New Models of Obstetric Care

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2:30 pm ET
Objectives

➢ Summarize changes in obstetric care nationally

➢ Highlight manpower changes in obstetric care

➢ Review implications of maternity closures

➢ Define strategies to improve obstetric care in the future including the laborist model
Obstetrics in USA

- 4 million births per year
- 99% in hospitals
- 92% deliveries by physicians
- 8% deliveries by midwives
- Maternity mortality 12.7/100,000 (49th in world)
- Infant mortality 6.7/1000 (30th in world)
- Intrapartum deaths 0.6/1000 (ACOG: capable of doing cesarean within 30 minutes)
Figure 4. Birth rates by selected age of mother: United States, final 1990-2009 and preliminary 2010

NOTE: Rates are plotted on a logarithmic scale. Source: CDC/NCHS, National Vital Statistics System.

NOTE - Due to software limitation, this graph could not be plotted on a log scale. The published version of this graph will be plotted on a logarithmic scale.
Figure 5. Cesarean delivery rates: United States, final 1996-2009 and preliminary 2010

United States


[Data for 2009 are based on continuous files of records received from the states]

<table>
<thead>
<tr>
<th>Year</th>
<th>Total preterm</th>
<th>Late preterm</th>
<th>Early preterm&lt;sup&gt;3&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>32–33 weeks</td>
<td>Less than 32 weeks</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>32–33 weeks</td>
<td>Less than 32 weeks</td>
</tr>
<tr>
<td></td>
<td>Percent</td>
<td>32–33 weeks</td>
<td>Less than 32 weeks</td>
</tr>
<tr>
<td>2009</td>
<td>12.18</td>
<td>3.51</td>
<td>1.97</td>
</tr>
<tr>
<td>2008</td>
<td>12.33</td>
<td>3.56</td>
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<tr>
<td>2007</td>
<td>12.68</td>
<td>3.64</td>
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</tr>
<tr>
<td>2006</td>
<td>12.80</td>
<td>3.66</td>
<td>2.04</td>
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<tr>
<td>2005</td>
<td>12.73</td>
<td>3.63</td>
<td>2.03</td>
</tr>
<tr>
<td>2000</td>
<td>11.64</td>
<td>3.42</td>
<td>1.93</td>
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<tr>
<td>1990</td>
<td>10.61</td>
<td>3.32</td>
<td>1.92</td>
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</tbody>
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NVSS 2009
The Obstetrician – Gynecologist Workforce in the U.S., ACOG 2011: Gender

Figure 2-7. Percentage of first-year residents in obstetrics and gynecology who are female.

Year of survey

Residents who are female (%)
### Table 7-3. Average Age at Which Fellows of the American College of Obstetricians and Gynecologists Stop Practicing Obstetrics

<table>
<thead>
<tr>
<th>Year</th>
<th>All Fellows (Years)</th>
<th>Males (Years)</th>
<th>Females (Years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>49.4</td>
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<td>No data</td>
</tr>
<tr>
<td>1987</td>
<td>49.3</td>
<td>No data</td>
<td>No data</td>
</tr>
<tr>
<td>1990</td>
<td>49.8</td>
<td>No data</td>
<td>No data</td>
</tr>
<tr>
<td>1992</td>
<td>48.9</td>
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<td>1996</td>
<td>46.6</td>
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<tr>
<td>1999</td>
<td>48.2</td>
<td>51.2</td>
<td>40.8</td>
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<tr>
<td>2003</td>
<td>48.0</td>
<td>51.0</td>
<td>42.0</td>
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<tr>
<td>2006</td>
<td>48.0</td>
<td>51.7</td>
<td>43.1</td>
</tr>
<tr>
<td>2009</td>
<td>48.0</td>
<td>51.9</td>
<td>43.8</td>
</tr>
</tbody>
</table>
The Obstetrician – Gynecologist Workforce in the U.S., ACOG 2011: Malpractice Premiums

Figure 6-3. Professional liability insurance premiums for general obstetrician–gynecologists by state for a $1 million/$3 million claims-made policy as of 2009.
Obstetric Unit Closures 2000-2005

