What’s the Role of the Laborist in Modern Obstetrics?

Ware Branch, MD

FYI, it’s no longer just doc-in-the-box
Disclosures

- UCB Pharmaceuticals Advisory Board, 2016 and 2017
Objectives

• Review the evidence regarding laborist performance
• Outline proposed role(s) of the laborist
• Briefly discuss key process indicators and outcome measures
• Review challenges to implementation of laborist model
Is L&D an Acute Care Unit?

Maybe; L&D houses/manages
- Acute care processes
  - May require emergency major surgery or procedures
- Round-the-clock services
  - Fully staffed with nurses
- Volume surges, often of varying clinical intensity
- (Some) formal processes for urgent situations/emergencies

Maybe Not:
- No have round-the-clock physician coverage!
- No have formal physician leadership!
- Tolerates individual care provider preferences and priorities!
Evolution of the Laborist

- A descendent of the hospitalist line
  - Weinstein 2003
- ACOG
  - Committee Opinion (2010) supported “the continued development of the obstetric-gynecologic hospitalist model as one potential approach to achieving increased professional and patient satisfaction while maintaining safe and effective care across delivery settings”
- Working obstetric care providers
  - 2010: 25% to 40% laborists or hospitalists
  - 2011: Society of OB/Gyn Hospitalists (SOGH)
Evolution of the Laborist

• Models
  – Laborist group
    • Limited or no practice of their own
    • Typically contracted as a group to cover a labor unit
  – Community laborists
    • Usually in practice, but take paid shifts as laborists
Evolution of the Laborist

• Proponents of the laborist model claim:
  – Improved maternal outcomes
    • Cesarean rate
    • TOLAC → VBAC rates
    • Management of emergencies
  – Reduced malpractice cases and costs
  – Improved physician satisfaction
  – Improved neonatal outcomes
Contemporary estimates of labor duration by dilation at admission

The 95th percentiles of cumulative duration of labor from admission among singleton term nulliparous women with spontaneous onset of labor, vaginal delivery, and normal neonatal outcomes. Colors represent cervical dilation when women were admitted to the labor unit: green (5 cm), yellow (4 cm), blue (3 cm), red (2 cm).

## Variation in Cervical Dilation in Normal Vaginal Births

<table>
<thead>
<tr>
<th>Dilation (cms)</th>
<th>Median (hrs)</th>
<th>Slowest 5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 to 3</td>
<td>3.2</td>
<td>15.0</td>
</tr>
<tr>
<td>3 to 4</td>
<td>2.7</td>
<td>10.1</td>
</tr>
<tr>
<td>4 to 5</td>
<td>1.7</td>
<td>6.6</td>
</tr>
<tr>
<td>5 to 6</td>
<td>0.8</td>
<td>3.1</td>
</tr>
<tr>
<td>6 to 7</td>
<td>0.6</td>
<td>2.2</td>
</tr>
<tr>
<td>7 to 8</td>
<td>0.5</td>
<td>1.5</td>
</tr>
<tr>
<td>8 to 9</td>
<td>0.4</td>
<td>1.3</td>
</tr>
<tr>
<td>9 to 10</td>
<td>0.4</td>
<td>1.4</td>
</tr>
</tbody>
</table>
Do Laborists Better Manage L&D Outcomes?

• Retrospective cohort study of 2 distinct practice models in a community facility
  – 2005-2010
  – 9381 singleton births
  – In-house Ob-Gyn Laborist+CNM vs traditional private practice

• Primary outcome: Primary CD rates

Do Laborists Better Manage L&D Outcomes?

