

Disclosures

- Past support from Casmed
- Research support from Covidien

"Publicity is justly commended as a remedy for social and industrial diseases. Sunlight is said to be the best of disinfectants; electric light the most efficient policeman."

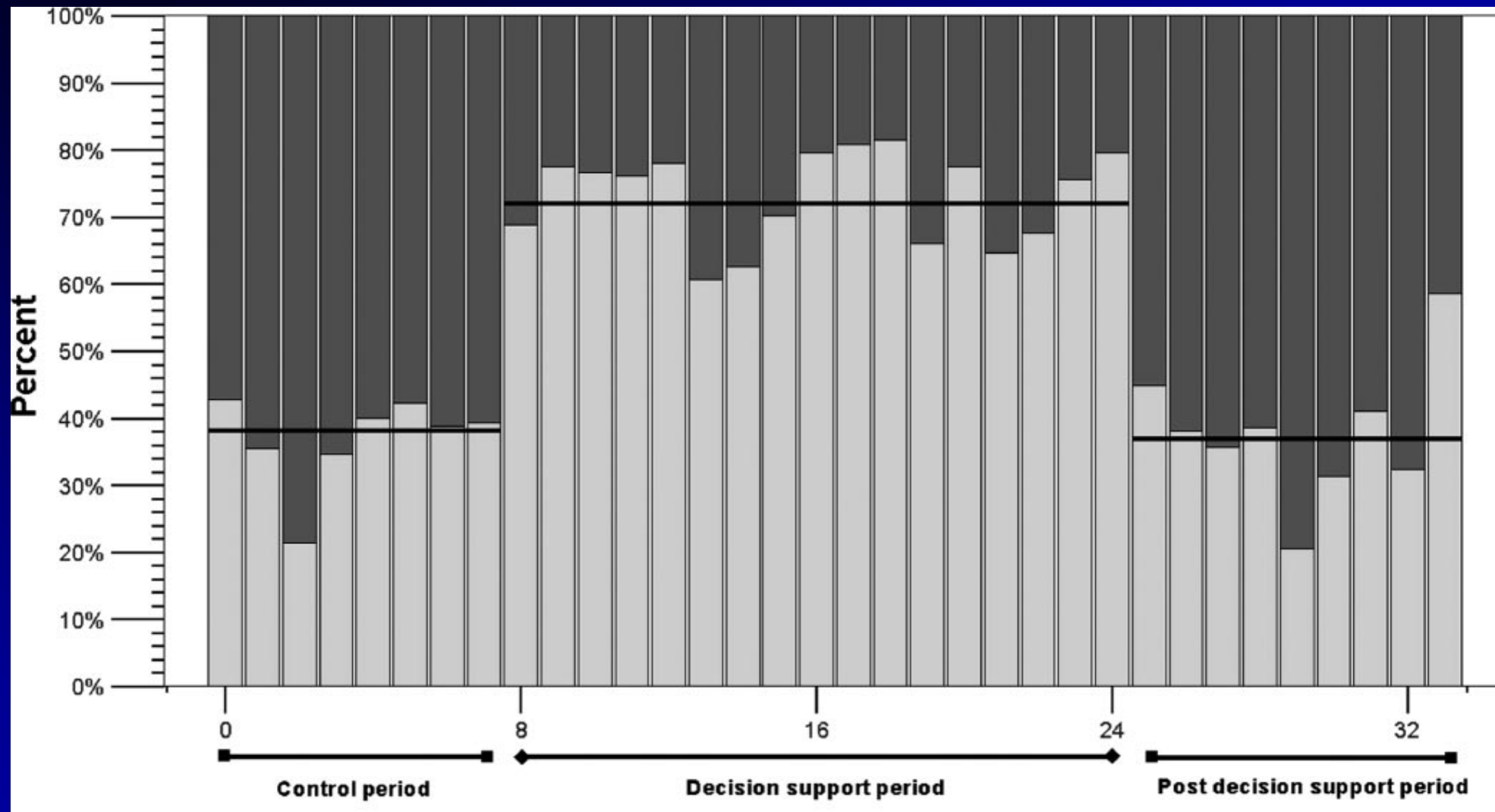
Louis Brandeis: Other People's Money,
and How the Bankers Use It (1914)

Value Based Purchasing

- 1% withhold of Medicare hospital payments
- Return of portion or all of withhold, depending upon quality metrics
 - Outcome measures
 - SCIP
 - HCAHPS, including pain management

Preoperative Assessment

PONV Decision Support



Kooij FO et al: Anesth Analg 2008;106:893-8

Intraoperative Quality Indicators

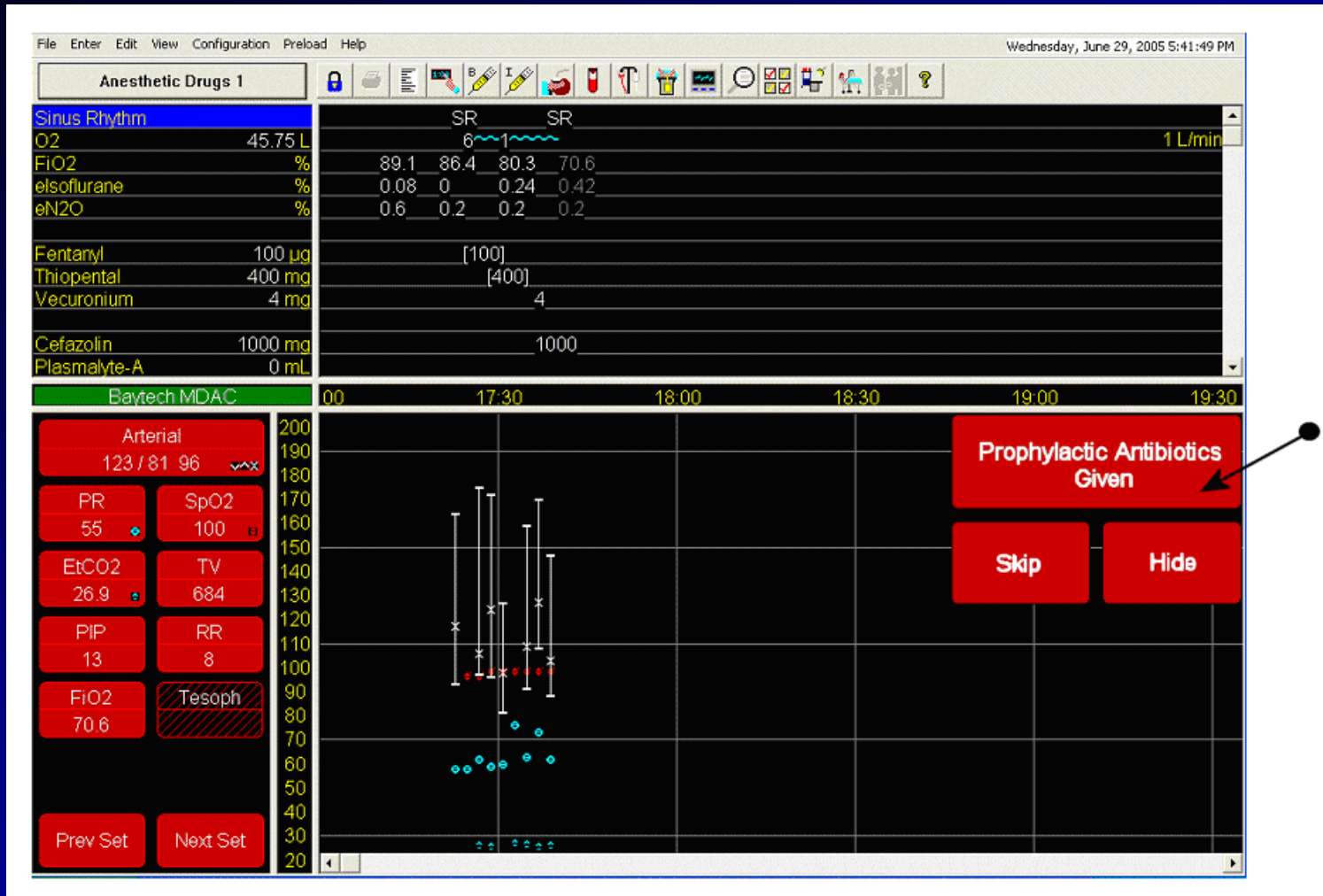
SCIP Adherence Infection Effect

	Nonadherent		Adherent		OR (95% CI)
	N	Infection Rate	N	Infection Rate	
S-INF-Core: all 3 original	44417	1.15%	154963	0.53%	0.86 (0.74-1.01)
S-INF: Full Set	59356	1.42%	158304	0.68%	0.85 (0.76-0.95)

