Objectives

• Learn about the Safe Deliveries Roadmap initiative aimed to improve care for moms and babies in the Pacific Northwest.

• Describe structures and processes that have supported successful implementation of the labor management bundle recommendations region wide.

• Review progress with the labor management best practices and results from outcome and process measure performance data.
Background

• Success with region-wide improvement with elective deliveries prior to 39 weeks
• Perinatal performance reports (EED, NTSV, VBAC)
• Conversations with members and clinicians
• Heightened interest in quality and safety of maternity care
  • Public
  • Employers
  • Payors
  • Government

Question:
Could we rapidly implement the medical evidence across the entire episode of care for a patient population?
Two Approaches

One Stone at a Time

Past strategy was successful, but slow.

Roadmap

Clinicians and Hospitals Leading the Way

Partners

American College of Nurse Midwives – WA affiliate
American Congress of Obstetricians and Gynecologists
Advanced Registered Nurse Practitioners United of WA State
Association of Women’s Health, Obstetric and Neonatal Nurses
Foundation for Health Care Quality – OB COAP
Foundation for Healthy Generations
March of Dimes
Midwives Association of WA State
Northwest Organization of Nurse Executives
Planned Parenthood – Great Northwest
Planned Parenthood – Greater WA and North Idaho
Seattle University College of Nursing
University of WA School of Nursing
WA Academy of Family Physicians
WA Chapter of the American Academy of Pediatrics
WA State Department of Health
WA State Health-Care Authority
WA State Medical Association
WA State Nurses Association
WA State Perinatal Collaborative
WithinReach
Over 100 Experts!

"I have such faith that we've identified the best practices because of the breath and depth of the expertise we've had participating in this process" Advisory Group Member...

Pharmacy
Lactation
Substance Abuse
Obstetrics/Gynecology
Mental Health
Sedation
Nutrition
Pediatrics
Infectious Disease
Public Health
Social Work
Midwifery
Community Health
Quality Improvement

The Bundles

Washington State Hospital Association - Safe Deliveries Roadmap
Best Practice Bundles

Our Model
Project Leaders

- Tom Benedetti, MD
- Dale Reisner, MD
- Mara Zabari, RN
- Eric Knox, MD
- Kathleen Simpson PhD, RNC, FAAN

Time Line

- On-boarding: (July – December 2013)
  - Readiness assessment
  - Education
  - Monthly webcasts
  - Safe Tables
- Algorithm and checklist development and testing: LEAPT (January – June 2014)
- Region-wide spread (July 2014)
- Outcome measure data collection (September 2014)
- Process Measure data collection (March 2015)
• Outcome:
  – NTSV cesarean section (Nulliparous, Term, Singleton, Vertex)
  – TSV primary cesarean section (Term, Singleton, Vertex)
  – Induced cesarean section (Nulliparous and Multiparous)
  – Maternal admission to Intensive Care Unit
  – Maternal blood transfusions
  – Extended maternal length of stay
  – Operative vaginal delivery
  – Unexpected newborn complications measure (UNC)

• Process:
  – Labor induction practices
  – First stage labor practices
  – Second stage labor practices
Labor Management

Cesarean Delivery Rates Vary Tenfold Among US Hospitals; Reducing Variation May Address Quality And Cost Issues

ABSTRACT Cesarean delivery is the most commonly performed surgical procedure in the United States, and cesarean rates are increasing. Working with 2009 data from 531 US hospitals nationwide, we found that cesarean rates varied tenfold across hospitals, from 7.1 percent to 69.9 percent. Even for women with lower-risk pregnancies, in which more limited variation might be expected, cesarean rates varied fifteenfold, from 2.4 percent to 36.3 percent. Thus, vast differences in practice patterns are likely to be driving the costly surge of cesarean delivery in many US hospitals. Because Medicaid pays for nearly half of US births, government efforts to decrease variation are warranted. We focus on four promising directions for reducing these variations, including better coordinating maternity care, collecting and measuring more data, tying Medicaid payment to quality improvement, and enhancing patient-centered decision making through public reporting.

Distribution of Total Cesarean Rates
US Hospitals vs WA State, 2009
Distribution of C/S Rates Among Low-Risk Pregnancies
US Hospitals (2009 data) vs WA State (July 2011 through June 2012 data)

Preventing the First Cesarean Delivery
Summary of a Joint Eunice Kennedy Shriver National Institute of Child Health and Human Development, Society for Maternal-Fetal Medicine, and American College of Obstetricians and Gynecologists Workshop

Catherine Y. Spong, M.D., Florencio Rombola, M.D., Katherine D. Winston, M.D., Brian M. Menon, M.D., and George E. Saade, M.D.

