Practice diversity: What does it mean when everybody does it differently?

Avery Tung, M.D. FCCM
Quality Chief for Anesthesia
Department of Anesthesia and Critical Care
University of Chicago

I think Medicine has…

1. Too much practice diversity
2. Just enough practice diversity
3. Not enough practice diversity

Outline

A brief tour of practice diversity
- It’s everywhere you look!

Is practice diversity bad?
- The case for standardization

(Are there any) arguments for practice diversity?
- The benefit(s) of no protocol(s)
- Learning
- Preferences
- Keeping up with the literature
- True believers
Surgeon-Reported **Conflict With Intensivists** About Postoperative Goals of Care

terrah J. Paul Olson, MD; Karen J. Bravel, MD, MPH; Andrew J. Redman, BA, BS; G. Caleb Alexander, MD, MS; Margaret L. Schwarz, MD, MPP

“43 percent of surgeons reported sometimes or always experiencing conflict about postoperative goals of care with intensivists”

**70% of intensivists** 
(AJRCCM 2009;80:853-60)

---


Cansever L, Pedel G, Ricks C, Hora A, Pedel A

368 ASA and ESA members surveyed regarding monitoring practices

<table>
<thead>
<tr>
<th>Monitoring</th>
<th>ASA (n=237)</th>
<th>ESA (n=195)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invasive art line</td>
<td>95.4</td>
<td>89.7</td>
</tr>
<tr>
<td>CVP</td>
<td>72.6</td>
<td>83.6</td>
</tr>
<tr>
<td>Noninvasive BP</td>
<td>51.9</td>
<td>53.8</td>
</tr>
<tr>
<td>CO</td>
<td>35.4</td>
<td>34.9</td>
</tr>
<tr>
<td>PCWP</td>
<td>30.8</td>
<td>14.4</td>
</tr>
<tr>
<td>TEE</td>
<td>26.3</td>
<td>19.0</td>
</tr>
<tr>
<td>SPV/PPV</td>
<td>20.3</td>
<td>23.6</td>
</tr>
<tr>
<td>Svo$_2$</td>
<td>14.3</td>
<td>15.9</td>
</tr>
</tbody>
</table>

---

Substantial variation of both opinions and practice regarding perioperative fluid resuscitation

Peter C. Chong, MD* 
Elias F. Green, MD* 
Danielle Stothart, MD* 
Donna E. Moulak, MD, CM* 
Sudhi Sundaram, MD* 
Farid M. Shamji, MD* 
David Neillipowitz, MD* 
Lauralyn McIntyre, MD* 
Paul Hillert, Mhbs; MD* 
Andrew J. Sealy, PhD, MD**

77 survey* respondents
Surgeons, Anesthesiologists, Intensivists,

Results
- 96% agreed that optimal fluid resuscitation decreased the risk of adverse events
- COV for fluid rate >50%
  (data had >100% variance)

---


---

Crit Care 2011;15:R197

---

*50 yr 90kg M s/p lobectomy
Massive variability in product use
7.8 to 92.8% for RBC
0 to 97.5% for FFP
0.4 to 90.4% for Platelets

Survey of Canadian perfusionists regarding blood product management

53% follow routine transfusion triggers for PRBC

The case for standardization

Small Area Variations in Health Care Delivery
A population-based health information system can guide planning and regulatory decision-making.
John Wennberg and Alvin Gittelsohn

<table>
<thead>
<tr>
<th>Surgical procedure</th>
<th>Lowest two areas</th>
<th>Entire state</th>
<th>Highest two areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tonsillectomy</td>
<td>13 32</td>
<td>43</td>
<td>85 151</td>
</tr>
<tr>
<td>Appendectomy</td>
<td>10 15</td>
<td>18</td>
<td>27 32</td>
</tr>
<tr>
<td>Hemorrhoidectomy</td>
<td>2 4</td>
<td>6</td>
<td>9 10</td>
</tr>
</tbody>
</table>

Science 1973;182:1102-8

When it comes to predicting...
- College grades from admissions packets
- Response to shock therapy for depression
- Likelihood of violating parole
- Which banks will go bankrupt
- Etc...

