project **BOOST**®
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Better Outcomes by
Optimizing Safe Transitions

PROJECT BOOST® IMPLEMENTATION GUIDE

SECOND EDITION

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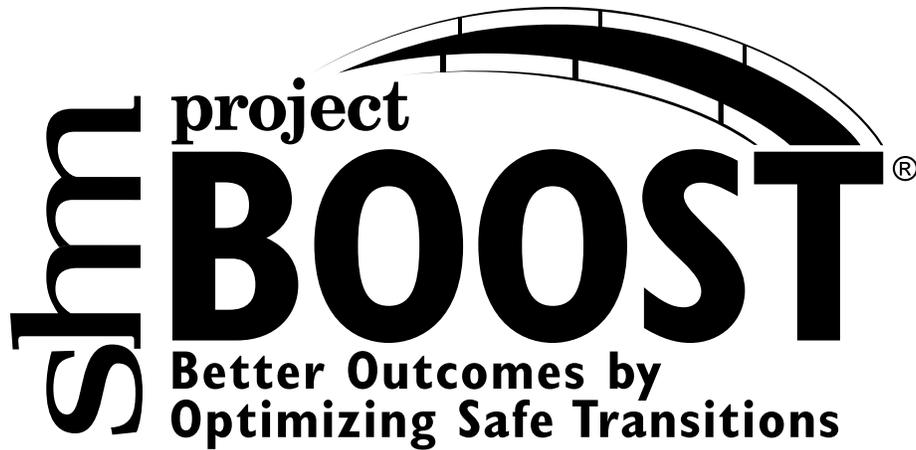
Implementation Guide to Improve Care Transitions

SECOND EDITION

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Executive Summary

The Society of Hospital Medicine (SHM) enthusiastically introduces the Second Edition of the *Project BOOST® Implementation Guide*. Since its launch in 2008, Project BOOST (**B**etter **O**utcomes by **O**ptimizing **S**afe **T**ransitions) has helped more than 180 hospitals and health systems improve their care transition processes.

SHM is the first national medical association to be recognized by the National Quality Forum and The Joint Commission with the John M. Eisenberg Patient Safety and Quality Award for Innovation in Patient Safety. The award acknowledges SHM for its innovative mentored implementation model, which has been utilized in more than 300 hospitals, touching the lives of tens of thousands of patients across the country. Project BOOST — SHM's signature mentored program — serves as a national model for improving the quality of care and reducing hospital readmissions. Project BOOST has also been recognized by the Centers for Medicare & Medicaid Innovation (CMMI) as an evidence-based approach to reducing readmissions. In addition to achieving reductions in unnecessary readmissions, some sites report increased patient satisfaction and improved length of stay in the hospital. Currently, more than 180 hospitals participate in Project BOOST, over 1,000 health care professionals participate on its active Listserv and more than 5,000 people have downloaded the original *Project BOOST Implementation Guide and Toolkit*.

This Second Edition incorporates the many lessons learned through BOOST mentor interactions with sites throughout the United States and Canada. For any site considering adoption of Project BOOST, please note the following:

- Project BOOST should be considered a platform on which other interventions can be layered. Adoption of this program influences more than just the discharge process, and consequently it provides benefits beyond reducing unnecessary readmissions. Project BOOST sites develop improved interprofessional work environments and communication, proactively identify and mitigate patients' risk factors for poor transitions from the hospital, and enhance patient and caregiver satisfaction through more effective interactions.

- Project BOOST is not a "one size fits all" program; each organization must understand its current state of care transitions and tailor the BOOST tools and concepts to meet its needs, priorities, resources and culture.

- The sustainable success of Project BOOST at institutions requires the engagement of many stakeholders. Executive leadership is critical, as is engagement with front-line staff (e.g., nurses, case managers, social workers, pharmacists and physicians), both in the hospital and post-acute care setting.

- Implementing Project BOOST takes time, with the desired culture change and the full impact occurring within 12 to 24 months.

- Project BOOST mentors are key to overcoming barriers to implementation, helping teams stay focused, as well as highlighting successes. These individuals can offer important guidance on how best to navigate the political landscapes that major projects such as these may encounter. The Project BOOST online community is a tremendous resource where organizations can share stories, lessons learned, tools and insights.

What's New in the Second Edition?

With the new edition, SHM has incorporated the latest data from the medical literature on improving care transitions, and has redesigned the *Implementation Guide* to reflect lessons we have learned from working with BOOST® sites. The *Implementation Guide* includes five sections:

- Section I: Improving Care Transitions
- Section II: Laying the Foundation for Improvement
- Section III: Getting to Work on Improving Transitions of Care
- Section IV: The BOOST® Toolkit
- Section V: Best Practices in Care Transitions — Annotated Bibliography

This new design will help sites move through the work of improving care transitions using "lean" problem-solving employed by many highly successful organizations such as Toyota. In addition, the BOOST tools have been updated, refined and are easier to use.

How to Use the Implementation Guide

SHM designed the *Implementation Guide* to function as a workbook. As you move through the material, you will be asked to complete specific tasks that will help you improve your care transition processes. Your team will start by understanding "why" — why it is important to improve care transitions at your organization, and why does your current situation exist? Next, your team will develop a shared mental model on your objectives for this important work. Finally, your team will strategically implement the BOOST tools to help you achieve your objectives.

While this recipe for success may sound simple, it is hard work — and your team will face obstacles along the way. To help you overcome these obstacles we have also redesigned the Project BOOST website so that it is more user-friendly and aligned with the new *Implementation Guide* in order to provide additional support and resources to BOOST teams.

Institutions officially enrolled in the Project BOOST Mentored Implementation Program can take advantage of additional online resources, as well as a growing online BOOST community. This group regularly discusses how to improve the care transition process and shares resources with one another on how to expedite implementation and expand on the BOOST interventions.

In addition, BOOST-mentored sites receive one-on-one mentorship from a physician expert in care transitions and change management. This mentor is an invaluable resource who can help your team engage your institution's leadership and front-line staff to facilitate collaboration and overcome obstacles or barriers that may impede your progress. This mentorship accelerates design and launch of the BOOST interventions at your hospital, assists in the training of your staff and helps you assess outcomes.

To learn more about joining the BOOST online community or becoming a mentored implementation site, visit www.hospitalmedicine.org/BOOST.

Again, welcome to the Second Edition of the *Project BOOST Implementation Guide*. The Project BOOST Team thanks you for working to improve patient care and wishes you much success at achieving **B**etter **O**utcomes by **O**ptimizing **S**afe **T**ransitions.

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Section I
Improving Care Transitions

A Patient's Story

Ms. Jones, a 72-year-old woman, was admitted to a local hospital for community-acquired pneumonia. She received treatment with intravenous antibiotics and quickly improved. On her second hospital day, however, she developed an episode of atrial fibrillation, and the cardiologist who evaluated her started two new medications for treatment, including an anticoagulant. On her fourth hospital day, the hospitalist deemed her stable for discharge. The physician wrote the discharge order, quickly completed a discharge summary and within an hour, Ms. Jones exited the hospital and took a taxi home. Upon her discharge, she was given prescriptions for oral antibiotics, the anticoagulant and the medication to control her atrial fibrillation. These new medications were added to her existing medications for diabetes, hypertension, hyperlipidemia and arthritis. She was also instructed to follow up with her primary care physician and the cardiologist "in one to two weeks after discharge." Widowed and living alone, Ms. Jones did not drive and depended on a neighbor for transportation. Because her neighbor was working, Ms. Jones could not get a ride to her local pharmacy and, consequently, failed to fill her prescriptions. Within a few days of leaving the hospital, Ms. Jones had a worsening cough, her heart was racing and her pulse was irregular. She reviewed her discharge instructions for advice on what to do, but she found the paperwork unhelpful as it was full of medical jargon. She called her primary care physician who scheduled an appointment with her for the following week. The next day, her neighbor became concerned because she did not see Ms. Jones walking her dog as usual. The friendly neighbor went over to her house and, getting no response to knocking on the door, entered to find Ms. Jones lying on the sofa, unable to talk and not moving her right side. The neighbor called 911.

