The art of waiting is a difficult one,
and not many obstetricians have either the
courage or the patience to sit idly by
whilst the breech delivers spontaneously;
This becomes even more difficult if the impatient
obstetrician has a century of tradition as well as
the words and writings of all his
contemporary teachers behind him.

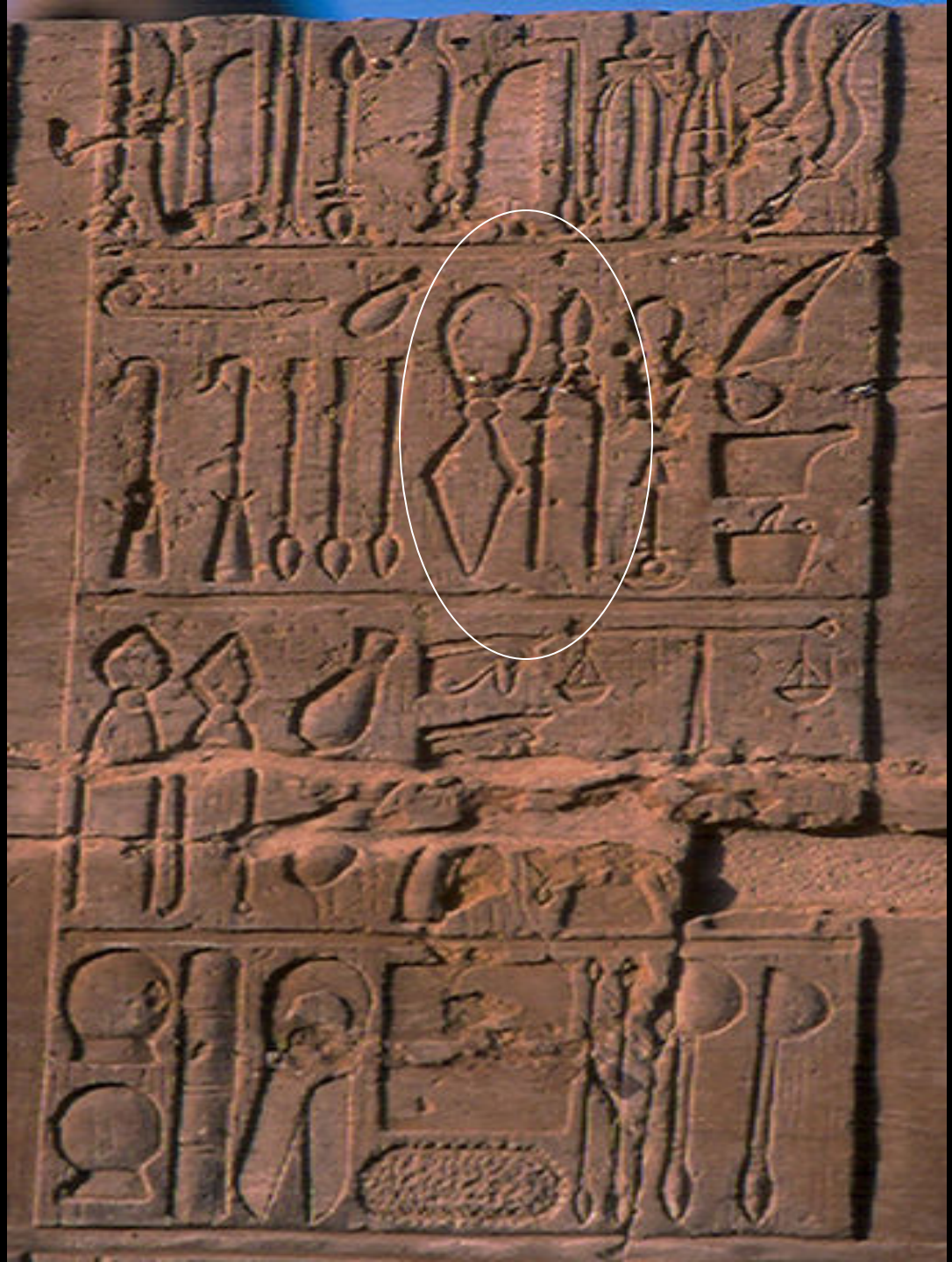
Plentl and Stone, 1953

