Who pays the price?
(Foreign) women, future siblings

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Conflict of interest

None…

other than the (conflicting?) interest of a poor woman in a faraway land, who may pay the price for our fear of the breech

Case study: the Netherlands

Netherlands

Rise in caesarean sections

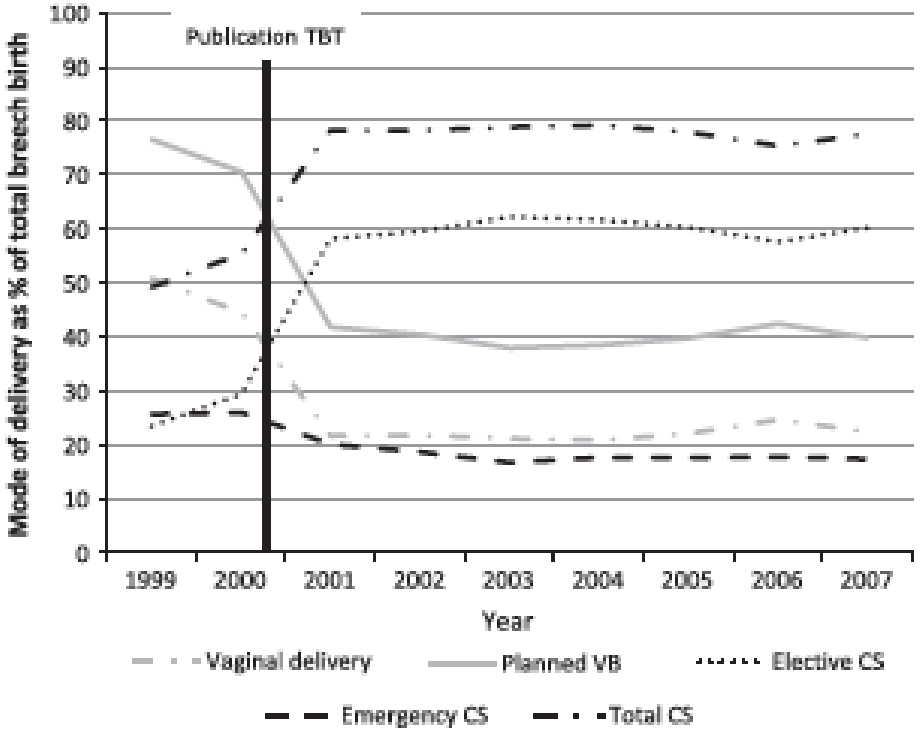


Figure 1. Trends in vaginal birth (VB) and cesarean section (CS) rate in women with an infant in breech presentation at term between 1999 and 2007. TBT, Term Breech Trial.

Vlemmix et al. Acta 2014

Netherlands

Decrease in poor neonatal outcome

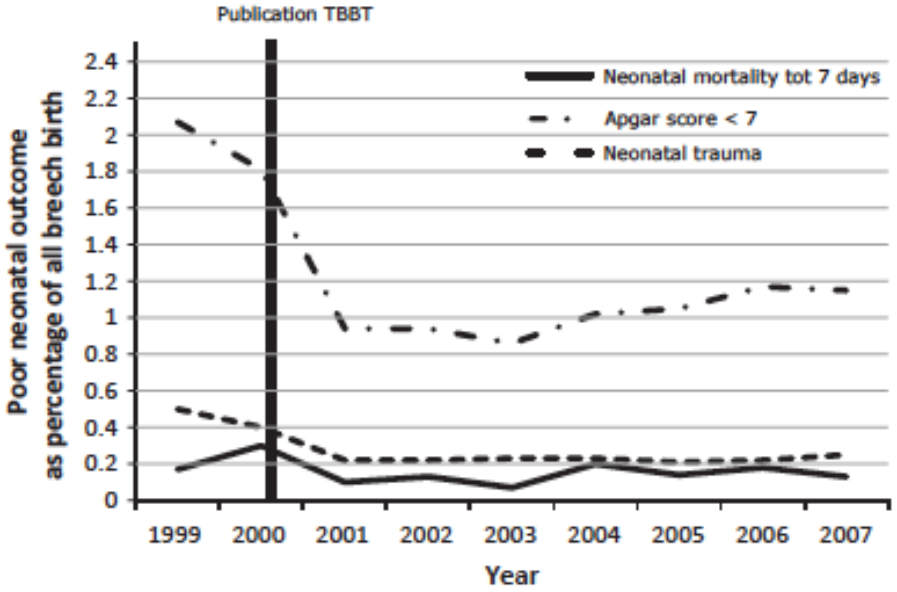


Figure 2. Trends in perinatal outcome after breech birth (elective cesarean and planned vaginal birth) at term between 1999 and 2007. TBT, Term Breech Trial.

