Appendix A. Project Personnel, Technical Panel, and Peer Reviewers

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Appendix B. Procedures for Suspect or Missing Data

If there was a discrepancy between data in text and tables of the studies we reviewed, we followed the following protocol:

- If the correct data could be derived from other data within the study, we used these data.

- If the data could not be determined from within the study, a search of an 'erratum' in the literature was done to see if updated data were published. If this was determined, the investigator used the updated information and included the study. The investigator noted this in the evidence table of the specific topic.

- If the study data could not be determined using other study data or no 'erratum' information was available, the study was excluded. In summary of subtopics, investigators noted how many and which studies were excluded for this reason.

(In some cases, where no data was available for an entire subtopic, investigators contacted authors to determine correct study data. See individual subtopic methods for details on this procedure.)

Appendix C. Identifying Developed Countries

Our research team decided to include only studies that were conducted in developed countries. We used the definition of "developed country" taken from the CIA World Factbook 2001, Appendix B (Washington, DC: Central Intelligence Agency). According to this source, 35 countries are considered developed countries:

- Andorra
- Australia
- Austria
- Belgium
- Bermuda
- Canada
- Denmark
- Faroe Islands
- Finland
- France
- Germany
- Greece
- Holy See
- Iceland
- Ireland
- Israel
- Italy
- Japan
- Liechtenstein
- Luxembourg
- Malta
- Mexico
- Monaco
- Netherlands
- New Zealand
- Norway
- Portugal
- San Marino
- South Africa
- Spain
- Sweden
- Switzerland
- Turkey
- United Kingdom
- United States

Appendix D. Search Strategies: All Topics

VBAC Success/Maternal and Infant Outcomes

Spontaneous Labor

Databases: MEDLINE (1980-April 2002), HealthSTAR (1980-April 2002)

1 Vaginal birth after cesarean/ or "vaginal birth after cesarean".mp.
2 (trial of labor or trial of labour or trial of scar$).mp.
3 Delivery/ or Episiotomy/ or Extraction, obstetrical/ or Home childbirth/ or Labor, induced/ or Natural childbirth/ or Version, fetal/
4 (vaginal birth or vaginal delivery or uterine rupture).mp.[mp=title, abstract, registry number word, mesh subject heading]
5 exp Labor/
6 2 or 3 or 4 or 5
7 exp cesarean section/ or "cesarean".mp.
8 6 and 7
9 1 or 8
10 limit 9 to human
11 limit 10 to english
12 10 not 11
13 limit 12 to abstracts
14 11 or 13

Elective Repeat Cesarean Section

Databases: MEDLINE (1980-April 2002), HealthSTAR (1980-April 2002)

1 Vaginal birth after cesarean/ or "vaginal birth after cesarean".mp.
2 (trial of labor or trial of labour or trial of scar$).mp.
3 Delivery/ or Episiotomy/ or Extraction, obstetrical/ or Home childbirth/ or Labor, induced/ or Natural childbirth/ or Version, fetal/
4 (vaginal birth or vaginal delivery or uterine rupture).mp. [mp=title, abstract, registry number word, mesh subject heading]
5 exp Labor/
6 2 or 3 or 4 or 5
7 exp cesarean section/ or "cesarean".mp.
8 6 and 7
9 1 or 8
10 limit 9 to human
11 limit 10 to english language
12 10 not 11
13 limit 12 to abstracts

14 11 or 13
15 Risk factors/ or "risk factors".mp.
16 exp ethnic groups/ or "ethnic groups".mp.
17 exp demography/ or "demographics".mp.
18 Midwifery/ or "midwife".mp.
19 "NATUROPATH".mp.
20 Family practice/ or "family practice".mp.
21 Health maintenance organizations/ or "hmo".mp.
22 exp prepaid health plans/ or "prepaid health plans".mp.
23 Pregnancy outcome/
24 exp "Outcome assessment (health care)"/
25 Physicians, family/ or "family physician".mp.
26 exp insurance/ or exp insurance, health/
27 Hospitals, rural/ or Rural health/ or Rural health services/ or Rural population/ or "rural".mp.
28 Medical indigency/ or "medical indigency ".mp.
29 Urban health/ or Urban population/ or "metropolitan".mp.
30 exp hospitals, teaching/ or "teaching hospital".mp.
31 Hospitals, community/ or "community hospital".mp.
32 exp hospitals, public/ or "public hospital".mp.
33 exp hospitals, private/ or "private hospital".mp.
34 obstetric factor$.ti.
35 exp infant, low birth weight/ or "low birth weight".mp.
36 Fetal weight/ or "fetal weight".mp.
37 exp pregnancy, multiple/ or "multiple gestation".mp.
38 exp labor presentation/ or "labor presentation".mp.
39 Parity/ or "parity".mp
40 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25
41 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39
42 40 or 41
43 14 and 42

Induction and Augmentation

Databases: MEDLINE (1980-April 2002), EMBASE (1980-April 2002), HealthSTAR (1980-April 2002)

1 exp labor, induced/ or "labor induction".mp.
2 (labor and augment$).tw
3 1 or 2
4 limit 3 to human
5 limit 4 to english language
6 4 not 5
7 limit 6 to abstracts
8 5 or 7

Predictors

Databases: MEDLINE (1980-April 2002), HealthSTAR (1980-April 2002)

1 Vaginal birth after cesarean/ or "vaginal birth after cesarean".mp.
2 (trial of labor or trial of labour or trial of scar$).mp.
3 Delivery/ or Episiotomy/ or Extraction, obstetrical/ or Home childbirth/ or Labor, induced/ or Natural childbirth/ or Version, fetal/
4 (vaginal birth or vaginal delivery or uterine rupture).mp. [mp=title, abstract, registry number word, mesh subject heading]
5 exp Labor/
6 2 or 3 or 4 or 5
7 exp cesarean section/ or "cesarean".mp.
8 6 and 7
9 1 or 8
10 limit 9 to human
11 limit 10 to english language
12 10 not 11
13 limit 12 to abstracts
14 11 or 13
15 exp risk assessment/ or "risk assessment".mp.
16 exp probability/ or "probability".mp.
17 Predictive value of tests/
18 previous vaginal delivery.mp.
19 Gestational age/ or "gestational age".mp.
20 "SPONTANEOUS LABOR".mp.
21 Birth weight/ or "birth weight".mp.
22 Fetal weight/ or "fetal weight".mp.
23 exp labor presentation/ or Oxytocin/ or "cervical dilation".mp.
24 exp treatment outcome/ or Pregnancy outcome/ or "outcome".mp.
25 Cesarean section, repeat/ or "repeat cesarean".mp.
26 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25
27 14 and 26

Patient Satisfaction, Health Status, and Patient Preference

Databases: MEDLINE (1980-April 2002), HealthSTAR (1980-April 2002)

1 Vaginal birth after cesarean/ or "vaginal birth after cesarean".mp.
2 (trial of labor or trial of labour or trial of scar$).mp.
3 Delivery/ or Episiotomy/ or Extraction, obstetrical/ or Home childbirth/ or Labor, induced/ or Natural childbirth/ or Version, fetal/
4 (vaginal birth or vaginal delivery or uterine rupture).mp. [mp=title, abstract, registry number word, mesh subject heading]
5 exp Labor/
6 exp cesarean section/ or "cesarean".mp.
7 1 or 2 or 3 or 4 or 5 or 6
8 exp health status/ or "health status".mp.
9 exp health status indicators/ or "health status indicators".mp.
10 exp quality of life/ or "quality of life".mp.
11 Patient satisfaction/ or "patient satisfaction".mp.
12 8 or 9 or 10 or 11
13 7 and 12
14 limit 13 to human
15 limit 14 to english language
16 14 not 15
17 limit 16 to abstracts
18 15 or 17
19 exp MALPRACTICE/ or malpractice.mp.
20 exp Jurisprudence/ or litigation.mp.
21 lj.fs.
22 19 or 20 or 21
23 7 and 22
24 limit 23 to (human and english language)
25 18 or 24
26 exp Depression, Postpartum/ or postpartum depression.mp.
27 7 and 26
28 27 not 25
29 limit 28 to (human and english language)
30 25 or 29

