

Cesarean on Demand

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Obstetrics and Gynaecology

Dalhousie & IWK

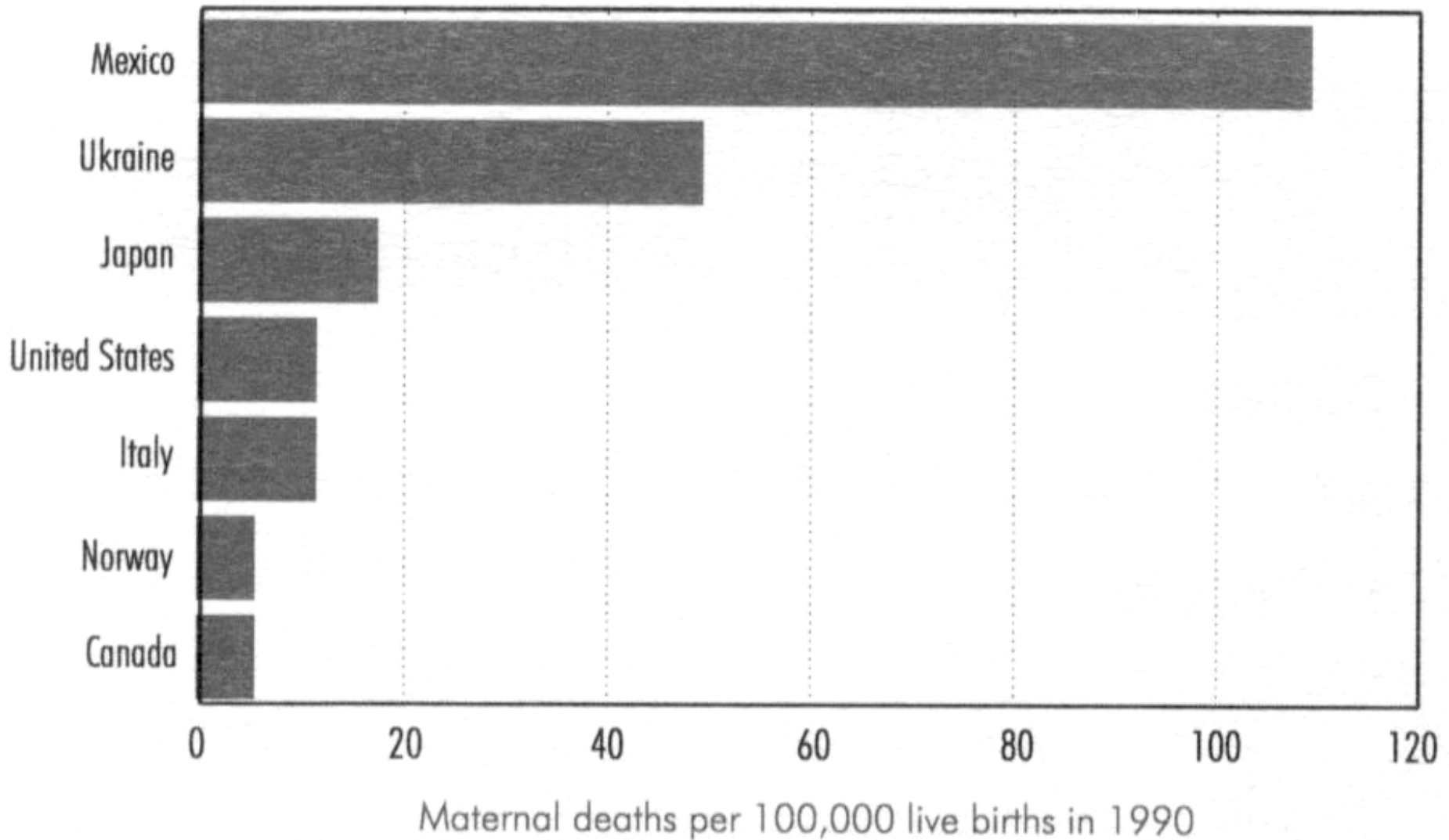
Other names

- Cesarean on request
- Cesarean by choice
- Elective primary cesarean