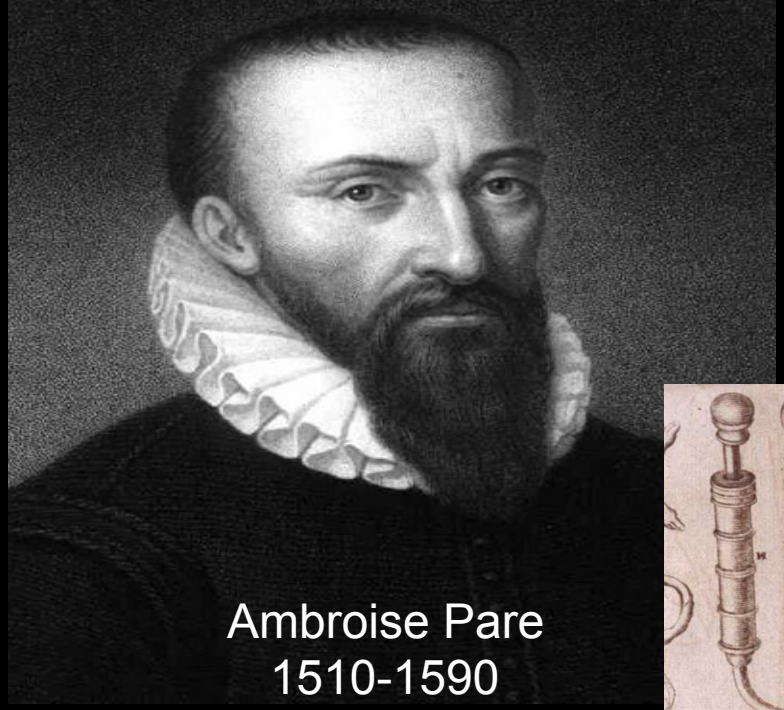
TRIALS OF THE TERM BREECH

A Historic Review

Dr. Dena Bloomenthal

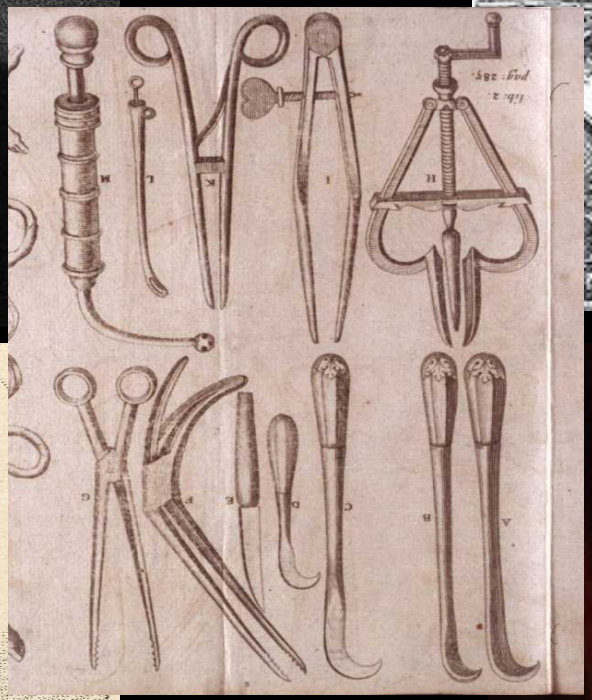
May 13, 2011





Ambroise Pare
1510-1590

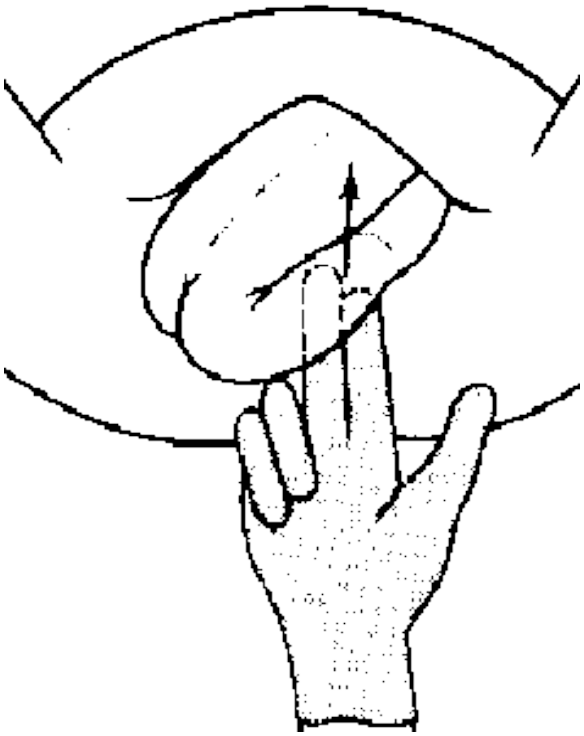
Jacques Guillemeau
1550-1613

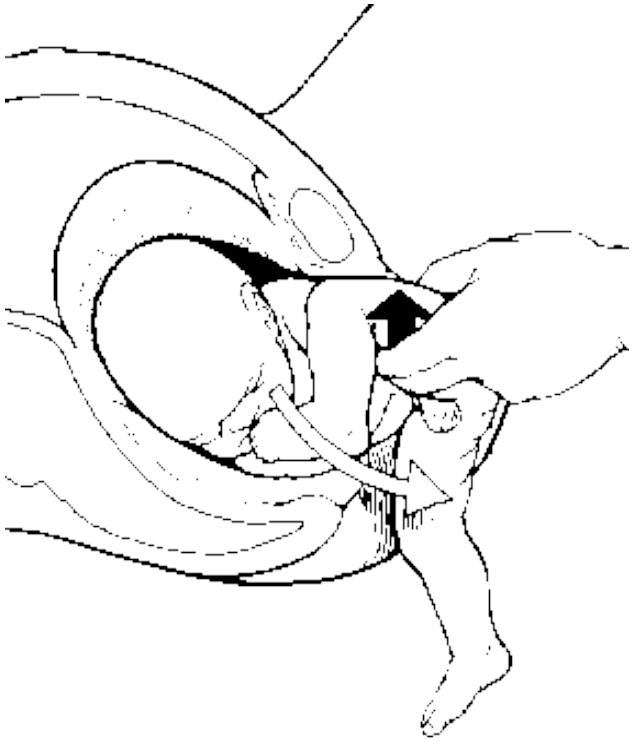


Françoise Mauriceau
1637-1709

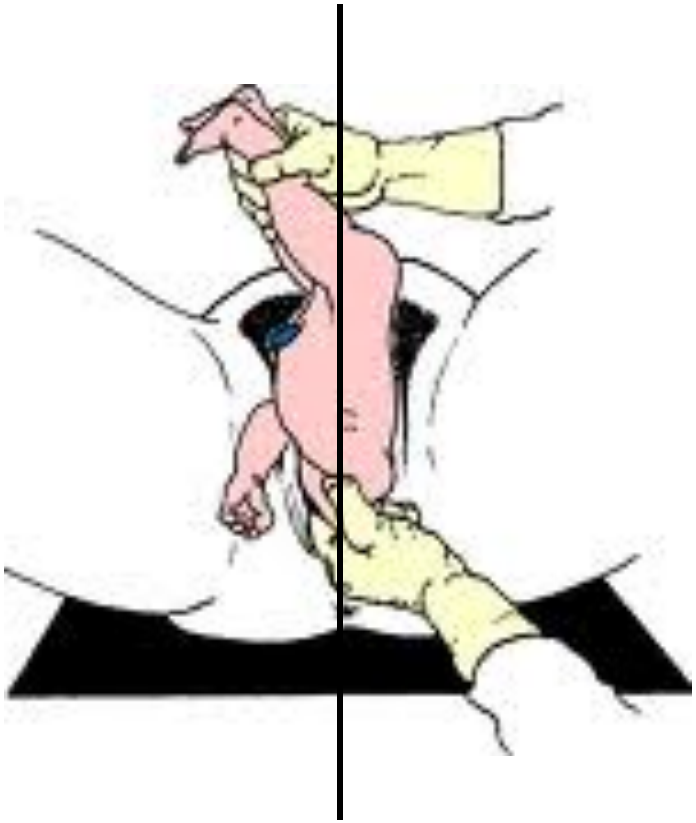
William Gifford
1756-1826