With more than one third of pregnancies in the United States being delivered by cesarean and the growing knowledge of morbidity associated with repeat cesarean deliveries, the Eunice Kennedy Shriver National Institute of Child Health and Human Development, the Society for Maternal-Fetal Medicine, and the American College of Obstetricians and Gynecologists convened a workshop to discuss strategies to reduce the cesarean delivery rate. The available evidence on maternal and fetal factors, labor management and induction, and modes of labor leading to the first cesarean delivery was reviewed as well as the implications of the first cesarean delivery on future spontaneous delivery.

First, Do No Harm
Labor Induction

Pre-procedure
✓ Consent form discussed with patient and signed for any induction; medical and non-medical (ACOG induction consent or equivalent).

Non-medically indicated
✓ Not done prior to 39 weeks gestation.
✓ Between 39 – 40 6/7 weeks gestation must have Bishop score of 9 or greater in nulliparous women and 6 or greater in multiparous women (no cervical ripening).

Medically indicated
✓ Done for reasons that are medically indicated and not included in the non-medically indicated guideline.
✓ Cervical ripening if needed for unfavourable cervix.

Guideline Criteria for Non-medically Indicated Labor Induction*

Non-medically indicated induction definition:
✓ Labor induction without clear medical benefits to mother or fetus at that point in time compared with continuation of pregnancy.

Indications that make the induction elective:
✓ History of fast labor
✓ Distance from hospital
✓ Suspected macrosomia (without history of shoulder dystocia)
✓ Psychosocial (e.g. partner’s deployment date, family or significant relation availability, adoption, etc.)
✓ Maternal discomfort (e.g. hemorrhoids, reflux, sciatic nerve pain, fatigue, etc.)
✓ Advanced cervical dilation, GBS negative

* Adapted from Northern New England Perinatal Quality Improvement Network (NNEPQIN)

First Stage Labor

• Delay admission to labor unit: all conditions to be met for discharge
  ◦ Cervix less than 4 cm.
  ◦ Membranes intact.
  ◦ Reactive NST/FHR category I (if uterine contractions present).
  ◦ Confirmed by 2 practitioners (RN, MD, DO, CNM).
  ◦ Pain control adequate with appropriate outpatient interventions as needed.
First Stage Labor

- Consider D/C home or further observation:
  - Cervix 4-5 cm without change x 2-4 hrs.
  - < 80% effacement.
  - Membranes intact.
  - Reactive NST/FHR category I (if uterine contractions present).
  - Contractions less than 3/10 minutes.

- Consider AROM and/or Oxytocin administration:
  - Cervix 4-5 cm without change x 2-4 hrs.
  - 90 – 100% effacement.
  - Membranes intact.
  - Reactive NST/FHR category I (if uterine contractions present).
  - Contractions less than 3/10 minutes.

Special Considerations

- Arrest of cervical dilation and uterine activity documented as:
  - Adequate (>200 Montevideo units or palpably strong > q 3 minutes when not feasible to rupture membranes) with no or minimal cervical change x 4 hr **

  OR

  - Inadequate (<200 Montevideo Units or <3/10 minutes despite Oxytocin per protocol) with no or minimal cervical change x 6 hr ***

*** Clinical judgment is needed to determine safe upper limit of total time allowed in active phase = does for < 3hrs. “minimal cervical change” would be substantially less than clinical norm, for example: less than or equal to 1cm change at 4-6 hours. Per the Zhang et al partogram at 6cm the 95th %’ile for a normal active labor phase curve and normal outcomes is approximately 8hrs.

For spontaneous labor use all considerations. For induction of labor entering active phase only use last consideration.

Consider cesarean delivery [all three present]
- Cervix 6 cm or greater
- Membranes ruptured (if feasible)
- Arrest of cervical dilation and uterine activity (see special considerations for parameters)

- Special Considerations
  - Arrest of cervical dilation and uterine activity documented as:
    - Adequate (>200 Montevideo units or palpably strong > q 3 minutes when not feasible to rupture membranes) with no or minimal cervical change x 4 hr **

  OR

  - Inadequate (<200 Montevideo Units or <3/10 minutes despite Oxytocin per protocol) with no or minimal cervical change x 6 hr ***

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For spontaneous labor use all considerations. For induction of labor entering active phase only use last consideration.

Active Phase of Spontaneous Labor for ≥37 Weeks GA

- Position:
  - 0
  - -3
  - -6
  - -9

- Cervical Dilation (cm) (Plot X)
- Time (hours)
- Action Line
- Decision Line
- Normal labor
- Departant management
- Risk of medical management
- still under for normal care, consider early phase intervention
Second Stage Labor

• Assessment of descent and position of presenting part.
  - At least every 1-2 hrs.

• Consider operative delivery or cesarean delivery (if presenting part not on perineal floor: +4 or lower).
  - Time from complete dilation*: **:
    - Nulliparous with epidural anesthesia - 4 hrs.
    - Nulliparous without epidural anesthesia - 3 hrs.
    - Multiparous with epidural - 3 hrs.
    - Multiparous without epidural - 2 hrs.
  OR
  - Total time from complete dilation 5 hrs. or greater.

* Passive descent (laboring down) is included in these time periods.

