The ICU Outreach RN Team

Results of a Three Year Evaluation

Surrey Memorial Hospital
Fraser Health Authority, B.C.

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Dynamics of Critical Care Conference
Fredericton, NB – September 2009
- Fraser Health: 1/3 of BC population; directly adjacent to Vancouver Coastal Health Authority
- Fraser Health: largest and fastest growing population in BC
- Municipality of Surrey: largest of 20 in FH; approx. 400,000 people
SMH Facts

- ~ 500 beds
- >70,000 ED visits/year
- 15 ICU beds (2009)
- UBC Academic site
- ICU Outreach Team (1st in Fraser Health)
- funding started 2005
ICU Outreach RN Program
Results of a 3 Year Evaluation

ICU Outreach Services
Model of Service Delivery
Data Collection
Highlights of Key Findings
Successes and Challenges
Lessons Learned
ICU RN Outreach Service

- “Rapid responders” to high risk patients
- 12 hours/day, 7 days/week (0930 -2130)
- no ICU patient assignment
- 3 part time RNs (0.75 FTE)
- 5 years critical care experience
- accessible by pager (to any team member)
- 2 x daily “rounds” to all in-patient units (including ED)
The SMH RN Outreach team operates within a collaborative practice model:

- First obligation: to our patients.
- Second obligation: to our staff for support and mentoring.

- Differs from the Rapid Response Team genre (usually physician driven) – dependency model.
Data Collection

- 36 months of ICU RN Outreach data (Jan 06 – Dec 08)
- Manual daily data collection (quantitative and qualitative)
- Summary and analysis using Excel
- Trends over time invaluable for program reporting and planning
Highlights of Key Findings

- Origins of clinical consultations
- Clinical triggers
- Outreach service utilization
- Patient outcomes
- Staff support and mentoring
KEY FINDINGS
Origins of Clinical Consults

**Pager**
Average number of pt consult requests:
- 267 year (average one per day)

**Unit “Rounds”**
Average number of pt consults from case finding:
- 211 year (average one per day)

**Follow up Assessments**
Average number of pt follow up assessments:
- 442 year (average 1-2 per day)
SMH ICU Outreach RN Program


<table>
<thead>
<tr>
<th>Origin of Consultation</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
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<tbody>
<tr>
<td>Referral</td>
<td>479</td>
<td>289</td>
<td>244</td>
</tr>
<tr>
<td>Case Find - Rounds</td>
<td>214</td>
<td>207</td>
<td>0</td>
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<tr>
<td>Followup</td>
<td>0</td>
<td>452</td>
<td>431</td>
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<tr>
<td>Code Blue</td>
<td>14</td>
<td>70</td>
<td>36</td>
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<tr>
<td>Other</td>
<td>0</td>
<td>11</td>
<td>47</td>
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KEY FINDINGS
Patient Clinical Triggers

Top five reasons to call

- decreased level of consciousness
- “general concern”
- decrease in blood pressure
- increase in heart rate
- decrease in O2 sat < 90%
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Patient Clinical Triggers – 2007, 2008

SMH ICU Outreach RN Program - Patient Clinical Triggers - 2007, 2008

- Decreased LOC
- BP Dec
- Heart Rate Inc
- Respiratory Rate Inc
- SpO2 > 90%
- FiO2 < .50
- Fail to Respond to Tx
- General Concern

Number of Patients

- 2007
- 2008
KEY FINDINGS
ICU Outreach Service Utilization

Emergency Dept
Percentage of consults 22-28% (ave = 24%)
Outreach RN workload in ED ~ 10%

Most common procedures/protocols initiated outside ICU:
- ECG monitoring
- Intubation
- Vasoactive Infusions
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ED Consults as % of Total Consults – 2006 - 2008

SMH ICU Outreach RN Program - ED Consults as % of Total Consults - 2006 - 2008

Number of Patients

2006
2007
2008

ED as % of Total

0
5
10
15
20
25
30

ED Consults as % of Total Consults

165
757
832
146
28
519

ED
Total
ED as % of Total

0
5
10
15
20
25
30

Number of Patients

2006
2007
2008
SMH ICU Outreach RN Program

<table>
<thead>
<tr>
<th>Protocol</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
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</thead>
<tbody>
<tr>
<td>ECG Monitoring</td>
<td>0</td>
<td>110</td>
<td>147</td>
</tr>
<tr>
<td>Intubation</td>
<td>0</td>
<td>104</td>
<td>98</td>
</tr>
<tr>
<td>IV inotropic or vasoactive infusion</td>
<td>0</td>
<td>72</td>
<td>78</td>
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<tr>
<td>BiPap</td>
<td>0</td>
<td>23</td>
<td>37</td>
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<tr>
<td>Fluid resuscitation</td>
<td>0</td>
<td>28</td>
<td>1</td>
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<tr>
<td>IV Anti-arrhythmic</td>
<td>0</td>
<td>16</td>
<td>33</td>
</tr>
<tr>
<td>IV With Monitoring</td>
<td>0</td>
<td>33</td>
<td>6</td>
</tr>
<tr>
<td>Hypothermia</td>
<td>2</td>
<td>12</td>
<td>8</td>
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<tr>
<td>Sepsis</td>
<td>24</td>
<td>29</td>
<td>15</td>
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</table>
KEY FINDINGS

Patient Outcomes

Patient condition after ICU RN consultation and intervention:
- 30% stabilized
- 12% unstable

Patient disposition:
- 33% remained on unit
- 15% transferred to ICU
- 6% transferred to higher acuity unit
- 3% Code Blue (resuscitation)
- <1% deceased
SMH ICU Outreach RN Program


Number of Patients

KEY FINDINGS
Staff Support and Mentoring

Staff Education and Support
• guidance for critical thinking
• support for patient specific clinical decision making
• practical “hands-on” assistance
• enhanced confidence in critical care protocol initiation
• positive impact on unit staff anxiety

Family Education and Support
• clinical expertise at time of “crisis”
• information and psychosocial support
What do SMH Staff say about the ICU Outreach Team?

“Their expertise really makes a difference in complicated cases.”

“They are our bridge to the ICU.”

“Thank goodness we have them to call!” 😊
Successful integration into hospital “culture”
- ICU admissions avoided
- Positive perceptions of ICU as a service vs. “closed door” unit
- Supports patients staying in unit and reduces intra-unit patient transfers
- Collaborative communication
- Valued by all physicians
- Code status/end of life discussions initiated
Challenges and Lessons Learned

- clearer role definition
- teaching/mentoring vs. “doing”
- consultation, collaboration vs. Workload
- relief coverage for the team
- manual data collection too time consuming
- RN model of ICU outreach works well!
- continued requests to expand the service
QUESTIONS?