National Transfusion Practice

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The Anesthesia Quality Institute

Vision: To become the primary source for quality improvement in the clinical practice of anesthesiology

Mission: To maintain AQI's registries with case data as the primary resource for anesthesiologists looking to assess and improve patient care.

Basic Principles

- The more you know, the better you do
- Quality management data
  - = research data
  - = business data
- Every patient encounter is a data point

AQI Registries

Facility and Provider Information from >500 Practices

Case Data from > 30M Anesthetics

Clinical Outcomes From > 5M cases

AIMS Data from >1M Cases

NACOR – University Hospital

- 40,982 cases
- 1,857 received a blood product intraop (4.53%)
  - 74% got RBC
  - 34% got plasma
  - 13% got platelets
  - 21% got cryoprecipitate

NACOR – University Hospital

- 847 got RBC alone (mean 2 Units)
- 130 got plasma alone
- 128 got platelets alone

- 697 got a combination

NACOR – University Hospital

- Max transfusion: 277 L
- More transfusion in older patients
- More in sicker patients
- More in longer cases
- More in inpatients

Cases Receiving Transfusion

- CABG: 33%
- Heart valve: 44%
- Periperheral vascular: 20%
- Liver transplant: 77%
- Hip replacement: 8%

Variation in Transfusion

UHC Database

Common operations:

- THR
- colectomy
- pancreas

Wide variability in transfusion rates

Quan, et al. Annals of Surgery, 2013

Perioperative Mortality

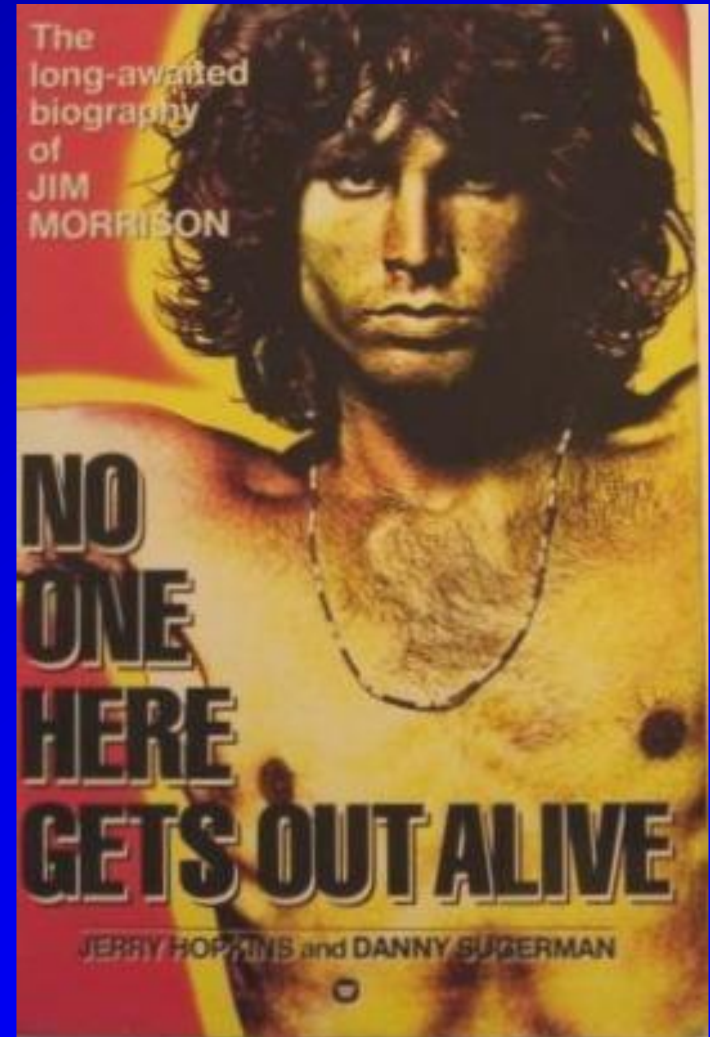
In the Surgery Center:	0.003%
In the OR:	0.03%
In the hospital after major surgery:	3-4%
Overall:	100%

“In this world nothing can be said to be certain, except death and taxes”

--Benjamin Franklin

“No one here gets out alive”

--Jerry Hopkins and Danny Sugerman



Death from Haemorrhage

- Rare, in general practice
- Usually associated with disasters
  - Audience Question: Laser Lead Removal?
- Better studied anecdotally than systematically

AQI Registries

Adverse Events
& Near Misses

www.aqiairs.org

Hemorrhage and Legal Risk

PERIOPERATIVE MEDICINE

Massive Hemorrhage

A Report from the Anesthesia Closed Claims Project

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Data: The ASA Closed Claims Project

- Malpractice cases against anesthesiologists
- Reviewed by experts
- Blinded, de-identified abstraction
- 50% of cases, for 25 years
- About 10,000 cases per decade

Malpractice from Bleeding

- 141 claims since 1995
- Cases are:
  - Younger
  - More emergent
  - More likely to suffer permanent harm
  - More likely to have substandard care
  - Twice as expensive (average $450,000)

Hemorrhage Claims…

- More likely to die (77%)
- More likely inappropriate care
- More likely to cost money
- Higher average payments

- Mostly related to UNEXPECTED bleeding

Which Cases?

30%	Obstetrics
20%	Spine
15%	Minimally invasive or robotic
10%	Cardiac, vascular
5%	Major tumor
5%	Liver
2%	Trauma (none in past decade)

Substandard Care

- Failure to identify a life-threatening condition
- Failure to promptly return to the OR
- Failure to obtain adequate IV access
- Failure to treat coagulopathy

Table 7. Clinical Lessons

Massive hemorrhage is a rare but serious cause of malpractice claims. • High mortality • High rate of payment to plaintiff • Large payment size
Hemorrhage claims were most common in obstetric anesthesia and anesthesia for thoracic or lumbar spine surgery. Massive hemorrhage can also occur in low-risk procedures, *e.g.*, minimally invasive, laparoscopic, or robotic procedures.
Common features: • Lack of timely diagnosis • Lack of timely transfusion • Lack of timely return to the operating room
Anesthesia care contributed to poor outcome in most claims.
Every surgical and obstetric facility should create and practice a plan to address unexpected massive hemorrhage.

Other Findings

70%	Bleeding immediately recognized
15%	Timely return to OR
15%	Timely transfusion

Obstetric Hemorrhage

- 50% have an obvious risk factor: known placenta accreta, coagulopathy, IUFD
- 50% from unexpected postpartum hemorrhage
- Bad outcomes occur in small hospitals with limited resources

Minimally Invasive and Robotic

- Vascular injury
- Adjacent body compartment
- Diagnostic fixation
- Instability > fluids > pressors > coagulopathy > bad outcome

- Currently 86 reports of fatality with DaVinci surgical robot in FDA data

Contact Me!

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