...the algorithm usually beats the human

“A search of the literature fails to reveal any studies in which clinical judgment has been shown to be superior to statistical prediction”

Clinical Versus Actuarial Judgment
ROBYN M. Dawes, DAVID Faust, PAUL E. Meehl

When it comes to predicting...

Science 1989;243:1668-74
**Impact of a Clinical Decision Rule on Hospital Triage of Patients With Suspected Acute Cardiac Ischemia in the Emergency Department**

<table>
<thead>
<tr>
<th>No rule</th>
<th>Rule*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficiency (correct triage to OJ)</td>
<td>27%</td>
</tr>
<tr>
<td>Safety (correct triage to ICU)</td>
<td>75%</td>
</tr>
</tbody>
</table>

JAMA 2002;288:342-50

---

**The Art versus Science of Predicting Prognosis: Can a Prognostic Index Predict Short-Term Mortality Better than Experienced Nurses Do?**

- David J. Cusack, M.D., M.A.  
- Sue Farrington, M.B.A.  
- Teresa Craig, C.P.A.  
- Julie Slattery, M.S., R.N.  
- Joan Horrold, B.O., R.N.  
- Betsy Osborne, R.N., B.S.N., M.A.  
- Jason Roy, Ph.D.  
- Richard Botto, Ph.D.  
- and Jean Teno, M.D., M.S.

Retrospective review of 21,074 hospice patients*  
“Imminent death” on admission vs predictive model


---

**Create a protocol**

- Measure outcomes
- Adjust as needed
- Remeasure

“Guys, it’s more important that you do it the same way than what you think is the right way”

-Brent James, M.D.

---

**Results:**
- ↓ infection rates from 7.7 to 1.4
- OR (infection) = 0.34 at 16-18 months

---

168,113,488 patient-days

ICU CLABSI rates (infections/1000 catheter days)

1990-1999* 2001 2009

*NNIS data summary
Am J Inf Cont 1999;27:520-32

0.8 per 1000 catheter days (2011)
0.76 per 1000 catheter days (2011)
0.3 per 1000 catheter days (2011)
0.97 per 1000 catheter days (2010)
0.6 per 1000 catheter days (2012)

Is there value to practice diversity?

Monk: “What is the highest technique you hope to achieve?”
Bruce: “To have no technique”

“We always run the ball on 2nd down”
“I always raise with two-of-a-kind”
“I always begin negotiations by offering 20% less than what I really want to pay”
Utility of Daily Routine Portable Chest Radiographs in Mechanically Ventilated Patients in the Medical ICU*

Mark Kricofoul, MD, Okane A. Shikota, MD, and Richard M. Schwartzstein, MD, FCCP

94 patients randomized to routine vs on demand CXR

519 total X Rays

• Nonroutine group was more likely to have new findings that needed intervention (26% vs 13%)

• No difference between groups in:
  • Ventilator days
  • ICU LOS
  • Hospital LOS
  • Adverse outcomes

Chest 2003;123:1607-14

Comparison of routine and on-demand prescription of chest radiographs in mechanically ventilated adults: a multicentre, cluster-randomised, two-period crossover study

Gilles Kehlet, Ludovic Dahousso-Lemaitre, Vincent Iancu, Pierre-Yves Beaufille, Laurence Sel assumes, TaharSouman, Jean-Francois Willet, Arntz-Stefanl

11 ICUs, 424 patients, 4,607 routine X Rays vs 3,128 on demand

No difference in outcome

Lancet 2009;374:1687-93

Q: How do you get to Carnegie Hall?
A: Practice

- Anon

Q: How do you become the best doctor?
A: See more variability?

Does practice variability facilitate learning?

