Safe Deliveries Roadmap

Learning Collaborative Webcast

May 21, 2015

Safe Deliveries Roadmap

Advancing Safety for Mothers and Babies
A Roadmap from Pre-pregnancy to Postpartum
Mara Zabari, Executive Director of Integration
Washington State Hospital Association

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maraz@wsha.org
Today

• Hear from Dr. Kara Hoppe, what they've learned at the University of Washington after using the Partogram (labor curve) over the past year to guide labor progression decisions

• Discover how this tool can help to implement the labor management recommendations and keep patients safe

• Learn about Safe Deliveries Roadmap project updates
A Cluster-Randomized Trial to Reduce Cesarean Delivery Rates in Quebec

Nils Chaillet, Ph.D., Alexandre Dumont, M.D., Ph.D., Michal Abrahamowicz, Ph.D., Jean-Charles Pasquier, M.D., Ph.D., François Audibert, M.D., Patrick Monnier, M.D., Ph.D., Haim A. Abenhaim, M.D., M.P.H., Eric Dubé, M.Sc., Marylène Dugas, Ph.D., Rebecca Burne, M.Sc., and William D. Fraser, M.D. for the QUARISMA Trial Research Group

BACKGROUND
In Canada, cesarean delivery rates have increased substantially over the past decade. Effective, safe strategies are needed to reduce these rates.

METHODS
We conducted a cluster-randomized, controlled trial of a multifaceted 1.5-year intervention at 32 hospitals in Quebec. The intervention involved audits of indications for cesarean delivery, provision of feedback to health professionals, and implementation of best
Congratulations!

8% Reduction!

Washington State Non-Military Hospitals

C-Sections Among Nulliparous Term Singleton Vertex (NTSV) Deliveries 1997-2014
Hospital Rate with 95% Confidence Limits

8% Reduction!

Primary C-Sections Among Term Singleton Vertex (TSV) Deliveries 1997-2014
Hospital Rate with 95% Confidence Limits

8% Reduction!
UPDATES
Labor- First Stage: Consider Cesarean Delivery (All Three Present)

**Recommendations:**
- 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 4hr ***
  - OR
  - Inadequate (<200 Montevideo Units or <3/10 minutes despite Oxytocin per protocol) with no or minimal cervical change X 6hr***

*** Clinical judgment is needed to determine safe upper limit of total time allowed in active phase ≥6cm to < 10cm. “Minimal cervical change” would be substantially less than clinical norm, for example, less than or equal to 1cm change in 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 8 hrs total time.
Partograms

Kara Hoppe, DO & Thomas Benedetti MD
May 21st, 2015
Objectives

• What we've learned over the past year at the University of Washington after using the Partogram (labor curve) we designed to meet contemporary standards to guide labor progression decisions.

• Discover how this tool can help with implementing labor management recommendations and keep patients safe.
  – Explain the components of the partogram, how to record patient data, and interpret the results.
  – Patient cases
Introduction

• Prolonged/obstructed labor
  • A leading cause of death among mothers and newborns in the developing world (WHO, 2005)
    • Obstructed labor: 1-20% (WHO, 2005)
  • The #1 indication for primary CS in US (ACOG, 2014)
  • The #1 indication for primary CS at UWMC (The National Perinatal Information Center (2009-2014))

• Partograms were developed to differentiate normal and abnormal labor
UWMC’s process to reinitiate a partogram to L&D

• Concern for increase in prolonged & obstructive labor
• Possible increase in maternal and neonatal morbidity

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Partogram: How the intervention works.....

- Objective data to promptly diagnose prolonged/obstructed labor & develop timely clinical decisions
  - Should have clear directives about what actions to take at what point
- Enhances communication among members of the team of providers
- Ultimate goal:
  - Prevent prolonged/obstructed 1\textsuperscript{st} stage of labor and poor maternal/neonatal outcomes

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Traditional diagnosis of active labor dystocia

- **Protracted active phase:**
  - Nullip ≤ 1.2 cm/hr
  - Multip ≤ 1.5 cm/hr (Friedman, 1955)

- **Arrest of active phase:** No cervical change for 2 hours or more in the presence of adequate contractions and cervix dilation >4 cm (ACOG)
UW consensus guidelines to define first stage arrest (Spong, 2012)

• 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
NICHD guidelines...

