QUALITY CORNER

Improving Communication in the ICU Using Daily Goals

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Background: **Clear communication is imperative if teams in any industry expect to make improvements. An estimated 85% of errors across industries result from communication failures.**

Purpose: **The purpose of this study was to evaluate and improve the effectiveness of communication during patient care rounds in the intensive care unit (ICU) using a daily goals form.**

Design: **We conducted a prospective cohort study in collaboration with the Volunteer Hospital Association (VHA), Institute for Healthcare Improvement (IHI), and Johns Hopkins Hospital's (JHH) 16-bed surgical oncology ICU. All patients admitted to the ICU were eligible. 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.**

Results: **At baseline, less than 10% of residents and nurses understood the goals of care for the day. After implementing the daily goals form, greater than 95% of nurses and residents understood the goals of care for the day. After implementation of the daily goals form, ICU LOS decreased from a mean of 2.2 days to 1.1 days.**

Conclusion: **Implementing the daily goals form resulted in a significant improvement in the percent of residents and nurses who understood the goals of care for the day and a reduction in ICU LOS. The use of the daily goals form has broad applicability in acute care medicine.**

THE NEED FOR CLEAR team communication among health care providers is paramount. Communication failures lead to increased patient harm, length of stay (LOS), and resource use, and caregiver dissatisfaction and turnover.[1-6] Efforts to improve communication may improve these outcomes.[7-9]

Effective communication among health care providers in the intensive care unit (ICU) is particularly imperative. Nearly all patients admitted to the ICU suffer a potentially life-threatening adverse event.[10,11] For patients to progress through the ICU or hospital, the medical care team—with the help of patients and families—must perform specific tasks or work, obtain tests, make diagnoses, implement treatments, remove tubes and catheters, prevent complications, and manage pain. To manage this work, the care team must understand clearly the goals of care that includes the tasks to be performed, care plan, and communication plan.

OBJECTIVES

The specific aims of this article are to describe our efforts to evaluate the effectiveness of communication during daily rounds in the ICU and to improve communication through the use of a daily goals form.

DATA SOURCES AND SETTINGS

This study was conducted as part of a collaborative effort between the Volunteer Hospital Association (VHA), the Institute for Healthcare Improvement (IHI), and an academic 16-bed surgical ICU to improve the quality of ICU care.

STUDY DESIGN

Patients in our ICU are cared for by an intensivist-led team that includes ICU attending physician and fellows, anesthesia and surgery residents, nurse practitioners, nurses, and a pharmacist. During each month there are 3 residents, who rotate monthly, and 3 nurse practitioners caring for patients in the ICU. During daily rounds, the ICU team visits each patient for about 20 to 25 minutes and develops a plan of care for the day, discussing evidence regarding diagnosis or therapy and devel-

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Table 1. Daily Goals Form

Room Number ____			Date ____/____/____
____ Attending initials:			—Initial as goals are reviewed—
	0700-1500	1500-2300	2300-0700
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.

oping care plans. On listening to discussions during rounds, one of the authors (P.P.) felt that rounds were more provider-centered than patient-centered; care teams discussed physiology, pharmacology, and the available evidence, yet often failed to develop explicit patient goals.

DATA COLLECTION METHODS

The authors developed a survey to evaluate the extent to which team members understood the goals of therapy. To estimate the magnitude of the communication problem, the physician-researcher (P.P.) asked the ICU residents and nurses the following 2 questions after rounds: (1) How well do you understand the goals of care for this patient today? and (2) How well do you understand what work needs to be accomplished to get this patient to the next level of care? The response categories for each question involved a 5-point Likert scale, including completely understand (5), mostly understand (4), understand somewhat (3), understand little (2), and understand nothing (1). The outcome measure was the percent of residents and nurses per week who responded that they understood the daily goals and tasks for each patient (scored 4 or 5). We administered the survey at the end of rounds to the patient's primary nurse and resident on call that day. Each day, we randomly surveyed the resident and nurse caring for 2 patients (14 per week) for 8 weeks. During this time period there were 6 residents and 3 nurse practitioners caring for patients. To accomplish this, a researcher (P.P.) used the occupied ICU bed number (1–15) as the sampling frame and using a random number table, sampled 2 beds per day.

To improve communication among providers, we developed and implemented a daily goals form (Table 1) that asked staff to state the tasks to be completed, care plan, and communication plan (discussions with patient/family or other care givers). This form was designed to facilitate communication by requiring the care team to define explicitly the goals for the day. The daily goals form was completed during rounds on each patient, signed by the fellow or attending physician, and handed to the patient's nurse before moving on to the next patient. All providers, physicians, nurses, respiratory therapists, and pharmacists reviewed the goals for the day and initialed the form 3 times a day. The goals form was updated if the goals of care changed.