Ultrasound-Guided Regional Anesthesia

How Much Practice Do Novices Require Before Achieving Competency in Ultrasound Needle Visualization Using a Cadaver Model

Michael J. Barrington, FANZCA,* Daniel M. Wung, FANZCA,* Ben Slater, FANZCA,* Jason J. Ivanusic, PhD, and Matthew Owens‡

15 trainees

Human preferences themselves are diverse!

“We all end up dead. Its just a question of how and why”

Mel Gibson
"Braveheart"
1995
Effect of Specialty and Recent Experience on Perioperative Decision-Making for Abdominal Aortic Aneurysm Repair

William Dale, MD, PhD,* Joshua Hemmerich, PhD,* Elizabeth Molinski, MBA, PhD,* Margaret L. Schwartz, MD,† and Avery Tung, MD‡

154 surgeons, geriatricians, and anesthesiologists

“We hypothesized that no effect of specialty or recent experience on decision behavior would exist”

Abdominal Aortic Aneurysms

• Usually detected in asymptomatic patients
• Expands 0.2-0.4 cm annually
• Risk of rupture increases with increasing size
• Goal: operate when risk of rupture = risk of surgery

Decision: Operate now or wait?

• If you decide to wait
  – AAA expands (& risk of rupture increases)
• If you decide to operate:
  – 5% chance of operative mortality

But first, a practice test!
How do you make a decision when you don’t know the odds?

- Identify the possible outcomes
- Decide which outcome you LEAST want
- Choose the other one
Getting on a Southwest plane

Unaccompanied minors & Businesspeople

- A1-A60
- Families with kids
  - ~B23
  - B1-B60
  - C1-C60

The Early Bird process

Unaccompanied minors & Businesspeople

- Early Bird
  - A, B, or C

How many people will buy the Early Bird?

If you buy the Early Bird, how good will your number be?

- Families with kids
  - A, B, or C

Maybe you’ll get lucky anyway!

How bad is that middle seat!

<table>
<thead>
<tr>
<th></th>
<th>Middle seat</th>
<th>Aisle or Window</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buy ($10)</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>Don’t buy</td>
<td>C</td>
<td>X</td>
</tr>
</tbody>
</table>

Choose carefully because regret lasts forever!
“What I didn’t anticipate was that the plaintiff’s attorney would argue that I should have never discussed the risk and benefits and just ordered the PSA.”

“A 4 physicians testified that when they see male patients > 50 yrs, they have no discussion with the patient about screening… they just do the test!”

Adequate study design?
Adequate power?
Appropriateness of study group?
Appropriateness of control group?
Appropriateness of statistics?
Stopped too soon?
Publication bias?
Funding bias?
Fraud?
You are captured by space aliens (who are fascinated by human decision behavior)

They ask:
- A fair, 2-sided coin is flipped 30 times
- Each time it lands heads
- What is the probability it will land "heads" on the 31th flip?

1. Less than 50%
2. 50%
3. Greater than 50%

Since the coin is fair and each flip is independent, the probability should be 50%
Answer: B

It is extremely unlikely that a fair coin could come up heads 30 times in a row*. I bet the coin is not really fair. It is likely to come up heads the next time too
Answer: C

1. Less than 50%
2. 50%
3. Greater than 50%

* p(30 heads in row) = 0.0000000093

Practice Guidelines for Central Venous Access
A Report by the American Society of Anesthesiologists Task Force on Central Venous Access

Selection of catheter insertion site:

<table>
<thead>
<tr>
<th>Subclavian vs. femoral</th>
<th>C2A/C3B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site selection should be based on clinical need to minimize risk of catheter-related infection</td>
<td></td>
</tr>
</tbody>
</table>

| Internal jugular vs. subclavian | C2A/C3B |
| Site selection should be based on clinical need to minimize risk of catheter-related infection |

The risk of catheter-related bloodstream infection with femoral venous catheters as compared to subclavian and internal jugular venous catheters: A systematic review of the literature and meta-analysis

Paul E. Mark, MD, FCCM, Mark Flemmer, MD, Wendy Harrison, PhD

17,376 catheters and 113,652 catheter days

Conclusions: Although earlier studies showed a lower risk of catheter-related bloodstream infections when the internal jugular was compared to the femoral site, recent studies show no difference in the rate of catheter-related bloodstream infections between the three sites.

