Quality, Safety, Cost Reduction: Clinical Nurse Specialist Lead the Way

Brenda A. Artz, DNP, RN, CCNS, CCRN
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Cynthia G. Stermer, MS, RN-BC, ACNS-BC
Relationship to Patient Safety and Quality

- 2000 “To Err is Human: Building a Safer Health System” (IOM)
- 2001 IHI “Improving care in the ICU”
- 2005 IHI “100,000 Lives Campaign”
- 2010 IHI “5 Million Lives Campaign”

Kohn et al. (2000).

www.ihi.org
CNS Spheres of Influence

Patient Clinical Expert

Nurses & Nursing Practice

Organizations & Systems

Fulton, Lyon, & Goudreau., 2014
Clinical Nurse Specialist Core Competencies

- Collaboration
- Research
- Consultation
- Clinical Practice
- Leadership
- Expert Coaching
- Ethical Decision Making

Fulton, Lyon, & Goudreau., 2014
Symposium Objective

Participants will learn approaches to reduce and document the cost of care related to:

- Falls and falls with injury,
- Catheter-associated urinary tract infections
- Ventilator-associated pneumonia
CNS Initiative to Reduce Fall Rates and Related Cost

Amy E. Seitz Cooley, MS, RN, ACNS-BC
Clinical Nurse Specialist
WellSpan York Hospital
York, PA
Objectives

- Describe the background and significance of reducing overall and injurious fall rates.
- Discuss approaches to reduce the cost associated with falls and falls with injury.
- Evaluate outcome measures related to cost reduction.
On a yearly basis, 1/3 of adults over the age of 65 fall!!
- Leading cause of injury and death due to head trauma and fracture injuries and complications.
  (Centers for Disease Prevention and Control, 2013)

In 2008, Centers for Medicare and Medicaid Services named falls with injury a hospital acquired condition (HAC)—"never event" (CMS, 2008)

National Quality Forum serious reportable event!! (NQF, 2007)
- Reportable patient safety indicators (PSIs) include post operative hip fracture (PSI 8)
  (Sadeghi, Barzi, Mikhail, & Shabot, 2013)
About 3-20% of patients fall at least once during hospital admission!!
- Injury prevalence ranges from 30-51%
- Injuries include fractures, subdural hematomas, excessive bleeding, death (Oliver, Healey, & Haines, 2010)

Falls are costly to patients and organization!!
- Fall without injury--$3,500
- Fall with injury--Up to additional $27,000 (Boushon et al., 2012)
- Other sources-- averages for falls with injury are $13,313 and $14,056 (Bouldin et al., 2013; Joint Commission Center for Transforming Healthcare, 2014)
Falls Defined

National Database of Nursing Quality Indicators (NDNQI)

- A fall is a sudden, unintentional descent, with or without injury, that results in the patient coming to rest on the floor, on or against some other person, or on an object such as the trash can.

- Assisted falls are those that happen when a staff member is with the patient and lowers the patient to the floor. (NDNQI, 2013)
Types of Falls

**Accidental**
- Falls due to environmental factors
- Slip or trip
- Interventions aimed at creating a safe environment

**Anticipated Physiological**
- Falls due to patient’s known intrinsic and extrinsic risk factors
- Interventions require comprehensive multifactorial risk assessment and treatment by interdisciplinary team

**Unanticipated Physiological**
- Falls due to unanticipated event such as a seizure, MI, or stroke
- Unpredictable

(Morse, 2009)
Problem Statements

- Most falls are preventable
- Universal precautions inadequate in reducing falls
- Multifactorial interventions most common prevention approach

- How do you know what interventions to include??
  - Evaluate contributing factors and root causes!!
The aim of the project is to reduce falls and falls with injuries by initiating a post fall huddle following every fall event.
Evidence Based Intervention

- Post-Fall Huddle identified as a best practice intervention to review and evaluate a fall incident (Boushon et al., 2012; Degelau et al., 2012; Ganz et al., 2013; Hempel et al., 2013)

- Mechanism to learn from learn from fall, near miss, or unexpected event (Degelau et al., 2012)
Goals

- Goal for HACs and PSIs is ZERO!! (Sadeghi et al, 2013)

- Myth to think organization can get to 0 falls—instead strive for 0 injuries!! (Quigley, 2014)

- Target preventable types of falls: accidental and anticipated physiological (Morse, 2009)
Framework for Improvement

