Reducing Patient Length of Stay in the Progressive Care Unit

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Conflict of Interest

Nothing to disclose
Objective

Relate principles of the PDSA cycle we used to develop and analyze patient PCU Status Tool to your own practice areas.
Background

- Level 1 trauma regional academic medical center
- Safety-net hospital
- Progressive Care Unit (PCU) - manage care of patients on the critical care spectrum, but at a lower acuity level (AACN, 2016)
- Our PCU had 6 beds
- Lack of available PCU beds contributed to:
  - ED overcrowding
  - ED diversion status
  - High ED nurse workload
- Transfer orders NOT written in a timely manner.
Nursing Practice Congress

- Place for frontline nursing staff to bring issues for resolution
- Part of our shared governance model
- Uses an academic-practice partnership model
Background

- Frontline nurses identified issue of inappropriate designation and retention of PCU Patients
  - Brought issue to Nursing Practice Congress (NPC)
  - NPC voted to form a Professional Action Coordinating Team (PACT)
    - Front line nurses
    - Clinical nurse educators
    - Nurse manager
    - College of Nursing faculty advisor
PDSA Cycle Framework

Plan:
1) Review and revise current PCU policies R/T unit criteria
2) Develop solutions to reoccurring PCU issues R/T criteria, patient flow, assessment, reassessment
3) Establish a measure for data collection R/T admission & D/C in PCU

Do:
1) Revise PCU admission and transfer policy – CCM criteria
2) Create PCU Status Tool for assessment & re-assessment
3) Collect baseline data

Study:
- Compare baseline & status tool data

Act:
- Refine processes, modify as needed

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“Do” - Revision of PCU Admission & Discharge Policy

- Based off the Society for Critical Care Medicine Guidelines for Admission and Discharge for Adult Intermediate Care Units (Nasraway et al., 1998)

- Emphasis placed on LOS 12 - 72 hours

- Emphasis placed on re-assessing Q12H for PCU Status
“Do” - PCU Status Re-Evaluation Tool

PCU Status Tool

Admission to PCU Instructions: RN to complete when patient receives PCU orders. RN to hand-off completed “PCU Tool” to RN upon transfer.

Admitting Diagnosis

Admitting Physician

Date/Time PCU order written

Date/Time PCU bed available

1. Does patient meet PCU admission criteria (refer to table on back of tool): Yes  No
2. If patient does not clearly meet PCU criteria, state MD’s reason for admission:
3. At time of transfer to PCU, does patient still meet PCU criteria: Yes  No
4. Was there any delay in patient getting a bed in PCU? If so, why?

Signature: ___________________________ Date/Time: ___________________________

Continue or Discharge from PCU Instructions: PCU RN to complete to evaluate readiness to transfer patient. PCU RN to hand-off completed “PCU Tool” to RN upon transfer.

<table>
<thead>
<tr>
<th>Time period</th>
<th>12 hours</th>
<th>24 hour</th>
<th>36 hour</th>
<th>48 hours</th>
<th>60 hours</th>
<th>72 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does patient still meet PCU admission criteria?</td>
<td>Yes  No</td>
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<td>2. Is patient requiring extensive nursing care? (example: requires 3 staff members to position, requires frequent safety interventions)</td>
<td>Yes  No</td>
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<td>3. If “yes”, explain</td>
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<tr>
<td>Nurse Signature</td>
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</tbody>
</table>

PCU Admission Criteria

Cardiac
- Acute Coronary Syndrome
- Dysrhythmias* (patient may not be receiving temporary pacing)
- Moderate congestive heart failure without shock*
- Pre and Post Coronary Intervention, without a sheath *
- Hypertensive urgency without evidence of end organ damage

Pulmonary
- Acute but stable exacerbation of chronic respiratory disease
- Pulmonary contusion
- New permanent tracheostomy, suctioning no > q 2 hrs
- Stable home ventilated patients per management approval

Neurological
- Stable ischemic stroke with neuro checks no > q2hrs
- Post traumatic brain injury requiring neuro checks and intervention no > q2hrs
- Stable post surgical spinal cord injury
- Acute but stable exacerbation of chronic neurological disorder

Gastrointestinal
- GI bleed with minimal orthostatic hypotension
- Acute but stable exacerbation of chronic liver failure or pancreatitis