** Each may need an additional hour if occiput posterior position and rotation of greater than 45 degrees toward anterior has been previously achieved.

How Are We Doing?

Safe Deliveries Roadmap Work
Complete Safe Deliveries Outcome and Balance Measure data
Submitted in 2015
35 hospitals representing 80% of Washington State hospital births (65,317 of 81,848 births in 2014)
### 2014 National NTSV C-section rates by State:

Mean 26%; Range 17.1% - 31.8%

<table>
<thead>
<tr>
<th>States with rates &lt; 24%</th>
<th>18 States</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 20% (5)</td>
<td></td>
</tr>
<tr>
<td>20% to &lt; 22% (8)</td>
<td></td>
</tr>
<tr>
<td>22% to &lt; 24% (5)</td>
<td></td>
</tr>
</tbody>
</table>


| States with > 1% Decrease 2013 to 2014 (5)** | Maine, Oregon, Vermont, Washington, Wyoming |

** Source: Centers for Disease Control/National Center for Health Statistics (CDC/NCHS), National Vital Statistics System

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### Results

**Washington State Non-Military Hospitals**

Primary TSV C-Section Rate by APR-DRG Severity of Illness Score FY 2011-2014 with Increased Correlation Coefficient FYs 2011 vs 2014 *

* Source: State CHARs data with APR-DRG grouper

<table>
<thead>
<tr>
<th>Correlation Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011: 0.777</td>
</tr>
<tr>
<td>2014: 0.812</td>
</tr>
</tbody>
</table>

** Source: Cawthon, L. Delivery Statistics Report (2014 Births) Washington State Non-Military Hospitals, Department of Social and Health Services Research and Data Analysis Division, March 30, 2015.**
Which thresholds for NTSV and primary c-section rates provide the best newborn and maternal care without unintended adverse outcomes?

Where is the Sweet Spot?

Are we almost there yet?
Unexpected Newborn Complications (UNC)
aka NQF 716: Healthy Term Newborn

Key maternity outcome measure
- Most important childbirth outcome for families is a healthy baby. UNC is the first well-balanced and validated measure to address this gap.
- Also serves as a balancing metric for maternal measures such as NTSV CS, 3rd/4th degree lacerations, episiotomy and early elective delivery rates.

- Denominator: Term infants without "pre-existing conditions":
  - Exclusions: preterm, <2500gm BWT, multiple gestations, all congenital anomalies ("big or small"), other fetal conditions and exposures to maternal drug use.
- Numerator: A set of either short or long term complications that would be of significant concern for the mother/family.
  - Identified by focus groups of neonatologists and families
  - Grouped into severe and moderate levels
  - Identification of cases of family separation/disruption: Term babies requiring neonatal transport to another facility or baby complications requiring a stay longer than their mother.

Source: WSHA-MQCC

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Frequency Distribution of UNC Measure
In California Hospitals (2011-2012)

Significant variation noted in both large and small hospitals.
Source: WSHA-MQCC

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Revised Specifications
NQF #716: Unexpected Newborn Complications
aka Healthy Term Newborn
Sub Measure Calculations

New: Ability to calculate several sub-measures to direct quality improvement efforts. "Buckets" include like-diagnoses - both severe and moderate. Hospital level comparisons show significant variation in these categories. This analysis allows hospitals to focus on specific care practices to drive QI.

<table>
<thead>
<tr>
<th>Neonatal Complication Sub-Categories</th>
<th>Proportion of Total Complications (California 2011-12)</th>
<th>Rate of each Complication Category (per 1,000 births)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory</td>
<td>41.9%</td>
<td>14.9</td>
</tr>
<tr>
<td>Infection</td>
<td>21.1%</td>
<td>7.5</td>
</tr>
<tr>
<td>Transfer to Higher Level of Care</td>
<td>16.6%</td>
<td>5.9</td>
</tr>
<tr>
<td>Neurologic/Birth Injury</td>
<td>12.9%</td>
<td>4.6</td>
</tr>
<tr>
<td>Shock/Resuscitation</td>
<td>3.1%</td>
<td>1.1</td>
</tr>
<tr>
<td>Long LOS (without clear diagnosis: social or elevated bilirubin)</td>
<td>3.9%</td>
<td>1.4</td>
</tr>
</tbody>
</table>

Source: WSHA-MQCC
**Wins and Challenges**

- **Wins**
  - Good timing
  - Strong project leadership
  - High level of interest and engagement among stakeholders
  - Opportunities for alignment with state agencies

- **Challenges**
  - Charting new waters
  - Measures and data sources

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**What We Are Learning**

- Implementing this type of change is messy
  - Developing/learning as we go
  - Changing time-lines
  - Course corrections

- We need to get more comfortable not having the answers

- Hospitals have different improvement opportunities – drill down is key

- Everyone has something to teach/contribute

- Good will keeps things moving when we hit the wall
  - There is a strong commitment for finding the way forward