The Distinct Dangers Of Anesthesia: How To Avoid The Possibility Of Catastrophic Injury, Notable Cases And Decisions, And Looking Towards The Future

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Objectives

1. Trends in Anesthesia Claims, Losses & Regulatory Compliance
2. Clinical Focus on Four Anesthesia Target Areas
3. The Cost of Adverse Events
4. Future Forecast: Anesthesia Technology & Risk

1. Trends In Anesthesia Claims, Losses & Regulatory Compliance

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Severity of Claims by Cause of Loss: Top 10

Rank	Cause of Loss	Average Claim Size (Unlimited)
1	Birth Related Error	$537,000
2	Anesthesiology Error	$296,000
3	Airway/Respiratory Complication	$215,000
4	Delay in Treatment	$204,000
5	Failure to Diagnose/Misdiagnosis	$172,000
6	Failure to Monitor	$168,000
7	Medication Error	$168,000
8	Pressure Ulcer	$148,000
9	Premature Discharge	$145,000
10	Performance Error	$143,000

Source: Aon/ASHRM Hospital & Physician Professional Liability, Benchmark Analysis, October 2015

Recent Anesthesia Cases

Intra-Op & Post-Op

$7M Settlement (Cal., Dec. 2014)

- 31 yof, L&D of fourth child, normal delivery
- During tubal ligation that followed suffered cardiac arrest, anoxia, irreversible brain damage

Significant Factors

- Pt. presented with flu-like symptoms, noted by RN but not relayed to OB
- During TL, OB & anesthesiologist disagreed on how to proceed, at which time pt coded
- Code Blue button in OR suite was broken ⟶ delay

Allegations

- Inadequate pre-op work-up
- Breakdown in communications
- Failure to maintain equipment

Intra-Op & Post-Op

$900K Settlement (Mass., Aug. 2015)

- Death of 39 yof during uterine fibroid surgery; general anesthesia
- Intra-Op: BP↓ (x45 min); HR↓ (x15 min)
- Irreversible coma; died 6 days later
- h/o HTN, diabetes, obesity

Allegations

- Medical errors: Excessive morphine and bupivacaine via epidural catheter prior to induction
- Medical errors: Insufficient pressors during resuscitation
- Medical errors: Intra-op meds caused bradycardia

Intra-Op & Post-Op

$12.1M Verdict (Oregon, Sept. 2015)

- 51 yom suffered anoxic brain injury from Amiodarone overdose during cardiac surgery
- Pt coming off by-pass; developed V-fib
- Surgeon ordered Lidocaine, electroshock & 150 mg Amiodarone IV
- Anesthesiologist gave 2700 mg Amiodarone (3-18 ml bottles)

Contributing Factors

- Pt off by-pass when overdose occurred
- Hospital stocked multi-dose vials of Amiodarone in cardiac OR (18 ml. bottles, rather than 3 ml. single-use vials)

Intra-Op & Post-Op

$3.9M Verdict (NJ, Dec. 2014)

- Death of 52 yof from anoxic ischemic encephalopathy, sepsis & pneumonia after cardiac arrest during right knee arthroscopy
- Spinal anesthesia
- Post-spinal BP↓, HR↓
- Failure to monitor, anticipate, and respond; protect airway; prevent aspiration; give epi

Intra-Op & Post-Op

$18.1M Settlement (Westchester, NY)

- 19 yo suffered severe brain damage undergoing upper endoscopy under MAC
- Post-procedure, unable to reverse anesthetics
- Pt developed bradycardia; did not reintubate; 9 min. delay calling code; 16 min. w/out adequate O_2
- Dept. of Health violations in intra-op anesthesia record

Intra-Op & Post-Op

$921K Verdict (Texas, June 2015)

- Death of 57 yom after cervical discectomy and fusion
- In RR, developed resp. distress and inspiratory stridor
- Tx'd and transfer to ICU ⟶
- PEA arrest, unsuccessful re-intubation, failure to recognize developing hematoma and airway compromise, swollen uvula, bleeding from surgical site

Pain Management

$21M Verdict (Georgia, Jan. 2015)

- Death of female of anoxic brain injury 6 yrs. following transforaminal epidural steroid injection in ASC
- Pt. prone; heavily sedated; difficulty w/airway; O_2 sats↓; BP↓
- Did Not: Turn pt. supine, attempt to intubate or call 911
- Post-procedure: Pt. unarousable; to Hosp. with severe anoxic encephalopathy

Breach of Confidentiality

$500K Verdict (Va., June 2015)

- Entire intra-op conversation inadvertently recorded on patient's iPhone: false, disparaging remarks about anatomy, unfounded dx of syphilis, admission of altering medical record with fake dx
- Defamation, violation of Virginia Health Privacy Act, falsified medical record, punitive damages, unethical conduct

Improper Technique

$438K Verdict (S. Carolina, June 2015)

- Female sustained anemia and permanent nerve damage to right hand and arm when central venous catheter lacerated internal carotid artery
- Alleged failure to use U/S guidance, identify landmarks, use catheter of proper length

Improper Technique

$4.25M Verdict (Conn., May 2015)

- OB anesthesia
- 29 yof in labor suffered cystic lesion at T12-L1 when anesthesia needle contacted terminal spinal cord
- Residual pain, weakness, burning & numbness, post-epidural neuralgia, weakness and depression
- FACTOR: Anesthesiologist just finished 24 hr. shift

Sexual Assault

$950K Verdict (Oregon, April 2015)

- 45 yof reported sexual assault while under anesthesia for a blood patch procedure
- Investigation Revealed:
  - Numerous prior episodes not investigated or reported by Hospital for > 3 years
  - In all, 19 patients reported abuse, 1 employee reported rape while under anesthesia

Sexual Assault

- Defenses:
  - Women lying, hallucinating, under influence of anesthesia
  - SOL
  - Sexual assaults caused minimal harm and mental distress
  - Other life events caused alleged distress

Common Allegations in Anesthesia Cases

- Failure to establish/maintain a proper, timely airway
- Improper positioning (injury to arms, legs, neck, back)
- Lack of informed consent

Common Allegations in Anesthesia Cases (cont.)

- Misuse of equipment (ET tubes, cuffs, lines, alarm features, blocks)
- Failure to monitor changes in patient status, or failure to act on changes in patient status (pre-, intra-, post-op)
- Insufficient pain relief; “awareness” during surgery

Anesthesia Compliance Concerns

1. Pain Management Clinics
2. New in 2015: Pain Management Billing Codes
   - New replacement codes (e.g., kyphoplasty, vertebroplasty)
   - Use of moderate sedation
   - Use of modifiers (unilateral, bilateral)
   - "All imaging guidance" included; no separate billing allowed

Anesthesia Compliance Concerns

3. Lab Utilization & Referral Kickbacks

Anesthesia Compliance Concerns

4. OIG audits for proper coding in Part B claims
   - "Personally provided anesthesia services" (the "AA" modifier) pays 2x higher than anesthesia provided by non-physicians ("QK" modifier)
   - Documentation must support coding

Anesthesia Compliance Concerns

5. Potential Red Flags
   - Providing routine MAC for minor procedures
   - Routine use & billing for ultrasound
   - Billing when the anesthesia is for procedures not “reasonable and necessary”

(See OIG Work Plan – FY 2016)

Anesthesia Compliance Concerns

6. OIG Compliance Guidance: "Medicare Payments for Facet Joint Injection Services" (Sept. 2008)

   - "Sixty-three percent of facet joint injection services allowed by Medicare in 2006 did not meet Medicare program requirements, resulting in approximately $96 million in improper payments."

   - "Facet joint injection services provided in an office were more likely to have an error than those provided in an ambulatory surgical center or hospital outpatient department."

   - "Eight percent of facet joint injection services had a medical necessity error: Medicare allowed approximately $17 million to physicians for facet joint injection services that medical reviewers determined were medically unnecessary."

"Lessons Learned" and Risk Management

- Use proper technique (for intubations, blocks)
- Proper charting and record keeping: detail is important: correct times, people, sequence of events, dosages, drugs, etc.
- Review the chart; no gaps in charting
- Know pending lab and test results

"Lessons Learned" and Risk Management (cont.)

- Proper, attentive monitoring (don't silence the alarms)
- Proper supervision and delegation
- Adequate staffing (be especially attentive at hand-offs)

"Lessons Learned" and Risk Management (cont.)

- Obtain and document informed consent; include spouse
- Manage patient's (and family's) expectations
- Give appropriate discharge care and instructions
- Effective protocols for follow-up care
- Guard against careless conversations

"Lessons Learned" and Risk Management (cont.)

- Be cautious about case reports and presentations
- Know and follow ASA Standards/Practice Guidelines

"Lessons Learned" and Risk Management (cont.)

- Monitor practice/hospital Website for accurate and balanced content
- Quality Initiatives (Leapfrog, "100K Lives") are evidence of the standard of care

Anesthesia Risk Management in Labor and Delivery Cases

- Informed consent
- Technical performance
- Indications for general v. spinal, in an emergency
- Chart the details
- Availability of staff and equipment in an emergency

When an Adverse Incident Does Occur

- Assure optimal medical care
- Obtain consultations, perform tests, if appropriate
- Document facts in chart (don't created private notes/files unless directed to do so by counsel)
- Documentation must be accurate and complete: times, sequence of events

When an Adverse Incident Does Occur (cont.)