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Laborist+CNM (N=3987)</th>
<th>Private Practice (N=394)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mat age &gt; 35</td>
<td>499 (12.5%)</td>
<td>2452 (45.5%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Private insurance</td>
<td>360 (9.0%)</td>
<td>5044 (93.5%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Median mat weight</td>
<td>73.6 kg</td>
<td>77.7 kg</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Nulliparous</td>
<td>1617 (40.6%)</td>
<td>2403 (44.5%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Prior cesarean</td>
<td>486 (12.2%)</td>
<td>901 (16.7%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Diabetes, any</td>
<td>369 (9.3%)</td>
<td>172 (3.2%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Hypertensive disorder</td>
<td>133 (3.3%)</td>
<td>200 (3.7%)</td>
<td>NS</td>
</tr>
<tr>
<td>Induction of labor</td>
<td>445 (11.2%)</td>
<td>754 (14.0%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>37+ weeks</td>
<td>3753 (94.1%)</td>
<td>5140 (95.3%)</td>
<td>NS</td>
</tr>
</tbody>
</table>

## Do Laborists Better Manage L&D Outcomes?

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Laborist+CNM (N=3987)</th>
<th>Private Practice (N=394)</th>
<th>aOR (95% CI)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cesarean delivery</td>
<td>689 (17.3%)</td>
<td>1704 (31.6%)</td>
<td>2.11 (1.73-2.58)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>CD in nullips with vertex</td>
<td>236 (15.9%)</td>
<td>627 (29.8%)</td>
<td>1.86 (1.33-2.58)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>ERCD (w/ prior CD)</td>
<td>201 (41.4%)</td>
<td>642 (71.3%)</td>
<td>3.19 (1.74-5.88)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>VBAC (w/ prior CD)</td>
<td>187 (38.5%)</td>
<td>162 (18.0%)</td>
<td>0.42 (0.22-0.80)</td>
<td>0.008</td>
</tr>
<tr>
<td>FAVD</td>
<td>49 (1.2%)</td>
<td>89 (1.6%)</td>
<td>0.72 (0.36-1.41)</td>
<td>NS</td>
</tr>
<tr>
<td>VAVD</td>
<td>146 (3.7%)</td>
<td>267 (4.9%)</td>
<td>0.68 (0.45-1.01)</td>
<td>0.05</td>
</tr>
<tr>
<td>5-min AS &lt; 7</td>
<td>1.8%</td>
<td>0.7%</td>
<td>0.22 (0.10-0.48)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>UA pH &lt; 7.1</td>
<td>3.9%</td>
<td>2.7%</td>
<td>1.06 (0.60-1.86)</td>
<td>NS</td>
</tr>
<tr>
<td>UA BD &lt; -12</td>
<td>1.1%</td>
<td>0.9%</td>
<td>0.88 (0.32-2.46)</td>
<td>NS</td>
</tr>
</tbody>
</table>

Prospective cohort study in community facility, 2005-2014

- Mix of private and public-insurance patients
  - Public-insurance patients → 24-hr obstetrician/CNM model 2005 forward
  - 2011: private practice model “expanded” → 24-hr obstetrician/CNM model

- Primary outcome: Primary CD rate in nullips and VBAC rate

- 4,884 deliveries included (3,413 → 1,471)
  - 2,406 privately insured

Rosenstein et al. Obstet Gynecol 2015;126:716
Composite Adverse Neonatal Complication

Annual change in rate before expansion: −0.16%
Annual change in rate after expansion: −0.71%
Annual change in rate before expansion: 0.07%
Annual change in rate after expansion: 0.66%

