From Paper to Practice: Developing and Implementing Guidelines that Matter

Society of Trauma Nurses - Annual Conference
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Rochester, NY
Disclosures

I have nothing to disclose.
Overview

• Why use guidelines
• EAST and PMGs
• How to create a guideline
• How to implement a guideline
How We are Thought to Practice

"Well, the drug rep gave me this shiny brochure and a lavish lunch and said it was the best drug to prescribe."

"I've practised in this field of medicine for over 30 years and I've always prescribed it that way."

"I found a single case study in a random journal which supports the unlicensed use of this drug."

"My consultant said to prescribe it."
How We Ideally Practice

How Do We Get Here???

By Creating and Implementing Evidence Based Guidelines
Guideline Purpose

“To make explicit recommendations with a definite intent to influence how healthcare providers practice”

Hayward RSA, et al. JAMA 1995;274:570-574
What Guidelines are Not

GIVE ME A MOMENT TO FIND UNBIASED DATA THAT SUPPORTS CALLING YOU AND YOUR IDEA STUPID.

"I want you to find a bold and innovative way to do everything exactly the same way it's been done for 25 years!"
Who Do Guidelines Benefit?

Patients
Healthcare Providers
Healthcare Systems
Potential Benefits for Patients

• Better quality of care
• Improved outcomes
• Improved consistency of care
• Inform patients about what health professionals should be doing
• Empower public to make more informed choices
• Influence public policy
Potential Benefits for Healthcare Providers

- Better quality of management decisions
- Reassure healthcare professionals that practice is appropriate
- Provide explicit recommendations to guide care
- Reduce outdated, ineffective or wasteful practice
- Support quality improvement initiatives
- Inform the research agenda by highlighting gaps in evidence
Potential Benefits for Healthcare Systems

• Improve efficiency
• Optimize value for money
• Demonstrate adherence to guidelines may improve public image
Does Absolutely Everything Require Practice Management Guideline?
What Does the Institute of Medicine Say?

- Clinical practice guidelines are useful when:
  - The problem is common or expensive
  - There is great variation in practice patterns
  - There is enough scientific evidence to determine appropriate and optimal care

(IOM Report, 1992)
What About EAST and Practice Management Guidelines?

“The role of the EAST and other national organizations will be to provide a series of national consensus-based guidelines from which institutionally specific clinical management protocols or pathways can be developed”

Pasquale, M; Fabian, T J Trauma and Acute Care Surgery. 44:941-956, 1998
EAST and PMGs

“A consensus conference of 20 EAST members interested in guideline development was held and initial topics were selected for development”

Pasquale, M; Fabian, T. J Trauma and Acute Care Surgery. 44:941-956, 1998
Types of Guideline Development Approaches

- Single author - expert opinion
- Single author - systematic literature review
- Consensus panel using expert opinion only
- Consensus panel using evidenced-based approach (AHCPR methodology)
**Initial EAST Methodology**

<table>
<thead>
<tr>
<th>Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class I</td>
<td>Prospective, randomized, controlled trials</td>
</tr>
<tr>
<td>Class II</td>
<td>Clinical studies with prospectively collected data and large retrospective analyses based on reliable data</td>
</tr>
<tr>
<td>Class III</td>
<td>Retrospectively collected data and expert opinion</td>
</tr>
<tr>
<td>Technology assessment</td>
<td></td>
</tr>
</tbody>
</table>

Once the evidence has been classified, it can be used to make recommendations.

- **Level I recommendation**: Convincingly justifiable based on the available scientific information alone. It is usually based on class I data; however, strong class II evidence may form the basis for a level I recommendation, especially if the issue does not lend itself to testing in a randomized format. Conversely, weak or contradictory class I data may not be able to support a level I recommendation.

- **Level II recommendation**: Reasonably justifiable by available scientific evidence and strongly supported by expert critical care opinion. It is usually supported by class II data or a preponderance of class III evidence.

- **Level III recommendation**: Supported by available data but adequate scientific evidence is lacking. It is generally supported by class III data.