Better Outcomes by Optimizing Safe Transitions

Why Improve Care Transitions?

Improving care transitions is important for three main reasons:

1) Failed care transitions result in patient harm.

2) Healthcare reform aligned financial incentives to stimulate system improvements in care transitions.

3) Optimized care transition processes improve outcomes, including patient satisfaction and reduced readmission rates.

First, and most important, failed care transitions result in patient harm. Research in the past 10 years documents that up to 49% of patients experience at least one medical error after discharge,[1] and one in five patients discharged from the hospital suffers an adverse event.[2,3] It is important to note that up to half or more of these adverse events are preventable or ameliorable, primarily through improved communication among providers. Information transfer and communication deficits at the time of hospital discharge are common, with direct communication between physicians occurring less than 20% of the time, and discharge summaries often lack important information and/or are unavailable when patients present for post-hospitalization follow-up with their primary physicians.[4] Additionally, many patients are discharged with test results pending, and left with loose ends such as additional testing after discharge.[5,6] Furthermore, many patients lack understanding of their hospitalization diagnosis and treatment plans,[7] resulting in patients not being able to care for themselves after discharge. Eventually, these mistakes result in about one in five Medicare patients being rehospitalized within 30 days of hospital discharge.[8]

Second, healthcare reform implemented by the Patient Protection and Affordable Care Act of 2010 has better aligned the financial incentives to stimulate healthcare systems to work on improving care transitions. The new law does so by both penalizing hospitals with excessive rates of rehospitalization, and supporting programs to help healthcare systems improve care transitions. As in the case of Ms. Jones in the story at the beginning of this section, a common result of a "failed" hospital discharge is subsequent rehospitalization resulting from harmful events after discharge. Such unnecessary rehospitalizations cost billions of dollars annually. Reacting to these unnecessary costs, the Medicare Payment Advisory Commission (MedPAC) recommended to Congress in June 2007 that hospitals should publicly disclose their own risk-adjusted readmission rates.[9] This suggestion became official policy with the passage of the Affordable Care Act on March 23, 2010. Since the beginning of 2013, those hospitals with higher-than-expected readmission rates for the diagnoses of pneumonia, heart failure and acute myocardial infarction have begun receiving a reduction in Medicare reimbursement of up to 1% for *all* Medicare diagnosis-related group (DRG) payments.[10] This maximum financial penalty is 2% in FY2014, and 3% in FY2015, resulting in potential loss of reimbursement for some hospitals in the millions of dollars. Beyond the penalties, though, hospitals and physicians can now receive reimbursement for care coordination for discharged patients. Physicians can use Current Procedural Terminology (CPT) codes 99495 and 99496 when they arrange for an early post-discharge follow-up appointment or make contact with a patient shortly after discharge. Combined with an increasing emphasis on patient-centered care, hospitals' desire for high-quality patient care and patient satisfaction is now aligning with reimbursement for quality instead of quantity.

Third, beyond the financial penalties, the Patient Protection and Affordable Care Act created programs to help hospitals and providers improve care transitions. The Centers for Medicare & Medicaid Services (CMS) started one of these programs, the "Partnership for Patients," creating a "nationwide public-private partnership that offers support to physicians, nurses, and other clinicians working in and out of hospitals to make patient care safer and to support effective transitions of patients from hospitals to other settings."[11] In fact, CMS recommends Project BOOST® as one of the care transition models for the community-based care transitions program. Following the principles and standards set forth by the Transitions of Care Consensus Policy Statement, medical home providers can ensure a safe transition for patients and help them navigate our complex health system.[12]

The Picture of a Broken Care Transition

Regardless of whether a patient is being discharged from the hospital to home or to an extended care facility (e.g., nursing home, rehabilitation center, assisted living, long-term acute care hospital), the discharge process has numerous potential pitfalls that can create harm for patients. As the figure below illustrates, well-intentioned, hard-working clinical staff do their best to provide a safe care transition, but these efforts are hindered by various broken or failed processes within the healthcare system. When combined, the broken processes may result in adverse events going unchecked and causing harm to the patient.

Traditional Care Transitions
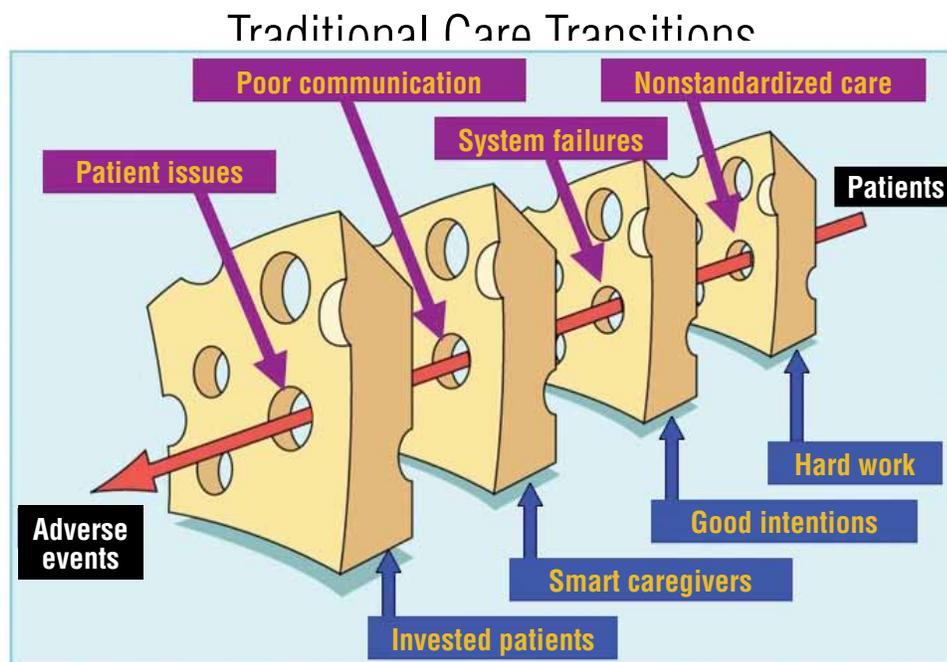
It is important to recognize that the transition process does not start with the physician writing an order for the patient to be discharged. Instead, preparing patients and their families/caregivers for a safe transition starts at admission (or *before* admission, if the admission is elective). By starting the discharge care transition early in a patient's hospital stay, we have opportunities to identify more potential failure points (e.g., potential issues that may lead to adverse events) in the process such as:

- Failure to identify patients with an increased risk for adverse events after discharge … including readmission

- Failure to conduct an accurate and/or complete medication reconciliation process

- Failure to assess or anticipate what the patient and family/caregiver may need at the time of discharge

- Failure to develop an interdisciplinary care plan that incorporates the input of other members of the care team, such as the nurse, pharmacist or case manager/social worker or even the patient and family/caregiver.

