Cesarean Birth and Recovery

Tracy Scoville BSN, RNC-OB
Clinical Nurse Educator
Providence Regional Medical Center Everett
Email: Tracy.scoville@providence.org

Objectives
- Discuss current trends in cesarean section rates within the U.S. and Washington state
- Review cesarean section rates around the globe
- Verbalize indications for a Cesarean delivery
- Describe roles of the Perinatal nurse in the continuum of care for a patient undergoing a Cesarean birth
- Identify potential complications of Cesarean delivery

Cesarean birth has been a part of both Western and non-Western cultures since ancient times
Initial purpose was to remove the infant from a dead or dying mother
Saving a mother's life became a possibility in the 19th century.

32.8% of U.S. births were delivered by cesarean in 2012, a rate that has remained unchanged since 2010
Prior to 2010 the cesarean rate increased every year since 1996 at which time the cesarean rate was 20.7% in the United States
Cesarean section rate in Washington state rose by 73% from 1996 to 20071
- Third behind Rhode Island (83%) and Connecticut (75%)

Cesarean Delivery Rates United States 1991-20071

<table>
<thead>
<tr>
<th>Year</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>22.4%</td>
</tr>
<tr>
<td>1992</td>
<td>22.6%</td>
</tr>
<tr>
<td>1993</td>
<td>22.8%</td>
</tr>
<tr>
<td>1994</td>
<td>23.0%</td>
</tr>
<tr>
<td>1995</td>
<td>23.2%</td>
</tr>
<tr>
<td>1996</td>
<td>23.4%</td>
</tr>
<tr>
<td>1997</td>
<td>23.6%</td>
</tr>
<tr>
<td>1998</td>
<td>23.8%</td>
</tr>
<tr>
<td>1999</td>
<td>24.0%</td>
</tr>
<tr>
<td>2000</td>
<td>24.2%</td>
</tr>
<tr>
<td>2001</td>
<td>24.4%</td>
</tr>
<tr>
<td>2002</td>
<td>24.6%</td>
</tr>
<tr>
<td>2003</td>
<td>24.8%</td>
</tr>
<tr>
<td>2004</td>
<td>25.0%</td>
</tr>
<tr>
<td>2005</td>
<td>25.2%</td>
</tr>
<tr>
<td>2006</td>
<td>25.4%</td>
</tr>
<tr>
<td>2007</td>
<td>25.6%</td>
</tr>
</tbody>
</table>

Global Cesarean Rates from the World Health Report 2010

<table>
<thead>
<tr>
<th>Country</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>45.9%</td>
</tr>
<tr>
<td>Mexico</td>
<td>37.8%</td>
</tr>
<tr>
<td>United States</td>
<td>30.3%</td>
</tr>
<tr>
<td>Australia</td>
<td>30.3%</td>
</tr>
<tr>
<td>Canada</td>
<td>26.3%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>22.0%</td>
</tr>
<tr>
<td>Ukraine</td>
<td>14.2%</td>
</tr>
<tr>
<td>Kenya</td>
<td>4.0%</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>1.0%</td>
</tr>
<tr>
<td>Chad</td>
<td>0.4%</td>
</tr>
</tbody>
</table>
United States Cesarean Delivery Rates by State 2010

Total Cesarean Deliveries:
Washington, 2008-2011 Average

Primary Cesarean Deliveries:
Washington, 2008-2011 Average

TOLAC: Trial of Labor After Cesarean
VBAC: Vaginal Birth After Cesarean

- 50% increase in VBAC’s reported in late 80s through mid 90s
- Since 1996 rate of VBAC deliveries has decreased significantly


Vaginal Birth After Cesarean Deliveries

Washington, 2008-2011 Average

- Examined safety and outcome of TOLAC and VBAC and factors associated with decreasing rates