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Based on Agency for Health Care Policy and Research (AHCPR) guideline development methodology

Pasquale, M; Fabian, T. J Trauma and Acute Care Surgery. 44:941-956, 1998
Steps in Development of an EAST PMG

• Identify a topic
• Gather a working group
• Form questions
• Literature review
• Make weighted recommendations
• Distribute for use by healthcare professionals
The Inaugural EAST PMGs

• Practice Management Guidelines for Screening of Blunt Cardiac Injury

• Practice Management Guidelines for Identifying Cervical Spine Injuries after Trauma

• Practice Management Guidelines for Penetrating Intraperitoneal Colon Injuries

• Practice Management Guidelines for Venous Thromboembolism in Trauma Patients

Pasquale, M; Fabian, T. J Trauma and Acute Care Surgery. 44:941-956, 1998
Status of EAST PMGs Now

• A cornerstone EAST product
  – “The Guideline Organization”
  – Over 50 active PMGs with more under construction
  – Broken up into four sections
    • Trauma
    • EGS
    • Critical Care
    • Injury Prevention
  – Reviewed and updated as needed
• Listed on the National Guideline Clearinghouse
• Some of the most viewed articles in Journal of Trauma
Is this still the ‘best’ guideline development methodology?
Institute of Medicine Standards for Guideline Development

**Standards for Developing Trustworthy PMGs**

- Establish a transparent process
- Manage conflict of interest
- Use a multidisciplinary guideline development group
- Guideline systematic review interaction
- Clearly describe summary of evidence and differences of opinion
- Clearly articulate the recommendations and how they should be used
- Allow for external review from other experts and stakeholders
- Keep guidelines up to date
The Eastern Association of the Surgery of Trauma approach to practice management guideline development using Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) methodology

Andrew J. Kerwin, MD, Elliott R. Haut, MD, J. Bracken Burns, DO, John J. Como, MD, Adil Haider, MD, Nicole Stassen, MD, Philipp Dahm, MD, and Eastern Association for the Surgery of Trauma Practice Management Guidelines Ad Hoc Committee

- EAST change to GRADE methodology for PMG development in 2012
- GRADE is methodologically rigorous and transparent in its assessment of quality of evidence and guideline development

(J Trauma Acute Care Surg. 2012;73: S283-S287)
What is GRADE?

• Grading of Recommendations, Assessment, Development and Evaluation
  – Designed by a working group in 2000 (www.gradeworkingroup.org)

• Provides framework for rating the quality of evidence available and the application the evidence to PMG development

• Moves away from guidelines that rely heavily on “expert opinion”
Other Organizations Using GRADE

- Centers for Disease Control
- Infectious Disease Society of America
- Society of Critical Care Medicine
- Surviving Sepsis Campaign
- Agency for Healthcare Research and Quality
- World Health Organization
- American Endocrine Society
- American College of Chest Physicians (ACCP)
- Norwegian Centre for Health Services
- Close relationship with Cochrane Collaboration
- American Society of Clinical Oncology (ASCO)
- American Thoracic Society (ATS)
- And Others…

(J Trauma Acute Care Surg. 2012;73: S283-S287)
GRADE Steps for PMG Development

- Define topic of high clinical relevance
- Assemble multi-disciplinary/balanced team of experts
- Framing the questions
- Systematic review of published literature
- Grade the evidence
- Recommendations formulated based on the quality of the evidence and the balance of patient benefit to harm

(J Trauma Acute Care Surg. 2012;73: S283-S287)
Defining the Topic

• Strong topics ensure relevance and usefulness for patients
• Should be high priority issue
• Should have a sufficient base of published evidence
• Controversy over the topic exists

(J’Trauma Acute Care Surg. 2012;73: S283-S287)
Assemble Team of Experts

• Multi-disciplinary topic content experts
  – Other specialties, practitioners
  – Potential financial and intellectual conflicts should be considered

• Systematic review methodology expert

• GRADE expert

(J Trauma Acute Care Surg. 2012;73: S283-S287)
Framing the Questions

Reformat an “informal question” into a specific question that can be answered in a binary format

(J’Trauma Acute Care Surg. 2012;73: S283-S287)
Framing the Questions

• PICO questions drive the systematic review of the literature search and guideline development
• Each informal question may lead to multiple PICO questions
• All possible outcomes should be considered

(J Trauma Acute Care Surg. 2012;73: S283-S287)
Examples of PICO questions

• Bad
  – “How do I treat a patient with a blunt splenic injury?”
  – “Should I use angioembolization when managing blunt splenic injury?”

• Good
  – “In patients with blunt splenic trauma (P), should angioembolization (I) be performed compared to no angioembolization (C) to improve splenic salvage (O) for patients treated with nonoperative management?”