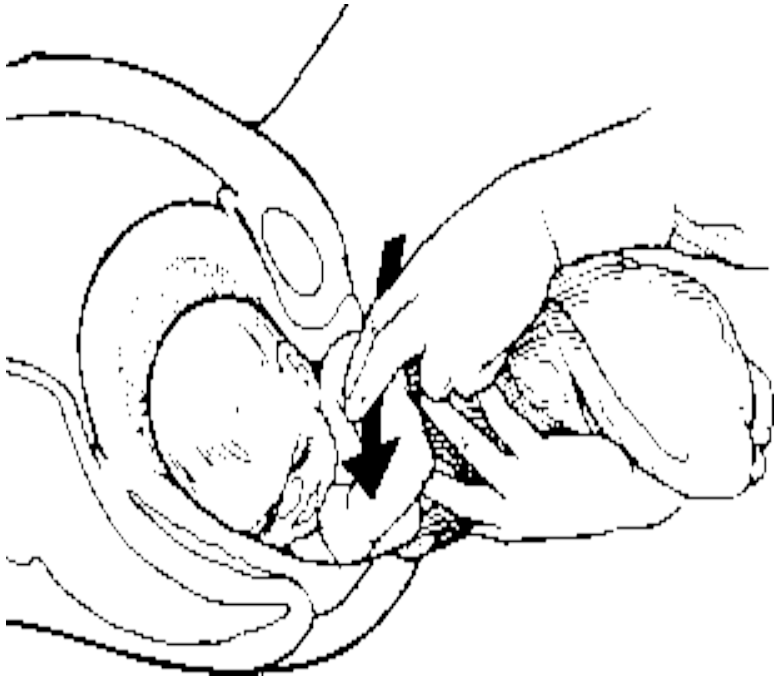
PINARD



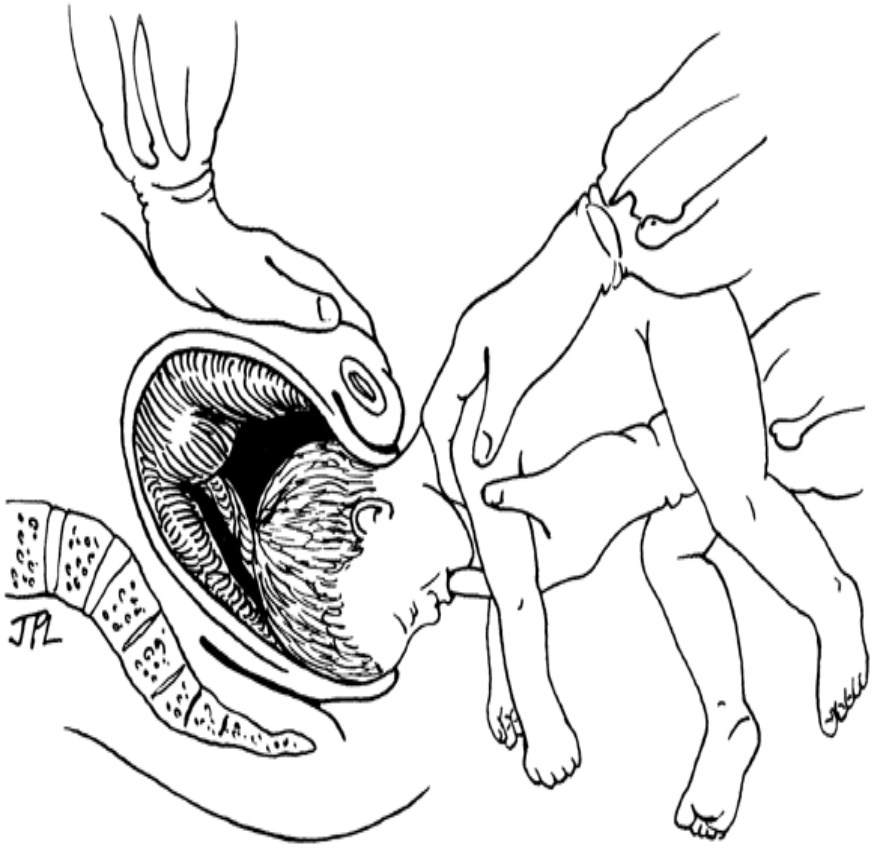


LOVSET





MARICEAU-SMELLIE-VEIT

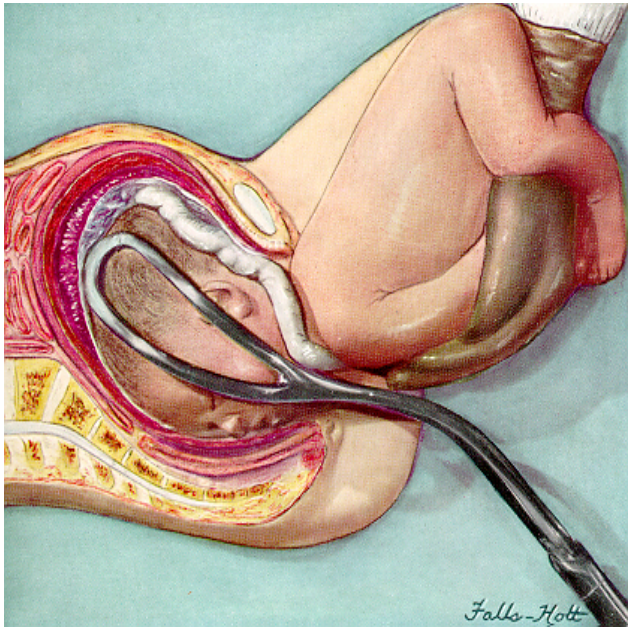


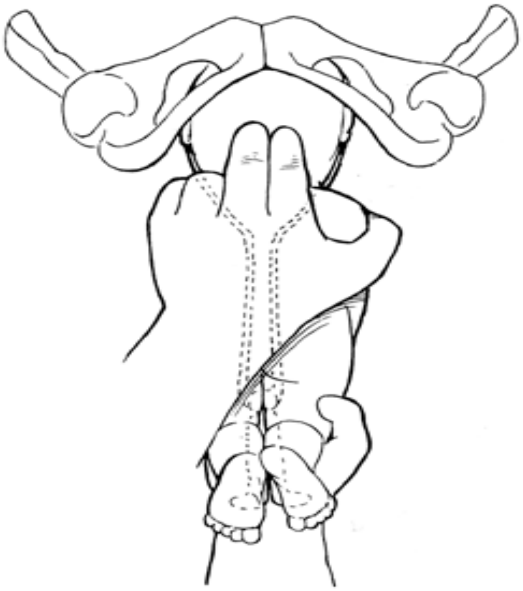
William Smellie
1697-1763

The Long Curved Forceps

Set of Anatomic Tables
1754

PIPER FORCEPS





1929

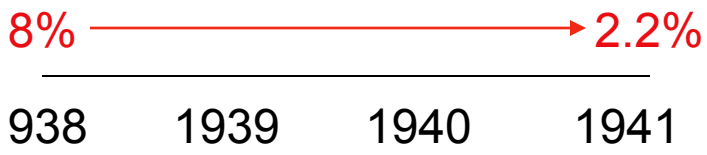
Maternal mortality rate 1/154 hospital births