Anesthesiology 2012; 116:539-73

Crit Care Med 2012;40:2479-85
"No significant differences were found between femoral and IJ routes in catheter colonization, CRBSI, and thrombotic complications."

**Clinical Practice Guidelines for the Management of Pain, Agitation, and Delirium in Adult Patients in the Intensive Care Unit**

Juliana Ranz, MD, FCCM†; Gillis L. Fraser, MD, FCCM†; Kathleen Puntillo, RN, PhD, FAAN, FCCM†; E. Wesley Ely, MD, MPH, FACP, FCCM†; Geline Cefalas, RN, PhD†; Joseph E. Davis, MSE, FCCM, FCCP†; Judy E. Davidson, MD, FACP†; John T. Devlin, PharmD, FCCM, FCCP†; John F. Kress, MD†; Aaron M. Joffe, DO†; Douglas R. Grasso, MD†; Daniel L. Herro, MD, MS, FCCM†; Avery Tang, MD†; Bryce E. H. Robinson, MD, FACP‡; Derville K. Fountain, PhD, RN, FAAN‡; Michael A. Ramsey, MD‡; Richard R. Hickey, MD, FCCM‡; Curtis N. Souter, MD, FCCM‡; Brenda Pan, MSN, RN, ACNP‡; Ioanna Skoubl, MD, FRCP†; Roman Jarczok, MD§

a. We recommend either daily sedation interruption or a light target level of sedation be routinely used in mechanically ventilated adult ICU patients (+1B).

\[\text{PAD Task force internal email 4/22/10}\]

- Which found no benefit to DSI, published 2012
- 24 yr M with ARDS after MVA
- Discharged on POD #56

**PROLONGED EXTRACORPOREAL OXYGENATION FOR ACUTE POST-TRAUMATIC RESPIRATORY FAILURE (SHOCK-LUNG SYNDROME)**

Use of the Borrman Membrane Lung


- 24 yr M with ARDS after MVA
- Discharged on POD #56

*NEJM 1972;286:629-34*
90 hypoxemic patients* randomized to ECMO or conventional ventilation

40 patients with hypoxemic respiratory failure

Stopped early for excess mortality in ECMO group (70 vs 60%)

Two negative RCTs but still alive

90 control patients
• 53% died
90 ECMO patients**
• 37% died

*Via referral to ECMO center
**24 did not get ECMO and 5/24 (21%) died

Lancet 2009;374:1351-63
I think Medicine has...

1. **Too much** practice diversity
2. **Just enough** practice diversity
3. **Not enough** practice diversity

Summary

- **Practice diversity is common**, and can be seen both in literature and in clinical practice
- **Practice diversity is not new**, and does not appear to be shrinking with time
- The causes of practice diversity are not well understood. **Individual preferences** and **cognitive heuristics** are two possibilities
Summary II

• The optimum amount of practice diversity in medicine is unknown

• Reducing practice diversity may reduce medical error and improve patient safety

• However, practice diversity has several uses in medicine, including protecting against fraud, adjusting to change, facilitating learning, and preserving knowledge

• In the ICU, adjusting to practice diversity is a vital aspect of successful care delivery

Transfusion practice varies widely in cardiac surgery: Results from a national registry

Zoe K. McQuilken, MBBS, Nick Andrianopoulos, MBBS, MBiotstat, Erica M. Wood, MBBS, Merrile F. Cole-Sinclair, MBBS, John J. McNeil, PhD, MBBS, Peter A. Cameron, MD, MBBS, Christopher M. Reid, PhD, Andrew E. Newcomb, MBBS, Julian A. Smith, MBBS, MS, and Louise E. Phillips, PhD