(J Trauma Acute Care Surg. 2012;73: S283-S287)
Predefining Which Outcomes are Important

• Outcome for each PICO is categorized
  – “Critical” for decision making
  – “Important but not critical” for decision making
  – “Limited importance” with respect to decision making

• Outcomes are classified with a numerical value based on a rating scale of 1 to 9 to describe their importance
  – 7 to 9 for critical outcomes
  – 4 to 6 for important outcomes
  – 1 to 3 for limited importance outcomes

(J Trauma Acute Care Surg. 2012;73: S283-S287)
Predefining Which Outcomes are Important

<table>
<thead>
<tr>
<th>Outcome Type</th>
<th>Value</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical outcomes</td>
<td>9</td>
<td>Mortality</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>Splenic salvage</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Need for further transfusions</td>
</tr>
<tr>
<td>Important outcomes</td>
<td>6</td>
<td>Arterial access complications</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Contrast induced nephropathy</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Contrast allergy</td>
</tr>
<tr>
<td>Limited importance outcomes</td>
<td>3</td>
<td>Cost, resource use</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
Identifying References

- Reliably identifying all relevant published data is imperative
  - Use method described by Cochrane Collaboration (http://www.cochrane.org) or The Institute of Medicine

- Meta-analysis done to combine data from studies to give an overall estimate for the effect size that the intervention has on the outcome of interest

(J Trauma Acute Care Surg. 2012;73: S283-S287)
Assessment of Reference Quality

• Evidence is graded separately for each outcome of each PICO question
• Transparent assessment of the quality of evidence
• Applied to either randomized trials or observational studies

<table>
<thead>
<tr>
<th>Quality Level</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>High (A)</td>
<td>Very confident that the true effect lies close to estimate of effect.</td>
</tr>
<tr>
<td>Moderate (B)</td>
<td>Moderate effect; true effect is likely close to estimate of effect but may be substantially different.</td>
</tr>
<tr>
<td>Low (C)</td>
<td>Limited confidence; true effect may be substantially different from estimate of effect.</td>
</tr>
<tr>
<td>Very low (D)</td>
<td>Little confidence; true effect likely substantially different from estimate of effect.</td>
</tr>
</tbody>
</table>

(J Trauma Acute Care Surg. 2012;73: S283-S287)
Assessment of Reference Quality

TABLE 5. GRADE Approach to Rating Quality of Evidence

<table>
<thead>
<tr>
<th>Study Design</th>
<th>Initial Quality of a Body of Evidence</th>
<th>Lower If</th>
<th>Higher If</th>
<th>Quality of a Body of Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Randomized trials</td>
<td>High</td>
<td>Risk of bias</td>
<td>Large effect</td>
<td>High (four pluses: ∝ ∝ ∝ ∝)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>−1 Serious</td>
<td>+1 Large</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>−2 Very serious</td>
<td>+2 Very large</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inconsistency</td>
<td>Dose response</td>
<td>Moderate (three pluses: ∝ ∝ ∝)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>−1 Serious</td>
<td>+1 Evidence of a gradient</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>−2 Very serious</td>
<td>All plausible residual confounding</td>
<td></td>
</tr>
<tr>
<td>Observational studies</td>
<td>Low</td>
<td>Indirectness</td>
<td>+1 Would reduce a demonstrated effect</td>
<td>Low (two pluses: ∝ ∝ ∝)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>−1 Serious</td>
<td>+1 Would suggest a spurious effect</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>−2 Very serious</td>
<td>if no effect was observed</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Imprecision</td>
<td></td>
<td>Very low (one plus: ∝ ∝ ∝)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>−1 Serious</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>−2 Very serious</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Publication bias</td>
<td>−1 Likely</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>−2 Very likely</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

More common to rate down the quality of evidence than to rate up.

(J Trauma Acute Care Surg. 2012;73: S283-S287)
Making Recommendations

- Only two possible recommendations can be made
  - Strong
  - Weak/conditional
- Not automatic and simply based on whether an RCT was performed
  - Must always consider the ratio of benefits to harms and the patient’s values and preferences
  - Some consider the cost of the care involved as well
- This phase should be abundantly transparent