- Since publication 1692 extra CSs, annual reduction of five neonatal deaths: **NNT 338**

Vlemmix et al. Acta 2014

Short sightedness

- ‘Finally, studies from the Netherlands, Denmark and Canada have shown that increases in planned caesarean delivery after the Term Breech Trial led to improved neonatal outcomes. Nevertheless, planned vaginal delivery continues to be associated with higher rates of adverse perinatal outcomes in these countries. The totality of the evidence therefore unequivocally shows the relatively greater safety of planned caesarean delivery for breech presentation at term gestation.’

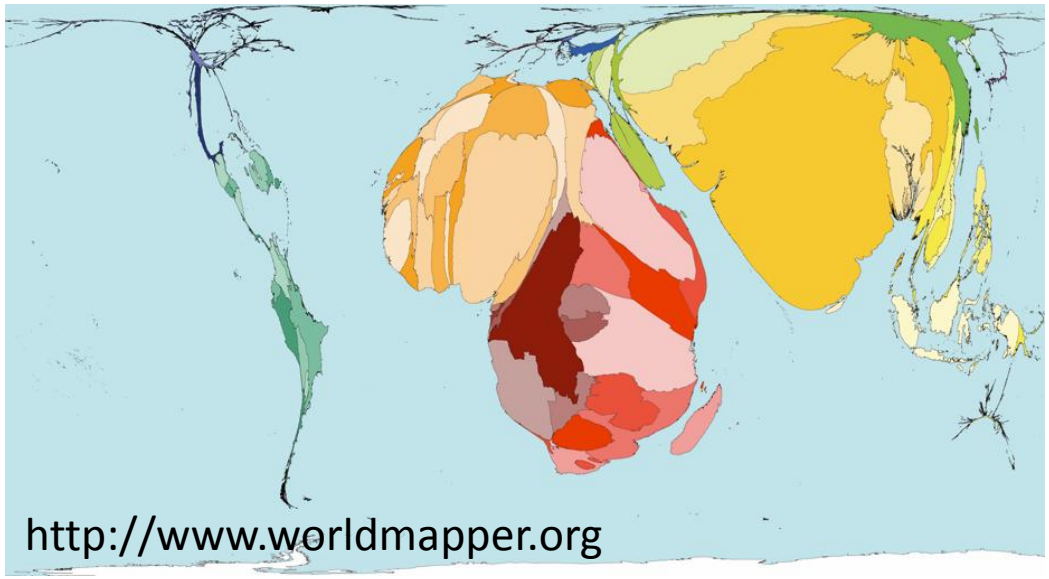
Joseph et al. Obstet Gynecol May 2015

Debate

- What about the mother?
- What about subsequent pregnancies?
- And what about the rest of the world?

These questions are much more difficult to answer!

- Underreporting
- Long-term follow up limited or little attention
- Fear of litigation

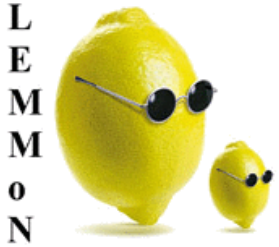


Term Breech Trial

Limited answer for maternal morbidity

- Risk lowest for vaginal birth
- Highest following CS during active labour
- Short second stage (<30 minutes) protective
- Follow-up at three months: lower risk of incontinence in planned caesarean group
- At 2 years: no difference, other than a higher risk of constipation in the planned caesarean delivery group…

