Leadership -
what’s different about ICU

Dr. Brian Cuthbertson
Chief, Critical Care Medicine
Sunnybrook Health Sciences Centre
Toronto
What’s different about ICU?

• Maybe nothing is different!
• Out practice is the most interprofessional
• We lead on interprofessional practice
• Nowhere is more acute
• We suffer more moral distress and burn out than other areas
Why leadership and teamwork?

• 20% of ICU admissions experience an adverse event
• Half of incidents caused by “failures in non-technical skills”
Non-technical adverse events
Non-technical skills

• Team work
• Team leadership
• Decision making
• Resource / task management
• Situation awareness
Situation awareness

- **Perception**
  - Multi data sources
  - Patient events

- **Comprehension**
  - Expertise and experience
  - Communication

- **Anticipation and reaction**
  - Prediction of future events
  - Preemptive actions
Teamwork

Who are your team?
The ICU team?

Dr. Marvin Monroe:
Who is in the ICU team?

I am a Critical Care Nurse

I am a trainee doctor

I am a respiratory therapist

I am the Attending physician

I am a physiotherapist
Team leadership

What is your leadership style?

I don’t have one!
Leadership styles
Which are you?

- Authoritative
- Consensus builder
- Role mode
- Free-Reign (Laissez Faire)
Team leadership in the intensive care unit: The perspective of specialists*

Tom W. Reader, PhD; Rhona Flin, PhD; Brian H. Cuthbertson, MD, FRCA

Objectives: To identify the behaviors senior physicians (e.g., specialists, staff attendings) report using to lead multidisciplinary teams in the intensive care unit.

Design: Semistructured interviews focusing on team leadership, crisis management, and development of an environment that enable effective team performance in the intensive care unit.

Setting: Seven general intensive care units based in National Health Service hospitals in the United Kingdom.

Participants: Twenty-five senior intensive care medicine physicians.

Measurements and Main Results: Responses to a semistructured interview were transcribed and subjected to “content” analysis. The interview analysis focused on references to the “functional” behaviors used by leaders to manage team performance and the “team development behaviors” used to build the conditions that enable effective team performance. Seven of the interviews were coded by a second psychologist to measure inter-rater reliability. Inter-rater reliability (Cohen’s $\kappa$) was acceptable for both scales ($\kappa = 0.72$ and $\kappa = 0.75$). In total, 702 functional leadership behaviors (behaviors for information gathering, planning and decision-making, managing team members) were coded as being used to manage the intensive care unit, along with 216 team development behaviors (for providing team direction and establishing team norms). These behaviors were grouped together in a theoretically driven framework of intensive care unit team leadership.

Conclusions: Intensive care unit senior physicians report using a variety of leadership behaviors to ensure high levels of team performance. The data described in this study provide insight into the team leadership behaviors used by intensive care unit team leaders and have implications for the development of team leadership training and assessment tools. (Crit Care Med 2011; 39: 1683–1691)

Key Words: intensive care unit; leadership; team leadership; teamwork; patient safety; training
Interview Protocol

Interviewees....

• Described the ICU team
• Discussed leadership, decision-making, and SA during a typical day in the ICU
• Discussed leadership, decision-making, and SA during a specific emergency
Interview content

- Functional leadership
  - Situation awareness
  - Decision-making
  - Team management
  - Resource management

Approx. 900 leadership behaviours identified (75% functional)
Leadership during rounds

Who leads rounds in your unit?
Leadership during rounds

The Attending....
• Lead patient diagnosis and decision-making
• Delegates tasks, sets priorities & identifies contingencies
• Identifies and utilises available resources

The Team....
• Provides patient information
• Develop understanding of patient conditions
• Identify key tasks to be performed by individuals

Performance and safety known to be influenced by....
• Team hierarchies & communication openness
• Shared SA for patient priorities
• Team member coordination
Leadership behaviours during rounds

- **Building SA**
  “...we review blood tests, new x-rays, plans...so that everyone has an overview of what is happening”

- **Develop collaboration**
  “...we all come together and the stories and findings are presented ...”

