OB/GYN HOSPITALISTS AND THE EVIDENCE TO DATE

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DISCLOSURES

- The presenters have nothing to disclose

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
- Explore published evidence to date regarding physician satisfaction with hospitalist models of care and potential roles of the OB/GYN hospitalist in addressing future staffing issues for our specialty

PUBMED SEARCH "LABORIST" AND "OB/GYN HOSPITALIST"

- 12 publications
- February 2003, Weinstein
  - *The **laborist**: a new focus of practice for the obstetrician*
- September 2003, Petrikovsky
  - *The **laborist**: do not repeat the mistakes of other medical systems*
  - Comment on Weinstein's publication
- December 2008, King and Wendel
  - ***Laborist** staffing requires careful attention*
  - Short ethics article
- July 2010
  - *ACOG Committee opinion no. 459: The **obstetric-gynecologic hospitalist***

PUBMED SEARCH "LABORIST" AND "OB/GYN HOSPITALIST"

- August 2010, Funk, et al
  - *Survey of **obstetric and gynecologic hospitalists** and **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?*
- July 2012, Srinivas and Lorch
  - *The **laborist** model of obstetric care: we need more evidence*

PUBMED SEARCH "LABORIST" AND "OB/GYN HOSPITALIST"

- August 2012, Olson, et al
  - ***Obstetrician/gynecologist hospitalists****: can we improve safety and outcomes for patients and hospitals and improve lifestyle for physicians?*
- March 2013, Srinivas, et al
  - *Patient satisfaction with the* ***laborist*** *model of care in a large urban hospital*
- May 2013, Atallah
  - *What is a* ***laborist****?*
  - Comment on Olson, 2012
- September, 2013, Iriye, et al
  - *Implementation of a* ***laborist*** *program and evaluation of the effect upon cesarean delivery*

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- August 2012, Olson, et al
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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
  - 17.0 +/- 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%

AUGUST 2010, FUNK, ET AL

SURVEY OF OB/GYN HOSPITALIST AND LABORISTS

OB/GYN HOSPITALISTS: WHO ARE WE?

- Hospital size/volume
  - >3,000 deliveries per year (37.3%)
  - 2001-3000 deliveries per year (18.7%)
  - 1000-2000 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 (88%)

AUGUST 2010, FUNK, ET AL

SURVEY OF OB/GYN HOSPITALIST AND LABORISTS

OB/GYN HOSPITALISTS: WHO ARE WE?

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

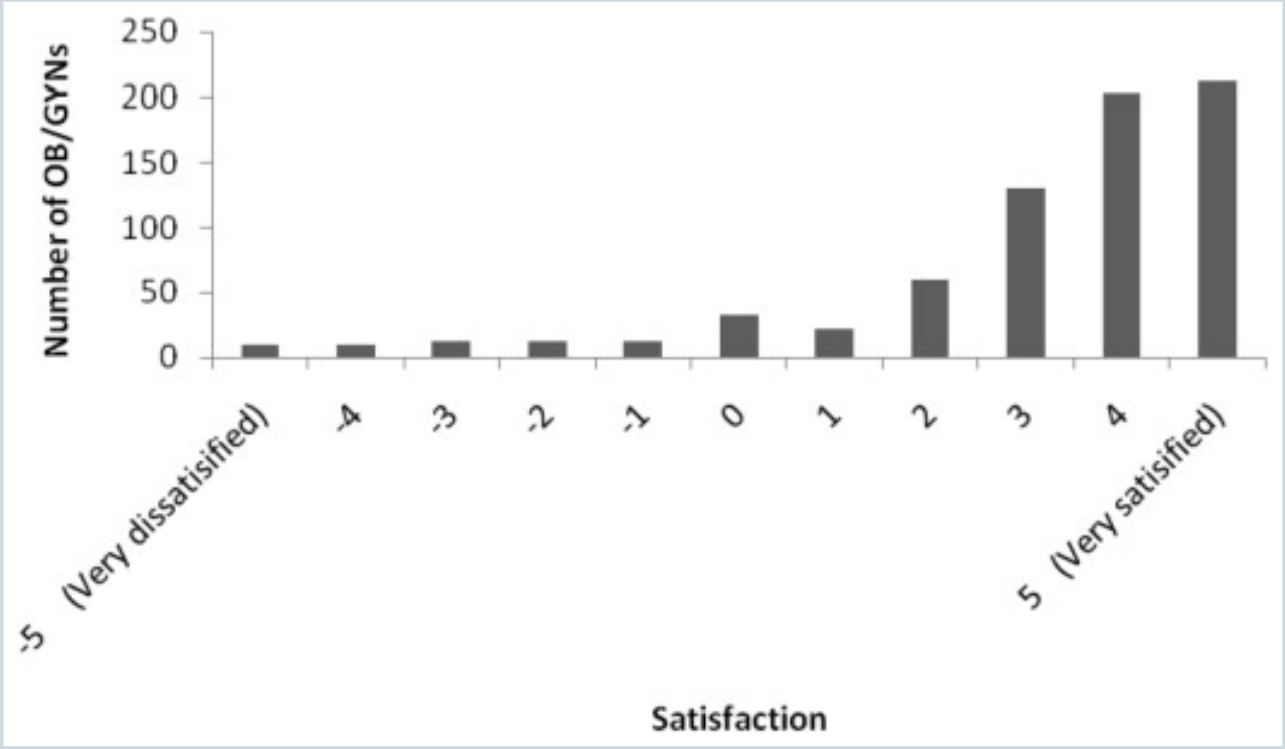
- Benefits
  - Professional Liability insurance (80.2%)
  - Vacation (73.1%)
  - Health Insurance (71.8%)
  - Life Insurance (57.8%)
  - Disability Insurance (55.5%)
  - CME benefits (67.4%)