- Recommendation:
  - Trial of labor reasonable for many women with history on one prior low transverse uterine incision
  - Consider making public TOL policies and VBAC rates
  - Mitigate or eliminate current barriers to TOL
  - More research needed regarding short and long term outcomes of TOL and elective repeat cesarean section

VBAC potential health advantages
- Avoid major abdominal surgery
- Decreases risk of infection, hemorrhage, and has a shorter recovery period
- Those wishing larger families avoid potential consequences of multiple cesarean sections
  - Hysterectomy
  - Bowel or bladder injury
  - Transfusion
  - Infection
  - Abnormal implantation of placenta

Candidates for TOL after previous cesarean:
- One to two previous C/S with low transverse incision
- Prior low vertical uterine incision
- Twin gestation with one previous C/S with low transverse incision
- Consideration for:
  - Macrosomia
  - >40 weeks gestation
  - One previous C/S with unknown uterine scar (unless high suspicion of classical uterine incision)

INDICATIONS FOR CESAREAN

- Abnormal Fetal Heart Rate
- Failure to Progress
- Macrosomia
- Cephalopelvic Disproportion (CPD)
- Active Genital Herpes
- Prior Cesarean Delivery/Uterine Surgery
- Cesarean Delivery on Maternal Request (CDMR)

### Indications for Primary Cesarean Delivery


#### Admission Assessment
- NPO
- Fetal Tracing
- IV/Labs
- Abdominal Clip

#### Consents

#### Plan of Care - Reassure!

#### Perinatal units should maintain comparable care standards as the main hospital surgical suites/postanesthesia care unit (PACU) (ASA, 2003, 2006; JCAHO, 2007a)

#### Medications
- Antacid
- Antibiotic prophylaxis

#### Pneumatic Compression Devices
Positioning
- Alignment
- Arm boards
- Tilt
- Safety strap
- Fetal monitoring
- Foley

- Grounding Pad
- Suction
- Counts
- Documentation
- Support Person
- Medication Safety
  - Label all medications, medication containers, and other solutions on and off the sterile field in perioperative and other procedural settings.

Epidural
- Placed in epidural space between 4th and 5th lumbar vertebrae
- Dilute local or a local combined with preservative free opioid
- Complete block occurs in about 15-20 minutes

Spinal
- Injected into subarachnoid space
- Local anesthetic or local combined with preservative free opioid
- Dense motor/sensory block
- Rapid onset

General anesthesia
- Clinical state that is defined by degrees of effect in four criteria:
  - Amnesia (loss of recall of event), analgesia (insensibility to pain), hypnosis (unconsciousness), and muscle relaxation
The Joint Commission - Universal Protocol and Speak Up Program

- Conduct time-out immediately before starting procedure
- Standardized
- Initiated by any team member
- All members of team actively communicate during time out
- All members agree, at a minimum on correct patient, correct site and correct procedure to be done
- Documentation of time out

SCOAP – Surgical Care and Outcomes Assessment Program

WHO – Safe Surgery Saves Lives Program

PRE - PROCEDURAL PAUSE

- At birth, at least one person whose sole responsibility is neonatal resuscitation should be present to care for the newborn. Either this person or someone else who is immediately available should be able to perform complete resuscitation including endotracheal intubation and medication administration”

Surgical Safety Checklist

- Before induction of anaesthesia:
  - Check aseptic and anaesthetic
  - Check patient’s compliance with fasting, premedication, and consent
  - If yes?
  - No

- Before skin incision:
  - Check aseptic and anaesthetic
  - Confirm patient’s information and medications
  - If yes?
  - No

- Before incision:
  - Confirm patient’s information and medications
  - If yes?
  - No

- Before closure:
  - Are instrument, sponge, and needle counts correct?
  - Additional procedures performed, if any
  - Specimens and labeling (cord gases?, placenta to path?, tubal ligation?, other?)
  - Infant information (sex, weight, Apgars)
  - Postop analgesia (dexamethasone, PCA, other)
  - Recovery issues anticipated
  - What could have been done better?