Su et al. J Obstet Gynaecol Can 2007
Hannah et al. Am J Obstet Gynecol 2004



Netherlands

Maternal morbidity

- Incidence of **Severe Acute Maternal Morbidity (SAMM)** related to mode of delivery:
  - **Attempted vaginal delivery: 39/10 000** deliveries
  - **Elective CS 64/10 000** deliveries (OR 1.7; 1.4-2.0)

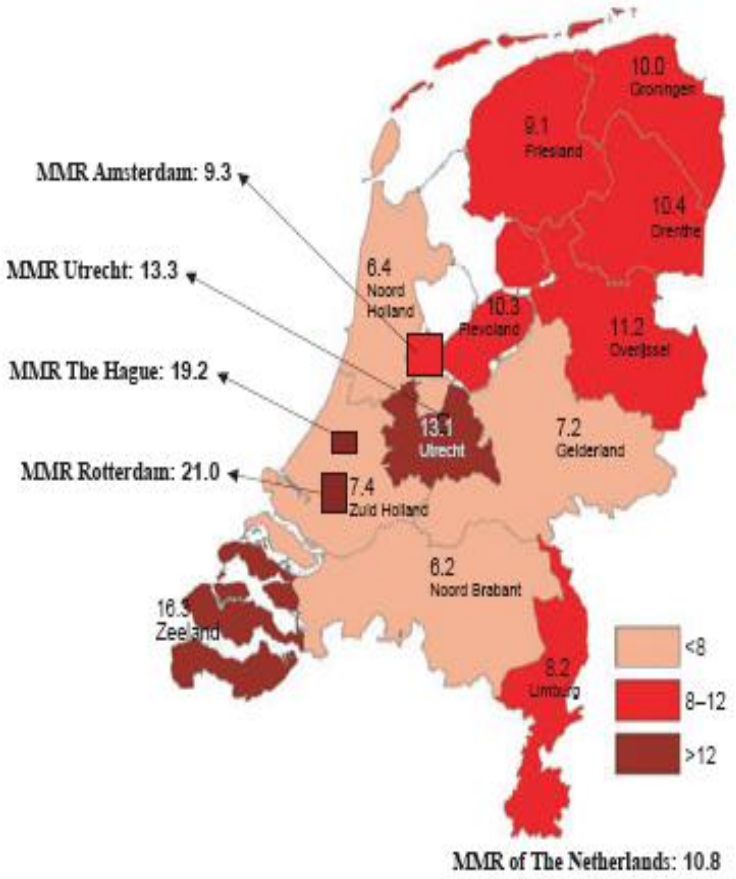
- Incidence of **peripartum hysterectomy** related to mode of delivery:
  - **Attempted vaginal delivery: 1.5/10 000** deliveries
  - **Elective CS: 5.3/10 000 deliveries** (OR 3.4; 1.8-6.5)

Van Dillen et al. Acta 2010

Netherlands

Maternal mortality

- **4 women died** after elective caesarean section for breech delivery in 2000-2002
- 7% of total direct maternal mortality in that period
- Two died from massive pulmonary embolism (complicating factor: obesity), two from sepsis
- **CFR** for elective caesarean section for breech: **4.7/10 000 caesarean sections**



Schutte et al. Acta 2007

Netherlands

Short-term consequences for the mother

- Underreporting: minimum numbers!
- For **10 000 babies** delivered by CS for breech there may be (compared to vaginal delivery as intended mode of delivery):
- **25 severe acute maternal morbidities**[1]
- **4-5?? maternal deaths**[2]

1. Van Dillen et al. Acta 2010
2. Schutte et al. Acta 2007

Netherlands

Maternal morbidity in subsequent pregnancies

- For **10 000 babies** delivered by elective CS in the first pregnancy versus intention to deliver vaginally in the first pregnancy there may be:
- **22 versus 5 uterine ruptures** in subsequent pregnancies