Plan

Act

Do

Study
Key Stakeholders

- Project manager
- Fall task force members
- Nurse managers
- House supervisors
- Patient safety officers
- Data specialist
- Senior leadership
- Unit staff
- Patients
- Families
Market Size

- 22 inpatient units—staff in these 22 units
- 22 Nurse Managers (NMs)
- 10 House Supervisors (HSs)
- Project Manager
- Patient safety officers (3)
- Three senior administrators—CNO, hospital president, financial administrator
Measures

Outcome Measures

- Number of falls
- Fall rate
- Number of falls with injury
- Injurious fall rate

Goal is to reduce the overall fall and fall with injury rates due to individualized fall prevention approach!
Measures

Process Measures

- % of post fall huddles that occur following a fall event
- % of falls with completed root cause findings documented
- % of fall risk screens completed post fall
- % of fall patients with a documented interdisciplinary fall plan of care in the electronic medical record
Financial Plan
Implementation Costs

Salaries:
- Designing, preparing, and providing the post fall huddle education include the project manager and the associate patient safety officer.
  - Hourly pay rate for the project manager
  - Hourly pay rate for the associate patient safety officer
  - Time involved in preparing for and providing the education is 12 hours per person.
- The data specialist salary to design the falls dashboard
  - Hourly pay rate for this role
  - First draft of the dashboard-- 80 hours to create.
- The education sessions for 22 NMs and 10 HSs equal three hours per person.
  - NM hourly pay rate
  - HS hourly pay rate

Other costs:
- Costs for room space, lighting, and computer access -- not separated out of hospital operating costs.
- Handouts are minimal ($0.02/page) and are printed on the premises.
Financial Benefit

- Through CMS, there are financial penalties for hospital-acquired conditions such as fall related trauma.

- The Affordable Care Act establishes a payment adjustment to organizations for HACs (Centers For Medicare And Medicaid Services, 2010).

- It benefits the organization to improve quality and reduce the numbers of HACs, in this case fall injuries.

- Organizations experience financial benefits for achieving the outcome measures of reducing falls and falls with injuries.
  - Cost of a fall without injury is $3500 per fall (Boushon et al., 2012).
  - Fall with injury cost is $14,056 per fall (Joint Commission Center For Transforming Healthcare, 2014).
Cost Benefit/Cost Effectiveness

- The cost to implement this project is significantly less than the cost of one fall with injury.

- The cost of the post fall huddle project is $9,549.

- Cost avoidance as a result of the post fall huddle project--$176,455

- No patient deaths in FY 2014! No deaths in calendar year 2014.
## Cost Benefit Cost Effectiveness Analysis

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<td><strong>Cost of falls</strong> ($3500 x no.)</td>
<td>(442 falls)</td>
<td>$1,547,000</td>
<td>(425 falls)</td>
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<td><strong>Cost of Injury Falls</strong> ($14,056 x no.)</td>
<td>( 24 injury falls)</td>
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<td><strong>Total Cost of Falls</strong></td>
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**Cost of falls (442 falls):**
- $1,547,000

**Cost of Injury Falls (425 falls):**
- 24 injury falls: $337,344
- 15 injury falls: $210,840

**Total Cost of Falls:**
- FY13: $1,884,344
- FY14: $1,698,340

**Cost Avoided:**
- FY13: $9,549
- FY14: --
## Falls Dashboard

### 12 Month Summary w/ Injury

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* indicates Major Injury | Red indicates >= Moderate Falls w/ Injury

Site Total: 30 30 40 38 28 27 31 47 27 32 45 39 427 61 9 7
12 MONTH PRIOR/CURRENT YEAR FALLS/1000 PT. DAYS COMPARISON

FALL COUNT PRIOR PERIOD COMPARISON

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<tr>
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<th>Prior Month End Count</th>
<th>Current Month Proj. “run-rate”</th>
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* Data available on or after 2nd Wednesday of every month

18 MNTH FALLS VOLUME MONTH RATE

FALLS SUMMARY METRICS

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18 MONTH RUNNING FALLS/1000PD CONTROL CHART

18 MONTH RUNNING INJ FALLS/1000PD CONTROL CHART
References


References


CNS Initiative to Reduce CAUTI Rate and Related Cost

Cynthia Stermer, MS, RN-BC, ACNS-BC
Clinical Nurse Specialist
WellSpan York Hospital
York, PA
Objectives

