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Integrating Research and Quality Improvement Using TeamSTEPPS: A Health Team Communication Project to Improve Hospital Discharge

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Abstract

Purpose/Objectives:

The purpose of this article is to describe an innovative approach to the integration of quality improvement and research processes. A project with the objective of improving health team communication about hospital discharge provides an exemplar case.

Description of the Project/Program:

The TeamSTEPPS 10-step action planning guide provided the structure for planning, developing, and evaluating a redesign of interprofessional health team communication to improve hospital discharge led by 2 clinical nurse specialists. The redesign involved development of processes for team bedside rounding, registered nurse bedside shift reports, and briefing tools to support the rounding processes.

Outcome:

Using the TeamSTEPPS process, a 4-phase combined quality improvement and research project was designed and implemented. Implementation is ongoing, supported by process evaluation for continuing process improvement. Longitudinal analysis of research outcomes will follow in the future.

Conclusions:

Led by unit-based clinical nurse specialists, use of an integrated process of quality improvement and research creates evidence-based innovation to solve interprofessional practice problems. Incorporating research within the project design allows for data-based decisions to inform the clinical process improvement, as well as documentation of both the processes and outcomes of the local improvements that can inform replications in other sites.

Development of new knowledge, innovation, and improvement are embedded in the culture of professional nursing practice. High-performing organizations are characterized by nurses who are actively engaged in research to generate new knowledge, test evidence and translate to practice, and innovate to improve care delivery systems and quality.[1] Although sometimes viewed as separate activities, creating synergy between innovation, evidence-based practice, and research provides a platform for meaningful change in nursing practice and patient outcomes.

In this article, we report the development of a project, led by clinical nurse specialists, that integrates innovation, evidence-based change, and research to improve health team communication about hospital discharge. We describe our approach to the integration of a quality improvement process with research methodology. (Research results will be published separately.) The project incorporated the strategies and tools provided by the TeamSTEPPS initiative, as well as use of published and local evidence, within a combined quality improvement and research process. TeamSTEPPS is a project of the Agency for Healthcare Research and Quality 2 that promotes optimal patient outcomes by improving communication and teamwork skills among healthcare professionals. TeamSTEPPS was developed to train providers in effective health team communication and to provide operational guidance for integrating interprofessional teamwork and tools into healthcare systems. Evidence is accumulating about the impact of the TeamSTEPPS approaches to improving team communication on work processes, errors, avoidable events, and professional satisfaction.[3]

The complexity of care in acute care hospitals has necessitated the development of innovative strategies for efficient and effective care delivery. In recent years, much emphasis has been placed on the development of interprofessional care teams to achieve improved patient outcomes.[4,5] Central to successful interprofessional team process is clear communication and integration of individual discipline activities into a seamless and effective system of care.[6] Communication among care team members is essential to effective interprofessional care. Breakdowns in communication have been linked to adverse events and patient dissatisfaction.[7-9] Specific to hospital discharge, interprofessional communication and collaboration in patient and family preparation for discharge are challenging; organizational routines, hierarchies, and priorities can create tensions that are evident in poor coordination, delays in care and discharge, and poor outcomes after discharge.[10-12]

To tackle the practice problem of poor health team communication about discharge between health team members and with patients and families, 2 surgical units in a Midwestern academic medical center embarked on a Communication About Readiness (CAR) for Discharge Project, led by the unit clinical nurse specialists. From the outset, there was a desire to implement a new communication process, using evidence-based practices to design the new process and research methods to evaluate the effectiveness of the new process on provider communication and patient outcomes. After master training in the TeamSTEPPS process attended by project leaders and a staff nurse champion, the project leadership team developed a model to integrate TeamSTEPPS processes and tools for implementing an improvement in team communication with a research design. The following sections detail the integration of quality improvement process and research design into the TeamSTEPPS 10-step planning process for the CAR project (also see the Table)