• If taken literally....

• **6 hrs** has passed with inadequate contractions, however the patient is making 1 cm of change every **6 hrs**
  • would allow for **24 hrs** of 1st stage of labor after 6 cm achieved

• **4 hrs** has passed with adequate contractions, making 1cm of change every **4 hrs**
  • would allow for **16 hrs** of 1st stage of labor after 6 cm achieved
Contemporary “dystocia” definitions for active labor: median/95th percentiles

• After 6cm:
  – Multips (16,000 pts)
    • Median 6cm → 10cm 1.5 hrs
    • 95% → 5.1 hrs
    – 0.5 to 1.3cm/hr
  – Nullips (25,000 pts)
    • Median 6 cm to 10cm → 2.1 hrs
    • 95% → 7 hrs
    – 0.5 to 0.7cm/hr

Zhang, 2010

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UWMC Partogram

Active Phase of Labor for ≥37 Weeks GA

Position:

---

Action Line

Decision Line

Cervical Dilatation (cm) (Plot X)

Time (hours)

-3 or higher

-2

-1

0

+1

+2

+3 or lower

Descent of Head (Plot O)

Normal labor: Expectant management

Off median normal labor curve: Augment labor management

>95th percentile for normal labor curve: Consider safety of continued labor vs delivery

Action Line: "Normal" median labor progress line for active labor (>6 cm), based on the Zhang et al partograms. When the patient falls off this line, consider interventions to augment labor (AROM, oxytocin), prior to reaching the decision line.

Decision Line: Four hours to the right of the action line. If the patient’s labor progress crosses this line, she is outside the 95th percentile of normal labor progress per the Zhang et al partogram.
UWMC Partogram with 95\textsuperscript{th} percentile Zhang curves (nullips)

WHO lines
Zhang lines

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Barriers to use

- Partograms are not accessible or available
- Lack of detailed knowledge on how to use
- Inadequate training
- Lack of evidence regarding efficacy
- Lack of clinical leadership and quality assurance
- Time consuming
Partogram QI

- Periodically, we should review partograms to see how well these are completed and to check on the appropriateness and timeliness of interventions.
- Partograms should be also reviewed whenever there is a maternal and perinatal death or severe morbidity.
  - These reviews should be used as a learning exercise to improve quality of care provided in labor.

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How to use the partogram

• All the recordings on the partogram should be done in relation to the time line
• Each box represents one hour
• Record the actual time
• First cervical exam should be documented in relation to the action line (using an X)
• First descent of head exam should be on the left side of y-axis (using an O)
Partogram recording exercise

Patient exam:

0100 6 cm dilated/-2 station
Position: OP

Active Phase of Labor for ≥37 Weeks GA

- Position: OP
- Action Line
- Decision Line
- Cervical Dilatation (cm) (Plot X)
- Time (hours)
- Descent of Head (Plot O)

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Action Line: “Normal” median labor progress line for active labor (>6 cm), based on the Zhang et al partograms. When the patient falls off this line, consider interventions to augment labor (AROM, oxytocin), prior to reaching the decision line.

Decision Line: Four hours to the right of the action line. If the patient’s labor progress crosses this line, she is outside the 95th percentile of normal labor progress per the Zhang et al partogram.

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Partogram recording exercise

Patient exam:

0100 6 cm dilated/-2 station
Position: OP

0400 8 cm dilated/-1 station
Position: OA

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Active Phase of Labor for ≥37 Weeks GA

Position:
- OP
- OA

Cervical Dilatation (cm) (Plot X)

Time (hours)

Action Line: “Normal” median labor progress line for active labor (>6 cm), based on the Zhang et al partograms. When the patient falls off this line, consider interventions to augment labor (AROM, oxytocin), prior to reaching the decision line.

Decision Line: Four hours to the right of the action line. If the patient’s labor progress crosses this line, she is outside the 95th percentile of normal labor progress per the Zhang et al partogram.
Partogram recording exercise

Patient exam:

0100 6 cm dilated/-2 station
Position: OP

0400 8 cm dilated/-1 station
Position: OA

0600 fully dilated/+1 station
Position: OA
Partogram labor management recommendations

- **Action line** is crossed: assure AROM, consider I UPC & oxytocin have been initiated.