- Do not alter or rewrite records
- Avoid accusations or admissions of guilt
- Communicate with patient and family (Apology & Candor statutes)
  - Designate spokesperson
  - Know the facts
  - Don’t speculate about the roles/decision-making of others
  - It’s okay to say “I don’t know, but I’ll find out”

2. Clinical Focus On Four Anesthesia Target Areas

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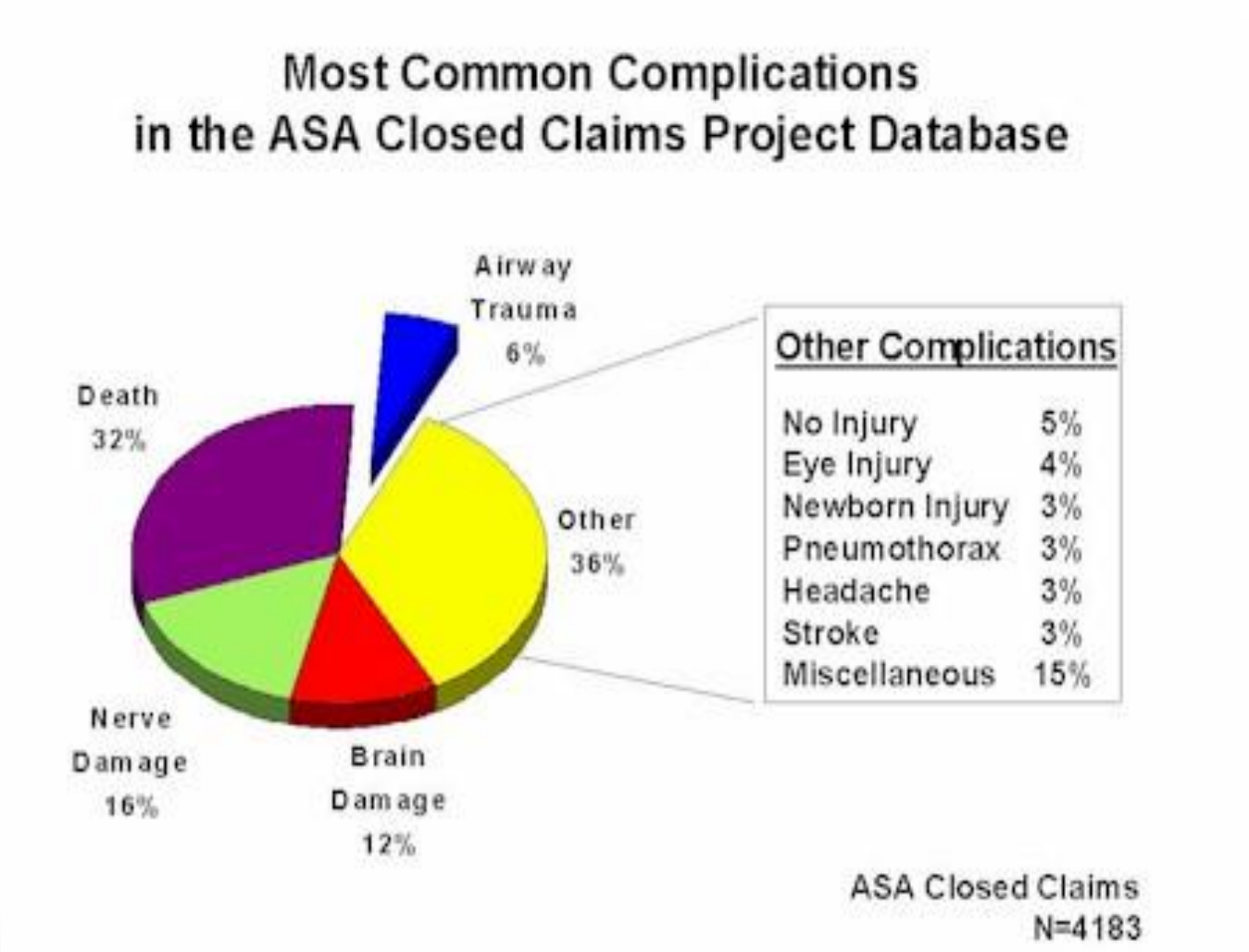
ASA Closed Claims Database



Kressin KA: Burn Injury in the Operating Room: A Closed Claims Analysis. *ASA Newsletter* 68(6): 9-11, 2004

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Failure to Rescue

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A complimentary publication of
The Joint Commission

Issue 49, August 8, 2012

Safe use of opioids in hospitals

Vulnerable Patients

- Obesity
- Respiratory disease
- Advanced age
- Concomitant use of other opioids & sedatives
- Obstructive sleep apnea
- Postoperative patients

Why Are Postoperative Patients Vulnerable?

- Mandatory supine position
- Exposure to opioids, benzodiazepines and other anesthetic agents
- Fatigue
- Circadian rhythms

SPECIAL ARTICLES

Anesthesiology 2006; 104:1081–93

Practice Guidelines for the Perioperative Management of Patients with Obstructive Sleep Apnea

A Report by the American Society of Anesthesiologists Task Force on Perioperative Management of Patients with Obstructive Sleep Apnea

ASA Sleep Apnea Guidelines

- First published in 2006, updated in 2014 with no changes
- Centrally monitored pulse oximetry recommended for *some* patients
- Includes ***unvalidated*** risk stratification assessment

- Hospitalized patients who are at increased risk of respiratory compromise from OSA should have continuous pulse oximetry monitoring after discharge from the recovery room.
  - Continuous monitoring may be provided in a critical care or stepdown unit, by telemetry on a hospital ward, or by a dedicated, appropriately trained professional observer in the patient's room.
  - Continuous monitoring should be maintained as long as patients remain at increased risk.§§§

The Official Journal of the Anesthesia Patient Safety Foundation

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NEWSLETTER

Volume 26, No. 2 Circulation 94,429 Fall 2011

In this issue:

—Featured Article—

"No Patient Shall Be Harmed By Opioid-Induced Respiratory Depression"

Matthew B. Weinger, MD, and Lorri A. Lee, MD,
for the Anesthesia Patient Safety Foundation

The APSF believes that clinically significant, drug-induced respiratory depression in the postoperative period remains a serious patient safety risk that continues to be associated with significant morbidity and mortality since it was first addressed by the APSF in 2006.1 The APSF envisions that "no patient shall be harmed by opioid-induced respiratory depression in the postoperative period," and convened the second multidisciplinary conference on this serious patient safety issue in June of this year in Phoenix, AZ, with 136 stakeholders in attendance. The conference addressed "Essential Monitoring Strategies to Detect Clinically Significant Drug-Induced Respiratory Depression in the Postoperative Period.". .[more]

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Airway Injuries

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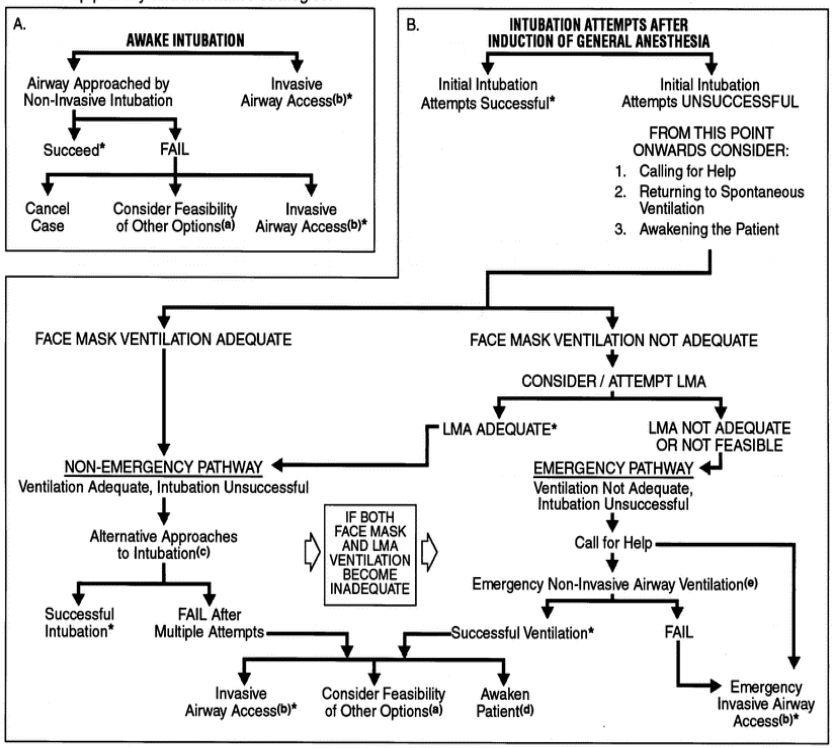
DIFFICULT AIRWAY ALGORITHM

1. Assess the likelihood and clinical impact of basic management problems:
   - A. Difficult Ventilation
   - B. Difficult Intubation
   - C. Difficulty with Patient Cooperation or Consent
   - D. Difficult Tracheostomy
2. Actively pursue opportunities to deliver supplemental oxygen throughout the process of difficult airway management
3. Consider the relative merits and feasibility of basic management choices:

A.	Awake Intubation	-vs-	Intubation Attempts After Induction of General Anesthesia
B.	Non-Invasive Technique for Initial Approach to Intubation	-vs-	Invasive Technique for Initial Approach to Intubation
C.	Preservation of Spontaneous Ventilation	-vs-	Ablation of Spontaneous Ventilation

4. Develop primary and alternative strategies:



*** Confirm ventilation, tracheal intubation, or LMA placement with exhaled CO_2**

a. Other options include (but are not limited to): surgery utilizing face mask or LMA anesthesia, local anesthesia infiltration or regional nerve blockade. Pursuit of these options usually implies that mask ventilation will not be problematic. Therefore, these options may be of limited value if this step in the algorithm has been reached via the Emergency Pathway.

b. Invasive airway access includes surgical or percutaneous tracheostomy or cricothyrotomy.

c. Alternative non-invasive approaches to difficult intubation include (but are not limited to): use of different laryngoscope blades, LMA as an intubation conduit (with or without fiberoptic guidance), fiberoptic intubation, intubating stylet or tube changer, light wand, retrograde intubation, and blind oral or nasal intubation.

d. Consider re-preparation of the patient for awake intubation or canceling surgery.

e. Options for emergency non-invasive airway ventilation include (but are not limited to): rigid bronchoscope, esophageal-tracheal combitube ventilation, or transtracheal jet ventilation.

