Preventing Early Elective Delivery:  
A View from the Front Line

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Obstetric Quality 2007

- Maternal mortality
- Neonatal mortality
- Cesarean delivery
- VBAC
- Obstetric trauma
- AOI (adverse outcome index)
- NTSV

Baillit OG Survey 2007
“There are currently no uniformly accepted measures of obstetrical quality. Many traditional measures of obstetrical quality are flawed and newer measures are still undergoing necessary validation.”

- Jennifer L. Bailit, MD, MPH
OBG Survey 2007
National Quality Forum

- Multi-stakeholder, private and federal funding
- Sets PI goals
- Endorses Standards
- Rigorous process
- No data collection
- Measures deemed for CMS
- 14 perinatal care measures (2012)
Early Elective Delivery

- NQF 0469
- The Joint Commission PC-01
- The Leapfrog Group
- CMS Hospital Compare
- PCPI: individual providers and groups
- State monitoring: Ohio Hospital Compare
Full Term: 39 0/7 – 40 6/7

Why?
COMMITTEE OPINION

Number 579 • November 2013

The American College of Obstetricians and Gynecologists Committee on Obstetric Practice
Society for Maternal-Fetal Medicine

This document reflects emerging clinical and scientific advances as of the date issued and is subject to change. The information should not be construed as dictating an exclusive course of treatment or procedure to be followed.

Definition of Term Pregnancy
Box 1. Recommended Classification of Deliveries From 37 Weeks of Gestation

- Early term: 37 0/7 weeks through 38 6/7 weeks
- Full term: 39 0/7 weeks through 40 6/7 weeks
- Late term: 41 0/7 weeks through 41 6/7 weeks
- Postterm: 42 0/7 weeks and beyond

Why is a Statewide Collaborative Project Needed?

• Joint Commission, CMS, etc: Summative
• Statewide Collaborative: Formative
  – Measurement alone is not enough
  – Rapid feedback: monthly or quarterly
    • Not yearly
  – Steal shamelessly, Share seamlessly
  – Multidisciplinary
Process Stops

• Hard Stop
  – Staff empowered not to schedule EED
  – Chain of command establish to handle disputes

• Soft Stop
  – Self enforced by obstetrician
  – Retrospective peer review process

• No Stop
  – Education only
Reduction in elective birth <39 weeks: 3 approaches to change

Clark SL, Frye DR, Meyers JA et al
Am J Obstet Gynecol 2010
Patient Safety Checklist

SCHEDULING PLANNED CESAREAN DELIVERY

Date ____________________  Patient ____________________  Date of birth ________  MR # ____________

Physician or certified nurse-midwife ____________________  Last menstrual period ____________

Gestational age ____________________  Estimated date of delivery ____________  Best estimated gestational age at admission ____________

Proposed cesarean delivery date ____________

Indication (choose one):

☐ Medically indicated Diagnosis: ____________________________________________________________________________

☐ Elective primary cesarean delivery (choose one) (1, 2):
  ☐ Trial of labor not appropriate: Reason: ____________________________________________________________________
  ☐ Trial of labor offered
  ☐ Yes
  ☐ No: Reason: __________________________________________________________________________________________

☐ Patient counseled about risks and benefits of cesarean delivery versus trial of labor and vaginal delivery (1, 3)
  ☐ Consent form signed as required by the institution
  ☐ Repeat cesarean delivery for logistical reasons: Circumstances ____________________________________________________________________________________________

☐ Elective primary cesarean delivery at maternal request (4):
  ☐ Patient counseled about risks and benefits of cesarean delivery versus vaginal delivery (1, 3)
  ☐ Consent form signed as required by institution

☐ Gestational age of 30 0/7 weeks or greater confirmed by either of the following criteria (5):
  ☐ Ultrasound measurement at less than 20 weeks of gestation supports gestational age of 30 weeks or greater
  ☐ Fetal heart tones have been documented as present for 30 weeks of gestation by Doppler ultrasonography

