Reducing Non-Medical Deliveries Before 39 Weeks Gestation

Kenneth E. Brown, MD, MBA, FACOG

Copyright © 2011
Eliminating Elective Deliveries Before 39 Weeks

Rate of Induction

- Rate rising nationally
- Wide variation between states
- Wide variation within states


- 1990: 9.90%
- 1995: 18%
- 2000: 20%
- 2005: 23%
Complication Rates, Scheduled Repeat Cesareans by Weeks of Gestation

- Any adverse outcome
- Adverse Respiratory outcome
- NICU Admit
- Sepsis

Weeks:
- 37 Weeks
- 38 Weeks
- 39 Weeks
Gestational Age That Women Consider it Safe to Deliver
Advocates for Elimination of Elective Deliveries Before 39 Weeks

• Institute for Healthcare Improvement (IHI)
• Joint Commission
• March of Dimes
• Leapfrog group
• State Quality Initiatives (LA, CA, MI, UT, ID, NY)
• Several health plans (Cigna, Wellpoint, United Healthcare, Blue Cross)
Institute for Healthcare Improvement (IHI)

Perinatal Bundle - Elective Induction Bundle Composite, Data Collection Tool
Joint Commission Core Measure

• Measure Set: Perinatal Care(PC)
• Set Measure ID: PC-01
• Performance Measure Name: Elective Delivery
• Description: Patients with elective vaginal deliveries or elective cesarean sections at ≥ 37 and < 39 weeks of gestation
March of Dimes Toolkit

• Making the Case: A literature review
• Data Collection and Quality Improvement
• Clinician and Patient Education:

http://cmqcc.org/39_week_toolkit
The Leapfrog Group

• Target rate for elective deliveries before 39 weeks: 12% in 2010...
• Future goal: 5%
Leapfrog: Hospital Rates of Early Scheduled Deliveries

You can look up reporting hospital rates in your state by going to http://www.leapfroggroup.org/tooearlydeliveries

Then click on your state
Rates of prior to 39 week inductions vary widely (0-67%)

<table>
<thead>
<tr>
<th>Hospital</th>
<th>State</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Miami</td>
<td>FL</td>
<td>67%</td>
</tr>
<tr>
<td>Cleveland Clinic</td>
<td>OH</td>
<td>30%</td>
</tr>
<tr>
<td>Brigham and Womens</td>
<td>MA</td>
<td>27%</td>
</tr>
<tr>
<td>Cedars Sinai</td>
<td>CA</td>
<td>17%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hospital</th>
<th>State</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mayo Clinic</td>
<td>MN</td>
<td>12%</td>
</tr>
<tr>
<td>Vanderbilt</td>
<td>TN</td>
<td>12%</td>
</tr>
<tr>
<td>Baylor</td>
<td>TX</td>
<td>5%</td>
</tr>
<tr>
<td>Henry Ford</td>
<td>MI</td>
<td>0.4%</td>
</tr>
</tbody>
</table>
## Louisiana Rates

<table>
<thead>
<tr>
<th>Hospital</th>
<th>City</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baton Rouge General</td>
<td>Baton Rouge, La.</td>
<td>0.0%</td>
</tr>
<tr>
<td>Tulane Lakeside</td>
<td>Metairie, La.</td>
<td>1.9%</td>
</tr>
<tr>
<td>Dauterive</td>
<td>New Iberia, La.</td>
<td>5.2%</td>
</tr>
<tr>
<td>Lakeview Regional</td>
<td>Covington, La.</td>
<td>45.9%</td>
</tr>
<tr>
<td>Rapides Regional</td>
<td>Alexandria, La.</td>
<td>54.0%</td>
</tr>
</tbody>
</table>
State Initiatives: the Louisiana Department of Health & Hospitals
Birth Outcomes Project
Medical Factors
Factors in Increased Inductions

