OB/GYN HOSPITALISTS AND THE EVIDENCE TO DATE

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OBJECTIVES

- Review published evidence to date regarding OB/GYN hospitalists, including quality and safety outcomes
- Explore published evidence to date regarding patient satisfaction with OB/GYN hospitalist models of care
- Present standard definitions of OB/GYN coverage arrangements, including OB/GYN Hospitalists

PUBLISHED ARTICLES REGARDING “OB/GYN HOSPITALISTS” OR “LABORISTS”

- December 2002, Frigoletto and Greene
  - Is there a sea change ahead for obstetrics and gynecology?
- February 2003, Weinstein
  - The laborist: a new focus of practice for the obstetrician
- July 2010
  - ACOG Committee opinion no. 459: The obstetric-gynecologic hospitalist
- August 2010, Funk, et al
  - Survey of obstetric and gynecologic hospitalists and laborists
OB/GYN HOSPITALISTS: WHO ARE WE?

- Survey of all 28,545 ACOG fellows April/May 2009
- 25% response rate (7,044)
- 15% of respondents identified as laborists (3.6% total)

- Laborists were younger than overall sample
  - 48.8 +/- 10.2 vs. 50.6 +/- 10.3

- Laborists were closer to residency than overall sample
  - 17.8 +/- 10.7 vs. 19.2 +/- 10.5

- Laborist employers
  - Hospital systems 31.7%
  - Single specialty medical groups 26.3%
  - OB/GYN hospitalist groups 25.1%

- Hospital size/volume
  - >3,000 deliveries per year (37.3%)
  - 2001-3000 deliveries per year (18.7%)
  - 1001-2000 deliveries per year (21.9%)
  - <1000 deliveries per year (22%)

- Shift length
  - 24 hours (30.8%)
  - 18 hours (8.7%)
  - 12 hours (22.5%)
  - 8 hours (9.4%)

- Number of shifts per week
  - Median = 3.5
  - ≤ 3.5 (65.5%)
  - 2 (98%)

- Compensation
  - >$300,000 (9.2%)
  - <$200,000 (52.7%)
  - <$151,000 (29.3%)

- Benefits
  - Professional Liability insurance (80.2%)
  - Vacation (73.1%)
  - Health Insurance (71.8%)
  - Life Insurance (57.8%)
  - Disability Insurance (55.5%)
  - CME benefits (67.4%)

AUGUST 2010, FUNK, ET AL
SURVEY OF OB/GYN HOSPITALIST AND LABORISTS

OB/GYN HOSPITALISTS: WHO ARE WE?

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- Dr. Rob Olson and obghospitalist.com do annual surveys

AUGUST 2010, FUNK, ET AL
SURVEY OF OB/GYN HOSPITALIST AND LABORISTS
Published Articles regarding “Ob/Gyn Hospitalists” or “Laborists”

- 2011, Veltman
  - The Ob hospitalist and the risk manager: ready for prime time
  - Short liability article

- March 2012, Srinivas, et al
  - Laborist model of care: who is using it?

- March 2013, Srinivas, et al
  - Patient satisfaction with the laborist model of care in a large urban hospital

- September, 2013, Iriye, et al
  - Implementation of a laborist program and evaluation of the effect upon cesarean delivery

OB/GYN HOSPITALISTS: WHERE ARE WE?

- Survey in February 2010
- 74 hospitals in 26 states (members of the NPIC/QAS)
- 93% response rate (69/74)
- 40% using laborists
- Use of laborists associated with increased delivery volume
- Use of laborists NOT associated with presence of residents/fellows or geography
PATIENT SATISFACTION WITH OB/GYN HOSPITALISTS

- September 2008 - April 2010
- Survey of 4,166 postpartum patients (54% response)
- Overall experience on L&D:
  - 60% excellent and 30% very good/good
  - Willingness to come back - 97% yes
- Experience with provider for this delivery
  - 75% excellent and 18% very good/good
- Press-Ganey results from pre- and post-laborist implementation
  - 91.3 (n=811) and 93.4 (n=747), p=0.08
- Did not actually look at what type of provider delivered patient