STEP 1. CREATE A CHANGE TEAM/CREATE A RESEARCH TEAM

A nurse-physician (RN-MD) Collaboration Team had been formed a few years earlier after a patient situation that occurred because of ineffective communication among healthcare team members. The original team was made up of staff RNs, clinical nurse specialists, and nurse managers from 2 surgical units and had an attending MD, a resident MD, and advance practice providers (advance practice registered nurses and physicians assistants) represented at times. Despite shared goals to improve RN-MD communication and collaboration, it was difficult to align priorities and decide on interventions that were acceptable to all participants. With continuing interest but limited progress, the clinical nurse specialists and staff RNs were approached with an opportunity to engage with a doctorally prepared nurse researcher with expertise in discharge preparation research. Through this collaboration, the conversation moved to the influence of health team collaboration about discharge and the impact on patient outcomes, specifically readmissions. The staff nurses on the team determined that if they were going to do research, they wanted to be able to impact patient outcomes. It was at that point that the newly formed research team created their charge to conduct an intervention study, where the intervention was a redesign of the health team communication processes related to hospital discharge. The RN-MD collaboration team became the research team, under the leadership of the unit-based clinical nurse specialists and the nurse researcher. An open solicitation to participate in developing the research plan was sent to clinical nurses; 2 MD participants were directly approached by the clinical nurse specialists. The research initiative was supported by the unit managers and the organization's chief nurse executive.

STEP 2. DEFINE THE PROBLEM, CHALLENGE, OR OPPORTUNITY FOR IMPROVEMENT

Clear definition of the problem, challenge, and opportunity for improvement helped to create a focal target for the team's project.

Table. Integrating TeamSTEPPS With the Research Process

TeamSTEPPS Action Plan Steps[a]	TeamSTEPPS Process for the CAR Study	Research Process
Step 1. Create a change team. Identification of the Change Team, the group of key leaders, and staff members who will make the TeamSTEPPS Initiative happen	RN-MD Collaboration Team formed to address ongoing communication problems. Clinical nurse specialists on 2 surgical units led the team. Team included staff nurses, nurse managers, resident, and attending medical staff.	Identify research team members to address the research questions. Faculty research consultant joined the nurse members of the RN-MD Collaboration team to design a research project.
Step 2. Define the problem, challenge, or opportunity for improvement. Identification of the specific problem, challenge, or opportunity for	Problem was identified as poor communication about the timing of discharge and updates about discharge in the plan of care.	Translation of challenges to research aims (or research questions): 1. Describe patterns of communication about discharge and

improvements that will be the target of the TeamSTEPPS Initiative	Challenge was interprofessional collaboration in solving the discharge communication problem in an academic medical center model of care.	collaboration among members of the healthcare team 2. Determine similarities and differences in patient, nurse, and physician perceptions of discharge readiness.
Step 3. Define the aim(s) of your TeamSTEPPS intervention.	Aims for redesign of health team communication process (determined from baseline [preintervention] data in step 5): 1. Improve communication about discharge between physicians, nurses and patients/families. 2. Improve agreement on patient readiness for discharge 3. Reduce postdischarge utilization (readmissions and ED visits)	Research aims: 1. Improve RN and MD communication and collaboration. 2. Design, implement, and determine the impact of a redesigned interprofessional health team communication process on the following outcomes: • Quality of discharge teaching • Readiness for hospital discharge • Post-discharge coping difficulty • Readmissions/ED visits within 30 days
Step 4. Design a TeamSTEPPS Intervention. Detailed description of the TeamSTEPPS InterventionVthe team strategies and tools and how they will be used to correct the problem (or make improvements). Interventions are also known as risk reduction strategies, corrective actions, and improvement actions	TeamSTEPPS Intervention: Implement vertical and longitudinal communication about discharge among the triad of physicians, nurse, and patients/families, using the following strategies and TeamSTEPPS tools. 1. Daily MD-RN bedside rounding, using briefing checklist 2. Shift change RN-RN rounding using briefing checklist Actions are process improvements targeting areas of need for improvement identified in pre-assessments in step 5.	Intervention design: Planning meetings to coordinate team planning Interprofessional meetings to determine intervention/process Decisions about implementation strategies determined through review of baseline data, evidence on health team collaborative practices in acute care settings, and team brainstorming about pragmatic innovations Detailed description of TeamSTEPPS intervention
Step 5. Develop a plan for testing the effectiveness of your TeamSTEPPS Intervention. A plan for testing the effectiveness of the TeamSTEPPS Intervention including measures, methodologies, target outcome ranges, and pilot testing as appropriate	Use research design and methods to measure effectiveness.	Four-phase preintervention/postintervention research design Phase 1: Pre-assessment of RN-MD communication and collaboration Phase 2: Pre-associations of discharge readiness by patient/RN/MD and patient outcomes Phase 3: Post-associations of discharge readiness by patient/RN/MD and patient outcomes Phase 4: Post-assessment of RN-MD communication and collaboration
Step 6. Develop an implementation plan. An implementation plan for the TeamSTEPPS Intervention, including implementation date and identification of person(s) responsible for implementation and oversight	Coordinated between intervention planning team and research project. CNS responsible for coordination and oversight	Preparation for implementation: • Staff engagement and training • Plan for monitoring for intervention fidelity • IRB review of intervention