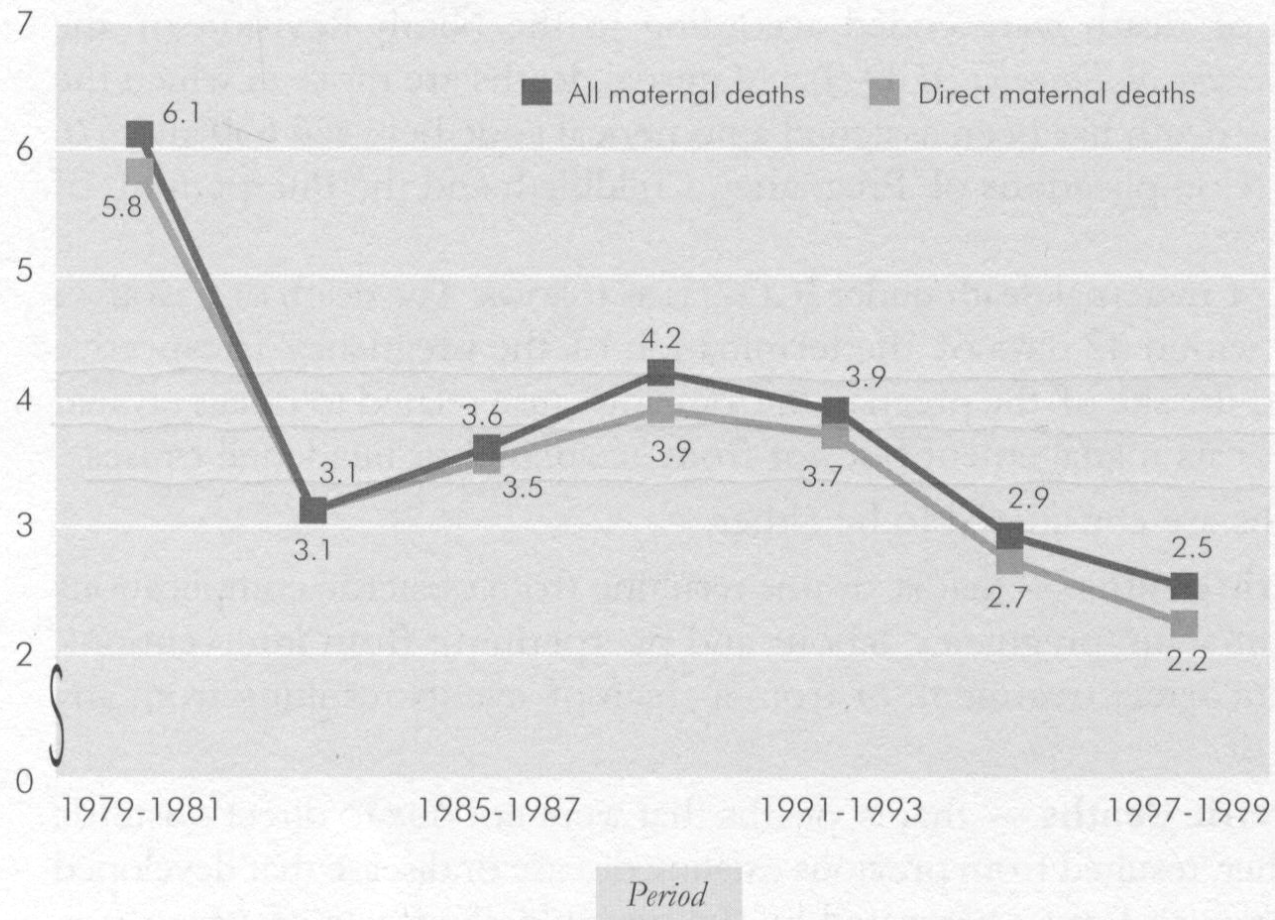
Maternal Mortality Ratio

- < 20 in North America, UK, France, Scandinavia
- > 100 in developing countries
- 436 – 852 in Senegal. Haemorrhage most common direct cause. (Kodio B et al. Trop Med Int Health 2002;7:499-505)