The short-term goals form evolved through much iteration, based on input from all members of the care team, and continues to evolve. To evaluate the impact of the daily goals form on patient outcomes we evaluated ICU LOS during the study period. We also interviewed 15 providers who had completed the daily goals form to evaluate provider's perceptions of the form, the burden, and average time to complete the form. In a semistructured

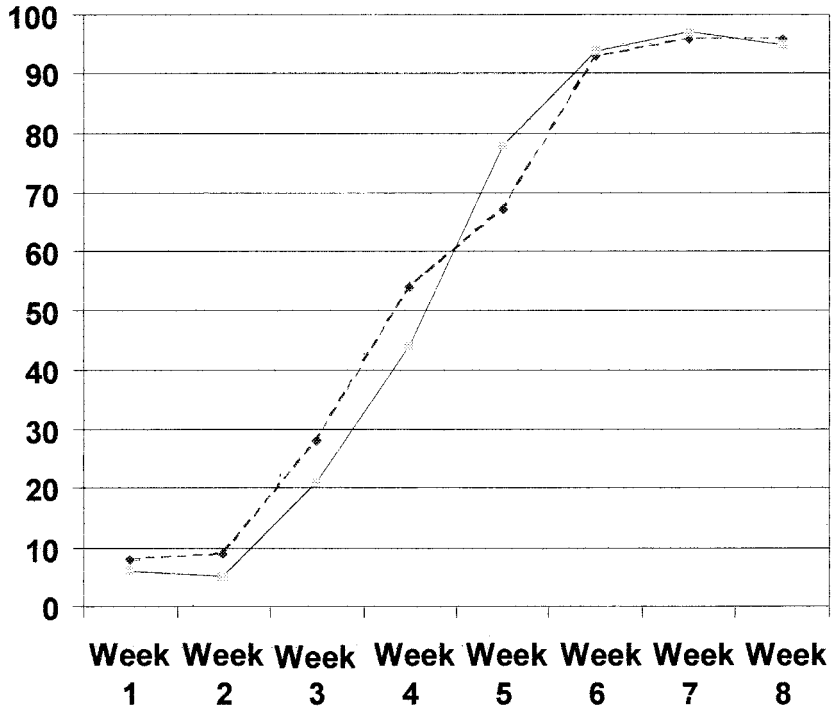

Fig 1. Percent of residents and nurses per week understanding goals.

personal interview, the researchers (P.P., S.B.) asked staff the following questions: (1) what was the affect of the goals form on communication, (2) what was the affect of the goal form on patient outcomes, (3) how long on average did the form take to complete, and (4) did the form negatively affect patient care. The goals form was developed and pilot tested in May and June and then implemented in July 2001. We evaluated its impact on ICU LOS from July 2001 through June 2002.

ANALYSIS AND INTERPRETATION

The analysis is descriptive. We used a run chart to display LOS and the percent of residents and nurses who stated (scored 4 or 5) that they understood the daily goals and tasks for each patient before and after the intervention.

RESULTS

During the first 2 weeks, less than 10% of residents and nurses understood the daily goals of therapy and the daily tasks to be completed. After implementing the goals form (Fig 1), the percent of residents and nurses who understood the daily goals increased to over 95%. Because the score for the question regarding goals and daily tasks were nearly identical, we present the goals data. The scores for residents and nurses were similar for both questions.

After initiation of the intervention, ICU LOS decreased significantly from a mean of 2.2 days to 1.1 days (Fig 2). With this decrease came an increase in the number of admissions. Annualized, the ICU was able to admit 670 additional patients.

CONCLUSION

At the start of the study, few residents or nurses understood the daily goals of care for patients in the ICU. After implementing the daily goals form, however, nearly all residents and nurses understood goals for the day and use of the form was associated with a 50% decrease in ICU LOS. This study did not evaluate how the use of the goals reduced LOS. Nevertheless, similar to personal effectiveness or project management tools, stating clearly the tasks, care plan, and communication plan to be accomplished and ensuring that all members of the care team understood these tasks could explain the reduced LOS. In addition, the use of the goals form may have prevented complications such as catheter-related bacteremia by removing central lines and ventilator-associated pneumonia by elevating the head of the bed and

