

## Reengineering the Hospital Discharge

After reading this chapter, you should be able to:

- Identify the most frequent adverse events that occur after a hospitalization and their causes.
- Describe the RED process including its 11 components.
- Describe the roles of Discharge Advocate and Patient Advocate.
- Identify the advantages of the nurse avatar within an adult learning framework.
- Discuss expected outcomes and organizational implementation tips.

Expectations for self care after a hospitalization are becoming more challenging for patients. And given shorter lengths of stay, the clinical team is pressured to prepare patients to perform more complex tasks than ever before, in a more concentrated timeline. Therefore, it makes sense to hone the discharge process to its most essential elements and perform the discharge tasks as effectively and reliably as possible.

Numerous studies point to adverse events that occur all too frequently after discharge. In fact, Forster and colleagues found that 20% of discharges result in an adverse patient event.<sup>1</sup> The growth in the use of hospitalists has not been accompanied by concomitant development of processes for ensuring information exchange between physicians.<sup>2</sup> Moore and colleagues found that 30% of recommended post-discharge testing was not completed. Poor documentation in discharge summaries was cited as one cause.<sup>3</sup> Unfinished business seems to be another cause of post discharge adverse events. Roy and his team found that 41% of inpatients were discharged with a pending test result and over 9% may have required some action.<sup>4</sup> These factors lead to the revolving emergency room door too many patients experience. Patients experiencing some type of error related to post discharge services were 6 times more likely to be rehospitalized within 3 months.<sup>5</sup>

### **The Re-engineered Discharge (RED)**

The work accomplished by Dr. Brian Jack and colleagues seems to be timely. This team at Boston University's School of Medicine calls itself Project RED (Re-engineered Discharge). They use engineering and quality improvement techniques to analyze the discharge process and recommend iterative changes in design.<sup>6</sup> The Reengineered discharge (RED) process developed by this group utilizes a Discharge Advocate to coordinate all aspects of discharge and features a

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discharge checklist similar to those used by pilots to prepare for flights. Patients receive an After Hospital Care Plan in a spiral notebook, complete with color pictures. The After Hospital Care Plan is used to teach patients about their primary diagnosis and after hospital care. Teaching can occur with a live Discharge Advocate or a computerized one. This package can be used to educate all patients but is particularly useful for individuals with low health literacy.<sup>7</sup>

### Principles of RED

Dr. Jack and his team developed RED based upon a few basic principles. Baseline analysis revealed there were many staff members involved in some aspects of the discharge process but no one who took charge of the entire process. So, Dr. Jack and his team more clearly defined the roles involved. Because patients who have a clear understanding of their discharge instructions are 30% less likely to visit an Emergency Room or be readmitted to the hospital, patient education is provided during the hospitalization. Finally, given the importance of after care and physician follow up, methods for ensuring communication with a patient's physician are emphasized.<sup>8</sup>

### Operational Components of RED

There are 11 specific components included in the RED process that are mutually reinforcing. We will review each component and discuss the role of the Discharge Advocate and Clinical Pharmacist in the process.

A fundamental role of the Discharge Advocate is to **educate patients throughout their stay** regarding their diagnosis. Therefore, the Discharge Advocate must be thoroughly conversant in the patient's medical record and treatment plan even before meeting with the patient. The Discharge Advocate is also responsible for **reconciling the discharge plan with national guidelines and critical pathways**. These plans and guidelines are reviewed with the treatment team and includes medications. The Discharge Advocate is responsible for **confirming the medication plan**, including reconciling the medication list developed on admission with the medications planned on discharge. At this point in the process, the Discharge Advocate must verify the medications taken at home before the hospitalization with the patient. In addition, medications planned for discharge must be verified with the treatment team. Let's follow Mrs. M and her Discharge Advocate Sharon, an RN and former bedside nurse in a medical-surgical unit.<sup>9</sup>

Mrs. M is a 75 year old retired factory worker in the hospital with pneumonia. She has a history of COPD, (related to her work environment), CHF and knee replacement surgery. Our Discharge Advocate, Sharon, reviews the medical record, noting the names of the treatment team caring for Mrs. M. Sharon then contacts members of the treatment team to receive a complete description of the patient's diagnoses, medications and treatment plan so she is familiar with each of these before meeting with Mrs. M. She also asks the team about the