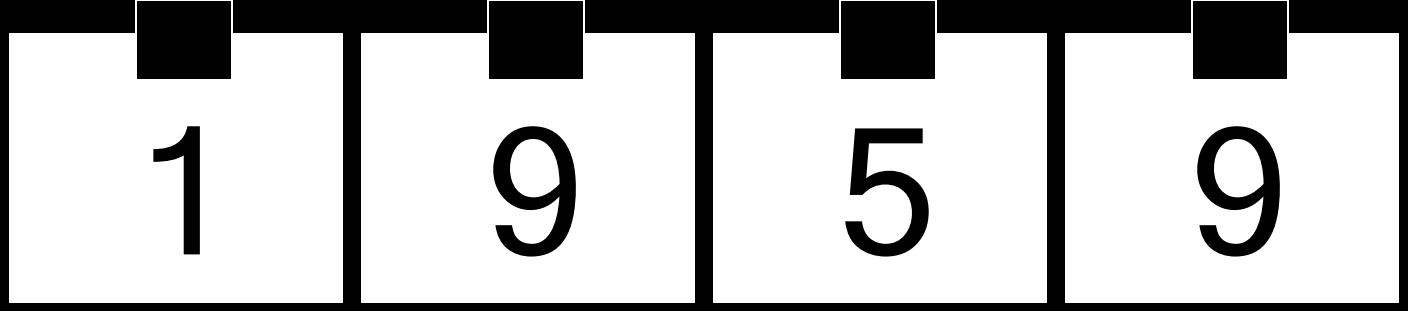
1953

BRACHT MANEUVER

Albert Plentl and Raymond Stone
The Bracht Maneuver
Ob/Gyn Survey 1953

30 Reports
>3000 term breeches





Wright, Ralph. Reduction of perinatal mortality and morbidity in breech delivery through routine use of cesarean section. Obstet Gynecol, 1959

DELIVERY PROBLEMS INHERENT TO BREECH

1. Umbilical cord compression
2. Inadequately dilated cervix
3. Trauma to the unmolded head
4. Prolapsed cord
5. Difficulty predicting CPD

Corrected Perinatal Mortality Rate for term breech

Vaginally: 4.7%

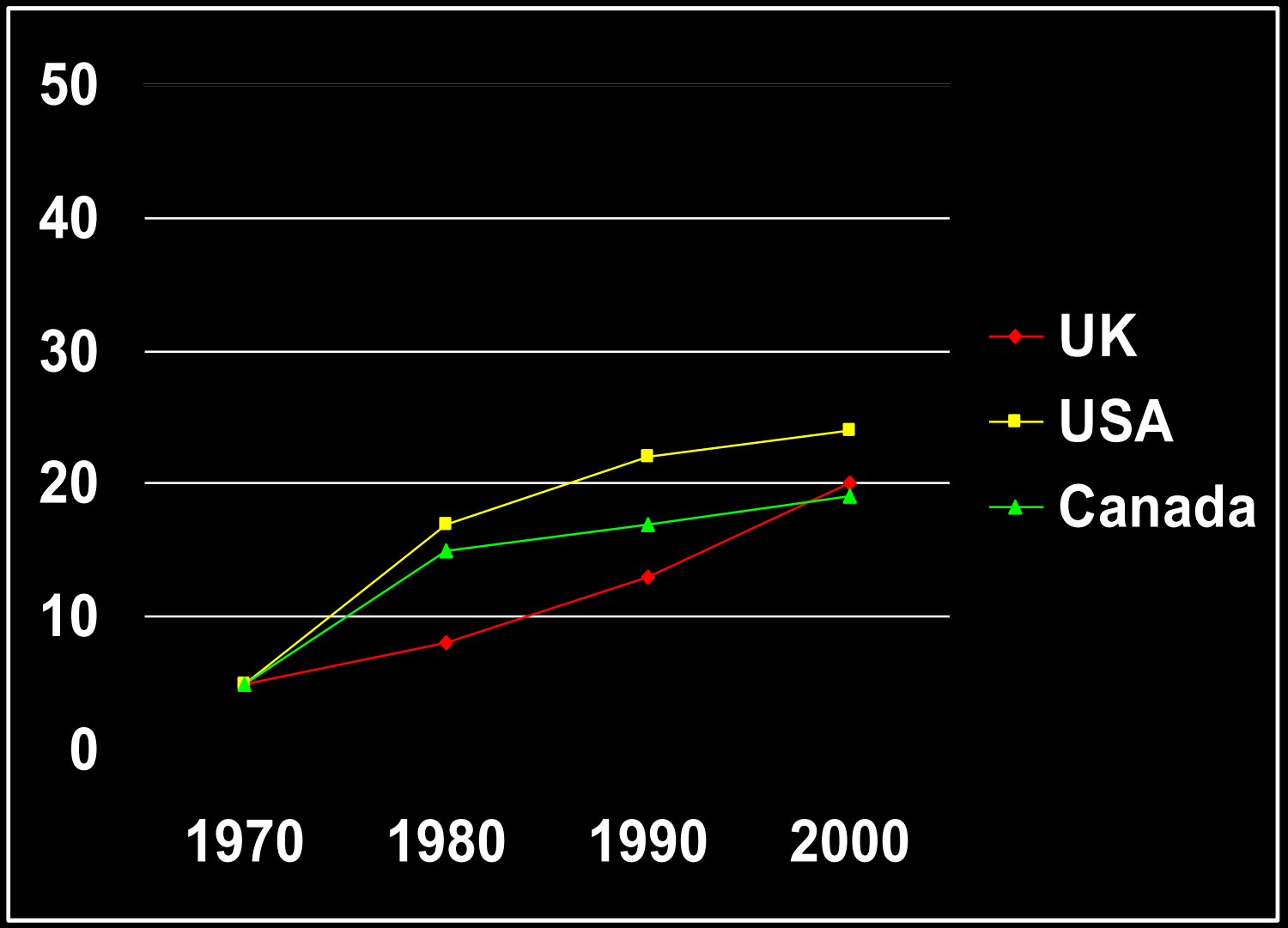
Cesarean: 1.6%

Fetal Injury Rate

Vaginally: 14/1000

Low forcep 1.3/1000

CESAREAN SECTION RATE



Medicolegal Pressures

Smaller Family size

Perfect baby

1992

BREECH DELIVERY AT TERM:

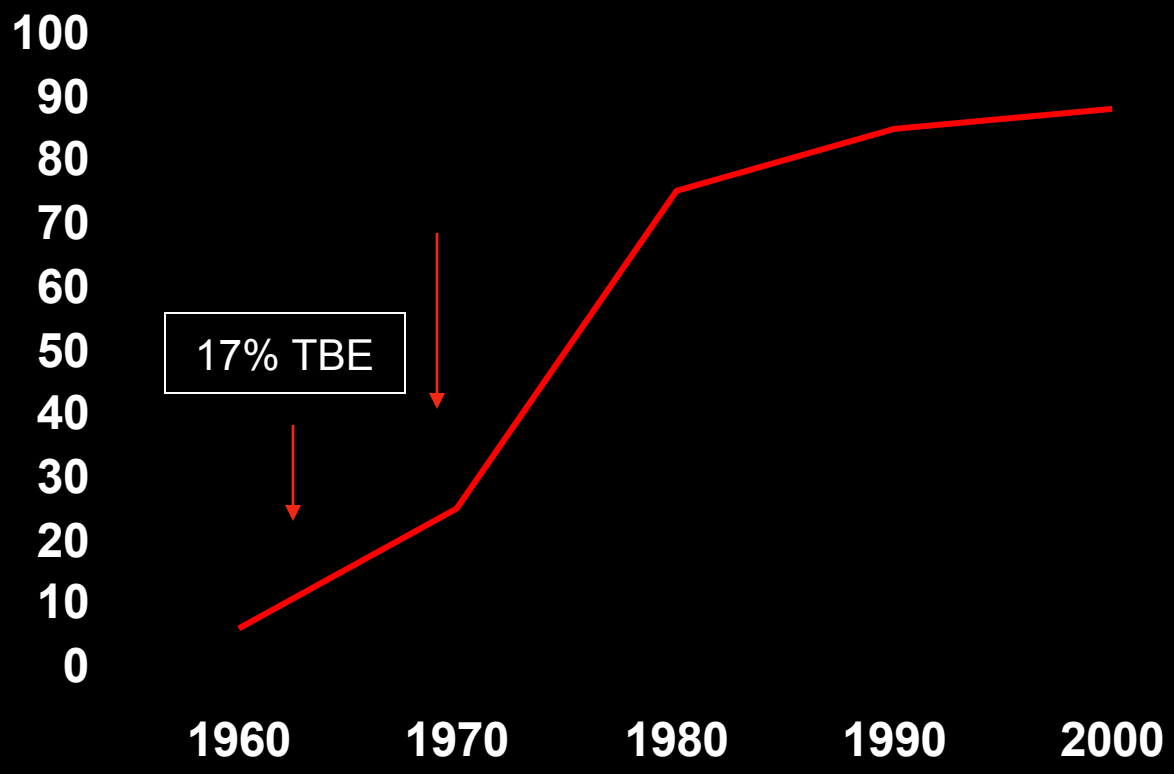
A CRITICAL REVIEW OF THE LITERATURE

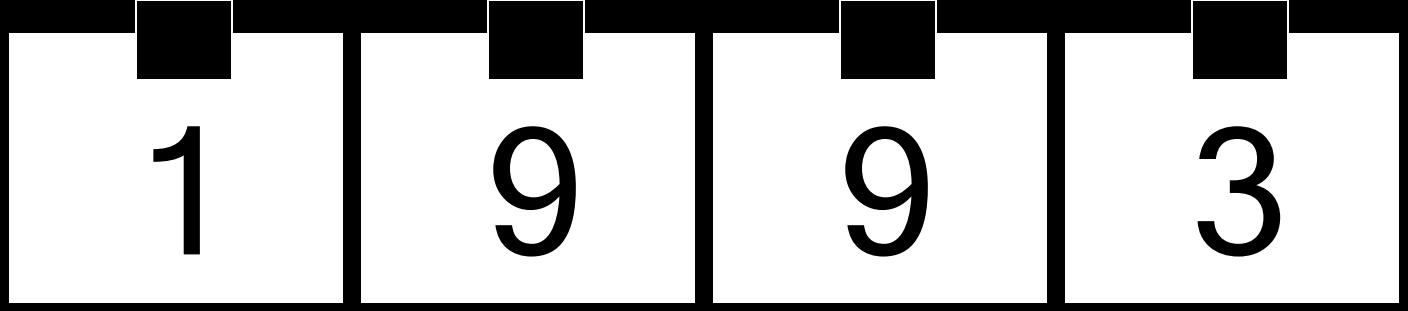
Mary Cheng, Mary Hannah AJOG, 1993

V	PERINATAL MORBIDITY	Cs
157	Low 5 minute Apgar	11
	Brachial plexus / Erb palsy	
	Fractured clavicle/humerus	
	Skull fracture	
	Cerebral hemorrhage	
	Asphyxia/CP	
	OR 3.96	

V	PERINATAL MORTALITY	Cs
75	Cord Prolapse	2
	Head Entrapment	
	Cerebral Hemorrhage	
	Asphyxia/CP	
	OR 3.86	

RATE OF CESAREAN SECTION FOR BREECH
CANADA





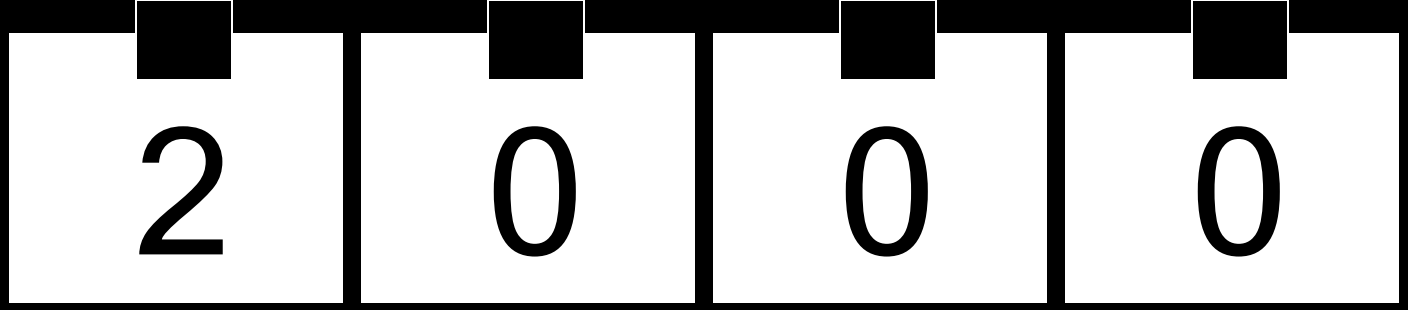
Survey of Canadian Obstetricians Regarding the Management of Term Breech Presentation.