(J Trauma Acute Care Surg. 2012;73: S283-S287)
## Making Recommendations

**TABLE 4. GRADE Definition of Strong and Weak Recommendation**

<table>
<thead>
<tr>
<th></th>
<th>Strong Recommendation</th>
<th>Weak Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>For patients</strong></td>
<td>Most patients would want the recommended course of action.</td>
<td>Most patients would want the recommended course of action, but many would not.</td>
</tr>
<tr>
<td><strong>For clinicians</strong></td>
<td>Most patients should receive the recommended course of action.</td>
<td>Different choices will exist for different patients, and clinicians should help patients decide.</td>
</tr>
<tr>
<td><strong>For policy makers</strong></td>
<td>Recommended course should be adopted as policy.</td>
<td>Considerable debate and stakeholder involvement needed to make policy.</td>
</tr>
</tbody>
</table>

(J Trauma Acute Care Surg. 2012;73: S283-S287)
Figure 1. Summary of GRADE methodology.\textsuperscript{12} Reprinted with permission from Elsevier.
So You Have a Guideline: Now What?
Guideline Implementation

• 5 Steps
  – Identify the guideline you are going to implement
  – Identify the stakeholders
  – Assess your environmental readiness
  – Education/Implementation
  – Evaluation

Identification of the Stakeholders

• Be very clear on your project
  – How is care delivered now and who is involved
  – How will care be delivered using the PMG, and who will be involved

• All those involved in the before and after situations will be stakeholders

How Does Your Institution Make Decisions

• Who is involved in decision making
  – Those who will make the decision
  – Those who can influence the decision;
  – Those who influence implementation
  – Those who will champion the decision and implementation
  – Those who will lead and champion (support) aspects of the implementation
  – Those who will implement/use the recommendations.
How Does Your Institution Make Decisions

• Type of co-operation
  – Supporters
  – Non supporters
  – Those who are neutral

May survey key personnel, set up focus groups, or conduct key interviews to gain information.

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**Figure 2: Stakeholder Influence, Support and Strategies for Engagement**

<table>
<thead>
<tr>
<th>high — stakeholder influence — low</th>
</tr>
</thead>
<tbody>
<tr>
<td>■ Will positively affect dissemination and adoption</td>
</tr>
<tr>
<td>■ Need a great deal of attention and information to maintain their buy-in</td>
</tr>
<tr>
<td>Strategies</td>
</tr>
<tr>
<td>■ Collaborate</td>
</tr>
<tr>
<td>■ Involve and/or provide opportunities where they can be supportive</td>
</tr>
<tr>
<td>■ Support and nurture</td>
</tr>
<tr>
<td>■ Encourage feedback</td>
</tr>
<tr>
<td>■ Prepare for change management</td>
</tr>
<tr>
<td>■ Empower</td>
</tr>
<tr>
<td>Strategies</td>
</tr>
<tr>
<td>■ Can positively affect dissemination and adoption if given attention</td>
</tr>
<tr>
<td>■ Need attention to maintain buy-in and prevent development of neutrality</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>low — stakeholder support — high</th>
</tr>
</thead>
<tbody>
<tr>
<td>■ Can negatively affect dissemination and adoption</td>
</tr>
<tr>
<td>■ Need great amount of attention to obtain and maintain neutrality and work towards buy-in</td>
</tr>
<tr>
<td>Strategies</td>
</tr>
<tr>
<td>■ Consensus</td>
</tr>
<tr>
<td>■ Build relationships</td>
</tr>
<tr>
<td>■ Recognize needs</td>
</tr>
<tr>
<td>■ Use external stakeholders and consultants</td>
</tr>
<tr>
<td>■ Involve at some level</td>
</tr>
<tr>
<td>■ Stress how CPG is developed</td>
</tr>
<tr>
<td>■ Don’t provoke into action</td>
</tr>
<tr>
<td>■ Monitor</td>
</tr>
<tr>
<td>Strategies</td>
</tr>
<tr>
<td>■ Least able to influence dissemination and adoption</td>
</tr>
<tr>
<td>■ Could have negative impact so should be monitored</td>
</tr>
<tr>
<td>■ Some attention to obtain neutrality and to work towards buy-in</td>
</tr>
</tbody>
</table>

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Assess the Environmental Readiness

• Essential to assess the environment
  – Develop implementation plan based on findings

• 8 Areas
  – Organizational infrastructure
  – Workplace culture
  – Leadership support
  – Communications systems
  – Knowledge, skills and attitudes of the potential target group
  – Resources available
  – Interdisciplinary relationships