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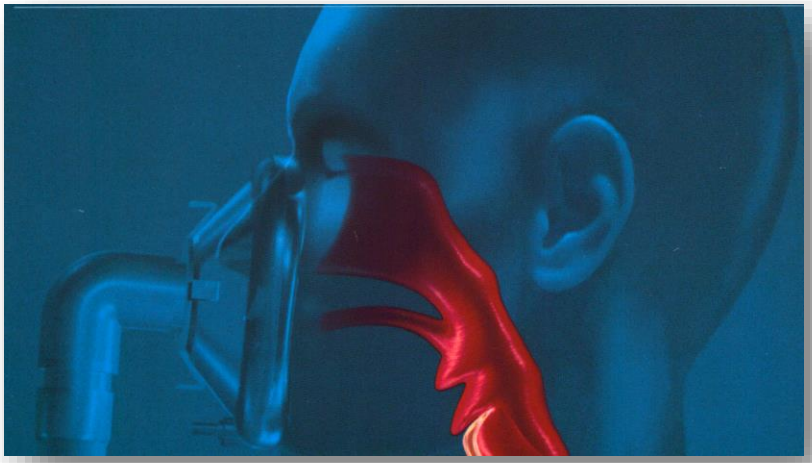
Difficult Airway Injuries: 1985-1999



- 179 claims
- ASA Algorithm introduced 1993
- Pre and post Algorithm case comparison

Peterson, Gene N. M.D., et al. Management of the Difficult Airway: A Closed Claims Analysis. Anesthesiology:Volume 103(1)July 2005pp 33-39.

Impact of ASA Algorithm on Claims

- No change in incidence of lawsuits
- 86 claims 1985-1992
- 93 claims 1992-1999
- Decreased incidence of death & brain damage during *induction*

Timing of Airway Difficulties

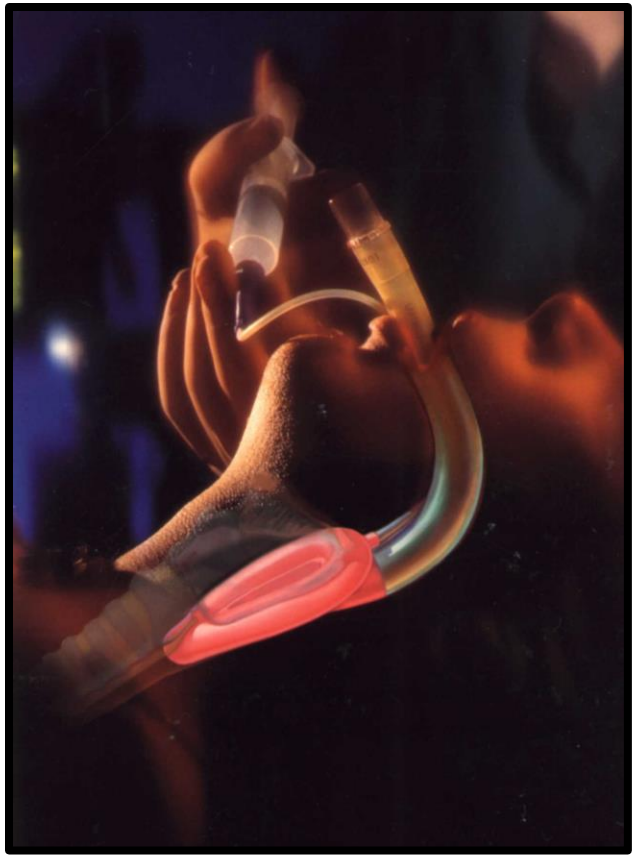
- Induction 67%
- During surgery 15%
- Extubation 12%
- Recovery 5%

Risk factors For Death & Brain Injury

- Difficult mask ventilation
- Airway emergency post induction
- Occurrence outside the O.R.
- Persistent unsuccessful intubation attempts

Study Limitations

- No Denominator Data
- Pre LMA
- Pre GlideScope



Monitored Anesthesia Care

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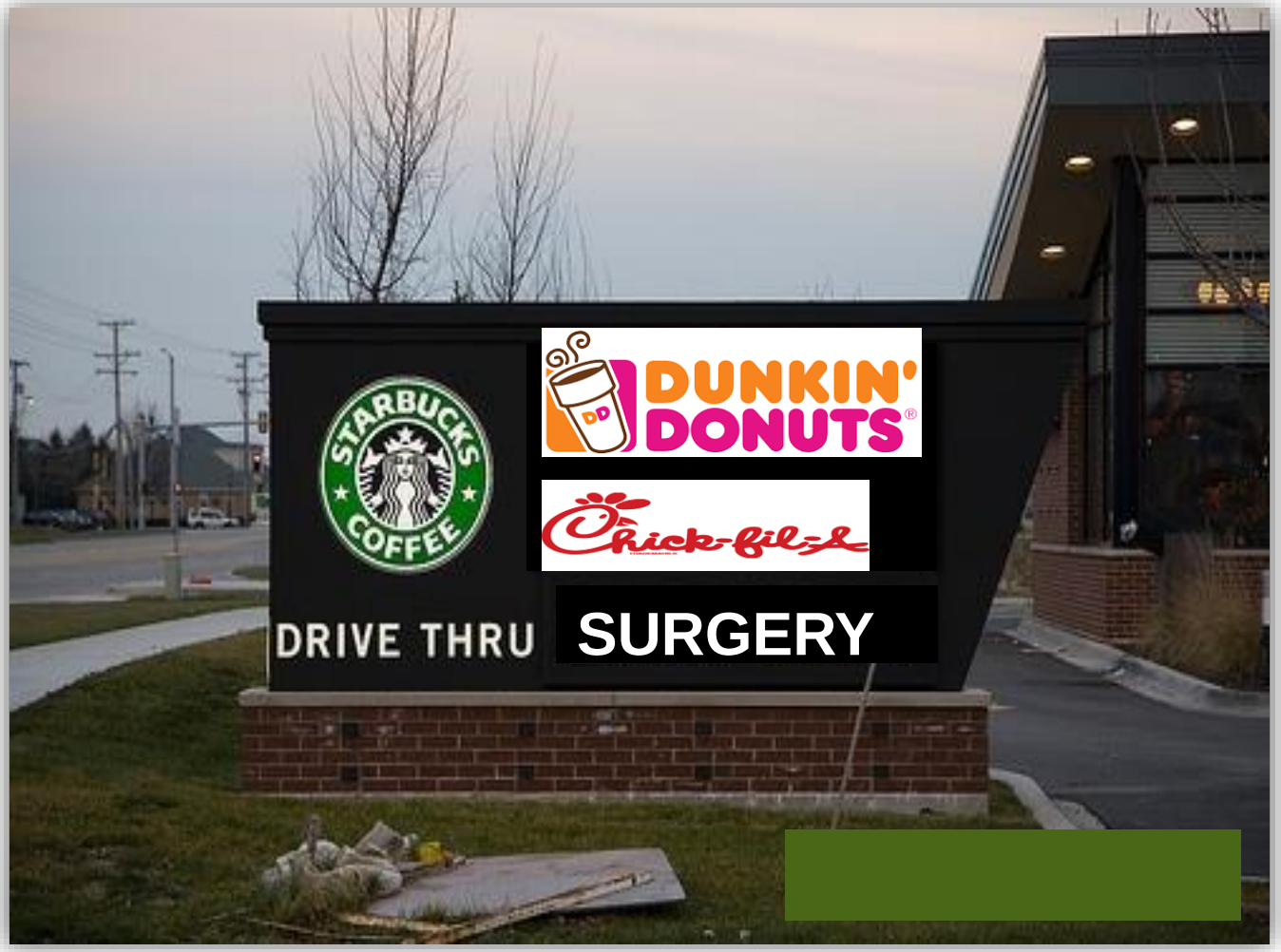
MAC and Malpractice Claims

- Closed Claims Project analyzed 121 claims since 1990
- Patients were older and sicker (eye and plastic surgery)
- 40% of claims involved death or brain damage
- 17% involved burns