- **Directs team to reach conclusions...**
  “...I try and get a group decision, and I’ll push it in what I think is the right direction....”

- **Facilitates team SA**
  “...it’s a model where you try and encourage people to move to the same position that you are already at...”

- **Oversees decision making process**
  “... decision making is up to the Attending ... with some consensus ... people present options ... you finalise a plan ... and explain why ... ”
Leadership during routine care

The Attending....
• Monitors the progress of management plans
• Intervene when patients deteriorate
• Adapt plans to changing and dynamic scenarios

The Team....
• Conducts medical procedures
• Coordinates to ensure tasks performed efficiently
• Manage unit sub-sections
• Request support as needed

Performance and safety known to be influenced by....
• Ability of Attendings to identify problems in provision of care
• Team recognition of stress / fatigue and seeking help
• Communication and adaptation
**Behaviour during routine care**

**Maintaining SA**
"... I probably circle the ICU 40 or 50 times a day ... I ask the trainees if they need help ... if they say yes I’ll assist them, if they say no I hang about as you may have to intervene anyway ... "

**Applying SA**
"...I’ll find out if we’ve made any progress...try and identify (trainees) that are struggling..."

**Allow team decisions making**
“... I take control, but don’t necessarily take over ... I want (the trainees) to make the right decisions, so I put the questions in a format, that they will only be able to come up with the right decision, but will think it is their decision at the time ... "

**Assumes decision making authority**
“... You’ve got to have that ability to prioritize and change plans ... in many cases you know the clinical scenario does change ... ”
Leadership during crises

The Attending:
• Rapidly assesses the problem being faced by the team
• Adopts authoritative style
• Decides on treatment
• Alters focus from team based to emergency management

The Team:
• Provides technical support to the Attending
• Helps Attending to understand/diagnose situation
• Ensures continuity of patient care throughout ICU

Performance and safety known to be influenced by:
• Ability of team to organise and respond quickly to emergency
• Accurate diagnosis of problem
• Utilisation of team member skills and knowledge
## Behaviour during emergencies

<table>
<thead>
<tr>
<th>Authoritative leadership</th>
<th>&quot;... in high pressure situations ... the group decision aspect of the ward round is completely inappropriate. I’m deliberately much more autocratic ... &quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quick, intuitive judgements</td>
<td>&quot;... it was quite clear this patient was bleeding, we needed to intervene quickly ... &quot;</td>
</tr>
<tr>
<td>Uses team as a resource</td>
<td>“... she was going to arrest, don’t ask me why, I just knew ... I already had the epinephrine in my hand ...”</td>
</tr>
<tr>
<td>Restructures according to immediate need</td>
<td>“... I knew he would be able to establish the access ...(and said) ‘right can you sort this out, it needs sorting out now, you need to do it ... ”</td>
</tr>
<tr>
<td></td>
<td>&quot;.... he really began to struggle ... I realized it was a life threatening situation ... I had to stop what I was doing and took over...&quot;</td>
</tr>
</tbody>
</table>
Alternating modes of leadership and decision-making

Standard care

Analytical and team-centred decision-making,
Structured decisions for the team

Team leadership framework
Functional leadership
Developing team norms

Crisis management

Intuitive decision-making for task and team,
Authoritative decision-making,
Team used as a resource

Team leadership

What is your leadership style?

I don’t have one!

I have many!
Team leadership

Do you set expectations each day before rounds?
Team leadership

Information handling

Daily goals
ICU Daily Goals Worksheet

Johns Hopkins University, Submitted by Peter Pronovost, MD, PhD
Baltimore, Maryland, USA

The goal of the ICU Daily Goals Worksheet is to reduce ICU length of stay and mortality while increasing the care team’s understanding of the daily goals for patients in the ICU, including what work needs to happen for the patient to leave the ICU; what is the greatest safety risk to the patient; what are the key processes for ventilator patients; what are the scheduled labs for the patient; catheter; and what can be done to assist in facilitating communication with the family.