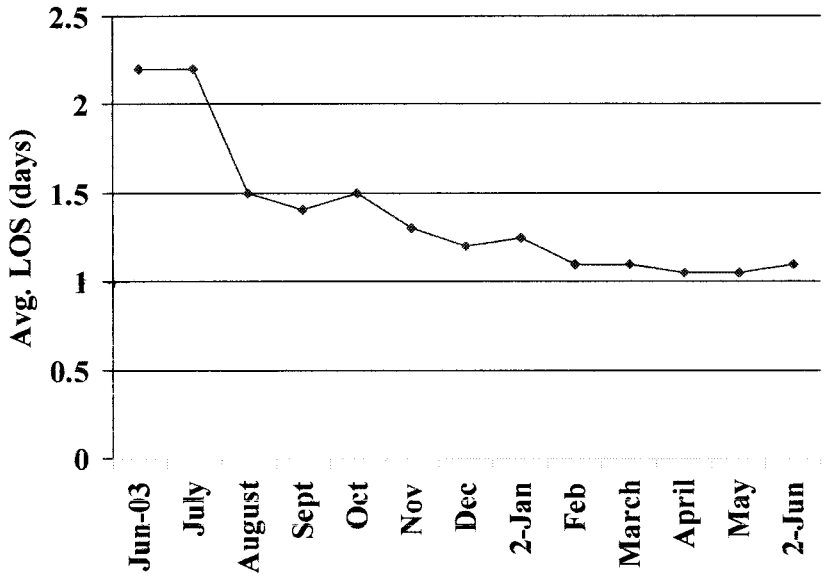

Fig 2. Impact of daily goals sheet on ICU LOS.

ensuring that patients were assessed for their readiness to extubate.

Caregivers found the short-term goals sheet to be a simple tool for clarifying work goals among providers. Both residents and nurses perceived that using this form improved communication and patient care. With the use of the goals form, nurses felt they were an active part of this patient care team, they partnered with physicians to achieve a common goal. Moreover, the physicians and nurses used the goal sheet as a tool to communicate with families. Nurses discussed daily goals with physicians, patients, and families.

This daily or short-term goals sheet has broad applicability for in-patient medicine and is now used in over 50 ICUs that are participating in IHI and VHA improvement efforts. Each of these ICUs modified the form to suit their individual needs and culture. For example, the goals form in one ICU is a piece of paper that lists goals 1, 2, 3, and so on, whereas the form in another ICU at the same hospital is a detailed checklist of specific therapies.

The benefits of the goals sheet are founded on theories of crew resource management (CRM).[12-15] Before using the goals sheet, patient care rounds were provider-centric with discussions of pathophysiology and relevant literature, but lacked clarity about tasks and care plans for the day. Despite dedicating 20 to 25 minutes of rounding time on each patient, staff often lacked understanding of the tasks they needed to accomplish, the plan of care, and the plan for communicating with patients/families and other caregivers. After the goals form, staff understood the goals and used them to clarify goals and organize their work.

When using the goals sheet, we learned some important lessons. First, we found that using an interdisciplinary communication tool is more important than the specific statements on the form. Although the structure of the form varies widely among hospitals; the use of the form improves communication and clarifies the work needed to get the patient to the next level of care. Second, hospitals should modify the form to meet their culture and needs. Third, the specific answer to the question "what is your greatest safety concern?" is less imperative than increasing awareness of how patients may be harmed and discussing how you may mitigate that risk. Fourth, in the beginning, the form should be modified frequently. Although 90% of our revisions occurred in the first couple of days, our form continues to evolve. For example, we now ask about long-term goals of care, incorporating palliative care into our practice. And fifth, it is not necessary to make the form part of the official medical record. Although some hospitals have attempted this, we have not. Rather, we use the form as a vehicle of communication among all providers. From a risk-management perspective, we have not discussed the risks and benefits of incorporating the goals form into the medical record; this warrants further discussion.

We recognize several limitations to our study. First, this type of study prohibits establishing a causal relationship between using the daily goals sheet and reduced LOS. In addition, there were other efforts during the study period to improve ventilator care and reduce catheter-related infections that may have contributed to reduced LOS. Nonetheless, the staff's perceptions of the benefits of the daily goals sheet and the association between using the goals and reduced LOS suggests that the goals sheet likely contributed to these improvements. Our before and after study design also is relatively weak. We also have relatively limited pre-intervention data potentially biasing our results. Nonetheless, the run charts of our results show marked improvement over time. Second, we studied only one ICU from an academic medical center, potentially limiting the generalizability of our findings. Yet, the goals sheet is now being used in over 50 ICUs from a wide variety of hospitals. Third, we did not rigorously evaluate the validity of our survey of nurses and residents understanding of the goals of care. Because residents and nurses may have understood the care plan and tasks but had not labeled them as goals, we also asked caregivers what work needs to be accomplished. The results were similar for both questions. Although our survey results may have been a labeling effect, residents and nurses perceived improved communication as a result of the use of the goals sheet. Because staff felt this intervention improved quality of care, they routinely use it; this is perhaps the best measure of its value.

In conclusion, use of this daily or short-term goals sheet in a surgical ICU at an academic medical center was associated with improved communication among providers and a 50% reduction in ICU LOS. These improvements were likely owing to clarifying tasks, care plans, and communication plans among caregivers. This form can be applied broadly in in-patient medicine. Indeed, many ICUs are using a goals form. Simple strategies such as this, based on principals of CRM, may provide a practical means to introduce CRM into health care.

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