- AHA MCH Governing Council 2007 Report
- Information from AHA Annual Survey
- Overall from 2000-2005, data showed actual 4.3% increase in hospitals with OB units
- However, 205 hospitals reported they were no longer offering OB
- 45% of those hospitals had become CAH – less than 25 beds; little or no obstetrics
- States with significant decreased number of obstetric units: AL, DC, DE, PA, IL, MA, MI and VT
Obstetric Closures 2004-2009

- More recent data finds 193 hospitals reporting they no longer offer OB
- Only 12% of those hospitals had become CAH after 2004
- States with significant decreased number of obstetric units:
  - CA (15), GA, IA, MI (10), PA (13), TX (12)
  - NJ (2)
- Only 7 states reported no reduction in obstetric units between 2004-2009
Facts

- Since 1997, 44 maternity closures in Pennsylvania, 6 remaining hospitals in Philadelphia
- Medicaid funds nearly half of all deliveries (45.3%)
- Infant mortality higher in Pennsylvania compared to national data
- No change in low birth weight infants
Trend in Infant Mortality Rates
Pennsylvania vs. United States

Infant Deaths per 1,000 births

2000 2001 2002 2003 2004 2005 2006 2007 2008 2009

Source: PA Department of Health, Vital Statistics (PA data) and Centers for Disease Control (U.S. data)

More recent U.S. data not yet available
All participants indicated that there are shortages in maternal health workforce with negative implications for patients & providers:

- Patients experience long waits, difficulty getting appointments, less choice of hospital & provider, and decreased quality of care.
- Providers face busier schedules, increased stress, greater burnout, fewer practice options and reduced work satisfaction.
Hospitals’ Issues in Improving Birth Outcomes

• Reimbursement Rates
  ▪ 66% of Philadelphia deliveries covered by Medicaid
  ▪ Nationally, Medicaid reimburses OB care at 88 cents to the dollar of cost
  ▪ In Pennsylvania, this rate is 82 cents

• Liability Costs
  ▪ Disproportionately high for OB cases

• Preterm Births
  ▪ Hospitals can only control a limited number of risks
  ▪ Prenatal information often not available at delivery

• Geographic Disparity
Federal and State

- ACA
- New models of care: role of mid-level providers, ACOs, pregnancy medical home, laborist, increased discussion on reality of home birth
- Cuts
- Feb 2012 CMS: Strong Start $43 million:
  - A) reduction of elective deliveries before 39 weeks.
  - B) enhancing prenatal care: centering, medical home, multidisciplinary
Strategies

• Alignment between Hospitals, health centers, out-patient facilities, health care providers, city and state government to work for the common good.

• Facilitate medical information exchange: common electronic medical record

• Emphasize quality and safety: quality forums, teams, drills, checklists, protocols, new models of care

• Explore new models of care: pregnancy home, home birth ??, mid level providers, laborist
• Bimonthly meeting of OB chairs

• Communication with different stakeholders: department of Public Health, State, MCC, insurance companies, FQHCs, Health Centers

• Sharing of guidelines and data

• Applying for City Wide CMS Strong Start
Pregnancy Medical Home: North Carolina Medicaid

- Ensuring that no elective deliveries are performed before 39 weeks of gestation by agreement with all professional providers
- Engaging fully in the 17P project in each pregnancy medical home
- Decreasing the cesarean section rate among nulliparous women
- Completing a high-risk screening on each pregnant Medicaid recipient in the program and integrating the plan of care with local care/case management
- Open chart audits
Maternal and newborn outcomes in planned home birth vs planned hospital births: a metaanalysis

Joseph R. Wax, MD; F. Lee Lucas, PhD; Maryanne Lamont, MLS; Michael G. Pinette, MD; Angelina Cartin; Jacquelyn Blackstone, DO

OBJECTIVE: We sought to systematically review the medical literature on the maternal and newborn safety of planned home vs planned hospital birth.

STUDY DESIGN: We included English-language peer-reviewed publications from developed Western nations reporting maternal and newborn outcomes by planned delivery location. Outcomes’ summary odds ratios with 95% confidence intervals were calculated.

RESULTS: Planned home births were associated with fewer maternal interventions including epidural analgesia, electronic fetal heart rate monitoring, episiotomy, and operative delivery. These women were less likely to experience lacerations, hemorrhage, and infections. Neonatal outcomes of planned home births revealed less frequent prematurity, low birthweight, and assisted newborn ventilation. Although planned home and hospital births exhibited similar perinatal mortality rates, planned home births were associated with significantly elevated neonatal mortality rates.