Stulberg et al: JAMA 2010;303:2479-85

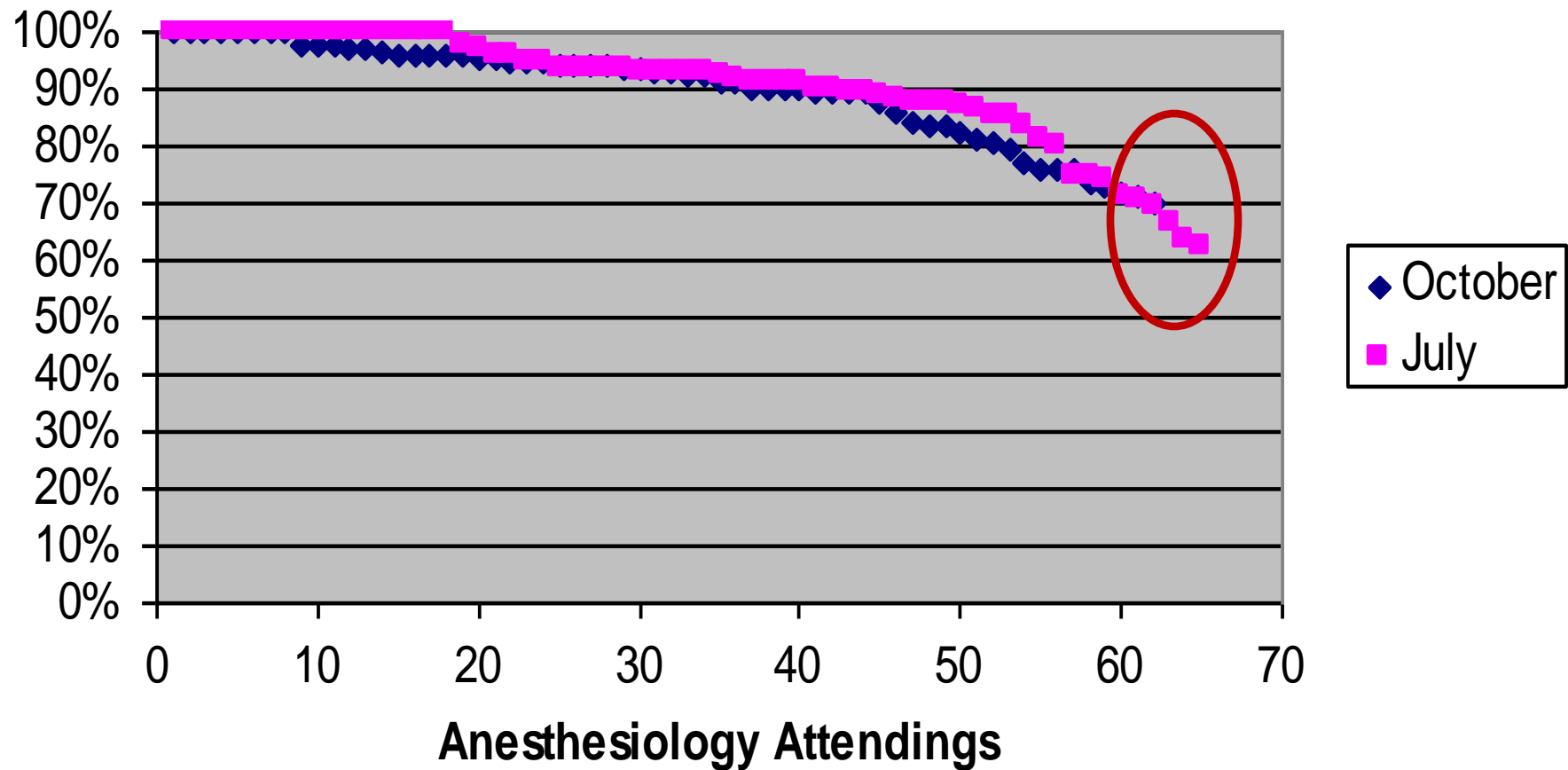
Antibiotics

Antibiotic Compliance Reminder



Wax et al: Anesth Analg 2007;104:1462-6

Antibiotic Compliance Reminder



Wax et al: Anesth Analg 2007;104:1462-6

An Anesthesia Information System Designed to Provide Physician-Specific Feedback Improves Timely Administration of Prophylactic Antibiotics

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Richard Burney, MD§

Surgical site infections are a frequent cause of morbidity and mortality and add significantly to the cost of care. One component of the national Surgical Infection Prevention (SIP) program is to ensure timely administration of prophylactic antibiotics, a key factor to reduce postoperative infection. Our anesthesia department decided to assume the responsibility for timing and administration of antibiotic prophylaxis and we initiated a multitiered approach to remind the anesthesiologist to administer the prophylactic antibiotics. We used our anesthesia clinical information system to implement practice guidelines for timely antibiotic administration and to generate reports from the database to provide specific feedback to individual care providers with the goal of ensuring that patients receive antibiotic prophylaxis within 1 h of incision. Before the initiation of this project, 69% of eligible patients received antibiotics within 60 min of the incision. After the program began, there was a steady increase in compliance to 92% 1 yr later. Provider-specific feedback increases compliance with practice guidelines related to timely administration of prophylactic antibiotics. Anesthesia information systems hold promise for implementing and monitoring new practice guidelines and the anesthesiologist may play a key role in influencing surgical outcomes by ensuring appropriate therapy that may not be directly related to anesthesia care.

(Anesth Analg 2006;103:908-12)

Beta Blockade

Item	Contents
------	----------

Primary Anesthetic Technique

General

Position

Surgical Field Avoidance, Position
Than Supine/Lithotomy

Surgical Infection Prophylaxis

Perioperative Beta Blocker Administration

Arm Positions

Airway Management

Monitors and Equipment

Perioperative Beta Blocker Administration

Beta Blocker Action(s)

Details

Perioperative beta blocker not indicated (less than 3 risk factors)