Economics/Cost

Databases: MEDLINE (1980-April 2002), HealthSTAR (1980-April 2002)

1 Vaginal birth after cesarean/ or "vaginal birth after cesarean".mp.
2 VBAC.mp.
3 1 or 2
4 ec.fs.
5 exp "costs and cost analysis"/
6 exp economics/
7 exp Insurance/
8 4 or 5 or 6 or 7
9 3 and 8
10 Vaginal birth after cesarean/ or "vaginal birth after cesarean".mp.
11 (trial of labor or trial of labour or trial of scar$).mp.
12 Delivery/ or Episiotomy/ or Extraction, obstetrical/ or Home childbirth/ or Labor, induced/ or Natural childbirth/ or Version, fetal/
13 (vaginal birth or vaginal delivery or uterine rupture).mp. [mp=title, abstract, registry number word, mesh subject heading]
14 exp Labor/
15 11 or 12 or 13 or 14
16 exp cesarean section/ or "cesarean".mp.
17 15 and 16
18 10 or 17
19 limit 18 to human
20 limit 19 to english language
21 19 not 20
22 limit 21 to abstracts
23 20 or 22
24 8 and 23

Access

Databases: MEDLINE (1980-April 2002), HealthSTAR (1980-April 2002)

1 Vaginal birth after cesarean/ or "vaginal birth after cesarean".mp.
2 VBAC.mp.
3 (trial of labor or trial of labour or trial of scar$).mp.
4 Delivery/ or Episiotomy/ or Extraction, obstetrical/ or Home childbirth/ or Labor, induced/ or Natural childbirth/ or Version, fetal/
5 (vaginal birth or vaginal delivery or uterine rupture).mp. [mp=title, abstract, cas registry/ec number word, mesh subject heading]
6 exp Labor/
7 3 or 4 or 5 or 6
8 exp cesarean section/ or "cesarean".mp.
9 7 and 8
10 1 or 2 or 9
11 exp Health Services Accessibility/
12 (access to healthcare or access to health care).mp.
13 exp HOSPITALS, RURAL/ or exp RURAL HEALTH SERVICES/
14 exp HOSPITALS, URBAN/ or exp URBAN HEALTH SERVICES/
15 Physicians, Family/ or family physicians.mp.
16 general practitioners.mp.
17 Midwifery/ or midwives.mp.
18 Length of Stay/
19 exp Clinical Competence/ or clinical competence.mp.
20 exp Utilization Review/
21 19 and 20
22 exp *clinical competence/
23 21 or 22
24 exp Physician's Practice Patterns/ or physician's practice patterns.mp.
25 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24
26 11 or 12 or 25
27 10 and 26
28 limit 27 to (human and english language)

Medicaid

Databases: MEDLINE (1980-April 2002), HealthSTAR (1980-April 2002)

1 Vaginal birth after cesarean/ or "vaginal birth after cesarean".mp.
2 VBAC.mp.
3 (trial of labor or trial of labour or trial of scar$).mp.
4 Delivery/ or Episiotomy/ or Extraction, obstetrical/ or Home childbirth/ or Labor, induced/ or Natural childbirth/ or Version, fetal/
5 (vaginal birth or vaginal delivery or uterine rupture).mp. [mp=title, abstract, registry number word, mesh subject heading]
6 exp Labor/
7 3 or 4 or 5 or 6
8 exp cesarean section/ or "cesarean".mp.
9 7 and 8
10 1 or 2 or 9
11 exp MEDICAID/ or medicaid.mp.
12 10 and 11
13 limit 12 to (human and english language)

Laws

Databases: MEDLINE (1980-April 2002), HealthSTAR (1980-April 2002)

1 Vaginal birth after cesarean/ or "vaginal birth after cesarean".mp.
2 VBAC.mp.
3 (trial of labor or trial of labour or trial of scar$).mp.
4 Delivery/ or Episiotomy/ or Extraction, obstetrical/ or Home childbirth/ or Labor, induced/ or Natural childbirth/ or Version, fetal/
5 (vaginal birth or vaginal delivery or uterine rupture).mp. [mp=title, abstract, registry number word, mesh subject heading]
6 exp Labor/
7 3 or 4 or 5 or 6
8 exp cesarean section/ or "cesarean".mp.
9 7 and 8
10 1 or 2 or 9
11 exp LEGISLATION/ or legislation.mp.
12 lj.fs. or law$1.mp.
13 11 or 12
14 10 and 13

Guidelines

Databases: MEDLINE (1980-April 2002), HealthSTAR (1980-April 2002)

1 Vaginal birth after cesarean/ or "vaginal birth after cesarean".mp.
2 VBAC.mp.
3 (trial of labor or trial of labour or trial of scar$).mp.
4 Delivery/ or Episiotomy/ or Extraction, obstetrical/ or Home childbirth/ or Labor, induced/ or Natural childbirth/ or Version, fetal/
5 (vaginal birth or vaginal delivery or uterine rupture).mp. [mp=title, abstract, registry number word, mesh subject heading]
6 exp Labor/
7 3 or 4 or 5 or 6
8 exp cesarean section/ or "cesarean".mp.
9 7 and 8
10 1 or 2 or 9
11 exp Practice Guidelines/ or practice guidelines.mp.
12 10 and 11
13 limit 12 to english language

Appendix E. Studies Excluded at the Data Abstraction Phase by Topic and Reason

Studies that were initially included and at the data abstraction level were excluded (see Bibliography for full reference.)

Author, Year	Study Design	Reason
VBAC Success/ Maternal & Infant Outcomes		
Abitbol, 1993	Prospective Cohort	All women with history of cesarean / study follow-up or time period ambiguous
Aydemir, 1993		Unable to separate scarred uterus group and CD data by group
Hamilton, 2001	Case-Control	Comparison and control groups not comparable on CD rates
Holland, 1992	Retrospective Cohort	Insufficient description of population/data
Lynch, 1996	Case-Series	Data not presented in an understandable/usable way
Miller, 1994	Retrospective Cohort	Duplicate Data to Leung, 1993
Poma, 2000	Before-After Policy change	Data difficult to understand/abstract due to study design
Rozenberg, 1996	Prospective Cohort	Sensitivity/ specificity data not able to be analyzed
Schneider, 1988	Prospective Cohort	Noncomparable groups, vertical incisions
Predictive Tools and Individual Factors		
Del Valle, 1994	TBA	Incorrect comparison/no TOL group information
Goldman, 1990	Case-control	Incorrect comparison/no TOL group information
King, 1994	Database	Incorrect comparison/no TOL group information
Stafford, 1991	Database	Incorrect comparison/no TOL group information
Wagner, 1999	Retrospective Cohort	Error in data
Induction of Labor		
Grubb, 1996	RCT	Data on risk/benefit of induction in TOL not discernable
Kaplan, 1993	Retrospective Cohort	Data on risk/benefit of induction in TOL not discernable
Learman 1996	Retrospective Cohort	Data on risk/benefit of induction in TOL not discernable
Maslow, 2000	Retrospective Cohort	Data on risk/benefit of induction in TOL not discernable
Peleg, 1999	RCT	Data on risk/benefit of induction in TOL not discernable
Troyer, 1992	Retrospective Cohort	Data on risk/benefit of induction in TOL not discernable
Turner, 1997	Retrospective Cohort	Data on risk/benefit of induction in TOL not discernable