If this is an elective cesarean delivery and gestational age is 30 0/7 weeks or less, reason for variance: ________________________________________________________________

Results of amniocentesis (if performed):

☐ Prenatal and pertinent prenatal laboratory test results (e.g., group B streptococcus or hematocrit) available (2)

☐ Special concerns (e.g., allergies, medical problems, and special needs) ____________________________________________________________________________________________

☐ Pertinent maternal risk factors (maternal and fetal) ____________________________________________________________________________________________

To be completed by reviewer:

☐ Approved cesarean delivery for gestational age equal to or greater than 30 0/7 weeks by the aforementioned dating criteria

☐ Approved cesarean delivery before 30 0/7 weeks of gestation (medical indication)

☐ HURDLE STOP: gestational age, indication, consent, or other issues prevent initiating planned cesarean delivery without further information or consultation with department chair
AULTMAN
BIRTH CENTER
SCHEDULED DELIVERY CONSENT
FAX COMPLETED FORM TO 330-438-2609

Today's Date: __________ C-section/Induction Date: __________ Amniocectesis scheduled: □ No □ Yes Date: __________

Patient Name:_________________________ Patient Phone:_________________________

Physician Name:_____________________ Physician Contact Number:_____________________

P: __________ W: __________ GA at scheduled delivery date: __________ GA determined by: __________

REASON FOR DELIVERY

□ Medically Indicated Delivery
This means inducing labor is helpful for the mother's or baby's health. Please state reason:

□ Elective Delivery. This means optional, not necessary for the mother's or baby's health. The American College of Obstetricians and Gynecologists (ACOG) recommends first elective inductions are at least 39 wks when the induction starts.
Select reason:

□ Termination of pregnancy
□ Preterm infant
□ Fetal abnormality
□ Multiple gestation
□ Maternal medical condition
□ Maternal mental condition
□ Medical emergency

The scheduling of inductions is based on indication. If increased activity in the Birth Center, you and your physician will be notified and the induction may be delayed.

Bishop Score (Please circle for each feature and total)

<table>
<thead>
<tr>
<th>Feature</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dilatation(cm)</td>
<td>0</td>
<td>1-2</td>
<td>3-4</td>
<td>5-6</td>
</tr>
<tr>
<td>Effacement (%)</td>
<td>0-50</td>
<td>50-60</td>
<td>60-70</td>
<td>80</td>
</tr>
<tr>
<td>Station</td>
<td>-3</td>
<td>-2</td>
<td>-1, 0</td>
<td>+1</td>
</tr>
<tr>
<td>Consistency</td>
<td>Firm</td>
<td>Medium</td>
<td>Soft</td>
<td>Anofter</td>
</tr>
<tr>
<td>Position</td>
<td>Posterior</td>
<td>Middle</td>
<td>Anterior</td>
<td></td>
</tr>
</tbody>
</table>

*Total Score*

If your Bishop Score is less than 6 and you have never had a baby before, there may be an increased rate of Cesarean Section. If the total score is greater than 6, the likelihood of vaginal delivery after labor induction is similar to spontaneous labor (ACOG Practice Bulletin 81).

Patient Induction Consent:

I have discussed the need, risks, and benefits of induction with my doctor. I understand why my labor is being induced. I understand the Bishop Score. I have been advised of the reasonable alternatives, including consequences of remaining untreated. The risks and possible complications of each alternative, including death of myself and/or my baby have been explained to me. With induction, there is a potential for a longer labor and increased chance of Cesarean Section. I also understand that if I am electively induced at less than 39 weeks, my baby may be at a higher risk to need help breathing (ventilator) and/or a higher level of care (Neonatal Intensive Care). I understand the information that has been presented to me regarding induction of labor and all my questions have been answered.