... Patient received PO beta blocker

... Perioperative beta blockers administered

... Perioperative beta blockers contraindicated

Other

Beta Blocker Contraindications

... Hypotension

... Bradycardia

... Bronchospasm

... Mobitz II or complete AV block

... History of adverse reaction to beta blockers

... Decompensated CHF

... Active major hemorrhage

Other

Beta-Blocker Indications

... On beta blocker preoperatively

Item Selected

Details

Beta Blocker Action(s), Perioperative ... N/A

Edit

Clear

Delete

OK

Skip

Cancel

OK

Cancel

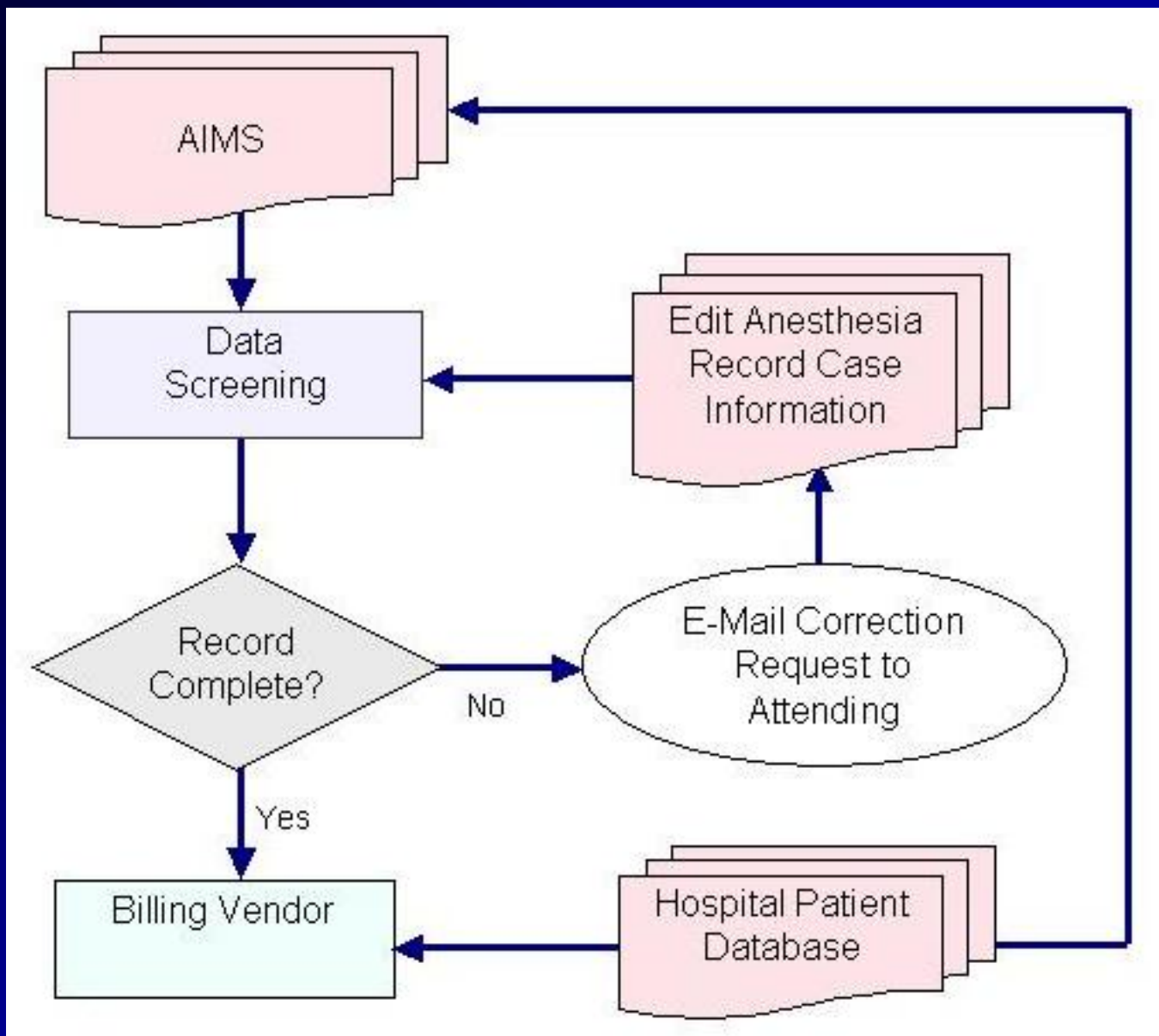
Apply

Administrative Use of AIMS

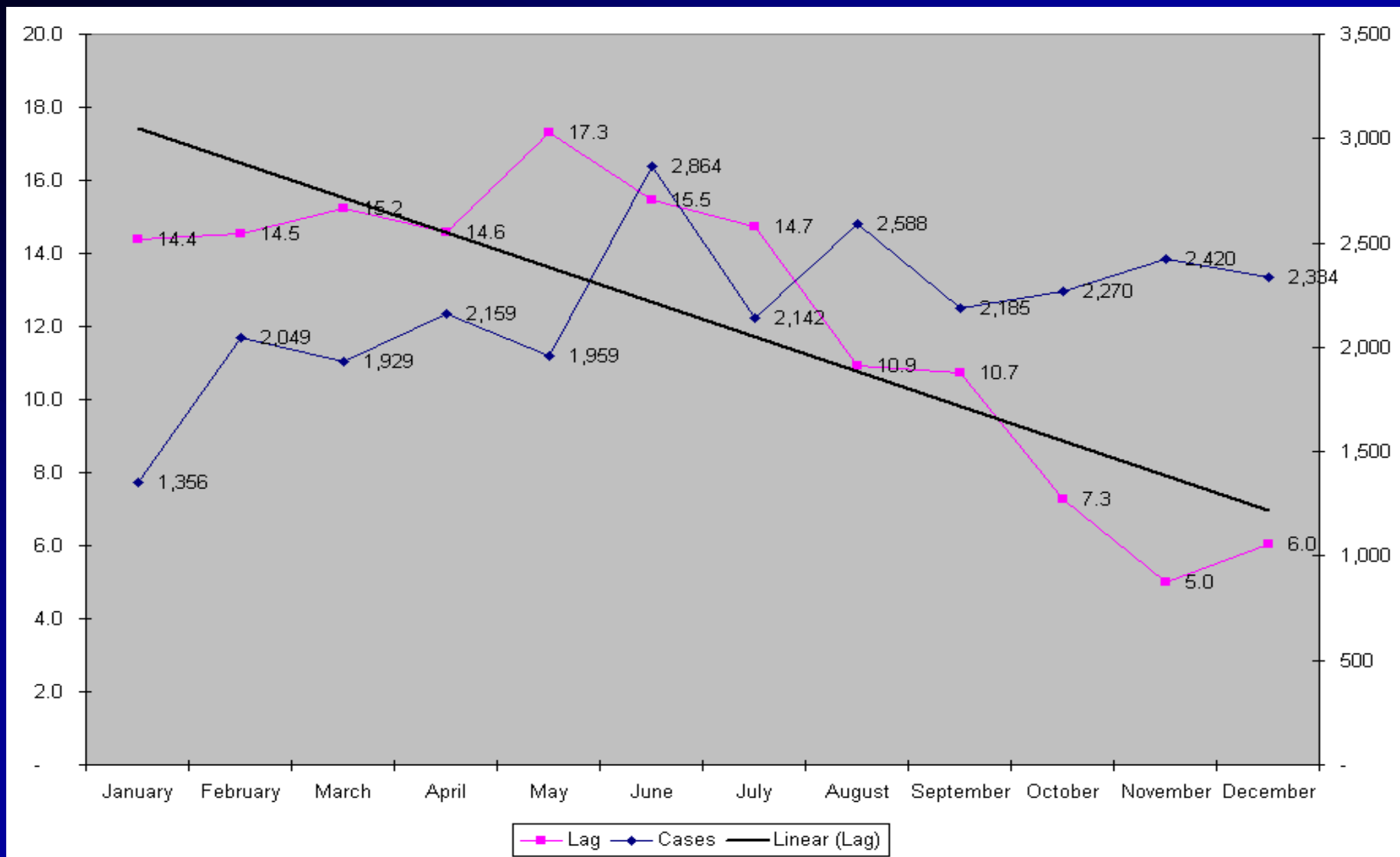
Providing Value to the Hospital

Hospital Quality Reports

- Returns to OR
 - Second operation within same hospitalization
- Anastomotic leak
- Surgical operation log
- PACU statistics and pain at discharge
- 48 hour post-anesthesia mortality
- Postop complications (standard CMS list)
- CLABS prevention program compliance
- Central line education report
- OR utilization reports



Anesthesiology 2006;105:179-86



Anesthesiology 2006;105:179-86

Table 4. Missing Data Report Elements

1. Service date
2. Internal case ID
3. Case number
4. Medical record number
5. Patient name
6. Patient date of birth
7. Attending anesthesiologist 1
8. Attending anesthesiologist 1 e-signature
9. Attestation comments
10. Attending anesthesiologist 2
11. Relief date/time 1
12. Attending anesthesiologist 2 e-signature
13. Attending anesthesiologist 3
14. Attending anesthesiologist 3 e-signature
15. Relief date/time 2
16. CRNA 1 e-signature
17. CRNA 2 e-signature
18. ASA classification
19. Performed procedure
20. Primary anesthetic technique
21. Preoperative diagnosis
22. Postoperative diagnosis
23. Surgeon
24. Anesthesia start time
25. Anesthesia end time