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*

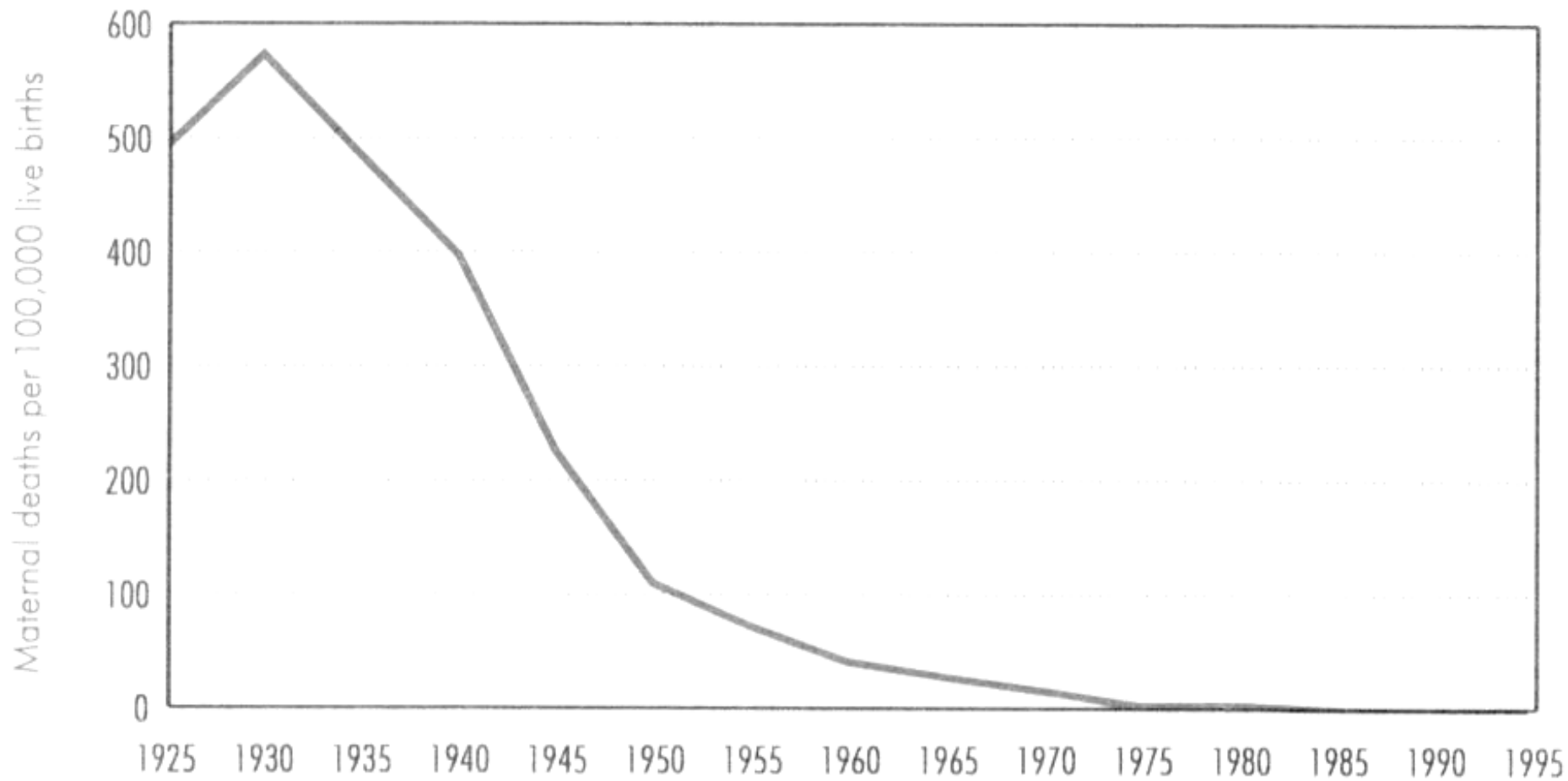
Sources: Years 1979-1990.³⁻¹¹

Years 1991-1999: Statistics Canada. Canadian Vital Statistics System, 1991-1999 (unlinked live birth and death files).

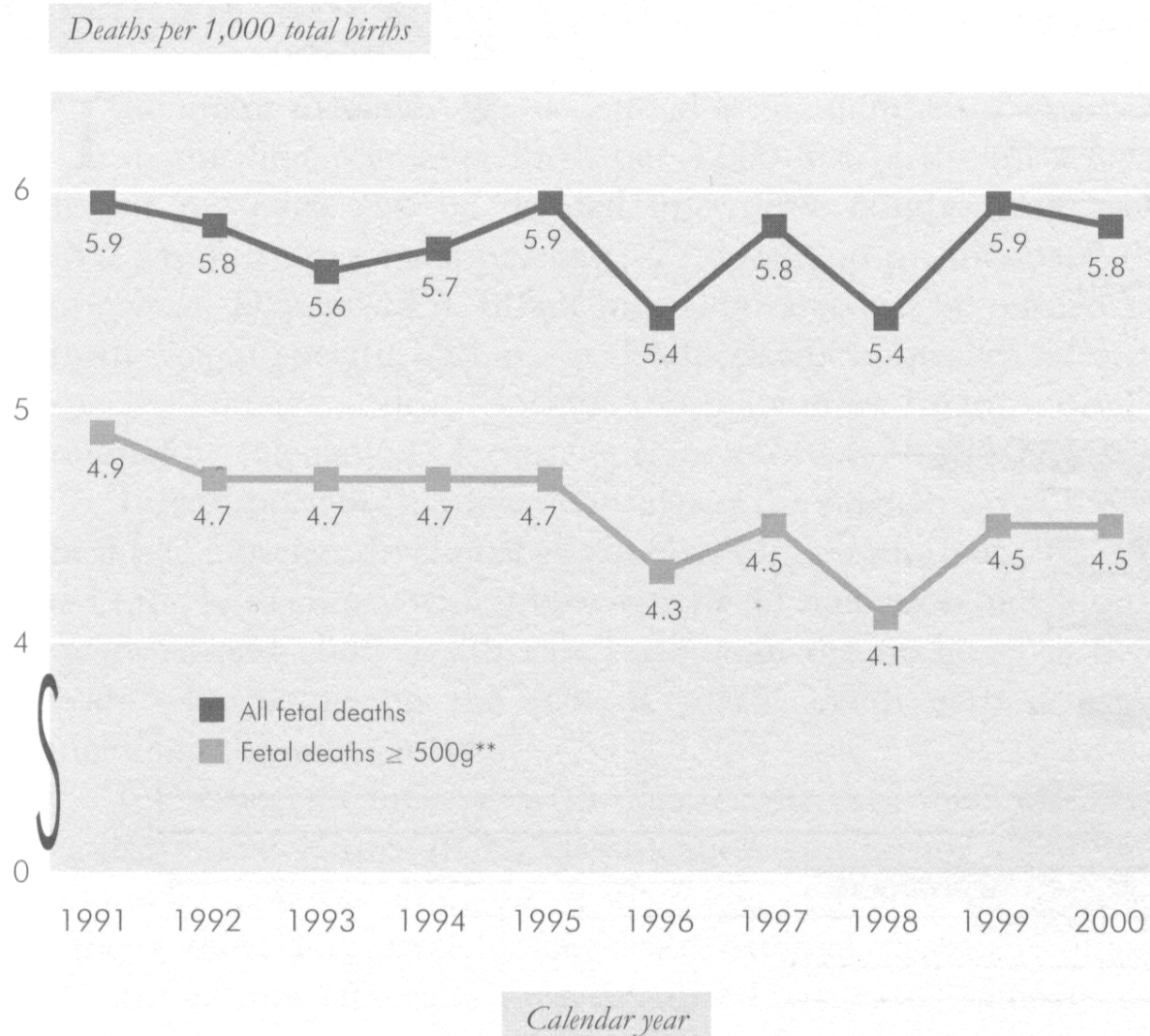
*Data for Ontario were excluded because of data quality concerns; they are presented in *Appendix G*.

