Detecting Quality and Safety Problems: Involving RNs in Improvement Science Research

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Background

Operational failures are defects in the care delivery system that RNs work around when the defects become part of the routine and continue to occur. Operational failures can expose patients to error and create inefficiencies in care delivery. RNs can engage in identifying the type and frequency of operational failures they experience on their clinical patient care units.

More information about the types of operational failures RNs encounter at the unit level in acute care hospitals and the relationship to contextual factors in their work environment will provide strategic direction for systems improvement.

A collaborative multisite approach will enhance the scope of failures reported and also enable meaningful analysis of the work environment factors that potentially influence variation and types of failures present.

This study is part of a network study entitled Small Troubles, Adaptive Responses (STAR-2): Frontline Nurse Engagement in Quality Improvement (Study PIs K. Stevens and R. Ferrer).

Objectives

The specific aims are:

1. Describe the type and frequency of first-order operational failures detected by frontline RNs on their clinical units.
2. Examine the association between operational failures self-detected by RNs among three medical-surgical clinical units and compare with findings from other hospitals in the collaborative.
3. Explore the relations among frontline engagement (detection of operational defects and team vitality), work environment (culture of patient safety and excellence in work environment), and quality improvement outcomes (quality improvement activities, quality of care, and job satisfaction).

Methods

Design: Descriptive, cross-sectional study

Setting: Three medical-surgical clinical units

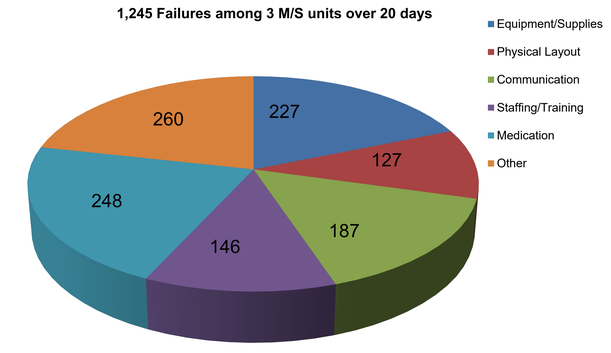
Sample: A convenience sample of a minimum of 20 RNs from each clinical unit volunteered to participate in the study; A total of 64 RNs participated.

Data Collection: RNs completed the STAR-2 Pocket Cards noting the problems they encountered delivering care during their shifts over a 20 day period. RN participants completed paper versions of the Practice Environment Scale (PES-NWIR), Assessment of Quality of Care, AHRQ Hospital Survey on Patient Safety Culture, team vitality, quality improvement, and job satisfaction scales.

Analysis: Descriptive statistics using Student's T-test and One-way Analysis of Variance (ANOVA)

Huntington Memorial Hospital is as 625-bed, not-for-profit, university-affiliated community hospital located in southern California. The hospital that began over a century ago now serves more than three-quarters of a million people every year. Huntington Hospital has been ranked among the best hospitals/top ten hospitals in greater Los Angeles in *U.S. News & World Report*. The hospital was recognized with awards from the American Heart Association for a stroke program, the U.S. Department of Health and Human Services for eliminating ventilator-associated pneumonia and by the Joint Commission as an Orthopedic Center of Excellence and ANCC designation as a Magnet hospital.

Results



Operational Failures:

There were a total of 1,245 operational failures reported across 3 clinical units during a 20 day period

Rate of occurrence was 2.6 per hour

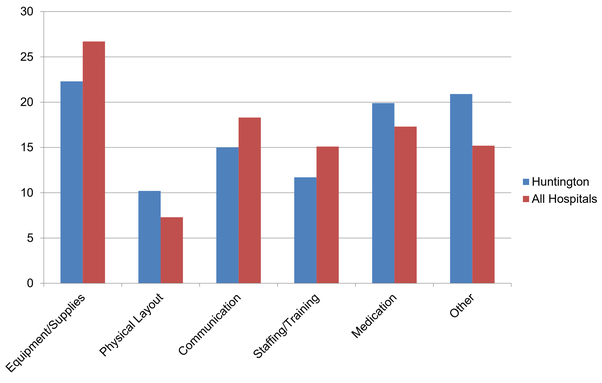
An average of 4.5 operational failures per RN per shift; The average for all 14 hospitals was 6.15

Three most common specific failures were:

1. Communication with MDs (n=93)
2. Missing medications (n=55)
3. Communication with pharmacy (n=52)

Problem Category	Huntington Hospital Data	Aggregate Data
Equipment/Supplies	22.3%	26.7%
Physical Unit/Layout	10.2%	7.31%
Information/Communication	15%	18.3%
Staffing/Training	11.7%	15.1%
Medication	19.9%	17.3%
Other	20.9%	15.2%
Total	N 1245	N 24014

There were no statistically significant differences between the average number of operational failures, the average between shifts, nor between shifts for any category among the study units



Results

Main categories of problems identified as *Other*:
Delayed support services, care coordination, delayed treatment, discharge issues, and admission process.

Patient safety culture showed a range of scores from 3.20-4.15 *(3 = neutral and 4-5 = positive)* for 11/12 categories across 3 units except non-punitive response to error scored 2.89, 2.88, 2.81.

Work environment scores ranged from 1.84 to 2.33 showing RNs *strongly agree (1)* or *agree (2)* that RN involvement in hospital activities; quality of care; leadership/management support; staffing resources; and collegial RN-MD relationships are all present.

Team vitality was strong with the majority responding *strongly agree* or *agree* in 9/10 categories with one category, *My ideas really seem to count on this unit* less than the majority for strongly agree or agree at 46%.

RNs believe the quality of care on their unit is good (51%) to excellent (43%) on the last shift; for the last year good (51%) to excellent (47%).

Job satisfaction was high with most RNs reporting they were satisfied or loved their job (95%).

Conclusions

The rate of care delivery defects that occur as operational failures per shift need to improve to reduce risk of error and increase efficiency.

Interdisciplinary communication failures between physicians, pharmacists and RNs need to be explored in more detail to plan improvements strategically.

Specific equipment and supply problems need to be identified for each unit.

Three specific areas for improvement are: Just culture regarding errors, recognizing and using the ideas of frontline RNs and continuing to support patients to successful discharge through care coordination.

The collaborative may be a source for sharing knowledge about implementing improvements and best practices to collectively improve the effectiveness of the work environment.

The effectiveness of the RN can be enhanced when repetitive system problems are resolved. Findings from this study can contribute to advancing the productivity of the work environment for RNs at the frontline unit level.

Acknowledgement: The ISRN Coordinating Center for resources and technical support. Network study funding by NINR RC2NR011946