- The purpose of this activity is to enable the learner to examine the use of a nursing urinary catheter removal protocol.
- The purpose of this activity is to enable the learner to describe methods to reduce the cost of care associated with CAUTI.
CAUTI – Catheter Associated Urinary Tract Infections

- Urinary tract infections are the 2nd most common healthcare associated infection
- Catheter associated urinary tract infections (CAUTI) account for 70%-80% of all urinary tract infections
CAUTI’s Impact

- Increased morbidity
- Increased length of hospital stay (1-2 days)
- Secondary blood stream infections
- Increased mortality - more than 13,000 deaths annually resulting in $400 – $500 million in annual healthcare costs.
- Average cost of one CAUTI $2,500 - $3,500
CAUTI Significance

- 2009 CDC HICPAC Guidelines for the prevention of CAUTI’s
- NHSN reports a 6 percent increase in CAUTI between 2009 and 2013
- NHSN CAUTI rates reported in 2011 were 0.2 – 4.8 per 1,000 catheter device days
- NHSN CAUTI rates reported in 2012 were 0.4 – 4.8 per 1,000 catheter device days

Core Prevention Strategies – 2009 HICPAC and CDC Guidelines

<table>
<thead>
<tr>
<th>Appropriate catheter use</th>
<th>Proper techniques for insertion</th>
<th>Proper techniques for maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insert catheters for appropriate indications</td>
<td>Hand Hygiene</td>
<td>Maintain a closed drainage system</td>
</tr>
<tr>
<td>Avoid use of catheters for the management of incontinence</td>
<td>Properly trained personnel</td>
<td>Maintain unobstructed flow of urine</td>
</tr>
<tr>
<td>Use in operative patient only as necessary and not routinely</td>
<td>Aseptic technique for insertion</td>
<td>Use standard precautions during manipulation of catheter or collecting system</td>
</tr>
<tr>
<td>Remove catheter postoperatively within 24 hours unless appropriately indicated to continue</td>
<td>Secure properly</td>
<td>Cleanse meatal surface daily and PRN</td>
</tr>
<tr>
<td>Consider alternatives when appropriate</td>
<td>Use smallest bore possible</td>
<td>Change catheters when clinically indicated with infection, obstruction or when closed system is compromised</td>
</tr>
<tr>
<td></td>
<td>Preform intermittent catheterization at routine intervals when used.</td>
<td></td>
</tr>
</tbody>
</table>

CAUTI Problem Solving

- What was being done well?
- What needed improvement?
- Insertion, care and maintenance had been addressed
- Returned to 2009 HICPAC and CDC Guidelines
- New literature reviewed
- Reviewed successful CAUTI prevention programs
- Infection control reports identified CAUTI events with > 10 device days
Problems Identified

- **Appropriate catheter use**
  - Indications for use not appropriate
  - Catheters not being removed when no longer appropriate
  - Nursing removal protocol (NRP) ineffective

- **Appropriate catheter product**
  - Evaluation of catheter materials
  - Infection control recommendation
  - Latex and silver alloy
Nursing Removal Protocol

- Catheter daily risk 3%-7%
- Early removal vital to CAUTI prevention
- NRP implemented in 2009 based on scoring system
- NRP revision based on CDC recommended criteria for catheter insertion
- Provider orders required to select appropriate criteria
- Aligned nursing assessment and documentation with provider order
Nursing Removal Protocol

- Urology physicians collaboration
- Nursing IT collaboration
- Education and implementation
- Go - Live June 2014
- Daily audits implemented
Nursing Removal Protocol
“Criteria to Maintain Foley”

- Chronic Foley
- Urologist insertion/recommendation
- Comfort care at end of life
- Acute retention /obstruction
- For selected surgical procedures (48 hours or less)
- Stage III or IV pressure ulcers at risk for contamination
- REQUIRED immobilization for mechanical/medical reason
- Critically ill with HEMODYNAMIC INSTABILITY to monitor I and O

*To maintain an indwelling foley catheter one of the following criteria must be met
Nursing Removal Protocol
“Criteria to Maintain Foley”
Reduction in Device Utilization

Catheter Device Days

- FY 2014: 24714
- FY 2014 Jul-Dec: 12368
- FY 2015 Jul-Dec: 8335
CAUTI FY 2014 and FY 2015 Mid-year Comparison