Patient Signature:_________________________ Date: __________ Time: __________

Guardian Signature (if applicable):_________________________ Relationship:_________________________

Physician Attestation:

I attest that I have discussed the risks and benefits of scheduled induction and all reasonable alternatives with this patient prior to performing this induction.

Date: __________ Time: __________ Physician Name (print):_________________________ Signature:_________________________

Form 335590: R: 11/10

CONSENTS
Low Hanging Fruit?
Scheduled Delivery Form

• Educate providers and staff
• Establish the review process
  – Regular hours
  – After hours
  – Slip through cases
• Establish chain of command
  – Hard stop is not an absolute stop
  – There are always exceptions
  – No algorithm can encompass all situations.
Overview: Critical Elements for Successful Implementation

- Clinician, Staff & Patient Education
- Reduce Demand
- Public Awareness Campaign

- Elective Delivery Hospital Policy
- Induction/Cesarean Scheduling Process

- Physician Leadership
  A. Enforce policy
  B. Approve exceptions

- Case NOT Scheduled if Criteria Not Met

- QI Data Collection & Trend Charts
Culture of Safety

• EED prevention process, when it works is empowering to front line staff.
  – They feel they make a difference
  – Spills over to other quality and safety efforts

• Conversely: Failure to back up delivery scheduling staff when they try to apply a policy is toxic
Christiana Medical Center, Nov 2011

- Percent of Deliveries <39wks fell from 33.1 to 26.4% (p<0.0001)
- Term NICU Admissions fell from 9.3 to 8.5% (p=0.044)
- Term Macrosomia increased with an adjusted OR of 1.11 (95% CI: 1.01-1.22)
- Stillbirths at 37 and 39 weeks increased from 2.5 to 9.1 per 10,000 pregnancies (p=0.032)
- Many of the stillbirths were unexplained but 5/11 were in mothers with hypertension, diabetes or other significant maternal illness

Ehrenthal Obstet Gynecol. 2011
Christiana Medical Center, Nov 2011

• Baseline and post intervention period straddled the Great Recession
• Stillbirth analysis is difficult and requires very large sample size
• This study with ~12,000 per study period was small compared to the Intermountain Health ~122,000 per period and HCA ~60,000 per study period
• Ohio state statistics did not show any increase in stillbirths during their intervention period (indirect)
• Several California collaboratives have not seen any increase of stillbirths to date (unpublished from MoD)
• Fluctuations related to the relatively small sample size
If your pregnancy is healthy, it’s best if your baby is born at 40 weeks.

A baby’s brain at 35 weeks weighs only two-thirds of what it will weigh at 40 weeks.

- In the last 6 weeks of pregnancy, your baby’s brain adds connections needed for balance, coordination, learning and social functioning. During this time, the size of your baby’s brain almost doubles.

- Babies born early have more learning and behavior problems in childhood than babies born at 40 weeks.

- Babies born early are more likely to have feeding problems because they can’t coordinate sucking, swallowing and breathing as well as full-term babies.

- Babies born early are likely to have breathing problems, like apnea. Apnea is when a baby stops breathing.

- Babies born early are more likely to die of sudden infant death syndrome (SIDS). SIDS is when a baby dies suddenly and unexpectedly, often during sleep.

To order our catalog or multiple copies of our materials, call 1-800-367-6630. #37-2229-07 Late-preterm Brain Development Card 2/08

March of Dimes materials are for information purposes only and are not to be used as medical advice. Always seek medical advice from your health care provider. Our materials reflect current scientific recommendations at time of publication. Check marchofdimes.com for updated information. Modeled after a fetal brain card developed by the Healthy Babies Are Worth the Wait™ Initiative.

