University of Michigan Hospitals & Health Centers
Sentinel Event Review

PCA Sentinel Event
Minimum Scope of Root Cause Analysis
Identified Issues

Patient Identification Process:

- Pt. ID from outside hospital remained on patient in ED – led to confusion when accessing old records
- Should UMHHC Patient ID look different from other hospitals?

Patient Observation Procedures

- Observation of patient between RR of 8 and arrest
- Appropriateness of discharge from PACU
- Mandatory pulse oximetry with PCA use?
- Mandatory pulse oximetry with continuous narcotic infusions?
- Were available lighting options in the room utilized to observe the patient?
- Monitoring of PCA – Should include Pulse ox or Cardio-respiratory monitor?
- Was patient agitated or in pain?
- Intervals for vital signs appropriate?
- Age specific orders for respiratory rates?

Care Planning Process

- Order written to call MD with RR< 8. Call not made for RR of 8
- Was PCA necessary at all for this patient?
- Was general care the correct placement of patient with specialized equipment?
- Set up of the PCA pump; where should that occur?
- Arrest response; notification of others on the unit
- Arrest response; Narcan not given
- Inconsistent management of patients with PCA – some by Acute Pain Service (APS), others not
- Surgical service controlling PCA process -want to know about patient's pain
- Ability to get gram stain during the night on fluid other than CSF
- Should we PCA trial while pt. still in PACU?
- Appropriateness of assignment for newly oriented nurse
- Should pulse oximetry require MD order?
- Hour of the day not optimal for this surgery to take place
- Equipment in the room to help nurse deal with pt. resp rate of 8.
- Staff nurse getting help; other nurse unable to hear call light or code alarm
- Did illness contribute to patient's death?
- Are PCAs needed in Mott at all? Should nurse use PCA or draw up dose each time?
- Was resuscitation according to ALS protocol?
- Should all PCA patients have pulse ox? (adult or Peds)
- Who should push PCA buttons? (nurses?)
- Decision to do laparoscopic versus open surgery?
- ICU placement versus general care? Who makes decision?

Staffing Levels:

- What was on call staffing for OR?
- Were recovery nurses stressed by working in the night and having to return the next day?
- Nurse staffing on general care; was it adequate?
- APS nurse coverage in Mott at night
- Are APS nurses from Mott and UH cross-trained?

Orientation & Training of Staff

- General care staff nurse 2 days off orientation
- PCA priming process misunderstood
- What is the process for double check, sign off, and PCA set up
- Knowledge about proper dosing and potency of meds
- De-centralized education related to PCA medication and dosing info
- Nurse calling other staff – pushing buttons for help
- Education about narcotic sensitivity r/t similar meds
- Education about patient's underlying illness r/t narcotic sensitivity and need for observation

Competency Assessment /Credentialing

- Double check not properly performed
- Should there be certification for all PCA users?

Supervision of Staff

- Attending surgeon unaware of PCA consult ordered by house officer
- Attending and House Officer communication?

Communication Among Staff Members

- Documentation of Fentanyl order unclear
- Unclear Fentanyl order not questioned
- Communication with Peds Surgery about PCA concerns by Anesthesia
- Communication with PACU nurses about PCA concerns by Anesthesia
- Lack of documentation of de-saturation in response to Fentanyl dose and recovery
- Lack of documented resp. rate in PACU after 2:10am
- Documentation of double check – inconsistent between Mott and UH; documentation of double-check not performed, documentation tool does not specify parameters double-checked
- Enforcement/education about abbreviations – 2 ways to write micrograms
- Afraid to ask questions in the OR
- Centralized process for pt. assignment to room
- Communication about patient's history between caregivers

Availability of Information

- Old records not available to review patient's previous pain management (prior to Care web)

Adequacy of Technical Support

- PCA programming process to avoid errors - is bar-coding available? Are safer programming selections possible?
- Pulse oximeter not immediately available on the unit; requires call to RT

Equipment Maintenance/Management

- Was PCA machine performing properly?
- Pump availability on general care units
- Extension tubing needed for IV set up
- When PCA pump is low battery, pump automatically erases programming. Timing of next dose, total volumes, etc are lost.
- Ambu bag in all pt. rooms?
- Use of mini bore tubing; – is it on carts?

Physical Environment

- Adequate available lighting in patient's room?

Control of Medications

- Direct access to Dilaudid PCA Syringes, bypassing Pharmacy
- Direct access to other narcotic PCA syringes, bypassing Pharmacy
- Incorrect concentration of Dilaudid selected
- Exact amount of Dilaudid infused unknown due to waste when IV tubing purged / lack of accurate control of wasted narcotics
- Should main IV line be carrier fluid rather than PCA fluid?
- Dilaudid concentration – should we use that high of a concentration at all? In peds, in adults?
- Should different nurses than those setting up PCA retrieve medication?
- Can Fentanyl be given on a general care unit?
- Should all blanks be filled in (mandatory) on the PCA order form?
- Should vial of Narcan come with pump? JCAHO mandates medications be locked up unless continuously visible; can it be locked within PCA pump?

Labeling of Medication

- Dilaudid concentration not visible on the syringe label when syringe placed in PCA.
- Differentiating color on label not visible all the way around syringe cartridge

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