43,482 procedures in 25 Australian hospitals

Sexual Regret: Evidence for Evolved Sex Differences

Andrew Galperin · Martie G. Haselton · David A. Frederick · Joshua Poore · William von Hippel · David M. Buss · Gian C. Gonzaga

J Thorac Cardiovasc Surg 2013; epub

Arch Sex Behav 2013;42:1145-61
Practice variability in brain death determination
A call to action
Claire N. Shapira, BA
Jeffrey J. Frank, MD
Khalil Fazl, MD
Marlow Sundeen, BS
Fernanda Ciskowski, MD
Agamshala Sabid, MD, PhD

Results
• 45% had complete documentation of absent brainstem and motor responses
• 73.5% completed apnea testing
• 44.7% overall compliance with AAN guidelines

Retrospective review of 226 organ donors
Neurology 2013;81:2009-14

Prescribing Patterns of Hydrocortisone in Septic Shock: A Single-Center Experience of How Surviving Sepsis Guidelines Are Interpreted and Translated into Bedside Practice
Kathryn M. Conzel, PharmD1, Beth J. Eilham, PharmD, BCPS1, Sara R. Gegg, MHA1
Timothy G. Rahman, PhD, MD, MCCM1, Craig M. Cooperstein, MD, FCCP1

155 patients with Septic shock on Vasopressors
Crit Care Med 2013;41:2310-7

“Significant variability exists when corticosteroids are prescribed for septic shock…”

Table I. How Long After the Initial Diagnosis of Septic Shock and Initiation of Vasopressor(s) Would You Consider the Prescribing of Hydrocortisone to Not Be Beneficial to the Patient?

<table>
<thead>
<tr>
<th>Time After Diagnosis (hr)</th>
<th>Survey Response (n)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within 6 hr</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>6-24 hr</td>
<td>1</td>
<td>26</td>
</tr>
<tr>
<td>25-48 hr</td>
<td>6</td>
<td>22</td>
</tr>
<tr>
<td>49-72 hr</td>
<td>7</td>
<td>26</td>
</tr>
<tr>
<td>73-96 hr</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>&gt;96 hr</td>
<td>6</td>
<td>22</td>
</tr>
</tbody>
</table>

Earlier Versus Later Tracheostomy in Patients With Respiratory Failure After Cardiac Surgery in the United States
Leila Hoseinian, MD,1 Yiying Chiang, BS,1 Shoshu Egaki, MD,1 Antonio Polvera, BA1 Amanda Rhee, MD,1 and Joanna Chilcote, MD1

2,063,227 patients from the NIS 2002-2010

% of total

Days after intubation

JCVA Dec 2013 epub

Effect of Early vs Late Tracheostomy Placement on Survival in Patients Receiving Mechanical Ventilation
The TracMan Randomized Trial

455 patients randomized to early (<4 days) vs late (>10 days) tracheostomy

Only 45% of patients allocated to the late group underwent tracheostomy!

JAMA 2013;309:2121-9

Ann Arbor, MI

JAMA 2013;309:2121-9

Dowoon Tae1, MD
David J. Hanna, PhD
Brian J. Catlett, MD
Kathy Roson, RPh
Trach Man Investigators

Survival Outcome

Years After Randomization

Early Late

JCVA Dec 2013 epub
Effects of Repeating Varied Ad Executions on Brand Name Memory