- **Decision 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

- Cannot use to make absolute decisions about CS
Cases
Normal labor

- 30 G1P0 at 39 +6 weeks gestational age
- Uncomplicated pregnancy to date

<table>
<thead>
<tr>
<th>Patient: Normal</th>
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<tbody>
<tr>
<td><strong>Current time</strong></td>
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<tr>
<td><strong>Admission indication</strong></td>
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<tr>
<td><strong>Cervical dilation</strong></td>
</tr>
<tr>
<td><strong>Head descent</strong></td>
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<tr>
<td><strong>Amniotic fluid</strong></td>
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<tr>
<td><strong>Oxytocin</strong></td>
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<tr>
<td><strong>Maternal temperature</strong></td>
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Normal labor

**Patient: Normal**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<td>Current time</td>
<td>2300</td>
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<tr>
<td>Cervical dilation</td>
<td>6</td>
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<tr>
<td>Head descent</td>
<td>0</td>
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<tr>
<td>Fetal position</td>
<td>Occiput anterior</td>
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<tr>
<td>Amniotic fluid</td>
<td>SROM @ 2300</td>
</tr>
<tr>
<td>Oxytocin</td>
<td>n/a</td>
</tr>
<tr>
<td>Maternal temperature</td>
<td>37.1</td>
</tr>
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</table>

---

**Active Phase of Labor for ≥37 Weeks GA**

- **Position:**
  - OA
- **Cervical Dilatation (cm) (Plot X):**
  - 0
- **Descent of Head (Plot O):**
  - 0
- **Time (hours):**
  - 2300
  - 0100

- **Action Line:**
  - "Normal" median labor progress line for active labor (>6 cm), based on the Zhang et al partogram. When the patient falls off this line, consider interventions to augment labor (AROM, oxytocin), prior to reaching the decision line.
- **Decision Line:**
  - Four hours to the right of the action line. If the patient’s labor progress crosses this line, she is outside the 95th percentile of normal labor progress per the Zhang et al partogram.

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# Normal labor

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<thead>
<tr>
<th><strong>Patient: Normal</strong></th>
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<tbody>
<tr>
<td><strong>Current time</strong></td>
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<tr>
<td><strong>Cervical dilation</strong></td>
<td>8</td>
</tr>
<tr>
<td><strong>Head descent</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>Fetal position</strong></td>
<td>OA</td>
</tr>
<tr>
<td><strong>Amniotic fluid</strong></td>
<td>Ruptured</td>
</tr>
<tr>
<td><strong>Oxytocin</strong></td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Maternal temperature</strong></td>
<td>37.1</td>
</tr>
</tbody>
</table>

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**Active Phase of Labor for ≥37 Weeks GA**

- **Position:**
  - OA
  - OA
  - Action Line
  - Decision Line

- **Cervical Dilation (cm) (Plot X):**
  - 0
  - 1
  - 2
  - 3

- **Descent of Head (Plot O):**
  - -3 or lower
  - -2
  - -1
  - 0
  - +1
  - +2
  - +3 or higher

- **Time (hours):**
  - 2300
  - 0100

**Action Line:**
- "Normal" median labor progress line for active labor (>6 cm), based on the Zhang et al partogram. When the patient falls off this line, consider interventions to augment labor (AROM, oxytocin), prior to reaching the decision line.

**Decision Line:**
- Four hours to the right of the action line. If the patient’s labor progress crosses this line, she is outside the 95th percentile of normal labor progress per the Zhang et al partogram.

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### Normal labor

<table>
<thead>
<tr>
<th>Patient: Normal</th>
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</thead>
<tbody>
<tr>
<td>Current time</td>
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<tr>
<td>Cervical dilation</td>
</tr>
<tr>
<td>Head descent</td>
</tr>
<tr>
<td>Fetal position</td>
</tr>
<tr>
<td>Amniotic fluid</td>
</tr>
<tr>
<td>Oxytocin</td>
</tr>
<tr>
<td>Maternal temperature</td>
</tr>
</tbody>
</table>

![Active Phase of Labor for ≥37 Weeks GA](chart)

**Position:**
- OA
- OA
- OA
- OA
- OA
- OA
- OA
- OA

**Action Line:**
- Normal median labor progress line for active labor (>6 cm), based on the Zhang et al partogram. When the patient falls off this line, consider interventions to augment labor (AROM, oxytocin), prior to reaching the decision line.