Step 7. Develop a plan for sustained continuous improvement. A monitoring plan for ongoing assessment of the effectiveness of the TeamSTEPPS Intervention	CNS presence at Care Coordination Rounds to reinforce process Individual coaching with nursing staff	• Whiteboard use audits • Talking with patients and families about their involvement in the rounds process
Step 8. Develop a communication plan. A communication plan to generate support for the TeamSTEPPS Initiative, to keep major stakeholders informed of progress, and to maintain and spread positive changes	Communication before change and during implementation process. Responsibility assigned to CNS, planning team, and implementation team	Interprofessional training in the new communication process and tools: • Nursing staff meetings • MD grand rounds • E-mail & Links to training videos
Step 9. Putting it all together: write the TeamSTEPPS action plan.	Activate/implement the process redesign.	Begin data collection for post-implementation measurement of outcomes (phases 3 and 4).
Step 10. Review your TeamSTEPPS action plan with key stakeholders.	Process evaluation of successful and challenging aspects of the redesign and implementation process	Qualitative implementation evaluation study: • Feedback from team • Feedback from patients and families

The Problem

The research team members, who were also direct patient care providers on the 2 units participating in the project, identified poor communication between nurses and physicians and with patients and families about the discharge plan of care as the problem to be investigated and improved. Nurses highlighted numerous examples of poor communication, many of which were related to the hierarchy of the academic medical care structure and siloed communication within rather than across disciplines. Of particular concern was communication of relevant information with the medical team about a patient's condition or home situation that might influence discharge decisions and perceived lack of urgency and responsiveness of medical resident staff to these concerns. Newer nurses found it particularly difficult to escalate their concerns to the medical team, describing that they felt intimidated in approaching medical team members or engaging them when they were rounding on the unit. The nurses noted that the schedule of rounding contributed to the communication issues as the surgical teams tended to round early in the morning at the end of the night shift and nurses were often not aware of their presence on the unit. The prevailing pattern of disconnected communication between nurses and the medical team resulted in frequent and unnecessary pages to the medical team and delays in preparing and processing patients for discharge. Contributing to the heightened awareness of communication pattern problems was an effort within the medical center to decrease length of stay without negatively impacting readmissions.

The Challenge

At an organizational level, the hospital and medical college are 2 separate entities, which creates both challenge and opportunity for aligning goals, processes, and accountability for changing practice. Successful project outcomes rely on shared goals, accountability, and ownership from hospital and medical college staff. Despite the structural challenges, the RN-MD collaboration team had completed multiple quality improvement projects to improve team collaboration, which included medical and nursing staff education, engaging medical students in the team, and having residents who were assigned as liaisons, all with little impact.

The Opportunity

While researching interventions and models to improve communication, the team learned about the TeamSTEPPS approach to improving health team communication and the growing evidence supporting its

effectiveness in improving interprofessional communication.[3] TeamSTEPPS was selected as the guiding methodology for project planning for a combined quality improvement project integrated with research methods to evaluate the effectiveness of a redesigned health team communication process focused on improved discharge communication.