Causes of Injury with MAC

- Respiratory (oversedation)
- Inadequate monitoring
- Cardiovascular
- Intravenous catheter complication
- Equipment
- Patient movement
- Medication error
- Allergy

Ambulatory & Office Based Anesthesia



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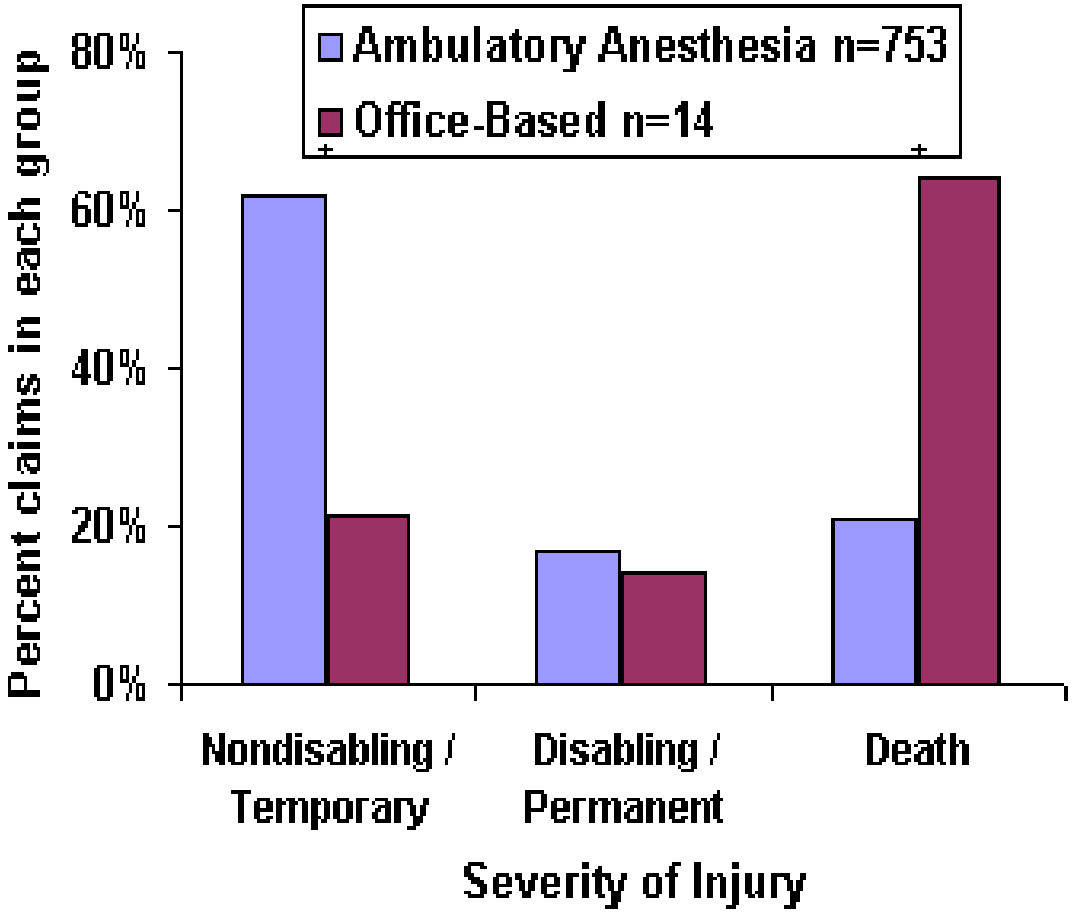
Ambulatory vs. Office Based Anesthesia

Severity of Injury in Ambulatory Anesthesia vs. Office-Based Claims



* p ≤ 0.01 Ambulatory vs. Office-Based

ASA Closed Claims N=5,480

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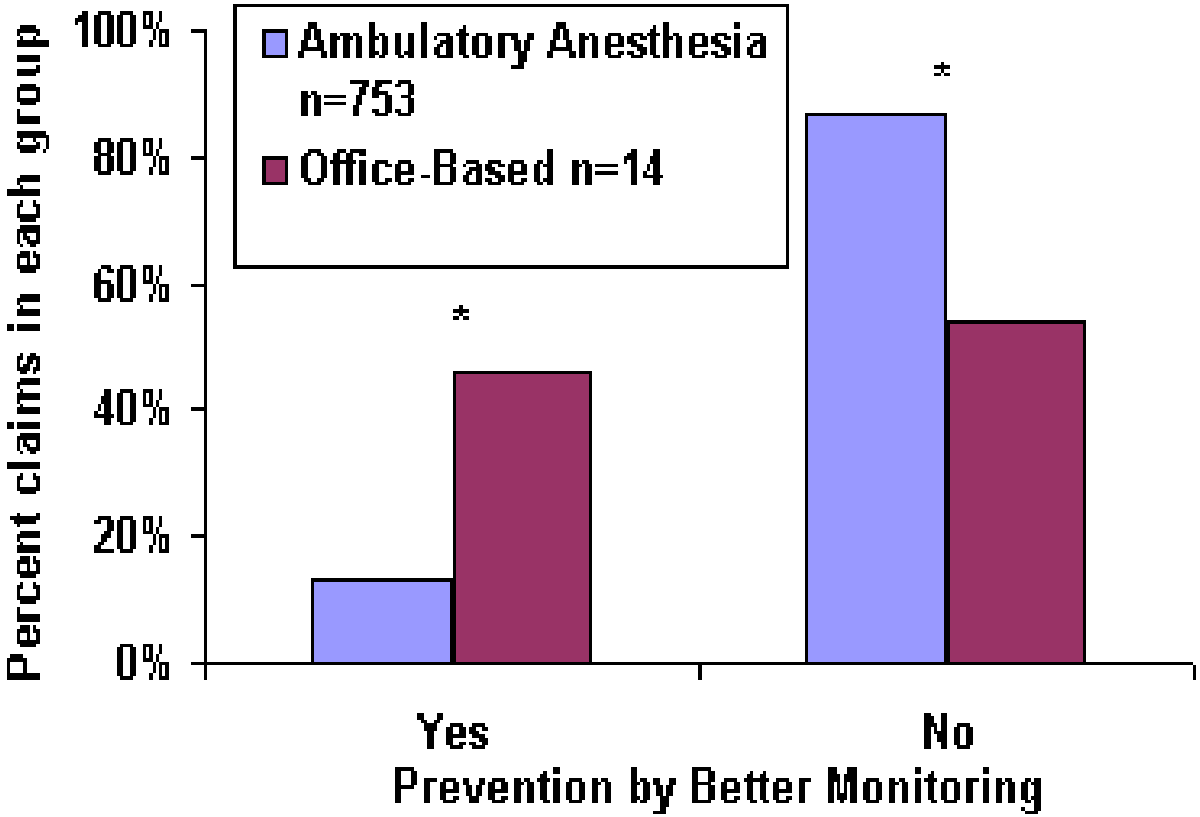
Domino, KB: Office-Based Anesthesia: Lessons Learned from the Closed Claims Project. *ASA Newsletter* 65(6): 9-11, 15, 2001.

Ambulatory vs. Office Based Anesthesia

Impact of Monitoring



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Obstetric Anesthesia

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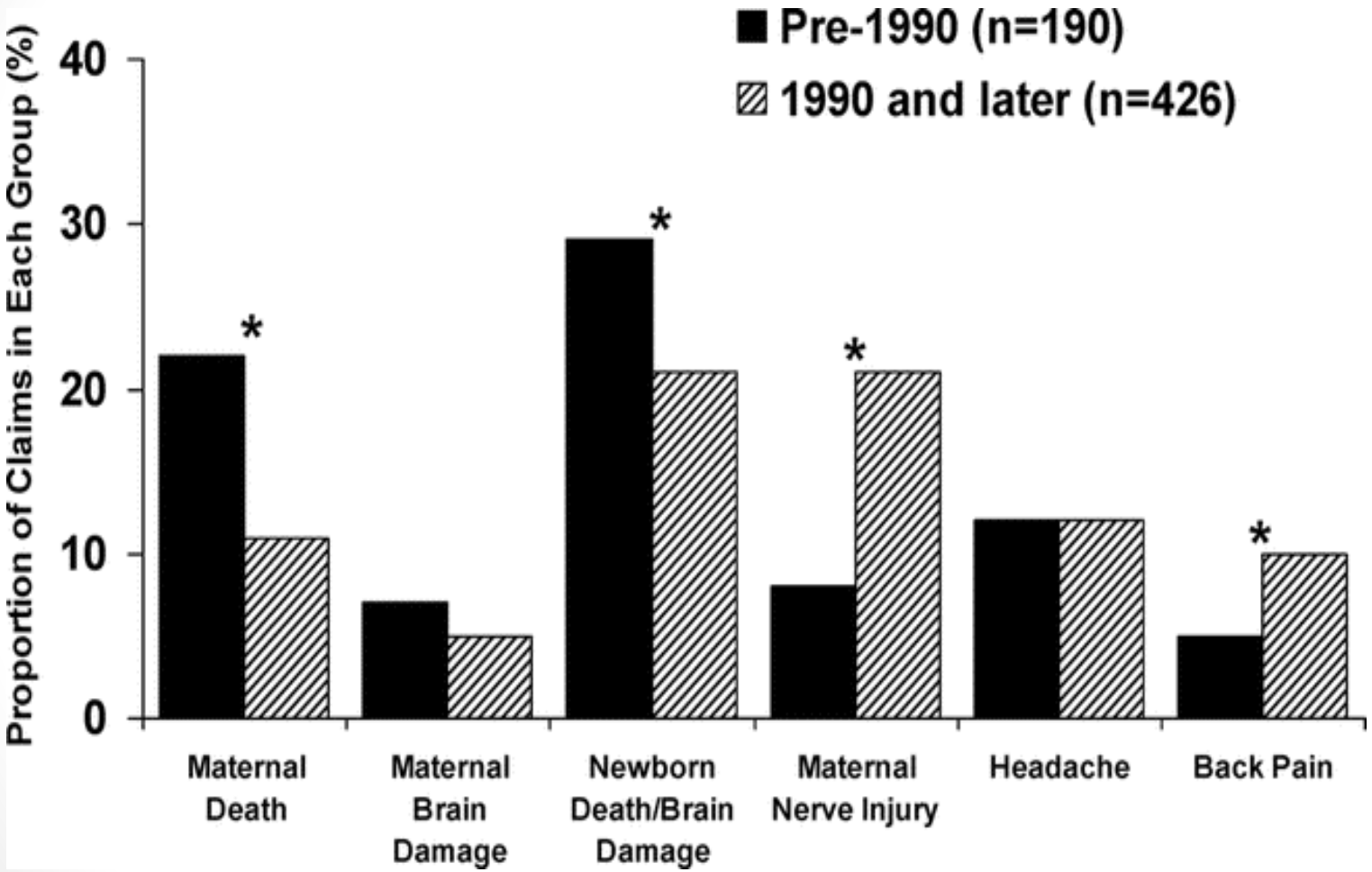
Changing Patterns in Liability