**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



Source: Statistics Canada. *Selected mortality statistics, Canada, 1921-1990*.

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

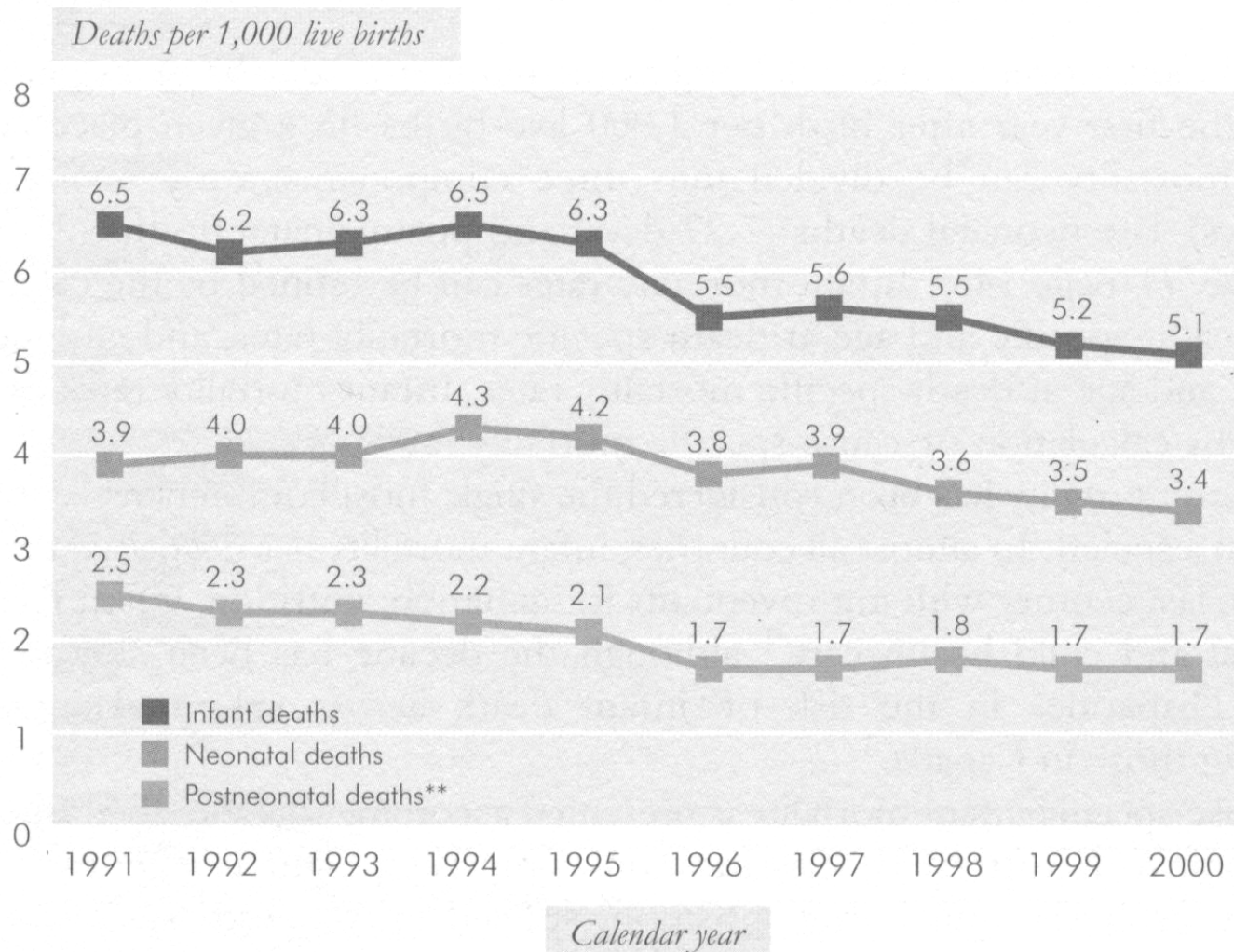
Source: Statistics Canada. Canadian Vital Statistics System, 1991-2000 (unlinked live birth and stillbirth files).