1. FDA approved cervical ripeners
2. More locally accepted marginal indications
3. Patient or physician preference
4. Accepted risk of cesarean section
More Factors in Increased Inductions

5. Physician convenience
6. Litigation concerns
7. A high intervention culture in medicine

The Leapfrog Group
Medical Indications for Elective Delivery

• Placental abruption
• Chorioamnionitis
• Fetal demise
• Gestational Hypertension
• Preeclampsia, eclampsia
• Premature rupture of membranes
• Post term pregnancy
• Maternal medical conditions
• Fetal compromise

ACOG Practice Bulletin No. 55
ACOG Practice Bulletin No. 107
Contraindications to Elective Vaginal Delivery

- Vasa previa or complete placenta previa
- Transverse fetal lie
- Umbilical cord prolapse
- Previous classical cesarean delivery
- Active genital herpes infection
- Previous myomectomy entering the endometrial cavity

ACOG Practice Bulletin No. 107
Non-Medical Indications for Elective Delivery (≥ 39 weeks)

- Risk of rapid labor
- Distance from hospital
- Spousal Tour of Duty
- Psycho-social events

ACOG Practice Bulletin No. 107
Controversial Indications for Induction of Labor

- Suspected Fetal Macrosomia
- Prior Shoulder Dystocia
- Isolated Oligohydramnios

ACOG Practice Bulletin No. 22
ACOG Practice Bulletin No. 101
ACOG Criteria for Term Gestation

- Ultrasound dating at <20 weeks supports gestational age ≥ 39 weeks
- FHT’s documented present for 20 weeks by fetoscope or 30 weeks by Doppler
- 36 weeks since positive serum or urine HCG pregnancy test by a reliable lab

Determining Gestational Age

• When an elective delivery is contemplated, the gestational age of the fetus must be determined and confirmed

• Iatrogenic prematurity is unacceptable
Determining Gestational Age (con’t)

Last Menstrual Period (LMP)

• Known and Documented
• Regular cycles
• Not artificially induced
Determining Gestational Age (con’t)

Ultrasonography

Best early, 6-12 weeks
Gestational sac size – unreliable (ectopic?)

Crown-rump length – more precise
Second trimester, 16-20 weeks – accurate estimate, fetal anatomy survey
Preference over LMP

ACOG Practice Bulletin No. 101
Determining Gestational Age (con’t)

Once established, the gestational dating should not be changed.
Determining Gestational Age (con’t)

In Vitro Fertilization
Fertilization date same as ovulation date
Or ... Age of embryo at transfer
Determining Gestational Age (con’t)

Fetal Lung Maturity ≠ Fetal Maturity

ACOG Practice Bulletin No. 107
ACOG Practice Bulletin No. 97
Adverse Outcomes, Maternal

- ↑ risk of cesarean section
- ↑ probability of repeat cesarean section
- ↑ length of labor
- ↑ length of hospital stay
- ↑ risk of hysterectomy

Glantz JC Term Labor Induction…Obstet Gynecol 2010
ACOG Practice Bulletin No. 7
Adverse Outcomes, Neonatal

- ↑ NICU Admissions
- ↑ incidence of Respiratory Distress syndrome
- ↑ risk of intraventricular hemorrhage
- ↑ risk of necrotizing enterocolitis

ACOG Practice Bulletin No. 97
NICU Admits by Week of Gestation, Intermountain Healthcare
Ventilator Use by Weeks of Gestation, Intermountain
QI Initiatives to Reduce Elective Inductions Before 39 Weeks

- Intermountain Healthcare – Utah and Idaho
- Magee-Womens Hospital – Pittsburgh, PA
- Ohio Perinatal Quality Collaborative
Intermountain QI Project

QI Intervention:

- Multidisciplinary team
- Guidelines adopted
- Physician education
- Data collection
- Patient Education
- Consent Forms