**Decision Line:**
- Four hours to the right of the action line. If the patient's labor progress crosses this line, she is outside the 95th percentile of normal labor progress per the Zhang et al partogram.

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NSVD at 0256
Live infant
2896 grams
Apgars 8/9
## Prolonged labor

### Patient: Prolonged

<table>
<thead>
<tr>
<th>Current time</th>
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</thead>
<tbody>
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<td>Admission indication</td>
<td>Spontaneous labor</td>
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<td>Cervical dilation</td>
<td>4</td>
</tr>
<tr>
<td>Head descent</td>
<td>-2</td>
</tr>
<tr>
<td>Amniotic fluid</td>
<td>intact</td>
</tr>
<tr>
<td>Oxytocin</td>
<td>n/a</td>
</tr>
<tr>
<td>Maternal temperature</td>
<td>36.8</td>
</tr>
</tbody>
</table>

- 37 year old G1P0 at 40+5 weeks gestation
- IVF pregnancy
## Prolonged labor

**Patient: Normal**

<table>
<thead>
<tr>
<th>Current time</th>
<th>0340 (d2)</th>
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<tbody>
<tr>
<td>Cervical dilation</td>
<td>6</td>
</tr>
<tr>
<td>Head descent</td>
<td>-1</td>
</tr>
<tr>
<td>Fetal position</td>
<td>OP</td>
</tr>
<tr>
<td>Amniotic fluid</td>
<td>Intact</td>
</tr>
<tr>
<td>Oxytocin</td>
<td>n/a</td>
</tr>
<tr>
<td>Maternal temperature</td>
<td>37.4</td>
</tr>
</tbody>
</table>

### Active Phase of Labor for ≥37 Weeks GA

![Diagram showing active phase of labor for ≥37 weeks GA](chart.png)

**Legend:**
- **Normal labor:** Expectant management
- **Off median normal labor curve:** Augment labor management
- **>95th percentile for normal labor curve:** Consider safety of continued labor vs delivery

**Action Line:** "Normal" median labor progress line for active labor (>6 cm), based on the Zhang et al. partogram. When the patient falls off this line, consider interventions to augment labor (AROM, oxytocin), prior to reaching the decision line.

**Decision Line:** Four hours to the right of the action line. If the patient's labor progress crosses this line, she is outside the 95th percentile of normal labor progress per the Zhang et al. partogram.
## Prolonged labor

### Patient: Normal

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<td>0</td>
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<td>Fetal position</td>
<td>OP</td>
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<td>Amniotic fluid</td>
<td>Intact</td>
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<td>Oxytocin</td>
<td>n/a</td>
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<td>Maternal temperature</td>
<td>37.7</td>
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</table>

### Active Phase of Labor for ≥37 Weeks GA

- **Position:**
  - OP
  - OP

- **Action Line:**
  - Cervical Dilatation (cm) (Plot X)
  - Descent of Head (Plot O)

- **Decision Line:**
  - Normal labor: Expectant management
  - Off median normal labor curve: Augment labor management
  - >95th percentile for normal labor curve: Consider safety of continued labor vs delivery

**Action Line:** "Normal" median labor progress line for active labor (>6 cm), based on the Zhang et al partograms. When the patient falls off this line, consider interventions to augment labor (AROM, oxytocin), prior to reaching the decision line.

**Decision Line:** Four hours to the right of the action line. If the patient's labor progress crosses this line, she is outside the 95th percentile of normal labor progress per the Zhang et al partogram.