© March of Dimes Foundation, 2008
The Ohio Perinatal Quality Collaborative 2013

**OBSTETRICS**

- 39-Week Scheduled Deliveries without medical indication
- ANCS for women at risk for preterm birth (24\(^{0}/7\) - 33\(^{6}/7\))
- Increase Birth Data Accuracy & Online modules
- Spread to all maternity hospitals in Ohio

**NEONATAL**

- Blood Stream Infection: Highly reliable line maintenance bundle
- Use of human milk in infants 22-29 weeks GA
- Progesterone for Preterm Birth Risk
- Pilot Neo Abstinence Syndrome: 6 Children’s Hospitals
- The Ohio Perinatal Quality Collaborative 2013
Ohio Hospital Compare

- Infants under 1500 grams
- Antenatal steroids
- NTSV cesarean rate
- Early elective delivery
- Episiotomy
- Cesarean infection
Ohio Hospital Compare

• Birth Registry (can be overridden)
  – Infants under 1500 grams
  – Antenatal steroids
  – NTSV cesarean rate

• TJC PC-01
  – Early elective delivery

• Chart review and surveillance
  – Cesarean infection

• ICD coding
  – Episiotomy
Illinois Hospital Report Card

- Birth Trauma
- Obstetric Trauma - Instrument
- Obstetric Trauma - Without Instrument
- Cesarean Section Delivery
- Primary Cesarean Delivery
- Uncomplicated VBAC
- Total VBAC

http://www.healthcarereportcard.illinois.gov/
The Ohio Perinatal Quality Collaborative is a collaborative effort to make sure every Ohio mother and baby gets the best available care.

MISSION
Through collaborative use of improvement science methods, reduce preterm births & improve perinatal and preterm newborn outcomes in Ohio as quickly as possible.

OBSTETRICS PROJECTS
Antenatal Corticosteroid Project (ANCs)
39-Weeks Delivery Charter Project (2008)
39-Week/Birth Registry Accuracy Project

WELCOME TO OPQC
OPQC is a statewide, multi-stakeholder network dedicated to improving perinatal health in Ohio. OPQC employs a modified version of the Institute for Healthcare Improvement’s (IHI) Breakthrough Series Model (BTS). OPQC brings teams together in face-to-face and webinar sessions to review individual and aggregate data, to learn from one another to making changes that achieve specific goals, and with expert guidance, to apply the IHI Model-for-Improvement to test specific strategies. The first projects were begun in 2008. OPQC’s first prenatal project aimed to decrease scheduled deliveries between 36 and 39 weeks gestation in the 20 largest maternity units in Ohio. On the neonatal side, 24 Neonatal Intensive Care Unit teams chose a project to decrease catheter associated infection among infants born at 22-29 weeks gestation using a Blood Stream Infection (BSI) Maintenance Bundle.

Frequently Asked Questions
Learn more about OPQC
Questions?
NICU Admissions By Weeks Gestation Deliveries Without Complications, 2000-2003
(n=84,538)

NICU Admissions

Percent

6.66%
3.36%
2.47%
2.65%
3.44%
4.26%

Gestational Weeks

37th
38th
39th
40th
41st
42nd

0%
2%
4%
6%
8%
10%

Respiratory Distress Syndrome (RDS) By Weeks Gestation Deliveries Without Complications, 2000-2003 (n=84,538)

Ventilator Usage By Weeks Gestation
Deliveries Without Complications, 2000-2003
(n=84,538)

