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Commentary

Reengineering Hospital Discharge: A Protocol to Improve Patient Safety, Reduce Costs, and Boost Patient Satisfaction

Carolyn M. Clancy, MD

Implementing patient safety improvements does not often yield immediate cost savings. Yet new research shows a way to reduce hospital readmissions dramatically and save nearly \$400 per admission in doing so. Rehospitalization, typically defined as hospital readmission within 30 days of a hospital discharge, is a common, expensive, and life-threatening event too often associated with gaps in follow-up care. New evidence shows that when hospitals focus on the discharge process, patient care and safety improve and costs decline.

Given these advantages, it is difficult to understand why more hospitals have not already overhauled their patient discharge protocols. The answer is counterintuitive: Until recently, properly planned, communicated, and executed hospital discharges have not been a primary focus for hospitals or clinicians. Additionally, the lack of financial incentives attached to patient discharge prevents hospitals from implementing coordinated discharge programs. That could be changing soon, however. As part of President Obama's 2010 budget plan, Medicare could save an estimated \$26 billion by bundling some payments to include follow-up care. Hospitals with high rates of readmission within 30 days would be paid less.¹

PATIENT SAFETY'S "PERFECT STORM"

But today at many US hospitals, one can easily observe the lack of planning put into the average

hospital discharge process. In fact, hospital discharge—a nonstandardized process frequently marked by poor quality—has been characterized as patient safety's "perfect storm."

In 2006, US hospitals discharged 39.5 million patients using an amalgam of homegrown procedures. Studies have shown that many patients do not understand their discharge medications and cannot recall their primary diagnoses.² Discharge summaries, for example, often lack critical data and are not sent to the primary care physician promptly^{3,4}; clinicians are unaware of test results prior to discharging patients⁵; and evaluations scheduled to be performed post discharge are not completed.²

Patient discharge is variable, fragmented, and characterized by poor communication, leaving many patients unprepared to care for themselves or to know how or when to seek follow-up care. This, in turn, is a reason why rehospitalization occurs so frequently, research has found. One in 5 hospitalizations is complicated by a post-discharge adverse event,^{6,7} some of which may lead to preventable emergency department (ED) visits or readmissions. One in 5 Medicare beneficiaries discharged from the hospital is readmitted within 30 days without having seen a physician for follow-up care.⁸

REDUCING REHOSPITALIZATIONS THROUGH PATIENT EDUCATION

New research findings provide a detailed road map that shows how to reduce a sizable percentage of rehospitalizations. A study funded by the Agency for Healthcare Research and Quality (AHRQ) found that patients who have a clear understanding of their after-hospital care instructions are 30% less likely to be readmitted or visit the ED than

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patients who lack this information.⁹ A research team led by Brian W. Jack, MD, associate professor of family medicine at Boston University Medical Center, developed a multifaceted program called Project RED (Reengineered Discharge) to educate patients about their post-hospital care plans.

Beginning in 2004, Dr Jack and his team analyzed and redesigned the discharge process at Boston Medical Center, a 626-bed teaching affiliate of Boston University School of Medicine and the largest safety net hospital in New England. It quickly became apparent that no one had the clear responsibility to prepare the patient for discharge. As a result, Dr Jack and his team began to redesign the discharge process based on several principles:

- clearly delineating the roles and responsibilities of everyone on the health care team,
- providing patient education throughout the hospitalization, and
- ensuring easy flow of information from the patient's doctor to the hospital team and back to the doctor, including a written discharge plan.

Specially trained registered nurses, called discharge advocates, helped the intervention group of patients arrange follow-up appointments, confirm medication routines, and assist patients to understand their diagnoses using a personalized instruction booklet, called an *After Hospital Care Plan* (AHCP). The discharge advocates also coordinated the discharge plan with the hospital team. The AHCP contained provider contact information, dates for appointments and tests, an appointment calendar, a color-coded medication schedule, and other helpful information. A pharmacist called patients 2 to 4 days after discharge to reinforce the medical plan and answer questions.

The 370 patients who participated in Project RED were one third less likely to be readmitted to the hospital or visit the ED than 368 patients who did not, according to the study, published earlier this year in the *Annals of Internal Medicine*. Nearly all of the patients in the intervention group left the hospital with a follow-up appointment with their primary care physician, compared with 35% of other patients. A total of 91% of participants had their discharge information sent to their primary care physician within 1 day of leaving the hospital.

The study found that more than half (52%) of intervention subjects who completed a medication review had at least 1 prescription drug problem

identified by a pharmacist that needed corrective action.

Dr Jack's team used 11 mutually reinforcing components to improve the discharge process. The checklist includes

- educating patients about their diagnoses throughout the hospital stay;
- making appointments for clinician follow-up and post-discharge testing, including making and coordinating appointments, discussing their importance with the patient, and confirming transportation arrangements;
- discussing any tests or studies that have been completed in the hospital and deciding who is responsible for follow-up;
- organizing post-discharge services, including making appointments and discussing how to receive each service;
- confirming the medication plan and making sure patients understand changes in routines and which side effects to monitor;
- reconciling the discharge plan with national guidelines and critical pathways;
- reviewing steps to take if a problem arises, such as whom to call and what constitutes an emergency;
- expediting the discharge summary to the physicians and other services responsible for the patient's care after discharge;
- asking patients to explain in their own words the details of the discharge plan;
- giving patients a written discharge plan at the time of discharge explaining the reason for hospitalization and information about medications and what to do if their condition changes; and
- phoning the patient 2 to 3 days after discharge to identify and resolve any problems.

BOTTOM-LINE IMPROVEMENTS

Reducing preventable hospital readmissions and ED visits translated to higher quality health care. It also empowered patients, improved patient readiness, and conserved resources, according to the study findings. The team asked patients 30 days post discharge about their perceived readiness for discharge. Project RED participants said they were better prepared than other patients to identify their discharge diagnosis and their primary care provider. In addition, Project RED participants

scored higher than the usual care group on the following questions:

- How well were your questions answered before you left the hospital?
- How well did you understand your appointments after you left the hospital?
- How well did you understand how to take your medications after leaving the hospital?
- How well did you understand your main problem or diagnosis when you left the hospital?
- How prepared were you to leave the hospital?

The intervention proved especially effective for patients with low health literacy but also for those with high health literacy.

Significantly, Project RED also was shown to save money. In contrast to the Project RED group, the control group saw substantially higher ED costs (\$21 389 vs \$11 285) and readmission costs (\$412 544 vs \$268 942) within 30 days of hospital discharge. Even when adding the costs for follow-up primary care physician appointments (\$55) for each intervention group patient, Project RED participants had overall lower costs of \$412 on average per person. When accounting for nursing time, the estimated total cost savings was about \$380 per patient. With additional funding from AHRQ, Dr Jack's team is also working with information technology to reduce registered nurse time in the discharge process, using virtual nurse discharge advocates, which have received high marks from patients in early studies.

PATIENT-CENTERED CARE

Reengineered hospital discharge, which also is a standard of the National Quality Forum, provides organizations with a tool to improve continuity of

care. At the same time, it improves patient satisfaction, reduces costly hospital care, and saves money. As policy makers focus more attention on incentives that not only save money but improve patient safety and outcomes, findings from initiatives such as Project RED are especially timely. Hospitals, clinicians, and patient safety advocates now have an important tool to help transform the hospital discharge process into one that genuinely serves the needs of patients.

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