STEP 3. DEFINE THE AIMS OF THE TEAMSTEPPS INTERVENTION AND RESEARCH

We used an integrated approach to defining the aims for the health team communication improvement initiative and the research. The aims of the improvement initiative were as follows:

1. Process aim: to improve communication about discharge between physicians, nurses and patients.
2. Outcome aim: Improve patient's discharge readiness and subsequent postdischarge utilization (readmission and emergency department [ED] visits within 30 days after discharge)

To support the development of a focused intervention to achieve the improvement aims, we designed a research study to inform decisions in designing improved health team communication processes and to measure the change in health team communication and patient outcomes before and after implementing the intervention. The specific aims of the research were to

1. Describe the patterns of communication about discharge and collaboration among members of the healthcare team.
2. Describe the relationships between patient perceptions of quality of discharge preparation and perceived readiness for discharge, care team (RN and MD) assessments of discharge readiness, and postdischarge outcomes (postdischarge coping difficulty, ED use, and readmission within 30 days after discharge).
3. Determine the impact of an intervention with the inpatient care team to improve discharge preparation communication, readiness for discharge, and postdischarge outcomes.

STEP 5. DEVELOP PLAN FOR TESTING THE EFFECTIVENESS OF THE TEAMSTEPPS INTERVENTION: THE RESEARCH DESIGN

For our project, the fifth step of TeamSTEPPS process (developing the plan for effectiveness testing) occurred before the design of the intervention (step 4). We decided that a preintervention-postintervention study design would help us to (1) measure the current state of the problem in the preintervention phase and (2) measure the change in the postintervention phase to evaluate the effectiveness of implementing the redesigned communication process. Most importantly, the preintervention data would provide the local evidence needed to guide the intervention planning team in redesign of the health team communication process.

Our integrated improvement/research design became a 4-phase research project. In phase 1, we learned about team communication patterns related to discharge communication. In phase 2, we collected baseline data on our outcome measures, specifically nurse, physician, and patient assessments of discharge readiness, patient report of postdischarge coping difficulty, and postdischarge utilization (readmissions and ED visits). Phases 3 and 4 were replicates of phases 1 and 2 after the implementation of the health team communication redesign (see Figure 1). The research design was submitted to the institutional review board (IRB) for approval. The IRB recognized the intervention would be developed from the results of phases 1 and 2 and approved the study design with a requirement to submit the detailed intervention plan for final review once designed and before implementation.

Intended outcomes of this study include improvement in communication among healthcare team members about discharge preparation and with patients and families as evidenced by increased cross-disciplinary communication and more aligned perceptions of discharge readiness. Better communication and preparation were viewed as key factors in avoiding readmissions and ED visits postdischarge.

The tools used to collect baseline data to direct the intervention planning team and for outcome evaluation included the following-(1) Discharge Communication Survey, which asked providers to rate the frequency and adequacy of communication about discharge on the day of and before the day of discharge with other health team members; (2) RN-MD Collaboration Scale[13]; (3) Readiness for Hospital Discharge Scale 8-item short-form with parallel versions for patient self-report and nurse and physician assessments,[14] completed on the day of hospital discharge; (4) Postdischarge Coping Difficulty Scale,[15] completed 2 weeks after discharge by telephone; and (5) readmissions and ED visits within 30 days after discharge, extracted from hospital electronic health records.

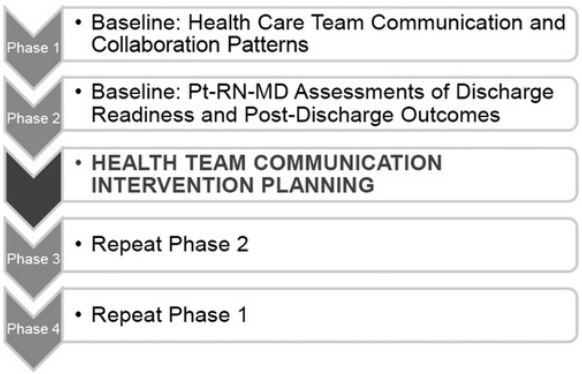

FIGURE 1. Project research design.

STEP 4. DESIGN THE TEAMSTEPPS INTERVENTION

Recognizing that successful redesign of the health team communication process would require participation from the entire care team, additional members were added after the research design was formalized. For this step, the research team expanded its membership to include staff RNs, a nurse educator, a nurse manager, an attending MD, resident MDs, advance practice providers (nurse practitioner and physician assistant) and the unit case managers. The team expansion was needed to work through the planning process for redesigning the interprofessional health team communication processes related to preparing patients for discharge that would become both the clinical process improvement and the intervention for the concurrent research project. The clinical nurse specialists and nurse researcher met to plan for each intervention planning session. The sessions were held every other week over an 8-week period. Meetings were scheduled in advance at times to accommodate participants' schedules. In addition, the medical team members were paged 15 minutes before the start of the meeting as a reminder. Coverage for patient care was arranged for nursing staff members. Each meeting was scheduled for an hour and a half to allow sufficient time for review of data, brainstorming, and planning next steps.