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discharge plan for Mrs. M and compares it to national guidelines for Pneumonia, Mrs. M's primary diagnosis. If there is a discrepancy between the national guidelines and the discharge plan proposed by the team, Sharon will attempt to resolve these before discharge by suggesting modifications to Mrs. M's discharge plan. Sharon will also verify the plan related to medications and verifies which medications will be discontinued, changed and added. Sharon records all of the information she gathers into a Data Collection Workbook so it can be incorporated into the After Hospital Care Plan that will be assembled for Mrs. M. <sup>10</sup>

Once the background information is assembled and the Discharge Advocate negotiates with the treatment team regarding the discharge plan, it is time to meet with the patient. During this meeting, the Discharge Advocate will **educate the patient** regarding her primary diagnosis and comorbidities. The patient will be asked to **verbalize the details of the discharge plan to check for understanding**. The Discharge Advocate will also **discuss planned treatments, tests and procedures** and make sure the patient knows who will follow up. The **medication list is reviewed** with the patient, emphasizing each medication's purpose, side effects and correct administration. In addition, the Discharge Advocate will make sure the patient is able to obtain her medications. The Discharge Advocate makes sure the patient knows what to expect after discharge. The **importance of keeping follow up appointments is emphasized** and the Discharge Advocate **organizes the discharge services**, including **clinician follow up and post discharge testing**, according to the patient's preferences. Finally, **the procedure for handling unanticipated problems is reviewed** with the patient. <sup>11</sup> Let's check in with Sharon and Mrs. M.

Sharon meets with Mrs. M in her hospital room and begins the discussion by explaining her role as a Discharge Advocate. She then asks Mrs. M to explain why she has been hospitalized. In this way, Sharon can assess how much is already understood and utilize Mrs. M's **experience** to build more complete understanding. Sharon encourages Mrs. M to ask questions and to stop her if she uses medical terms that are unfamiliar. When explaining Mrs. M's diagnosis, Sharon uses information and illustrations from the After Hospital Care Plan that Mrs. M will take home. Because Mrs. M indicates she is interested in learning more about pneumonia, Sharon provides it from the hospital patient education material. Sharon then asks Mrs. M about any other medical conditions she has. They talk about COPD and CHF and how those conditions relate to Mrs. M's primary diagnosis.

The next topic is medications. Sharon begins by asking Mrs. M whether she has any allergies. Since Mrs. M is allergic to Sulfadiazine, Sharon ensures this has been recorded in the chart and Mrs. M is not being sent home on it. Sharon then asks about the presentation of the allergy and makes sure Mrs. M knows she should avoid this medication.

In order to ensure that Mrs. M can obtain her discharge medications, Sharon asks about any potential problems. Sharon makes sure Mrs. M has a pharmacy and can get there to pick up her medications. Sharon also inquires about any other difficulties related to obtaining medications. Mrs. M tells Sharon that her pharmacy delivers so Sharon makes sure scripts are faxed directly to the pharmacy upon discharge.

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The next step is to reconcile medications Mrs. M will need to continue at home with medications she was taking before her hospital admission. Sharon shows Mrs. M the listing of medications developed on admission and asks her to verify what medications she was taking at home before her admission to the hospital. Mrs. M verifies that the listing is complete. So, using the list provided by the treatment team, Sharon identifies the medications Mrs. M will no longer need to take after this hospitalization.

Sharon then identifies the medications the treatment team wants Mrs. M to take when she gets home. Using the After Hospital Care Plan, Sharon goes through each medication, including any accompanying photograph, drawing Mrs. M's attention to the dose and how often she should plan to take it. Sharon also discusses side effects Mrs. M should report to her primary care physician.

Sharon provides Mrs. M with a chart, which illustrates how Mrs. M should take her medications and reviews it with her. Sharon then tells Mrs. M a pharmacist will call her in 2 or 3 days to see if she has any questions about her medications when she is home.