<table>
<thead>
<tr>
<th>Measure</th>
<th>Same execution</th>
<th>Varied execution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low effort</td>
<td>High effort</td>
</tr>
<tr>
<td>Unaided recall (%)</td>
<td>15</td>
<td>28</td>
</tr>
<tr>
<td>Aided recall (%)</td>
<td>33</td>
<td>50</td>
</tr>
<tr>
<td>Verbal message recall a</td>
<td>.62</td>
<td>1.84</td>
</tr>
<tr>
<td></td>
<td>(82)</td>
<td>(1.11)</td>
</tr>
<tr>
<td>Picture recall c</td>
<td>.90</td>
<td>.62</td>
</tr>
<tr>
<td></td>
<td>(93)</td>
<td>(84)</td>
</tr>
</tbody>
</table>

DSI group had fewer:
- Ventilator days (4.9 vs 7.3)
- ICU days (6.4 vs 9.9)
- CT scans (9 vs 27)

NO difference in complications

Research

Randomized trial comparing daily interruption of sedation and nursing-implemented sedation algorithm in medical intensive care unit patients

268 MICU patients randomized to DSI or control:

Results:
- DSI protocol amended after 3 study related adverse events
- 4 DSI patients withdrawn at the request of the family
- DSI: ↑ mortality, Longer MV duration, ICU and hospital LOS
- Study terminated after 74 patients

The Quality of Health Care Delivered to Adults in the United States

439 recommended interventions for 30 conditions

- Large variability (10.5 to 78.7% of recommended care)
- 54.9% of recommended care overall

"These deficits pose serious threats..."
Variable compliance with clinical practice guidelines identified in a 1-day audit at 66 French adult intensive care units
Marc Leone, MD, PhD; Benoit Ragot, PhD, Sandrine Alonso, MS; Bernard Aillaud, MD, PhD; Jean-Michel Constantine, MD, PhD; Sarrir Aiber, MD, PhD; Claude Martin, MD, FCOM; Pascale Fabre-Peycha, MD, PhD; Jean-Yves Lefrant, MD, PhD; for AzurUs Group

“Overall, only 24% (20–27) of patients in our cohort received fully compliant care.”

Sepsis bundle: 34%
Ventilator setting: 37%
Glucose control: 45%
Sedation monitoring: 24%

Crit Care Med 2012;40:3189-95

Meta-analysis of secure randomised controlled trials of β-blockade to prevent perioperative death in non-cardiac surgery
Sonia Bouri, Matthew James Shun-Shin, Graham D Cole, Jamil Mayet, Darrel P Francis
9 "secure" trials* with 10,529 patients
6 DECREASE trials analyzed separately

In “secure” trials, BBs:
• Reduced nonfatal MI (RR = 0.73)
• Increased hypotension (RR = 1.51)
• Increased stroke (RR = 1.73)
• Increased 30 day mortality by 27%

Heart 2013 Jul 31 [epub ahead of print]

Don Poldermans And The Dutch Research Scandal
The publication last week of the final report from the Erasmus Medical Center on the Don Poldermans research scandal in the Netherlands ends the first and most explosive chapter of an ugly episode of scientific misconduct. But there are still many important questions regarding scientific integrity and the culture of medical research raised by the case. And one key detail about the case remains— and is likely to remain— unanswered. Did Don Poldermans commit scientific fraud by fabricating data or was he only guilty of the serious but lesser sin of poor or negligent supervision of a research factory?

Forbes online, 10/15/12

Canadian survey of the use of sedatives, analgesics, and neuromuscular blocking agents in critically ill patients
Sangita Mehla, MD; Lisa Burry, PhD; Sandra Fischer, MD; J. Carlos Martinez-Infante, MD; David Hallett, MSc; Dennis Bowman, BSc; Cindy Wong, PhD; Maureen O. Magee, MD, MSc; Thomas E. Stewart, MD; Deborah J. Cook, MD, MSc; for the Canadian Critical Care Trials Group

Crit Care Med 2006;34:374-80

* Secure trials: 9 trials with 10,529 patients
6 DECREASE trials analyzed separately