Davies: Anesthesiology, Volume 110(1).January 2009.131-13

Table 2. Factors in Newborn Death/Permanent Brain Damage (n = 91) 1990 or Later

Factor	n	%
Nonreassuring fetal heart tracing*	65	71%
Urgent/emergency Cesarean section*	65	71%
Possible anesthesia contribution	20	22%
Maternal coexisting conditions	14	15%
Umbilical cord problems	11	12%
Uterine rupture†	8	9%
Abnormal placenta	8	9%
Chorioamnionitis or maternal fever	7	8%
Fetal congenital abnormality	7	8%
Meconium aspiration	6	7%
Breech presentation	6	7%
Less than 34 wk gestation	4	4%

* Fifty-five cases (60%) included both factors. † Six of eight associated with attempted vaginal birth after Cesarean section (VBAC).

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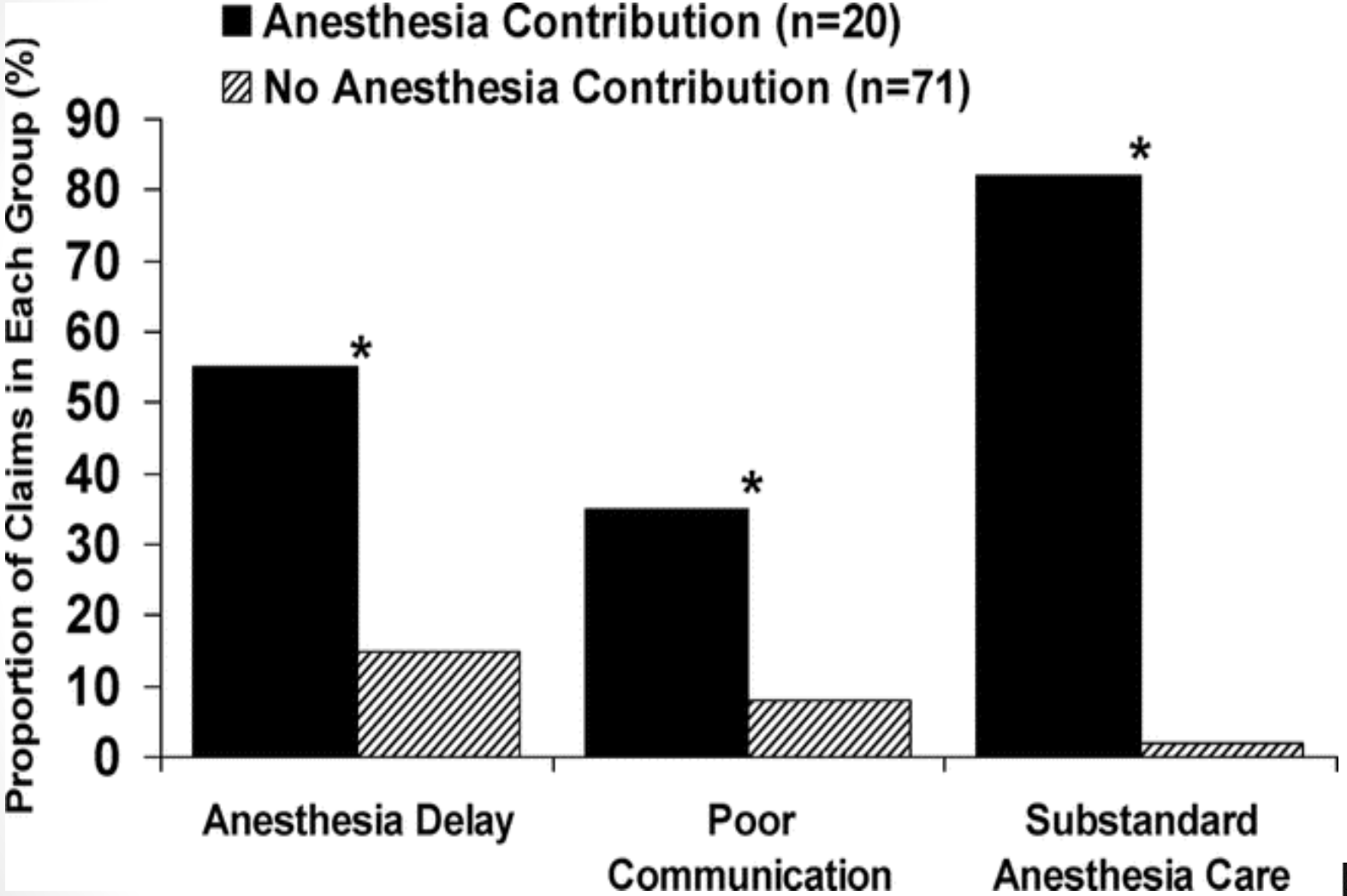
Davies: Anesthesiology, Volume 110(1).January 2009.131-13

Newborn Death & Brain Damage



Davies: Anesthesiology, Volume 110(1).January 2009.131-13

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Maternal Death & Brain Damage

Table 5. Causes of Maternal Death/Permanent Brain Damage (n = 69) 1990 or Later

	Overall (n = 69), %	General Anesthesia (n = 28), %	Regional Anesthesia (n = 41), %
High neuraxial block	15 (22)	0 (0)	15 (37)
Maternal hemorrhage	11 (16)	8 (29)	3 (7)
Embolic events	8 (12)	2 (7)	6 (15)
Difficult intubation	7 (10)	7 (25)	0 (0)
Preeclampsia/HELLP syndrome	5 (7)	3 (11)	2 (5)
Medication	5 (7)	0 (0)	5 (12)
Inadequate oxygenation/ventilation	3 (4)	1 (4)	2 (5)
Aspiration of gastric contents	2 (3)	1 (4)	1 (2)
Neuraxial cardiac arrest	2 (3)	0 (0)	2 (5)
Hypertensive intracranial hemorrhage	2 (3)	1 (4)	1 (2)
Central venous catheter	1 (1)	1 (4)	0 (0)
Chorioamnionitis/ARDS	1 (1)	1 (4)	0 (0)
Airway obstruction	1 (1)	1 (4)	0 (0)
Other/unknown	6 (9)	2 (7)	4 (10)

Percentages do not sum to 100% due to rounding error.

ARDS = adult respiratory distress syndrome; HELLP = hemolysis, elevated liver enzymes, low platelet count.

3. The Cost of Adverse Events

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Is Your Hospital Giving Away Money?

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Physician-Patient Alliance for Health & Safety

- Non-Profit dedicated to improving patient health and safety
- Advisory Board composed of prominent clinicians & healthcare safety advocates
- Focus on preventable patient harms
- Prescriptive and practical solutions to advance key patient health and safety initiatives that significantly impact patient lives

Dollars ≠ Patient Lives

Amanda Abbiehl

Matt Whitman

John LaChance

Leah Coufal

Robert Goode

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Promise to Amanda
A FOUNDATION FOCUSED ON MONITORING CO2
HOME
ABOUT AMANDA
WHY MONITOR PCA?
LEARNING CENTERS
AMANDA'S FRIENDS
NEWS AND PATIENT STORIES
PATIENT STORY CENTRAL
Monitoring can save precious lives...
like that of Amanda.
LEARN MORE ABOUT PCA MONITORING >>

The Patient/Family Cost

18 year-old Amanda was admitted to a hospital on Thursday, July 15, 2010

She was dehydrated, had lost at least 10 pounds, and had a virus that was causing a great deal of pain in her mouth and throat.