# Education/Implementation

## Evidence on Implementation Strategies

<table>
<thead>
<tr>
<th>Generally Effective</th>
<th>Sometimes Effective</th>
<th>Little or No Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational outreach visits</td>
<td>Audit and feedback</td>
<td>Educational materials</td>
</tr>
<tr>
<td>Reminders</td>
<td>Local opinion leaders</td>
<td>Didactic educational meetings</td>
</tr>
<tr>
<td>Interactive educational meetings</td>
<td>Local consensus processes</td>
<td></td>
</tr>
<tr>
<td>Multifaceted intervention including two or more of:</td>
<td>Patient mediated interventions</td>
<td></td>
</tr>
<tr>
<td>• Audit and feedback</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Reminders</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Local consensus processes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Marketing</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Evaluation

• Program evaluation
• Structure evaluation
  – Assesses settings and instruments available and used for the provision of care
• Process evaluation
  – Is implementation consistent with the way the program was planned?
  – How can the program be improved?
• Outcome evaluation
  – Assesses the impact of the program

Implementation of a New Guideline

A New Pain and Sedation Protocol

Moving Beyond Just Daily Sedation Interruption
Why It Was Needed

• Over sedation of mechanically ventilated patients worsens ICU outcomes

• Sedation interruption has been shown to reduce sedation use
  – Particularly in medical ICU patient populations

• Utility in trauma ICUs has been questioned

Protocol Design

• Derived from guideline by ICU Provider team
  – Adapted to fit our system
• Medication dosage specifics vetted by Pharmacy
• Approved by Critical Care Quality Council
Burn/Trauma ICU Sedation/Analgesia Protocol

Pain Management

NVPS > 4

Yes

Hydromorphone 0.75mg IV, Reassess in 5-15 min

No

NVPS > 4

Hydromorphone 1mg IV, Reassess in 5-15

Yes

No

Start Midazolam infusion at 5mg/hr IV**

Hydromorphone 0.5-1mg IV Q2hr PRN NVPS > 4

Yes

No

Start Fentanyl infusion at 100mcg/hr IV *

Hydromorphone 1.5mg IV, start Fentanyl gtt

Suspect Pain? Q1 hour

First Pain Management

NVPS = 4

Yes

Hydromorphone 0.5-1mg IV Q2hr PRN NVPS > 4

No

Hydromorphone 0.5-1mg IV Q2hr PRN NVPS > 4

Yes

No

Midazolam 4mg IV Start Midazolam gtt

After initiation of Infusion:
Midazolam 2-4mg IV q15min PRN
Initiation, increase infusion by 50%
bolus dose after bolus is finished

Midazolam 2mg IV reassess in 5-15 min

Start Fentanyl infusion at 50-100mcg IV q15min, infusion by 50% of bolus
Burn/Trauma ICU Sedation/Analgesia Protocol

If requiring Hourly Neurologic Checks Guideline

Midazolam 1mg IV Reassess in 5-15 min

SAS >4

Yes

Midazolam 2mg IV Reassess in 5-15 min

No

SAS >4

Yes

Midazolam 4 mg IV Start Midazolam gtt

No

Sedation Management

Lorazepam 0.5-1mg IV Q2hrs PRN for SAS>4

SAS >4

Yes

Start Midazolam infusion at 5mg/hr IV**

**After initiation of Infusion: Midazolam 2-4mg IV q15min PRN agitation, increase infusion by 50% of bolus dose after bolus is finished

Pain Management

NVPS>4

Yes

Hydromorphone 0.5-1mg IV Q2hr PRN NVPS>4

No

Yes

No
Implementation

• Multidisciplinary education committee created
  – Group in-services for all nursing staff
    • Performed at 1 month and 2 weeks prior to implementation of protocol
  – Group in-service for all faculty and APPs
  – Individual in-service for all rotating residents
Implementation

- Sedation “Champions” used as nursing resource
  - One-on-one bedside teaching during implementation
    - A “champion” was on at all times

- Continuous monitoring to ensure compliance
  - Daily focused discussion on rounds
  - Nursing daily rounds to ensure weaning plan occurred
    - Performed independently by ICU charge nurse
Implementation

- Evaluation of ease of protocol use
- Evaluation of nursing interpretation of efficacy of protocol in pain and sedation management

"I'm not here for committing a crime — I'm here for failing to comply with a guideline."
Results