Endocrine
- DKA (transfer to ICU if BG checks q 1hr for > 24hrs)
- Hypersmolar state with resolution of coma

Close observation
- Patient with psych consult that are potentially harmful to self/others

Other
- Diagnoses not specified, requiring vital signs and intervention no > q2hrs

Exclusions to PCU Admission

- Vital signs, neuro checks, neurovascular checks > q2hs
- Respiratory suctioning > q2hrs
- Invasive hemodynamic monitoring
- Severe Sepsis and Septic Shock Algorithm
- Invasive procedure requiring conscious sedation
- Arterial and femoral sheaths, including TR bands
“Do” – Data Collection

- Multiple team members
- Communicate how to report
  - MM/DD/YY
  - M/D/YY
  - MM/DD/YYYY
  - DD/MM/YYYY
  - MM/DD
  - HHMM
  - HH:MM
“Study” - Perceptions of Inappropriate PCU Admissions – Baseline Data Results

Alcohol Withdrawal patients were the problem –
  • 3 Patients
DKA patients were the problem -
  • 2 Patients
Rapid response patients were the problem –
  • 8 Patients
Close observation patients were the problem –
  • 15 Patients
Dr. ___’s patients were the problem -
  • Admitted no more patients than any of their colleagues also on medical services.
  • *Medical services did admit more than surgical/ trauma/ or burn services
**“Study” - Data Analysis**

- Average time as a PCU patient (with extreme outliers) is 117.78 hours (4.9 days)
- Median time as PCU patient is 63.19 hours
- 27/109 (24.7%) Exceeded 72 hours in PCU
- 26/109 (23.8%) Exceeded 24 hours waiting to LEAVE the PCU.
- 11/109 (10.1%) D/C’d within 23 hours of PCU Status
“Study” - Data Analysis

- 31/109 (28.4%) waited 23 hours & 50 minutes or longer for a PCU bed
  - 16 of these 31 (51.61%) were in the E.D.

- Average PCU bed wait time was 19 hours & 9 minutes (this is for the patients that actually made it to the PCU)
  - 68/109 (62.4%) came from the E.D.
    - Average wait time of 19 hours & 41 minutes
  - 60/109 waited outside of the E.D.
    - Average wait time of 18 hours 13 minutes & 55 seconds.

- 8/109 (7.3%) waited >72 hours before being transferred to PCU
  - Average wait for these 8 patients was 109 hours & 47 minutes (4.5 days!)
“Study” – One Month ER Analysis

- 84 Patients designated “PCU Status”
- 21/84 (25%) Were D/C’d from ER or Changed to Floor Status <12 hours
  - 7/84 (8.3%) D/C’d from ER
  - 8/84 (9.5%) Changed status < 6 hours
  - 6/84 (7.1%) Changed status >6 hours, < 12 hours
- 15/84 (17.9%) Changed to floor status between 13 – 22.5 hours (avg = 17.4 hrs)
- 5/84 (6%) Changed from PCU to ICU status in ER.

*This adds up to 48.9% of the “PCU Status” patients seen in the ER
“Study” – One Month ER Analysis

- 24/84 (28.6%) Went to PCU directly from ER
- This leaves 22.5% as true “problem” patients not being placed in PCU
“Act”

- Refine tool – make more user friendly
- Educate
- Need for additional PDSA Cycle
  - Compare baseline & PCU tool usage data
PDSA Cycle # 2

Plan:
- Develop solutions to reoccurring PCU issues R/T criteria, patient flow, assessment, reassessment

Do:
- Refine PCU Status Tool for assessment & re-assessment
- Collect status tool data

Study:
- Compare baseline & status tool data

Act:
- Refine processes, modify as needed
“Do # 2” – Revised PCU Status Re-Evaluation Tool

PCU Status Tool

RN Instructions: RN to complete when patient receives PCU order. Tool to follow patient to PCU upon transfer. If patient is downgraded to floor status, please place Tool in Nurse Manager’s door.