Private, before expansion (observed annual rate)
Public, before expansion (observed annual rate)
Private, after expansion (observed annual rate)
Public, after expansion (observed annual rate)
Private, before expansion (regression line)
Public, before expansion (regression line)
Private, after expansion (regression line)
Public, after expansion (regression line)
But is it the laborist ... or is it something else, like the CNMs?
<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Births</td>
<td>526</td>
<td>488</td>
<td>494</td>
<td>536</td>
<td>577</td>
<td>639</td>
<td>690</td>
<td>700</td>
<td>615</td>
</tr>
<tr>
<td>Vaginal Births</td>
<td>463</td>
<td>414</td>
<td>423</td>
<td>456</td>
<td>509</td>
<td>559</td>
<td>605</td>
<td>627</td>
<td>544</td>
</tr>
<tr>
<td>Nulliparas</td>
<td>32.1%</td>
<td>33.0%</td>
<td>31.0%</td>
<td>29.1%</td>
<td>24.0%</td>
<td>34.6%</td>
<td>30.3%</td>
<td>28.7%</td>
<td>23.1%</td>
</tr>
<tr>
<td>Primary Cesarean Delivery</td>
<td>5.7%</td>
<td>7.6%</td>
<td>6.9%</td>
<td><strong>7.8%</strong></td>
<td>5.5%</td>
<td>7.8%</td>
<td>6.7%</td>
<td><strong>4.7%</strong></td>
<td>4.9%</td>
</tr>
<tr>
<td>Total Cesarean Delivery</td>
<td>12.0%</td>
<td>13.8%</td>
<td>14.0%</td>
<td>13.1%</td>
<td>9.6%</td>
<td>11.1%</td>
<td>12.3%</td>
<td>10.4%</td>
<td>11.5%</td>
</tr>
<tr>
<td>VBAC attempt</td>
<td>74.0%</td>
<td><strong>40.7%</strong></td>
<td>44.1%</td>
<td>50.3%</td>
<td>51.0%</td>
<td>70.0%</td>
<td>67.5%</td>
<td><strong>79.5%</strong></td>
<td>59.6%</td>
</tr>
<tr>
<td>VBAC success rate</td>
<td><strong>73.5%</strong></td>
<td>75.0%</td>
<td>78.8%</td>
<td><strong>90.2%</strong></td>
<td>92.9%</td>
<td>82.8%</td>
<td>80.4%</td>
<td>86.4%</td>
<td>83.9%</td>
</tr>
<tr>
<td>Preterm Delivery &lt;37 weeks</td>
<td>6.8%</td>
<td>5.3%</td>
<td>8.9%</td>
<td>6.4%</td>
<td>7.6%</td>
<td>5.3%</td>
<td>7.5%</td>
<td>5.4%</td>
<td>7.2%</td>
</tr>
<tr>
<td>Preterm Delivery &lt;28 weeks</td>
<td>0.9%</td>
<td>0.2%</td>
<td>0.2%</td>
<td>0.0%</td>
<td>0.2%</td>
<td>0.3%</td>
<td>0.6%</td>
<td>0.3%</td>
<td>0.3%</td>
</tr>
<tr>
<td>5 min Apgar &lt;7</td>
<td><strong>1.7%</strong></td>
<td>0.8%</td>
<td>0.8%</td>
<td>0.9%</td>
<td><strong>0.7%</strong></td>
<td>0.9%</td>
<td>0.8%</td>
<td>1.1%</td>
<td>1.1%</td>
</tr>
<tr>
<td>Intact Perineum</td>
<td>39.3%</td>
<td>52.0%</td>
<td>54.0%</td>
<td>60.2%</td>
<td>48.0%</td>
<td>50.0%</td>
<td>43.8%</td>
<td>48.0%</td>
<td>40.3%</td>
</tr>
<tr>
<td>3rd/4th degree lacerations</td>
<td>1.9%</td>
<td>0.1%</td>
<td>1.9%</td>
<td>0.7%</td>
<td>1.4%</td>
<td>1.3%</td>
<td>1.5%</td>
<td>1.6%</td>
<td>1.8%</td>
</tr>
<tr>
<td>Epidural Rates</td>
<td>67.6%</td>
<td>73.0%</td>
<td>65.0%</td>
<td>67.8%</td>
<td>63.0%</td>
<td>65.5%</td>
<td>63.6%</td>
<td>52.6%</td>
<td>46.3%</td>
</tr>
<tr>
<td>Waterbirth</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>57</td>
<td>81</td>
<td>77</td>
<td>37</td>
</tr>
<tr>
<td>Water Immersion</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>122</td>
<td>131</td>
<td>147</td>
<td>76</td>
</tr>
<tr>
<td>EIOL</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>59</td>
<td>52</td>
<td>63</td>
<td>44</td>
</tr>
<tr>
<td>IIOL</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>126</td>
<td>115</td>
<td>101</td>
<td>124</td>
</tr>
</tbody>
</table>
Do Laborists Better Manage L&D Outcomes?