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

AUGUST 2010, FUNK, ET AL

SURVEY OF OB/GYN HOSPITALIST AND LABORISTS

OB/GYN HOSPITALIST CAREER SATISFACTION



AUGUST 2010, FUNK, ET AL

SURVEY OF OB/GYN HOSPITALIST AND LABORISTS

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

MARCH 2012, SRINIVAS, ET AL

LABORIST MODEL OF CARE: WHO IS USING IT?

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
- Full-time laborist – 33.2%
- Community laborist – 38.7%, OR 0.77, [0.67-0.87], p<0.001
- No laborist – 39.2%, OR 0.73, [0.64-0.83], p<0.001
- 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

OB/GYN HOSPITALISTS AND C-SECTION RATE

- Full-time laborist = decrease in 0.41-0.48 C-sections per day for a population of nulliparous, term, singleton live births
- Savings of $2,823 - $3,305
- Cost of laborist = $2,500 per 24-hour shift

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

SMFM ABSTRACTS - JANUARY 2013

- Iriye, et al
  - Implementation of a full-time laborist program is associated with a substantial reduction in cesarean section rate (published September 2013)
- Srinivas, et al
  - Does the laborist model improve obstetric outcomes?
- Allen, et al
  - The cost effectiveness of 24 hr in-house obstetric coverage
- Cheng, et al
  - Labor and delivery coverage: around-the-clock or as-needed?

Does the laborist model improve OB outcomes?

- Cohort study matched 8 laborist and 16 non-laborist hospitals
  - Geography
  - Volume
  - NICU
  - Teaching status
- Reviewed discharge data
- 626,772 patients

January 2013, Srinivas, et al (SMFM abstract)

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

JANUARY 2013, ALLEN, ET AL (SMFM ABSTRACT)

THE COST EFFECTIVENESS OF 24 HOUR IN-HOUSE OBSTETRIC COVERAGE

Hospital of 1,000 deliveries/year in a population of 100,000 women		
OUTCOMES	**NO HOSPITALIST**	**HOSPITALIST**
Intrapartum Fetal Demise	46	8
Neonatal Death	115	100
Neurodevelopmental disability	148	123
Quality-adjusted Life Years	5,712,960	5,715,170
Cost	$1,043,236,000	$1,143,929,000

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)

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

- ↓ 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%

JANUARY 2014, FELDMAN, ET AL, SMFM ABSTRACT

24/7 AND LABORIST COVERAGE AND TERM BIRTH OUTCOMES

- Compared term birth outcomes in hospitals with and without laborist coverage or 24/7 coverage
- Telephone survey, admission records and birth certificate review
- 361 L&D units (90% response rate)
- 1,066,049 term singleton births

JANUARY 2014, SRINIVAS, ET AL, SMFM ABSTRACT

24/7 COVERAGE ASSOCIATED WITH WORSE OUTCOMES

- ↓ C/S rates (AOR = 0.92, 0.91-0.93, p<0.001)
- ↑ IOL (AOR = 1.02, 1.01-1.03, p<0.001)
- ↑ Prolonged Maternal length of stay (AOR=1.48, 1.43-1.53, p<0.001)
- ↑ Prolonged Neonatal length of stay (AOR = 1.05, 1.03-1.06, p<0.001)

JANUARY 2014, SRINIVAS, ET AL, SMFM ABSTRACT

LABORIST COVERAGE ASSOCIATED WITH WORSE OUTCOMES

- ↓ C/S rates
- ↑ IOL
- ↑ Prolonged Maternal length of stay
- ↑ Prolonged Neonatal length of stay
- ↑ Birth Asphyxia (OR=1.24, 1.13-1.35, p<0.001)

JANUARY 2014, SRINIVAS, ET AL, SMFM ABSTRACT

Why?

- Level of training?
- Experience?
- Work force issues?
- Other systems issues at play?
- My thoughts – reporting bias? Change in definitions?