Cost, Healthcare Resources, and Provider Characteristics	
Author, Year	**Reason**
Abitol (1993)	No relevant data
ACOG (1996)	review
ACOG (1997)	No relevant data
Adams (2000)	General population
Afriat (1990)	Review
Ales (1990)	Wrong population
American Health Consultants (1996)	Review
Amini (1994)	General population
Anderson (1985) CMAJ	General population
Anderson (1999)	Wrong population
Anonymous (DS&B, 1998)	National data from insurer; limited cost and number of cases
Balaban (1994)	General population
Barclay (1989)	General population
Barros (1991)	Developing country
Bennetts (1982)	General population
Benson (2001)	No relevant data
Bertollini (1992)	General population
Bique (1999)	Wrong population
Blakemore (1990)	General population
Blegen (1995)	General population; no relevant data
Bonham (1983)	General population
Braveman (1996)	No data
Britton (1998)	General population
Brooten (1994)	General population
Bryan (1990)	Wrong population
Buist (1999)	General population
Burns (1993)	No relevant data
Burns (1994)	No relevant data
Butler (1993)	General population
Carey (1991)	General population
Carpenter (1987)	General population
Caughey (1998)	No relevant data
Cavero (1991)	General population
Chambliss (1992)	No relevant data
Chaska (1988)	General population
Chervenak (1996)	Editorial; no relevant data
Chez (2001)	No relevant data
Chua (1991)	Developing country (Sinagapore) or General population
Clark (1991)	General population
Clarke (1995)	No relevant data
Clarke (1996)	No relevant data
Clemenson (1993)	Review
Coco (1998)	Review
Combs (1992)	Wrong population
Committtee on Obstetric Practice (1996)	No relevant data

Comreid (1996)	Wrong population
Coody (1993)	Wrong population
Coonrod (2000)	General population
Cowan (1994)	No relevant data
Creedy (2000)	General population
Crump (1988)	General population
Curtin (1999)	No relevant data
Daniels (1989)	Review
Davies (1996)	No relevant data
Dawson (1997)	Editorial
de Meeus (1998)	No relevant data
de Regt (1986)	Wrong time
DeJoy (1999)	Letter
Demott (1990)	General population
DeMott (1999)	Letter
Dhall (1987)	Developing country
Dublin (2001)	No relevant data
Duff (1988)	No relevant data
Eakes (1990)	Wrong population
Eakins (1989)	No relevant data
Eddy (1990)	Review
Eidelman (1998)	General population
Eisenberg (1979)	Wrong time
Elliott (1997)	No relevant data
Emerson (2001)	Wrong population
Enthoven (1989)	General population
Evans (1984)	Data pre-1980
Fadda (2001)	Wrong population
Farmer (1996)	Wrong population; no relevant data
Feldman (1985)	Wrong population
Finkler (1982)	Review
Finkler (1991)	General population
Finkler (1993)	General population
Firth (1988)	No relevant data
Flamm (1985) Clin Obst & G, 28, 735	No relevant data
Flamm (1990)	No relevant data
Flamm (1997)	Review; no relevant data
Flanagan (1987)	Wrong population
Fraser (1987)	General population
Frigoletto	Wrong population
Gafni (1997)	Wrong population
Garite (1986)	Wrong population
Gates (1995)	No relevant data
Gifford (1995)	Wrong population
Gillette (1996)	Letter; no relevant data
Glasser (1988)	General
Gleicher (1984) JAMA 3273	General population
Gleicher (1986)	Editorial; no relevant data

Goeree (1995)	Wrong population; no relevant data
Goetzl (2001)	No relevant data
Gold (1987)	General population
Goldfarb (1987)	General population
Goldfarb (1991)	General population
Gonzalves (1993)	Wrong population
Gordon (1999)	Wrong population, no relevant data
Gould (1989)	Wrong population
Grazier (1987)	General population
Green (1995)	Editorial
Gregory (1994)	No relevant data
Gregory (1999)	Wrong population; no relevant data
Greis (1981)	General population
Greulich (1994)	General population
Grullon (1997)	Wrong popultion
Grzybowski (1991)	General population; no relevant data
Guirguis (1991)	Developing country
Hage (1992)	Wrong population
Haire (1991)	General population
Halpern (1999)	Letter
Haney (1999)	General population
Hanley (1996)	No relevant data; VBAC outcomes (N=376)
Haq (1988)	Review
Hart (1996)	Wrong population
Harwood (2001)	Wrong population
Heddleston (1991)	No relevant data
Hemminki (1991)	General population
Henry (1995)	No relevant data
Hibbard (1989)	General population
Hickson (1987)	No relevant data
Hillman (1990)	General population
Hornbrook (1981)	Wrong time
Hourvitz (1996)	Wrong population
Hsiao (1988)	No relevant data
Hueston (1993)	Wrong population
Hueston (1994)	General population
Hueston (1995) J Fam Pract, 40, 345	General population
Hueston (1995A)	General population
Hurst (1984)	General population
Institute of Clinical Systems Investigation (1996)	No relevant data
Janowitz (1982)	Developing country
Janowitz (1984)	Developing country
Jones (1991)	No relevant data
Joseph (1991)	No relevant data
Kaplan (1996)	Wrong population
Kazandian (1996)	No relevant data
Keeler (1993)	Review
Kennedy (1997)	Review

Kennell (1991)	General population
Kilpatrick (1995)	Wrong population
Kirk (1990)	No relevant data
Kizer (1988)	Letter
Kline (1993)	No relevant data
Koska (1989)	General population
Kotagal (1999)	Wrong population
Kozak (1989)	General population
Kramer (1997)	General population; no relevant data
Krieger (1993)	Editorial
Krikke (1989)	Wrong population
Lagrew (1998)	General population
Lavin (1982)	Data pre-1980
Leung (1993)	No relevant data
Leung (1998)	General population
Leyland (1993)	Letter
Lieberman (1998)	No relevant data
Lopez-Zeno (1992)	Wrong population
Lydon-Rochelle (2000)	Wrong population
Magann (1991)	Wrong population
Mansfield (1995)	General population
Mardon (1997)	General population
Marieskind (1989)	Review
Marta (1994)	Review
Martin (1997)	Wrong population (low-segment vertical) or review
Mauldin (1996)	General population
McClain (1990)	No relevant data
McCloskey (1992)	Wrong population
McCord (2001)	Developing country
McIntosh (1984)	General population
McIntosh (1991)	Review
Meehan (1989)	No relevant data ?
Menacker (2001)	No relevant data
Merrill (1999)	General population; no relevant data
Metropolitan Life Insurance Co, (1994)	No relevant data
Miller (1980)	No relevant data
Miller (1989)	Review
Miller (1994) Ob Gyn 255	No relevant data
MMWR 4/23/1993	General population
MMWR 8/16/96	General population
Moore (1986)	Wrong population
Mousa (2000)	Wrong population
Mozurkewich (2000)	No relevant data
Mundle (1996)	General population; no relevant data
Myers (1986)	Wrong population
Myers (1990) SA, NEJM	Letter
Myers (1993)	General population
Naef (1995)	No relevant data

Nesbitt (1991)	Wrong population
Newton (1989)	Wrong time
Norman (1995)	Editorial
Notzon (1990)	No relelvant data
November (2001)	Review
Oberman (1989)	General population
Obst (2001)	General population
Oleske (1991)	General population
Oleske (2000)	No relevant data
Panlilio (1992)	General population
Parrish (1993)	General population
Parrish (1994) JAMA 443	Wrong population
Paul (2000)	Developing country
Pauly (2001)	No relevant data
Petitti (1985)	Review
Petrou (2001)	General population
Phillips (1982)	Wrong time
Placek (1983)	Wrong time
Placek (1988)	General population
Poma (1999)	No relevant data
Porreco (1989)	Editorial
Porreco et al (1989)	Editorial
Pridjian (1991)	General population
Rabinerson (2001)	Letter; no relevant data
Radin (1993)	Wrong population
Regan Report on Nursing Law (1993) v34 No.2	Wrong population
Reid (1989)	General population
Resnick (1987)	General population
Reynolds (1997)	General population
Rhodes (1994)	Wrong population
Roberts (1994)	No relevant data
Roberts (1997)	Meta-analysis; no citations for included articles
Robertson (1990)	General population
Rochat (1988)	General population
Rock (1988)	Wrong population
Rogers (2000)	Wrong population
Rooks (1989)	General population
Rose (1999A and B)	Editorial
Rose (1999A) AFP 474	Editorial
Rosen (1990)	Review
Rosen (1991)	Review
Rubin (1981)	Wrong time
Ruderman (1993)	General population
Rudick (1984)	No relevant data
Sachs (1999)	Editorial; no relevant data
Sachs (1999)	Editorial
Sachs (1999A)	Editorial
Sachs (1999B)	Letter
Sack (1980)	Wrong population