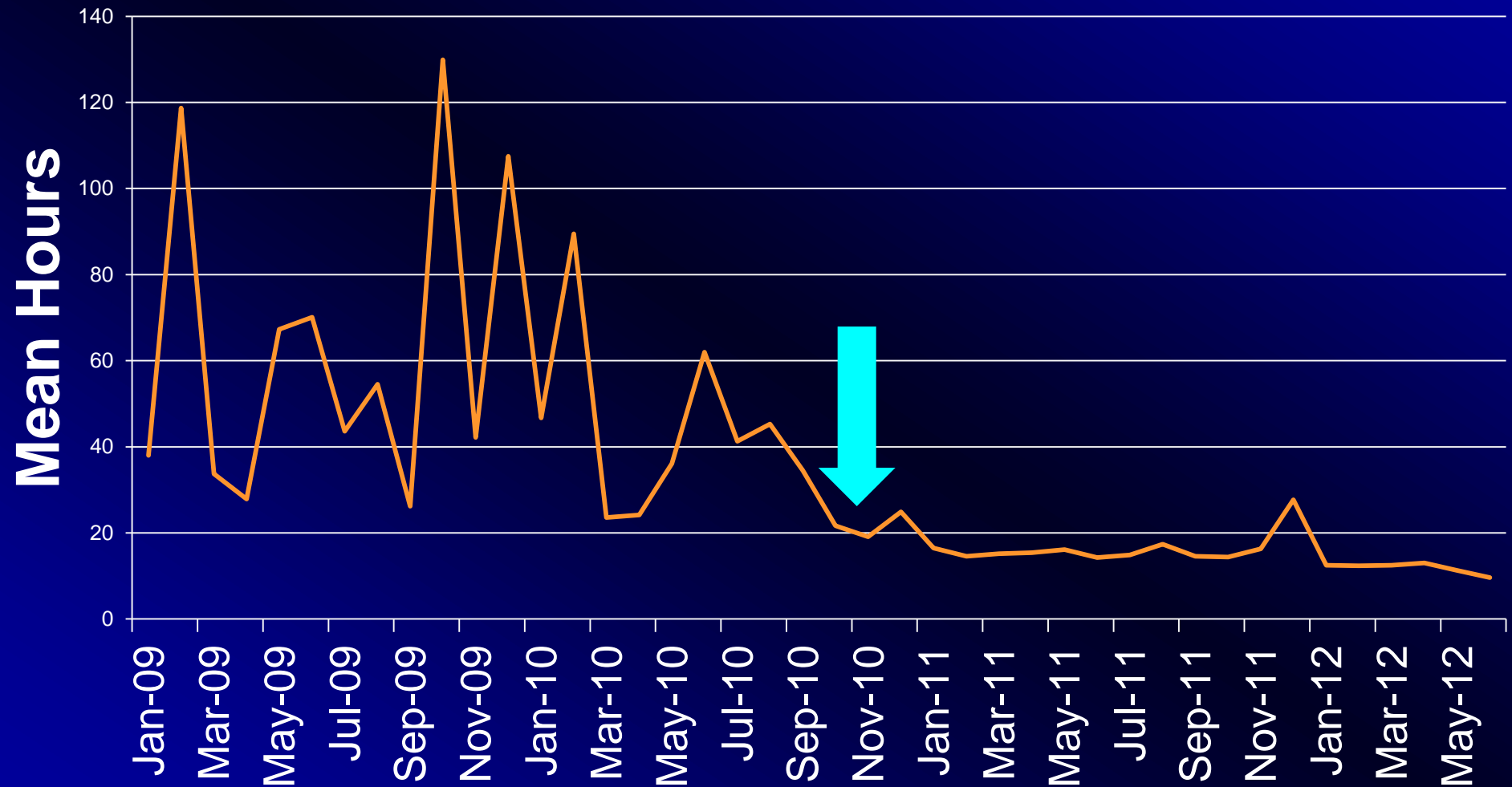
Billing Module from AIMS

Anesthesiology
2006;105:179-86

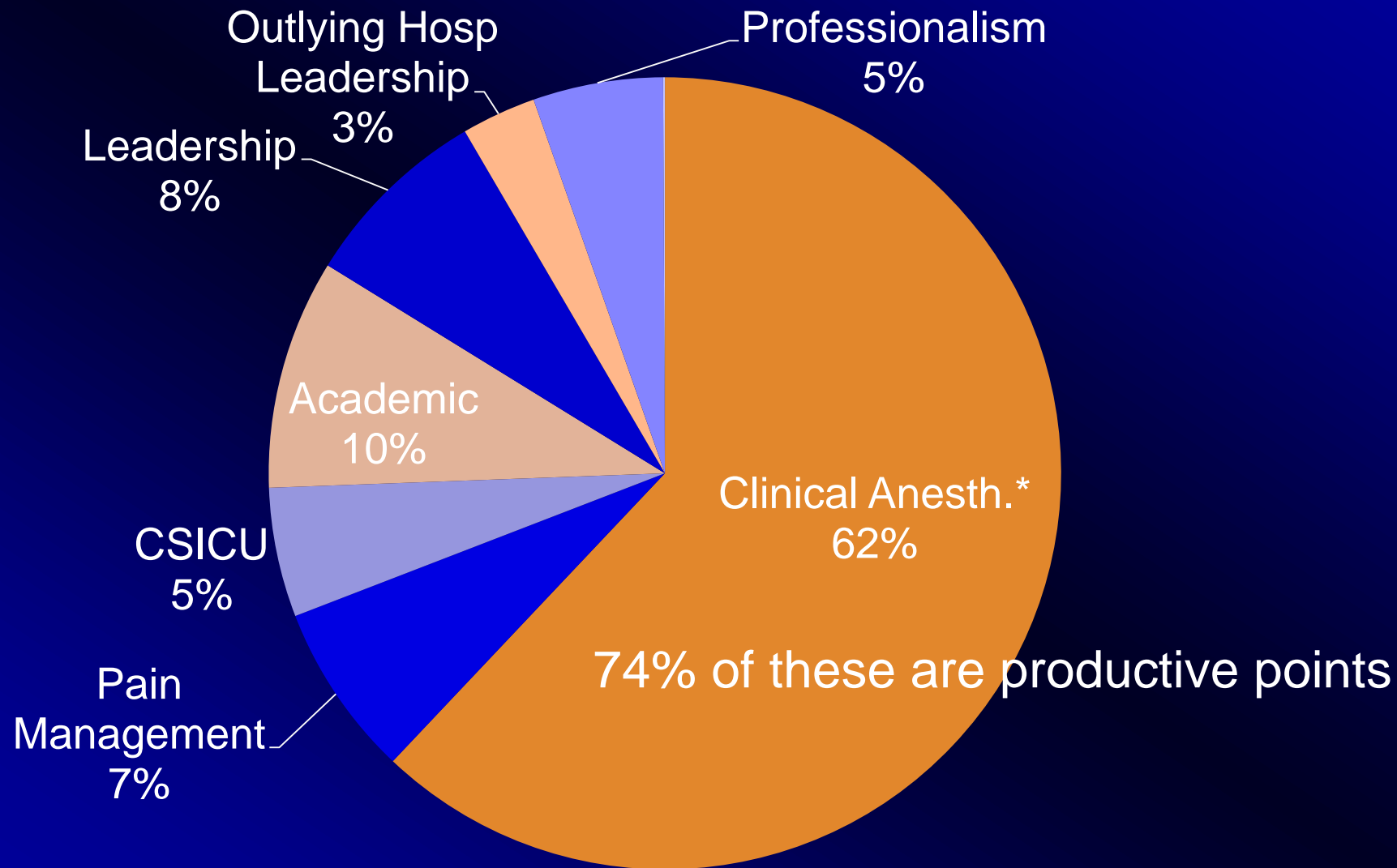
Daily Clinical Productivity

Case Number	Start Time	End Time	Points	Concurrency Adjustment	PostOp Note Lateness	Call Related	Completeness	Final Points
						Cardiac 1	N/A	450
						Worked Pre-Call	N/A	450
1	9:28	10:34	195	0.97	1		1	190
2	20:00	23:24	310	N/A after 1800	1		1	310
3	9:00	10:43	255	0.97	1		1	248
4	17:45	18:00	27	0.97	1		1	27
4	18:00	21:28	378	N/A after 1800	1		1	378
5	11:10	15:25	420	0.97	1		1	409
6	15:50	18:00	206	0.97	0.9		1	181
6	18:00	20:15	214	N/A after 1800	0.9		1	193
Total								2836

Postoperative Note Latency



2013 Points Budget: 27.8m points



Comparison of the Pre- and Post-Implementation Periods

	MEDIAN		p-value
	Pre-Implementation	Post-Implementation	
Average Monthly ASA Units	43,563	49,594	.0001
Average Monthly ASA Units per OR FTE	601	790	<.0001
Average Monthly ASA Units per Location	1268	1147	.046

Mean Faculty Salary Ratios by Rank Grouping c/w 2001

Rank Grouping	Pre-Implementation (2003-2004)	Post-Implementation (2006-2007)&
Instructors and Assistant Professors*	1.12	1.57
Associate and Full Professors	1.01	1.35

*Higher mean salary increase for Instructors/Assistant Professors compared with Associate and Full Professors across periods ($p < 0.001$)

&Higher mean salary increase for post-implementation period compared with pre-implementation across rank groupings ($p < .0001$).

