Partnership for Patients
Safe Deliveries Roadmap
Webcast
April 23, 2014

Advancing Patient Safety in Maternity Care:
A Roadmap from Prenatal to Postpartum
Safe Deliveries Roadmap Project Coordinator

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Presented at Washington State Hospital Association Safe Table Webcast April 23, 2014
Today’s Objectives

• Safe Deliveries Roadmap Project Updates

• Hear from Kara Hoppe, DO, and Thomas Benedetti, MD, how they are planning to use the Partogram (labor curve) at the University of Washington Medical Center as a tool to guide labor progression decisions that meet contemporary standards.

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Partnership for Patients

• **40** – Percent reduction in harm

• **20** – Percent reduction in readmissions

• **14** – by 2014

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10 Targeted Strategies

Infection Reduction:
1. Catheter-associated urinary tract infections (CAUTI)
2. Central line-associated blood stream infections (CLABSI)
3. Surgical site infections (SSI)
4. Ventilator-associated pneumonia (VAP)

Nursing Care:
5. Injuries from falls and immobility
6. Pressure ulcers

High Risk:
7. Adverse drug events
8. Obstetrical adverse events
9. Venous thromboembolism or blood clots (VTE)

Continuity of Care:
10. Prevention of readmissions

Cultural Transformation
Leadership Engagement
Patient and Family Engagement

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OB Adverse Events

- Partnership for Patients: 2012 – 2013
  - Early Elective Delivery Prior to 39 Weeks
  - Episiotomy
  - Safe Deliveries Roadmap

- Partnership for Patients: 2014
  - Early Elective Delivery Prior to 39 Weeks
  - Episiotomy
  - Safe Deliveries Roadmap
  - Pre-eclampsia
  - Hemorrhage

Today’s Focus

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Washington State Hospital Association
Safe Deliveries Evidenced-Based Roadmap

Pre-Pregnancy
- Increased use of preconception care services
- Improved health entering pregnancy
- Reduced risk from complications due to previous pregnancies

Pregnancy
- Fewer infant abnormalities and disabilities
- Less maternal and fetal complications
- More educated patients

Delivery
- Less maternal morbidity and mortality
- Fewer early deliveries
- Higher Apgar scores
- Fewer NICU admissions

First Month
- Healthier mothers and babies
Safe Deliveries Roadmap
Roll-out

• Laying the Foundation: (July – On-going)
  • Readiness assessment
  • Education

• Testing (LEAPT): (December – May)

• Implementation: (July 2014)

AND, THEY’RE OFF!

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Next Steps

• Finish testing
• Disseminate tools to all hospitals
• Gear up for data collection
• Second round of Safe Deliveries Roadmap practice assessment
Partograms

Kara Hoppe, DO & Thomas Benedetti, MD

Presented at Washington State Hospital Association Safe Table Webcast April 23, 2014
Objectives

- Review the origins of the Partogram (labor curve) and the recent research related to it.
- Explain the components of the Partogram, how to record patient data, and interpret the results.
- Learn how clinicians at the University of Washington Medical Center are planning to use the Partogram as a tool to guide labor progression decisions that meet contemporary standards.
- Ask questions and discuss strategies for using the Partogram in your hospital to change practice.
Introduction

• Maternal mortality
  – In 2011, there were approximately 273,500 maternal deaths (uncertainty range, 256,300 to 291,700). (Bhatta, 2013)
  – In the U.S. was 24 per 100,000 was reported for 2008. (Country comparison: Maternal Mortality Rate, CIA)

• Prolonged/obstructed labor
  – A leading cause of death among mothers and newborns in the developing world.
  – Obstructed labor: 1-20% (WHO, 2005)

• Partographs were developed to differentiate normal and abnormal labor
Historical perspective

• Friedman, 1954: 1\textsuperscript{st} to describe the progress of labor graphically (cervicograph)
  – 100 African primigravid women at term
  – Rectal exams
  – S-shaped curve
• Philpott, 1972: developed a cervico(parto)graph for clinic in Zimbabwe
  – Alert line (straight)-1cm/hr
    • Transfer to a unit to manage “slow labor”
  – Action line
    • Transfer the patient without impairing the success of essential active management
• 1\textsuperscript{st} WHO model in 1988 with launch of worldwide Safe Motherhood Initiative.
• In 1998, WHO recommended research into all aspects of the partogram
• Multicenter trial involving >35,000 women in Indonesia, Malaysia and Thailand
  – When partograph was used, labor outcomes were greatly improved.
  – All hospital should use a partogram
• Current WHO partograph, 2003
• Modern partograph, 2010 (Zhang)
Partogram (Partograph)