During a patient's hospital stay, healthcare providers might compound their mistakes made at the start of the hospitalization by:

- Failing to initiate care processes to ameliorate readmission risk factors

- Failing to educate patients and their families/caregivers in a patient-centered manner, resulting in patients and families/caregivers who do not know how to stay healthy after discharge

- Failing to address key concerns of the patient and family/caregiver.

At the time of discharge, healthcare providers might further undermine the transition of care plan by:

- Providing patients with discharge instructions full of medical jargon and failing to use "Teach Back" (see Appendix A) to confirm adequate understanding

- Inadequately communicating with primary care physicians or other aftercare providers about the patient's hospital course
  and ongoing diagnostic and treatment plans

- Providing a discharge summary to outpatient providers that is incomplete, delayed or missing a clear care plan for the patient after discharge

- Failing to complete an accurate medication reconciliation process, often because the medication reconciliation on admission is inaccurate

- Failing to work with patients and their families/caregivers to coordinate follow-up visits with outpatient healthcare providers soon after discharge.

There are also things healthcare providers might do, or fail to do after discharge, that undermine the care transition process, including:

- Rarely checking on patients after they have left the hospital, resulting in missed opportunities to identify early warning signs of an adverse event

- Failing to give patients the resources needed to handle events if their condition worsens at home

- Failing to send completed discharge summaries with essential information to primary care physicians or other aftercare providers in a timely fashion

- Failing to connect patients to community resources that will help them achieve lasting health and wellness.

A picture of our current state of the care transition process is shown below:

Why Patients Get Readmitted:
A **DESIGN** Root Cause Analysis
Adapted from Chris Kim, MD

On Admission:
- Poor communication with prior providers
- Redundant testing
- Inadequate medication information
- Limited efforts to identify risks and barriers to successful transition

During Hospitalization:
- Poor communication among members of care team, including outpatient providers
- Delays in initiating interventions to improve transitions
- Insufficient involvement of patient and family/caregiver in discharge education/plan
- Failures to clarify goals of care

At Discharge:
- Appointments made when patient and family/caregiver cannot attend
- Discharge instructions cumbersome
- Inadequate information handoffs
- Error-prone medication reconciliation
- Rushed education

Post-Discharge:
- Little/Late/No contact with patient post-discharge (hospital/PCP or other caregiver)
- Patients and families/caregivers unaware of how to manage acute conditions
- **LIFE HAPPENS (social, financial, physical circumstances)**

As in the case of Ms. Jones, a common result of a "failed" hospital discharge is subsequent rehospitalization or morbid outcomes. Following the principles and standards set forth in the Transitions of Care Consensus Policy Statement, hospitalists and primary care providers (future patient-centered medical homes) can ensure a safe transition for patients and help them navigate our complex health system.[12] The ideal care transition process does not have the failure points described above, and instead, uses care delivery systems and staffing models to shore up each of these potential failure points. As shown in the illustration on the following page, some of the key aspects of the ideal care transition process include:

- Screening patients for readmission risk factors

- Creating an interdisciplinary plan of care through interprofessional rounds

- Accurate medication reconciliation on admission and discharge

- Educating patients *and* families/caregivers using a patient-centered approach (e.g., Teach Back) that assesses their understanding

- Providing patients with useful and succinct written information about their discharge instructions produced at an appropriate literacy level

- Engaging patients and/or families/caregivers in scheduling a timely follow-up appointment with their primary care physician prior to discharge, and ensuring the patient has transportation to that appointment

- Speaking with patients after discharge to assess how they are doing at home, ensuring they have the services they need and addressing any issues or questions that may have developed after discharge

- In selected higher risk or more vulnerable patients, linking them to transitional care services including community services or nursing as exemplified by models from Coleman[13] and Naylor[14]

Your hospital is likely addressing some of these steps to ensure a safe care transition. If so, you are well on the way to improving the care transition process at your facility. Through your work with Project BOOST®, you can identify system strengths and failure points and redesign workflow practices to improve care transitions and patient outcomes. In fact, Project BOOST will help your team incorporate these crucial steps into existing workflows to ensure a safe care transition for patients.

BOOST Future State
Adapted from Chris Kim, MD

On Admission:
- Readmission risk factor screen
- Discharge needs analysis
- General assessment of preparedness
- Medication reconciliation
- Input from outpatient caregivers
- Readmit root cause analysis (if needed)

During Hospitalization:
- Interprofessional rounds to develop patient-centered, safe transition plan
- Initiate readmission risk reduction interventions
- Educate patient and family/ caregiver using Teach Back
- Clarify goals of care

At Discharge:
- Schedule post-discharge appointment
- Patient friendly discharge instructions
- Handoffs (hospital to aftercare)
- Medication reconciliation
- Reinforce education

Post-Discharge:
- Post-discharge call
- Follow-up appointment
- Transmit accurate discharge summary
- Family/caregiver support
- Appropriate services
- Transitional support

How can Project BOOST help improve the quality of care transitions?

Based on a desire to improve care transitions for our patients, we initially developed Project BOOST® (**B**etter **O**utcomes by **O**lder adults through **S**afe **T**ransitions) to provide resources to optimize the hospital discharge process and mitigate many of the problems described above. After gaining experience implementing Project BOOST at more than 180 hospitals, we markedly revised our original implementation guide into this new version, and updated the program's name to **B**etter **O**utcomes by **O**ptimizing **S**afe **T**ransitions, reflecting its applicability to all hospitalized patients.

This *Implementation Guide* includes evidence-based interventions and other best practices in transitional care refined through expert input. The original advisory board for Project BOOST (See Appendix N: The Project BOOST® Advisory Board for the original toolkit) included representatives from The Joint Commission, the National Quality Forum, the Institute for Healthcare Improvement and the Agency for Healthcare Research and Quality as well as numerous other clinical leaders, patient advocates and members of the healthcare industry, including insurers. This guide will also walk you through basic quality improvement and implementation strategies to help you along your way. Using this toolkit will promote a safe and high-quality hospital discharge process as patients transition out of the hospital setting.

We embrace the recent movement toward "patient-centered care"[15] and support patients playing a more active role in their care, including engagement in medical decision making.[16] Complementing its ethical basis, expanded patient involvement in care yields improved health outcomes.[17,18] In fact, the patient-centered approach to education is integral to Project BOOST. Involving patients and their families/caregivers in the care transition process, however, is just one piece of the puzzle. True transformation will come as your team redesigns the care processes to ensure that every patient receives the right care, every time. The *Project BOOST Implementation Guide* contains tools and advice to facilitate your efforts.

While improving care transitions may seem a daunting task, remember that you are not alone in this journey. In fact, BOOST offers many resources to support your effort, including a user-friendly website replete with tools for your team and an online community of other health systems at various stages in the process of planning, implementing or sustaining improvements. Furthermore, a BOOST mentor can provide continued guidance and support.

The Society of Hospital Medicine and the Project BOOST team hope you find this *Implementation Guide* and the included tools useful as you aim to optimize the discharge process in your healthcare system.

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Section II
Laying the Foundation for Improvement

This section outlines the steps you and your BOOST® team should take to ensure successful improvement efforts. While the steps are listed in a linear fashion, please note that these steps often should be done in parallel. For example, you can simultaneously work on ensuring institutional support (Step 1) while also assembling an effective team (Step 2). Furthermore, many of these steps are synergistic. For example, assembling an effective team (Step 2) will help you engage and identify stakeholders (Step 3) and ensure institutional support (Step 1). Therefore, please plan to read through this entire section's steps before proceeding so you can approach the tasks most efficiently. If, at any point, you have a question about laying the foundation for improvement, contact your BOOST mentor for help.