## Stillbirths Before and After Implementation of Guidelines at Intermountain Healthcare

<table>
<thead>
<tr>
<th>Weeks of Gestation</th>
<th>1999-2000</th>
<th></th>
<th></th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Stillbirths</td>
<td>Deliveries</td>
<td>%</td>
<td>Stillbirths</td>
<td>Deliveries</td>
<td>%</td>
<td>Odds Ratio</td>
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<tr>
<td>37</td>
<td>17</td>
<td>4,117</td>
<td>0.41</td>
<td>22</td>
<td>13,077</td>
<td>0.17</td>
<td>0.406</td>
<td>0.22-0.77</td>
</tr>
<tr>
<td>38</td>
<td>19</td>
<td>9,954</td>
<td>0.19</td>
<td>21</td>
<td>28,209</td>
<td>0.07</td>
<td>0.390</td>
<td>0.21-0.72</td>
</tr>
<tr>
<td>39</td>
<td>10</td>
<td>13,752</td>
<td>0.07</td>
<td>28</td>
<td>51,721</td>
<td>0.05</td>
<td>0.744</td>
<td>0.36-1.53</td>
</tr>
<tr>
<td>40</td>
<td>10</td>
<td>7,925</td>
<td>0.13</td>
<td>14</td>
<td>24,140</td>
<td>0.06</td>
<td>0.459</td>
<td>0.20-1.03</td>
</tr>
<tr>
<td>41</td>
<td>2</td>
<td>1,938</td>
<td>0.10</td>
<td>3</td>
<td>5,571</td>
<td>0.05</td>
<td>0.522</td>
<td>0.09-3.12</td>
</tr>
<tr>
<td>All</td>
<td>58</td>
<td>37,686</td>
<td>0.15</td>
<td>88</td>
<td>122,718</td>
<td>0.07</td>
<td>0.466</td>
<td>0.33-0.65</td>
</tr>
</tbody>
</table>

Scheduling Algorithm

Request to schedule induction or cesarean delivery (either phone call or fax scheduling form)

EDD Verified (by criteria)

- Yes
  - ≥39 Wks?
    - Yes
      - Indicated? (by criteria)
        - Yes
          - Do not schedule. Refer to Charge RN to clarify clinical question or Medical Director if needed.
        - No
          - Patient is tentatively scheduled.
          - Prenatal forms faxed.
          - Final scheduling is contingent upon updated prenatal documentation.
    - No
      - Indicated? (by criteria)
        - Yes
          - Patient not scheduled and allowed to go into labor or
        - No
          - If estimated gestational age ≥39wks, patient is tentatively scheduled for Cesarean Section pending results of lung maturity amniocentesis.
          - Prenatal forms faxed.
          - Final scheduling is contingent upon updated prenatal documentation and verification of fetal lung maturity.

- No
  - Indicated? (by criteria)
    - Yes
      - Patient not scheduled and allowed to go into labor or
    - No
      - If estimated gestational age ≥39wks, patient is tentatively scheduled for Cesarean Section pending results of lung maturity amniocentesis.
      - Prenatal forms faxed.
      - Final scheduling is contingent upon updated prenatal documentation and verification of fetal lung maturity.
## Overuse Measures

### Table. Potential Unintended Consequences of Overuse Measurement

<table>
<thead>
<tr>
<th>Potential Unintended Consequences of Overuse Measurement</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underuse of the service when it is actually indicated</td>
<td>Measuring overuse of bone scanning for staging low-risk patients may unintentionally lead to</td>
</tr>
<tr>
<td></td>
<td>underuse in higher-risk patients for whom a bone scan is indicated</td>
</tr>
<tr>
<td>Underuse of other related services</td>
<td>Measuring overuse of cervical cancer screening in low-risk women may unintentionally lead to</td>
</tr>
<tr>
<td></td>
<td>underuse of other preventive services, such as screening mammography</td>
</tr>
<tr>
<td>Patient selection</td>
<td>Measuring overuse of spine imaging may unintentionally lead primary care physicians to avoid</td>
</tr>
<tr>
<td></td>
<td>caring for patients with low back pain by referring them all to specialists</td>
</tr>
<tr>
<td>Care location shift</td>
<td>Measuring overuse of imaging in physicians’ offices may unintentionally lead to physicians sending</td>
</tr>
<tr>
<td></td>
<td>patients to the emergency room for imaging</td>
</tr>
<tr>
<td>Increasing use of alternate tests or treatments</td>
<td>Measuring overuse of lumbar spine radiographs may unintentionally lead to increased use of lumbar</td>
</tr>
<tr>
<td></td>
<td>spine magnetic resonance imaging</td>
</tr>
<tr>
<td>Damage to the patient-physician relationship</td>
<td>Measuring overuse of antibiotics for bronchitis may unintentionally damage a physician’s</td>
</tr>
<tr>
<td></td>
<td>relationship with a patient because the physician did not order the treatment the patient desired</td>
</tr>
<tr>
<td>Clinician dissatisfaction with quality measurement</td>
<td>Excessive measurement burden (eg, additional documentation to confirm that service use is not</td>
</tr>
<tr>
<td></td>
<td>overuse) may lead to clinician dissatisfaction with quality measurement on the front lines,</td>
</tr>
<tr>
<td></td>
<td>gaming the system, or both, to improve performance on the measure without improving patient care</td>
</tr>
<tr>
<td>Adverse public health effects</td>
<td>Measuring overuse of blood cultures may unintentionally lead to decreased availability of data</td>
</tr>
<tr>
<td></td>
<td>necessary to track antibiotic resistance over time; such difficult situations must be anticipated</td>
</tr>
<tr>
<td></td>
<td>and addressed prior to implementation of overuse measures</td>
</tr>
</tbody>
</table>