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### Prolonged labor

**Patient: Normal**

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<table>
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<td><strong>Fetal position</strong></td>
<td>OP</td>
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<tr>
<td><strong>Amniotic fluid</strong></td>
<td>AROM</td>
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<td><strong>Oxytocin</strong></td>
<td>n/a</td>
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<tr>
<td><strong>Maternal temperature</strong></td>
<td>37.5</td>
</tr>
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</table>

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**Active Phase of Labor for ≥37 Weeks GA**

- **Position:** OP, OP, OP
- **Action Line:** Cervical Dilatation (cm) (Plot X)
- **Decision Line:** Descent of Head (Plot O)

**Time (hours):**

- 0340
- 0640
- 0840

**Graph:**

- *Normal labor: Expectant management*
- *Off median normal labor curve: Augment labor management*
- *>95th percentile for normal labor curve: Consider safety of continued labor vs delivery*

**Action Line:** “Normal” median labor progress line for active labor (>6 cm), based on the Zhang et al partograms. When the patient falls off this line, consider interventions to augment labor (AROM, oxytocin), prior to reaching the decision line.

**Decision Line:** Four hours to the right of the action line. If the patient’s labor progress crosses this line, she is outside the 95th percentile of normal labor progress per the Zhang et al partogram.

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Prolonged labor

**Patient: Normal**

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<table>
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<td>Current time</td>
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<td>Cervical dilation</td>
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<td>Head descent</td>
<td>0</td>
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<tr>
<td>Fetal position</td>
<td>OP</td>
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<tr>
<td>Amniotic fluid</td>
<td>AROM</td>
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<tr>
<td><strong>Oxytocin</strong></td>
<td>Initiated with IUPC</td>
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<tr>
<td>Maternal temperature</td>
<td>37.4</td>
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Prolonged labor

**Patient: Normal**

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<th>Parameter</th>
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<tr>
<td>Current time</td>
<td>1100</td>
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<td>Cervical dilation</td>
<td>C</td>
</tr>
<tr>
<td>Head descent</td>
<td>+1</td>
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<td>Fetal position</td>
<td>OP</td>
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<td>Oxytocin</td>
<td>5 milliunits/min</td>
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<td>Maternal temperature</td>
<td>37.7</td>
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**Active Phase of Labor for ≥37 Weeks GA**

- **Position:** OP, OP, OP, OP, OP
- **Time (hours):** 0340, 0640, 0840, 0940, 1140
- **Cervical Dilatation (cm) (Plot X):** 0, 7, 10
- **Descent of Head (Plot O):** -3, -2, -1, 0, +1, +2, +3 or higher

**Graph Legend:**
- Normal labor: Expectant management
- Off median normal labor curve: Augment labor management
- >95th percentile for normal labor curve: Consider safety of continued labor vs delivery

**Action Line:** "Normal" median labor progress line for active labor (>6 cm), based on the Zhang et al partograms. When the patient falls off this line, consider interventions to augment labor (AROM, oxytocin), prior to reaching the decision line.

**Decision Line:** Four hours to the right of the action line. If the patient’s labor progress crosses this line, she is outside the 95th percentile of normal labor progress per the Zhang et al partogram.

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2nd stage 4 hours
NSVD at 1447
Live infant
3702 grams
Apgars 6/9
EBL 500cc
<table>
<thead>
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<th>Patient: Obstructed</th>
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<tbody>
<tr>
<td>Current time</td>
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<td>Admission indication</td>
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<td>Cervical dilation</td>
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<tr>
<td>Head descent</td>
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<tr>
<td>Amniotic fluid</td>
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<tr>
<td>Oxytocin</td>
</tr>
<tr>
<td>FHT</td>
</tr>
<tr>
<td>Maternal temperature</td>
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**Obstructed labor**

- 24 year old G1P0 at 39 weeks gestation
## Obstructed labor

<table>
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<tr>
<th>Patient: Obstructed</th>
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<tbody>
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<td><strong>Cervical dilation</strong></td>
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<td><strong>Head descent</strong></td>
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<tr>
<td><strong>Fetal position</strong></td>
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<tr>
<td><strong>Amniotic fluid</strong></td>
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<tr>
<td><strong>Oxytocin</strong></td>
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<tr>
<td><strong>FHT</strong></td>
</tr>
<tr>
<td><strong>Maternal temperature</strong></td>
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### Active Phase of Labor for ≥37 Weeks GA

**Position:**

- **Action Line**
- **Decision Line**

**Cervical Dilatation (cm) (Plot X):**

- **0200**

**Time (hours):**

- **0**
- **+1**
- **+2**
- **+3 or lower**

**Descent of Head (Plot O):**

- **-1**
- **-2**
- **-3 or higher**

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**Action Line:** "Normal" median labor progress line for active labor (>6 cm), based on the Zhang et al partograms. When the patient falls off this line, consider interventions to augment labor (AROM, oxytocin), prior to reaching the decision line.