- Population cohort study of laborist and nonlaborist hospitals
  - 24 hospitals → 500,000 women, 1998-2011
    - 8 laborist and 16 nonlaborist hospitals (1:2 match)
    - Outcomes via ICD-9
    - Outcomes: CD, chorioamnionitis, induction, preterm birth, prolonged LOS, 5 min AS<7, birth asphyxia, birth injury/trauma, neonatal death

Do Laborists Better Manage L&D Outcomes?

- Used a before-and-after design
  - Minimizes effect of
    - Differences between laborist and nonlaborist and hospitals that are stable over time
    - Factors that impact all hospitals and are independent of introduction of laborists
    - Evolving case-mix of patients

### Do Laborists Better Manage L&D Outcomes?

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Nonlaborist before, %</th>
<th>Nonlaborist after, %</th>
<th>Laborist before, %</th>
<th>Laborist after, %</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cesarean rate</td>
<td>28.53</td>
<td>31.75</td>
<td>32.55</td>
<td>33.62</td>
<td>0.011</td>
</tr>
<tr>
<td>Chorioamnionitis</td>
<td>6.15</td>
<td>4.75</td>
<td>3.83</td>
<td>3.46</td>
<td>0.077</td>
</tr>
<tr>
<td>Induction of labor</td>
<td>16.10</td>
<td>20.01</td>
<td>21.17</td>
<td>21.85</td>
<td>0.094</td>
</tr>
<tr>
<td>Preterm birth</td>
<td>9.88</td>
<td>10.87</td>
<td>8.74</td>
<td>8.07</td>
<td>0.046</td>
</tr>
<tr>
<td>Apgar 5&lt;7</td>
<td>0.35</td>
<td>0.35</td>
<td>0.15</td>
<td>0.21</td>
<td>0.214</td>
</tr>
<tr>
<td>Birth asphyxia</td>
<td>0.25</td>
<td>0.18</td>
<td>0.21</td>
<td>0.16</td>
<td>0.904</td>
</tr>
<tr>
<td>Birth injury</td>
<td>0.42</td>
<td>0.50</td>
<td>0.28</td>
<td>0.26</td>
<td>0.253</td>
</tr>
</tbody>
</table>

### Do Laborists Better Manage L&D Outcomes?

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Adjusted OR, 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cesarean rate</td>
<td>1.02 (0.27-1.10)</td>
</tr>
<tr>
<td>Chorioamnionitis</td>
<td>1.07 (0.88-1.30)</td>
</tr>
<tr>
<td>Induction of labor</td>
<td>0.85 (0.71-0.99)</td>
</tr>
<tr>
<td>Preterm birth</td>
<td>0.83 (0.72-0.96)</td>
</tr>
<tr>
<td>Apgar 5&lt;7</td>
<td>1.09 (0.69-1.72)</td>
</tr>
<tr>
<td>Birth asphyxia</td>
<td>0.75 (0.48-1.18)</td>
</tr>
<tr>
<td>Birth injury</td>
<td>0.77 (0.56-1.07)</td>
</tr>
</tbody>
</table>

Variation in Primary CD Rates by Individual Laborist

• Retrospective cohort study of term, cephalic nulliparous deliveries at a single center with laborist model 2007-2014
  – No contraindications to vaginal birth
  – CNM patients excluded
  – 2224 patients included

• Primary outcomes: CD rate for each laborist

Table 2
Clinical Characteristics of Women Undergoing Primary Cesarean Delivery by Groups of Physicians with Low, Medium and High Cesarean Delivery Rates