Paula Penkin, Mary Cheng, Mary Hannah

1 9 9 4

INTRAPARTUM MANAGEMENT

Induction and Augmentation OK	No Routine Epidurals
<u>Duration of Labour</u> 0.5 cm/hour progress >3cm 2 hours passive 2nd stage 1 hour active 2nd stage	Amniotomy prn Intrapartum Consultation
Continuous EFM Unnecessary Vaginal Exam with Membrane Rupture	No total breech extractions Assisted Breech Delivery



Hannah et al. Planned caesarean section versus planned vaginal birth for breech presentation: a randomised multicenter trial
Lancet October 2000

COUNTRIES WITH LOW PERINATAL MORTALITY

No difference in perinatal/neonatal mortality between planned C-section and trial of labour.

Significant difference in short term neonatal morbidity in the vaginal delivery group (5.1% vs 0.4%)

Composite measurement of perinatal or neonatal mortality or short term morbidity was significantly higher in the vaginal delivery group (5% vs 1.6%)

"the best method of delivering
a term frank or complete breech
is by planned C-section"

March, 2001

ACOG Committee Opinion
Mode of Term Singleton Breech Delivery
Number 265, December 2001

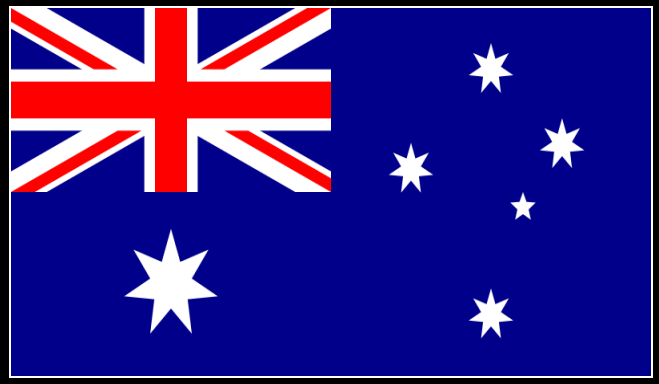
"...planned vaginal delivery of a term singleton breech may no longer be appropriate."
"Patients with breech presentation at term should undergo planned cesarean delivery."

Hofmeyr GJ, Hannah M.
Planned caesarean section for term breech delivery.
Cochrane Database of Systematic Reviews, Nov 2000

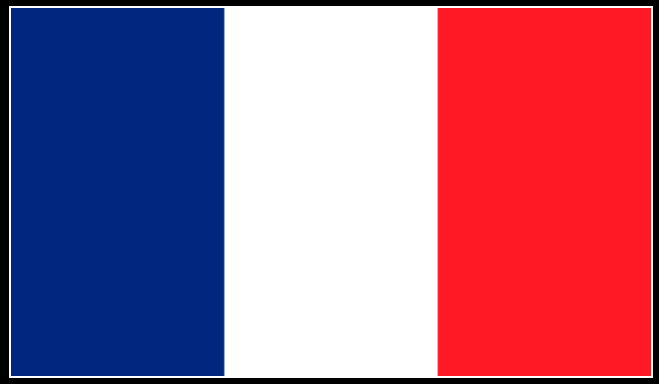
"planned caesarean section reduced perinatal or neonatal death or serious neonatal morbidity, at the expense of somewhat increased maternal morbidity. "

"Individual women should be informed of the risks of vaginal breech delivery.."

IMPACT OF THE TERM BREECH TRIAL



72% offered vaginal breech birth before TBT and 20% after (Phipps, 2003).

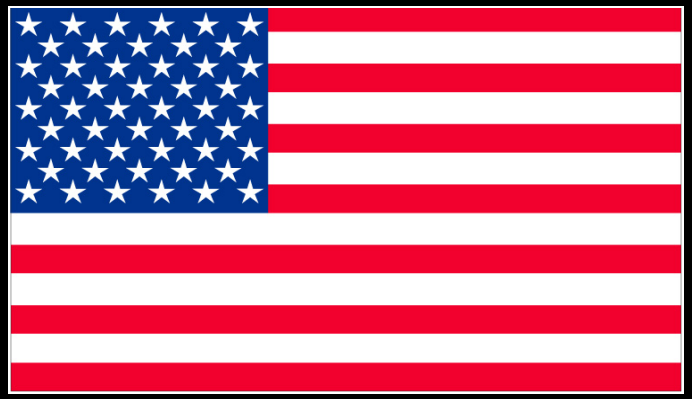


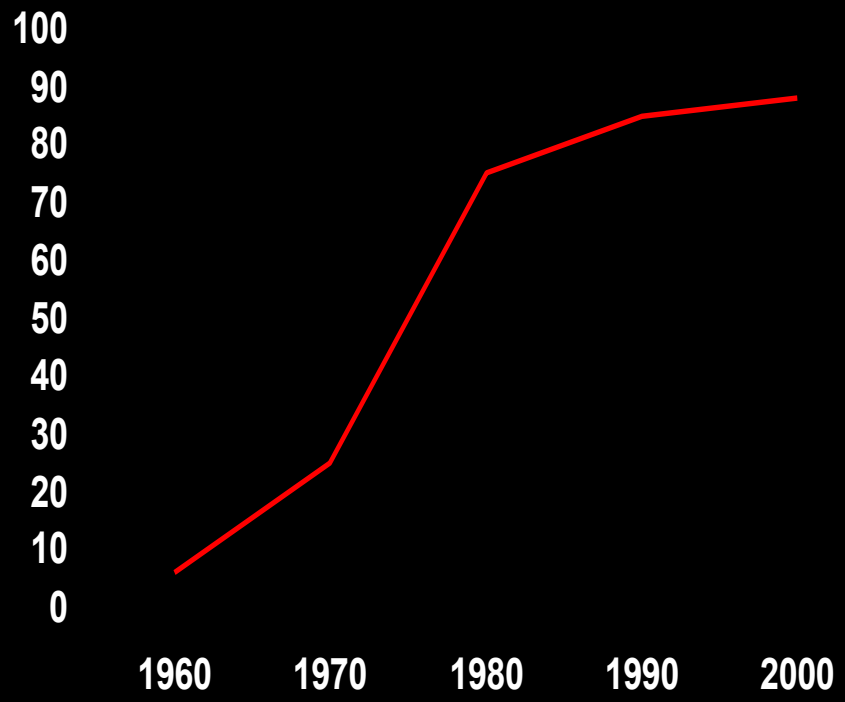
C-section rate for breech rose from 49% in 1998 to 75% in 2003