Sakala (1993)	General population
Sanchez-Ramos (1992)	Wrong population
Sanchez-Ramos (1995)	General population
Sandmire (1994)	No relevant data
Sandmire (1996)	No relevant data
Satcher (1999)	Letter
Satin (1991)	General population
Satin (1994)	General population
Schipp (2000)	No relevant data
Schipp (2001)	No relevant data
Schnitker (1999)	Review
Scott (1991)	No relevant data
Scott (1997)	Review
Seminar in Nursing Law	Wrong population
Sennett (1983)	Wrong population
Shy (1980)	Wrong time
Siddiqui (1999)	General population
Sims (1984)	General population
Sirio (1999)	Letter
Skupinski (1996)	Wrong population
Spelliscy (1995)	Wrong population
Stafford (1990) JAMA 683	Review
Stafford (1993)	No relevant data
Stainaker (1997)	No relevant data
Statistical Bulletin (1988)	General population
Statistical Bulletin (1989)	Wrong time
Statistical Bulletin (1992)	General population
Stuart (2001)	General population
Taffel (1983)	General population
Taffel (1987)	No relevant data
Taffel (1991)	General population
Taylor (1997)	Wrong population
Torres (1989)	Wrong population
Tussing (1992)	Wrong population
Udom (1998)	General population; no relevant data
van Amerongen (1989)	No relevant data
Vimercati (2000)	No relevant data
Wall (1995)	Editorial
Wen (1998)	General population
Wennberg (1982)	No relevant data
Whitsel (2000)	No relevant data
Williams (1983) RL, AJPH	Wrong time
Wilner (1981)	Wrong time
Wright (1984)	Wrong time
Yanover	pre 1980
Young (1997)	Editorial
Zahniser (1992)	No relevant data
Zelop (2001)	No relevant data
Zhou (1991)	Developing country (China)

Appendix F. Criteria for Grading in the Internal Validity of Individual Studies

Our team used the criteria listed below to rate studies.* Details on use of these criteria follow. See individual topic method and/or results sections for discussion on those components considered fatal flaws for particular topics.

Randomized Controlled Trials

- Random assignment
- Allocation concealed
- Groups similar at baseline
- Eligibility criteria specified
- Outcome assessors blinded
- Care provider blinded
- Patient unaware of treatment
- Intention-to-treat analysis
- Maintenance of comparable groups
- Reporting of attrition, crossovers, adherence, and contamination
- Differential loss to followup or overall high loss to followup

Cohort Studies

- Comparable groups assembled/ Database representative for study (e.g., comparing women who all would qualify for TOL rather than TOL versus medically indicated repeat cesarean)
- Maintenance of comparable groups
- Clear definition of comparison groups/sufficient description of distribution of prognostic factors
- Measures equal, reliable, valid/ explicit definition of outcomes (objective, consistently applied e.g., uterine rupture)
- Outcome assessment blind to exposure status
- Loss/dropout rate
- Follow-up long enough for outcomes to occur
- Consider/adjust for potential important confounders (obstetric/medical conditions)

*Harris, R.P.Helfand, M.Woolf, S.H.Lohr, K.N.Mulrow, C.D.Teutsch, S.M.Atkins, D. (2001). Current methods of the U.S. Preventive Services Task Force. Am J Prev Med, V20; 21-35.

Undertaking Systematic Reviews of Research Effectiveness: CRD's Guidance for those Carrying Out or Commissioning Reviews. CRD Report Number 4 (2nd ed). NHS Centre for Reviews and Dissemination; York, England. March 2001.

Case-control Studies

- Case definition explicit
- State of the cases reliably assessed and validated
- Accurate ascertainment of cases
- Nonbiased selection of cases/controls *(controls randomly selected)*
- Cases and controls comparable with respect to potential confounding factors
- Procedures applied equally
- Appropriate attention to confounders
- Appropriate statistical analysis used (matched, unmatched, overmatching)

Case Series Studies

- Representative sample selected from a relevant population
- Inclusion criteria explicit
- Individuals entered the survey at a similar point in their disease progression
- Followup long enough for important events to occur
- Outcomes assessed using objective criteria/ blinding used
- If comparison of sub-series, sufficient description of the series and distribution of prognostic factors

The Methods Work Group for the US Preventive Services Task Force (USPSTF) developed a set of criteria by which the quality of individual studies could be evaluated in terms of both internal validity and external validity. The USPSTF accepted the criteria, and the associated definitions of quality categories, that relate to internal validity at its September 1999 quarterly meeting. Details on this criteria and grading study quality has also been documented.*

This document describes the criteria relating to internal validity and the procedures followed to make these judgments.

All topic teams will use initial "filters" to select studies for review that deal most directly with the question at issue and that are applicable to the population at issue. Thus, studies of any design that use outdated technology or that use technology that is not feasible for primary care practice may be filtered out before the abstraction stage, depending on the topic and the decisions of the topic team. The teams will justify such exclusion decisions if there could be reasonable disagreement about this step. The criteria below are meant for those studies that pass this initial filter.

Design-Specific Criteria and Quality Category Definitions

Presented below are a set of minimal criteria for each study design and then a general definition of three categories—good, fair, and poor—based on those criteria. These specifications are not meant to be rigid rules but rather are intended to be general guidelines, and

individual exceptions, when explicitly explained and justified, can be made. In general, a good study is one that meets all criteria well. A fair study is one that does not meet (or it is not clear that it meets) at least one criterion but has no known "fatal flaw." Poor studies have at least one fatal flaw.

Randomized Controlled Trials and Cohort Studies

Criteria:

- Initial assembly of comparable groups
  -for RCTs: adequate randomization, including first concealment and whether potential confounders were distributed equally among groups
  -for cohort studies: consideration of potential confounders with either restriction or measurement for adjustment in the analysis; consideration of inception cohorts
- Maintenance of comparable groups (includes attrition, cross-overs, adherence, contamination)
- Important differential loss to follow-up or overall high loss to follow-up
- Measurements: equal, reliable, and valid (includes masking of outcome assessment)
- Clear definition of interventions
- Important outcomes considered
- Analysis: adjustment for potential confounders for cohort studies, or intention to treat analysis for RCTs.

Definition of ratings based on above criteria:

Good: Meets all criteria: Comparable groups are assembled initially and maintained throughout the study (follow-up at least 80 percent); reliable and valid measurement instruments are used and applied equally to the groups; interventions are spelled out clearly; important outcomes are considered; and appropriate attention to confounders in analysis. In addition, for RCTs, intention to treat analysis is used.

Fair: Studies will be graded fair if any or all of the following problems occur, without the fatal flaws noted in the "poor" category below: Generally comparable groups are assembled initially but some question remains whether some (although not major) differences occurred in follow-up; measurement instruments are acceptable (although not the best) and generally applied equally; some but not all important outcomes are considered; and some but not all potential confounders are accounted for. Intention to treat analysis is done for RCTS.

Poor: Studies will be graded poor if any of the following fatal flaws exists: Groups assembled initially are not close to being comparable or maintained throughout the study; unreliable or invalid measurement instruments are used or not applied at all equally among groups (including not masking outcome assessment); and key confounders are given little or no attention. For RCTs, intention to treat analysis is lacking.

Case-control Studies

Criteria:

- Accurate ascertainment of cases
- Nonbiased selection of cases/controls with exclusion criteria applied equally to both
- Response rate
- Diagnostic testing procedures applied equally to each group
- Measurement of exposure accurate and applied equally to each group
- Appropriate attention to potential confounding variable

Definition of ratings based on criteria above:

Good: Appropriate ascertainment of cases and nonbiased selection of case and control participants; exclusion criteria applied equally to cases and controls; response rate equal to or greater than 80 percent; diagnostic procedures and measurements accurate and applied equally to cases and controls; and appropriate attention to confounding variables.