<table>
<thead>
<tr>
<th>CHARACTERISTIC</th>
<th>Low Cesarean Rate (n=107)</th>
<th>Medium Cesarean Rate (n=224)</th>
<th>High Cesarean Rate (n=206)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary indication for cesarean of non-reassuring fetal status</td>
<td>25 (23.4)</td>
<td>67 (29.9)</td>
<td>61 (29.6)</td>
<td>0.437</td>
</tr>
<tr>
<td>Primary indication for cesarean of arrest disorder</td>
<td>82 (76.6)</td>
<td>152 (67.9)</td>
<td>143 (69.4)</td>
<td>0.257</td>
</tr>
<tr>
<td>Primary or secondary indication for cesarean of non-reassuring fetal status</td>
<td>33 (30.84)</td>
<td>75 (33.5)</td>
<td>73 (35.4)</td>
<td>0.727</td>
</tr>
<tr>
<td>Chorioamnionitis</td>
<td>26 (24.3)</td>
<td>70 (31.3)</td>
<td>44 (21.5)</td>
<td>0.061</td>
</tr>
<tr>
<td>Hours at maximum dilation prior to cesarean (hrs), mean (SE)</td>
<td>6.35 (0.59)</td>
<td>6.85 (0.61)</td>
<td>5.64 (0.38)</td>
<td>0.223</td>
</tr>
<tr>
<td>Length of 2nd stage (hrs)(^a), mean (SE)</td>
<td>4.01 (0.28)</td>
<td>4.76 (0.27)</td>
<td>4.35 (0.29)</td>
<td>0.243</td>
</tr>
<tr>
<td>(\geq 3) hours of 2nd stage(^a)</td>
<td>19 (17.8)</td>
<td>38 (17.0)</td>
<td>39 (18.9)</td>
<td>0.864</td>
</tr>
<tr>
<td>Transfusion</td>
<td>0 (0.00)</td>
<td>5 (2.23)</td>
<td>4 (1.94)</td>
<td>0.380</td>
</tr>
<tr>
<td>Hysterectomy</td>
<td>0 (0.00)</td>
<td>1 (0.45)</td>
<td>0 (0.00)</td>
<td>&gt;0.99</td>
</tr>
</tbody>
</table>

All values are n (%) unless otherwise indicated.

Only women who had a cesarean delivery are included in this table.

\(^a\)Only n=121 women were completely dilated at the time of cesarean delivery. The length of 2nd stage data were collected only for women who reached complete dilation prior to cesarean delivery.
Do Laborists Better Manage L&D Outcomes?

- Evidence for the laborist being the key factor in better L&D outcomes is modest at best.
- Existing studies include variables other than just the laborist, e.g., CNMs. Suggesting that a systematic, team approach is important.
- Performance variation (e.g., in CD rates) remains and is of uncertain cause.
“Just Clocking In” laborist model – the doc-in-the-box
Evolution of the Laborist

• Proponents of the laborist model claim:
  – Improved maternal outcomes
    • Cesarean rate
    • TOLAC $\rightarrow$ VBAC rate
    • Management of emergencies
  – Reduced malpractice cases and costs
  – Improved physician satisfaction
  – Improved neonatal outcomes
Reducing Obstetric Litigation Through Alterations in Practice Patterns

- Retrospective review of 189 closed perinatal claims 2000-2005 from a large liability insurer
- Analyzed:
  - Whether there was substandard care
  - Whether changes in practice would avoid adverse outcome
  - Whether documentation was inadequate