In this section we outline seven key steps you should take to lay the foundation for implementing Project BOOST successfully:

1) Ensure support from the institution.

2) Assemble an effective team.

3) Clarify key stakeholders, reporting hierarchy and approval process.

4) Survey previous or ongoing efforts and resources.

5) Set SMART goals and a timeline.

6) Decide on key metrics and a measurement plan.

7) Choose a hospital care unit on which to implement BOOST.

Step 1: Ensure Support from the Institution

Time, energy, expertise and leadership skills are necessary to drive improvement. The project lead should have all of those attributes. The leader can be a nurse, case manager, social worker, physician or someone with training in quality improvement (QI). In addition, the leader will require direct assistance from stakeholders and should include them as part of the project team (see Step 2 on building a BOOST® team). It is also essential to secure sponsorship and support from the medical center, especially key leaders, and engagement of front-line staff. Basic revisions to order sets, data collection resources or tweaks of the health information system (i.e., electronic medical record) may require special permission, fast-track approval processes or dedicated personnel. While most obstacles will require merely patience or ingenuity, some may be insurmountable without the influence of executive leadership. Beyond simply removing barriers, having support and engagement from your senior leaders can help facilitate change and improvement. Moreover, the hospital's leadership can focus attention on the importance of Project BOOST driving high-quality care transitions. By having senior leaders advocate as "cheerleaders-in-charge" of your efforts, they can also have tremendous positive impact on the culture of your organization.

Real institutional support should confer the authority and resources needed for the project team to design and manage improvement. We strongly recommend that the project leader obtain a solid and tangible commitment from the institution before launching the improvement team. The single most effective way to attract this support is by aligning the goals of the improvement effort with the strategic goals of the organization. To align your BOOST efforts with the institution's strategic objectives, you must first identify and understand those objectives. Then, make hospital leadership aware of how an effective care transitions program supports its goals for high-quality patient care, performance reporting, customer service and efficiency. A number of forces may fuel administrative interest in the project, including public reporting of hospital performance (e.g., The Joint Commission and National Quality Forum measures), cost savings from more efficient care, risk aversion, favorable payments for better care (e.g., Pay-for-Performance and avoidance of the CMS penalties for excess readmissions), nursing and medical staff retention (e.g., Magnet Recognition Program), related projects (Accountable Care Organization application) and even quality for quality's sake. (See Appendix B: "Talking Points to Garner Institutional Support.")

You may start this discussion by sending your senior executives an email or letter. Outline the goals of the project and begin the discussion of ensuring their support for the effort. (See Appendix C: "Sample Letter to Administration.")

In addition to using the talking points in Appendix B, you may want to provide your senior leadership with information regarding the financial implications of optimizing care transitions. To do so, you will need to take into account the following metrics:

• Frequency, duration and cost of readmissions

• Patient satisfaction scores

• Length of stay and occupancy rates of your hospital

• Cost per hospital stay

• Payer mix of your patient population

• Emergency department rates of occupancy and diversion.

You will need to partner with the administrative and financial professionals at your institution to obtain this information. Then, use the Project BOOST Return on Investment (ROI) calculator to determine the financial impact that may result from improving care transitions. The ROI calculator can be found on the BOOST website at www.hospitalmedicine.org/BOOST. In addition, please see Appendix D: "Project BOOST Return on Investment (ROI)" for more detail on determining ROI for Project BOOST.

Finally, to ensure and maintain your institution's support, it is critical to understand the vision and priorities of key leaders. Your team should aim to help your institution achieve its priority outcomes, as well as meet budget and time frame requirements. Recognizing these issues and integrating them into your activities will ensure that your team and institution are aligned. This alignment will facilitate success through adequate resource allocation and political support to implement systemic changes.

TASK

Ensure institutional support for care transitions improvement.

Time Frame: 1 to 2 weeks

Action Item:

1. Meet with your senior executive sponsor. Discuss the steps in Section II of this workbook, and obtain input on key stakeholders and team members to involve along with a clear reporting hierarchy. Specifically ask how your efforts can support larger institutional goals and priorities. In Appendix E: "Record Your Work," write a few sentences detailing the results of that meeting.

Step 2: Assemble an Effective Team

Quality improvement efforts often originate from just a few thought leaders who see a gap between best practice and current practice. However, it takes a team to implement change effectively. For Project BOOST®, the team should include:

Team Leader: The team leader should be respected by the medical and hospital staff and have some topic expertise on care transitions. This person is responsible for working with the QI facilitator (see below) to set the agenda as well as the frequency and collaborative tone of team meetings. The team leader will also communicate directly with administrative and appropriate medical staff committees.

While the team leader need not be a QI expert, good organizational and meeting facilitation skills are key. Materials to guide good management of the team and meetings can be found in Appendix F: "Tools for Running an Effective Meeting" and in the Team Dynamics section below. The team leader will need the commitment and contributions of other team members to move the initiative forward. Equally important, the team needs the knowledge and input of the real experts in care delivery — front-line care providers such as floor nurses, case managers and hospitalists. The team leader and the team will need to recruit local champions based on service, skill or hospital geography. Whatever the format, a coordinated effort is required across the entire spectrum of care. (See Figure 1: Anatomy of a BOOST Team.)

QI Facilitator: The QI facilitator should be someone with experience in QI and/or process improvement (PI). The QI facilitator may or may not be a physician. Knowledge about care transitions is helpful but not necessary initially, particularly since your BOOST mentor can provide this expertise. This individual plays the pivotal role of ensuring that the team functions constructively and that the project stays on track. The QI facilitator should have at least a rudimentary knowledge of QI skills and techniques, be prepared to acquire new tools, and have a talent for moving projects forward. For smaller scale projects, the team QI facilitator could be the same person as the team leader, but for more ambitious projects (like Project BOOST) or for projects involving buy-in from disparate physician and nursing groups, a separate facilitator is strongly recommended.

Project Manager: Since improving care transitions can be such a large task with many moving pieces, having a dedicated project manager can help keep the team organized and moving forward toward its goal. This role requires project management skills, and at times may call for the ability to balance team dynamics or introduce appropriate QI tools to help the team analyze and understand data. As above, the project manager may be the team leader or QI facilitator, but may also be a separate individual.

Process Owners: The front-line personnel involved in the process of providing safe, effective care transitions in the hospital are essential for an effective team wishing to optimize the care transition process. Process owners should come from each service (pharmacy, nursing, case management, etc.) and units on which you plan to implement BOOST (medical, surgical, etc.). While people in positions of leadership (e.g., unit manager or head of pharmacy) may be assigned these roles and offer critical input, the BOOST QI team must include active input from front-line staff engaged in daily delivery of patient care. In our opinion, the sustained success of the project depends on the involvement of front-line staff. See Step 3: Clarify Key Stakeholders, Reporting Hierarchy and Approval Process as you may wish to consider adding some key stakeholders to your BOOST team.

Information Technology/Health Information Services Experts: From performance tracking to actual QI interventions, the contributions of information technology or health information system experts will be pivotal. Enlist those who can pull data and generate reports from the electronic clinical data warehouse, assist with reporting requirements, and who understand the hospital EMR and can be a liaison to medical records.