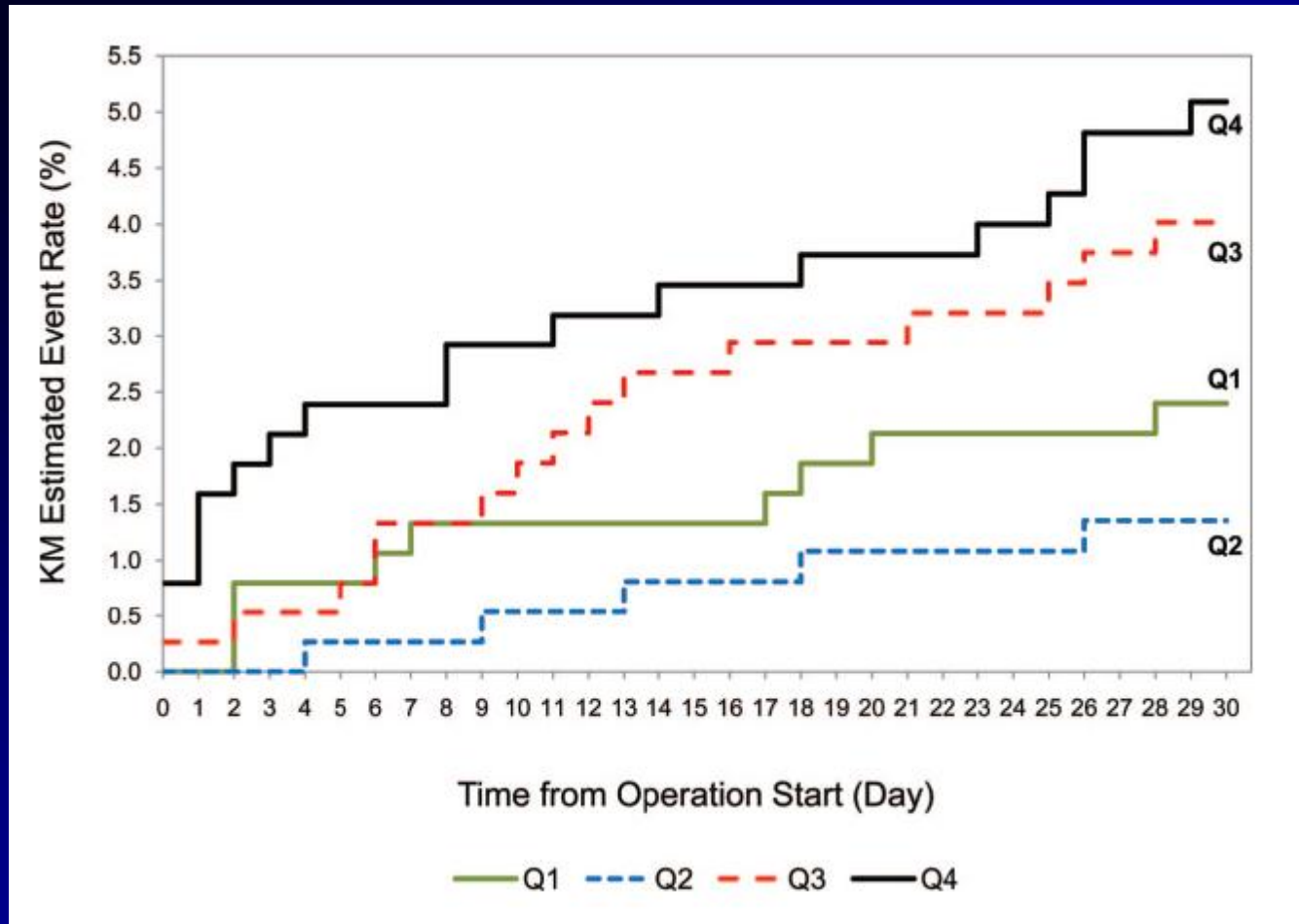
Anesth Analg 2008;107:1981-8

Administrative

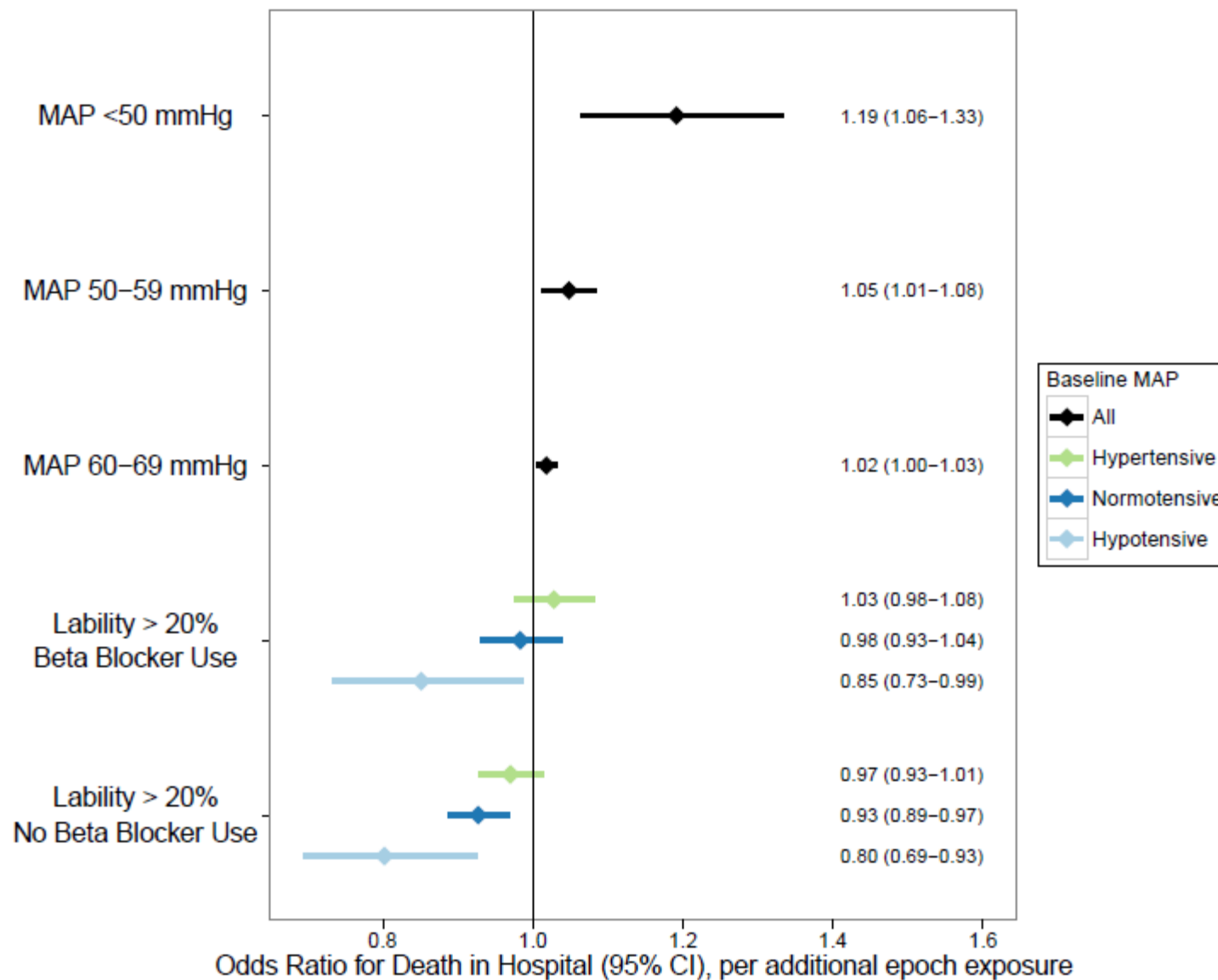
- ACGME report automatic generation
- EPIC interface
- Tracking system
 - OR Control Desk, Family Waiting Room, Assessment Area, PACU's, Bed assignment unit, Cardiac White Board, Event Notification
- Scheduling system
 - Daily assignments
 - Night and weekend calls
 - Time off
 - Web displays and reports
- Personnel system