*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



Source: Statistics Canada. Canadian Vital Statistics System 1991-2000 (period calculation using unlinked live birth and death files).

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

**Per 1,000 neonatal survivors.

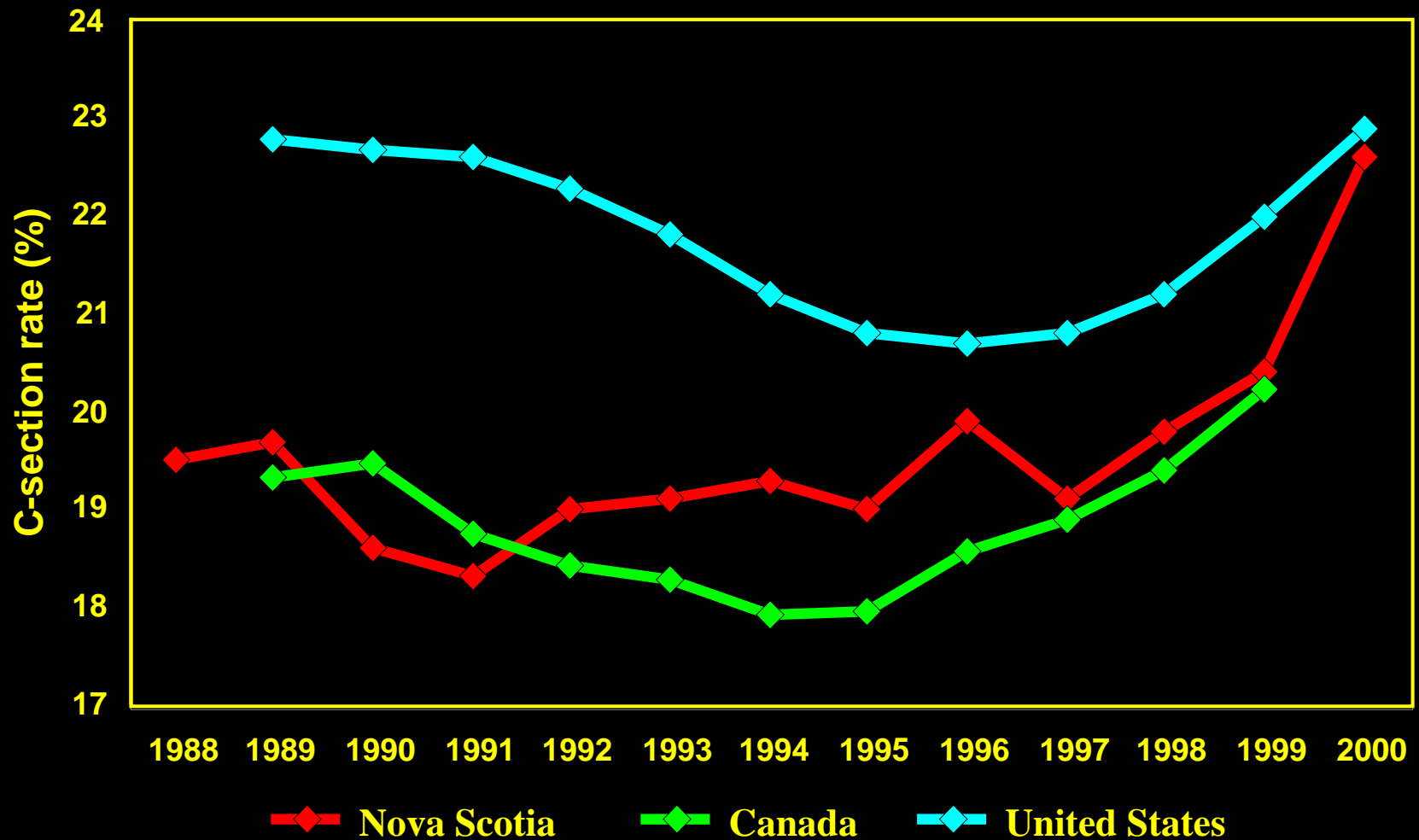


Canadian Perinatal Health Report

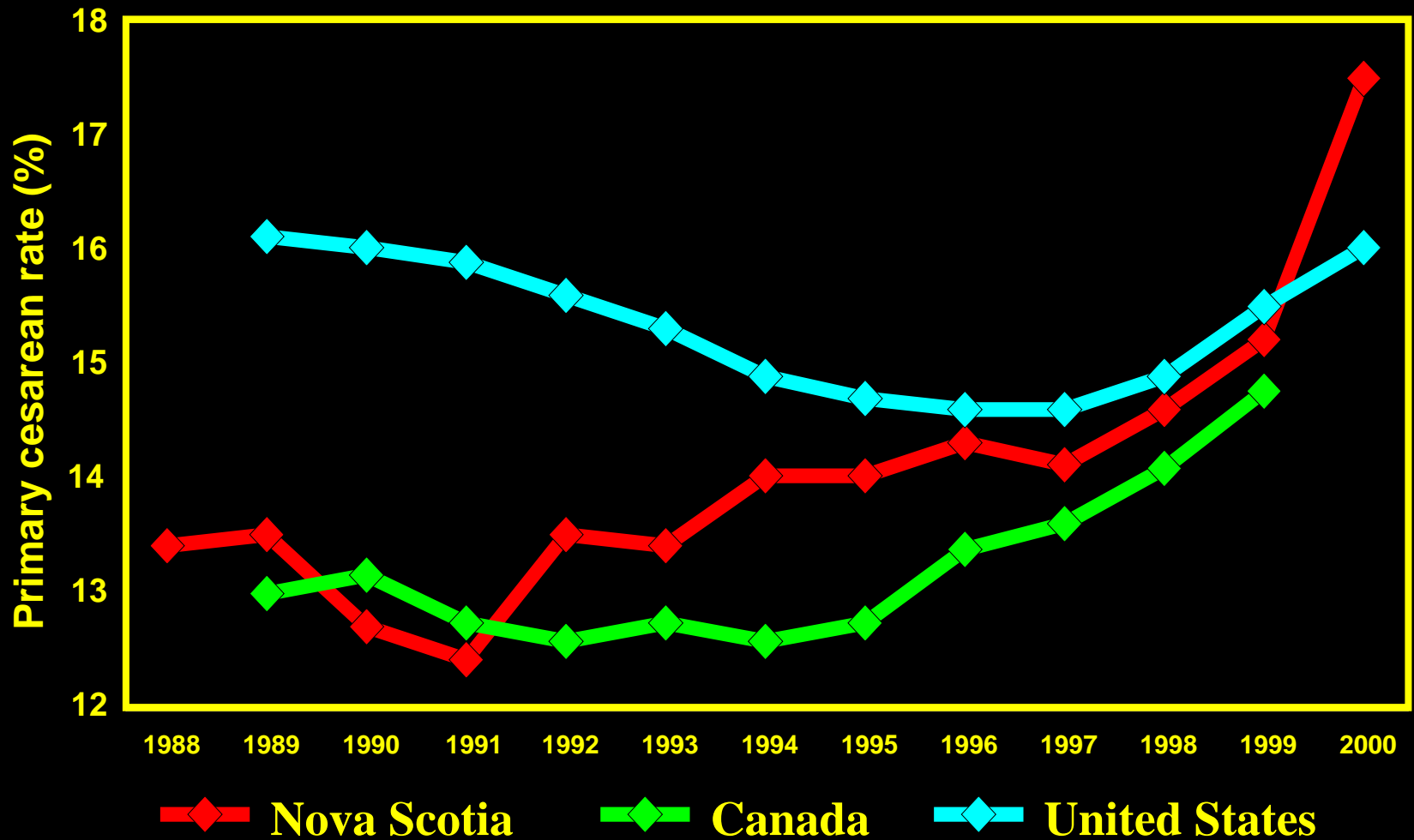
2003

Canadian
Perinatal
Surveillance System