Since Mrs. M is going home on a low sodium diet, Sharon calls that to Mrs. M's attention and asks if she understands how to follow the diet. Sharon also asks whether Mrs. M would like to discuss how to follow the diet with a nutritionist either in the hospital or after she returns home. Finally, Sharon makes Mrs. M won't have difficulty obtaining food when she gets home.

Sharon then talks with Mrs. M about the follow up appointments she will require after the hospitalization. Since Sharon is going to set up those appointments, she discusses some possible dates with Mrs. M.

Mrs. M's doctor has recommended physical therapy after the hospitalization so Sharon makes sure she knows why the therapy has been ordered and how important it is to complete. Sharon also discusses suggestions or restrictions Mrs. M's doctor has made regarding physical exercise after the hospitalization.

Mrs. M is going home on oxygen so Sharon makes sure she knows what it is for and how it will be delivered to her.<sup>12</sup>

Once the Discharge Advocate has made all of the follow up appointments, she will visit the patient again. **A written discharge plan, in the form of the After Hospital Care Plan, will be provided to the patient.** The final After Hospital Care Plan will contain

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- Specific information on the discharge medications including, which medications to discontinue, which to continue to take, how to take them and where to obtain them.
- Information on symptoms to watch for and instruction on what to do if the condition deteriorates.
- An organized listing of follow up appointments for clinical visits and post discharge testing.
- Identification of test results not available at discharge and instructions regarding how to follow up on results.<sup>13</sup>

Let's see how Sharon handles this with Mrs. M. The hospitalist would like Mrs. M to follow up with her primary care physician and a pulmonologist. Sharon reviews each appointment with Mrs. M, explaining the reason for the appointment and reinforcing the location, date and time. Sharon emphasizes the importance of bringing the After Hospital Care Plan to each of these appointments. Sharon then asks Mrs. M how she will get to these appointments. Mrs. M's daughter will transport her so Sharon notes that in the Plan. Sharon follows this process for the first physical therapy appointment as well.

Mrs. M has some pending lab tests and the results may not be available until after discharge. So, Sharon identifies these tests for Mrs. M and emphasizes the importance of discussing these pending results with her primary care physician, who will receive the reports.

Sharon reviews any potential problems that may occur once Mrs. M returns home. These generally relate to new medication side effects, difficulty acquiring medications and clinical deterioration. Finally, Sharon provides Mrs. M with her contact information so Mrs. M can call if she thinks of any questions or encounters difficulties after returning home.

Once Sharon completes the patient teaching and ensures all activities related to discharge are complete, she completes the Discharge Plan Sign Off. This is similar to a check sheet used by pilots to double check that all necessary actions have been completed for takeoff. Sharon then provides Mrs. M with her After Hospital Care Plan and documents that Mrs. M is being discharged home with services. Sharon completes the process by documenting any remaining notes or progress in the Data Collection Workbook so that members of the treatment team can view it.<sup>14</sup>

Finally, the Discharge Advocate **expedites transmission of the discharge plan** to physicians, facilities or other service providers that will be caring for the patient after discharge. The discharge plan includes

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- Identification of the principle diagnosis along with a brief discussion of the reason for hospitalization.
- Enumeration of the significant findings, including the most recent reports for lab results, operative reports and medication administration documentation.
- A listing of the procedures performed and related care, treatment and services provided.
- Description of the patient's condition at discharge.
- A reconciled medication list, including allergies.
- Identification of acute medical issues and pending test results that require follow up.
- Input from consultative services, including rehabilitative therapy.

Two to three days after discharge a clinical pharmacist will **telephone the patient to reinforce the discharge medication plan.** <sup>15</sup>

Let's see what happens with Mrs. M. Two or three days after discharge, the clinical pharmacist phones Mrs. M to answer any questions or settle any concerns. The Clinical Pharmacist is familiar with Mrs. M's discharge history since she has access to the Data Collection Workbook and After Hospital Care Plan. <sup>16</sup>

### The Discharge Advocate

The role of the Discharge Advocate includes

- Coordinating with medical team, RNs, and case managers
- Educating patients about their disease
- Educating patients about their medication
- Arranging aftercare with patients & family
- Reinforcing national quality guidelines
- Arranging for medication pick-up, rides
- Preparing and Reinforcing After Hospital Care Plan with patients & family<sup>17</sup> (Note – this is directly from Dr. Jack's Training Manual.)