MARCH 2013, SRINIVAS, ET AL
Patient satisfaction with the laborist model of care in a large urban hospital

OB/GYN HOSPITALISTS AND C-SECTION RATE

- Retrospectively reviewed 2006-2011
- Primiparous patients >37 weeks
- Compared 3 groups for C-section rates:
  - No laborist
  - 24 hr in-hospital laborist coverage by community staff
  - 24 hr in-hospital coverage by full time laborist team
- 6,206 patients

September, 2013, Iriye, et al
Implementation of a laborist program and evaluation of the effect upon cesarean delivery

OB/GYN HOSPITALISTS AND C-SECTION RATE

- 23-27% reduction in C-sections with full time laborist compared to 2 other groups
- No laborist – 39.2%, OR 0.73, [0.64-0.83], p<0.001
- Community laborist – 38.7%, OR 0.77, [0.67-0.87], p<0.001
- Full-time laborist – 33.2%
- No difference in birth weight, maternal weight, diabetes, gestational age, 5 minute Apgar score

September, 2013, Iriye, et al
Implementation of a laborist program and evaluation of the effect upon cesarean delivery
<table>
<thead>
<tr>
<th>OB/GYN HOSPITALISTS AND C-SECTION RATE</th>
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<tbody>
<tr>
<td>o Full-time laborist = decrease in 0.41-0.48 C-sections per day for a population of nulliparous, term, singleton live births</td>
</tr>
<tr>
<td>o Savings of $2,823 - $3,305</td>
</tr>
<tr>
<td>o Cost of laborist = $2,500 per 24-hour shift</td>
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</tbody>
</table>
| September, 2013, Itoz, et al  
Implementation of a laborist program and evaluation of the effect upon cesarean delivery |

<table>
<thead>
<tr>
<th>SMFM ABSTRACTS - JANUARY 2013</th>
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</table>
| o Srinivas, et al  
• Does the laborist model improve obstetric outcomes? |
| o Allen, et al  
• The cost effectiveness of 24 hr in-house obstetric coverage |
| o Cheng, et al  
• Labor and delivery coverage: around-the-clock or as-needed? |

<table>
<thead>
<tr>
<th>DOES THE LABORIST MODEL IMPROVE OB OUTCOMES?</th>
</tr>
</thead>
</table>
| o Cohort study matched 8 laborist and 16 non-laborist hospitals  
• Geography  
• Volume  
• NICU  
• Teaching status |
| o Reviewed discharge data |
| o 626,772 patients |
DOES THE LABORIST MODEL IMPROVE OB OUTCOMES?

- Labor inductions AOR 0.85 [0.82-0.88], p<0.001
- Maternal length of stay AOR 0.92 [0.89-0.94], p<0.001
- Term NICU admissions AOR 0.75 [0.67-0.83], p<0.001
- Preterm delivery AOR 0.82 [0.78-0.86], p<0.001
- Low birth weight (<2500g) AOR 0.94 [0.90-0.99], p=0.02
- C-section rates AOR 1.05 [1.02-1.08], p=0.002

JANUARY 2013, SRINIVAS, ET AL (SMFM ABSTRACT)

THE COST EFFECTIVENESS OF 24 HOUR IN-HOUSE OBSTETRIC COVERAGE

- Decision analysis that compared cost of maternal and neonatal outcomes after emergent delivery +/- laborist
- Emergent deliveries = cord prolapse and abruption
- No TOLAC
- 1,000 deliveries a year
- Outcomes:
  - Intrapartum fetal demise
  - Asphyxia
  - Neonatal death
  - Long-term neurodevelopmental disability

THE COST EFFECTIVENESS OF 24 HOUR IN-HOUSE OBSTETRIC COVERAGE

JANUARY 2013, ALLEN, ET AL (SMFM ABSTRACT)