Team Dynamics:

While meetings with the whole team are invaluable, they can become impractical or difficult to schedule. Team 'huddles,' where a subset of the team meets briefly to advance action items, can be very effective for overall progress. How team members interact with one another is also important. A key dynamic for an effective team is the removal of authority gradients (i.e., hierarchy). Since the perspective of every team member is potentially critical, every perspective must be heard. To do that, each team member must be comfortable expressing his or her viewpoint. Try to pick people who have reputations for being collaborators. It is up to the leader and facilitator to enforce constructive team dynamics. (See Appendix F: "Tools for Running an Effective Meeting.")

Team Structure:

Once you have identified the core members of your BOOST® team, including individuals representing key front-line knowledge as well as your team leadership, it is important to recognize four additional roles you will likely need to establish to accomplish your goals:

1. Advisory Board

Many people who need to have a say in and understand your processes and interventions appropriately may not be able or willing to roll up their sleeves and help with the work of the core team. Often these are individuals in leadership or management who are critical stakeholders and can facilitate uptake and spread, but may not be able to attend all of your meetings. This group can form an ad hoc committee with whom you meet every few months to get input and to keep informed of updates.

2. Executive Sponsor

High-level accountability is critical to programmatic success. Understanding to whom the project and project team is beholden in your organization's leadership structure will be a real asset. Ideally, your project team's success should be tied to the incentive structure of an executive sponsor. At the very least, your team should have regular meetings with an executive leader to ensure your efforts remain on the hospital leadership's radar. This individual ideally might be the Chair of your BOOST Advisory Board. Remaining accountable also then allows your team to request resources, ask for assistance with eliminating barriers, and to gain help with shaping the environmental culture of your organization in a way that aligns your work with hospital priorities and vice versa. (See Step 4 below.)

3. Subgroups

Often, the work of the BOOST team is done in small groups of three to five people. These subgroups are focused on specific key topic areas of care transitions, such as patient education or follow-up care. (See Step 4: Survey Previous or Ongoing Efforts and Resources for more information on key topic areas.) Allow team members to choose to work with a subgroup based on their own interest, but do not be afraid to assign members to specific subgroups based on individual strengths and specific subgroup needs. These subgroups need to understand their role and mission, define their processes and develop metrics to assess their impact, similar to the core group as a whole. (See Step 6 on metrics.) Subgroups may come and go over the life of the project; however, they should report their progress to the core team and be accountable to that group.

4. Ad Hoc Expertise and Support

While your project team may have a lot of experience, including everyone you *might* need would yield an unwieldy and unmanageable team. The subgroups mentioned above can bring in additional help from individuals with expertise in the area of focus who are not part of the core team. For example, if you decide to address issues surrounding patient education, you may wish to bring in a literacy specialist, a patient and family/caregiver, and a patient education specialist who can work with one or more members of your core team to form a patient education subgroup.

One additional important note about your team — it is common and tempting to focus solely on the processes patients experience in the hospital when sites roll out Project BOOST®. Unfortunately, that neglects critical aspects of what happens after the patient leaves. After discharge, patients experience all kinds of difficulties and complexities that typically fall into the laps of the ambulatory providers or the emergency department. Many of these issues were initiated in the hospital or caused by the hospitalization. Therefore, it is important for BOOST teams to involve, communicate with, and educate ambulatory and other post-acute care providers on new efforts that have direct impact on patients after they leave the hospital so that these providers can help effectively to receive the patient into their care after the hospitalization. These providers need to be a part of your team and provided an opportunity to review suggestions and contribute feedback. Some BOOST teams have included a member of their local skilled nursing facilities, for example, and later set up regular meetings or gone on trips to visit them.

Once the team and subgroups are formed, keep an updated list of the names and contact information for the Project BOOST team members. We have provided a team roster for you in Appendix G: "Tools for Care Transition Improvement Team Roster." An example of how to organize your BOOST team is shown on the following page.

Figure 1: Anatomy of a BOOST® Team

C-suite, PO/PHO, ambulatory care leadership, hospital/board QI committee → **Advisory Board**

Core BOOST Team

Project Leader & Mgr, QI/PI, RN, CM, SW, PharmD, IT/data, Doctor (inpt & outpt), Advanced Practice Provider

Schedulers, pt education, unit secretary, VNA, financial, patient and caregiver, hospice, SNF

Ad Hoc Members

Subgroup · Subgroup · Subgroup · Subgroup
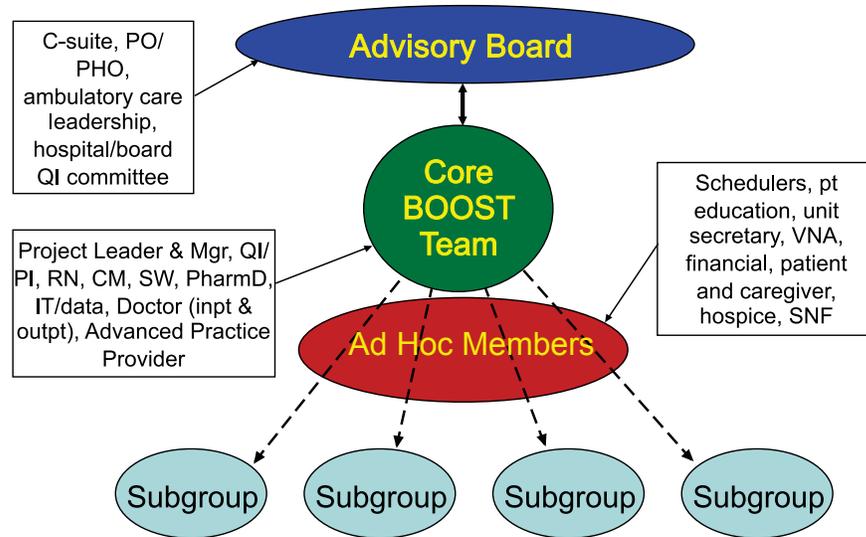
Legend

C-Suite: The senior executive team, usually including the Chief Executive Officer, Chief Medical Officer, Chief Financial Officer, Chief Nursing Officer, Chief Information Officer, and Chief Quality Officer

PO/PHO: Physician Organization/Physician-Hospital Organization

QI/PI: Quality Improvement/Process Improvement leader or engineer

RN: Registered Nurse

CM: Case Manager

SW: Social Worker

VNA: Visiting Nurse Association

SNF: Skilled Nursing Facility representative

TASK

Form your BOOST team and subgroups.

Time Frame: 1 to 2 weeks

Action Item:

1. Create your BOOST team (including your core team and Advisory Board) and begin to identify any preliminary ad hoc and subgroups members. In Appendix E: "Record Your Work," detail your BOOST team and subgroup rosters.

Step 3: Clarify Key Stakeholders, Reporting Hierarchy and Approval Process

Every improvement effort has stakeholders — individuals, committees or departments — who are affected by, and/or have an interest in, the results of that improvement effort. Since optimizing care transitions can broadly affect many care processes in the hospital, you may find that your Project BOOST® team has many stakeholders. You should identify these stakeholders early on, and regularly inform them of your efforts to improve the care transition process. These stakeholders can become some of your strongest advocates.

