Evidence-Informed ICU Rounds

Critical Care Canada Forum
October 26, 2015
No disclosures or conflicts of interest

Many acknowledgements
Objectives

1. Summarize why we round
2. Describe current rounding practices
3. Review best rounding practices
4. Highlight knowledge gaps
Effective Communication is Important

- **Effective communication**
  - Facilitates patient compliance with therapy
  - Improves clinical outcomes
  - Increases patient satisfaction

- **Ineffective communication**
  - Medical errors
  - Adverse events
Communication in the ICU

- The sicker a patient, the more important communication

- Complex environments, high workloads & high stress levels impair performance

- Strategies to ensure effective communication
Rounds are a scheduled discussion of individual patients by 2 or more healthcare providers, lead by a physician, to review important clinical information & discuss future plans of care.

Lane et al Crit Care Med 2013
Key Considerations

- Majority of information exchange during rounds
- Discrete & limited time
- Verbal reports central to process
- Donabedian framework
  - Structure ➔ Process ➔ Outcome
Current Rounding Practices

- Mixed methods design
  - Cross-sectional study
  - Adult medical-surgical ICUs in Canada
  - Medical directors or designates
  - 111 responses (61%) from 181 ICUs

- Follow-up telephone interviews
  - Purposefully sampled directors

Holodinsky et al. Manuscript under peer review 2015
Multidisciplinary

Number of ICUs

Attending Physicians
Bedside Nurses
Respiratory Therapists
Pharmacists
Dieticians
ICU Residents
Other Nursing Positions
Physiotherapists
Medical Students
Social Workers
ICU Fellows
Nurse Practitioners
Other

Other includes physician assistants, addiction services, chaplains, research associates, and nursing students.
## Role of Patient & Family

<table>
<thead>
<tr>
<th></th>
<th>Observe</th>
<th>Provide Information</th>
<th>Ask Questions</th>
<th>Receive Update</th>
<th>Decision-Making</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient</td>
<td>50%</td>
<td>65%</td>
<td>64%</td>
<td>64%</td>
<td>41%</td>
</tr>
<tr>
<td>Family</td>
<td>65%</td>
<td>65%</td>
<td>68%</td>
<td>65%</td>
<td>38%</td>
</tr>
</tbody>
</table>
Process of Rounds

- 79% standard start time
- 56% standard start location
- 82% bedside, 12% conference room

- ~ 12 patients seen during rounds
- ~ 16 minutes per patient 192 minutes
- Time: 80% patient care, 20% teaching
Interruptions Common

The bar chart shows the percentage of ICUs affected by different types of interruptions. The categories include:

- Code Blue
- New Admission
- Other Patients (Emergent)
- Other Patients (Non-Emergent)
- Answering Pages
- Answering Phone Calls
- Receiving Consults
- Requesting Consults
- Rapid Response Team Calls
- Tests/Procedures

The chart uses color coding to indicate the frequency of interruptions:

- Light gray: Never
- Medium gray: Sometimes
- Dark gray: Usually
- Black: Always

The chart provides a visual representation of how frequently these interruptions occur in ICUs.
Best Rounding Practices

A Systematic Review of Evidence-Informed Practices for Patient Care Rounds in the ICU

Daniel Lane, MSc1; Mauricio Ferri, MD1; Jane Lemaire, MD2; Kevin McLaughlin, MD2; Henry T. Stelfox, MD, PhD3

- 43 articles
  - 13 ethnographic studies
  - 15 uncontrolled before-after studies
  - 6 controlled studies

- 13 facilitators of patient care rounds
- 9 barriers to patient care rounds
Facilitators of Rounds

- Multidisciplinary team
- Explicit team member roles
- Standardized structure & process
- Tools
- Access to patient data
- Open collaborative discussion
- Goal oriented
- Minimizing non-essential activities
Barriers to Rounds

- Variable structure & process
- Interruptions
- Longer rounding times
- Poor information retrieval & docs
- Use of electronic medical records
- Provider perceptions of not being valued
# Multidisciplinary Team

## Table 2. Adverse Drug Event Rates*

<table>
<thead>
<tr>
<th></th>
<th>Study Unit</th>
<th></th>
<th>Control Unit</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Phase 1</td>
<td>Phase 2</td>
<td>Phase 1</td>
<td>Phase 2</td>
</tr>
<tr>
<td>Average daily census</td>
<td>13.9</td>
<td>12.4</td>
<td>12.9</td>
<td>11.9</td>
</tr>
<tr>
<td>Total patient-days No.</td>
<td>787</td>
<td>861</td>
<td>461</td>
<td>644</td>
</tr>
<tr>
<td>No. of patients</td>
<td>75</td>
<td>75</td>
<td>50</td>
<td>75</td>
</tr>
<tr>
<td>All adverse drug events, No.</td>
<td>35</td>
<td>10</td>
<td>16</td>
<td>30</td>
</tr>
<tr>
<td>Rate per 1000 patient-days†</td>
<td>33.0 (27-39)</td>
<td>11.6 (8-15)‡</td>
<td>34.7 (26-43)</td>
<td>46.6 (38-55)</td>
</tr>
<tr>
<td>Preventable ordering adverse drug events, No.</td>
<td>11</td>
<td>3</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Rate per 1000 patient-days†</td>
<td>10.4 (7-14)</td>
<td>3.5 (1-5)‡</td>
<td>10.9 (6-16)</td>
<td>12.4 (8-17)</td>
</tr>
</tbody>
</table>

†Data expressed as percentage (95% confidence interval).
‡P<.001 for comparison with both phase 1 in the study unit and phase 2 in the control unit.
Identify Essential Participants, Define Roles, Mandate Attendance

- Variation in structure & process of rounds
- Lack of clarity in roles of team members
- Clear leader
- Clear role for participants
- Standard rounding process
  - Increased self-rated quality, increased provider satisfaction & improved outcomes

Lane et al. Crit Care Med 2013
Use a Structured Tool

% Residents & Nurses Understanding Goals

Average Length of Patient Stay

Pronovost et al. J Crit Care 2003
Minimize & Manage Interruptions

- Alvarez 2005 (Ethnographic)
  - 14 interruptions per hour
  - Account for 42% of communication

- Lyons 2010 (Uncontrolled pre-post)
  - Interruptions → ↑round time
  - Discussion content 10% more complete in conference room vs. bedside
We Need More Evidence

- What is the patient & family role?
  - Frequency & nature is highly variable
  - Pediatric & neonatal ICU studies
    - Increased quality of communication
    - Increased family & provider satisfaction
We Need More Evidence

- How to measure the quality of rounds?
  - Ten Have et al. J Crit Care 2013 developed 19 item Interdisciplinary Rounds Assessment Scale
  - Patient plan of care
    - Main problem discussed?
    - Goal formulated?
  - Process
    - Input of nurses encouraged?
    - Identification of who is responsible for tasks?
The Goal is for Rounds Not to Feel Like...
Summary

- **Standard structure**
  - Multidisciplinary team with clear leader & roles
  - Start location & time

- **Standard process**
  - Structured tool
  - Minimize & manage interruptions
  - Goal oriented

- **Outcome**
  - Measure quality
Acknowledgements

Mentors
- Sharon Straus
- Bill Ghali

Collaborators
- Simon Berthelot
- Deborah Cook
- Marilynne Hebert
- Romain Rigal
- Jane Lemaire
- Kevin McLaughlin
- Dave Zygun

Trainees
- Jessalyn Holodinsky
- Dan Lane
- Mauricio Ferri

Funding Agencies
- Alberta Innovates
- CIHR