Fair: Recent, relevant, without major apparent selection or diagnostic work-up bias but with response rate less than 80 percent or attention to some but not all important confounding variables.

Poor: Major selection or diagnostic work-up biases, response rates less than 50 percent, or inattention to confounding variables.

Systematic Reviews

Criteria:

- Comprehensiveness of sources considered/search strategy used
- Standard appraisal of included studies
- Validity of conclusions
- Regency and relevance are especially important for systematic reviews

Definition of ratings from above criteria:

Good: Recent, relevant review with comprehensive sources and search strategies; explicit and relevant selection criteria; standard appraisal of included studies; and valid conclusions.

Fair: Recent, relevant review that is not clearly biased but lacks comprehensive and search strategies.

Poor: Outdates, irrelevant, or biased review without systematic search for studies, explicit selection criteria, or standard appraisal of studies.

Quality Analysis Details: Uterine Rupture

Three studies (Lydon-Rochelle, 2001; Rageth, 1999; Stone, 2000), used ICD-9 codes to measure uterine rupture rates, a method that has been shown to be inaccurate (Anonymous, 2000). Hospital discharge data has important limitations. For example, one state-wide study of ICD-9 codes from hospital discharge data compared the codes for uterine rupture to detailed medical records including surgical reports and discharge summaries in Massachusetts (Anonymous, 2000). In a seven-year period 1,244 suspected uterine ruptures were identified from ICD-9 codes. After detailed record review 480 (39.8 percent) of these were confirmed as true uterine ruptures rather than incidental extension of uterine incision at surgery or uterine windows without disruption. The positive predictive value was 50.7percent for the ICD-9 codes 665.0 (rupture of uterus before the onset of labor) and 665.1 (rupture of uterus during labor or not otherwise specified) and 28.6 percent for code 674.1 (disruption of cesarean wound including dehiscence or disruption of uterine wound). If they had restricted cases of uterine rupture to those identified by codes 665.0 and 665.1, as was done in the two retrospective studies above (Lydon-Rochelle, 2001; Stone, 2000), they would have missed one third of cases classified as having uterine rupture by chart review. Thus, ICD-9 codes are not an accurate means to identify cesarean disruption. Seven of 15 prospective cohort studies were rated poor.

References

Anonymous. Use of hospital discharge data to monitor uterine rupture--Massachusetts, 1990-1997; US Department of Health & Human Services. MMWR - Morbidity & Mortality Weekly Report 2000;49(12):245-8.

Lydon-Rochelle M, Holt VL, Easterling TR, et al. Risk of uterine rupture during labor among women with a prior cesarean delivery. New England Journal of Medicine 2001;345(1):3-8.

Rageth JC, Juzi C, Grossenbacher H. Delivery after previous cesarean: a risk evaluation. Swiss Working Group of Obstetric and Gynecologic Institutions. Obstetrics & Gynecology 1999;93(3):332-7.

Stone C, Halliday J, Lumley J, et al. Vaginal births after Caesarean (VBAC): a population study. Paediatric & Perinatal Epidemiology 2000;14(4):340-8.

Quality Ratings - Vaginal Delivery, Maternal and Infant Outcomes (see Bibliography for full citations)

Author/ Year/ Quality	Random assignment	Allocation concealed	Groups similar at baseline / Maintenance of comparable groups	Eligibility criteria specified	Blinded: Outcome Assessors/ Care Provider/ Patient	Cointerventions/Intention-to-treat analysis	Report of attrition, crossovers, adherence, & contamination	Differential loss to followup or overall high loss to followup	Quality Score
Random Control Trials									
Lelaidier 1994	Yes - randomized in pharmacy, "balanced rand list"	Yes - tablets all the same disp out of pharm	Yes, although diff in rates of postdates, IUGR between Mef and pl unsure if SS	Yes	Yes/Yes/Yes	Yes, f/u with oxytocin, specific details not available although authors looked at dose requirements /	?	NR	FAIR
Rayburn 1999	Yes pharmaceutical company computer generated	Yes	Yes except never looked at parity/NR	Yes	?/No/No	Yes oxytocin - similar between groups/No - non-compliance excluded prior to analysis	Yes oxytocin - similar between groups	No	FAIR
Xenakis 1995	inadequate (days of the week)	no	yes/NR	yes	No/No/No	None/NR	NR	none	POOR
Wing 1998	NR	NR	NR/NR	*yes*	No/No/No	None/NR	NR	none	POOR

Quality Ratings - Vaginal Delivery, Maternal and Infant Outcomes (see Bibliography for full citations)

Population-Based Database									
Author, Year	**Comparable groups assembled/ Database represent-ative for study**	**Main-tenance of com-parable groups**	**Clear definition of comparison groups/ sufficient description of distribution of prognostic factors**	**Measures equal, reliable, valid/ explicit definition of outcomes**	**Outcome assessment blind to exposure status**	**Loss / Drop - out rate**	**Follow-up long enough for outcomes to occur**	**Consider/Adj ust for potential important confounders**	**Quality Score**
McMahon 1996	Yes	NA	Yes	Yes	No	NA	Yes	Yes	GOOD
Smith 2002	Uncertain	NA	Uncertain	Yes	No	NA	Yes	Yes	FAIR
Bais 2001	Uncertain	NA	No	Most	No	NA	Yes	No	POOR
Lyndon-Rochelle 2001	Yes	NA	Yes	No	No	NA	Yes	Yes	POOR
Stone 2000	Uncertain	NA	No	No for uterine rupture	No	NA	Yes	No	POOR
Gregory 1999	Uncertain	NA	No	Yes	No	NA	Yes	No	POOR
Rageth 1999	No	NA	No	No	No	NA	Yes	No	POOR
Holt 1997	Uncertain	NA	No	Yes	No	NA	Yes	No	POOR
Beall 1984	Yes	NA	Yes	No	No	NA	Yes	Not adjusted for age, parity, obsteric or medical complication s	POOR

Quality Ratings - Vaginal Delivery, Maternal and Infant Outcomes (see Bibliography for full citations)

Prospective Cohort									
Author, Year	**Comparable groups assembled/ Database represent-ative for study**	**Main-tenance of comparable groups**	**Clear definition of comparison groups/ sufficient description of distribution of prognostic factors**	**Measures equal, reliable, valid/ explicit definition of outcomes**	**Outcome assessment blind to exposure status**	**Loss / Drop - out rate**	**Follow-up long enough for outcomes to occur**	**Consider/Adjust for potential important confounders**	**Quality Score**
Duff 1988	Yes	NA	Yes	Yes	No	NA	Yes	Y/N	GOOD
Flamm 1994	Yes	NA	Yes, age, prior #CD, birth weight	Yes	No	NA	Yes	Yes	GOOD
Flamm 1988	Yes	NA	NA	Yes	No	NA	Yes	looked at group specific rates for parity, prior CD reason	GOOD
Flamm 1987	yes	NA	partial, reasons for induction not given	yes	No	NA	Yes	Yes	FAIR
Blanchette 2001	nr	NA	No	yes	No	NA	yes	yes	FAIR
Cowan 1994	NA, no comparison	NA	NA, no comparison	Yes	No	NA	Yes	Y/N	FAIR
Flamm 1990	Yes/No	NA	NA	Yes, defined rupture	No	NA	Yes	uncertain	FAIR
Phelan 1987	Yes	NA	No info for parity, age	Yes	No	NA	Yes	Yes/No	FAIR

Quality Ratings - Vaginal Delivery, Maternal and Infant Outcomes (see Bibliography for full citations)

Paul 1985	Yes	NA	No	Yes	No	NA	Yes	No, scar type, age, parity	FAIR
Martin 1983	Yes	NA	No	Yes except fever	No	NA	Yes	No	FAIR

