.71 [0.56, 0.90]
- **Continuous support in either early or active labour**
 - 5 RCTs, n = 9668; RR 0.99 [0.89, 1.11]
- **Continuous support in active labour**
 - 6 RCTs, n = 1978; RR 0.81, [0.67, 0.99]
- **Also:**
 - reduced analgesia
 - reduced instrumental delivery
 - increased satisfaction with care

Amniotomy

- Inadequate evidence to support general use
 - Trend to improved Apgars (<7 @ 5min)
 - Significant for primipara (RR 0.42 [0.20, 0.88])
- Dysfunctional labour:
 - Two RCTs: 1005 women
 - Amniotomy associated with significantly reduced risk of “dysfunctional labour” (RR 0.75 [0.64, 0.88])
 - No information available in order to conduct subgroup analyses

Smyth RMD *et al.* CDSR 2007

CTG vs intermittent auscultation of FHR in LOW risk labour

- IA associated with:
 - fewer Caesarean sections
 - fewer instrumental deliveries

Alfirevic Z et al. CDSR 2007

VBAC

- **Difficult literature**
 - **Rupture vs dehiscence**
 - studies unclear with variable definitions
- **Reduced enthusiasm given recent literature**
- **Significant concerns around IOL in the presence of a scar**

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- **Is it that we're just not doing it right?**
 - **Active management with pre-specified limits**

Regional anaesthesia

- No evidence from the RCTs to support the conjecture that epidurals are causally related to increased Caesarean section rates
 - flawed trials
 - ?generalisability?
- Evidence that withdrawing epidurals in 2nd stage increase pain and suffering without improving NVD rates

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Education

- **Diploma of obstetrics**
 - shared between FP and obstetric residents
 - increase understanding of fundamentals
 - anatomy
 - physiology/pathophysiology

Dating, 'post-dates', & oligohydramnios

- **Post-dates**
 - Funded first trimester ultrasound as standard of care (with NT!!)
 - Acceptance of deepest amniotic fluid pocket for the description of oligohydramnios
 - for post-dates as well as all other fetal surveillance
- **Oligohydramnios**
 - AFI <50mm
 - Moderate when DVP <20mm
 - Severe when DVP <10mm

Targeted funding through MSFHR

- Evidence-based fetal surveillance
 - incorporate elements of BPP, Doppler, cCTG ...
- Evidence-based IOL
 - where's the haste?
 - target 3-4cm with slow agents prior to ARM
- Patterns of intrapartum care
 - 1:1 support
 - other elements of active management
 - integrated midwifery

Comments ...