Canadian survey of the use of sedatives, analgesics, and neuromuscular blocking agents in critically ill patients
Sangita Mehla, MD; Lisa Burry, PhD; Sandra Fischer, MD; J. Carlos Martinez-Infante, MD; David Hallett, MSc; Dennis Bowman, BSc; Cindy Wong, PhD; Maureen O. Magee, MD, MSc; Thomas E. Stewart, MD; Deborah J. Cook, MD, MSc; for the Canadian Critical Care Trials Group

Crit Care Med 2006;34:374-80

Canadian survey of the use of sedatives, analgesics, and neuromuscular blocking agents in critically ill patients
Sangita Mehla, MD; Lisa Burry, PhD; Sandra Fischer, MD; J. Carlos Martinez-Infante, MD; David Hallett, MSc; Dennis Bowman, BSc; Cindy Wong, PhD; Maureen O. Magee, MD, MSc; Thomas E. Stewart, MD; Deborah J. Cook, MD, MSc; for the Canadian Critical Care Trials Group

Crit Care Med 2006;34:374-80

Canadian survey of the use of sedatives, analgesics, and neuromuscular blocking agents in critically ill patients
Sangita Mehla, MD; Lisa Burry, PhD; Sandra Fischer, MD; J. Carlos Martinez-Infante, MD; David Hallett, MSc; Dennis Bowman, BSc; Cindy Wong, PhD; Maureen O. Magee, MD, MSc; Thomas E. Stewart, MD; Deborah J. Cook, MD, MSc; for the Canadian Critical Care Trials Group

Crit Care Med 2006;34:374-80

Canadian survey of the use of sedatives, analgesics, and neuromuscular blocking agents in critically ill patients
Sangita Mehla, MD; Lisa Burry, PhD; Sandra Fischer, MD; J. Carlos Martinez-Infante, MD; David Hallett, MSc; Dennis Bowman, BSc; Cindy Wong, PhD; Maureen O. Magee, MD, MSc; Thomas E. Stewart, MD; Deborah J. Cook, MD, MSc; for the Canadian Critical Care Trials Group

Crit Care Med 2006;34:374-80

Canadian survey of the use of sedatives, analgesics, and neuromuscular blocking agents in critically ill patients
Sangita Mehla, MD; Lisa Burry, PhD; Sandra Fischer, MD; J. Carlos Martinez-Infante, MD; David Hallett, MSc; Dennis Bowman, BSc; Cindy Wong, PhD; Maureen O. Magee, MD, MSc; Thomas E. Stewart, MD; Deborah J. Cook, MD, MSc; for the Canadian Critical Care Trials Group

Crit Care Med 2006;34:374-80

Canadian survey of the use of sedatives, analgesics, and neuromuscular blocking agents in critically ill patients
Sangita Mehla, MD; Lisa Burry, PhD; Sandra Fischer, MD; J. Carlos Martinez-Infante, MD; David Hallett, MSc; Dennis Bowman, BSc; Cindy Wong, PhD; Maureen O. Magee, MD, MSc; Thomas E. Stewart, MD; Deborah J. Cook, MD, MSc; for the Canadian Critical Care Trials Group

Crit Care Med 2006;34:374-80

Canadian survey of the use of sedatives, analgesics, and neuromuscular blocking agents in critically ill patients
Sangita Mehla, MD; Lisa Burry, PhD; Sandra Fischer, MD; J. Carlos Martinez-Infante, MD; David Hallett, MSc; Dennis Bowman, BSc; Cindy Wong, PhD; Maureen O. Magee, MD, MSc; Thomas E. Stewart, MD; Deborah J. Cook, MD, MSc; for the Canadian Critical Care Trials Group

Crit Care Med 2006;34:374-80
Daily Sedation Interruption in Mechanically Ventilated Critically Ill Patients Cared for With a Sedation Protocol
A Randomized Controlled Trial

NO difference in ventilator days
NO difference in ICU days
NO difference in delirium
Greater nursing workload with DSI

