Nursing Crew Resource Management: High Reliability Behaviors for Front Line Nurses

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Objectives

1. Compare and contrast cultures – high reliability and professional nursing
2. Explain a cultural analysis of VHA nursing as an impetus for a Crew Resource Management (CRM) initiative
3. Present a Nursing Crew Resource Management (NCRM) program overview
4. Discuss specific CRM based behaviors that nurses can implement to reduce the level of risk for hospitalized veterans
5. Outline specific outcomes found on nursing units that have implemented NCRM within the VHA

Vision

- National Center for Patient Safety
- Institute of Medicine (IOM)

“...establish team training programs ...using proven methods such as crew resource management training techniques employed in aviation...”

“Culture Shock” – High Reliability

- Team training (CRM)
- Human factor awareness
- Regulatory protection
- High degree of standardization (SOP)
- Briefings

“Culture Shock” – Nursing Front Line

- Hierarchical Relationships (Nurse – Physician)
- Human Factors not emphasized
- Expectation to complete non-nursing functions
- Varying degrees of standardization
- Fear and Shame in reporting errors
- Haphazard recurrent training
- Absence of performance checking via simulation

“Culture Shock” – High Reliability

- Checklist Discipline
- CVR / FDR
- Incentivized non-punitive reporting (anonymity / immunity)
- Highly formalized – perpetual training
- Performance checking via simulation

A BLUEPRINT FOR CHANGE
VA Patient Safety Culture Survey 2009

Mean Scores
Front- Line Nursing and All VHA

Mean Scores
RNI, RN II and LPN, Nursing Assistant

Mean Scores
RNI, RN II and LPN, Nursing Assistant

Tenerife – March 1977 (Fatalities 583)

(CRM) Crew Resource Management

Originated in a 1979 NASA workshop
(CRM) Crew Resource Management

- **Reduce error** through better use of human resources
- **Manage error** by employing specific safety behaviors

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NCRM - Program Layout

- **Logistics & Pre-work**
  - 2 months prior
- **Project Implementation**
  - Consultation
  - 12 months

- **Training**
  - On site
  - 1 week

- **Refresher Training**
  - At 1 year

= Clinical Questionnaire

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Projects

1. Mitigating Distractions
2. Checklist development and Implementation
3. Team Briefings / Debriefings
4. Situational Awareness Countermeasures
5. Fatigue Management

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Program reception at front line?

- Percent of respondents that agreed or strongly agreed

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NCRM Foundation

**Human Error**

**Systems**

**Behaviors**
“Zero error is NOT realistic”

Fault Tolerant System
system tolerates errors
but still functions successfully...

The Error Pyramid
“Fault Tolerance”

MITIGATE
CONSEQUENCES
of ERROR

TRAP
ERROR

AVOID
ERROR

Leadership Style
“Dictator”

Complete Control
Input not welcome
Autocratic
Intimidating
Rude
Hostile

75% Nurses and Pharmacists use
“avoidance techniques” ISMP, 2005
Team Building Behaviors

1. Interpersonal skills
2. Invite and Expect Participation
3. Use Open Ended Questioning
4. Set Acknowledgement Expectation
5. Briefings
6. Debriefing

Leadership Grid (x,y)

- Country Club (1,9)
- High Motivation, Style (9,9)
- Horrible Leader (1,1)
- Produce or Perish (9,1)

Assertion Advocacy

Assertive Advocacy
Followership

Independent Critical Thinkers
- Passive
- Advocacy
- Active

Dependent Non-Critical Thinkers

Avoiding “Hint and Hope” Communication

Standardized Tools

Air Florida Flight 90
January 1982

15:59:58 - F/O God, look at that thing. That doesn’t seem right, does it?...Uh, that’s not right.
16:00:09 - CA Yes it is, there’s eighty
16:00:10 - F/O Naw, I don’t think that’s right...
Ah, maybe it is.
3 “W”s

1. **What I see**
2. **What I’m concerned about**
3. **What I want**

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“3Ws” Case Study

A procedure is about to begin in the operating room on a patient having several laryngeal polyps removed. The surgeon begins the case. The circulating nurse notices that there has been no discussion of procedures for reducing the risk of an intra airway fire during electrocautery.

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Assertive Communication

**Standardized Communication Tools**

**4 Step Tool**
1. Get Attention - Use title or first name
2. State Concern - “I’m uncomfortable with”
3. Offer Alternative - “I want you to...”
4. Pose question - Get resolution

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Use Chain of Command

**Four-Step Assertive Tool**
- Get Attention
- State Concern “I’m Uncomfortable with...”
- Offer Solution
- Pose Question

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Nursing Questionnaire (TW Domain)

**Situation Awareness**

***Statistically significant (p<0.05, t-test)***

- 75% Improvement
- 29% Improvement

A Blueprint for Change
Levels of Situational Awareness

- Level 1: perception
- Level 2: comprehension
- Level 3: projection

Make Decisions

Situational Awareness (SA)
Significant Challenge for Nurses

THREATS STRESSORS

- Medication Variance
- Fall with Injury
- Wrong Patient
- Wrong Procedure
- Failure to Rescue
- NARCAN, D50
- ACLS