• Pre-printed paper form on which labor observations are recorded.
• Aim: provide a pictorial overview of labor, to alert providers of deviations in maternal or fetal wellbeing and labor progress.
• Support decision-making regarding interventions with goal to improve management of labor.
  – Primarily 1st stage
Components of partogram

• Components of partogram
  – Maternal
  – Fetal
  – Labor progress
    • Alert
      – Line that represents the slowest 10% of primigravid women’s labor progress
      – Corresponds with onset of active phase of labor (when cx is 4 cm)

• Action
  – Line that is place a number of hours after the alert line (usually 2-4) to prompt effective management of slow labor progress

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Types of partograms

- Cervicographs
- Preprinted paper versions
- Circular partograms
- Electronic partograph (www.epartograph.edu)
Cervicographs

**Figure 3.**
The 95th percentiles of cumulative duration of labor from admission among singleton, term nulliparas with spontaneous onset of labor, vaginal delivery, and normal neonatal outcomes.
WHO composite partograph: latent phase

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WHO partograph: active phase only
FIGURE 3. The “simplified” World Health Organization partograph.¹
Circular partogram
Electronic partograph

http://www.epartograph.eu/index.html
Average labor curves by parity in singleton, term pregnancies with spontaneous onset of labor, vaginal delivery and normal neonatal outcomes. P0: nulliparas; P1: women of parity 1; P2+: women of parity 2 or higher.

The figure depicts the labor curves for various parities. In multiparas, labor appears to accelerate after 6 cm of cervical dilation. Parity 2+ entered the active phase earlier than Parity 1. In contrast, the average labor curve for nulliparas did not show a clear inflection point.

Zhang, 2010

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Contemporary labor findings: median/95\textsuperscript{th} percentiles

Table 2

<table>
<thead>
<tr>
<th>Cervical Dilation (cm)</th>
<th>Parity=0 Median (95\textsuperscript{th} percentile) N=25624</th>
<th>Parity=1 Median (95\textsuperscript{th} percentile) N=16755</th>
<th>Parity=2+ Median (95\textsuperscript{th} percentile) N=16219</th>
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<tbody>
<tr>
<td>3-4</td>
<td>1.8 (8.1)</td>
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<td>1.4 (7.3)</td>
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<td>0.8 (3.4)</td>
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<td>6-7</td>
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<td>0.5 (1.9)</td>
<td>0.5 (1.8)</td>
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<td>7-8</td>
<td>0.5 (1.6)</td>
<td>0.4 (1.3)</td>
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<td>8-9</td>
<td>0.5 (1.4)</td>
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<td>9-10</td>
<td>0.5 (1.8)</td>
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<tr>
<td>2\textsuperscript{nd} stage with epidural analgesia</td>
<td>1.1 (3.6)</td>
<td>0.4 (2.0)</td>
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<tr>
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</tr>
</tbody>
</table>

Zhang, 2010
Zhang partogram for nulliparas in spontaneous labor

Figure 3. The 95th percentiles of cumulative duration of labor from admission among singleton, term nulliparas with spontaneous onset of labor, vaginal delivery, and normal neonatal outcomes.

Zhang, 2010
Partogram: How the intervention might work.....

• Objective data to base clinical decisions
• Enhances communication among members of the team of providers
• Should have clear directives about what actions to take at what point
• Ultimate goal:
  – Prevent prolonged/obstructed 1st stage of labor and poor maternal/neonatal outcomes
University of Washington’s process of developing an evidence based Partogram to implement
Partogram

- 6 studies involving 7706 women
- 2 studies assessed partogram vs no partogram in CS (RR 0.64, CI 0.24-1.7); instrumental VD (RR 1.0, CI 0.85-1.17); or Apgar score <7 at 5 min between groups (RR 0.77, CI 0.29-2.06)
- 2 hr action line vs 4 hr action line
  - 2 hr more likely to require oxytocin (RR 1.15, CI 1.05-1.22)
- 3 hr action line vs 4 hr action line
  - CS rate lowest in the 4 hr group (RR 1.20, CI 1.07-2.70)* n=613.
- Partogram with a latent phase vs without, CS rate was lower without a latent phase(RR 2.45, CI 1.72-3.50) n=743