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

JANUARY 2014, BRANDT, ET AL, SMFM ABSTRACT

Morbidity	PRE (n=2,286)	POST (n=2,429)	P-value
Overall	174 (7.6)	215 (8.9)	0.12
Death	0	0	NA
Acute renal failure	5 (0.2)	2 (0.1)	0.22
Acute liver failure	0	0	NA
Respiratory failure	1 (0.04)	1 (0.04)	0.97
CVA	0	1 (0.04)	0.33
Embolism	22 (1)	30 (1.2)	0.37
Transfusion	56 (2.4)	52 (2.1)	0.48
Eclampsia	3 (0.1)	2 (0.1)	0.61
Cardiac events	6 (0.3)	5 (0.2)	0.69
Infection	148 (6.5)	187 (7.7)	0.10

JANUARY 2014, BRANDT, ET AL, SMFM ABSTRACT

Other evidence supporting OB/GYN hospitalists

- Gosman, et al (April 2008)
  - *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 supporting OB/GYN hospitalists

- Pettker, et al (March 2011)
  - *A comprehensive obstetrics patient safety program improves safety climate and culture*
- Solt, et al (May 2011)
  - *Teaching forceps: 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

APRIL 2008, GOSMAN, ET AL
INTRODUCTION OF AN OBSTETRIC-SPECIFIC MEDICAL EMERGENCY TEAM FOR OBSTETRIC CRISES: IMPLEMENTATION AND EXPERIENCE

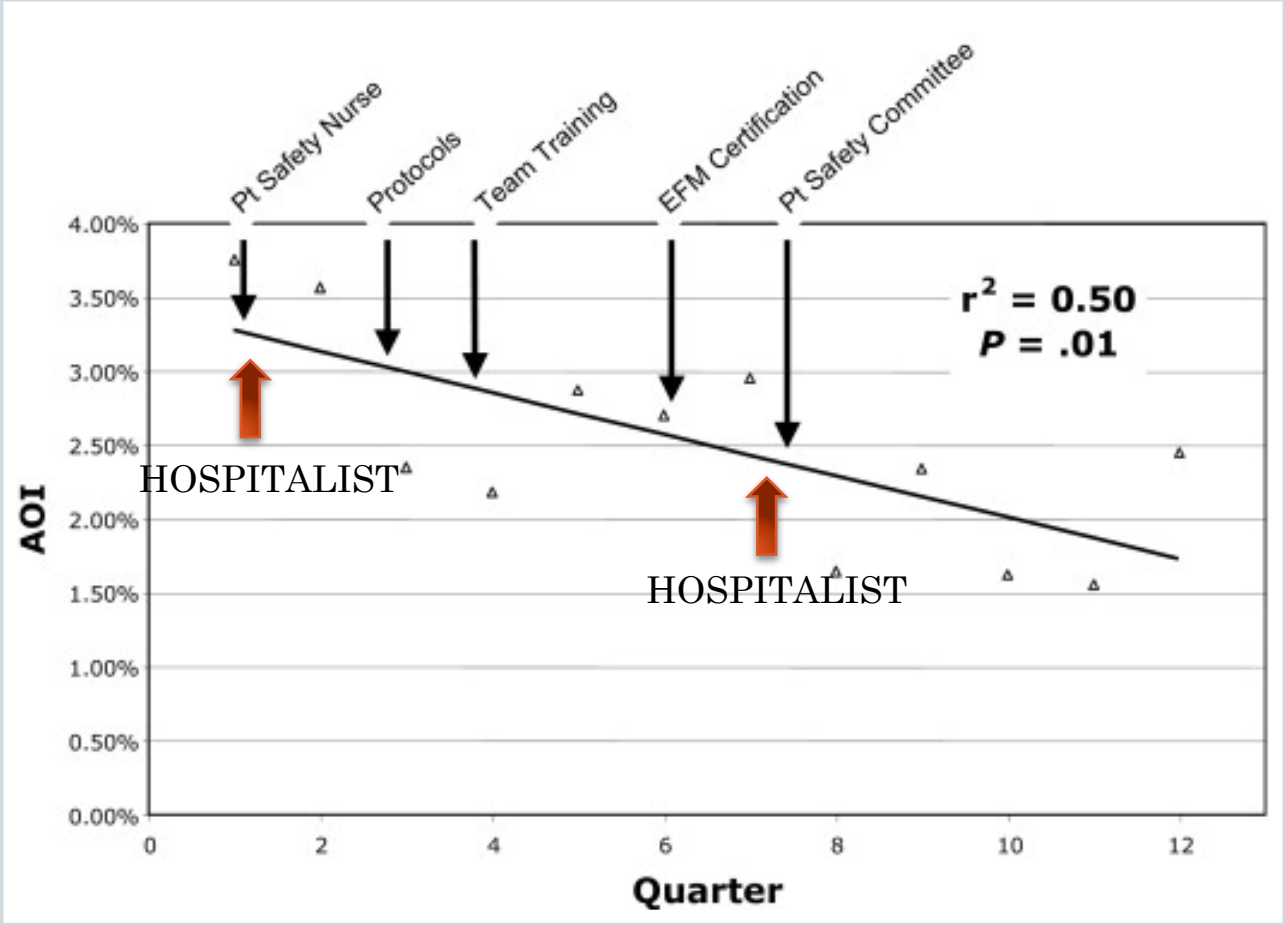
Impact of OB/GYN hospitalist on OB adverse events

- Multiple interventions at Yale-New Haven hospital 2003-2006
  - Introduction of an OB/GYN hospitalist (2003)
  - 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."