During the first meeting, a review of the literature on the importance of health team communication, preliminary study results from phases 1 and 2 of the concurrent research study, and TeamSTEPPS strategies and tools were reviewed. This review was used to clearly describe the problem in discharge-related team communication and the need for improvement. To foster interprofessional communication among team members, time was spent talking about the current state of communication process of the healthcare team members on the 2 participating units as it related to the patient plan of care. Barriers to achieving optimal communication were addressed and the vision for a desired state was developed. These steps were key to

better understanding of each member's challenges and to team engagement in developing a team-based solution to the identified discharge communication problems.

The results of phase 1 and 2 served to highlight the nature of the communication issues and provide baseline data for determining the effectiveness of the redesigned communication processes. In phase 1, we discovered an imbalance in communication about discharge, where communication was reported as frequent among RNs and among MDs but interprofessional communication was viewed by MDs as adequate but limited by nurses. The MDs also rated interprofessional collaboration as occurring "often" (but not "almost always"), whereas nurses rated collaboration as "sometimes." This information substantiated the importance of our process aim to improve interprofessional communication about discharge.

The results of the phase 2 study also revealed that there were poor correlations ($r < 0.2$) between how the patient, the MD/provider, and the RN answered the same survey questions about the patient's readiness, and in one-quarter of patient cases, either the MD, RN, or patient reported low readiness for discharge. Our readmission rate for the preintervention phase was 18%. These results supported our outcome aim to improve the patient readiness for discharge and reduce readmissions through an intervention consisting of redesigned communication processes.

Subsequent meetings were spent brainstorming ideas and solutions to get to the desired state. From review of practice literature, practice innovations reported at professional meetings, and participant suggestions for practice solutions, the team agreed to the following process changes:

1. RN-MD team bedside rounding (TBR): To bring physicians, nurses, and patients together for shared communication, the intervention planning team recommended the implementation of RNs and MDs rounding together at the bedside to promote continuity in planning and coordination from day to day during the course of hospitalization. The goal of the rounding was joint communication between the triad of physician, nurse, and patient (and family if present) to review and monitor progress, engage patients in setting progressive goals and action steps needed for the patient to be ready for discharge, and clearly articulate expectations with patients and families. The evidence supporting the use of TBR was drawn from reports of improved communication and collaboration resulting from implementation of face-to-face daily interprofessional rounding.[16-21] Team rounding extends the concept of coordination of care, which emphasizes linking planning and management activities of care across different providers, to create an interdisciplinary plan of care.[22] Whereas communication and collaboration between providers (nurses, physicians, and other team members) has been emphasized in research on interprofessional communication, in this project, we included patient and family engagement in the communication process. This approach is consistent with national guidelines for "IDEAL (Include patient and family; Discuss key areas; Educate; Assess teaching styles; Listen) discharge planning."[23]
2. RN-RN bedside shift report (BSR): BSR was included in the communication process redesign to augment the TBR. A BSR adds interval communication within the nursing team in the time between TBR to promote continuity within each day of care as team members change. A report summarizing the evidence concluded that BSR has benefits for both patients and nurses, including improved patient relationships, patient empowerment, family inclusion, care coordination and care team processes, empowerment, error reduction, and time and cost savings.[24] Patients welcome the opportunities available through BSR to participate in their care and have access to their health information.[25] Nurses value shift change handoffs for the positive work environment created by teamwork and the care coordination that improves workflow, patient centered care, and patient and nurse satisfaction.[24]

STEP 6. DEVELOP AN IMPLEMENTATION PLAN

To operationalize the redesigned team communication processes, a process map was created to visualize the communication processes that would occur daily on the units (Figure 2). The map places the patient and family

at the center, linking them to each one of the communication processes. The map also includes a brief description of what should occur during each process. The redesigned communication process included the new process, TBR, that coordinated with BSR and existing Care Coordination Rounds (CCR) for enhanced interdisciplinary communication.