  (18/8116 vs. 4/7442; aOR 4.9, 1.6-14.7)
- **9 versus 5 placental abruptions**

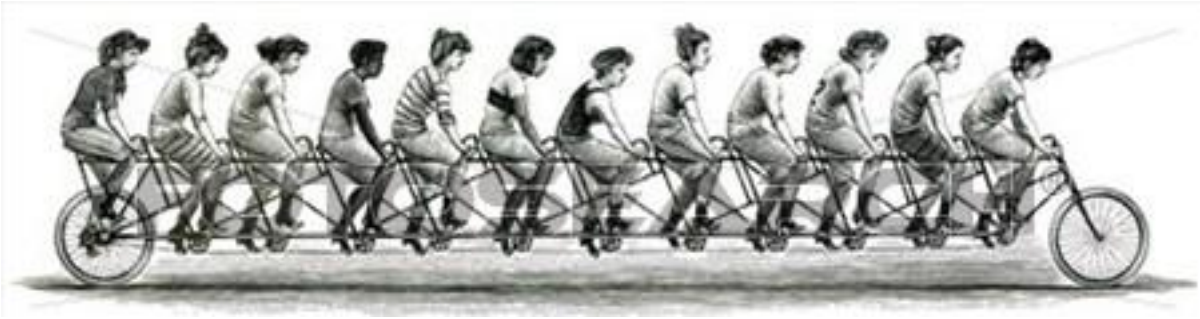
  (7/8116 vs. 4/7442; aOR 1.3, 0.35-4.4)
- **572 versus 419 PPHs**

  (464/8116 vs. 312/7442; aOR 1.2-1.6)
- **Other morbidities (abnormally invasive placenta, placenta praevia) unknown…**

Vlemmix et al. Submitted

Perinatal death in subsequent pregnancy

- **Elective CS** in first pregnancy: 20 perinatal deaths (18 in trial of labour, 2 in second elective CS) out of 8116 subsequent pregnancies: 25 per 10 000
- **Planned vaginal delivery** in first pregnancy: 10 perinatal deaths out of 7442 subsequent pregnancies: 13 per 10 000
- aOR 2.1 (95%CI: 0.95 - 4.5) Vlemmix et al. Submitted



Perinatal mortality combined

- Per **10 000 babies** delivered by CS for breech there were (compared to vaginal delivery as intended mode of delivery):
- **26 neonates saved in the first pregnancy (19/7442)**
- **27 neonates (18/6689) lost in subsequent pregnancies** in a policy of trial of labour, versus 14 (2/1427) in a scenario of repeat CS

Vlemmix et al. Submitted

For 10 000 babies delivered by CS for breech, in a policy of VBAC… :

- No difference in neonates lost/saved in the longer run
- 25 severe acute maternal morbidities in initial pregnancy
- 4 peripartum hysterectomies in initial pregnancy
- 153 PPHs in subsequent pregnancies
- 17 uterine ruptures in subsequent pregnancies
- 4 placental abruptions in subsequent pregnancies
- And some women who die…

- 12 neonates saved in the long run in a policy of ‘once a caesarean, always a caesarean’
- But then (some of) the other numbers will also increase…

Ethics

- Should 997 out of 1000 women deliver by elective caesarean section without being allowed a chance to deliver vaginally to save the lives of 3 babies (in the short term)?

- And what about cost?
- 2001-5: 35 000 000 euros for 7500 caesarean sections

De Leeuw et al. BJOG 2007

The impact of the message

- Even if you believe the TBT, the difference for that first child in our context is small…
- But beware of the big consequences of ‘our’ messages in other countries!

- These consequences of a change in obstetric practice will differ per context…

A NNT of 338 to prevent one perinatal death means…

6 maternal deaths in Tanzania (5/268)

3 maternal deaths in a district hospital in Malawi (CFR≈1%)

in the short run…

And if she survives the CS, she is likely to become pregnant much more often, and under far more dangerous circumstances…

Van Roosmalen and Van den Akker. BJOG 2014

Van Roosmalen and Meguid. Lancet 2014

Conclusion

- Elective CS may save some neonates in the short run, but perhaps not in the longer run
- Elective CS will lead to higher (severe acute) maternal morbidity and some maternal deaths
- Approach should be context-specific: our messages have done harm elsewhere!
- Take into account a woman's complete fertile life

Considerations

- Improve registration of maternal morbidity and mortality
- Role for simulation-based training: Teach the Breech, Breech Course Leiderdorp
- Time for another TBT, with stringent maternal registration and long-term follow-up?
- Promote external cephalic version, but… what comes after ECV?

Thank you, and…
think for yourself: dealing with a breech is not simply black and white