Typically, stakeholder groups will include:

- Hospital leadership
- Nurses
- Case managers
- Discharge planners
- Social workers
- Hospital-based physicians
- Primary care physicians
- Pharmacists

- Patient safety and/or quality improvement committees
- Hospital finance department
- Skilled nursing facilities, long-term acute care facilities, home health agencies
- Chief residents and residency program directors, if present at your hospital
- Hospital information technology leadership
- Patient and family/caregiver representatives

You can list your key stakeholders on the form provided in Appendix H: "Tool for Identifying Key Stakeholders, Committees and Groups." Once you have compiled a list of key stakeholders, consider scheduling regular meetings or "report out" sessions to update these stakeholders on progress. Stakeholder awareness, and preferably the overt "buy-in" of your work, will be important to support early adoption of the interventions. Furthermore, stakeholder support can help you procure needed resources, including people, and advance educational efforts surrounding the improvement effort. Including them on your BOOST Advisory Board or in relevant subgroups may be a successful approach to engaging them.

As noted in Step 1, it is also critical to understand your reporting structure. To whom does the core BOOST team answer for its successes, and, more important, from whom do they seek help to remove barriers to successful implementation? Once you've identified a clear chain of command, list the reporting structure and approval process for your interventions on the form provided in Appendix H. As with stakeholders, we recommend scheduling regular meetings with those senior leaders who have committed to help you be successful in your efforts. Additionally, these senior leaders can and should hold your project team accountable for its work, but also be invested in seeing you succeed. Thus, having an executive sponsor who is also accountable for your success is quite important. Establishing an effective communication plan will advertise the initiative and mitigate the potential for unwelcome surprises. A "BOOST Newsletter" can be an easy way to inform stakeholders and advertise your activities.

TASK

Identify key stakeholders, reporting hierarchy and approval process.

Time Frame: 1 to 2 weeks

Action Item:

1. Meet with your senior executive sponsor and advisory board. Identify key stakeholders, reporting hierarchy and approval process, and list them in Appendix E: "Record Your Work."

Step 4: Survey Previous or Ongoing Efforts and Resources

You may find that, while building your Project BOOST® team, there are people at your hospital working on similar issues surrounding care transitions. Seize this opportunity to collaborate and avoid duplicate work. Attempting to "go it alone" depletes institutional resources and may lead to conflict later, undermining both teams' efforts. Engaging your hospital leadership to support this collaboration will increase the likelihood of success for overall improvement of care transitions. Such partnership opportunities highlight the need for your team to survey the hospital for prior or ongoing efforts surrounding care transitions.

To help your team conduct this survey of ongoing efforts, and to identify other potential resources, we suggest you focus on the following key areas:

- **Quality improvement infrastructure:** What is the existing quality improvement infrastructure? What support or services are available for this project? Are there any ongoing quality improvement initiatives to learn from, collaborate with or leverage? Are there any initiatives that could influence support for Project BOOST, such as initiatives to prevent readmissions? What other programs are targeting high-risk patients and include community outreach?

- **Data flow/metrics:** Who collects and tracks your readmission data and other data such as length of stay and patient satisfaction? Who else is following these metrics besides your team (and for what reason are they following them)?

- **Current discharge process:** Is anyone else working on aspects of the discharge process? Has the process changed recently?

- **Patient education:** Who is educating patients and their families/caregivers about their illnesses and how to care for themselves? How is patient education and discharge preparation typically conducted?

- **Patient and family/caregiver preparedness:** Are there any initiatives ongoing to better educate and prepare patients and their families/caregivers for discharge?

- **Patient satisfaction initiatives:** Is anyone working to improve patient satisfaction with part or all of the hospital stay, such as care team collaboration and effectiveness of the discharge process?

- **Medication safety issues:** Is anyone working on admission and/or discharge medication reconciliation? Is anyone observing patients for adverse medication events after discharge?

- **Follow-up care:** Who is working on processes to ensure patients get the care they need after discharge? Is anyone helping arrange home care services? Is anyone helping arrange follow-up medical appointments for patients with their primary care physician?

- **Outreach to community physicians and/or skilled nursing facilities:** Is anyone working on outreach to community physicians and/or skilled nursing facilities? What partnerships exist between your facility and community physicians and/or skilled nursing facilities? Look specifically for teams working on solutions similar to what you are considering implementing at your facility. For example, can you partner with pharmacies on education for patients taking high-risk medications? Look for any outpatient physicians working on education about chronic medical diseases so that your hospital-based education can build on the education delivered to patients in outpatient clinics.

As described in Step 2, these categories may represent areas of focus for your subgroups. To assist your team with this survey of ongoing institutional efforts, please see Appendix I: "Tool for Performing Institutional Assessment."

TASK

Survey prior and ongoing care transitions improvement work.

Time Frame: 1 to 2 weeks

Action Item:

1. Each subgroup should survey prior or ongoing improvement work in their key area. In Appendix E: "Record Your Work," write a few sentences detailing the results of that survey for one of your subgroups.

Step 5: Set SMART Goals and a Timeline

"You've got to be very careful if you don't know where you're going, because you might not get there."
— Yogi Berra

Your team needs clear direction for its efforts, and this can be reinforced with specific aims and setting goals with a timeline. Setting goals will help the team stay focused and communicate with stakeholders. For clarity of purpose and to overcome initial inertia, at the beginning the team needs only to agree on general goals (e.g., "reduce rehospitalizations or improve patient preparedness for discharge"). You may have already set some goals when you secured institutional support and met with your key stakeholders.

Once you have established preliminary goals, your team should work to narrow the scope of those goals. We recommend using the SMART approach to goal definition — transform your general goal statements into statements that are **S**pecific, **M**easurable, **A**chievable (but also **A**ggressive), **R**elevant and **T**ime-bound. For example, your initial goal may have been to "reduce readmissions," but once you make it SMART, it now becomes "to reduce readmissions by 10% on medical floor 5G within 6 months."

Selecting a time course for each step within your project is important to allow the group an overarching idea of timeline. The timeline for each step should be ambitious but also realistic. For piloting a single improvement intervention on a single medical floor, a timeline of 12 weeks is reasonable. For spreading a series of improvement changes across an entire system, 12 to 18 months may be necessary. This will depend on how adept your system and team members are at quality improvement and accepting of change. When creating a timeline, be sure to take into account known events such as holidays and required review and approval processes for various steps of your intervention. For example, if your institution requires that new forms be vetted through a forms committee, your timeline should take into account when that group meets and the duration of the review process.

Once the team has decided upon SMART goals and a timeline, list those goals on the form in Appendix J: "Tools for Establishing General Aims." If you are participating in a Project BOOST® Mentored Implementation Program, your Project BOOST mentor will likely begin reviewing these goals with you at the kickoff and throughout the effort to help ensure the goals are attainable and realistic. The team leader should review those goals with the senior executive sponsor and select stakeholders. Once your goals are approved, share them widely and detail for each of the stakeholders how the goals support their priorities. Ensuring support of the goals and timeline will help the team to remove barriers to success in the future.

TASK

Set SMART goals and a timeline for achieving those goals.

Time Frame: 1 to 2 weeks

Action Item:

1. As a team, and with the help of your executive sponsor, set SMART goals and a timeline for achieving those goals. List those goals and the timeline in Appendix E: "Record Your Work."

Step 6: Decide on Key Metrics and a Measurement Plan

Now that your team has its goals and timeline in place, it is time to decide how you will measure your success. Much like road signs on a highway, your data will tell you if you are heading in the right direction and allow you to adjust your efforts to achieve your goals.

Three types of metrics are based on Donabedian's framework for quality improvement in healthcare[1]:

- **Outcome:** Metrics that tell us if we are accomplishing the aim. These metrics are often related to results that affect a patient's health, or stakeholder's interest (e.g., number of unnecessary readmissions; average length of stay; satisfaction).