CONCLUSION: Less medical intervention during planned home birth is associated with a tripling of the neonatal mortality rate.

The American College of Obstetricians and Gynecologists Issues Opinion on Planned Home Births

Washington, DC -- The American College of Obstetricians and Gynecologists (The College) issued a Committee Opinion today that says although the absolute risk of planned home births is low, published medical evidence shows it does carry a two- to three-fold increase in the risk of newborn death compared with planned hospital births. A review of the data also found that planned home births among low risk women are associated with fewer medical interventions than planned hospital births.
Home Birth

- Although The College does not support planned home births given the published medical data, it emphasizes that women who decide to deliver at home should be offered standard components of prenatal care, including Group B Strep screening and treatment, genetic screening, and HIV screening. It also is important for women thinking about a planned home birth to consider whether they are healthy and considered low-risk and to work with a Certified Nurse Midwife, Certified Midwife, or physician that practices in an integrated and regulated health system; have ready access to consultation; and have a plan for safe and quick transportation to a nearby hospital in the event of an emergency.
• Autonomy of all childbearing women
• Collaboration within an integrated maternity care system
• Equitable maternity care system: access
• Licensure and national certification
• Increased participation by consumers
• Effective communication and collaboration across all disciplines
• Improving liability system
• Compulsory process for collection of patient level data
• Value of physiologic birth, value of appropriate interventions
Obstetrical Hospital Closures: Philadelphia

Philadelphia Resident Births and Labor & Delivery Hospitals, 1996-2009

Source: Philadelphia Department of Public Health, Division of Maternal, Child and Family Health
Philadelphia OB Access Crisis

Early Childhood & Maternal Risk in proximity to Birth Hospitals

Map Legend

- Birth Hospitals
- Locations
- Composite Risk
- 6 - 7 (Low)
- 8 - 9
- 10 - 12
- 13 - 15
- 16 - 19
- 20 - 24 (High)

American Hospital Association
Concerns in Philadelphia

- Increasing volumes and acuity
- Fewer resources
- Quality and safety
- Claims
- Review of claims by outside consultant: RMF
Risk Management Concerns

- Communication
- Supervision
- Lack of uniform protocols
Timeline

- 25% increase in deliveries from FY 03 - FY 08
- RMF analysis of claims in 2007
- RMF recommendations
- Focus groups in 2007-2008
- Multidisciplinary Laborist Working Group
- Change in departmental By-laws
PAH: Recommendations based on malpractice data and qualitative findings (RMF)

- Team training
- Standardized protocols
- Drills
- OB rapid response team
- Electronic fetal monitoring
- New metrics for L&D
- New laborist-type model
• 2003: L. Weinstein described the concept
• Physicians hired essentially to cover labor and delivery and obstetric emergencies
• Since 2005 several hospitals have adopted the model
• Very little data and literature
The Laborist: Positive Attributes

1. 24 hour coverage of labor and delivery with heightened surveillance
2. Dedicated coverage without the distraction of other clinical duties
3. Improved team work
4. Improved ability to respond to emergencies
5. Decreased sleep deprivation leading to better outcomes
6. Reduction in liability claims
7. Improved work hours
8. Improved family work life balance
The Laborist: Concerns

1. Lack of continuity of care
2. Disagreement between inpatient and outpatient care provider regarding management
3. Decrease patient satisfaction leading to loss of patients
4. Reimbursement issues and reduced pay
5. Worse outcomes, especially in high-risk patients, due to lack of knowledge of patient from antenatal care and increased hand-offs
6. Over-medicalization of the natural birth process by over-vigilance
Healthy People 2010 and Perinatal Goals

1. Reduce maternal illness and complications due to pregnancy
2. Reduce cesarean births among low-risk (full-term, singleton, vertex presentation) women
3. Reduce maternal deaths
4. Reduce fetal and infant deaths

*The assessment of novel models of obstetric care delivery to achieve these goals is necessary. The evaluation of the laborist model of care in the context of reaching these goals is critical and timely.*
• The responsible attending (physician or midwife) must be immediately available in L&D for all patients in active labor and not allowed to have other clinical responsibilities (e.g., gyn surgery, out-patient office)

