Put Peer Review & Quality Assurance into Practice:
Reduce Adverse Events,
Decrease Healthcare Costs

Physician-Patient Alliance
for Health & Safety
Crittenden Medical Conference
Scottsdale, AZ (April 16, 2012)
Cost of Adverse Events

$19.5 billion (2008) - Society of Actuaries

- based on insurance claim data
- cost estimate includes medical costs, costs associated with increased mortality rate and lost productivity, and covers what the authors describe as a conservative estimate of 1.5 million measurable errors
- report estimates the errors caused more than 2,500 avoidable deaths and over 10 million lost days of work

The Economic Measurement of Errors (June 2010)
http://www.soa.org/search.aspx?searchterm=The%20Economic%20Measurement%20of%20Errors%20(June%202010)
Do You Give Money Away?

Institute of Medicine:

• $8,750 per preventable adverse event
• excludes potential costs of litigation


Data Provides Solutions

Peer Review Programs:

- enlist professionals to monitor the quality of patient care provided by their colleagues
- identify opportunities to improve the quality of patient care, and educate, restrict, or remove those providers who do not satisfy the applicable standards of knowledge or competence

Quality Assurance Programs:

- monitor the quality of the health care services rendered to patients
- identify opportunities to improve patient outcomes, and identify and prevent malpractice
Faces of Tragedy

Amanda Abbiehl
18-yr old, mouth sores and fever from strep throat

Leah Katherine Coufal
11-yr old, elective surgery pectus carinatum

Justin Micalizzi
11-yr old, incise/drain swollen ankle

Louise Batz
grandmother, elective knee surgery
Case Study:
PCA (patient-controlled analgesia)

Pennsylvania Patient Safety Authority¹
- about 4,500 reports associated with PCA pumps
- 6-yr period (June 2004 to May 2010)

MedMarx² (national voluntary medication error-reporting database)
- 9,571 (1%) of 919,241 voluntary medication errors reported were associated with PCA (only 801 facilities reporting)
- 5-yr period (July 1, 2000, to June 30, 2005)

Veteran Health Administration (root cause analyses since 1999)
- 13% involved two types of pumps
- about 50% general-purpose and 50% PCA

"... there are about 10 times as many general-purpose pumps in use across the VA system than PCA pumps. This suggests that incidents with PCA pumps are about 10 times more than with general-purpose pumps. That's significant!"

Bryanne Patail
Biomedical Engineer
U.S. Department of Veterans Affairs
National Center for Patient Safety

Reported PCA Events:
Just The Tip of the Iceberg

“PCA errors certainly occur, both in programming and in delivery, but any published estimate is likely to be only the tip of the iceberg.”

Dr. Richard Dutton
(Executive Director, Anesthesia Quality Institute)

Anesthesia Quality Institute’s mission:
• develop and maintain an ongoing registry of anesthesia cases and outcomes to help anesthesiologists assess and improve patient care
• goal include data from all practicing anesthesiologists and all practice locations in the United States.

The VHA Solution: Implement Strong Fixes

Three-Types of Fixes
"Use of PCA pumps is a process, and improving that process is an area that involves many stakeholders. In looking at fixes, they can be categorized as strong, intermediate or weak fixes."

“The strongest fix for PCA pumps is a forcing function, such as an integrated end tidal CO₂ monitor that will pause the pump if a possible over infusion occurred. So, healthcare providers should first look at these strong fixes. There they will see the most impact on reducing errors and improving patient safety.”

Bryanne Patail
Biomedical Engineer, U.S. Department of Veterans Affairs, National Center for Patient Safety
http://wp.me/p1JikT-dH
The VHA Solution:
Reducing PCA Errors by more than 60%

“A capnograph measures in real-time the adequacy of ventilation. Using this technology could prevent more than 60 percent of adverse events related to PCA pumps.”

Bryanne Patail
Biomedical Engineer
U.S. Department of Veterans Affairs
National Center for Patient Safety
# St Joseph’s/Candler Hospitals

<table>
<thead>
<tr>
<th>What Happened</th>
<th>3 significant patient events in less than 2 year period</th>
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<tbody>
<tr>
<td>What They Did in 2002</td>
<td>replaced its existing traditional IV pumps with “smart” IV safety systems - PCA pump with integrated capnography</td>
</tr>
<tr>
<td>Location</td>
<td>Savannah, Georgia</td>
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<tr>
<td>History</td>
<td>2 of oldest continuously operating hospitals in US</td>
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<tr>
<td>Patient Volume</td>
<td>39,064 admissions annually</td>
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<tr>
<td>Staff</td>
<td>- 407 physicians</td>
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<td></td>
<td>- 716 nurses</td>
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<td>- 50 pharmacists</td>
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Return on Investment*

St Joseph’s Hospital & Candler Hospital

• no PCA-related respiratory events with a serious outcome
  - now approaching their 8th ‘event free’ year

• averted at least 471 preventable adverse drug events

• prevented estimated potential expenses of almost $4 million

• 5 year ROI of $2.5 million

✴ “There can be no adequate valuation of a life saved from preventing an adverse medication event.” - Ray Maddox & Carolyn Williams, “Clinical Experience with Capnography Monitoring for PCA Patients”, APSF Newsletter (Winter 2012).
What PPAHS Is Doing: PCA Safety Checklist

Dr. Elliot Krane
(Director, Pediatric Pain Management, Lucile Packard Children’s Hospital at Stanford)
A checklist would help avoid many things that could go wrong with PCA.

Dr. Julius Cuong Pham
Department of Emergency Medicine, Department of Anesthesia and Critical Care Medicine, Armstrong Institute for Patient Safety and Quality at Johns Hopkins University School of Medicine:
In practice, checklists serve as a mental reminder of critical steps that we may or may not remember. Therefore, the value of a checklist with regards to PCAs would be to remind us/double check a critical step in the process.

Dr. Richard Dutton
(Executive Director, Anesthesia Quality Institute)
A checklist would help to avoid simple but recurrent errors in packaging and programming the PCA.

Dr. Andrew Kofke
(Co-Director, Hospital of the University of Pennsylvania Neurocritical Care Program)
The use of a well-constructed checklist that ensures proper procedures are followed in patient-controlled analgesia would enhance patient safety.
Conclusion

Put Peer Review & Quality Assurance into Practice:

- Reduce Adverse Events, Decrease Healthcare Costs
- Example: PCA Integrated Capnography Monitoring
Other Cost-Reducing Studies

Blood Gas Tests:\(^1\)
- Riley Hospital for Children at Indiana University Health
- Spent about $112,000 and saved $985,130 over a six month period

Surgical Patients with Obstructive Sleep Apnea: \(^2\)
- Kelowna General Hospital (KGH) in British Columbia, Canada
- 70% reduction in operating costs

1. http://wp.me/p1JikT-fM
2. http://wp.me/p1JikT-gg
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