Mathius & Baker, JAMA 2013
What about 38 weeks + 4 to 6 days?

- **Tita** *(NEJM 2009;360:111) (MFM Network)*
  - Examined 2,463 scheduled CS babies in this age range
  - Respiratory outcomes worse than 39 weeks (RR=1.21 95% CI 1.04-1.4, p=0.01), similar to 38 weeks as a whole

- **Wilminnik** *(AJOG 2010;202:250.e1-8) (Netherlands)*
  - Examined 5,046 scheduled CS babies in this age range
  - Respiratory outcomes worse than 39 weeks (RR=1.4 95% CI 1.1-1.8, p=0.01), similar to 38 weeks as a whole
Obstetric Quality: NQF 2012

- 0304: Late Sepsis or Meningitis in Very Low Birth Weight (VLBW) Neonates (risk-adjusted) (Vermont Oxford Network)
- 0480: PC-05 Exclusive Breast Milk Feeding (Joint Commission)
- 0483: Proportion of Infants 22 to 29 Weeks Gestation Screened for Retinopathy of Prematurity (Vermont Oxford Network)
Obstetric Quality: NQF 2012

- 0469: PC-01 Elective Delivery (Joint Commission)
- 0470: Incidence of Episiotomy (Christiana Care Health System)
- 0471: PC-02 Cesarean Section: NTSV (Joint Commission)
- 0472: Appropriate Prophylactic Antibiotic Received Within One Hour Prior to Surgical Incision—Cesarean Section (Massachusetts General Hospital/Partners Health Care System)
Obstetric Quality: NQF 2012

- 0473: Appropriate DVT Prophylaxis in Women Undergoing Cesarean Delivery (Hospital Corporation of America)
- 0475: Hepatitis B Vaccine Coverage Among All Live Newborn Infants Prior to Hospital or Birthing Facility Discharge (Centers for Disease Control and Prevention)
- 0476: PC-03 Antenatal Steroids (Joint Commission)
Obstetric Quality: NQF 2012

- 1746: Intrapartum Antibiotic Prophylaxis for Group B Streptococcus (GBS) (Massachusetts General Hospital)
- 0477: Under 1500g infant Not Delivered at Appropriate Level of Care (California Maternal Quality Care Collaborative)
- 0478: Neonatal Blood Stream Infection Rate (NQI #3) (Agency for Healthcare Research and Quality)
- 1731: Health Care-Associated Bloodstream Infections in Newborns (Joint Commission)
• Pregnancy-related complications (gestational diabetes, abruption, preeclampsia) were not used to designate subjects as high risk for this analysis.
• Vital statistics data
• There are some births that should occur before 39 weeks.