The tool is designed to facilitate explicit communication, allow for independent redundancy, require local modification, empower nursing, increase nurse morale, and avoid duplicate work.

Background
The tool was developed as part of a prospective cohort study in collaboration with the Volunteer Hospital Association (VHA), the Institute for Healthcare Improvement (IHI), and Johns Hopkins Hospital’s (JHH) 16-bed surgical oncology ICU. All patients admitted to the ICU were eligible. The main outcome variables were ICU length of stay (LOS) and percent of ICU residents and nurses who understood the goals of care for patients in the ICU. Baseline measurements were compared with measurements of understanding after implementation of a daily goals form. At baseline, less than 10 percent of residents and nurses understood the goals of care for the day. After implementing the daily goals form, greater than 95 percent of nurses and residents understood the goals of care for the day. After implementation of the ICU Daily Goals Worksheet, ICU LOS decreased from a mean of 2.2 days to 1.1 days.

Directions
During daily rounds in the ICU, have the ICU team visit each patient and develop a plan of care for the day and complete the ICU Daily Goals Worksheet. The fellow or attending physician should sign the worksheet and hand it to the patient’s nurse before
Peter Pronovost’s Seemingly Simple Ideas Are Changing the Face of Patient Care

Johns Hopkins critical care specialist Peter Pronovost, who champions scientifically rigorous yet common-sense approaches to eliminating medical errors and complications, has been named a 2008 winner of a MacArthur Fellowship, the so-called “genius grant.”

Peter Pronovost, M.D., Ph.D.

The award from the John D. and Catherine T. MacArthur Foundation recognizes recipients for their creativity, originality and potential to make important contributions in the future.

For his work developing simple tools that greatly improve the delivery of care, Pronovost was one of four winners this year to receive this MacArthur Foundation’s “genius grant.”

<table>
<thead>
<tr>
<th>Related Stories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press Release</td>
</tr>
<tr>
<td>Checking up on the Checklist</td>
</tr>
<tr>
<td>Exporting Safety</td>
</tr>
<tr>
<td>Checking for Quality</td>
</tr>
<tr>
<td>Embracing Family in Patient Care</td>
</tr>
</tbody>
</table>
Table 1. Daily Goals Form

<table>
<thead>
<tr>
<th>Room Number ___</th>
<th>Date <em><strong>/</strong></em>/___</th>
</tr>
</thead>
<tbody>
<tr>
<td>___ Attending initials:</td>
<td>—Initial as goals are reviewed—</td>
</tr>
<tr>
<td></td>
<td>0700-1500 1500-2300 2300-0700</td>
</tr>
</tbody>
</table>

What needs to be done for the patient to be discharged from the ICU?
What is this patient’s greatest safety risk? How can we reduce that risk
Pain mgt/sedation
Cardiac/volume status
Pulmonary/ventilator (PP, elevate HOB)
Mobilization
ID, cultures, drug levels
GI/Nutrition
Medication changes (can any be discontinued?)
Tests/procedures
Review scheduled labs; morning labs and CXR
Consultations
Communication with primary service
Family communication
Can catheters/tubes be removed?
Is this patient receiving DVT/PUD prophylaxis?

Mgt, management; PP, plateau pressure; HOB, head of bed; ID, infectious disease; GI, gastrointestinal; labs, laboratory tests; CXR, Chest radiograph; DVT, deep venous thrombosis; PUD, peptic ulcer disease.
Daily goals

A broad aim of patient care that needs to be understood by the team members to allow effective and efficient care
# Daily goals