- **Process:** Metrics that tell us how the process is working, and if the change we implemented is occurring. These metrics tell us how the system or process is behaving (e.g., percent of patients screened for readmission risk factors; percent of patients undergoing assessment of understanding with Teach Back; conversion of all discharge instructions to a new patient-centered form).

- **Structure:** Metrics that tell us if the equipment and personnel of a care delivery structure are in place to support the care delivery processes. These metrics tell us how the system of care is organized (e.g., nursing staffing ratios; patient education material available for nurses to use during Teach Back).

You may also want to consider a fourth category of metrics:

- **Balancing:** Metrics that tell us if the improvement we have implemented has influenced the process in other ways not anticipated (e.g., if nurses are now screening patients for readmission risk factors, is the time it takes for the nurses to screen patients causing delays in patient care elsewhere during the day, such as delays in administering medications?).

It is important to have a balanced set of metrics so as to understand completely how the care delivery process is improving. With Project BOOST®, important outcome metrics are often lagging, with results sometimes not available for review for 30 to 90 days. Such lagging metrics make it difficult for teams to adjust their care delivery processes in real time. Furthermore, experience with prior Project BOOST teams has shown that outcome metrics such as readmission rates for the hospital overall may not improve for 12 months after a team has begun implementing the BOOST tools. It is important, therefore, that your team focus on measuring and celebrating your successes with process metrics. For example, your team should concentrate on implementing and measuring an effective process to screen patients for readmission risk factors. Once this process is implemented, your team should celebrate that success; do not be discouraged if the newly implemented screening process has not had an immediate impact on readmission rates.

Identifying success stories and sharing them with staff is another powerful way to garner local support. For example, share a patient's compliments about how attentive and understanding the nursing staff was with discharge education and setting up outpatient follow-up. Feature that nurse in the hospital newsletter.

TASK

Decide on key metrics and a measurement plan.

Time Frame: 1 to 2 weeks

Action Item:

1. Decide on key metrics and a measurement plan. Try to include structural, process, and outcome measures for your planned interventions and, perhaps, balancing measures as well. List those metrics, and describe the plan in Appendix E: "Record Your Work."

Step 7: Choose a Hospital Care Unit on Which to Implement BOOST®

Choosing the right inpatient unit is a critical step to ensure your team is successful at improving care transitions. By focusing the improvement efforts on one unit, you keep the project small and manageable. Such a focus also helps clarify for the front-line staff their new roles and responsibilities for the improved care transition process. Furthermore, keeping the effort confined to one unit engages the front-line staff in the effort, and gives them a sense of ownership of the work. Finally, having a defined BOOST unit makes the unit and their efforts clearly visible to patients, visitors, staff and senior executives. We strongly advise choosing a unit in which to implement Project BOOST, and advise against implementing BOOST for a specific patient population, such as all patients with heart failure. From our experience, trying to improve the care transition process for some patients, and not others, becomes very burdensome to the staff.

Good characteristics of a BOOST unit include:

- Prior success with process improvement efforts
- Good interprofessional unit leadership
- Front-line staff engagement and capacity to participate in the change effort.

Once you have chosen a BOOST unit, you should also choose a "control" unit. Ideally, this unit will have similar characteristics to your BOOST unit, including number of beds, types of patients, staff and leadership structure. As you improve the care transition process, you will want to compare the results of the BOOST unit to those of the control unit. Having a control unit that closely resembles the BOOST unit also makes that control unit fertile ground for spread.

TASK

Choose a BOOST unit and a control unit.

Time Frame: 1 to 2 weeks

Action Item:

1. Choose your BOOST and control units. Describe the details of the units in Appendix E: "Record Your Work."

Project BOOST®: Sample Project Plan

While all BOOST sites will be working to improve the discharge process using a specific set of interventions, each experience of implementing BOOST will be unique. The culture at your institution, characteristics and availability of key team members, fiscal climate and other site-specific variables will influence who will be involved in your project, how those people interact and in which forums, how work gets done and the order in which some tasks are undertaken. The reality of clinical quality improvement is that no two sites are the same. However, there are some common steps along the way that most if not all BOOST teams will take. Certain tasks will have to be completed; certain stakeholders will have to be engaged, no matter the institutional culture or core team composition. Below is a general framework for your project, which is meant to serve as a guide for your project planning. While there is some sequential linearity to the process, parallel processing will also be required to advance the project. Specific tasks involved in the steps listed below are addressed in detail throughout the BOOST *Implementation Guide*. As you progress in your initiative, you will likely need to develop a more detailed project plan and timeline.

BOOST Kickoff Meeting

| Lay foundation 0-3 months |
| Understand the current state 1-6 months |
| Implement changes 3-18 months |
| Sustain and spread 12-24 months |

0   6   12   18   24
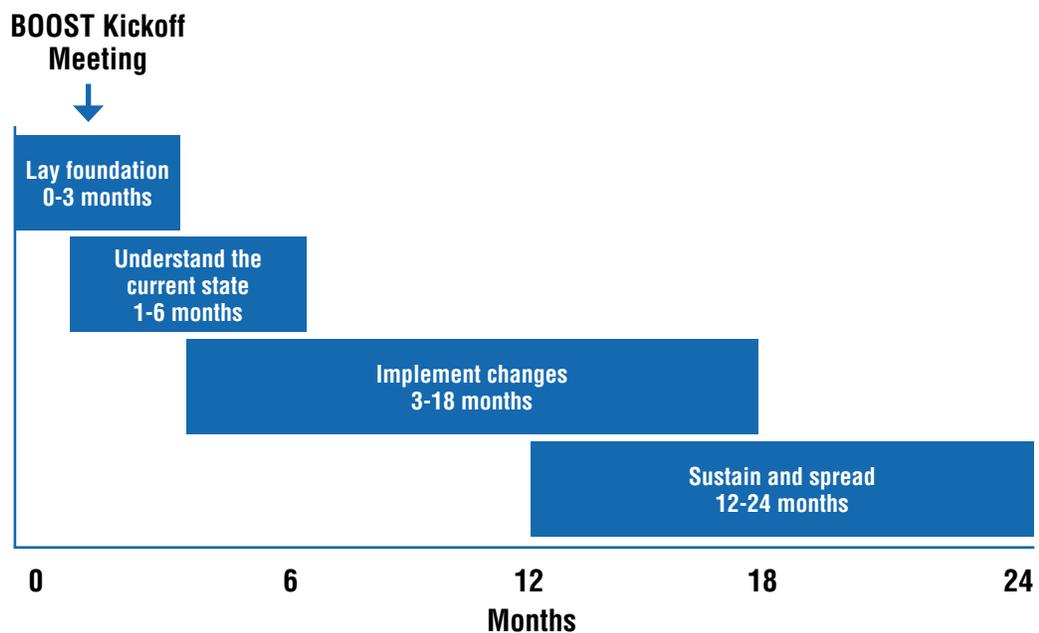
Months

Lay the foundation for improvement (months 0–3)

• This planning begins the ***Plan-Do-Study-Act*** *(PDSA)* approach with some "plan" and "do" activities.

• **Understand why** improving care transitions is important to your organization.

• **Survey prior improvement efforts** for care transitions.

• **Secure institutional support** for the initiative: engage senior leaders and secure needed resources.

• **Assemble an interprofessional team** that is focused on improving the quality of care transitions in your institution.