May 2009, Petttker, et al
Impact of a comprehensive patient safety strategy on obstetric adverse events

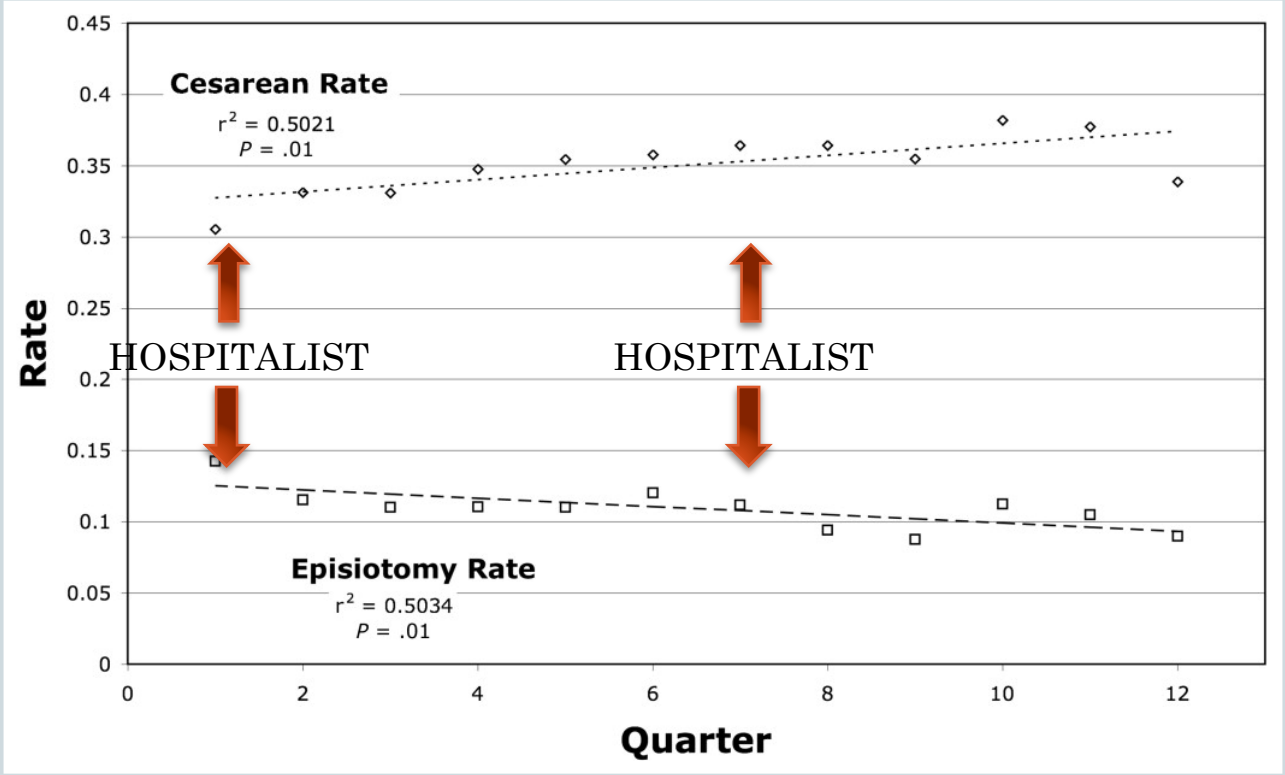
OBSTETRIC ADVERSE OUTCOMES INDEX TREND



13,622 deliveries

MAY 2009, PETTTKER, ET AL
IMPACT OF A COMPREHENSIVE PATIENT SAFETY STRATEGY ON OBSTETRIC ADVERSE EVENTS

C-SECTION AND EPISIOTOMY RATES



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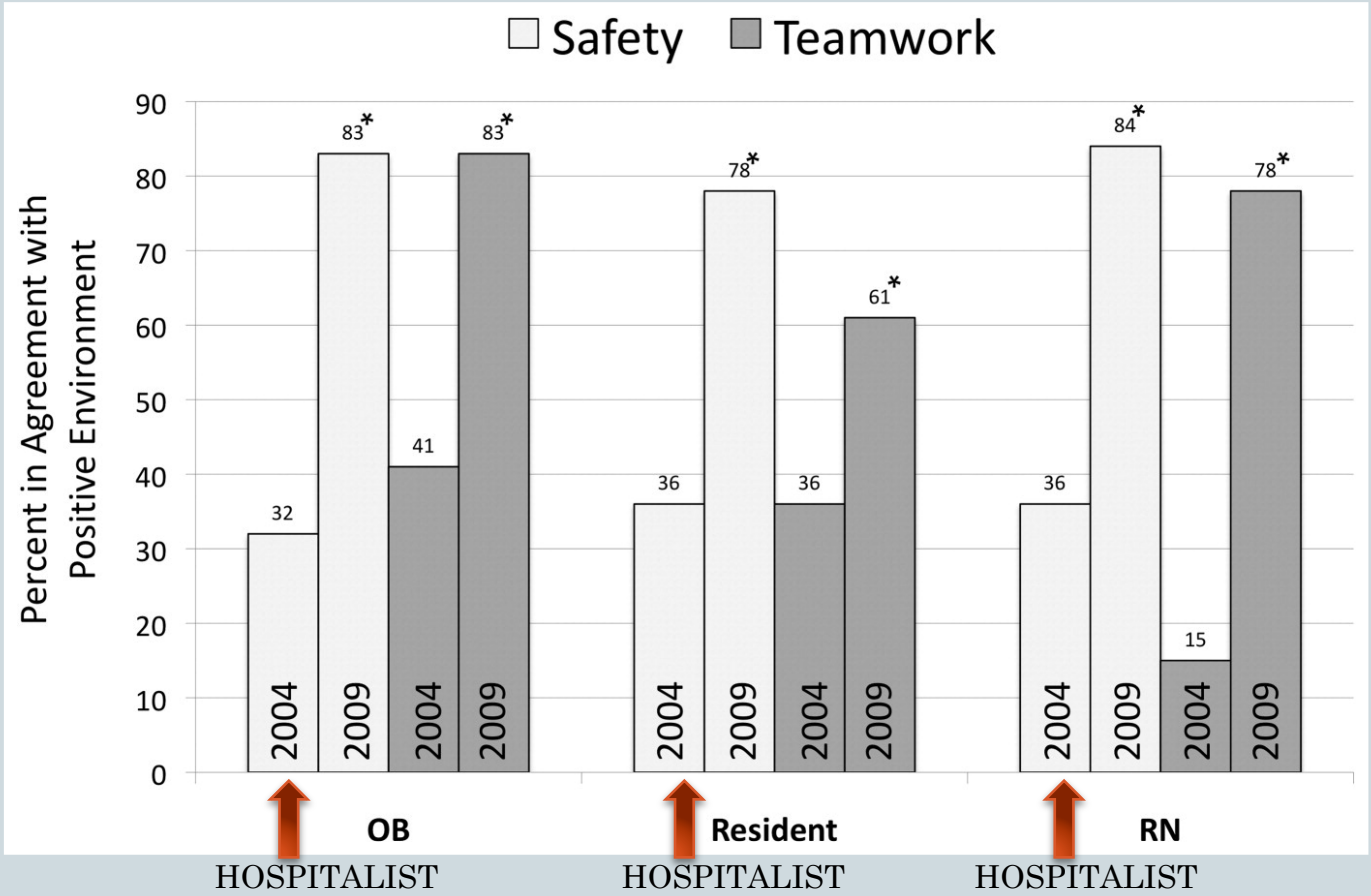