Research

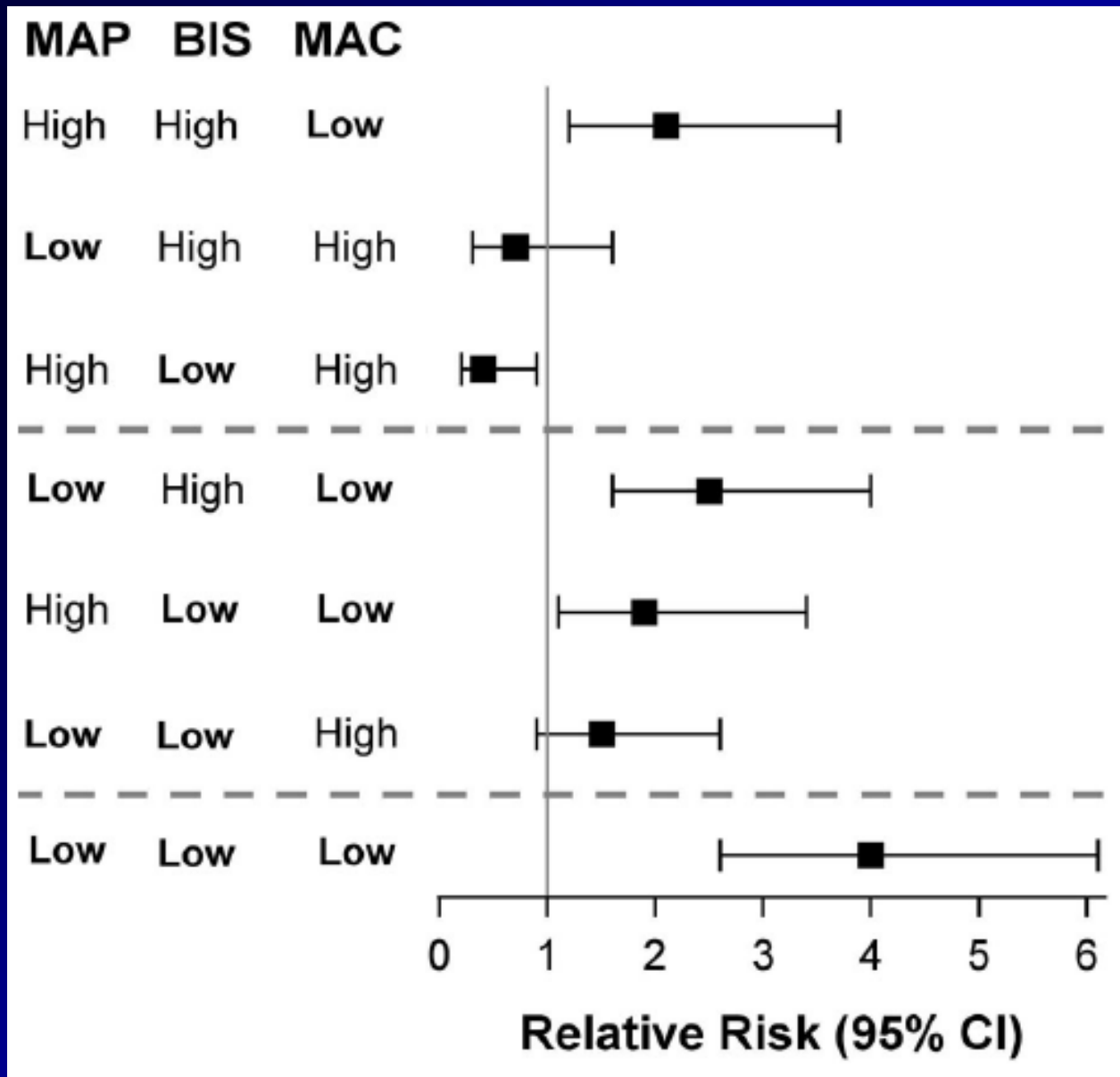
BP Excursions and Mortality



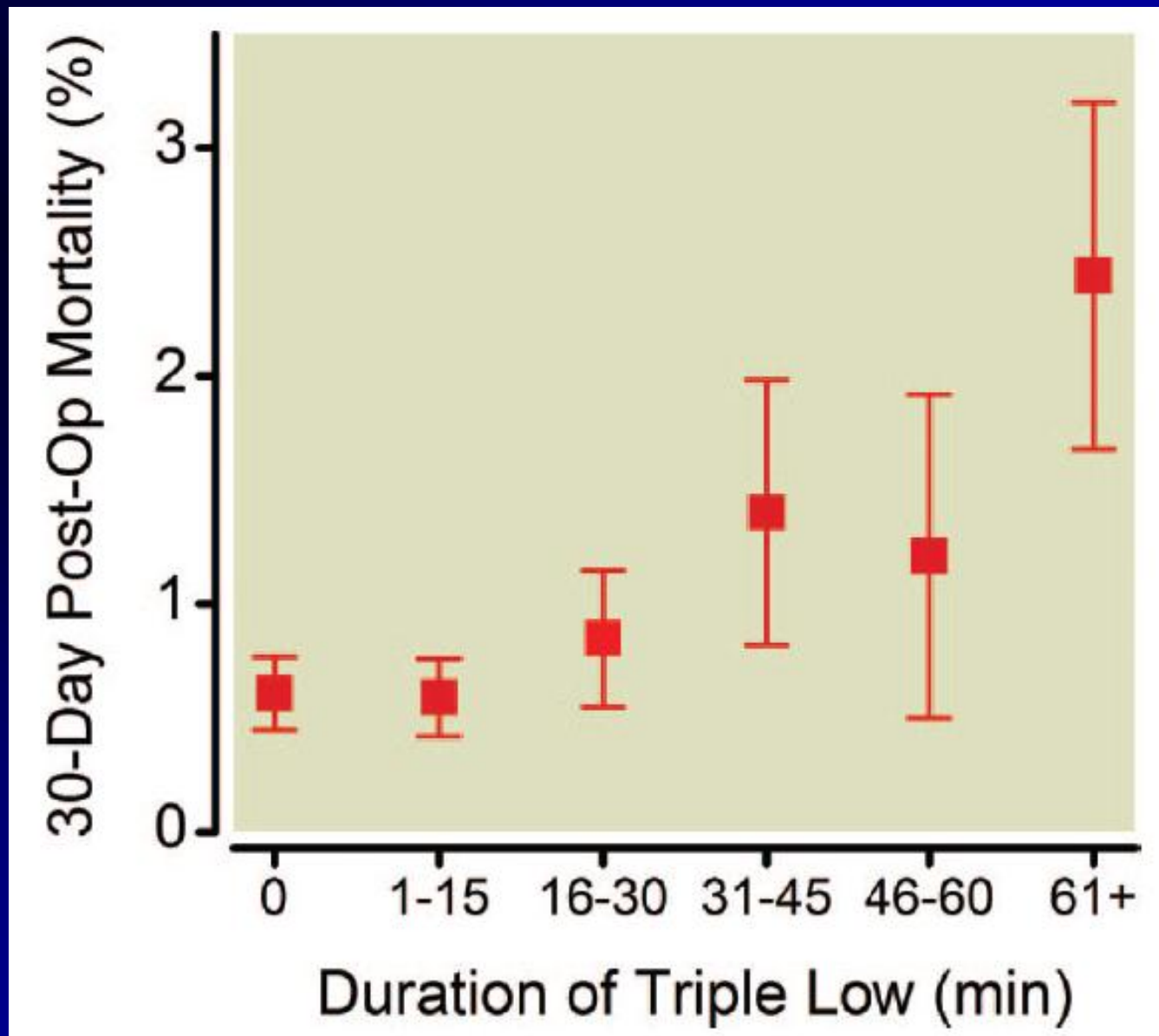
Anesth Analg 2011;113:19–30



Unpublished Data

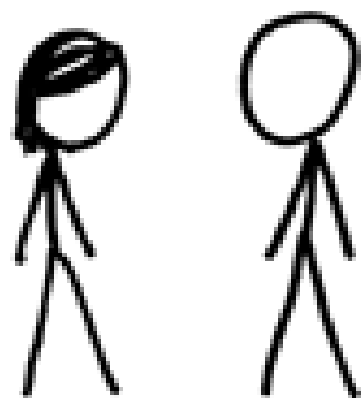


Sessler D et al: Anesthesiology 2012;116:1195-203

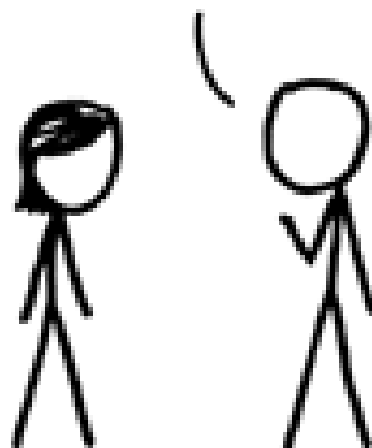


Sessler D et al: Anesthesiology 2012;116:1195-203

I USED TO THINK
CORRELATION IMPLIED
CAUSATION.

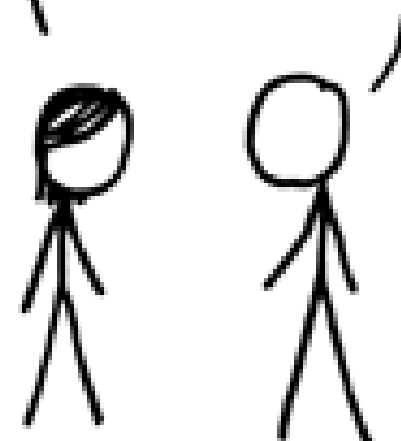


THEN I TOOK A
STATISTICS CLASS.
NOW I DON'T.



SOUNDS LIKE THE
CLASS HELPED.

WELL, MAYBE.

