Optimizing Patient Care Virtually with eInterventions

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Objectives and Learning Outcomes

• To highlight the contribution Christiana Care Health System’s virtual ICU, eCare, makes toward improving patient outcomes and promoting patient safety
• Explain the eRNs contribution to patient care and enhancing nursing practice
• Describe the different ways the eRN intervenes to effect patient outcomes
• Discuss the implications for data collection and research

eCare’s Mission

To promote patient safety and improve patient outcomes by providing surveillance and support to the direct health care team, using telemedicine technologies and critical care expertise.
Who We Support

- 2 Hospitals
  - Christiana Hospital, Wilmington Hospital
- 4 ICUs
  - CCVC, CNCC, MICU, WCU
- 2 EDs
- 74 beds including 4 mobile eCarts

Who We Are/Nurses

- 2 nurses/12 hour shift, 24/7
- Number of eCare nurses (eRNs) 14
- Total Years Nursing Experience 358
- Total Years Critical Care Experience 316
- Total Years Tele-ICU Experience 73
- Average Years Critical Care Experience 23
  - 7 to 41 years
- Average Years Tele-ICU Experience 6
  - 1 to 11 years
- Percentage Certified Nurses 100
- Percentage ASN/BSN/MSN 21%/64%/15%

Who We Are/Doctors

- 1 Intensivist covering eCare (eMD) from 1900-0700 daily via Advocate Health, Chicago
- 35 eMDs
- All board certified in Critical Care Medicine
- Most with other board certifications including
  - Anesthesiology, Surgical Critical Care, General Surgery, Cardiothoracic Surgery, Thoracic Surgery, Internal Medicine, Pulmonary Medicine, Sleep Medicine, Emergency Medicine
What We Do

• Add the experience of seasoned ICU nurses and intensivists to support the bedside team and optimize care

What We Do

• Utilize telemedicine technologies to analyze and assess patient needs
What is an eIntervention?

Purpose of eInterventions

- Overseeing best practice adherence
- eInterventions represent the value of service for the patient and the institution
- Communicate with leadership and bedside nurse need for change
- Highlight ICU & eCare unit trends that allow for performance improvement initiatives

• Reducing harm and preventing potential adverse events
• Cost savings for the institution
• Recognizing actionable interventions
Classification of eInterventions

- Best Practice
- Good catches
- Suggestions/Mentoring
- Patient Safety/Comfort

Alerts & Trends

Video Assessment
- Additionally, eRN visually rounds in each patient’s room utilizing camera technology, assessing the patient situation and family.
eIntervention Examples
Low Blood Pressure

- Change in patient condition

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eIntervention Examples
Bedside e-alert

- Change in patient condition
  - Suggestions/Clinical Intervention

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eIntervention Examples
Lab results just in time
eIntervention Examples
End of Life Issues

Video Rounds IVs

- Good Catch/Patient Safety

Waveform Analysis

- Prevention of harm
  - Noted new swan PA waveform damped. eMD checked line placement and states line is too far. Notified bedside RN and asked them to re-evaluate connections as line waveform inaccurate. Line re-positioned by bedside MD.
  - Patient Safety
eIntervention Examples
Extra Pair of Eyes

ANOTHER SELF-EXTUBATION?!

COME ON GUYS!

Prevention of harm/self extubation

Chart Review

eIntervention Examples
Chart Rounds

- **Order Discrepancies**
  - Fentanyl drip d/c d 10 hours ago, but still running. Asked bedside RN to reassess need for drip and d/c or obtain order. On follow-up, drip turned off.
  - Central line in place with no order.
  - Foley in place with no order.
  - DVT Prophylaxis indicated not ordered
  - Stress Ulcer Prophylaxis indicated or not indicated

- Good Catch
### Interventions

<table>
<thead>
<tr>
<th>Intervention</th>
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<tbody>
<tr>
<td>No patient weight recorded</td>
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<tr>
<td>$212,801</td>
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<tr>
<td>No Stress Ulcer Prophylaxis ordered when indicated</td>
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<td>$38,097</td>
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<td>No DVT Prophylaxis ordered when indicated</td>
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<td>F/U PTT Not ordered</td>
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<td>Documentation Error</td>
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<td>Fall Surveillance</td>
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<tr>
<td>$59,500</td>
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<tr>
<td>Device/Order Inconsistency</td>
</tr>
<tr>
<td>$54,468</td>
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</tbody>
</table>

### Medications

- Preventable medication errors cost the U.S. healthcare system more than $21 billion annually. (Karch, A.M., 2015, p.18)
- Medication errors cause more deaths in 1 year than motor vehicles, breast cancer, and AIDS. (Karch, A.M., 2015, p.18)
- 98,000 people die each year from hospital-related medication errors and other medical errors, at a cost of $17 to $29 billion. (Karch, A.M., 2015, p.18)
- Times have changed, and we need more than just a simple checklist like the “five rights” to keep patients safe. (Karch, A.M., 2015, p.18)

### Human Error

#### Inattentional blindness

- Failure to see something that’s not expected
- We tend to see what we expect to see
- It’s involuntary
  - (Karch, A.M., 2015, p.20)
Falls
• "The annual death rate from
falls averages 41 per 100,000
people and has been
increasing in the past decade" (Marin, L., 2011, pp. 1)
• "In addition to increased
morbidity and mortality, falls
are associated with an
increased length of stay in
hospitals and significant costs" (Marin, L., 2011, pp. 1)
• "The estimated total annual
costs are $16 to $19 billion for
nonfatal fall-related injuries
and approximately $170 million
for fatal-related deaths; the
average cost of each fall-
related injury is $24,962" (Marin, L., 2011, pp. 1)
• "more than half of all falls in
the health care setting occur at
or near the bedside" (Marin, L.,
2011, pp.1)

Results &
Practice Implications
For the period March 2015 through Feb 2016, the eRNs have
intervened for the patients, 4184 times
• fall prevention (12)
• request for patient surveillance (233)
• correcting documentation errors (438)
• correcting incorrect IV pump rate administration (556)
• preventing self-extubations (4)
• prevention of harm (20)
• preventing best practice discrepancies (378)

These eInterventions have resulted in potentially $7,964,468 in
savings based on the Care Discovery Quality Measures (2013).

Tracking eInterventions
• Improved Collaboration with team
to improve care
  o Communicates eIntervention trends
  o Supports Quality Improvement &
Evidence Based Practice
  o Used to evaluate eRN
• Supports future nursing research
Quality Improvement Projects

- Cardiovascular & Neuro ICU Line Discrepancy review
- Vent Liberation, ABC DEF Bundle
- Spontaneous Breathing Trial Monitoring
- MICU Stroke Documentation Compliance
- Wilmington ED Cart monitoring
- Sepsis Alert monitoring
- CIWA monitoring
- Prone patient monitoring
- ARDS/ABG monitoring

References


Christiana Care's eCare team staffs a virtual ICU, provides extra layer of safety. (2016, February), Focus 27, (2), 24-25. Christiana Care Internal Affairs.


THANK YOU!