Root Cause Analysis

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ROOT CAUSE ANALYSIS

Victor Warr, Tom Sant, Carly Riehl, Rahib Bashir
AGENDA

• What happened?
• Timeline of events
• Why?
• Root cause analysis
• Recommendations for improvement
A 65 y/o female with a PMH significant for severe protein calorie malnutrition (BMI 15.8), CKD, osteoporosis, R hip replacement, and a single kidney with renal artery stenosis was seen at STHC on 9/13 for a non-healing R hip wound. Due to concerns for abscess formation with extension into her hip hardware, blood cultures were collected, and an IR joint aspiration was ordered. On 9/17, a password page was received to alert that her blood cultures came back positive for gram-positive cocci in clusters and the patient was instructed to present to the ED.

In the ED on 9/17, a R hip ultrasound was performed which showed a 5.9 x 2.1 x 3.9 cm hypoechoic area with echogenic foci which extended from the dermis to R hip osseous structures, including the femoral head and orthopedic hardware. The patient was prescribed doxycycline and instructed to follow up with her PCP.

On 10/26, the patient followed up with her PCP at STHC and was found to have ongoing purulent drainage. Imaging was reviewed and discussed with the on-call Orthopedic physician and the patient was instructed to go straight to the SHMC ED for irrigation and debridement.
• Following her surgery, the patient became delirious suspected to be associated with her infection and prolonged hospital course.
• Patient got out of bed to use the restroom (despite her profound weakness, confusion, and instructions to stay in bed) and fell. She was assessed at bedside but was found to be uninjured.
• Nursing called the on-call provider and requested a posey vest which was ordered. The only size immediately available was XXL which was donned. It was clearly too large and did not fit her cachectic frame well.
• Additionally, due to the patient's extremely low BMI, the bed alarm was triggered every five to ten minutes despite the patient lying in bed, requiring the nursing staff to enter the room each time to turn it off.
• Nursing became tired of frequently attending to the false alarms and subsequently turned off the bed alarm.
• Shortly after the bed alarm was deactivated, the patient wiggled free of the XXL posey vest in another attempt to go to the restroom.
• The bed alarm did not activate, as it was off, and nursing was not aware she was out of bed.
• The patient had a second fall and hit her head. This fall required a full trauma workup including CT head, CT C-spine, CXR, and pelvic x-ray costing both the patient and hospital.
13 Sep.
seen at STHC w/ cellulitis, IR joint aspiration ordered

17 Sep.
password page for 1 of 2 positive blood cultures

17 Sep.
hip u/s in ED with evidence of extension to hardware, d/c'd on doxycycline

27 Oct.
Ortho washout

5 Nov.
Patient fell again: CT head, CT neck, CXR, Pelvic Xray

26 Oct.
seen at STHC, sent back to SHMC for admission

3 Nov.
Patient fell: CT head & CXR
THE PROBLEM:

RECURRENT PREVENTABLE FALLS
THE 5 WHY'S: INCORRECT POSEY VEST SIZE

Why ? ____________ Patient fell twice while receiving inpatient care

Why ? ____________ Patient was placed in a posey vest that was far too large for her that she was able to get out of

Why ? ____________ There were no posey vests available for someone of her size

Why ? ____________ Patient was anorexic and petite with a BMI of 15.8

Why ? ____________ Patient had poor oral intake and deconditioning from long term illness
THE 5 WHYS: DEACTIVATED BED ALARM

Why ? ______________  Patient fell twice while receiving inpatient care

Why ? ______________  Patient's bed alarm didn’t sound when she got up

Why ? ______________  Patient's bed alarm was turned off as it was constantly going off

Why ? ______________  Patient was constantly getting out of bed without ability to always redirect her

Why ? ______________  Lack of staffing to permit 1:1 sitter
• Patient discharged with infection already extending into joint, seen a week later at STHC immediately sent back to SHMC.
• Delay in admission and surgical cleanout led to increased severity of infection

• No communication of incorrect posey vest size from nursing
  • Could have requested restraints

• Possible bed alarm malfunction
  • Epic not able to notify of posey vest size availability

• Correct size posey vest not available.
  • Dysfunctional alarm in bed not fixed immediately, ultimately turned off.

• Frequent beeping alarms from bed, disruption of circadian rhythm
  • Unfamiliar environment of the hospital

• Nursing staff shortages, too many patient’s per nurse to take care of delirious patients requiring frequent redirection.

Medical decision making

Communication

Technology

Availability of resources

Environment

Delirium and Recurrent falls
RECOMMENDATIONS FOR IMPROVEMENT

1. Create a "Delirium Precautions" order that is not simply a dot-phrase in a nursing communication. This will standardize delirium precautions and make it more easily recognizable and actionable.

2. Nurses should verify that a posey vest is the correct fit via test of patient movement, tightness, and mobility.

3. Posey vests should be restocked regularly and should be available in all sizes. Epic should notify when sizing is unavailable.

4. If a well-fitted Posey vest in unavailable, the provider should be contacted in case another form of restraint is preferred.

5. Bed alarms should not be turned off if a bed alarm is ordered, even if it is malfunctioning, unless the bed alarm order is discontinued.

6. Have mechanic check bed for malfunction following the incident, review all beds of that make and model to see if they have trouble with sensitivity to low-weight patients.