Overall cesarean delivery rates



Primary cesarean delivery rates



PRIMARY CESAREANS

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

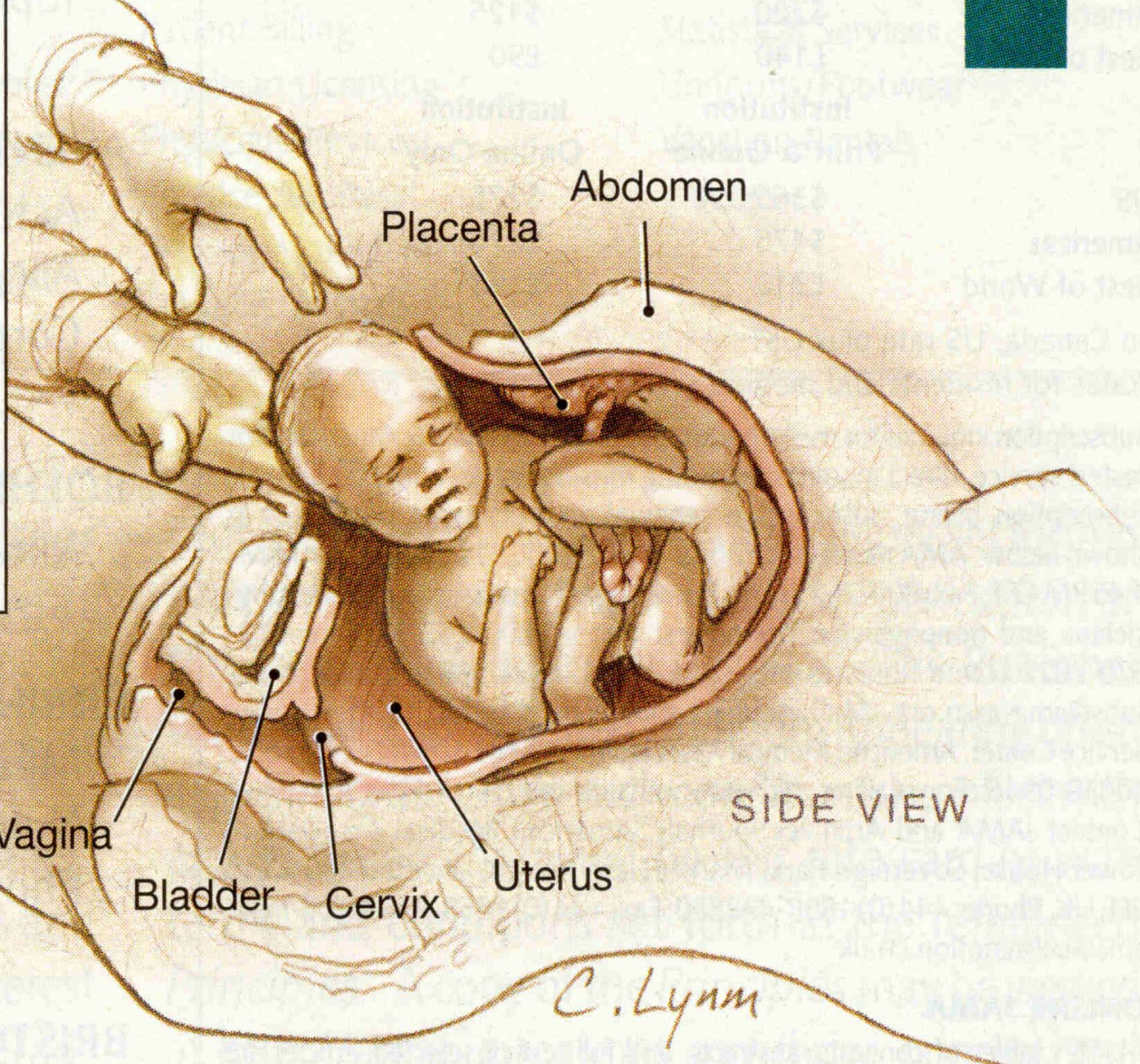
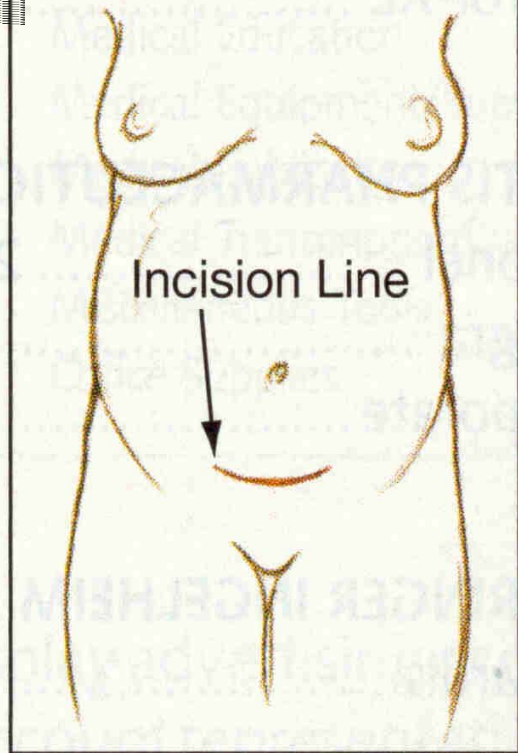
OBSTETRIC PRACTICES