FY 2014 – FY 2015 Mid-year Comparison

FY 2014: 73
FY 2015: 23

Month:
- July: 8
- Aug: 11
- Sept: 3
- Oct: 4
- Nov: 3
- Dec: 4
- Total FY 2015: 33
- July: 2
- Aug: 2
- Sept: 5
- Oct: 5
- Nov: 2
- Dec: 7
- YTD: 23

WellSpan York Hospital
Catheter Product Evaluation

- Latex vs non-latex
- Manufacturing process
- Latex less irritation and trauma
- No sensitization
- Non-latex for known latex allergy only
- Silver alloy coating may be of benefit
- Product cost increase vs CAUTI cost avoidance
Urinary Catheter Product

Product Comparisons

- **Silicone Product Annual Cost**: $136,932
- **New Latex Product Annual Cost**: $181,059
Timeline

- March 2014 - product evaluation and approval by value analysis team
- Mandatory daily foley audit on each unit
- April 2014 - staff education and preparation for new product changes
- May 2014 - new product transition
- June 2014 - nursing removal protocol and “Criteria to Maintain Foley” go-live
- July 2014 – significant improvement in CAUTI events
Reduced CAUTI Events

CAUTI Events FY 2014 – FY 2015

- FY 2013: 64
- FY 2014 Jul-Dec: 33
- FY 2015 Jul-Dec: 23
Associated Cost Avoidance

Average Cost of all CAUTI Events

<table>
<thead>
<tr>
<th>Year</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>$192,000</td>
</tr>
<tr>
<td>FY14 July-Dec</td>
<td>$99,000</td>
</tr>
<tr>
<td>FY 15 Jul-Dec</td>
<td>$69,000</td>
</tr>
</tbody>
</table>
Reduced CAUTI Events

Comparison FY 14 to FY 15

- FY 2014:
  - July: 8
  - Aug: 11
  - Sept: 3
  - Oct: 4
  - Nov: 3
  - Dec: 4
  - Total: 41

- FY 2015:
  - July: 2
  - Aug: 2
  - Sept: 5
  - Oct: 5
  - Nov: 2
  - Dec: 7
  - Jan: 2
  - YTD: 25
Current CAUTI Rate

<table>
<thead>
<tr>
<th>Year</th>
<th>CAUTI Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 2014</td>
<td>2.95%</td>
</tr>
<tr>
<td>FY 2014 Jul-Dec</td>
<td>2.66%</td>
</tr>
<tr>
<td>FY 2015 Jul-Dec</td>
<td>2.29%</td>
</tr>
</tbody>
</table>
Selected References

- IHI Program to Prevent CAUTI http://www.ihi.org/
- SHEA/IDSA Compendium (ICHE 2008;29:S41-S50)
CNS Initiative to Reduce VAP Rate and Related Cost

Brenda A. Artz, DNP, RN, CCNS, CCRN
Clinical Nurse Specialist
WellSpan York Hospital
York, PA
Objectives

- Describe the significance and background in reducing VAP.
- Discuss approaches to reduce the cost of care associated with VAP.
- Evaluate outcome measures related to cost reduction.
Problem and Importance

- LOS
- Mortality
- Morbidity
- Complications
- Costs
VAP Significance

- Most common HAI in the ICU
- 25% ICU Infections
- 46% Mortality Rate
- 4-19 days LOS increase
- $40,000 per incidence

Goal of VAP Prevention Project

Reduce the overall VAP rate by 50% for FY 13

- Interdepartmental Team
- Goals linked to Strategic Plan
- Decrease Morbidity, Mortality, Complications, LOS, and Cost
Evaluation

- HOB not always > 30 degrees
- Mouth care not consistently documented every 4 hours
- Inconsistent use of mouth care kits
- Sedation vacation (SV) and Spontaneous Breathing Trials (SBTs) not consistent
- Inconsistent documentation
- Only one unit used subglottic ET tubes
Bundle Elements

- Elevation of HOB 30-45 degrees
- Daily interruption in sedation and initiation of a SBT
- Daily oral care with chlorhexidine
- Subglottic ET tubes for high risk patients
Mouth Care

Problem Analysis

- Not all units had medline CHG kits
- Lack of staff education
- Practice varies
- Inconsistencies in who does task
- Inconsistencies in documentation
- Opening multiple kits for suction