Qualities it is necessary for Discharge Advocates to possess include

- Excellent communication and education skills.
- The ability to establish a trusting relationship with patients since a patient must feel comfortable to express doubts regarding self care abilities or difficulties on following the discharge plan.

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- Strong organization and multitasking skills since patients in the caseload will not all be at the same point in the process. And, the intervention will not be completed in its entirety in one sitting.
- The ability to earn the respect of the treatment team so they work with the Discharge Advocate and take her suggestions seriously.

### The Patient Advocate

Dr. Jack and his team have also designed a computerized nurse avatar that acts as a Patient Advocate, assisting the Discharge Advocate by delivering the patient education and taking the patient through the After Hospital Care Plan. Patients have a copy of the After Hospital Care Plan they go through along with the Patient Advocate. Using a touch screen, patients can ask the Patient Advocate to repeat information, slow down or stop for awhile if the patient needs a rest. The Project RED team designed the nurse avatar to mimic live nurses explaining written medical instructions. The Patient Advocate's explanations are supported by colored illustrations. Dr. Jack and his associates estimate that it takes the Discharge Advocate 81 minutes to complete the discussion with the patient. The computerized nurse avatar can reduce that time by 30 minutes. In addition, 74% of patients in a pilot study preferred working with the nurse avatar. The Patient Advocate is particularly helpful for patients with low health literacy levels. <sup>18</sup>

Because patients can direct the pace of information presented and repeat any part of the education, it enables patients to receive information in a time frame that is comfortable for them and not based upon the time available by the nurse. The computerized process delivers information the patient is **ready to learn**. Moreover, it encourages patients to be an active participant. Learners who have a **self concept** that creates more of a passive role related to educational processes will be nudged into a more active role.

### Implementing RED

The RED program is dependent upon a treatment team that works together pretty effectively. Teams who don't share information regarding decisions effecting discharge will have a difficult time implementing RED. Therefore when contemplating the implementation of RED, teams should set themselves up for success. Consider selecting one clinical team to pilot the program, taking note of successes and challenges so that learning and continuous improvement can be part of the process. The clinical team selected should be coalesced and have a strong organizational leader who can drive the implementation. It would also be helpful to have a strong physician champion who can encourage other physicians on the team to communicate the discharge timing and needs as early in the process as possible. It is also critical for the physicians on the team to be supportive of this new process with their patients and take an active role in developing the discharge education. If implementing some of the information systems, it will be important to involve the information management department early so the computer system supports the new process. Throughout the process, it will be important to make note of suggestions for improvement from the team. They will be more supportive of a process they helped to build. And finally, share the improved outcomes that

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will occur. Every team wants to know that their hard work paid off. Your proven success will help you move from the pilot phase to hospital-wide implementation.

### Expected Outcomes

Carolyn M. Clancy, in her commentary in the American Journal of Medical Quality, identifies the major outcomes that resulted from the original work on RED. The fundamental outcome resulting from improved patient understanding of discharge information is a reduction in 30-day readmission rates. In fact, Dr. Jack's research shows more informed patients are 30% less likely to return to the hospital or visit the emergency department within 30 days. Patients who have the benefit of this process are also more likely to have a follow up appointment with their primary care physician and 91% of those physicians had the discharge summary within 1 day of the hospitalization. Not surprisingly, over half of the patients in Dr. Jack's seminal work had medication problems that needed corrective action by the clinical pharmacist upon their arrival home. When asked 30 days after discharge about the experience, patients reported they felt more prepared for discharge after participation in RED. RED appears to be related to cost savings as well. After accounting for nursing time, RED saved \$380 per patient.<sup>19</sup>

### Where to Learn More

Dr. Jack and his team have developed a useful website that includes detailed descriptions of RED, a training manual for the Discharge Advocate and videos from Louise, the avatar Patient Advocate. Access [www.bu.edu/fammed/projectred/index.html](http://www.bu.edu/fammed/projectred/index.html) for more information.

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