MAY 2009, PETTTKER, ET AL
IMPACT OF A COMPREHENSIVE PATIENT SAFETY STRATEGY ON OBSTETRIC ADVERSE EVENTS

Source: American Journal of Obstetrics & Gynecology 2009; 200:492.e1-492.e8 (DOI:10.1016/j.ajog.2009.01.022)

STAFF PERCEPTIONS OF SAFETY CLIMATE



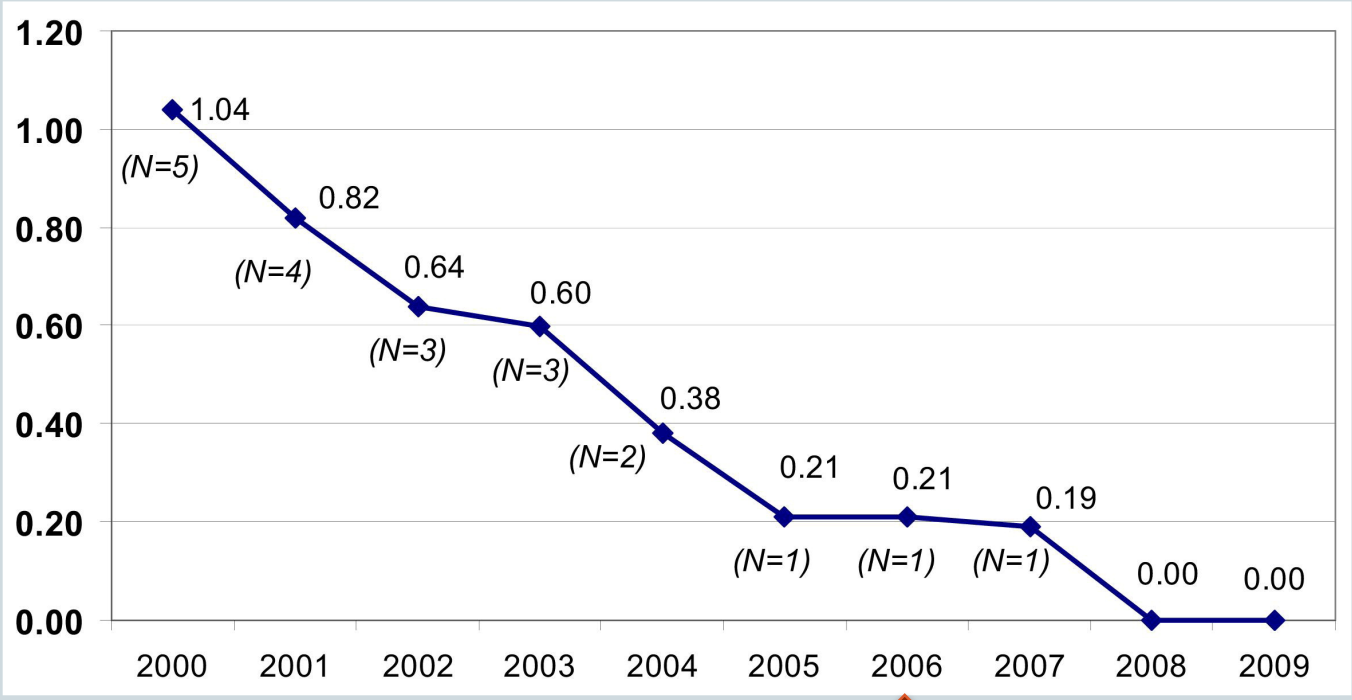
MARCH 2011, PETTKER, ET AL
A COMPREHENSIVE PATIENT SAFETY PROGRAM IMPROVES SAFETY CLIMATE AND CULTURE