Action Plan

- Provide oral care kits with CHG to all units
- Web based education to Medline CHG kits competency based evaluation
- Education to RNs, RTs, and NAs
- Mouth care bite blocks for all units
- Supplying single suction catheters
- VAP Prevention Bundle in I-View for documentation
Sedation/SBT Problem Analysis

- 6am sedation vacation/SBT may not be best time
- No coordinated POC/order set for sedation
- No set guidelines for SBT
- Variation between units
- Documentation inconsistent and difficult to find
- SBT often not completed when physician available resulting in extended trials
- Multiple patient transports
VAP Rates

VAP RATE per 1000 PATIENT DAYS

VAP RATE

Task Force

VAP Rate
Upper Control Limit
Lower Control Limit
20 month Average

YEARLY MONTHS

2011 2012 2013
### Projected Reduction

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
<th>FY 12</th>
<th>FY 13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular ET Tube</td>
<td>$1.62</td>
<td>$30,201.66</td>
<td>$20,134.98</td>
</tr>
<tr>
<td>Sub-glottic ET Tube</td>
<td>$33.93</td>
<td>$41,000 (start)</td>
<td>$210,841.02</td>
</tr>
<tr>
<td>Mouth care Kit</td>
<td>$13.67</td>
<td>$82,074.68</td>
<td>0.00</td>
</tr>
<tr>
<td>Mouth care Kit CBG</td>
<td>$18.45</td>
<td>0.00</td>
<td>$110,773.80</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td>$12,120 (initial)</td>
<td>$480</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>$165,396.34</strong></td>
<td><strong>$342,229.80</strong></td>
</tr>
<tr>
<td>Cost VAP</td>
<td></td>
<td>$1,160,000</td>
<td>$200,000</td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td><strong>$1,325,396.34</strong></td>
<td><strong>$542,229.80</strong></td>
</tr>
<tr>
<td>Potential Reduction</td>
<td></td>
<td></td>
<td><strong>$783,166.54</strong></td>
</tr>
</tbody>
</table>
ABCDE Bundle

Delirium Assessment & Management

Awakening & Breathing Trial Coordination

Early Exercise & Progressive Mobility

http://www.aacn.org/pearl
# Early Mobility Protocol

## Step 1 – Safety Screening

<table>
<thead>
<tr>
<th>Green: Proceed with a mobility consult and OOB based on protocol</th>
</tr>
</thead>
<tbody>
<tr>
<td>• FiO2 ≤ 60%</td>
</tr>
<tr>
<td>• PEEP ≤ 10</td>
</tr>
<tr>
<td>• Myocardial stability (No evidence of active myocardial ischemia x 24 hours)</td>
</tr>
<tr>
<td>• No dysrhythmia requiring new antidysrhythmic agent x 24 hours</td>
</tr>
<tr>
<td>• Vasopressors minimal (No increase x 2 hours)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Yellow: Need to have discussion with interdisciplinary team regarding appropriateness</th>
</tr>
</thead>
<tbody>
<tr>
<td>• FiO2 &gt; 60%</td>
</tr>
<tr>
<td>• PEEP &gt; 10</td>
</tr>
<tr>
<td>• O2 sat &lt; 88% or if decreased during treatment session</td>
</tr>
<tr>
<td>• IVC closed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Red: No Mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Femoral Sheath</td>
</tr>
<tr>
<td>• IVC if open or elevated ICP when closed</td>
</tr>
<tr>
<td>• Titration of vasopressor drips</td>
</tr>
<tr>
<td>• Subdural drains</td>
</tr>
<tr>
<td>• Unstable spinal fracture</td>
</tr>
<tr>
<td>• CVVHD, ECCMO, Inhaled Flolan</td>
</tr>
<tr>
<td>• Open Abdomen</td>
</tr>
<tr>
<td>• RR &gt; 40 paradoxical breathing, use of accessory muscles</td>
</tr>
</tbody>
</table>
LEVEL I
• Not following commands/too sedated
• Team: PROM 3 x/day, q2hr positioning
• PT: sitting edge of bed (EOB) to assess for increased command following
  • Pending sedation weaning/vacation
  • When clinically indicated and medically appropriate

