Reducing Healthcare Costs While Improving Patient Health Outcomes and Safety: Checklist and Case Studies in Making Patient-Controlled Analgesia (PCA) Safer

**Faces of Tragedy: PCA-Related Patient Deaths**

Amanda Abbott
18 year old from Michigan, (2009)

Leanne Davis
Learned daughter, Los Angeles (2009)

Justin Micalizzi
14 year old from Chicago, (2008) increase in 32
decay due to PCA

Leah Katerina Circle
5 year old from New York, (2006) increase in 32
decay due to PCA

Lenore Alexander (active member of

The answer is yes, it would have.

**Safety Checklist Targeting PCA Use**

**PCA Pump Initiation, Refilling, or Programming Change**

- Risk factors that increase risk of respiratory depression
  - Have been considered:
    - Sleepy
    - New body weight
    - Consequence of medications (various and non-opioids) that may potentiate sedative effect of opioid PCA
    - Presence of conditions such as asthma, COPD, and sleep apnea
    - Advanced age

Pro-procedural cognitive assessment (determined patient is capable of pain management (note: pediatric patient may not be suitable for PCA)

Patient has been provided with information on proper patient use of PCA pump (other recipient of information — family/caregiver) and purpose of monitoring

Two healthcare providers have independently double-checked:

- Patient’s identification
- All patient allergies appear prominently on medication administration record (MAR)
- Drug selection and concentration confirmed as that which was prescribed
- Any necessary flow adjustments completed
- PCA pump settings
- Read attachment to patient and tubing insertion into pump

Patient is electronically monitored with both: Dose counter and capnography

**PCA Pump Check of Scale Change and Every Hour/Every 2 Hours (Recommended)**

- Patient satisfied with care:
  - Level of pain
  - Adequacy of ventilation

PCA pump settings verified

Electronic monitoring verified: Dose counter and capnography

Patient assessment/condition has been added to flow sheet/ chart documenting PCA titrating and monitoring

**About PPNAHS**

Physician-Patient Alliance for Health & Safety would like to thank the following healthcare professionals for their thoughts and input on this safety checklist:

- Dr. Robert Bonow (UCSD)
- Dr. Jennifer Helsel (UCSF)
- Dr. Michael Kanto (UCSD)
- Dr. John Shaw (UCSF)
- Dr. Thomas Harless (UCSF)
- Dr. Roshan Patel (UCSF)
- Dr. David Valsecchi (UCSF)

**Achieving Zero Code Blues:**

Eliminating Adverse Events and Improving Patient Safety While Reducing Costs

Reducing the number of PCA adverse events is a national priority. The American Society of Anesthesiologists reports that over the last six years, more than 100,000 patients have been injured due to PCA errors.

### How Often Do They Occur?

- **Approximately 4,500 reports** associated with PCA errors

### What Are They?

- **Outcomes related to PCA pumps.**

### How Do They Happen?

- **Over the six-year period from June 2004 to May 2010.**

### How Can They Be Prevented?

- **Implementing technology to improve patient safety.**

### The ROI of Safer PCA:

**60% Reduction in PCA Adverse Events**

**65% Reduction in PCA Adverse Events**

Achieving Zero Code Blues: Reducing Adverse Events in Critical Care Setting: "A deceptively simple method for reducing adverse events ..."

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