Dealing With Change

Old Way

New Way
## Sedation Results

<table>
<thead>
<tr>
<th></th>
<th>PRE</th>
<th>POST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total sedation days</td>
<td>1784</td>
<td>344*</td>
</tr>
<tr>
<td>Average narcotic continuous infusion duration (days)</td>
<td>4.54</td>
<td>3.10*</td>
</tr>
<tr>
<td>Average sedative hypnotic continuous infusion duration (days)</td>
<td>5.11</td>
<td>3.05*</td>
</tr>
<tr>
<td>No continuous sedatives</td>
<td>11%</td>
<td>25%*</td>
</tr>
<tr>
<td>No continuous narcotics</td>
<td>13%</td>
<td>27%*</td>
</tr>
<tr>
<td>Quetiapine (Seroquel) use (%)</td>
<td>11%</td>
<td>35%*</td>
</tr>
</tbody>
</table>

*P<0.05
## Sedation Results

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<tr>
<td>Average narcotic continuous infusion duration (days)</td>
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<td>3.10*</td>
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<td>Average sedative hypnotic continuous infusion duration (days)</td>
<td>5.11</td>
<td>3.05*</td>
</tr>
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<td>No continuous sedatives</td>
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*P<0.05
### Sedation Results

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<tr>
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## Complications

<table>
<thead>
<tr>
<th></th>
<th>PRE</th>
<th>POST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total fall rate (per thousand patient days)</td>
<td>1.2</td>
<td>2.7</td>
</tr>
<tr>
<td>Unintended Extubations</td>
<td>8</td>
<td>10</td>
</tr>
</tbody>
</table>
### Press Ganey Results

<table>
<thead>
<tr>
<th></th>
<th>PRE</th>
<th>POST</th>
<th>Other U of R ICUs 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>90.8</td>
<td>90.8</td>
<td>91</td>
</tr>
<tr>
<td>ICU Nurse responsive to pain</td>
<td>93.7</td>
<td>94.9</td>
<td>92.6</td>
</tr>
</tbody>
</table>

Still used Sedation Interruption
## Nursing Feedback

<table>
<thead>
<tr>
<th>Statement</th>
<th>Early Mean Score</th>
<th>Late Mean Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>The protocol is user-friendly</td>
<td>4.1</td>
<td>4.4</td>
</tr>
<tr>
<td>My patient’s pain is better controlled with this protocol.</td>
<td>4.0</td>
<td>4.1</td>
</tr>
<tr>
<td>My patient’s sedation is better controlled with this protocol.</td>
<td>4.1</td>
<td>4.1</td>
</tr>
<tr>
<td>I believe this protocol has improved care in the BTICU</td>
<td>4.1</td>
<td>4.5</td>
</tr>
</tbody>
</table>

1: Disagree, 3: Neutral, 5: Agree
End Result of Protocol Implementation

• Previous sedation interruption based mindset
  – “When can this continuous sedation be stopped?”

• Current BTICU mindset
  – “Does continuous sedation even need to be started?”

• Adopted by the other ICUs in our institution
Use of Guidelines Benefits

Patients
Healthcare Providers
Healthcare Systems
What Makes a Good Guideline?

Should provide extensive, critical and well-balanced information on the benefits and limitations of various interventions so that the practitioner can carefully judge individual cases.
EAST Practice Management Guidelines

• A cornerstone EAST product
  – Broken up into four sections
    • Trauma
    • EGS
    • Critical Care
    • Injury Prevention

• Now using GRADE methodology
GRADE

Formulate question
Select outcomes
Rate importance
Outcomes across studies
Create evidence profile with GRADEpro
Rate quality of evidence for each outcome
Randomization raises initial quality
RCTs: high
Observational: low

PICO
Outcome Critical
Outcome Critical
Outcome Important
Outcome Not important

Evidence synthesis

Summary of findings & estimate of effect for each outcome

Grade overall quality of evidence across outcomes based on lowest quality of critical outcomes

Recommendation
Grade recommendations
(Evidence to Recommendation)
- For or against (direction) ▼ ▲
- Strong or conditional/weak (strength)

EIR framework GRADEpro

Guideline
Formulate Recommendations (▼ ▲ △...)
"The panel recommends that...should..."
"The panel suggests that...should..."
"The panel suggests to not..."
"The panel recommends to not..."
Transparency, clear, actionable Research?
Guideline Implementation

• 5 Steps
  – Identify the guideline you are going to implement
  – Identify the stakeholders
  – Assess your environmental readiness
  – Education/Implementation
  – Evaluation

Guideline Implementation

The Change Process

Performance

Old Status Quo

Foreign Element

Resistance

Time

Integration

New Status Quo

Chaos

Transforming Idea
Conclusion