LEVEL II
• Inconsistent Command following (<25%)
  • Light sedation, sedation weaning/vacation
  • Verbal, tactile and/or visual commands
• Team: PROM/AAROM 3x/day, q2hr positioning
• PT/OT: Evaluation – assisted sitting EOB
• Out of bed (OOB) to chair via mechanical lift
  • If patient unable to reposition self 2 hours max OOB at a time

LEVEL III
• Consistent Command following (> 25%)
• Team: AAROM/AROM, q2hr positioning, EOB minimum
• 2 Activities/day
  • Therapy (PT/OT)
  • Nursing (follow algorithm for OOB assist to chair)
  • Team: EOB, OOB to chair, or ADLs
  • Any combination of services provides activity (coordinated in daily huddle)

LEVEL IV
• Multiple step consistent command following
• 3 Activities/day
  • Therapy (PT/OT)
  • Nursing
  • Team: EOB, OOB to chair, ambulation, or ADLs
  • Any combination of services provides activity (coordinated in daily huddle)

LEVEL V
• 3 activities/day
• No PT/OT Services needed
• RN/NA/patient & family: Ambulation, ADLs, OOB to chair
To develop and implement an early progressive mobility pilot protocol

- Interdepartmental participation
- Identify barriers to implementation
- Permanent physical and occupational therapist
- Select pilot unit
- Develop protocol
- Develop and implement education plan
- Collect pre/post data on patient demographics, vent days, and ICU and hospital LOS
- Occurrence of patient adverse events during mobility
Implementation of Early Progressive Mobility Protocol

- Decrease Ventilator Days
- Decrease ICU LOS
- Decrease Hospital LOS
- No significant adverse events
## Results

<table>
<thead>
<tr>
<th>Pre/Post Intervention</th>
<th>N</th>
<th>Mean</th>
<th>Days</th>
<th>S.D</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hospital LOS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>180</td>
<td>9.3</td>
<td>0.10</td>
<td>8.8</td>
<td>0.618</td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; Q Post</td>
<td>167</td>
<td>9.2</td>
<td>1.20</td>
<td>7.1</td>
<td>0.829</td>
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<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Q Post</td>
<td>131</td>
<td>8.1</td>
<td></td>
<td>5.4</td>
<td></td>
</tr>
<tr>
<td><strong>ICU LOS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>180</td>
<td>3.7</td>
<td>0.42</td>
<td>3.7</td>
<td>0.504</td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; Q Post</td>
<td>167</td>
<td>3.3</td>
<td>1.00</td>
<td>3.0</td>
<td>0.55</td>
</tr>
<tr>
<td>2 Q Post</td>
<td>131</td>
<td>2.7</td>
<td></td>
<td>2.3</td>
<td></td>
</tr>
<tr>
<td><strong>Vent Days</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>180</td>
<td>3.8</td>
<td>1.77</td>
<td>6.5</td>
<td>0.001</td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; Q Post</td>
<td>167</td>
<td>2.1</td>
<td>2.30</td>
<td>3.3</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Q Post</td>
<td>131</td>
<td>1.5</td>
<td></td>
<td>3.0</td>
<td></td>
</tr>
</tbody>
</table>
Financial Implications

- ICU LOS ↓ 0.42 days ($102,123.84) cost avoidance
- Vent days ↓ 1.77 days ($45,154.33) cost avoidance
## Cost-Avoidance

<table>
<thead>
<tr>
<th>Description</th>
<th>Initial Cost</th>
<th>Pilot Cost-Avoidance</th>
<th>Potential 1st Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salary and Benefits</td>
<td>$119,580</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training</td>
<td>$2,723</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planning Meetings</td>
<td>$4,848</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment</td>
<td>$53,521</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$180,672</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICU LOS</td>
<td>$102,123.84</td>
<td></td>
<td>$408,495.36</td>
</tr>
<tr>
<td>Vent Days</td>
<td>$45,154.33</td>
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<td>$180,617.32</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$147,278.17</strong></td>
<td></td>
<td><strong>$589,112.68</strong></td>
</tr>
<tr>
<td><strong>Net</strong></td>
<td></td>
<td></td>
<td><strong>$408,440.68</strong></td>
</tr>
</tbody>
</table>
Conclusions

A focused interdepartmental team can:

- Implement an early mobility protocol for ICU Patients.
- Decrease hospital, ICU, and ventilator days.
- Increase mobility without increasing adverse events.
- Contribute to a significant cost avoidance savings.
Selected References


Selected References


Questions??
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