Quality Ratings: Predictive Tools and Individual Factors

RCT	**Quality Components**								
Study, Year	**Random assignment**	**Allocation concealed**	**Groups similar at baseline / Maintenance of comparable**	**Eligibility criteria specified**	**Blinded: Outcome Assessors/ Care Provider/ Patient**	**Intention-to-treat analysis**	**Report of attrition, crossovers, adherence, & contaminatio**	**Differential loss to followup or overall high loss to followup**	**Quality Score**
Thubisi, 1993	Y	NA	Y/N	Y	N/N/N	Y	NA	NA	GOOD
Fraser, 1997	Y	NA	Y/ Y & N	Y	N/N/N	N	Y	Y/N	FAIR
COHORT	**Quality Components**								
Study, Year	Comparable Groups. Clear inclusion criteria.	Maint. of comparable groups	Clear definition of comparison groups	Measures reliable, valid	Unbiased assessment of data and analysis of results	Loss / Drop - out rate	Follow-up long enough for outcomes to occur	Adjust for potential confounders (obstetric conditions)	Quality Score
Flamm, 97	Y	Y	Y/N	Y	N	NA	Y	Y	GOOD
Jakobi, 93	Y	Y	N	Y	N	NA	Y	Y	FAIR
McNally, 99	Y	Y	N	Y/N	N	NA	Y	Y	FAIR
Stronge, 1996	Y	Y	N	Y/N	N	NA	Y	Y/N	FAIR
Troyer, 92	Y	Y	N	Y/N	N	NA	Y	N	FAIR
Vindeza, 2000	Y	Y	Y	Y/N	N	NA	Y	N	FAIR
Weinstein, 96	Y	Y	N	Y/N	N	NA	Y	Y	FAIR
Zclop, 2001 (A)	Y	Y	Y/N	Y	N	NA	Y	Y	FAIR
Zclop, 2001 (B)	Y	Y	Y/N	Y	N	NA	Y	Y	FAIR
Abitbol, 91	N	NA	N	Y	N	NA	Y	N	POOR
Lao, 87	Y	Y	N	Y/N	N	NA	Y	N	POOR
Morgan, 88	Y	Y	N	Y	N	NA	Y	N	POOR
Thurnau, 91	Y	Y	N	Y	N	NA	Y	N	POOR
Wright, 85	Y	Y	N	Y/N	N	NA	Y	N	POOR

Quality Ratings: Predictive Tools and Individual Factors

Case-Control	Quality Components								
Author, Year	**Case definition explicit**	**State of the cases reliably assessed and validated**	**Accurate ascertainment of cases**	**Cases/ controls: Nonbiased selection & comparable confoundin**	**Procedures applied equally**	**Measurement of exposure accurate and applied equally**	**Appropriate attention to confounders**	**Appropriate statistical analysis used (matched, unmatched, overmatching)**	**Quality Score-Review 1**
Macones, 2001	Y	Y/N	Y	N/N	Y	Y/N	Y	Y	FAIR
Pickhardt, 92	Y	Y/N	Y/N	N/N	Y	Y/N	Y	Y	FAIR
Case-Series	**Quality Components**								
Author, Year	**Representative sample selected from a relevant population**	**Inclusion criteria explicit**	**Individuals entered the survey at a similar point in their disease progression**	**Follow-up long enough for important events to occur**	**Outcomes assessed using objective criteria/ blinding used**	**If sub-series, sufficient description & distribution of prognostic factors**			**Quality Score**
Flamm, 91	Y	Y	Y/N	Y	Y	N			FAIR
de Meeus, 98	Y	Y	Y/N	Y	Y	N			FAIR
Schatcher, 94	Y	Y/N	Y/N	Y	Y	Y			GOOD

Quality Ratings: Decision Making/Patient Preference

RCT	**Quality Components**								
Study, Year	**Random assignment**	**Allocation concealed**	**Groups similar at baseline / Maintenance of comparable groups**	**Eligibility criteria specified**	**Blinded: Outcome Assessors / Care Provider/**	**Intention-to-treat analysis**	**Report of attrition, crossovers, adherence & con-**	**Differential loss to followup or overall high loss**	**Quality Score**
Fraser, 1997	Yes	Yes	No differences in baseline demographic. Similar proportions of women had previous labors and were requesting tubal	Used validated Birth Experience Rating Scale.	Blocked by hospital and by the women's motivation (either low or high)	Yes, used intent-to-treat	Yes	Lost 140/1275 (11.0%).	Good
COHOR	**Quality Components**								
Study, Year/ Quality/ Design	**Comparable Groups. Clear inclusion criteria.**	**Main-tenance of comparable**	**Clear definition of comparison groups**	**Measures reliable, valid**	**Unbiased assessment of data and analysis**	**Loss / Drop - out rate**	**Follow-up long enough for outcome**	**Adjust for potential confounders (obstetric**	**Quality Score**
Kirk, 1990	Incl/excl criteria NR. At Hospital B: 73% of patients who planned a TOL			NR	Yes	Lost 97/257 (38%)	Yes	NA	Fair: Fair follow-up, validity of measur

Quality Ratings: Decision Making/Patient Preference

Kline, 1993	Clear exclusion criteria. No differences in demographic	Yes	Women requesting elective CD. Women attempting TOL.	Validation unlikely but not reported.	Unclear who asked patients about delivery reasons but biased if patient's	NR	Yes	No confounders or adjustments are presented.	Fair. Unclear who interviewed patients. Potentially

Quality Ratings: Decision Making/Patient Preference

COHOR	Quality Components								
Study, Year/ Quality/ Design	**Comparable Groups. Clear inclusion criteria.**	**Main-tenance of comparable**	**Clear definition of comparison groups**	**Measures reliable, valid**	**Unbiased assessment of data and analysis**	**Loss / Drop - out rate**	**Follow-up long enough for outcome**	**Adjust for potential confounders (obstetric**	**Quality Score**
McClain, 1985; McClain, 1987; McClain, 1990	Yes	Yes	Women who chose TOL and those who chose elective repeat CD.	Unclear if reasons validated.	Yes	NR	Follow-up not reported.	Yes. Adjusted for education when examining ethnicity	Fair. Measures validation not reported
Martin, 1983	Yes			NR	Unclear who interview the women regarding	Accounted for all patients.	Follow-up NR	Accounted conditions (# of prior CDs, epidural	Fair. Measures validation NR.
Meier, 1982	Clear inclusion criteria.	Reported no demographics for groups.		NR	Yes	Lost 14/53 (26.4%) of TOL.	Yes	NA	Fair. Follow-up rate is for subgroup.
Melnikow, 2001	Yes, groups determined by underlying			Yes, used ICD-9CM coding.	Yes. Independent chart abstraction	Lost 73/1662 (4.3%)	NA	NR	Fair. No mention of
Quinlivan, 1996	Not clear of some patients eligible for TOL.	No baseline demographics or risks presented	Women with emergency and elective CD.	Probably clinically valid.	No, the clinician who performed the CD provided the data	NR	NA	NA	Poor.

Quality Ratings: Decision Making/Patient Preference

Cross-section	Quality Components								
Study, Year/ Quality/ Design	**Comparable Groups. Clear inclusion**	**Main-tenance of compara**	**Clear definition of comparison groups**	**Measures reliable, valid**	**Unbiased assessment of data and**	**Loss / Drop - out rate**	**Follow-up long enough for**	**Adjust for potential confounders**	**Quality Score**
Lau, 1996	Clear inclusion criteria			Not clear	Yes	NA	Yes	NA	Good
Murphy, 1989	Yes			Content validity. Pretesting.	Yes	Lost 3/53 (5.7%)	Y	NA. Discussed possible confounde	Good
Joseph, 1991	Clear exclusion criteria.	Unclear.	Presented may groups of patients with crossovers	Yes/No	No.	Accounted for all patients	Yes	Presented only descriptive	Fair.
Gamble, 2001	NR by group. Inclusion/exclusion			Yes. Content validity.	Yes	Lost 3% at recruitment	NA	NA	Fair. No demographics
Fawcett, 1994	NA. Only one group.	Unclear	Unclear	Interrater reliability was 92%.	Yes.	NR	12-48 hours after	NA	Fair. Follow-up rate
Mould, 1996	Clear inclusion criteria. No baseline demographic or risks presented	Cross-sectional study	Women having an ERCD. Women having an emergency CD.	Validation unlikely but not reported. Yes/No	No, patient's clinician interviewed for preference	Lost 15/102 (14.7%)	Yes	No	Poor
Abitbol, 1993	Clear inclusion criteria. No baseline demographics	Unclear.	Women requesting elective CD. Women attempting TOL.	Validation unlikely but not reported.	No	0%?	Yes	No	Poor. Potentially biased results.