- Uterine atony
- Uterine hysterectomy
- Uterine rupture
- Bladder and/or bowel perforations
- Arterial bleeds
- Maternal cardiac arrest
- Anesthesia complications (i.e. Malignant Hyperthermia, Aspiration)
Maternal Co-morbidities
- Multiple Repeats
- Over Distended Uterus
- Substance Abuse

COMPLICATING MATERNAL FACTORS
- Risk of death caused by the operation of cesarean delivery is approximately 2 per 100,000 cesareans, compared with 0.2 per 100,000 deaths caused by vaginal births
- Typical Sources:
  - Hemorrhage
  - Thromboembolism
  - Infection

Most Common Preventable Errors
- Failure to adequately control BP in hypertensive women
- Failure to adequately diagnose and treat pulmonary edema in women with preeclampsia
- Failure to pay attention to vital signs following Cesarean section
- Hemorrhage following Cesarean section

PATIENTS should be accompanied to recovery by Anesthesiologist/CNRA
- Verbal report by Anesthesia provider includes:
  - Name, age, surgical procedure, allergies
  - Medical problems
  - Most recent VS
  - Mental status
  - Communication barriers
  - All medications given (pre-op, intra-op)
  - I & O (EBL, IV fluid, urine, emesis)
  - Any complications
  - Orders for care
  - Number to contact Anesthesia

Assessments performed according to hospital protocols in alignment with main hospital PACU
- Review of systems
- Dermatome level
- LOC
- Obstetric status
- I & O
- Pain
- Anesthesia site
- Safety
Systematic method of patient scoring help to provide an objective measurement for care.

- Can be applied immediately and repeatedly as a convenient means to evaluate progress in recovery from anesthesia.

**POST ANESTHESIA SCORING – MODIFIED ALDRETE**

<table>
<thead>
<tr>
<th>Consciousness</th>
<th>Activity on command</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 = Fully awake</td>
<td>2 = Moves all extremities</td>
</tr>
<tr>
<td>1 = Responds to name</td>
<td>1 = Moves two extremities</td>
</tr>
<tr>
<td>0 = No response</td>
<td>0 = No movement</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Respiration</th>
<th>Circulation</th>
<th>Oxygen saturation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 = Free deep breathing</td>
<td>2 = Blood pressure within 20% of pre-op level</td>
<td>2 = ( \text{SpO}_2 ) &gt; 92% on room air</td>
</tr>
<tr>
<td>1 = Dyspneic, hyperventilating, obstructed breathing</td>
<td>1 = Blood pressure within 50%-20% of pre-op level</td>
<td>1 = Supplemental ( O_2 ) required to maintain ( \text{SpO}_2 ) &gt; 92%</td>
</tr>
<tr>
<td>0 = Apneic</td>
<td>0 = Blood pressure 50%, or less, of pre-op level</td>
<td>0 = ( \text{SpO}_2 ) &lt; 92% with ( O_2 ) supplementation</td>
</tr>
</tbody>
</table>

Total Score = 10
9 needed to leave PACU

**POST ANESTHESIA DISCHARGE**

- Occurs after recovery period and when the patient is stable per recovery discharge criteria
- Utilizing Post Anesthesia scoring system to assess readiness
- Anesthesia provider is involved in decision to discharge from recovery
- Prior to discharge/transfer of patient, RN completes a final review of systems assessment
- If care is transferred to another nurse, report is given utilizing standardized approach to hand off.

---

**REFERENCES**

2. Centers for Disease Control and Prevention, MMWR Weekly, April 20, 2007/ 56(15);373
4. Centers for Disease Control and Prevention, MMWR Weekly, January 21, 2005/ 54(02);46
REFERENCES

4. Association of Perioperative Registered Nurses (AORN) http://www.aorn.org
5. Association of Women's Health, Obstetrics, and Neonatal Nurses (AWHONN) http://www.awhonn.org