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
  - Introduction of an OB/GYN hospitalist (2006)
  - 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 COMPENSATION PAYMENTS AND SENTINEL EVENTS

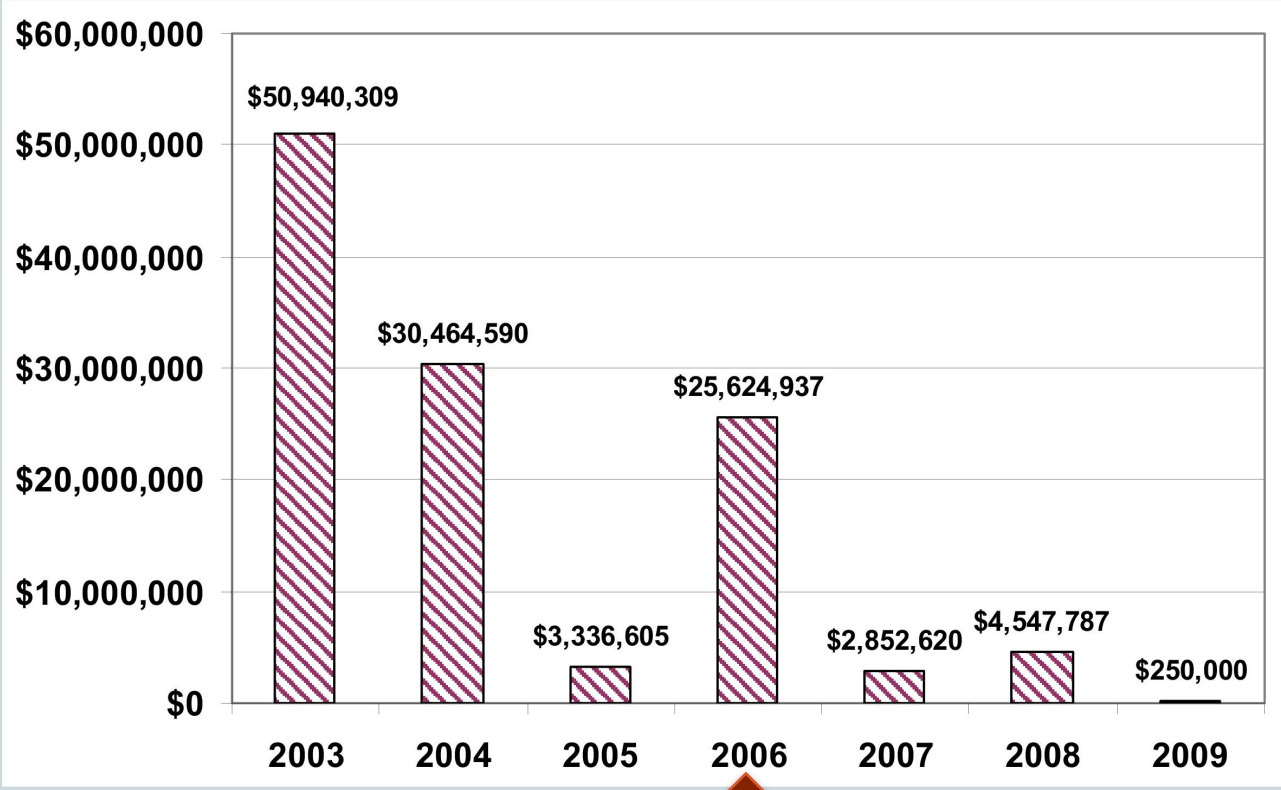
SENTINEL EVENTS PER 1,000 DELIVERIES



HOSPITALIST

FEBRUARY 2011, GRUENBAUM, ET AL
EFFECT OF A COMPREHENSIVE OBSTETRIC PATIENT SAFETY PROGRAM ON COMPENSATION PAYMENTS AND SENTINEL EVENTS