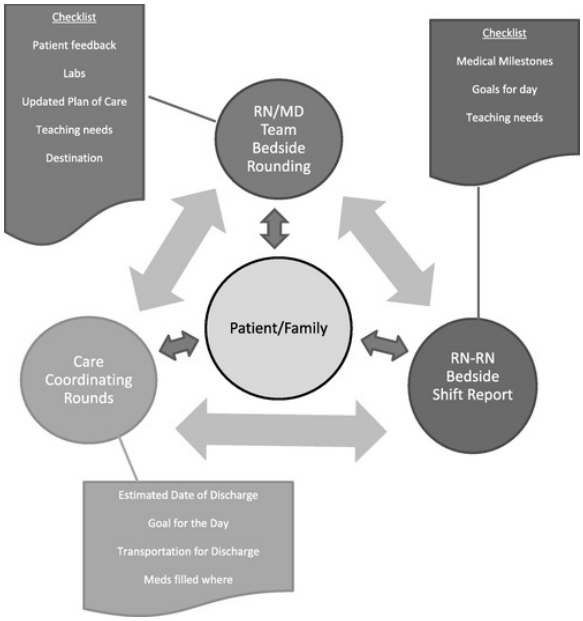

FIGURE 2. Process map for communication about discharge.

A step-by step process chart for the TBR (Figure 3) was also developed to standardize the process to be followed by each medical team that came to the unit for patient rounds. The chart assisted in the training and roll out of the intervention. We used available technology to assist with the rounding process. Built into the process was the Vocera communication system and lighting indicators at each patient location to announce the arrival of medical teams for rounds. According to the process chart, when the entire team is at the bedside, responsibilities are assigned, the patient is engaged in the conversation, and the rounding session begins. The rounding team then uses a "briefing checklist," a tool recommended in the TeamSTEPPS methods, to ensure that topics important to discharge preparation were addressed daily, including patient's input, goals, and questions; laboratory results and planned tests; plan of care; teaching needs; and discharge needs. At the conclusion of the rounding session, confirmation of any follow-up items and responsibilities for those items are assigned to members of the team.

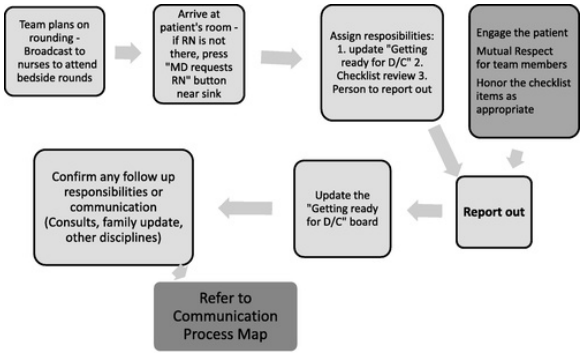

FIGURE 3. Team bedside rounding process chart.

To make the plan of care visible to patients, family members, and other assigned nurses between rounding sessions, a "Getting Ready for Discharge" whiteboard was designed and installed in patient rooms to communicate shared discharge goals and planned actions, including patient participation expectations (Figure

4). The board serves as a visual reminder of what needs to be addressed during rounds and BSR and is also used as a communication tool to track progress toward discharge. The board is updated daily during TBR by a member of the care team, and any other care team member can also update the board anytime there is a change. Patients and families also use the board to write questions down for the team and to track progress toward their daily diet and activity goals.

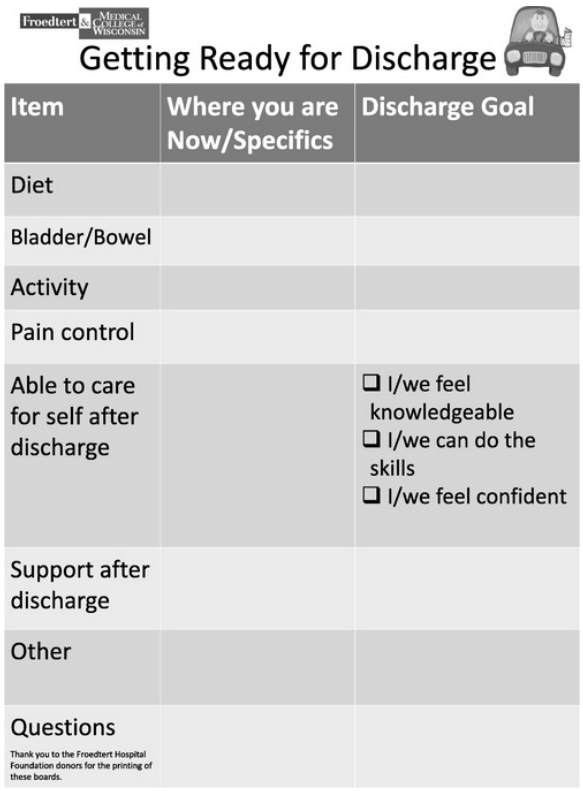

FIGURE 4. "Getting ready for discharge" whiteboard.