Quality Ratings: Decision Making/Patient Preference

Dilks, 1997	Yes			Yes	Unclear	Recruited 74/225. Lost	Yes	NA	Poor. Recruit-ment rate

Quality Ratings- Economic Studies

Author/ year	Perspective Stated	Prog Benef. Described	Intervention Cost incl	Morbidity/SE Costs include	Averted Costs include	Induced Costs include	Costs/Ben counted	Sensitivity Analyses	C/E Ratio Stated	Quality Score
Chung (2001)	Good	Good	Good	Good	Good	Good	Good	Good	Good	GOOD
Grobman (2000)	Good	Good	Good	Good	Good	Good	Good	Good	Fair	**FAIR**
Finkler (1997)	Good	Poor	Good	Good	Good	Fair	NA	Poor	NA	**POOR**
Keeler (1996)	Good	Poor	Fair	Poor	Poor	Poor	NA	Poor	NA	**POOR**
Spellacy (1991)	Poor	Fair	Fair	Poor	Fair	Poor	NA	Poor	NA	**POOR**
Shy (1981)	Poor	Poor	Fair	Poor	Poor	Poor	NA	Poor	NA	**POOR**
Chuang (1999)	None	Fair	Fair	Fair	Poor	Poor	NA	Good	Poor	**POOR**
Clark (2000)	Poor	Poor	Fair	Poor	Fair	Fair	Poor	Poor	NA	**POOR**
Traynor (1998)	Good	Fair	Good	Fair	Poor	Fair	NA	None	NA	**POOR**
Shorten (1998)	Good	Fair	Good	Fair	Fair	Fair	NA	Good	NA	**POOR**
Hadley (1986)	Fair	Good	Fair	Fair	Poor	Fair	NA	Poor	Poor	**POOR**
Flamm (1985)	Poor	Fair	Fair	Poor	Poor	Poor	NA	Poor	Poor	**POOR**
DiMaio (2002)	Poor	Fair	Fair	Fair	Fair	Fair	NA	Poor	Poor	**POOR**

Quality Ratings - Provider Characteristics

RCT									
Study, Year	**Random assign-ment**	**Allocation concealed**	**Groups similar at baseline / Main-tenance of com-parable groups**	**Eligibility criteria specified**	**Blinded: Outcome Assessors/ Care Provider/ Patient**	**Intention-to-treat analysis**	**Report of attrition, cross-overs, etc**	**Loss to follow-up**	**Quality Score**
Guidelines									
Bickell (1996)	Good	NA	Good/NA	Good	NA	Fair	NA	**NA**	FAIR
Lomas (1991)	Good	NA	Good/NA	Good	NA	Good	NA	**NA**	GOOD
CASE CONTROL									
Author, Year	**Case definition explicit**	**State of the cases reliably assessed and validated**	**Accurate as-certainment of cases**	**Non-biased selection of cases/ controls**	**Cases and controls comparable with respect to potential con-founding factors**	**Measure-ment of exposure accurate and applied equally/ Procedures applied equally**	**App attention to con-founders**	**App. Stat Analy**	**Quality Score**
Physician Characteristics									
Goldman (1993)	Good	Fair	Fair	Good	Poor	Fair/NA	Good	Poor	POOR
Goldman (1990)	Good	Good	NA	NA	Good	Fair	Poor	Good	POOR
Hospital Characteristics									
Goldman (1993)	Good	Fair	Fair	Good	Poor	Fair/NA	Good	Poor	Poor
Goldman (1990)	Good	Good	NA	NA	Good	Fair	Poor	Good	POOR

Quality Ratings - Provider Characteristics

Case-Series									
Author, Year	**Re-present-ative sample selected from a relevant pop-ulation**	**Inclusion criteria explicit**	**In-dividuals entered the survey at a similar point in their disease pro-gression**	**Follow-up long enough for important events to occur**	**Outcomes assessed using objective criteria/ blinding used**	**Sufficient description of the series (subseries) and distribution of prognostic factors**	**Other important issues**		**Quality Score**
Health Care Resources									
Iglesias (1991)	Good	Good	NA	NA	Good	NA	Poor (small n)		POOR
Hospital Characteristics									
Iglesias (1991)	Good	Good	NA	NA	Good	NA	Poor (small n)		POOR
Kumar (1996)	Good	Good	NA	NA	Good	NA	Poor (small n)		POOR
Raynor (1993)	Good	Good	NA	NA	Good	NA	Fair (smaller		FAIR
Schlimmel (1992)	Good	Good	NA	NA	Good	NA	Fair (smaller n)		FAIR
Walton (1993)	Good	Good	NA	NA	Good	Good	Fair (smaller		FAIR
Hangs-leben (1989)	Fair	Fair	NA	NA	Good	Fair	Poor (did not report ERCD in sample)		POOR
Cross-Sectional Studies									
Guidelines									
Coulter (1995)	NA	Good	NA	NA	Fair (self report)	Poor	Poor (small n)	Poor	POOR

Author, Year	Com-parable Groups/ Clear inclusion criteria	Main-tenance of com-parable groups	Clear definition of com-parison groups	Measures reliable, valid	Un-biased assess-ment of data	Loss / Drop - out rate	Follow-up long enough for outcomes to occur	Adjust for con-founders	Quality Score
Resources									
Flamm (1994)	Good	NA	Fair	Fair	NA	NA	NA	Poor	POOR
Mor-Yosef (1990)	Poor	NA	Good	Good	NA	NA	NA	Poor	POOR
Phelan (1987)	Poor	NA	Good	Good	NA	NA	NA	Poor	POOR
Placek (1988A)	Poor	NA	Good	Fair	NA	NA	NA	Poor	POOR
Placek (1988B)	Poor	NA	Good	Fair	NA	NA	NA	Poor	POOR
Roberts (1997)	Poor	NA	Good	Good	NA	NA	NA	Poor	POOR
Stovall (1987)	Poor	NA	Good	Good	NA	NA	NA	Poor	POOR
Taffel (1991)	Poor	NA	Good	Good	NA	NA	NA	Poor	POOR
Boucher (1984)	Poor	NA	Good	Good	NA	NA	NA	Poor	POOR
Cowan (1994)	Poor	NA	Good	Good	NA	NA	NA	Poor	POOR
Data Strat & Bench Marks	Poor	NA	Good	Good	NA	NA	NA	Poor	POOR
Eriksen (1989)	Poor	NA	Good	Good	NA	NA	NA	Poor	POOR
Flamm (1988)	Poor	NA	Good	Good	NA	NA	NA	Poor	POOR
Hadley (1986)	Poor	NA	Good	Good	NA	NA	NA	Poor	POOR
Hanley (1996)	Poor	NA	Good	Good	NA	NA	NA	Poor	POOR
Curtin (1997)	Poor	NA	Fair	Fair	Good	NA	NA	Poor	POOR
Hook (1997)	Fair	NA	Fair	Good	Good	NA	NA	Poor	POOR
anonymous (1998) Data	Poor	NA	Poor	Good	Good	NA	NA	Poor	POOR