- 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 2nd to anesthesia complications
- Laceration
- Stillbirth in future pregnancy

Cost

- 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)
- Thrombo-embolism
- 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

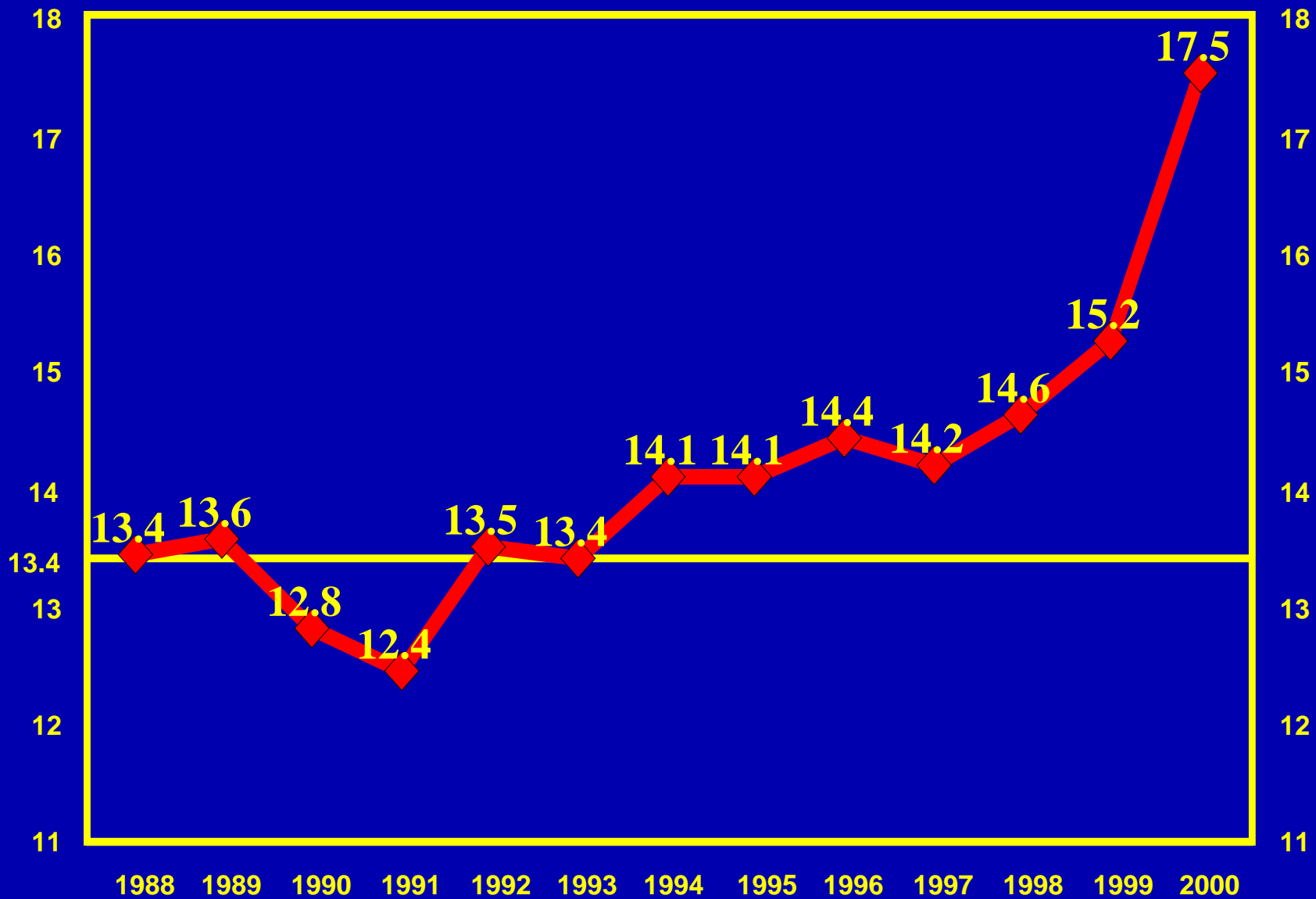
Dalhousie

NS ATLEE PERINATAL DATABASE

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

Primary C-delivery rate (%)

Primary C-delivery rate (%)



◆ Crude

MATERNAL CHARACTERISTICS SUBSTANTIAL CHANGES IN:

- Maternal age \leq yrs
- Pregnancy weight \leq 70 kg
- Weight gain 20 or more kg

TAKE HOME MESSAGE

- 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.

- Joseph KS, Young DC, Dodds L, O'Connell CM, Allen VM, Chandra S, Allen AC. Changes in maternal characteristics and obstetric practice, and recent increases in primary cesarean delivery. *Obstet Gynecol* 2003;102:791-800.