Amanda Abbiehl

Amanda's tonsils and uvula were extremely swollen. She was not interested in eating; even drinking hurt.

To help manage her pain, Amanda was put on a patient controlled analgesia (PCA) pump.

The next morning Amanda was found unresponsive and died.

The Hospital Cost

American Society of Anesthesiologists

Closed Claims Analysis
Julia I. Metzner, MD, "Risks of Anesthesia at Remote Locations"

- database of 8,496 cases
- 87 remote location claims and 3,287 operating room claims
- remote location claims:
  - 32% GI suite
  - 25% cardiology catheterization/electrophysiology suite
  - remainder emergency room, radiology or lithotripsy suite

Julia I. Metzner, MD, "Risks of Anesthesia at Remote Locations"
http://www.asahq.org/resources/publications/newsletter-articles/2010/february2010/risks-of-anesthesia-at-remote-locations

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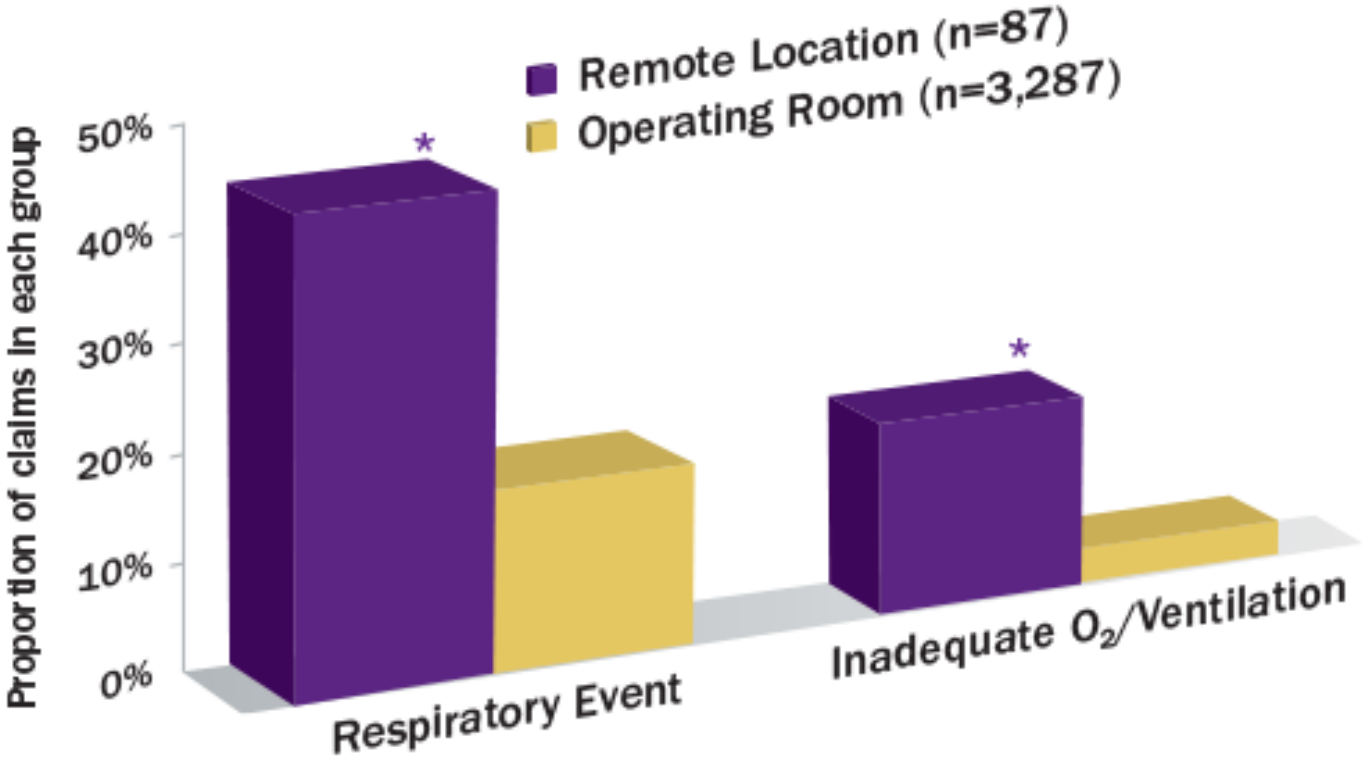
Where Adverse Events Occur



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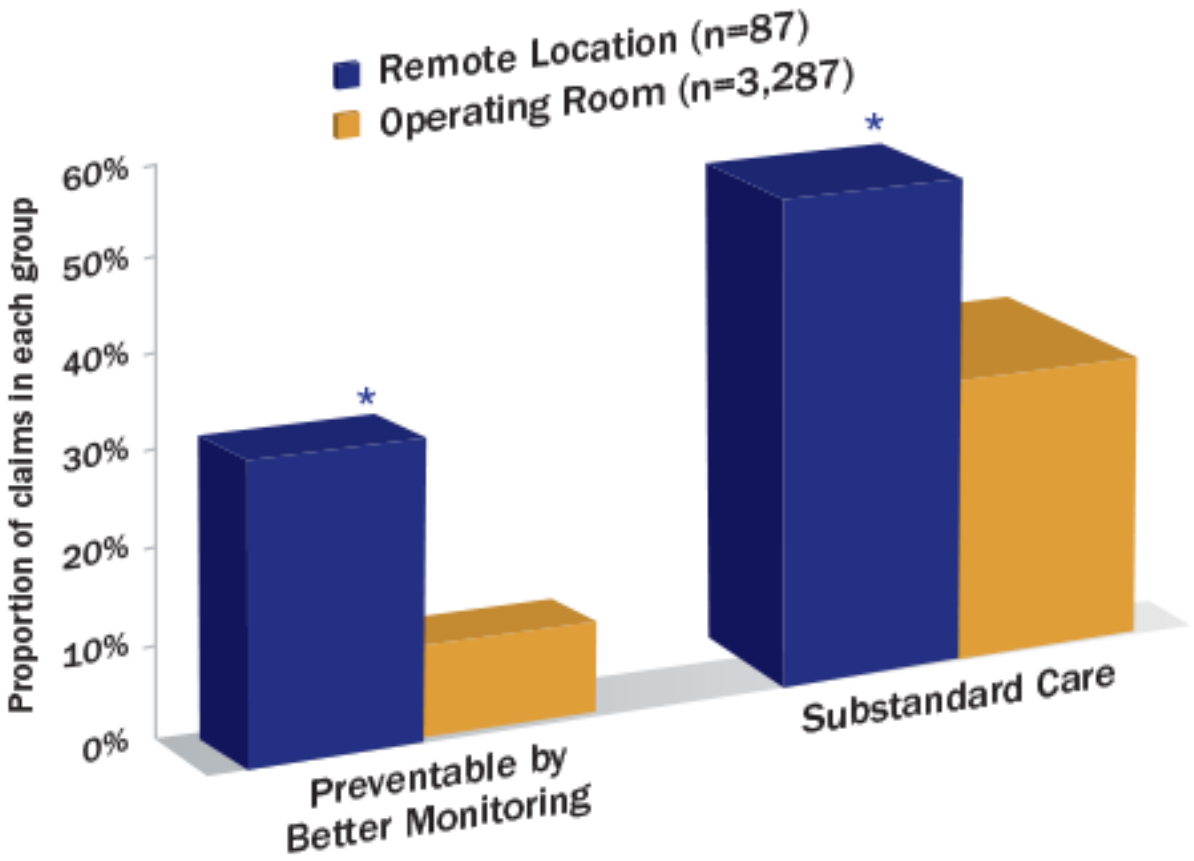
Cause of Adverse Event



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Median $ Losses

	Operating Room	Remote Locations (such as GI suite)
Median Payment	$210,000	$330,000

Julia I. Metzner, MD, “Risks of Anesthesia at Remote Locations”
http://www.asahq.org/resources/publications/newsletter-articles/2010/february2010/risks-of-anesthesia-at-remote-locations