For BSR, the RN who attended the TBR passes the information onto the next RN caring for the patient, with the patient and family also participating in the information exchange. The BSR process includes a review of the Getting Ready for Discharge whiteboard and BSR "briefing checklist" to standardize communication during BSR so that information important to progress toward discharge is included in the end-of-shift handoff. This process allows the RN caring for the patient to engage the patient and family daily in goals for the day and goals for discharge.

The CCR was an existing process that was integrated with the new process of TBR. Care Coordination Rounds occurred daily from Monday thru Friday as an interprofessional communication process for bedside nurses, charge nurses, social workers, case managers, pharmacists, dietitians, therapies, and, from time to time, other disciplines. During this meeting, the team discusses the estimated discharge date, plan for going home, needs after discharge, including transportation, and medication. Information from the CCR was taken back to TBR and BSR by the patient's assigned nurse. Because the CCR process was integrated within RN workflow during the week, nurses learned how to handle discharge coordination needs on weekends and holidays. If new information was gathered during TBR, the nurses knew what information was important to communicate to other disciplines and how to update the CCR flow sheets in the electronic health record.

The development of procedural steps for the redesigned communication served as the intervention protocol for the research component of the project. Before implementation, the newly designed process was submitted to the IRB for review as an amendment to our research protocol. The implementation steps also formed the

foundation for training of staff to promote fidelity to application of the intervention (see below, step 8-develop a communication plan).

Staff engagement and excitement about the project were key to its success. The units' clinical nurse specialists created posters to display on each participating units. Registered nurses, MDs, and other care team members were encouraged to ask questions about the project and give feedback. The clinical nurse specialists also met individually with key MD faculty to describe the process improvement plan, seek feedback, and obtain buy-in.

STEP 7. DEVELOP A PLAN FOR SUSTAINED CONTINUOUS IMPROVEMENT

The plan to sustain the implementation of the redesigned communication processes and the collection of research data for evaluation of the new processes was centered on the clinical nurse specialists' leadership of the project. Within their unit-based role, they maintained a presence at the CCR to reinforce the integrated processes of TBR, BSR, and CCR. They also conducted ongoing monitoring and hallway conversations to provide individual coaching and reinforcement of the expected behaviors. E-mail communications with faculty surgeons provided feedback about perceptions of clinical nurses regarding the process and MD performance of expected team behaviors. Feedback was solicited from unit RNs and MD residents and other health team members participating regularly or occasionally in the rounding process about logistics and effectiveness of the new process. This feedback prompted discussions about how to improve the process of communication, ensuring that TBR was optimized.

To audit fidelity to the use of the new communication processes as both a standardized procedure and the research intervention, the clinical specialists audited whiteboard use and talked with patients and families about their involvement in the rounding processes. This information was shared back with the TBR and BSR teams to promote adherence to the new processes.

STEP 8. DEVELOP A COMMUNICATION PLAN

The communication plan involved strategic communication with MD and nurse leaders and development of a training plan in preparation for launching the redesigned communication process and tools. In addition to direct face-to-face communication with key MD and RN leaders, the clinical nurse specialists conducted training sessions at RN staff meetings and regular faculty and resident meetings to talk about the unit-wide implementation of the process changes. A training video was created by members of the team to demonstrate how the entire process should work and a website was built for staff to be able to learn about 2 new processes, TBR and BSR, and how to use the supporting checklists and the Getting Ready for Discharge whiteboard in the patient's room. All medical and nursing staff on the 2 units were sent the link to the website in addition to in person communication and training.