Author, Year	Comparable Groups/ Clear inclusion criteria	Main-tenance of com-parable groups	Clear definition of com-parison groups	Measures reliable, valid	Unbiased assess-ment of data	Loss / Drop - out rate	Follow-up long enough for outcomes to occur	Adjust for potential confounders (obstetric conditions)	Quality Score
Insurance Type									
Stafford (1990)	Good	NA	Good	Good	NA	NA	NA	Good	GOOD
Stafford (1991)	Good	NA	NA	Good	NA	NA	NA	Good	GOOD
King (1994)	Good	NA	Good	Good	NA	NA	NA	Good	GOOD
Gregory (1999)	Good	NA	Good	Good	NA	NA	NA	Fair	FAIR
Santerre (1996)	Fair	NA	Good	Good	NA	NA	NA	Good	FAIR
Oleske (1998)	Poor	NA	Good	Good	NA	NA	NA	Poor	POOR
Rageth (1999)	Poor	NA	Good	Good	NA	NA	NA	Poor	POOR
Wagner (1999)	Poor	NA	Good	Good	NA	NA	NA	Poor	POOR
Placek (1988A)	Poor	NA	Good	Fair	NA	NA	NA	Poor	POOR
Skelton (1997)	Good	NA	Good	Good	NA	NA	NA	Poor	POOR
Curtin (1997)	Poor	NA	Fair	Fair	Good	NA	NA	Poor	POOR
Miller (1992)	Fair	NA	Fair	Good	Good	NA	NA	Poor	POOR
Physician Charactreristics									
Davis (1994)	Poor	NA	Fair	Good	NA	NA	NA	Poor	POOR
Barnsley (1990)	Poor	NA	Poor	Fair	NA	NA	NA	Poor	POOR
Coco (2000)	Poor	NA	Good	Good	NA	NA	NA	Poor	POOR
Deutchman (1995)	Poor	NA	Good	Good	NA	NA	NA	Poor	POOR
Hueston (1995)	Poor	NA	Good	Good	NA	NA	NA	Poor	POOR

Author, Year	Comparable Groups/ Clear inclusion criteria	Main-tenance of com-parable groups	Clear definition of com-parison groups	Measures reliable, valid	Unbiased assess-ment of data	Loss / Drop - out rate	Follow-up long enough for outcomes to occur	Adjust for potential confounders (obstetric conditions)	Quality Score
Miller (1995)	NA	NA	NA	Good	NA	NA	NA	Poor	POOR
Sinusas (2000)	Poor	NA	NA	Good	NA	NA	NA	Poor	POOR
Stone (1996)	NA	NA	NA	Fair	NA	NA	NA	Poor	POOR
Berkowitz (1989)	Poor	NA	Adequate	Good	NA	NA	NA	Poor	POOR
Harrington (1997)	Fair	NA	Good	Good	NA	NA	NA	Poor	POOR
Hueston (1994)	NA	NA	NA	Fair	Good	NA	NA	Poor	POOR
Hospital Characteristics									
Gregory (1999)	Good	NA	Good	Good	NA	NA	NA	Good	GOOD
Santerre (1996)	Fair	NA	Good	Good	NA	NA	NA	Good	FAIR
McMahon (1996)	Good	NA	Good	Good	NA	NA	NA	Good	GOOD
King (1994)	Good	NA	Good	Good	NA	NA	NA	Good	GOOD
Stafford (1991)	Good	NA	NA	Good	NA	NA	NA	Good	GOOD
Barnsley (1990)	Poor	NA	Poor	Fair	NA	NA	NA	Poor	POOR
Shiono (1987)	Fair	NA	NA	Good	NA	NA	NA	Fair	FAIR
Whitsel (2000)	Good	NA	NA	Good	NA	NA	NA	Poor	POOR
Gregory (1999)	Poor	NA	Good	Good	NA	NA	NA	Poor	POOR
Mor-Yosef (1990)	Poor	NA	Good	Good	NA	NA	NA	Poor	POOR
Skelton (1997)	Good	NA	Good	Good	NA	NA	NA	Poor	POOR
Paterson (1991)	Good	NA	Good	Good	Good	NA	NA	Poor	POOR

Author, Year	Comparable Groups/ Clear inclusion criteria	Main-tenance of com-parable groups	Clear definition of com-parison groups	Measures reliable, valid	Unbiased assess-ment of data	Loss / Drop - out rate	Follow-up long enough for outcomes to occur	Adjust for potential con-founders (obstetric conditions)	Quality Score
Curtin (1997)	Poor	NA	Fair	Fair	Good	NA	NA	Poor	POOR
Sieck (1997)	Poor	NA	Good	Fair	Good	Poor	NA	Poor	POOR
Placek (1988A)	Poor	NA	Good	Fair	NA	NA	NA	Poor	POOR
Legal Factors									
King (1994)	Good	NA	Good	Good	NA	NA	NA	Good	GOOD
Studnicki (1997)	Good	NA	Good	Good	NA	NA	NA	Good	GOOD
Guidelines									
Santerre (1996)	Fair	NA	Good	Good	NA	NA	NA	Good	FAIR
Lomas (1989)	Fair	NA	Good	Good	NA	NA	NA	Fair	FAIR
Myers (1993)	Poor	NA	Good	Good	NA	NA	NA	Poor	POOR
Sanchez-Ramos (1990)	Poor	NA	Good	Good	NA	NA	NA	Poor	POOR
Myers (1988)	Poor	NA	Adequate	Good	NA	NA	Adequate	Poor	Poor
Porreco (1985)	Poor	NA	Adequate	Good	NA	NA	Adequate	Poor	POOR

Appendix G. Uterine Rupture Terminology Conference: September 5, 2002

Call Participants:

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Purpose of the Uterine Rupture Terminology Conference Call

A conference call was held on September 5, 2002 to discuss terminology for uterine rupture. Specifically, some peer reviewers of the VBAC evidence report were concerned with terminology used in the draft report. If the members of the call could reach consensus on appropriate terminology, the final evidence report would be revised to reflect this consensus, as possible.

Defining Uterine Rupture

The draft evidence report found inconsistencies and ambiguities in terminology used for uterine rupture. Call participants were directed to a table of terminologies used for uterine rupture among several studies in the evidence report. We discussed the challenges in studying the epidemiology of the condition due to these inconsistencies. We also discussed the inability to identify predictors for morbidity due to uterine rupture when they were embedded in the definition of uterine rupture. Motivated by these issues, we presented the terminology used in the draft report to start discussion about more precise terminology.

One alternative terminology proposed was complete rupture, incomplete rupture, or window. Members of the call were pleased with the fact that incomplete and complete would provide a clear anatomic description. The majority felt that there was not a need to distinguish between incomplete rupture and window. There was some concern that these terms did not provide a description for the severity of the condition. Although the severity of the condition is important, indicating the origin or cause of uterine rupture is needed to establish contributing factors. One suggestion was to use the following terms:

Symptomatic Uterine Rupture Not Related to a Cesarean Scar
Symptomatic Uterine Rupture Related to a Cesarean Scar

Asymptomatic Uterine Rupture Not Related to a Cesarean Scar

Through discussion it was suggested that the descriptors, clinically significant or consequential, would be more appropriate than a/symptomatic since they are easier to define. However, questions as to what "clinically significant" meant were raised. Some members of the call considered any uterine rupture as "clinically significant" since the patient would need an unexpected surgical procedure and may have delivered her baby via an unintended route. Also, some mentioned that any uterine rupture could also lead to significant morbidity if left untreated.

It was then suggested that outcomes should not be used to diagnosis/describe a uterine rupture. In order to accurately determine and record the frequency of uterine rupture, it must be kept in simple terms. Several members of the call agreed with this suggestion. There was some agreement on using the following terms:

Incomplete uterine rupture of a cesarean scar - separation that was not completely through all layers of the uterine wall (e.g., serosa intact)
Complete uterine rupture of a cesarean scar - entire thickness of the uterine wall including visceral serosa (with or without expulsion of part or complete extrusion of fetal-placental unit)

Next Steps

The evidence report is constrained by the data provided within the studies. The text was revised to replace cesarean disruption with uterine rupture of a cesarean scar. Because few studies presented data exclusively for complete or incomplete rupture, the authors were not able to present these data specifically in the report. The text has included the table of terminology used among studies (referred to in the call) and a discussion of the difficulties raised by inconsistent terminology to pave the way for future research with explicit outcomes.

Although full consensus was not reached on terminology, the call was the first step in bringing together experts in the field to discuss this issue. Future work can be done to arrive at a consensus and potentially shape the field by uniformity in reporting terminology.