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UW consensus guidelines - adopted from NICHD guidelines

• Recommendations

• 1. Failed induction of labor
   – a. Failure to generate regular contractions and cervical change after 24 hours with oxytocin and with artificial rupture of membranes when feasible

• 2. First-stage arrest: Over 6 cm dilated with rupture of membranes with either:
   – a. No cervical change in 4 hours despite adequate contractions
   – b. No cervical change in 6 hours with inadequate contractions

• 3. Second-stage arrest: No progress (descent or rotation) for
   – a. 4 hours in nulliparous women with an epidural
   – b. 3 hours in nulliparous women without an epidural
   – c. 3 hours in multiparous women with an epidural
   – d. 2 hours in multiparous women without an epidural

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Designing a partogram that supports the NICHD guidelines...

- Not able to consistently use the action and alert line?
- Hypothetically....
- 6 hrs with inadequate contractions, but making change every 6 hrs by 1 cm would allow for **24 hours** of 1\textsuperscript{st} stage of labor after 6 cm achieved
- If 4 hrs with adequate contractions, making change of 1cm every 4 hrs would allow for **16 hrs** of 1\textsuperscript{st} stage of labor after 6 cm achieved
- Zhang and partogram

**After 6cm:**
- **Multips (16,000 pts)**
  - Median 6cm\rightarrow complete 1.5 hours
  - 95%\rightarrow 5.1 hours
- **Nullips (25,000 pts)**
  - Median 6 cm to complete\rightarrow 2.1 hrs
  - 95%\rightarrow 7 hours
NICHD versus Partogram

- In reality for each patient, there is a balance between the strict lines on the partogram and the NICHD recommendations.
Zhang curves

• Let’s take a quick look again at the Zhang curves for normal labor superimposed on the partogram.
Zhang curve: 3 cm at admission (nulliparous)
Zhang curve: 4 cm at admission (nulliparous)
Zhang curve: 5 cm at admission (nulliparous)
Partogram: Latent labor vs Active labor only...

- Starting time 0 at 6cm, active labor fits into our next issue #3

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Including latent labor (induction)

- Studies have shown that over half of the women undergoing labor induction remain in the latent phase for at least 6 hours, and nearly 1/5 remain in the latent phase for 12 hours or longer.
- In a multi-center study, nearly 40% of the women still in the latent phase after 12 hours of oxytocin and membrane rupture successfully delivered vaginally.
- These data suggest that induction should not be defined to have failed in the latent phase unless oxytocin has been administered for at least 24 hours, or for 12 hours after membrane rupture.

Spong, 2012
Partogram: Latent labor vs Active labor only...

- UW decision: Do not include latent labor
- It may increase C-sections
- It is difficult to prospectively connect to active labor
- NICHD proposes up to 24 hours in latent labor, which doesn’t allow it to fit on 1 page for easy L&D use

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Partogram: Definitions

• Consider changing the name of the lines

• Alert Line → Action Line
  – If crossing the alert line, there should be an action taken for abnormal labor curve

• Action Line → Decision Line
  – If crossing the action line, a definitive discussion and decision should be made about the labor end-point and C-section

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Final QI form with partogram

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Partogram implementation with utilization recommendations

• The partogram should have clear directives about what actions to take at what point, however cannot use to make absolute decisions about CS.
  – If alert line is crossed: assure AROM, oxytocin have been initiated.
  – If action line is crossed: consider CS with understanding that they have exceeded the 95% of “active” labors with normal outcomes. However, it is reasonable to discuss continuation within NICHD guidelines if reassuring maternal and fetal status.

• The partogram should enhance communication among members of the team of providers

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References

http://www.glowm.com/resources/glowm/videos/safermotherhood/Partograph%20E-tool/Partograph_WHO.swf


Friedman and coll.

Philpott and coll.

Hendricks and coll.

Studd and coll.

Schifrin and coll.

Beazley and coll.

WHO

Albers and coll.

Lavender and coll.

Zhang and coll.

Vahratian and coll.

NICE UK

Mathai

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Questions?
Meeting Schedule

2014

• Roadmap Monthly (webcast) 7:00 – 8:00 a.m.

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• Safe Tables (in-person) 9:00 a.m. – 2:30 p.m.
  • July 24
  • November 18

New Date!
Thank You!

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Safe Deliveries Roadmap Website
http://www.wsha.org/0513.cfm%20

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