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### Obstructed labor

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<thead>
<tr>
<th>Patient: Obstructed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current time</td>
</tr>
<tr>
<td>Cervical dilation</td>
</tr>
<tr>
<td>Head descent</td>
</tr>
<tr>
<td>Fetal position</td>
</tr>
<tr>
<td>Amniotic fluid</td>
</tr>
<tr>
<td>Oxytocin</td>
</tr>
<tr>
<td>FHT</td>
</tr>
<tr>
<td>Maternal temperature</td>
</tr>
</tbody>
</table>

**Diagram:**

*Active Phase of Labor for ≥37 Weeks GA*

- **Position:** OP
- **Action Line:** Incremental cervical dilatation (cm) (Plot X)
- **Decision Line:** Decrease of head (Plot O)

**Legend:**

- Normal labor: Expectant management
- Off median normal labor curve: Augment labor management
- >95th percentile for normal labor curve: Consider safety of continued labor vs delivery

**Action Line:** "Normal" median labor progress line for active labor (>6 cm), based on the Zhang et al. partogram. When the patient falls off this line, consider interventions to augment labor (AROM, oxytocin), prior to reaching the decision line.

**Decision Line:** Four hours to the right of the action line. If the patient’s labor progress crosses this line, she is outside the 95th percentile of normal labor progress per the Zhang et al. partogram.

Presented at Washington State Hospital Association Safe Table Webcast May 21, 2015
Patient: Obstructed

<p>| | |</p>
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<td>Current time</td>
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<tr>
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</tr>
<tr>
<td>Amniotic fluid</td>
<td>SROM @0100</td>
</tr>
<tr>
<td>Oxytocin</td>
<td>n/a</td>
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<tr>
<td>FHT</td>
<td>Category 2: Variable and early decels, no accels, minimal variability</td>
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<tr>
<td>Maternal temperature</td>
<td>37.2</td>
</tr>
</tbody>
</table>

Obstructed labor

**Active Phase of Labor for ≥37 Weeks GA**

- **Position:**
  - OP
  - ROT

- **Cervical Dilatation (cm) (Plot X):**
  - 0
  - 7
  - 10

- **Descent of Head (Plot O):**
  - -3 or higher
  - -2
  - -1
  - 0
  - +1
  - +2
  - +3 or lower

- **Time (hours):**
  - 0200
  - 0300
  - 0400

**Action Line:**

- Normal labor: Expectant management
- Off median normal labor curve: Augment labor management
- >95th percentile for normal labor curve: Consider safety of continued labor vs delivery

**Decision Line:**

- Four hours to the right of the action line. If the patient's labor progress crosses this line, she is outside the 95th percentile of normal labor progress per the Zhang et al partogram.
## Patient: Obstructed

<table>
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<tr>
<td>Fetal position</td>
<td>ROT</td>
</tr>
<tr>
<td>Amniotic fluid</td>
<td>SROM @0100</td>
</tr>
<tr>
<td>Oxytocin</td>
<td>n/a, I UPC placed MVU 165</td>
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<td>FHT</td>
<td>Category 1</td>
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<td>Maternal temperature</td>
<td>37.4</td>
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</table>

---

**Obstructed labor**

### Active Phase of Labor for ≥37 Weeks GA

- **Position:**
  - OP
  - ROT
  - ROT

- **Cervical Dilation (cm) (Plot X):**
  - 7

- **Head Descent (Plot O):**
  - 0

- **Fetal Heart Rate (FHT) Category:**
  - 1

- **Maternal Temperature:**
  - 37.4

---

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## Patient: Obstructed

<table>
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<th>Parameter</th>
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<td>Fetal position</td>
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<tr>
<td>Amniotic fluid</td>
<td>SROM @0100</td>
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<tr>
<td>Oxytocin initiated</td>
<td>1mu/min</td>
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<td>MVU</td>
<td>140</td>
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<td>Maternal temperature</td>
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<tr>
<td>FHT</td>
<td>Category 1</td>
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</table>