<table>
<thead>
<tr>
<th>Hospital of 1,000 deliveries/year in a population of 100,000 women</th>
<th>NO HOSPITALIST</th>
<th>HOSPITALIST</th>
</tr>
</thead>
<tbody>
<tr>
<td>OUTCOMES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intrapartum Fetal Demise</td>
<td>46</td>
<td>8</td>
</tr>
<tr>
<td>Neonatal Death</td>
<td>115</td>
<td>100</td>
</tr>
<tr>
<td>Neurodevelopmental disability</td>
<td>148</td>
<td>123</td>
</tr>
<tr>
<td>Quality-adjusted Life Years</td>
<td>5,712,960</td>
<td>5,715,170</td>
</tr>
<tr>
<td>Cost</td>
<td>$1,143,286,000</td>
<td>$1,143,929,000</td>
</tr>
</tbody>
</table>

JANUARY 2013, ALLEN, ET AL (SMFM ABSTRACT)
THE COST EFFECTIVENESS OF 24 HOUR IN-HOUSE OBSTETRIC COVERAGE

- Having a 24/7 OB/GYN hospitalist results in better fetal outcomes where obstetricians cannot respond to OB emergencies within 30 minutes
- OB/GYN hospitalist remains cost effective at hospitals with as few as 450 deliveries/year

JANUARY 2013, ALLEN, ET AL (SMFM ABSTRACT)

L&D COVERAGE: AROUND-THE-CLOCK OR AS-NEEDED?

- Retrospective cohort study compared hospitals with “around-the-clock” coverage vs. “as-needed” coverage
- Singleton, term, live births in California 2005-2006
- Excluded hospitals with <1,200 deliveries/year
- 740,019 births
  - 274,106 (37%) in hospitals with “around-the-clock” coverage
  - 465,913 (63%) in hospitals with “as-needed” coverage

JANUARY 2013, CHENG, ET AL (SMFM ABSTRACT)

C-section rate AOR 0.84 [0.83-0.85], p<0.001
Nulliparous C-section rate AOR 0.83 [0.82-0.85], p<0.001
Induction of labor AOR 1.11 [1.10-1.13], p<0.001

Among Inductions:
- Nulliparous C-section rate AOR 0.89 [0.86-0.93], p=0.008
- Multiparous C-section rate AOR 0.87 [0.81-0.93], p<0.001
TOLAC rate AOR 2.33 [2.21-2.45], p<0.001
VBAC rate AOR 1.19 [1.05-1.34], p<0.001

JANUARY 2013, CHENG, ET AL (SMFM ABSTRACT)
SMFM ABSTRACTS - JANUARY 2014

- Feldman, et al
  - The laborist on labor and delivery: is this new trend associated with higher rates of VBAC?
- Srinivas, et al
  - Labor and delivery care models are associated with term birth outcomes
- Brandt, et al
  - Does a MFM centered L&D provider model put the “M” back in MFM?

HOSPITALS WITH LABORISTS HAD HIGHER VBAC RATES

- Interview of nurse managers in Southern California
- Hospital-level VBAC rates from state data
- Looked at:
  - Presence of laborists
  - Teaching hospital status
  - Delivery volume
- 70% response rate, total of 52 hospitals
- Teaching hospitals had higher VBAC rates
  - 15.3% vs. 5.6%
- In non-teaching hospitals, laborist associated with higher VBAC rates
  - 6.5% vs. 3.7%

MFM CENTRIC L&D MODEL

- Does the regular presence of MFM on L&D:
  - Decrease maternal morbidity?
  - Alter residents’ perceptions of safety and education?
  - Improve resident CREOG scores?
- Retrospective cohort
  - Pre: MFM did not regularly staff L&D, available for consultation
  - Post: MFM staffed L&D daily from 07:00-18:00
- 4,715 deliveries
- No difference in maternal morbidity
- Residents preferred new model (81.3%)
- CREOG scores improved by 6-7 points
### Morbidity PRE (n=2,286) POST (n=2,429) P-value