Intermountain QI Project

- Gatekeepers of scheduled admits: department chairs, perinatologists
- Guideline: “Delivery, whether by induction or C-section, should be electively undertaken ONLY after 39 weeks gestation, regardless of fetal lung maturity testing, and after both the mother and fetus have been examined thoroughly ... and the patient has given consent”
- Individual and institution rates reported
% of All Elective Births Occurring Before 39 Weeks (Intermountain)
Magee-Womens Hospital UPMC

Magee QI Project: Reduction of Induction Rates

Elective Inductions
Elective Nullip Inductions
Total Induction Rate

- **2004 Baseline**
- **2005 Education**
- **2006-07 Approval**
% Scheduled Deliveries 36-38 Weeks without indication
% births 36-38 weeks induced without indication
Here's why your baby needs 39 weeks:

• **Important organs**, like the brain, lungs and liver, get all the time they need to develop.

• It will be less likely your baby will have **vision and hearing** problems after birth.

• Babies need time to **gain more weight** in the womb. Babies born at a healthy weight have an easier time **staying warm** than babies born too small.

• Babies do better with feeding. Babies born early sometimes can't **suck swallow and stay awake**.
Patient Education Resources

• March of Dimes bilingual booklet “Why the Last Weeks of Pregnancy Count”

• March of Dimes Late Preterm Brain Development Card, www.marchofdimes.com

• Healthy Babies are Worth the Wait® Toolkit for Community Partners www.prematurityprevention.org/professionals.html

• Let Labor Begin on Its Own. www.lamaze.org/

Clark 2010 Study: 3 Methods

27 HCA hospitals in 14 states

» Hard Stop
» Soft Stop
» No Stop

Clark Study Outcomes

- 55% reduction in elective early deliveries (from 9.6% to 4.3%)
- 16% decline in NICU admissions overall
- Stillbirths unchanged
- Hard Stop achieved greatest reduction, then Soft Stop, then No Stop
- 1.7% rate achievable with Hard Stop
Common Elements of Successful Programs to Reduce the Rates

• Define terms/guidelines
• Multidisciplinary teams, collaborative projects
• Measure baseline, collect data
• Physician buy-in
• Education for staff
• Education tools, consent forms for patients
• “Hard stop” admissions versus voluntary
Hidden Cost to Healthcare System

1. Over scheduling in labor and delivery
2. Longer time in labor and delivery
3. Increase primary cesarean rate
4. Additional nursing time
Hidden Costs, continued

5. Longer length of hospital stay
6. Increased risk of downstream morbidity
7. Increased risk of litigation

Mello MM et al. National costs of the medical liability…Health Affairs 2010.
Claims Profile: Elective Induction prior to 39 weeks

- Labor induced, baby delivered at 38 weeks 4 days
- Soon after delivery, respiratory distress
- 17 days NICU
- Malpractice claim followed

Tex. App.-Austin, 2003, Mauzey vs. Sutliff, 125 S.W.3d 71
Compliance with Clinical Pathways

– Noncompliance with an institution’s OB clinical pathways was over 3 x more common for deliveries associated with malpractice claims than those that were not (43% vs. 12%).

– In 79% of the OB malpractice claims involving noncompliance with pathways, the main allegation in the claim related directly to the departure from the pathway.

Guidelines and Pathways/Protocols

Guidelines are guidelines
   – Not hard and fast rules
   – Not one size fits all
If you depart from established guidelines, document your rationale
Adverse Outcomes and Claims

Rand Corp. study: adverse patient outcomes and claims rise and fall together

Deliveries before 39 weeks are associated with ↑ rate of adverse events

By reducing these deliveries, both adverse outcomes and claims will decline

Conclusions

• Evidence is consistent that elective inductions prior to 39 weeks increases risk of harm
• Guidelines well established for decades
• Many stakeholders, many collaborative projects aim to reduce or eliminate non-medically indicated deliveries before 39 weeks
Conclusions

• Physician buy-in, ownership, leadership
• Physician champions needed