Low (SA)

Apply the 1,2,3 Rule

Immediate Action

1. Step Back
2. Analyze
3. Use Resources

As soon as POSSIBLE vs. PRACTICAL

Knowing / Recognizing Red Flags

- Failed Cross Check
- Failure to meet targets
- Confusion
- Not following Policy
- Fixation
- Failure to Delegate
- Not communicating
- Not addressing discrepancies

Team Monitoring & Cross Checking

PM Pilot Monitoring
Staff Monitoring (NM)

RN Led Briefings

- Short
- Done by Leader
- Informative
- Structured
- Opportunity for Questions
RN Led Briefings

RN to Team Briefing
- Greet Team
- Follow Policy
- Invite participation
- Acknowledgements
- Clarify roles – RN, LPN, N/A
- Patient Risks
- Define Team
- Questions

Huddle = Briefing

3C HUDDLE
- ANY CHANGES SINCE REPORT? IF SO WHAT?
- ANY DISCHARGES?
- HOW ARE YOU DOING?
- DO YOU NEED HELP?
- CAN YOU HANDLE YOUR ASSIGNMENT?
- CAN YOU TAKE AN ADMISSION?
- HOW ARE YOU DOING?
- CAN YOU GO TO LUNCH?
- CAN YOU HANDLE YOUR ASSIGNMENT?
- IS THERE ANYTHING ELSE?

*THIS TAKES ABOUT 10 MINUTES MAX TO WITH ALL NURSES AND NURSING ASSISTANTS PRESENT.

Unit Acquired Pressure Ulcers (UAPU)

- UAPU Rate FY 10 qtr. 2 = 4
- UAPU Rate FY 11 qtr. 1 = 0

Blood Glucose Monitoring

Blood Glucose Related Events

33% ↓
15 in FY10 Q2 to 10 in FY11 Q1.

71% ↓
24 in FY10 Q2 to 7 in FY11 Q1.
Checklists

- Support the user
- Puts knowledge in the world
  - “Read and Verify”
  - “Read and Do”

A BLUEPRINT FOR CHANGE

Read and Verify

Before Takeoff

Window Heat…………………………………………………………..ON HIGH
Anti-Ice……………………………………………………………………ON
Flight Instruments & Radios……………………………………………….SET
Yaw Damper………………………………………………………………ON & CHECKED
Flight Controls…………………………………………………………..CHECKED
Stabilizer Trim………………………………………………………….SET
Flaps / Slats………………………………………………………………15 & GREEN
Electrical…………………………………………………………………….NO LIGHTS
Fuel Pumps……………………………………………………………………SET FOR TAKEOFF
Fuel Heat……………………………………………………………………OFF
Hydraulics……………………………………………………………………PRESS & QTY NORMAL
Elevator & Rudder Lights…………………………………………………OFF
Air Cond & Press…………………………………………………………..SET FOR TAKEOFF
EPR & Airspeed Bugs…………………………………………………SET
Transponder……………………………………………………………….ALTITUDE
Take Off briefing…………………………………………………………COMPLETE

A BLUEPRINT FOR CHANGE

Read and Do

Read and Do Checklist

4% - 22% ↑
Calls to Rapid Response Team

25% - 12% ↓
Failure to Rescue Events

A BLUEPRINT FOR CHANGE

Central Line Mishap

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<td>Verify patient with 2 identifiers</td>
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<td>Performed hand hygiene and applied personal protective equipment (sterile gloves and, if indicated, gowns, mask, and gown).</td>
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<td>Transferred or discontinued the IV solution(s).</td>
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<td>Opened the sterile scissors or suture removal kit and sterile gauze pads.</td>
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<td>Placed a moisture proof absorbent pad under the patient’s upper torso and another close to the catheter site.</td>
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<td>Placed the patient in a supine position with the head of the bed in a slight Trendelenburg position (or flat when the Trendelenburg position was contraindicated or not tolerated by the patient).</td>
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<td>Have the patient turn his or her head away from the catheter.</td>
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A CHANGE
Central Line Removal Checklist

Before Removal (Read and Verify)
- Patient Identification: Confirmed X 2
- Supplies: At bedside
- Supine Position: Confirmed
- HOB (Slight Trendelenburg or Flat): In position
- Sutures: Removed

Removal (Read and Do)
- Patient: Confirm in supine position
- Patient: Take a deep breath and hold
- Line Remove: Pull parallel to skin in steady motion
- Pressure Dressing: Immediately apply
- Patient: Exhale

After Removal (Read and Verify)
- Occlusive Dressing: Applied
- Patient: Instructed - Bedrest X 30 minutes
- Staff and Patient: Instructed - Monitor per protocol

Sterile Cockpit Methodologies

Reducing Distractions
- "Sterile Cockpit Methodologies"

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Medication Error Rate

Pre Intervention: 3.95 / 1000 bed days of care
Post Intervention: 2.26 / 1000 bed days of care

Simulation

High Fidelity Simulation
- Unit Specific Clinical Scenario
Clinical Simulation

Pre
Post

References

- Hoeksema et al., unpublished.