<table>
<thead>
<tr>
<th>Action</th>
<th>Subject</th>
<th>Target / Outcome / Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrange</td>
<td>a family conference</td>
<td>to discuss prognosis</td>
</tr>
<tr>
<td>Commence</td>
<td>diuresis</td>
<td>to achieve negative fluid balance</td>
</tr>
<tr>
<td>Commence</td>
<td>antibiotics</td>
<td>for presumed VAP</td>
</tr>
<tr>
<td>Commence</td>
<td>PMV protocol</td>
<td>to aid weaning</td>
</tr>
<tr>
<td>Do not commence</td>
<td>antibiotics</td>
<td>for fever unless signs worsen</td>
</tr>
<tr>
<td>Discharge</td>
<td>patient</td>
<td>to ward</td>
</tr>
<tr>
<td>Mobilise</td>
<td>patient</td>
<td>to walk</td>
</tr>
<tr>
<td>Request</td>
<td>surgical opinion</td>
<td>to assess wound</td>
</tr>
<tr>
<td>Wean</td>
<td>mechanical ventilation</td>
<td>to trach mask</td>
</tr>
</tbody>
</table>
Team leadership

Information handling-
The problem sheet
### CRITICAL CARE PROBLEM SHEET

<table>
<thead>
<tr>
<th>Name:</th>
<th>Brian Cuthbertson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
<td>730 Merton Street</td>
</tr>
<tr>
<td></td>
<td>Toronto, Ontario, Canada</td>
</tr>
<tr>
<td>DOB:</td>
<td>1/1/1</td>
</tr>
<tr>
<td>Age:</td>
<td>21</td>
</tr>
<tr>
<td>Hospital No:</td>
<td>123456</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Admitting Critical Care Attending:</th>
<th>Cuthbertson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital Attending:</td>
<td>Smith</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date of admission to Critical Care:</th>
<th>17/9/09</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Admission to Critical Care:</td>
<td>17/9/09</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Referred from:</th>
<th>Emergency department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Discharge from Critical Care:</td>
<td>22/9/09</td>
</tr>
</tbody>
</table>

| Discharged to: | Mortuary |

<table>
<thead>
<tr>
<th>DATE</th>
<th>PROBLEM/DIAGNOSIS</th>
<th>ACTION/COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>Ischemic Heart Disease</td>
<td>Nitrate</td>
</tr>
<tr>
<td>1993</td>
<td>Worsening Ischemic Heart Disease</td>
<td>Angiography showing triple vessel disease</td>
</tr>
<tr>
<td>2000</td>
<td>Congestive cardiac failure</td>
<td>ACE therapy</td>
</tr>
<tr>
<td>2008</td>
<td>Chronic renal insufficiency</td>
<td>Creatinine 150</td>
</tr>
<tr>
<td>19/9/09</td>
<td>Motor vehicle accident</td>
<td>Car on car at 40km/hr</td>
</tr>
<tr>
<td></td>
<td>- Cervical 5 fracture</td>
<td>Hard collar</td>
</tr>
<tr>
<td></td>
<td>- Fracture Right 4-10th ribs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Right Hemopneumothorax</td>
<td>Right chest drain, 2000ml blood and air drained</td>
</tr>
<tr>
<td></td>
<td>- Splenic rupture</td>
<td>Conservative management</td>
</tr>
<tr>
<td>19/9/09</td>
<td>ICU admission and ventilaton</td>
<td></td>
</tr>
</tbody>
</table>
Team leadership

Formal versus informal leadership
Team leadership

The big(ger) issues
Looking upwards in the organisation

- Clinical Governance
- Financial Governance
- Patient safety
- Advocacy
- Societal responsibilities
Toronto man at the heart of a landmark life support case has a ‘very low level’ of consciousness, tests show

Tom Blackwell | 12/12/02 | Last Updated: 12/12/03 12:23 AM ET
More from Tom Blackwell | @tombblackwellNP

Morgan Rasouli, left, kisses the hand of her father Hassan Rasouli as his wife, Parichehr Saleseil tries to keep him comfortable in Sunnybrook Hospital’s cardiac intensive care unit in Toronto.
Team building

What is your role in team building?
Team building

Do you have a role as a role model?
Building a team

Attendings try to build teams through:

PROVIDING TEAM DIRECTION
- Demonstrating clinical excellence
- Developing a shared perspective with the ICU team

ESTABLISHING TEAM NORMS
- Building expectations for teamwork
- Team member interactions with the Attending
Team building

Are you there when you are needed?
Nurses experienced more moral distress and lower sense of collaboration than physicians.

...they were less satisfied with the quality of care provided on their units...