Underestimating the Value of Reassurance
Allan S. Detsky, MD, PhD*

“The news value of this result* made me feel better, not unlike the feeling I get when one of my favorite sports teams wins an important game. In fact, for several months thereafter, whenever something was troubling me, I said to myself “At least I don’t have prostate cancer””

*PSA = 0.91 at age 60

Most Frequently Identified Root Causes of Sentinel Events Reviewed by The Joint Commission

<table>
<thead>
<tr>
<th>2010 (N=802)</th>
<th>2011 (N=1423)</th>
<th>2012 (N=501)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership</td>
<td>Human Factors</td>
<td>Human Factors</td>
</tr>
<tr>
<td>Human Factors</td>
<td>Leadership</td>
<td>Leadership</td>
</tr>
<tr>
<td>Communication</td>
<td>Communication</td>
<td>Communication</td>
</tr>
<tr>
<td>Assessment</td>
<td>Assessment</td>
<td>Assessment</td>
</tr>
<tr>
<td>Physical Environment</td>
<td>Physical Environment</td>
<td>Information Management</td>
</tr>
<tr>
<td>Information Management</td>
<td>Information Management</td>
<td>Physical Environment</td>
</tr>
<tr>
<td>Operative Care</td>
<td>Operative Care</td>
<td>Continuum of Care</td>
</tr>
<tr>
<td>Care Planning</td>
<td>Care Planning</td>
<td>Operative Care</td>
</tr>
<tr>
<td>Continuum of Care</td>
<td>Continuum of Care</td>
<td>Medication Use</td>
</tr>
<tr>
<td>Medication Use</td>
<td>Medication Use</td>
<td>Care Planning</td>
</tr>
</tbody>
</table>

http://www.jointcommission.org/assets/1/18/Root_Causes_Event_Type_04_4Q2012.pdf, accessed 1/6/14
Comparison of the Unstructured Clinician Gestalt, the Wells Score, and the Revised Geneva Score to Estimate Pretest Probability for Suspected Pulmonary Embolism

Andrea Pennalizza, MD; Francy Vescivener, MD; PhD; Guy Meyer, MD; Sophie Quentin-Georget, MD; Caroline Souille, MD; Frédéric Thys, MD; PhD; Pierre-Marie Roy, MD; PhD

Retrospective analysis of 1,038 patient cohort

- 31% overall prevalence


Well so what?

(Why am I learning about what stupid people do, anyway? I can’t help it if the world is full of idiots who don’t do it the way I do!)

Developing and Implementing Computerized Protocols for Standardization of Clinical Decisions

Alan H. Morris, MD

- 103 hospitals
- 38,546 computer decisions in 32,055 hours
- 1.2 instructions/hour
- Less barotrauma
- Physicians objected to only 0.3%

Ann Intern Med 2000;132:373-83

Cardiothoracic Surgeon Management of Postoperative Cardiac Critical Care

Glenn J. R. Whitman, MD; Michel Haddad, MD; Hitoshi Hirose, MD; Jeremiah G. Allen, MD; Margaret Lusardi, BA; Mauria A. Murphy, BA

P1: 9 months, 168 patients, 2 Pulm/CC, 1 SCC
P2: 16 months, 272 patients, 3 Cardiac surgeons

Results
- No difference in mortality
- No difference in VAPs, CLABSIs, or transfusion
- Shorter LOS (13.4 to 11.2 days)
- Less $ spent on drugs ($2,500 per patient)

“By virtue of their cardiac-specific operative and nonoperative training, cardiothoracic surgeons may be uniquely qualified to provide postoperative cardiac critical care.”

Arch Surg 2011;146:1253-60
Regret

“You only regret the things you don’t do, Johnston.”

True Believers

“The consultants agree and ASA members are equivocal that venous access should be confirmed before insertion of a dilator”

ASA practice guidelines for central venous access
Approved October, 2011

“Who cares what the yahoos think?”
ASA subspecialty president
January, 2012