STEP 9. PUTTING IT ALL TOGETHER: WRITE THE TEAMSTEPPS ACTION PLAN

The action plan for this project involved setting dates for the activation of the redesigned communication processes on the 2 participating units and for the collection of research data for postimplementation measurement of project outcomes, as defined in the research protocol in step 5. After training, whiteboards were installed in patient rooms and the clinical nurse specialists supervised and supported the initiation of the new processes by consistent presence on the units in the first several weeks of the launch. To allow for the integration of the new processes within the care teams' workflow and recognizing that there would be a learning curve for how to make the new processes most effective, the research team decided that the postimplementation data collection would begin 3 months after the launch date.

STEP 10: REVIEW THE ACTION PLAN WITH KEY STAKEHOLDERS

Once the redesigned processes were launched, it was important to include a robust process evaluation to determine needed revisions and to sustain the change efforts. A qualitative study of the perceptions of all stakeholders, the RNS, MDs, and patients, was conducted. Recommendations included specific suggestions regarding continuing to develop and enhance team workflow by increasing the frequency of intended participants' presence in the rounding process and specifying assigned responsibility of updating the whiteboard during team rounds. Continued effort to build team culture within the structure of an academic medical center and recommit to the intent and purpose of the practice change were also highlighted as necessary for the current and future projects.[26]

DISCUSSION

The skills of the clinical nurse specialist were paramount throughout this combined quality improvement and research project to keep the team members engaged, navigate the complexity of the research design, negotiate the practice change, and bolster support for this project throughout the organization. The clinical nurse specialists integrated elements of the organization's strategic plan into the project while using evidence-based practice and innovation in the design, consistent with the new knowledge, innovation, and improvement activities expected of Magnet-recognized academic medical centers.

Communication in the healthcare setting is complex and has significant impact personally for the patient. Strong health team communication patterns and integrated processes are required to improve the experience of the patient and the quality of discharge communication, leading to improvements in postdischarge outcomes. Our goal to improve communication between the nurses, providers, and the patient around discharge preparedness met with some success as well as challenges. Our challenges were not unexpected: time limitations and competing priorities. This project was limited to 2 inpatient units and 10 surgical services within an academic medical center. The project relied on the participation and enthusiasm of clinical nursing and medical staff; organizational initiatives, staffing needs, and situational events competed for their time and effort. The challenge to engage 10 separate surgical specialties to adopt the research intervention required proper training and support from surgical leadership to set expectations for TBR behaviors for the rest of their team. Because of scheduling constraints, the training for resident MDs had to be sent out in links to training videos. A presentation was taken to individual department meetings and coaching occurred at the bedside and in hallway conversations.

The clinical nurse specialists had developed relationships with their primary surgical teams and were often asked to participate in special projects or improve processes within their respective units. It was those relationships that the clinical nurse specialists were able to leverage to successfully engage the surgical teams to participate in this research project and implement the new communication patterns. Because the medical college physicians were partners but not employees of the hospital, the collaborative relationship was key to obtaining buy-in. It was the development of relationships with the teams and individual members that fostered opportunities for informal training and feedback and buffered the persistent requests to surgical residents and attending MDs from the research team to adhere to the agreed intervention.

The clinical nurse specialists in this organization indirectly report to the chief nursing officer. As a result, we regularly meet with the chief nursing officer to share the work we do and the alignment with the strategic plan. Through these meetings, we were able to generate support for this research project. The CNS shared the vision of the potential impact that this project could have on the organization. This allowed us to negotiate obstacles encountered with other organizational priorities and helped with obtaining the data needed for the study

analysis. In the end, it was our persistence with communication and feedback and established relationships with the health team members on the patient care units that allowed us to operationalize this project.

CONCLUSIONS

The TeamSTEPPS action planning process[27] was a useful organizing structure that allowed for integration of the processes of quality improvement and research. This integrated approach encourages use of preintervention data for design of improved processes and rigorous investigation of targeted outcomes. The design of our health team communication improvement project is complete, and implementation of the redesign ongoing. Process evaluation has led to refinements in team processes. In orientation, new staff are expected to learn the redesigned processes for communicating about discharge preparation. Longitudinal analyses will determine patient outcomes of the redesigned process. The complexity of the project development and implementation required the knowledge of improvement and research process combined with skills in managing the dynamics of interprofessional teams that are hallmarks of clinical nurse specialist practice.

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