<table>
<thead>
<tr>
<th>Morbidity</th>
<th>PRE</th>
<th>POST</th>
<th>P-value</th>
</tr>
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<tbody>
<tr>
<td>Overall</td>
<td>174 (7.6)</td>
<td>215 (8.9)</td>
<td>0.12</td>
</tr>
<tr>
<td>Death</td>
<td>0</td>
<td>0</td>
<td>NA</td>
</tr>
<tr>
<td>Acute renal failure</td>
<td>5 (0.2)</td>
<td>2 (0.1)</td>
<td>0.22</td>
</tr>
<tr>
<td>Acute liver failure</td>
<td>0</td>
<td>0</td>
<td>NA</td>
</tr>
<tr>
<td>Respiratory failure</td>
<td>1 (0.04)</td>
<td>1 (0.04)</td>
<td>0.97</td>
</tr>
<tr>
<td>CVA</td>
<td>0</td>
<td>1 (0.04)</td>
<td>0.33</td>
</tr>
<tr>
<td>Embolism</td>
<td>22 (1)</td>
<td>30 (1.2)</td>
<td>0.37</td>
</tr>
<tr>
<td>Transfusion</td>
<td>56 (2.4)</td>
<td>52 (2.1)</td>
<td>0.48</td>
</tr>
<tr>
<td>Eclampsia</td>
<td>3 (0.1)</td>
<td>2 (0.1)</td>
<td>0.61</td>
</tr>
<tr>
<td>Cardiac events</td>
<td>6 (0.3)</td>
<td>5 (0.2)</td>
<td>0.69</td>
</tr>
<tr>
<td>Infection</td>
<td>148 (6.5)</td>
<td>187 (7.7)</td>
<td>0.10</td>
</tr>
</tbody>
</table>

### Other evidence supporting OB/GYN hospitalists

  - Introduction of an obstetric-specific medical emergency team for obstetric crises: implementation and experience

- Pettker, et al (May 2009)
  - Impact of a comprehensive patient safety strategy on obstetric adverse events

- Grunebaum, et al (February 2011)
  - Effect of a comprehensive obstetric patient safety program on compensation payments and sentinel events

### Other evidence regarding OB/GYN hospitalists

- Pettke, et al (March 2011)
  - A comprehensive obstetrics patient safety program improves safety climate and culture

- Solt, et al (May 2011)
  - Touching forces: the impact of proactive faculty

- Barber, et al (December 2011)
  - Type of attending obstetrician call schedule and changes in labor management and outcome
HOSPITALIST AND RAPID RESPONSE FOR EMERGENCIES

- Descriptive article on implementation of an obstetric-specific rapid response team at Magee Women’s hospital in Pittsburgh
- Team composition:
  - In-house OB (MFM or hospitalist)
  - Critical care MD
  - Anesthesia MD
  - 4th year OB/GYN resident
  - RT
  - Patient’s nurse
  - L&D charge nurse
- Staff education increased usage from 14/10,000 admissions to 62/10,000 admissions
- No patient outcome statistics

IMPACT OF OB/GYN HOSPITALIST ON OB ADVERSE EVENTS

- Multiple interventions at Yale-New Haven hospital 2003-2006:
  - Outside expert review
  - Protocol standardization
  - Creation of patient safety nurse position
  - Creation of patient safety committee
  - Team skills training
  - Fetal heart rate monitoring training
- OB/GYN hospitalist (Yale On-Call Attending – YOCA) 2005:
  - “…the YOCA has responsibility for the quality of care of the entire obstetric service by providing services to patients within the university practices and emergency backup and consultation for all community physicians.”

OBSTETRIC ADVERSE OUTCOMES INDEX TREND

13,622 deliveries
C-SECTION AND EPISIOTOMY RATES

MAY 2009, PETTKER, ET AL
Impact of a Comprehensive Patient Safety Strategy on Obstetric Adverse Events
13,622 deliveries

STAFF PERCEPTIONS OF SAFETY CLIMATE

MARCH 2011, PETTKER, ET AL
A Comprehensive Patient Safety Program Improves Safety Climate and Culture