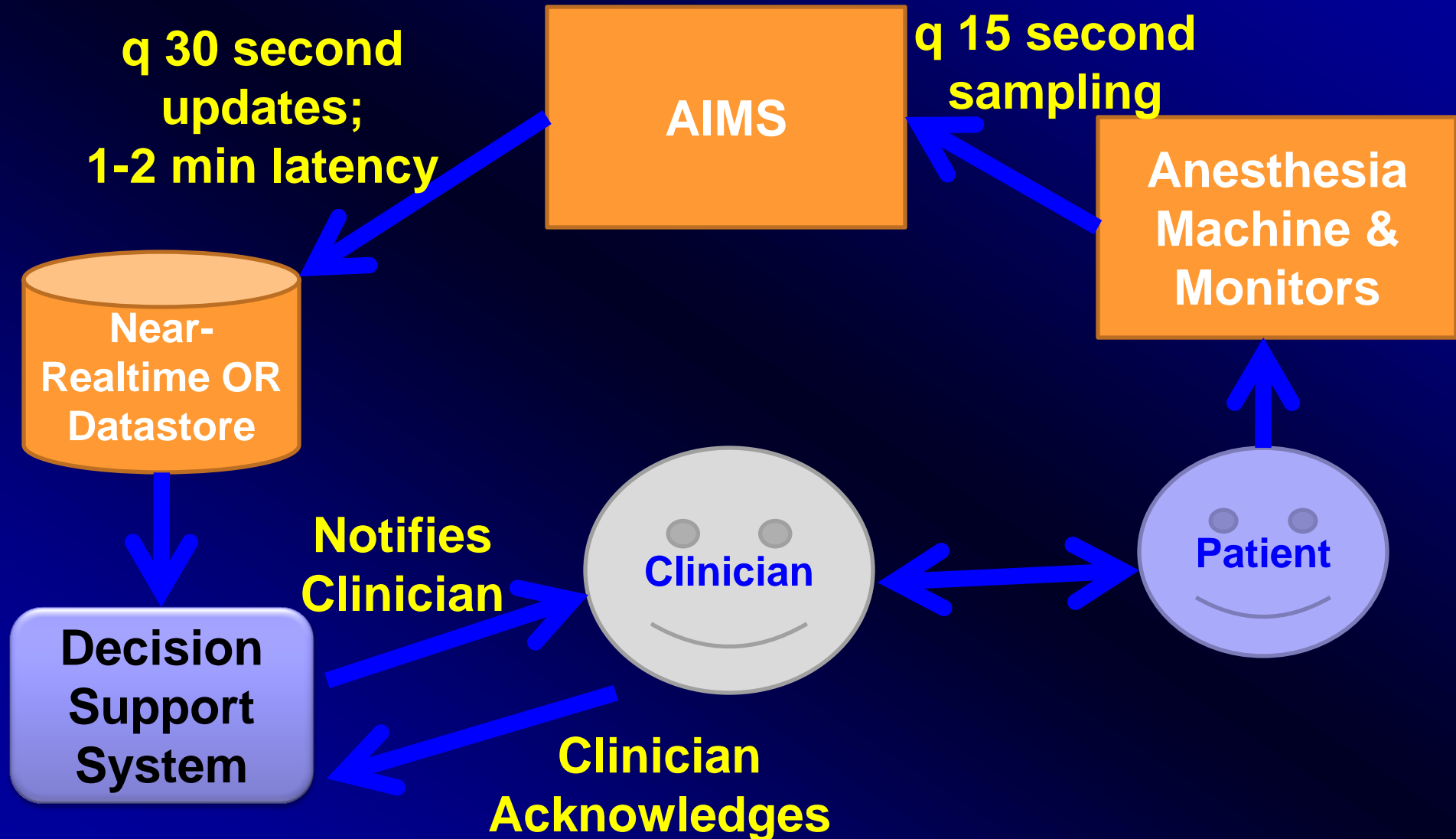


<http://xkcd.com/552>

Hemodynamics, Anesthetic Depth and Mortality

- Association does not prove causation
- Why should a brief period of hypotension or deep anesthesia be associated with hospital mortality?
 - Acute organ injury?
 - Anesthetic “stress test” is a marker for patients with more severe underlying illness?
 - Cancer patients (debilitated) have exaggerated responses to “standard” anesthetic doses

Clinician/DSS Feedback Loop

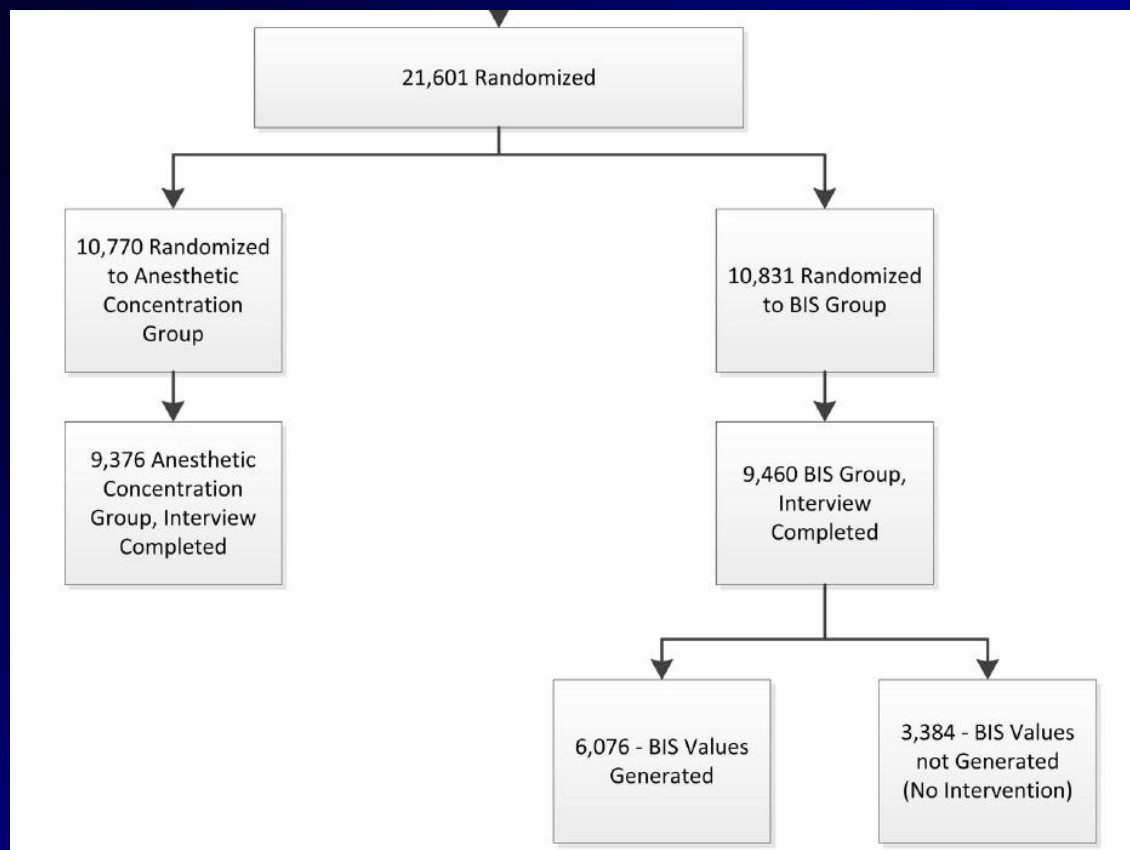


Prevention of Intraoperative Awareness with Explicit Recall in an Unselected Surgical Population

A Randomized Comparative Effectiveness Trial

George A. Mashour, M.D., Ph.D.,* Amy Shanks, M.S.,†
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Paul Picton, M.D., F.R.C.A.,§ Christa Schueller, B.S.,# Michelle Morris, M.S.,**
John C. Vandervest, B.S.,†† Nan Lin, Ph.D.,‡‡ Michael S. Avidan, M.B., B.Ch.§§