Within two months of TBT, overall C-section rate for breech rose from 50% to 80% (Reitberg, 2003)

95% of Canadian maternity centers adopted a policy of planned C-section for term breech following the TBT

(Daviss, 2010)





OUTCOME OF CHILDREN 2 YEARS AFTER TBT

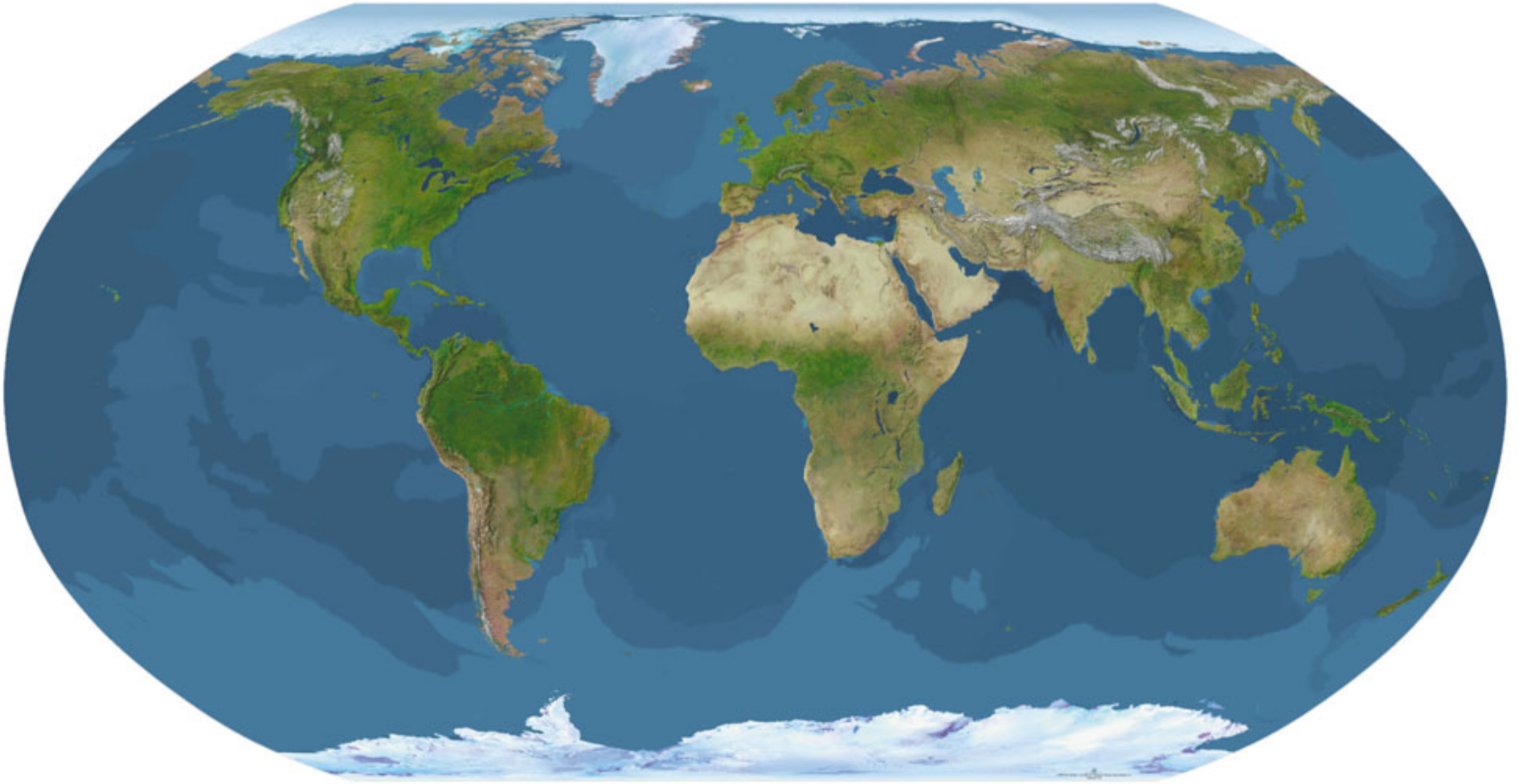
Whyte, 2004

923 parents completed ASQ questionnaires

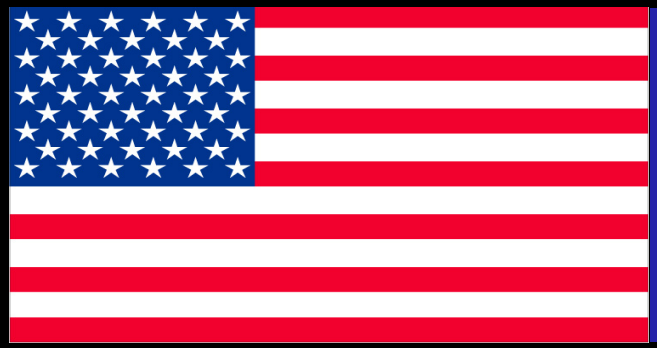
Result:

No difference in risk of death or neurodevelopmental delay between vaginal and cesarean groups.

SELECTION CRITERIA



INTRAPARTUM MANAGEMENT



UNITED STATES OF AMERICA

Vaginal versus cesarean delivery for breech presentation in California: A Population-based study. Obstet Gynecol, 2003

>3.2 million singleton term newborns 1991-1999

93% 97%

100,667 Breech (3%)

4952 Vaginal Breech (4.9%)

	Mortality	Asphyxia	Brachial Plexus Injury	Birth Trauma
Nullipara	OR 9.2	OR 5.7	OR 33.9	OR 5.8
Multipara	OR 1	OR 3.9	OR 22.4	OR 4.2

.. ethnic minority, less education, uninsured…were more likely to have VBD

THE NETHERLANDS

The Dutch Perinatal Database
33,824 term breeches
(1995-1999)

Vaginal breech delivery or
Intrapartum emergency cesarean section

7-fold increase low Apgar score
3-fold increase birth trauma
2-fold increase in perinatal mortality

Compared to elective cesarean section

50% TBT 80%

Decrease in perinatal mortality rate, birth trauma and low Apgar scores

175 elective cesareans to prevent one perinatal death

IRELAND

Alarab et al. Singleton vaginal breech delivery at term: Still a safe option. Obstet Gynecol, 2004

641 Term Breech
1997-2000

Elective C-section
343 (54%)