Clark SL et al. Obstet Gynecol 2008;112:1279
<table>
<thead>
<tr>
<th>Category</th>
<th>Number of Cases (%)</th>
<th>Care Substandard (%)</th>
<th>Cost (% of Total Dollars Paid)</th>
<th>Payment (Mean and Range in U.S. $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fetal monitoring/hypoxia, non-VBAC</td>
<td>64 (34)</td>
<td>60 (94, 85–98)</td>
<td></td>
<td>1,392,629 (25,500–16,850,428)</td>
</tr>
<tr>
<td>Minor injury</td>
<td>46 (24)</td>
<td>31 (67, 53–79)</td>
<td>2</td>
<td>74,478 (173–724,955)</td>
</tr>
<tr>
<td>Shoulder dystocia</td>
<td>26 (14)</td>
<td>6 (23, 11–42)</td>
<td>6</td>
<td>429,480 (30,617–3,248,262)</td>
</tr>
<tr>
<td>Maternal injury/death</td>
<td>19 (10)</td>
<td>16 (84, 62–95)</td>
<td>15</td>
<td>1,331,816 (24,488–4,600,369)</td>
</tr>
<tr>
<td>VBAC</td>
<td>10 (5)</td>
<td>6 (60, 31–84)</td>
<td>6</td>
<td>992,703 (30,873–3,707,348)</td>
</tr>
<tr>
<td>Fetal trauma</td>
<td>9 (5)</td>
<td>2 (22, 6–55)</td>
<td>2</td>
<td>425,532 (58,281–1,949,747)</td>
</tr>
<tr>
<td>Preterm birth</td>
<td>3 (2)</td>
<td>2 (67, 21–94)</td>
<td>1</td>
<td>615,546 (285,553–1,014,287)</td>
</tr>
<tr>
<td>Group B streptococcus</td>
<td>3 (2)</td>
<td>3 (100, 44–100)</td>
<td>1</td>
<td>218,669 (1,500–577,492)</td>
</tr>
<tr>
<td>Prenatal diagnosis</td>
<td>3 (2)</td>
<td>2 (67, 21–94)</td>
<td>4</td>
<td>2,011,868 (22,504–3,715,503)</td>
</tr>
<tr>
<td>Nonobstetric</td>
<td>6 (3)</td>
<td>NA</td>
<td>10</td>
<td>2,446,389 (56,346–10,960,856)</td>
</tr>
</tbody>
</table>

CI, confidence interval; VBAC, vaginal birth after cesarean. The 95% CIs are reported using no continuity correction.
Reducing Obstetric Litigation Through Alterations in Practice Patterns

• Findings:
  – 70% of claims involved substandard care
    • 79% of all costs
  – 23% cases involving NR-FHRT in TOLAC patients avoidable if in-house ob coverage
  – 62% cases involving NR-FHRT and 16% of maternal injury cases in non-TOLAC patients avoidable in in-house coverage or via following published checklists/protocols

Clark SL et al. Obstet Gynecol 2008;112:1279
Obstetric Safety Improvement and Its Reflection in Reserved Claims

- Retrospective analysis of liability claims reserved by single-facility insurance companies, 2004-2009
- Interventions over time period:
  - 2004: Call schedule revision
  - 2005: Obstetric drills
  - 2006: Collaborative practice model; EFHM course
  - 2008: Dedicated ob quality committee; cultural competency training; teams training

Obstetric Safety Program Reduces Liability Claims and Payments

- Retrospective review of liability claims at a single-facility for before (1998-2002) and after (2003-2007) implementation of ob safety program
  - 2002: outside expert review of ob services
  - 2003: ob hospitalist
  - 2004: development of protocols and guidelines; ob safety nurse for education; anonymous event reporting; ob patient safety committee; team training; EFHRM certification

# Obstetric Safety Program Reduces Liability Claims and Payments

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total cases</td>
<td>30</td>
<td>14</td>
<td>--</td>
</tr>
<tr>
<td>Cases without payment</td>
<td>7 (23%)</td>
<td>5 (42%)</td>
<td>0.27</td>
</tr>
<tr>
<td>Case severity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>16 (53%)</td>
<td>8 (57%)</td>
<td>0.97</td>
</tr>
<tr>
<td>Moderate</td>
<td>9 (30%)</td>
<td>4 (28%)</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>5 (17%)</td>
<td>2 (14%)</td>
<td></td>
</tr>
<tr>
<td>Case type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improper management</td>
<td>13 (43%)</td>
<td>7 (50%)</td>
<td>0.91</td>
</tr>
<tr>
<td>FHRM</td>
<td>5 (17%)</td>
<td>2 (14%)</td>
<td></td>
</tr>
<tr>
<td>Failure to diagnose</td>
<td>3 (10%)</td>
<td>2 (14%)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>9 (30%)</td>
<td>3 (21%)</td>
<td></td>
</tr>
<tr>
<td>Total payments</td>
<td>$50,721,033</td>
<td>$2,239,173</td>
<td>--</td>
</tr>
<tr>
<td>Total payments/1,000 deliveries</td>
<td>$2,158,434</td>
<td>$95,806</td>
<td>--</td>
</tr>
</tbody>
</table>

Does training in obstetric emergencies improve neonatal outcome?

