Cesarean on Demand

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Dalhousie & IWK
Other names

- Cesarean on request
- Cesarean by choice
- Elective primary cesarean
Maternal Mortality Ratio

- < 20 in North America, UK, France, Scandinavia
- > 100 in developing countries
Maternal Mortality Ratios in Selected Countries

Source: Unicef. The state of the world’s children 1997.
**FIGURE 3.1** Maternal mortality ratio (MMR), Canada (excluding Ontario), *
1979-1981 to 1997-1999**

*Maternal deaths per 100,000 live births*

![Graph showing maternal mortality ratio (MMR) from 1979-1981 to 1997-1999.

Period

Sources: Years 1979-1990.3–11


*Data for Ontario were excluded because of data quality concerns; they are presented in Appendix G.

**Maternal deaths are coded using ICD-10 from 2000 onwards and will be presented in subsequent reports.
Maternal Mortality Ratios in Canada, 1925 to 1995

**FIGURE 4.10** Rate of fetal death, Canada (excluding Ontario), *1991-2000*

*Deaths per 1,000 total births*

<table>
<thead>
<tr>
<th>Year</th>
<th>All fetal deaths</th>
<th>Fetal deaths $\geq 500g$**</th>
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</thead>
<tbody>
<tr>
<td>1991</td>
<td>5.9</td>
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<tr>
<td>2000</td>
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</tbody>
</table>

*Calendar year*

*Data for Ontario were excluded because of data quality concerns; they are presented in Appendix G.*
**Fetal death rates $\geq 500$ g exclude stillbirths and live births with a birth weight $< 500$ g or, if birth weight was unknown, those with a gestational age of $< 22$ weeks.*
FIGURE 4.12 Rates of infant, neonatal and postneonatal death, Canada (excluding Ontario), * 1991-2000

Deaths per 1,000 live births


*Data for Ontario were excluded because of data quality concerns; they are presented in Appendix G.

**Per 1,000 neonatal survivors.
Canadian Perinatal Health Report

2003
Primary cesarean delivery rates

Nova Scotia  Canada  United States
PRIMARY CESAREANS

- CS in a woman with no prior cesarean
- 1988 to 2000 → 13.4% to 17.5%
OBSTETRIC PRACTICES

- Induction rates
- Epidural anaesthesia
- Reduced midforceps use
- Increased CS for breech
- Obstetrician delivery
1° CS Increases Entirely Explained by Adjustment for Changes in:

- Maternal age
- Parity
- Pre-pregnancy weight
- Weight gain

RR 1.02  95% CI 0.97, 1.06
Caesarean Birth
Cesarean Section

- At 39 weeks or more
- Family support present
- Spinal or epidural anaesthesia
- Low transverse incision
- Bladder catheter
- Antibiotic
Why are women asking?

- **Fear** of labor
- **Better for baby**
- **Avoid pelvic muscle/nerve injury**
- **Control**
- **Convenience**
Natural

versus

Medicalized
BENEFITS TO MOM

Protection of pelvic floor

• involuntary loss of feces, gas, urine
• prolapse
  - avoids instrumental vaginal birth
  - avoids labor
• avoids emergency CS
  - ↑ morbidity / mortality
  - ↑ involvement / satisfaction
BENEFITS TO FETUS

- Reduces prelabor and labor deaths (1-2/1000)
- Reduces meconium aspiration
- Reduces mother to child infection transmissions (HIV, Herpes)
- Reduces intracranial injury (hemorrhage)
- Cerebral palsy
- Fractures / nerve injuries
- Balancing staff levels / avoiding fatigue (reduces harmful events)
RISKS TO MOM

- Maternal death
  - elective vs non-elective
  - old data
  - British and Israeli studies

- In future pregnancies: uterine rupture, placental problems (location, ingrowth, premature separation)

- Operative complications – infection / hemorrhage / bladder and bowel injury
RISKS TO MOM

- Readmission to hospital
- Following surgery
  - ↑ thrombosis
  - bleeding / hysterectomy
- Longer recovery time
Risks to Fetus

- Newborn breathing problems
- Acidosis 2\textsuperscript{nd} to anesthesia complications
- Laceration
- Stillbirth in future pregnancy
With detailed analysis, there may be little difference
Ethics Principles

- Autonomy – informed choice
- Beneficence – doing good
- Non-maleficence – not doing harm
- Justice – effect on others
- Veracity - truth
Choice

- **Woman**
  - Cesarean or try for vaginal birth

- **Physician**
My Ranking

- Spontaneous vaginal birth
- Elective Cesarean
- Operative intervention in labor
  - Vacuum
  - Forceps
  - Cesarean
Thank you!

Questions & Comments?
Doctor/Patient Influence

Defensive Medicine  Expectation

Convenience

Compensation  Request
Other CS Influences

- Hospital birth volume
- Teaching vs non-teaching
- Payer source
- Intrapartum nursing
- VBAC
- Dystocia management
- Epidural
- EFM
- Bigger babies
- Multiple pregnancies
- Operative vaginal birth
Cesarean - Maternal Risks

- Death….RR 3-7…~6/100,000 (1988)
- Operative injury : blood loss, bladder, ureter, broad ligament, bowel (1/1300)
- Thromboembolism
- Infection : endomyometritis 10%+ (RR 5), wound, urinary
- Ileus, atelectasis
- Future previa… RR 2.6 …then accreta RR 6
Cesarean - Newborn Risks

- RDS iatrogenic
- Transient tachypnea
- Accidental lacerations 0.4%
Vaginal Birth Risks

- Pelvic floor dysfunction
- > PNTML (pudendal nerve terminal motor latency)
- Anal sphincter laceration
- Urinary and fecal incontinence
The Rising C-Section Rate: The Patient or the Doctor

David Young MD

Dalhousie
NS ATLEE PERINATAL DATABASE

- January 1, 1988 → December 31, 2000
- Excluded all with previous LSCS
- 127,564 births
MATERNAL CHARACTERISTICS

SUBSTANTIAL CHANGES IN:

- Maternal age $\leq$ yrs
- Pregnancy weight $\leq$ 70 kg
- Weight gain 20 or more kg
Calls for reducing primary cesarean delivery rates (and especially target-driven restrictions) should be tempered by an understanding of temporal changes in maternal characteristics, and the rationale behind changes in obstetric practice.