OB/GYN HOSPITALISTS AND IMPACT ON ADVERSE EVENTS AND LIABILITY

- Multiple interventions at New York Presbyterian Hospital-Weill Cornell Medical Center 2002-2009
  - Team skills training
  - Chain of communication for L&D
  - Separate L&D coverage and emergency GYN coverage
  - Protocol standardization
  - Creation of patient safety nurse position
  - Fetal heart rate monitoring training

FEBRUARY 2011, GRUENBAUM, ET AL
Effect of a Comprehensive Obstetric Patient Safety Program on Complications, Events and Sentinel Events
YALE NEW HAVEN COMPREHENSIVE SAFETY PROGRAM AND LIABILITY

- Implementation 2004
- Reviewed malpractice suits and claims 2000-2007
- Before program:
  - 19 claims/suits and $23.2 million payments
- After program:
  - 11 claims/suits and $7.2 million payments
- Annual claims/suits per 1000 deliveries decreased significantly
  - Mean claims annually down from 4.75 to 2.75 (ns)
  - Mean annual payments down from $5.8 million to $1.8 million (ns)

JANUARY 2011, PETTEER, ET AL (SMFM ABSTRACT)
OB/GYN HOSPITALISTS AND RESIDENT EDUCATION

- Cedars-Sinai, Los Angeles
- Recruitment of a single experienced (35 years) generalist OB/GYN to act as a laborist
  - L&D coverage 4 days a week and 2-3 nights a month
  - Responsible for all births on unit
- Compared cohorts 2 years prior to implementation and 2 years after implementation
- 7,819 births
- C-section rate unchanged (27%)
- Operative vaginal delivery rate unchanged overall (11%)
  - Forceps up from 5% to 8% of all births
  - Vacuum down from 6% to 3% of all births

SOLT, ET AL (MAY 2011)

TEACHING FORCEPS: THE IMPACT OF PROACTIVE FACULTY

- No difference in 3rd/4th degree laceration rates
  - Slightly better with laborist
- No difference in birth injury rates
- No difference in 5 minute Apgar score
- Slight difference in umbilical artery pH<7.1 (p=0.003)

SOLT, ET AL (MAY 2011)

TEACHING FORCEPS: THE IMPACT OF PROACTIVE FACULTY
DEDICATED NIGHT FLOAT AND IMPROVED PATIENT OUTCOMES

- Change in generalist faculty coverage from 24-hr shifts to 12-hr night float shifts
  - Labor inductions (30% vs 16.7%, P=0.02)
  - Episiotomy (10.1% vs 2.6%, P=0.04)
  - Manual placental extractions (5% vs 0%, P=0.02)
  - Neonatal acidosis (9.3% vs 2.2%, P=0.03)
  - 3rd and 4th degree lacerations (10.3% vs 3.3%, P=0.045)

OTHER EVIDENCE REGARDING OB/GYN HOSPITALISTS

- Pettker, et al (Oct 2014)
  - A comprehensive obstetric patient safety program reduces liability claims and payments.

  - Association of expanded access to a collaborative midwifery and laborist model with cesarean delivery rates

  - Do laborists improve delivery outcomes for laboring women in California community hospitals?

REVIEW ARTICLES: CLINICS OF NORTH AMERICA OBSTETRIC AND GYNECOLOGIC HOSPITALISTS AND LABORISTS

Obstetric and Gynecologic Hospitalists and Laborists

EDITORS
Brigid McCue
Jennifer A. Tesmer-Tuck
CONSULTING EDITOR
William F. Rapburn
DEFINITION OF OB-GYN HOSPITALIST

- Submitted to Green Journal as Clinical Commentary from board of Society of Ob/Gyn Hospitalists
- Intended to facilitate research to elucidate impact of Ob-Gyn Hospitalists and Ob-Gyn Hospitalist programs
- Potential to move beyond “laborist” image of back up shift worker