COMPENSATION PAYMENTS BY YEAR



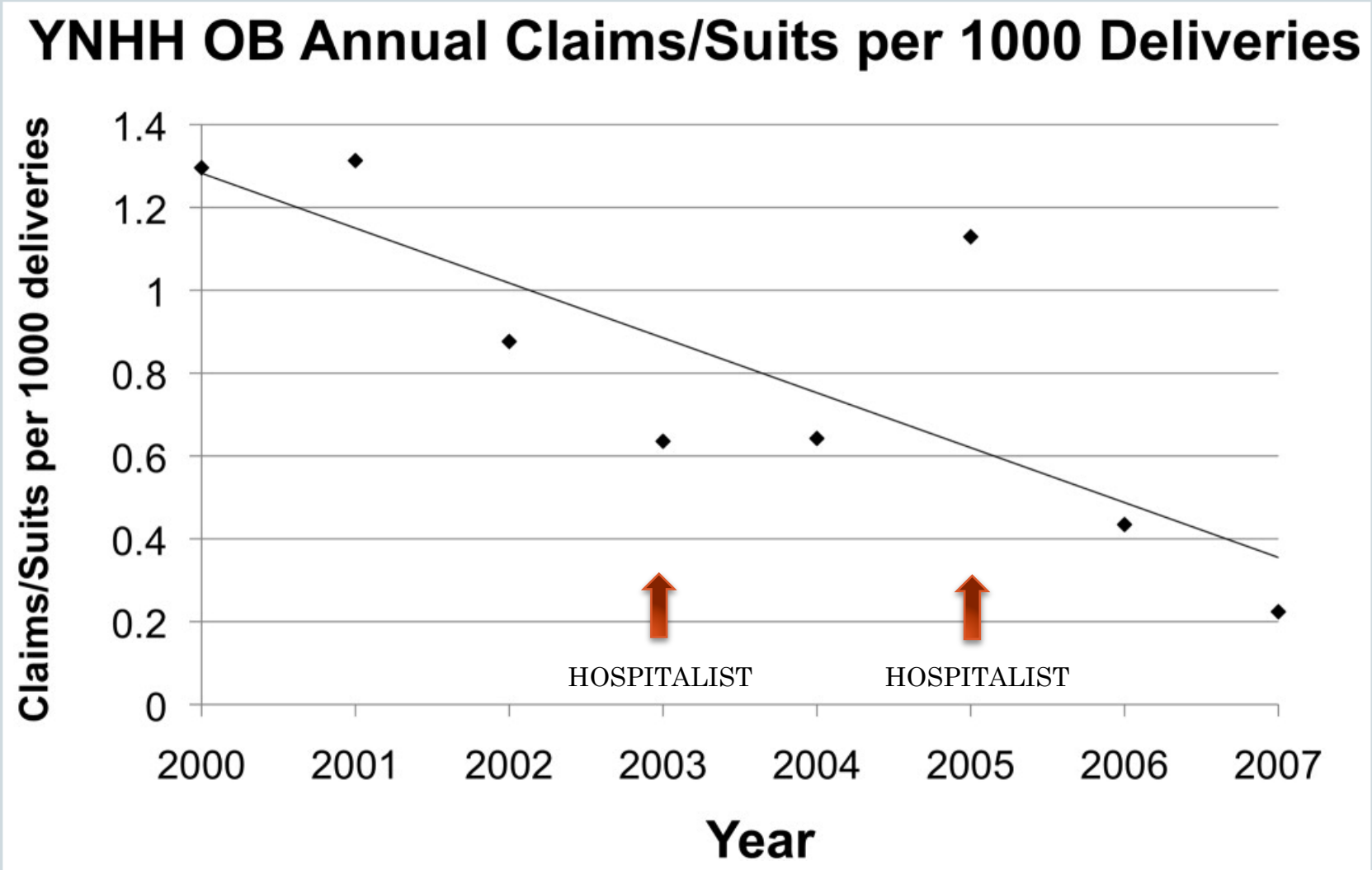
HOSPITALIST

FEBRUARY 2011, GRUENBAUM, ET AL
EFFECT OF A COMPREHENSIVE OBSTETRIC PATIENT SAFETY PROGRAM ON COMPENSATION PAYMENTS 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, Pettker, et al (SMFM abstract)



JANUARY 2011, PETTKER, ET AL (SMFM ABSTRACT)

Source: American Journal of Obstetrics & Gynecology 2011; 204:S218-S219 (DOI:10.1016/j.ajog.2010.10.565)

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

OB/GYN HOSPITALISTS AND RESIDENT EDUCATION

- 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)

BARBER, ET AL (DEC 2011)
TYPE OF ATTENDING OBSTETRICIAN CALL SCHEDULE AND CHANGES IN LABOR MANAGEMENT AND OUTCOME.