Quality of care were strongly related to perception of collaboration.

“Improving the ethical climate through explicit discussions of moral distress, recognition of differences in nurse values, and improving collaboration may mitigate frustration arising from differences in perspective”.
Sometimes I feel that I have the worst job in the world!

Yay... right!
CRITICAL CARE MEDICINE

Last Right Rounds

Dr. Gordon Rubenfeld
with
Klara Siber

October 26th, 2011
D5-06
3:00 P.M.
Team building

Do you know how to resolve conflict?
Burnout in the ICU: Potential consequences for staff and patient well-being

Behaviours towards one’s work [2, 3]. Burnout research has identified various antecedents to staff burnout within organisations [4]. Factors producing burnout include the demands of a work setting (e.g., workload, time pressure) and the resources for meeting these demands (social support, job control). Additionally, aspects of personality (e.g., neuroticism, coping styles, poor self-esteem) have been found to be correlates of burnout, and burnout can result in depression, physical illness, and poor work performance. Burnout is a major issue within healthcare as it has been shown that levels of burnout are high [4], and that the consequences of burnout amongst doctors and nurses are substantial for both caregivers and patients.
Being a good team player

Are you a good team player?
The doctor as a team player
Team processes

Team decision making
Involvement in the rounds and decision making

- Attending involvement
- Fellow involvement
- Resident involvement
- Nurse involvement
Team processes

Communication
Interdisciplinary communication in the intensive care unit

T. W. Reader¹ *, R. Flin¹, K. Mearns¹ and B. H. Cuthbertson²

¹School of Psychology, University of Aberdeen, Kings College, Aberdeen, Scotland, UK. ²Health Services Research Unit, University of Aberdeen, Foresterhill, Aberdeen, Scotland, UK

*Corresponding author: School of Psychology, University of Aberdeen, Kings College, Aberdeen AB24 2UB, Scotland, UK. E-mail: tom.reader@abdn.ac.uk

Background. Patient safety research has shown poor communication among intensive care unit (ICU) nurses and doctors to be a common causal factor underlying critical incidents in intensive care. This study examines whether ICU doctors and nurses have a shared perception of interdisciplinary communication in the UK ICU.

Methods. Cross-sectional survey of ICU nurses and doctors in four UK hospitals using a previously established measure of ICU interdisciplinary collaboration.

Results. A sample of 48 doctors and 136 nurses (47% response rate) from four ICUs responded to the survey. Nurses and doctors were found to have differing perceptions of interdisciplinary communication, with nurses reporting lower levels of communication openness between nurses and doctors. Compared with senior doctors, trainee doctors also reported lower levels of communication openness between doctors. A regression path analysis revealed that communication openness among ICU team members predicted the degree to which individuals reported understanding their patient care goals (adjR²=0.17). It also showed that perceptions of the quality of unit leadership predicted open communication.

Conclusions. Members of ICU teams have divergent perceptions of their communication with one another. Communication openness among team members is also associated with the degree to which they understand patient care goals. It is necessary to create an atmosphere where team members feel they can communicate openly without fear of reprisal or embarrassment.

Different perspectives on teamwork

Attending’s beliefs

Attendings vs Nurse beliefs about openness of communication

Attendings vs Trainee beliefs about openness of communication
Relationship between leadership and understanding goals

- Leadership
- Understanding goals
Communication behaviours during rounds

<table>
<thead>
<tr>
<th>Behaviours per minute</th>
<th>Senior trainee contributions</th>
<th>Junior trainee contributions</th>
<th>Nurse contributions</th>
<th>Attending prompts</th>
<th>Attending goal setting</th>
</tr>
</thead>
</table>

The diagram shows the contributions of different roles during rounds.
Team situation awareness and the anticipation of patient progress during ICU rounds

Tom W Reader,¹ Rhona Flin,² Kathryn Mearns,² Brian H Cuthbertson³

¹Institute of Social Psychology, London School of Economics, Houghton Street, London, UK
²School of Psychology, University of Aberdeen, Kings College, Aberdeen, UK
³Department of Critical Care Medicine, Sunnybrook Health Sciences Centre, Toronto, Canada

Correspondence to
Dr Tom Reader, Institute of Social Psychology, London School of Economics, Houghton Street, London, UK

ABSTRACT

Background: The ability of medical teams to develop and maintain team situation awareness (team SA) is crucial for patient safety. Limited research has investigated team SA within clinical environments. This study reports the development of a method for investigating team SA during the intensive care unit (ICU) round and describes the results.