- Retrospective cohort observational study in a referral obstetric unit
  - Pre- and post-training for obstetric emergencies
    - One-day course: FHRT interpretation, emergency drills

- Primary outcomes: 5 min AS and rate of HIE

Draycott et al. BJOG 2006;113:177
Does training in obstetric emergencies improve neonatal outcome?

<table>
<thead>
<tr>
<th>Measure</th>
<th>1998-1999 (N=8430)</th>
<th>2001-2003 (N=11,030)</th>
<th>RR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-min AS ≤ 6, per 10,000</td>
<td>86.6</td>
<td>44.4</td>
<td>0.51 (0.35-0.74)</td>
</tr>
<tr>
<td>HIE, per 10,000</td>
<td>27.3</td>
<td>13.6</td>
<td>0.50 (0.26-0.95)</td>
</tr>
<tr>
<td>Mod/sever HIE, per 10,000</td>
<td>19.0</td>
<td>10.0</td>
<td>0.53 (0.24-1.13)</td>
</tr>
</tbody>
</table>

Increase in emergency cesarean from 9.3% to 11.4%

Draycott et al. BJOG 2006;113:177
Do Laborists Improve Liability in L&D?

- Only as part of a systematic approach that typically includes such things as:
  - Close collaboration between providers – “A Team”
  - Development and implementation of standardized protocols, guidelines, and policies
  - Specialized training
    - Communication
    - Cultural competency
    - EFHM interpretation
  - Monitoring of performance by a quality committee
Roles of Laborist

- Team Builder & Leader
  - Co-captain of L&D with Charge Nurse
  - Fully understands and supports health system’s approaches and processes
  - In charge of L&D chain-of-command
Roles of Laborist

- **Medical Expert**
  - Labor
    - FHRTs
    - Labor progress
    - Operative vaginal delivery
  - Emergencies
    - Hemorrhage
    - Hypertension
    - Maternal sepsis
  - Triage
Roles of the Laborist
Understands and Implements Care Processes

• Obstetric hemorrhage
• Severe hypertension
• Thromboprophylaxis
• Maternal sepsis
• Maternal early warning system
• Others
Roles of Laborist

- **Educator**
  - For
    - Fellow physicians
    - Trainees
    - Nurses
    - Health system
  - Using
    - Setting an example
    - Lectures
    - Simulation training
Characteristics of a Good Laborist

The 3 C\(^2\)s

- Clinically-Capable
- Collegially-Communicative
- Committed to a Culture of Safety and Respect
Culture of Safety

• All care-team members
  – Are empowered to identify errors, near misses, risky behaviors, system issues
  – Participate in peer-review and root cause analysis
  – Communicate effectively using
    • Standardized terminology
    • Structured systems, e.g., SBAR, read backs, 2-challenge rule
  – Participate in team training exercises
Obstetric Outcome Measures

- Cesarean delivery (CD) rates
  - Indications
- Chorioamnionitis and postpartum infection rates
  - Maternal sepsis
- Postpartum hemorrhage rate
- TOLAC→VBAC rates
- Admit-to-delivery times
- Triage→discharge times
- Maternal hospital length of stay

- Adverse fetal-neonatal outcomes
  - HIE diagnosis
  - 5-min AS <5
  - UmA pH < 7 or BD 12 or less
  - Need for neonatal cooling
  - Intrapartum death
  - Early onset sepsis
  - Composite of above
Key Process Indicators

- Birth injury rate
  - AHRQ PSI 17
  - State measures
- Perinatal core measures (JC, 1-6)
- 3rd and 4th degree lacerations
  - AHRQ PSI 18, 19
- Compliance with AIM bundles
  - e.g., PPH, hypertension
- Serious safety events
- Patient satisfaction scores

- Compliance with L&D guidelines
  - e.g., obtaining cord gases
- Incident reports
- Medical malpractice claims
Challenges to Optimal Laborist Model

• Recruiting
  – The 3 C²s

• Funding

• Independent care provider acceptance of laborist