DEFINITIONS OF CALL SYSTEMS

- An on-call ob-gyn is an ob-gyn who is assigned for a limited and defined time period (i.e. 24 hours) to cover the obstetric and gynecologic inpatient care of patients who are enrolled in his or her practice. An on-call ob-gyn may or may not be in the hospital for the duration of their call period.
- An in-hospital ob-gyn is an ob-gyn with whom the hospital contracts (either voluntarily or on a paid basis) to stay in the hospital to ensure immediate availability for obstetric emergencies. The in-hospital ob-gyn’s responsibilities to the hospital usually include care for uninsured obstetric patients or the stabilization of care for patients from their own practice (call for that practice).
- An obstetric hospitalist is an ob-gyn who specializes in the practice of hospital obstetrics. This may include (but is not limited to) the obstetric triage unit, labor and delivery, the antepartum unit and the postpartum unit. An obstetric hospitalist has no gynecologic or gynecologic surgery responsibilities.
- An obstetric and gynecologic hospitalist is an ob-gyn who specializes in the practice of hospital obstetric and gynecologic care. This may include (but is not limited to) the obstetric triage unit, labor and delivery, the antepartum unit, the postpartum unit, the emergency department, emergent gynecologic surgery, inpatient medical and critical care units and consultative inpatient obstetric and gynecologic services.
- A laborist is a poorly defined term and should be replaced by the term obstetric hospitalist.
- An obstetric or obstetric and gynecologic hospital medicine practice is a practice that uses hospitalists to provide patient care and minimizes the use of non-hospitalist ob-gyns.

ROLES AND RESPONSIBILITIES OF AN OBSTETRIC OR OBSTETRICAL AND GYNECOLOGIC HOSPITALIST

- Respond to emergencies in Obstetric Triage, Labor and Delivery, antepartum, and postpartum units
- Respond to gynecologic consultation requests (including gynecologic emergencies in the Emergency Department of obstetric hospitals
- Provide real-time knowledge, issue-oriented communications, educational interventions across disciplines, and direct request to team members andcoordinate intervention
- Lead team-based and interdepartmental change after patient safety events or unacceptably events
- Work as the primary caregiver for patients requiring hospitalization and directing the recovery process
- Guide clinical decision-making (including ordering, implementing protocols and order sets and facilitating the use of the electronic medical record (EMR)
- Develop and maintain competence in low-volume, high stress clinical skills (such as operative vaginal delivery or breech delivery of the second twin) in order to offer 24-7, in-hospital clinical expertise to colleagues as needed
- Maintain knowledge of the most current quality reporting metrics to ensure that department colleagues succeed in meeting the metrics and that reporting is timely and accurate
- Provide continuous supervision, education and mentorship for nurses, students, residents, and peers
- Facilitate consultations of obstetric and gynecologic patients
- Collaborate, communicate, and coordinate care among hospital-based consultants, family medicine providers, and other members of the care team
- Support a Maternal Fetal Medicine service and Neonatal Intensive Care Unit by collaboratively managing high-risk obstetric patients
- Support interdepartmental collaboration (i.e., general practice physicians) for covering patients when requested and when needed by the hospitalist’s responsibilities allow
- Coordinate patient care with emergency medicine and hospitalist colleagues to meet patient care and department responsibilities

*This is practice specific and excludes obstetric hospitalists.
STAFFING & RECRUITMENT ISSUES

- OB/GYN’s are less satisfied with their careers compared to other specialties

- Career satisfaction is negatively correlated with working more than 50 hours a week and an uncontrollable schedule

- Why aren’t new med school grads choosing OB/GYN?
  - Single most important factor is work-life balance

- Practicing OB/GYN’s who do not do deliveries work fewer hours and have higher career satisfaction


STAFFING & RECRUITMENT ISSUES

- For OB/GYN’s who still do deliveries, “on-call” time is what they perceive most negatively. Why?
  - Increased workload
  - Decreased personal control over schedule

- Burnout for practicing OB/GYN’s is strongly correlated with perceived work-life balance, which is directly related to
  - Control over work schedule
  - Control over # of hours worked

- Why are more OB/GYN grads sub-specializing?
  - Reduced workload


OB/GYN HOSPITALIST CAREER SATISFACTION

August 2010, Funk, ET AL
Survey of OB/GYN Hospitalist and Laborists