### Active Phase of Labor for ≥37 Weeks GA

- **Position:**
  - OP
  - ROT
  - ROT
  - ROT
  - ROT
  - Decision Line

- **Cervical Dilatation (cm) (Plot X):**
  - 7

- **Descent of Head (Plot O):**
  - 0

- **Time (hours):**
  - 0200
  - 0300
  - 0400
  - 0500
  - 0600

- **Normal labor:**
  - Expectant management

- **Off median normal labor curve:**
  - Augment labor management

- **>95th percentile for normal labor curve:**
  - Consider safety of continued labor vs delivery

**Action Line:**
- "Normal" median labor progress line for active labor (>6 cm), based on the Zhang et al partogram. When the patient falls off this line, consider interventions to augment labor (AROM, oxytocin), prior to reaching the decision line.

**Decision Line:**
- Four hours to the right of the action line. If the patient's labor progress crosses this line, she is outside the 95th percentile of normal labor progress per the Zhang et al partogram.

---

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### Patient: Obstructed

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<table>
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<tbody>
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<td><strong>Current time</strong></td>
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<tr>
<td><strong>Fetal position</strong></td>
<td>ROT</td>
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<tr>
<td><strong>Amniotic fluid</strong></td>
<td>SROM @0100</td>
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<td><strong>Oxytocin</strong></td>
<td>Turned off MVU 180</td>
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<td><strong>FHT</strong></td>
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---

**Obstructed labor**

*Active Phase of Labor for ≥37 Weeks GA*

- **Position:**
  - OP
  - ROT
  - ROT
  - ROT
  - ROT
- **Action Line:**
  - Cervical Dilatation (cm) (Plot X)
  - Descent of Head (Plot O)
- **Decision Line:**

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Cesarean section at time
Live infant 0902
ROT presentation
3385 grams
Apgars 3/6/8
UA 7.12 BD 5.4
Infant required PPV, CPAP and NICU admission, persistent retractions and increased work of breathing → MBU PP
day 1
UWMC Mode of delivery by partogram zone (n=196) 5/1/14-12/31/14

<table>
<thead>
<tr>
<th></th>
<th>Green (n=98) 50%</th>
<th>Yellow (n=62) 30%</th>
<th>Red (n=36) 18%</th>
<th>Incomplete Partogram</th>
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</thead>
<tbody>
<tr>
<td>NSVD</td>
<td>86 (88%)</td>
<td>42 (68%)</td>
<td>13 (36%)</td>
<td>9</td>
</tr>
<tr>
<td>Forcep assisted VD</td>
<td>7 (7%)</td>
<td>4 (6%)</td>
<td>1 (3%)</td>
<td>-</td>
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<tr>
<td>Vacuum assisted VD</td>
<td>0</td>
<td>2 (1%)</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Cesarean section</td>
<td>5 (5%)</td>
<td>15 (24%)</td>
<td>22 (61%)</td>
<td>4</td>
</tr>
</tbody>
</table>

** If started 94% were completed
** Of those eligible for partogram approximately 25% were started on a partogram

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Summary

• Partograms are useful for tracking labor
• Help to promptly recognize prolonged/obstructed labor and when to provide an intervention
• Partograms may decrease maternal and neonatal morbidity
• More research is needed
Future directions...

• Plans to analyze the pre/post periods of partogram implementation on L&D
• Prospective QI
• Initiate use with:
  – Statewide hospitals
  – Community Midwives
  – Nurses
  – Patients
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.**


References

WHO

Albers and coll

Lavender and coll.

Zhang and coll.

Vahratian and coll.

NICE UK

Mathai

Presented at Washington State Hospital Association Safe Table Webcast May 21, 2015
References

- ACOG. Obstetric Care Consensus. 3/1/14.
Discussion/Questions
2015

- Roadmap Monthly (webcast) 7:00 am – 8:00 am

<table>
<thead>
<tr>
<th>March 12</th>
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<td>December 17</td>
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<td>July 16</td>
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- Safe Tables (in-person) 9:00 am – 2:30 pm
  - September 8
Thank You!

Mara Zabari, Executive Director of Integration
206-216-2529
maraz@wsha.org

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

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