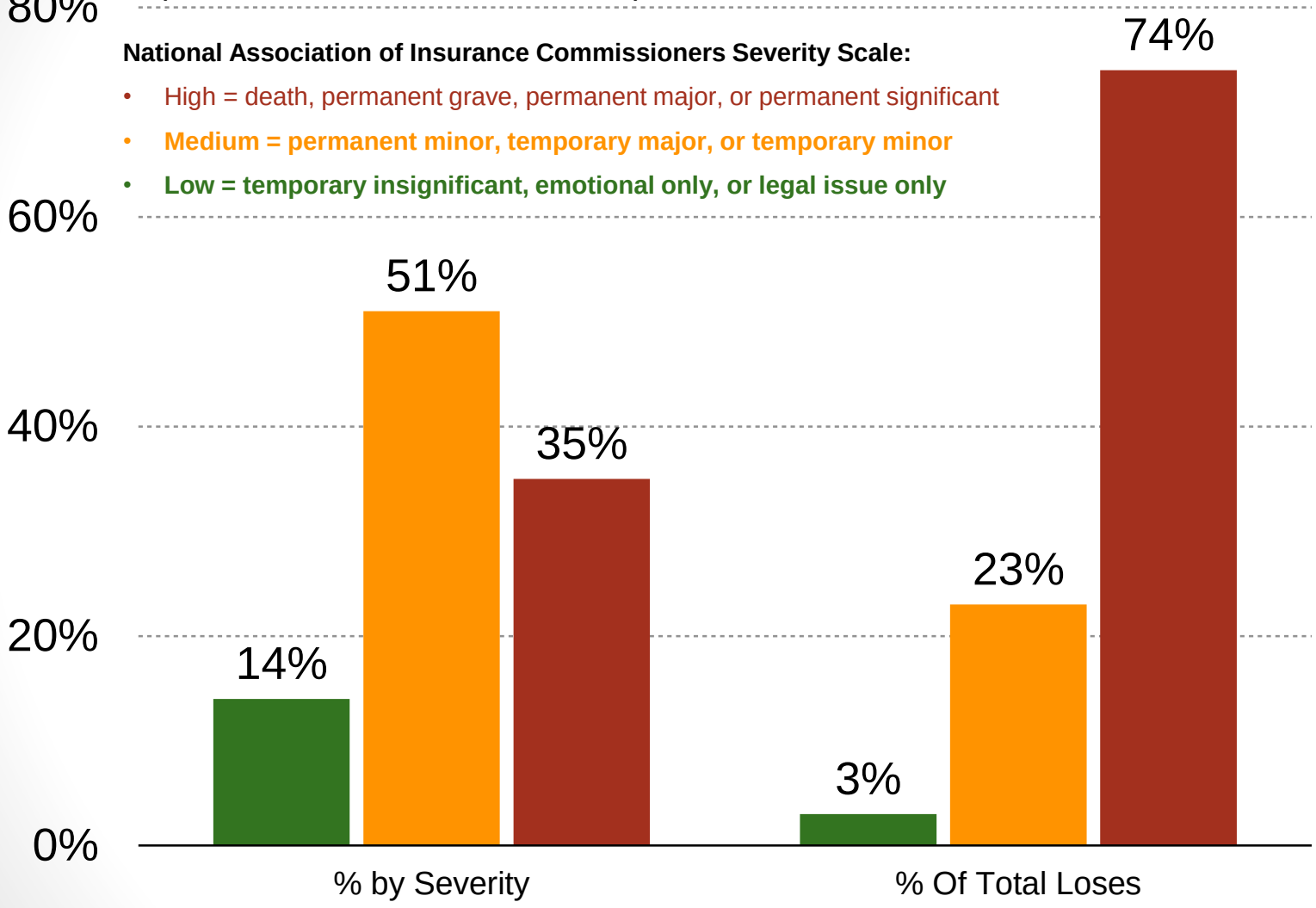
Cost of Adverse Events & Malpractice Claims

Crico Analysis

21,184 cases asserted 2009–2013, $3.6B total incurred losses

National Association of Insurance Commissioners Severity Scale:

- High = death, permanent grave, permanent major, or permanent significant
- **Medium = permanent minor, temporary major, or temporary minor**
- **Low = temporary insignificant, emotional only, or legal issue only**



Source: Crico (Risk Management Foundation of the Harvard Medical Institutions), "National Landscape"

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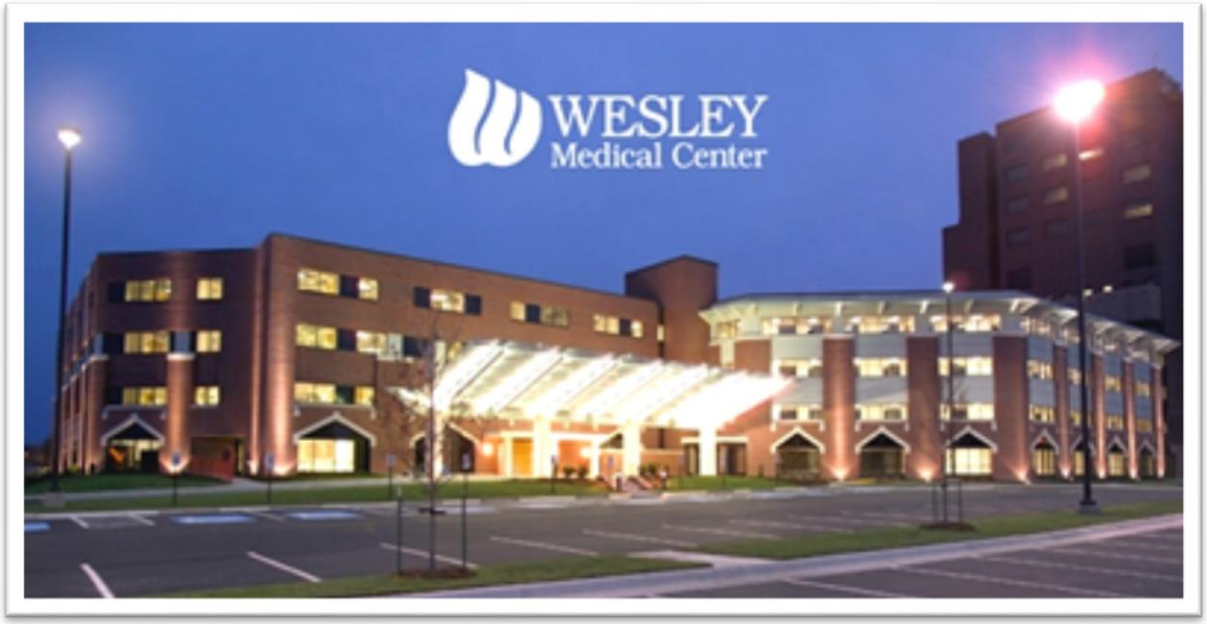
Cost $ Losses for 100 Claims

Severity of Event	% Event	Avg Cost Incurred	Cost Per 100 Claims
Low	14%	$38,775	$542,850
Medium	51%	$77,229	$3,938,679
High	35%	$380,606	$13,321,210
Total Cost Per 100 Claims			$17,802,739

Source: Crico (Risk Management Foundation of the Harvard Medical Institutions), "National Landscape"

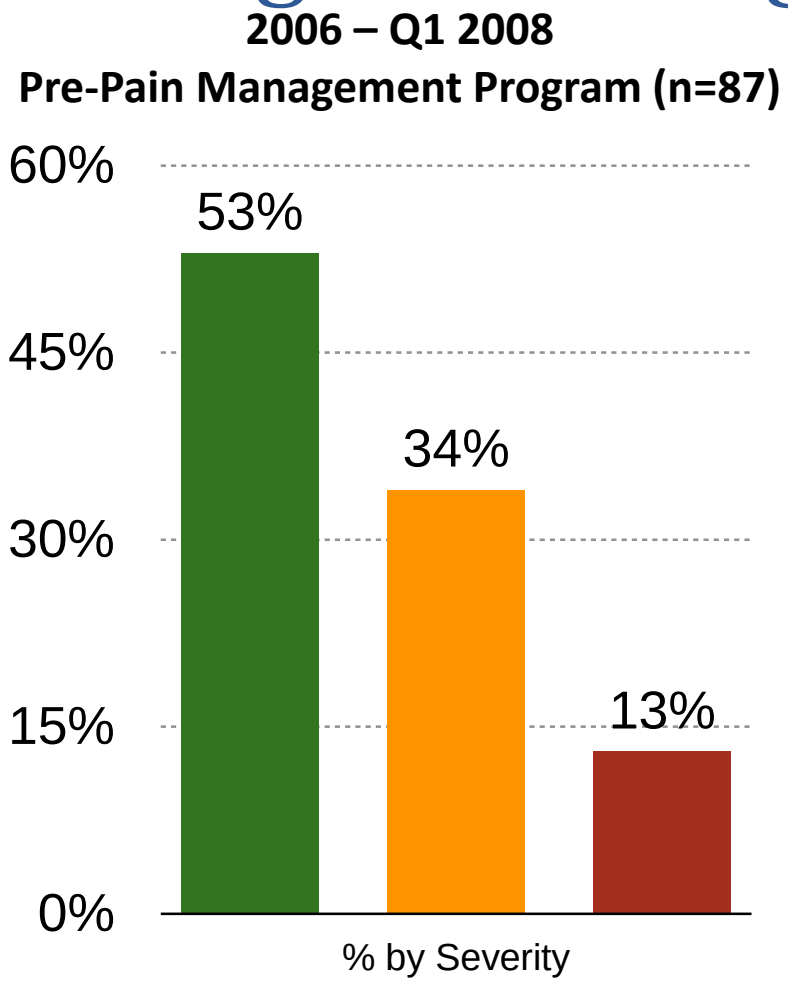
Reducing Adverse Events & Claims



Wesley Medical Center (Wichita, Kansas)
Acute-care center licensed for 760 beds and 102 bassinets

In 2010, Wesley Medical Center decided to develop a safe pain management program.