- Date/Time PCU order written
- Date/Time PCU bed available
- Admit Diagnosis
- Re-admit back to PCU (within 24 hours)? Y or N

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Date/Time</th>
<th>Does patient meet PCU criteria? Y or N</th>
<th>If no, please contact MD</th>
<th>If no, why continue PCU status?</th>
<th>RN Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial</td>
<td>See above</td>
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<tr>
<td>+ 8 hrs</td>
<td>Date/Time</td>
<td>MD</td>
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<tr>
<td>+ 16 hrs</td>
<td>Date/Time</td>
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<tr>
<td>+ 24 hrs</td>
<td>Date/Time</td>
<td>MD</td>
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<td></td>
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<tr>
<td>+ 36 hrs</td>
<td>Date/Time</td>
<td>MD</td>
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<tr>
<td>+ 48 hrs</td>
<td>Date/Time</td>
<td>MD</td>
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<tr>
<td>+ 60 hrs</td>
<td>Date/Time</td>
<td>MD</td>
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</tr>
<tr>
<td>+ 72 hrs</td>
<td>Date/Time</td>
<td>MD</td>
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</tr>
</tbody>
</table>

Date/Time transfer/discharge orders written
Actual Date/Time of transfer/discharge

PCU Admission Criteria

- Cardiac: Acute Coronary Syndrome
  - May be on a non-stable
  - Infusion initiated in a CVA
- Pulmonary: Acute but stable exacerbation of chronic respiratory disease
  - Pulmonary fibrosis
  - New permanent tracheotomy requiring suction more frequent than every 4 hours
  - Stable home ventilated patients per management approval
- Neurological: Stable ischemic stroke with neuro checks more frequent than every 4 hours
  - Post traumatic brain injury requiring neuro checks more frequent than every 4 hours
  - Stable post-surgical spinal cord injury
- Gastrointestinal: GI bleed with minimal orthostatic hypotension
- Acute but stable exacerbation of chronic liver failure or pancreatitis
- Endocrine: EIA (transfer to ICU if BG checks every hour for greater than 2 hours)
- Hyperosmolar state with resolution of coma
- Close observation: Patient with psych consult that are potentially harmful to self/others
- Other: Diagnoses not specified, requiring interventions more frequent than every 4 hours

Exclusion to PCU Admission

- Vital signs, neuro checks, neurovascular checks, observation more frequent than every 2 hours
- Respiratory suctioning more frequently than every 2 hours
- Invasive hemodynamic monitoring
- Severe Septic and Sepsis Shock Algorithm
- Invasive procedure requiring moderate sedation
- Arterial and femoral sheaths, including TR bands

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“Study #2” PCU Status Tool Groups

• Second data collection analysis from

• Two groups within this time period
  • 174 Patients made PCU Status and had a tool completed (Intervention)
  • 123 Patients physically made it to the PCU and did not have a tool completed (Control)
  • 297 Patients total during this time.

• Not all patients had the tools or enough information completed to use
## “Study #2” LOS Comparison – Cycle 1 & 2

<table>
<thead>
<tr>
<th></th>
<th>Average (Mean) Time as PCU Status Pt</th>
<th>Median Time as PCU Status Pt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycle 1 (n = 114)</td>
<td>117.78 Hours</td>
<td>63.19 hours</td>
</tr>
<tr>
<td>Cycle 2 - No PCU Status tool used (n = 116)</td>
<td>72.9596 Hours</td>
<td>48.3350 Hours</td>
</tr>
<tr>
<td>Cycle 2 - PCU Status Tool used (n = 124)</td>
<td>46.9820 Hours</td>
<td>25.5500 Hours</td>
</tr>
</tbody>
</table>
“Study #2” Between Groups

- Mann-Whitney U Test

SPSS version 24

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Total N: 243
Mann-Whitney U: 9,944.500
Wilcoxon W: 16,730.500
Test Statistic: 9,944.500
Standard Error: 547.310
Standardized Test Statistic: 4.711
Asymptotic Sig. (2-sided test): .000
“Act #2” - Expansion of PCU

- ER Analysis demonstrated 22% unmet need for PCU beds
- Business plan created by nurse in Masters’ in Nursing Administration
- Two offices previously were two patient rooms
- Converted offices back to a semi-private room
  - Increased PCU capacity by 2 beds
- PCU is continually at full capacity
- Transitioned PCU PACT into a standing sub-committee under EBP committee
References


Questions?

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