Staffing & Recruitment issues

- OB/GYN's are less satisfied with their careers compared to other specialties[1]
- Career satisfaction is negatively correlated with working more than 50 hours a week and an uncontrollable schedule[1]
- Why aren't new med school grads choosing OB/GYN?
  - Single most important factor is work-life balance[2]
- Practicing OB/GYN's who do not do deliveries work fewer hours and have higher career satisfaction[3]

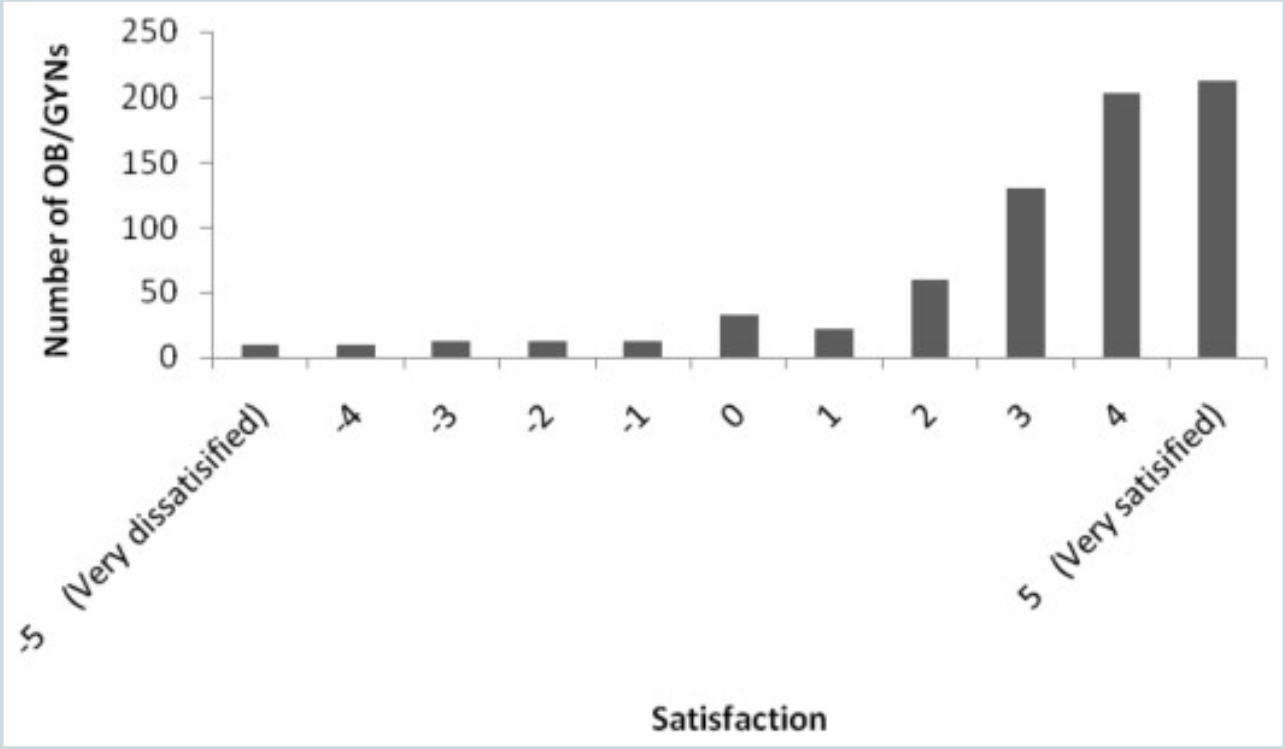
1 – Leigh, et al (2009), 2 – Goldacre (2012), 3 – Bettles (2004)

Staffing & Recruitment issues

- For OB/GYN's who still do deliveries, "on-call" time is what they perceive most negatively[3]. 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[4]
  - Control over work schedule
  - Control over # of hours worked
- Why are more OB/GYN grads sub-specializing?[5]
  - Reduced workload

3 – BETTLES (2004), 4 – KEETON (2007), 5 – FANG (2009)

OB/GYN HOSPITALIST CAREER SATISFACTION



AUGUST 2010, FUNK, ET AL

SURVEY OF OB/GYN HOSPITALIST AND LABORISTS

OB/GYN HOSPITALIST CAREER SATISFACTION

	Very Satisfied	Mostly Satisfied	Satisfied	Somewhat Satisfied	Very Dissatisfied
Career	**53%**	**27%**	17%	3%	0%
Variety of Work	**38%**	**26%**	21%	15%	0%
Management	**19%**	**43%**	18%	15%	5%
Recognition of work/ contribution	**27%**	**34%**	19%	15%	5%
Professional relationships	**47%**	**26%**	22%	4%	1%
Pay	**28%**	**41%**	23%	8%	0%
Benefits	**38%**	**36%**	18%	7%	1%