Pre-Pain Management Program



"Addressing The Joint Commission Opioid Warnings: A Case Study From Wesley Medical Center on Reducing Respiratory Depression and Improving Patient Safety"
http://www.beckershospitalreview.com/quality/addressing-the-joint-commission-opioid-warnings-a-case-study-from-wesley-medical-center-on-reducing-respiratory-depression-and-improving-patient-safety.html

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Pre-Pain Management Program: $ Losses

2006 – Q1 2008
Pre-Pain Management Program (n=87)
Cost of 100 Adverse Events

Before Intervention (Q1 2010)	% Event	Avg Cost Incurred (Crico Costs)	Cost Per 100 Claims
Low	53%	$38,775	$2,055,075
Medium	34%	$77,229	$2,625,786
High	13%	$380,606	$4,947,878
Before Intervention Cost Per 100 Claims			**$9,628,739**

Sentinel Event Alert #49

The Joint Commission
Sentinel Event Alert

Issue 49, August 8, 2012

While opioid use is generally safe for most patients, opioid analgesics may be associated with adverse effects, the most serious effect being ***respiratory depression****, which is generally* ***preceded by sedation*** *…*

In addition to monitoring respiration and sedation, pulse oximetry can be used to monitor oxygenation, and capnography can be used to monitor ventilation. ***Staff should be educated not to rely on pulse oximetry alone*** *because pulse oximetry can suggest adequate oxygen saturation in patients who are actively experiencing respiratory depression, especially when supplemental oxygen is being used –* ***thus the value of using capnography to monitor ventilation****. When pulse oximetry or capnography is used, it should be used* ***continuously rather than intermittently****.*

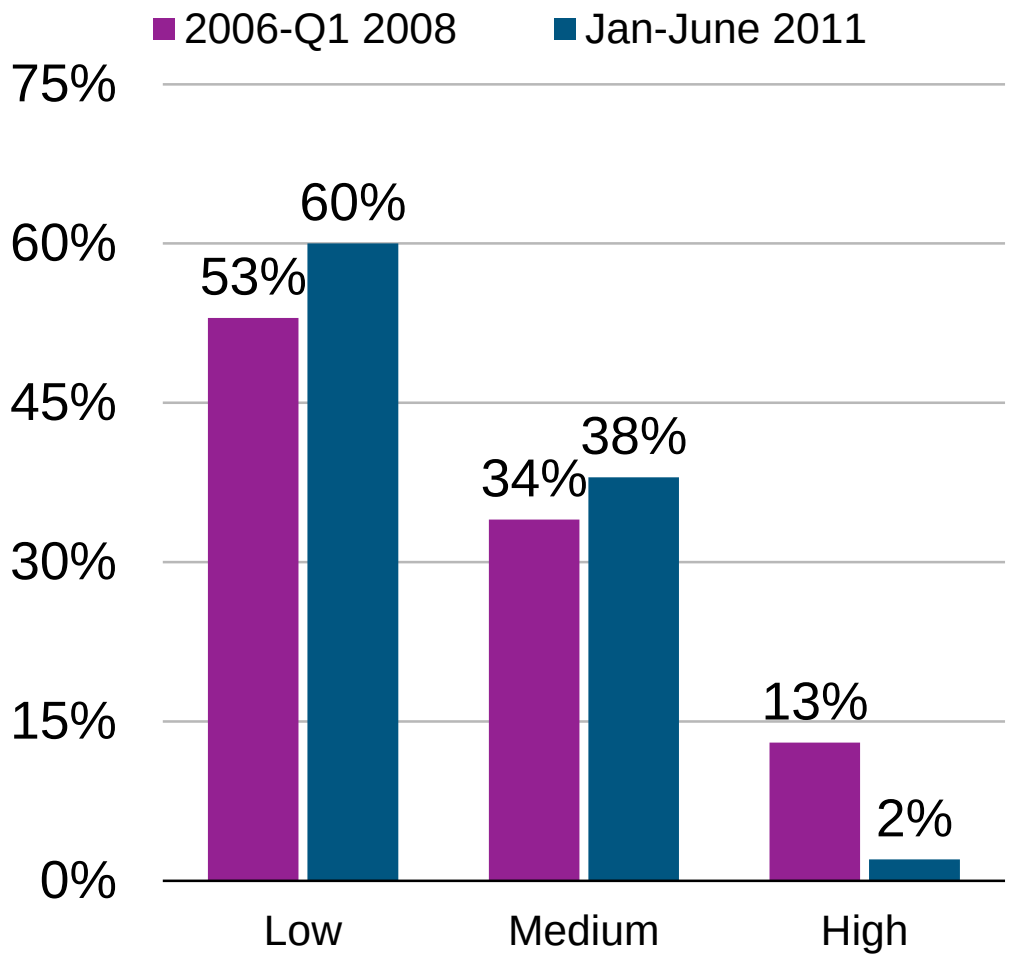
Emphasis added

http://www.jointcommission.org/assets/1/18/SEA_49_opioids_8_2_12_final.pdf

Opioid Safety

Opioid Safety, for patients receiving opioids in hospital and healthcare facilities, is the management and minimization of the risks of respiratory compromise, adverse events, and death through continuous **respiratory monitoring with pulse oximetry for oxygenation and with capnography for adequacy of ventilation.**

Shifting the Severity of Adverse Events



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Program Cost Savings

After Intervention (Oct 2010-April 2011)	% Event	Avg Cost Incurred (Crico Costs)	Cost Per 100 Claims
Low	59%	$38,775	$2,287,725
Medium	39%	$77,229	$3,011,931
High	2%	$380,606	$761,212
After Intervention Cost Per 100 Claims			$6,060,868
Before Intervention Cost Per 100 Claims			$9,628,739
Intervention Cost Savings			$3,567,871

How PPAHS Helps Hospitals

The Five Drivers of Risk:

1. Observing Protocol
2. Identifying High Risk Patients
3. Ensuring Documentation is Complete
4. Implementing Effective Hands-Off Communication
5. Proactively Disclosing Adverse Events with Patients/Families

Value of Observing Protocol

Value of Observing Protocols

Improving Patient Safety
Adherence to standards helps ensure safety, reliability and consistent care

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Adherence to standards helps ensure safety, reliability and consistent care

Observing Standard of Care
Observing best practice standards of care (those released from consensus work groups within professional organizations);
Confirmation that procedures have been done in accordance with most current practice standards of care and current accreditation standards.

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Improving Patient Safety
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Observing Standard of Care
Observing best practice standards of care (those released from consensus work groups within professional organizations);
Confirmation that procedures have been done in accordance with most current practice standards of care and current accreditation standards.

(two ways to meet standard)

Internal Standard
(evidence of sustained quality)

External Standard
(evidence of compliance)

Observing Protocol: PPAHS's PCA Safety Checklist

Ensure compliance with our own protocols developed with expert panels

PCA Safety Checklist — **Physician-Patient Alliance for Health & Safety**

Physician-Patient Alliance would like to thank the following healthcare professionals for their thoughts and input on this safety checklist:

Dr. Christian Apfel (UCSF)
Dr. James Berry (Vanderbilt)
Dr. Art Boudreaux (University of Alabama)
Dr. Brendan Carvalho (Stanford)
Dr. Adam Collins (UCSF)
Dr. Saundra Curry (Columbia)
Dr. Rick Dutton (Anesthesia Quality Institute)
Dr. Atul Gawande (Harvard)
Dr. Mike Hawkins (Cogent Healthcare)
Dr. Andrew Kofke (University of Pennsylvania)
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Dr. Peter Pronovost (JHU)
Dr. Dan Sessler (Cleveland Clinic)
Dr. John Williams (Society of Cardiovascular Anesthesiologists)

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Observing Protocol: PPAHS's PCA Safety Checklist

PCA Safety Checklist provides an easy to understand point of comparison to assess and make recommendations

PCA Safety Checklist

Physician-Patient Alliance for Health & Safety

PCA Pump Initiation, Refilling, or Programming Change

- ☐ Risk factors that increase risk of respiratory depression have been considered:
  - ○ obesity
  - ○ low body weight
  - ○ concomitant medications (opiates and non-opiates) that potentiate sedative effect of opiate PCA
  - ○ pre-existing conditions such as asthma, COPD, and sleep apnea
  - ○ advanced age
- ☐ Pre-procedural cognitive assessment has determined patient is capable of participating in pain management (note: pediatric patients may not be suitable for PCA)
- ☐ Patient has been provided with information on proper patient use of PCA pump (other recipients of information -- family/visitors) and purpose of monitoring
- ☐ Two healthcare providers have independently double-checked:
  - ○ patient's identification
  - ○ all patient allergies appear prominently on medication administration record (MAR)
  - ○ drug selection and concentration confirmed as that which was prescribed
  - ○ any necessary dose adjustments completed
  - ○ PCA pump settings
  - ○ line attachment to patient and tubing insertion into pump
- ☐ Patient is electronically monitored with both:
  - ○ pulse oximetry and
  - ○ capnography

PCA Pump Check at Shift Change and Every Hour Since Last Assessment (Recommended)

- ☐ Patient satisfactorily assessed for:
  - ○ level of pain
  - ○ alertness
  - ○ adequacy of ventilation
- ☐ PCA pump settings verified
- ☐ Electronic monitoring verified:
  - ○ pulse oximetry and
  - ○ capnography
- ☐ Patient assessment/condition has been added to flow sheet/ chart documenting PCA dosing and monitoring

THIS CHECKLIST IS NOT INTENDED TO BE COMPREHENSIVE. IT IS A SHORT-LIST OF RECOMMENDED STEPS TO MINIMIZE ADVERSE EVENTS AND MAXIMIZE PATIENT SAFETY AND HEALTH OUTCOMES.

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4. FORECAST OF EMERGING ISSUES/PRACTICES

THANK YOU!

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