Methods: In one ICU, a sample of doctors and nurses (n=44, who combined to form 37 different teams) were observed during 34 morning ward rounds. Following the clinical review of each patient (n=105), team members individually recorded their anticipations for expected patient developments over 48 h. Patient-SA developed during daily rounds will likely influence how team members monitor the patient, prioritise tasks and anticipate urgent events. Teams with mismatching SA for a patient’s condition or expected developments may result in suboptimal decision-making, communication breakdowns, and missed care opportunities. Understanding team SA dynamics during ward rounds is essential for improving multidisciplinary teamwork and patient care.
Involving junior trainee doctors in decision making yields better situation awareness, with a statistical significance of $P < 0.001$.

Involving senior trainee doctors in decision making also yields better situation awareness, with a statistical significance of $P < 0.05$. 
Developing a team performance framework for the intensive care unit*

Tom W. Reader, PhD; Rhona Flin, PhD; Kathryn Mearns, PhD; Brian H. Cuthbertson, MD, FRCA

**Objective:** There is a growing literature on the relationship between teamwork and patient outcomes in intensive care, providing new insights into the skills required for effective team performance. The purpose of this review is to consolidate the most robust findings from this research into an intensive care unit (ICU) team performance framework.

*Data Sources:* Studies investigating teamwork within the ICU using PubMed, Science Direct, and Web of Knowledge databases.

*Study Selection:* Studies investigating the relationship between aspects of teamwork and ICU outcomes, or studies testing factors that are found to influence team working in the ICU.

*Data Extraction:* Teamwork behaviors associated with patient or staff-related outcomes in the ICU were identified.

*Data Synthesis:* Teamwork behaviors were grouped according to the team process categories of “team communication,” “team leadership,” “team coordination,” and “team decision making.” A prototype framework explaining the team performance in the ICU was developed using these categories. The purpose of the framework is to consolidate the existing ICU teamwork literature and to guide the development and testing of interventions for improving teamwork.

**Conclusions:** Effective teamwork is shown as crucial for providing optimal patient care in the ICU. In particular, team leadership seems vital for guiding the way in which ICU team members interact and coordinate with others. (Crit Care Med 2009; 37: 1787–1793)

**Key Words:** intensive care unit; teamwork; team performance framework; training interventions; patient safety; leadership
Team processes and patient outcomes

Reader, Flin, Mearns, & Cuthbertson (2009). Developing a team performance framework for the ICU. Critical Care Medicine, 37, 1787-1793
Teaching team work

Reader and Cuthbertson Critical Care 2011, 15:313
http://ccforum.com/content/15/6/313

Teamwork and team training in the ICU: Where do the similarities with aviation end?

Tom W Reader*1 and Brian H Cuthbertson2

Abstract
The aviation industry has made significant progress in identifying the skills and behaviors that result in effective teamwork. Its conceptualization of teamwork, development of training programs, and design of assessment tools are highly relevant to the intensive care unit (ICU). Team skills are important for maintaining safety in both domains, as aviation [1,6]. Like work environments in aviation, the ICU is a complex, high-risk, and stressful setting, and it can potentially gain from adopting and integrating the principles and techniques used to train team skills in aviation [4]. We consider the case for this and reflect upon the similarities and differences that exist between aviation and intensive care.

The aviation teamwork model
Conclusions

• Identify who your team really is!
• Identify your role as a leader!
• Identify your leadership styles!
• Be a good team player!
• Build your team!
• Open communication encourages quality!
• It likely improves patient outcome
• It’s cost-effective!
But you don’t need told this by...