• Any attending covering L&D for 24 hours straight will not be allowed to have clinical hospital responsibilities the following day
Laborist Model: Coverage and Funding PAH

- Daytime: 3 attending physicians and 1 midwife
- Night-time and weekends: 2 attending physicians and 1 midwife
- Hiring 4 laborists (one laborist always present on Labor Floor) = about $1.6 million
- Required organization of current employed practices to complement laborist on Labor Floor
- Independent physicians (4): had to follow the new by-laws (if not present in L&D when patient in active labor, patient assigned to laborist)
Laborist Model

- Improvement of safety and quality of care
- Metrics: AOI
- Liability reduction: claims monitoring
- Improve education of medical students and residents (resident survey)
- Attractive to future workforce (flexibility and hours)
- Monitor patient and staff satisfaction (IRB approved survey)
PAH: Results

- Model started in July 2008
- Emphasized safety, quality of care and constant attention to patients needs
- One independent and one employed physician left
- < 5% patients left
OB Quality Indicators: Neonatal Mortality

Graph N 9a: Inborn Neonatal Mortality Analysis (≥ 500 Grams) 2005-2010 (Q1) with Trendlines
NPIC ID: 24J

- Hospital Rate with 95% Confidence Intervals
- Trend Hospitals: Average Rate
- Hospital Rate: Stable Over Time
- Trend Rate: Stable Over Time
If you had prior delivery at PA hospital, would you deliver here again?

- Yes: 97%
- Maybe: 1.6%
- No: 1.4%

Total survey Sample Size 1553

Srinivas, Turzo, Ludmir, ACOG 2011
Patient Satisfaction (N = 4166)

How would you rate overall experience in the labor and delivery suite?

- Poor/fair: 2.5%
- Neutral: 1.8%
- Good/very good: 30%
- Excellent: 60%
- Did not answer/Not applicable: 5.7%

Srinivas, Turzo, Ludmir, ACOG 2011
Is Resident Education Improved by the Laborist Model of Obstetric Care?

- Resident survey performed one year after the model started
- Six residents per year (N = 24)
- All residents participated with the exception of 2 who performed the study
- Education improved 82%
- Support improved 91%
- Chief residents autonomy diminished
Physicians

- Although initially some reluctance, currently most physicians are very happy with the model. Feel safe, no running, concentrate in the office or on labor floor, ability to plan.
- Less sleep deprivation
- Laborists are extremely satisfied. Initially hired for one year. All 4 laborists renewed contract.
Physician Satisfaction at PAH (N = 24)

- Communication in L&D  77% improve
- Ability to do your job  70% improve
- Overall job satisfaction  70% improve
CNM Satisfaction at PAH (N = 10)

- Communication in L&D 100% improve
- Ability to do your job 70% improve
- Overall job satisfaction 50% improve
Conclusions

• It is feasible to establish a Laborist Model in a teaching institution with a traditional model of obstetric care
• It is too early to determine if quality of care, safety and liability will improve; although they seem to go in the right direction to justify the investment
• Nurses and physicians seem very satisfied with the model
• The model offers flexibility to physicians
• Residents state that education and support improve despite a lack of autonomy
• To our pleasant surprise patients are very satisfied with the model
In summary, if this model of obstetric care delivery leads to demonstrable changes in maternal and neonatal outcomes, there is the potential to revolutionize obstetric care delivery and improve the quality of obstetric care delivered. Rigorous research is needed to study the effect of this model on maternal and neonatal outcomes and economic implications of this model in comparison to the traditional model of obstetric care delivery.

Srinivas S, 2010
PAH Laborist Model

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Karen Slover
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Penn Medicine

American Hospital Association
Future of Obstetrics

- Universal access to prenatal care
- “Home patient centered care” or pregnancy medical home? ACO model
- Home birth for low risk populations ????
- Alignment between government, hospitals, health care providers and public
- Integration between out-pt and Hospitals (universal common EMR)
- Emphasize quality and safety resulting in less claims and greater care
- Team approach to obstetrics: Laborist model
- Reduction in prematurity, LBW, mortality
• Questions

• Comments