Trial of vaginal delivery
298 (46%

Vaginal Delivery
146 (49%)
Nullip: 37% VD
Multip: 63% VD

Selection Criteria

2500-3800 g
Frank/Complete
No hyperextension
Normal growth & fluid
No pelvimetry

Labour Management

No inductions/augmentations
1 cm/hr progress
30 min–1 hr active 2nd stage
Routine episiotomy
Epidural by choice (53%)
Assisted breech delivery
Experienced obstetrician

No nonanomalous perinatal deaths, significant trauma or neurologic dysfunction

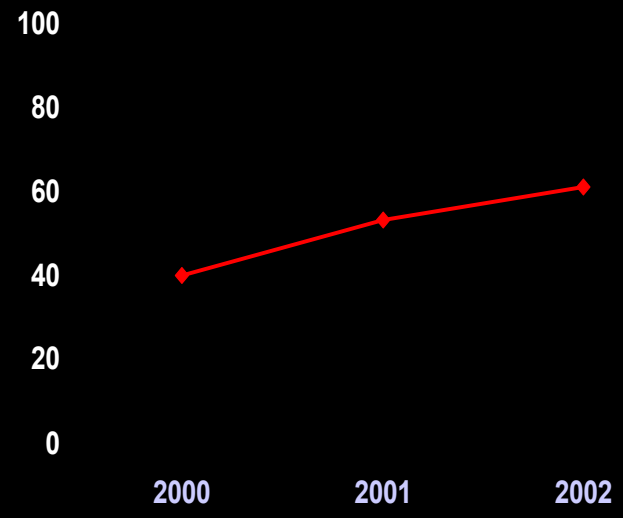
FRANCE

C N G O F

“ There is insufficient current evidence to allow systematic performance of a C-section in the case of breech presentation. “

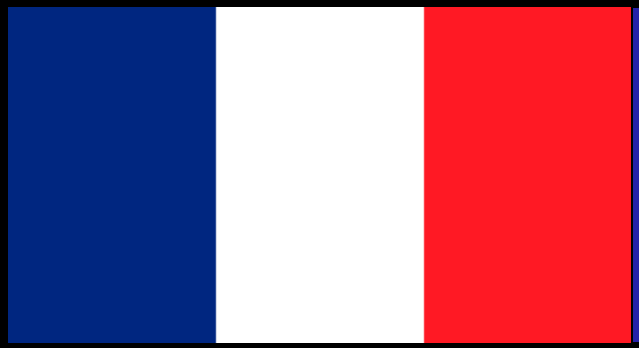
CNGOF, 2000

Elective cesarean for term breech



“Current obstetrical practices in France concerning the breech presentation are very different than those described in the Term Breech Trial. “

CNGOF, 2000



FRANCE

French College of Gynecologists and Obstetricians
Criteria For Vaginal Breech Delivery (2000)

Normal pelvimetry
No hyperextension of fetal head
EFW 2500-3800 g
Frank breech
Continuous monitoring
Patients informed consent

No inductions w unripe cervix
No VBAC
Progress of Labour
- 1-1.5 cm/hr first stage
- 30 minute 2nd stage

Membrane preservation
Assisted Breech Delivery
- Lovset, Bracht, Mariceau

Oxytocin (75%), epidural (>60%),
Episiotomy (>60%) common

2005

THE PREMODA STUDY

Fetal/Neonatal death < 28 days (excl congenital anomalies)

or 1 or more of the following:

Seizures < 24 hours
5 minute Apgar < 4
Intubation/Ventilation x 24 hours
Tube feeding x 4 days
NICU x > 4 days

Birth Trauma
Subdural hematoma
Intracerebral bleed
Intraventricular bleed
Spinal cord injury
Basal skull fracture
Peripheral nerve injury
Genital injury

8105 term breech

STUDY DIFFERENCES

	TBT	PREMODA
US preceeding labor	<70%	100%
Pelvimetry	10%	82%
Passive 2nd stage >1hr	3%	18%
Active 2nd stage > 1 hr	5%	0.2%
FHR monitoring	33%	100%
Mortality/Serious Morbidity	5.7%	1.6%
Senior Obstetrician at delivery	<80%	92.3%

Planned Vaginal Delivery
2526 (31.2%)

Vaginal Delivery
1796 (71%)

1.6%

Almost 20% of deliveries required maneuvers for extended arms or an entrapped head

ACOG Committee Opinion

Mode of Term Singleton Breech Delivery

Number 340, July, 2006

"In light of recent studies that further clarify long-term risks of vaginal breech delivery, ACOG recommends that the decision **depend on the experience of the health care provider**. Cesarean will be the preferred mode for most physicians because of **diminishing expertise**... Planned vaginal delivery may be reasonable under hospital-specific protocol guidelines for eligibility and labor management."

SOGC Clinical Practice Guideline

June, 2009

"Planned vaginal delivery is reasonable in selected women with a term singleton breech fetus."

"With careful case selection and labour management, perinatal mortality occurs in 2 per 1000 births and serious neonatal morbidity in approximately 2% of breech infants."

2009

INTRAPARTUM MANAGEMENT

Induction not recommended Augmentation OK	No Routine Epidurals
<u>Duration of Labour</u> 5-10 cm in under 7 hours 1.5 hours passive 2nd stage 1 hour active 2nd stage	Amniotomy prn
	Intrapartum Consultation
Continuous EFM preferable 1st stage, mandatory second stage Vaginal Exam with Membrane Rupture	Assisted/Spontaneous Breech Delivery

CONCLUSIONS

Problems inherent to the breech position, which place the fetus at risk during delivery, include cord compression, cord prolapse, entrapped aftercoming fetal parts (nuchal arms, entrapped head) and traumatic birth injuries.

These fetal complications have been described in the literature for decades preceeding the Term Breech Trial.

CONCLUSIONS

The cesarean section rate for the term breech has been steadily rising since 1950. Contributing factors include the relative safety of cesarean section, medicolegal pressures, social and societal issues and the “hands off” approach to the term breech.

The Term Breech Trial re-enforced the importance of an experienced care provider, swift labour progress, limited active second stages, universal ultrasound accessibility and close operating room proximity.

CONCLUSIONS

The recommendations of the TBT assume all women and circumstances are the same.

Vaginal breech deliveries based on selective patient criteria and stringent intrapartum management may be safely accomplished. The stricter the criteria, the better the safety outcomes.

Those labours which start spontaneously and are progressive in nature are least likely to pose a problem.

The art of waiting is a difficult one,
and not many obstetricians have either the
courage or the patience to sit idly by
whilst the breech delivers spontaneously;
This becomes even more difficult if the impatient
obstetrician has a century of tradition as well as
the words and writings of all his
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