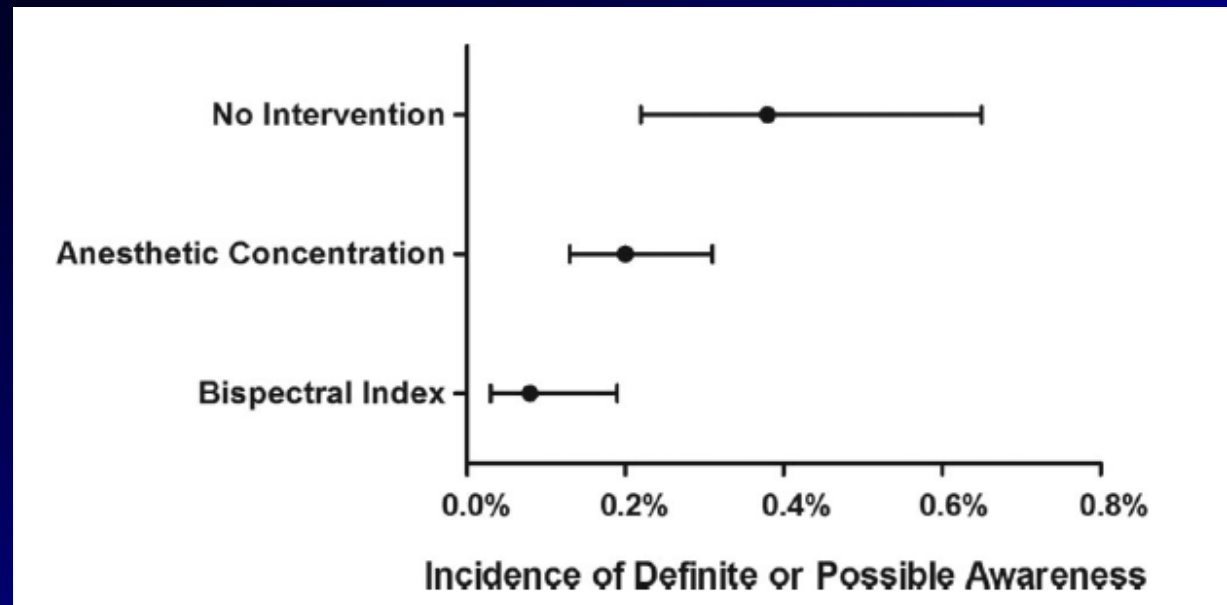
Anesthesiology 2012;
117:717–25



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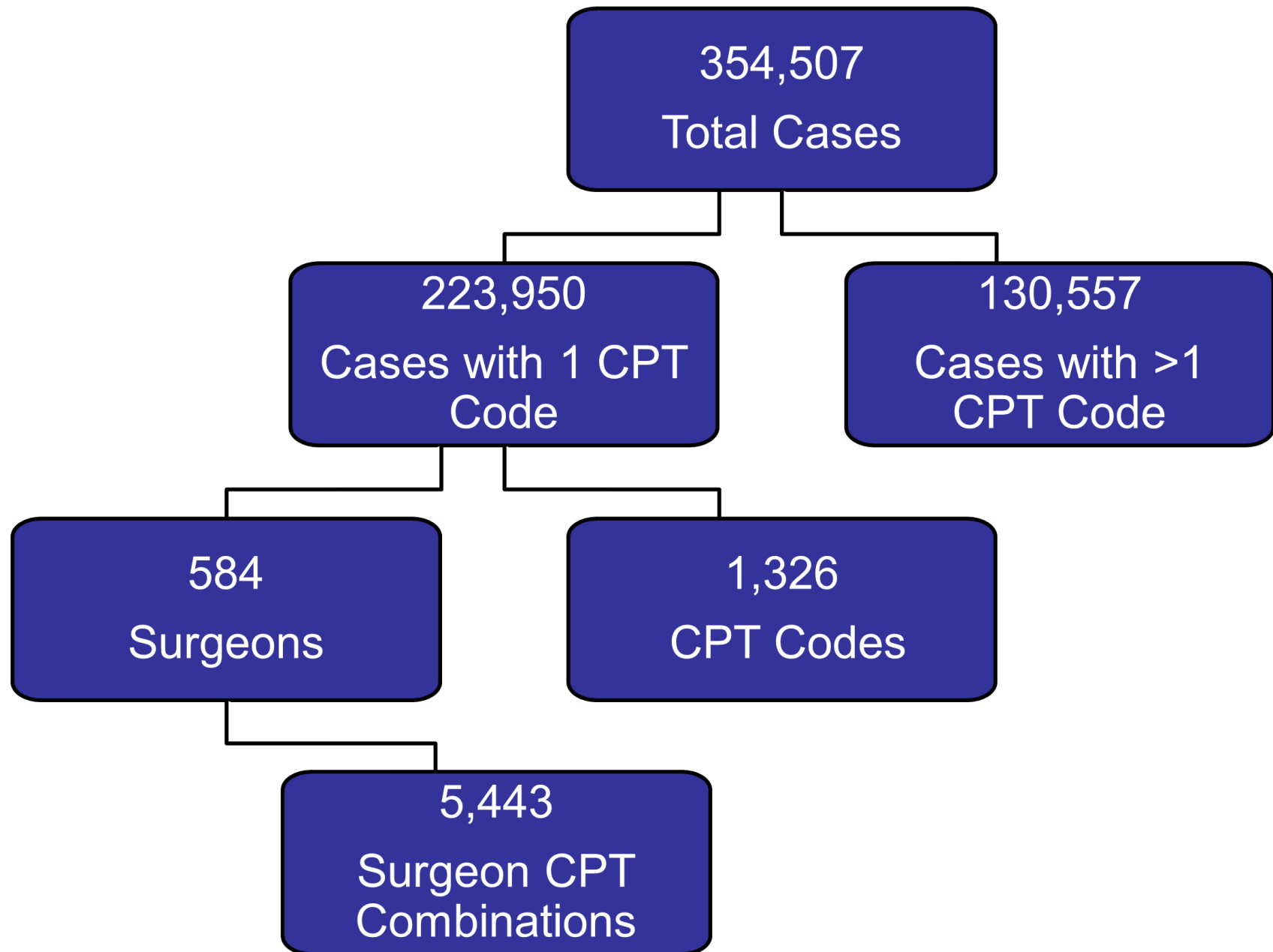
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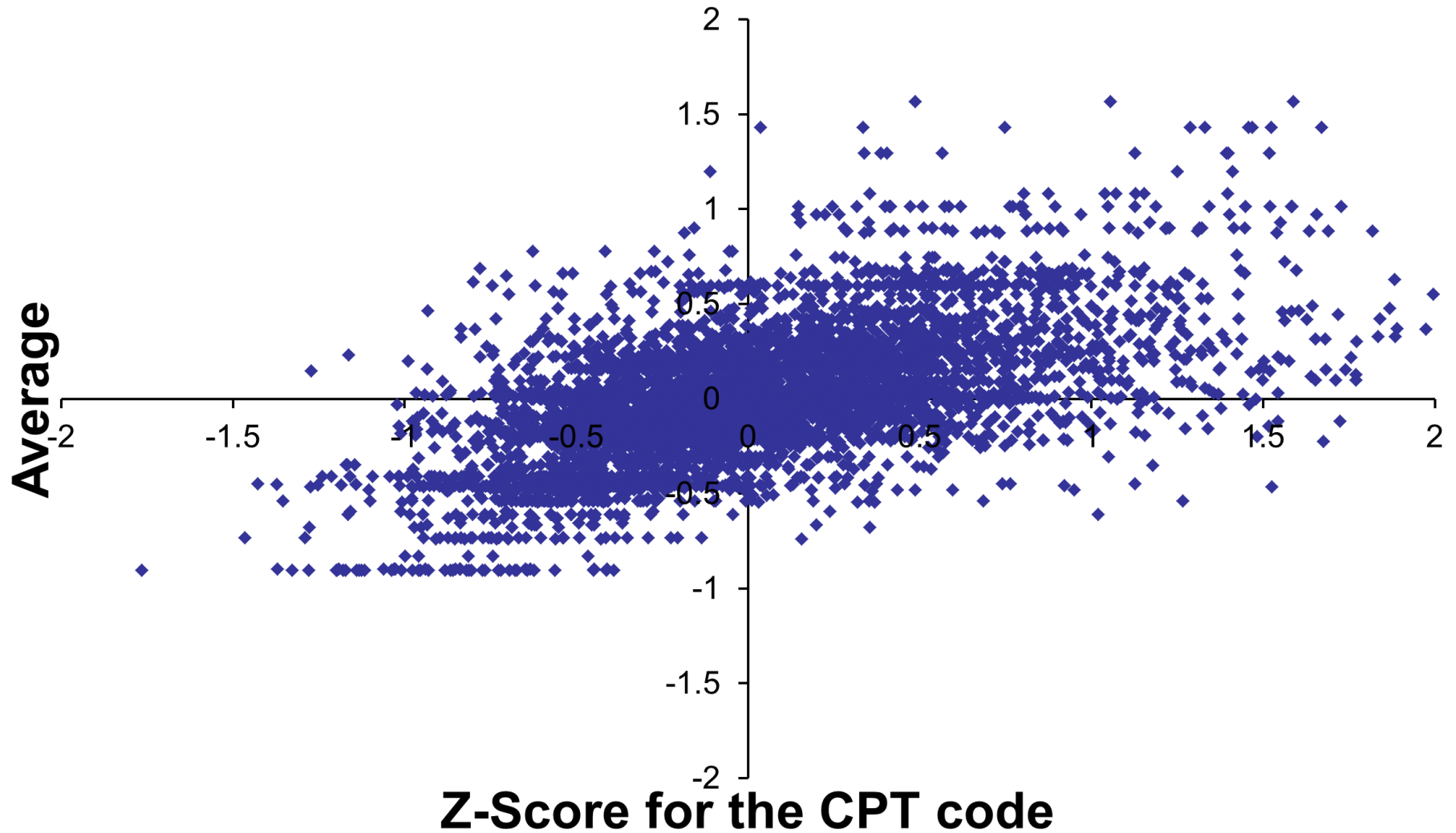


Anesthesiology 2012; 117:717–25

Surgeon Efficiency



Association Between Average Z-score and CPT Specific Z-Score



Summary and Discussion

- Report generation needs: OR operations, quality, PQRS, custom reports
- Managing people with data
 - Linking quality with compensation
- Managing all of the missions of the Department