Small Troubles, Adaptive Responses (STAR-2): Frontline Nurse Engagement in Quality Improvement

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INTRODUCTION

Organizational climate in hospitals, including organizational support for nursing care and engagement in microsystem operations, are potentially modifiable to produce better patient outcomes and workforce satisfaction. However, the causal links between macro- and micro-system features and improvement are poorly understood.

The broad impact on health derives from the fact that most adverse events in health care originate from small process failures that are common enough to be taken for granted. Although these process failures include both errors and "problems" - task interruptions due to something or someone not being available when needed - problems are far more common, yet have drawn far less attention (1). In fact, such problems occur about once per hour per nurse on hospital units and 95% of problems are managed through workarounds (1). How problems are managed, therefore, is an important determinant of a hospital's organizational culture for quality of care (2).

This study seeks to describe the type and frequency of first-order operational failures (workarounds) detected by frontline nurses on their clinical units.

METHODS

Study Sample: 14 hospitals from the Improvement Science Research Network participated in this study. Each hospital engaged three medical surgical units in this study and approximately 20 registered nurses from each unit were recruited to self-report first-order operational failures. 8 sites that have completed data analysis are presented here.

Data Collection: Data collection procedures were identical across each of the hospitals. Data collection was standardized using a Protocol Implementation Kit provided by the Improvement Science Research Network.

First-Order Operational Failures: The STAR Pocket Card was used to systematically detect the number and type of first-order operational failures. The STAR Pocket Cards are specially -designed index cards containing checklists to capture information on the type and frequency of small problems encountered during the work shift. Consenting nurses were asked to record operational failures for a maximum of 10 shifts over a 20 day data collection period.

The Pocket Card offers the following six categories for self-detection: equipment, information/communication, medication, physical unit/layout, staffing and other.

Statistical Analysis: Descriptive statistics were used to examine the type and frequency of the self-reported operational failures using SPSS.

RESULTS

A. Pocket Card Data

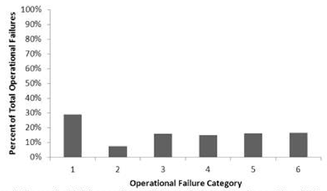

Figure 1. Percent of total operational failures. Categories of operational failures are represented by numbers: 1 = Equipment/Supplies, 2 = Physical Unit/Layout, 3 = Information/Communication, 4 = Staffing/Training, 5 = Medication, 6 = Other.

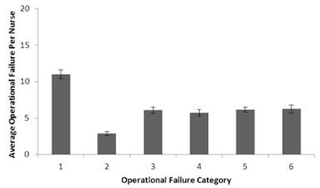

Figure 2. Average number of operational failures per nurse. Categories of operational failures are represented by numbers: 1 = Equipment/Supplies, 2 = Physical Unit/Layout, 3 = Information/Communication, 4 = Staffing/Training, 5 = Medication, 6 = Other.

B. Survey Packet Data

Table 1. HSOPS Survey Data: Means and Standard Error (SEM) for All Study Units

Category	Mean	Median	SEM
Teamwork Within Units	3.88	4.00	0.04
Supervisor/Manager Expectations & Actions Promoting Patient Safety	3.79	4.00	0.04
Organizational Learning—Continuous Improvement	3.79	4.00	0.03
Management Support for Patient Safety	3.72	3.67	0.04
Overall Perceptions of Patient Safety	3.35	3.50	0.04
Feedback & Communication About Error	3.64	3.67	0.04
Communication Openness	3.52	3.67	0.04
Frequency of Events Reported	3.69	3.67	0.05
Teamwork Across Units	3.48	3.50	0.03
Staffing	3.14	3.25	0.04
Handoffs & Transitions	3.25	3.25	0.03
Nonpunitive Response to Error	2.99	3.00	0.05

Table 3. Assesment of Quality of Care: Frequency of Responses for All Study Units

Category		Frequency	%
In general, how would you describe the quality of nursing care delivered to patients on your unit	Excellent	101	31%
	Good	196	59%
	Fair	33	10%
	Poor	0	0%
	Total	330	100%
How would you describe the quality of nursing care delivered on your last shift	Excellent	118	36%
	Good	181	55%
	Fair	26	8%
	Poor	6	2%
	Total	331	100%
Overall, over the past year would you say the quality of patient care in your hospital has:	Improved	160	49%
	Remained the same	127	39%
	Deteriorated	42	13%
	Total	329	100%
How confident are you that your patients are able to manage their care when discharged from the hospital?	Very confident	47	14%
	Confident	172	52%
	Somewhat confident	105	32%
	Not at all confident	7	2%
	Total	331	100%

Table 2. Practice Environment Scale of the Nursing Work Index: Means and Standard Error (SEM) for All Study Units

Category	Mean	Median	SEM
Nurse Participation in Hospital Affairs	2.21	2.22	0.02
Nursing Foundations for Quality of Care	1.95	2.00	0.02
Support of Nurses	2.14	2.00	0.03
Staffing and Resource Adequacy	2.56	2.50	0.03
Collegial Nurse-Physician Relations	2.14	2.00	0.03

RESULTS / DISCUSSION

- A total of 16306 operational failures were reported by 8 hospitals, equipment/supplies (n=4717; 28%) and medication (n=2634, 19%) were the top reported categories
- Results of this study show similar findings to a previous study by our group (STAR-1, unreported).
- Analysis of 6 additional hospitals along with systems variables is currently under progress though the Improvement Science Research Network.

CONCLUSION

- Operational failures directly impact safety and quality of patient care.
- Results indicate that leveraging frontline clinicians can help improve healthcare delivery by understanding frontline operational failures.
- Next steps for this project are to devise interventions to address these operational failures.

IMPROVEMENT SCIENCE RESEARCH NETWORK

The Improvement Science Research aims to accelerate the development and dissemination of interprofessional improvement science in a system context across multiple hospital sites. Through a network of national and international healthcare professionals and organization, the Network fills a national gap in improvement science, creating an environment to build academic-practice partnerships to conduct multisite quality improvement research.

REFERENCES

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