• **Clarify stakeholders and reporting hierarchy** for your initiative.

• **Develop a communication plan.**

• **Develop specific aims or goals** that are time defined, measurable and achievable.

• **Decide on key metrics and assemble baseline data** that describe current performance.

• **Choose a BOOST® unit** in which to implement and study the improvement.

Understand the current state (months 1–6)

• **Analyze the current discharge process** to gain a full understanding of the status quo and how all stakeholders (physicians and hospital staff, house staff, patients and families/caregivers, your administration) contribute to or are affected by the current processes.

• **Identify other activities that can support or hinder** BOOST implementation.

• **Establish a data collection plan** of key metrics.

• **Conduct root cause analyses** as to where, when and why your current process fails.

• **Select and tailor interventions to fix root causes.**

• **Develop an evaluation plan.**

Implement changes (months 3–18)

• **Implement solutions** using the *PDSA* process. To do so, you will need to:

   ○ Redesign care processes to incorporate your new solution.

   ○ Engage in staff education and outreach to ensure that all stakeholders are aware of your efforts and as appropriate have an opportunity to offer input.

   ○ Develop policies, procedures, forms, tools, order sets and other documents needed to support new or redesigned processes.

• **Track and learn from your performance**

   ○ Analyze data and assess performance.

   ○ Adjust intervention and implementation.

Sustain and spread (months 12–24)

• **Sustain the success of your intervention.**

• **Report back to your stakeholders and front-line staff.**

   ○ Celebrate your successes, no matter how small.

• **Plan for spread.**

References

1. Donabedian A. Evaluating the quality of medical care. *Milbank Mem Fund Q.* 1966;44:Suppl:166-206.

Section III
Getting to Work on Improving Transitions of Care

Getting to Work on Improving Transitions of Care

Section I of this guide explained why we need to improve care transitions, and Section II outlined how to ensure success in your improvement efforts. Section III explores the actual steps that you and your team should undertake to implement Project BOOST®.

1) Understand the background context at your institution.

2) Understand how your current care transition process functions and where it fails.

3) Establish a quantitative data collection plan.

4) Understand why there are deficiencies in your current process.

5) Select and tailor interventions to fix the root causes of any deficiencies.

6) Implement solutions to improve your care transition process.

7) Track your performance.

8) Sustain the success of your interventions.

9) Report back to your stakeholders.

10) Spread the improvement.

Following these steps will lead your team through the entire Project BOOST implementation process and increase your likelihood of success. Assistance from a Project BOOST mentor can be invaluable to guide you as you encounter and overcome barriers.

Step 1: Understand the Background Context at Your Institution

Before beginning any quality improvement process, it is important to understand why improvement is needed. For Project BOOST®, your team needs to understand why your hospital is interested in improving transitions of care. In general, failed care transitions can cause:

- Adverse outcomes for patients — medication errors, clinical progression of illness, missed follow-up, avoidable emergency department visits and rehospitalizations (see "A Patient's Story" in Section I)
- Decreased patient and staff satisfaction
- Wasted time, resources and money
- Financial penalties through reduction in reimbursement from the Centers for Medicare & Medicaid Services (CMS) and likely other insurers

Work with your executive sponsor, BOOST mentor and clinical staff to understand the extent and importance of these problematic care transitions. Learn how improving transitions of care aligns with your organization's goals. The BOOST kickoff conference and online webinars review this information in detail.

TASK

Understand why improving the transition of care process is important to your organization.

Time Frame: 1 to 2 weeks

Action Item:

1. In Appendix E: "Record Your Work," write a few sentences detailing why improving the transition of care process is important to your organization. Then discuss these statements with your BOOST mentor, your executive sponsor and your BOOST champions to ensure that all have an appropriate and concordant understanding of the background of the problem.

Step 2: Understand How Your Current Care Transition Process Functions and Where It Fails

Part A: Understand the Care Transition Process — Process Mapping

Once your team understands why it is important to your organization to improve care transitions, you must understand how your current process functions, and where it fails. You cannot improve your hospital's care transition process if you do not fully understand in detail how your current process functions. This step is critical for the success of your initial improvement effort, and you should commit sufficient project team effort to it.

Improving your care transition process will likely require that multiple changes be made to that process. To see what steps in the process need improvement, create a flow diagram of your current care transition process. By diagramming the process, a technique called "process mapping," your team will gain a better overall understanding of the process. In our experience mentoring Project BOOST® implementation, this effort is the most powerful step to confirm the necessity of improving the discharge process and the need to implement Project BOOST tools. Then, once the process has been mapped, you can compare your existing process to the future state care transition process (see figure, BOOST Future State, in Section I). This comparison will almost certainly reveal performance gaps or areas of redundancy that would otherwise be overlooked. Once you have identified gaps in the process, you may then work to close them.

Process mapping requires writing down every step that happens in a given process. To assist your BOOST team, there is a webinar on process mapping on the Society of Hospital Medicine Project BOOST Community webpage. The Institute for Healthcare Improvement (www.ihi.org) and the American Society for Quality (www.asq.org) websites also provide in-depth information about process mapping. Often, the major steps of the process are defined first, and then each step is analyzed in detail (see Appendix I: "Tool for Performing Institutional Assessment"). In some cases, a single individual (such as the team leader) can accurately define the major steps in a process. However, accurate process mapping requires a team of individuals who participate in the actual process steps (the so-called "front line") to elucidate what is really happening. This factor highlights the importance of the multidisciplinary team in completing this exercise. Creating a process map at one of your initial team meetings also serves as a terrific opportunity to engage all team members in the process and gain their buy-in as the group identifies problems and then naturally begins to look for solutions.

Once the process has been mapped, begin to identify the gaps between the current process and the best practice. Members of the team likely will be able to recognize these gaps and highlight them for others on the team. Your BOOST mentor is knowledgeable about the Project BOOST tools, which are current "best practices." These tools are described in detail in Section IV of this guide. Ideally, this process will leave the team with a list of gaps that need to be addressed to achieve the team's goals, and this list will be used to select and prioritize interventions.

Below are some questions your team may want to answer while you complete the process map. The answers to these questions can also help team members to recognize the gaps in the process.

- What standardized processes already exist for care transitions?
- How often are steps in these processes actually followed (i.e., is there standardization of the discharge process on individual units or among them)?
- What other elements of the discharge process can/should be standardized?
- What elements of the discharge process need to be more customized to a specific patient population?
- What checks exist to ensure critical processes occur?
- Who owns each process?

> ### 🖉 TASK
>
> **Understand how the existing care transition process operates.**
>
> **Time Frame:** 1 to 2 months
>
> **Action Items:**
>
> 1. Complete a process map of your existing care transition process that depicts the way the discharge process occurs on the unit where you are considering beginning your BOOST® project (see Section II, Step 7 regarding selecting your BOOST population/site). View an example of a process map on the BOOST webpage at www.hospitalmedicine.org/BOOST.
>
> 2. Show your process map to front-line staff, and revise the map based on their feedback. Large sheets of paper (e.g., "butcher block paper") and sticky notes are useful tools to describe the various steps in your process and build the process map. This can then be readily shared with multiple staff by posting the process map in a room shared by staff (e.g., break room) on a hospital unit. Share the process map with your mentor to obtain feedback.

Part B: Understand the Details of the Process

Once you understand how the care transition process functions in general, it is important to develop a deeper understanding of each step in the process. To do so, your subgroups should develop focused, more detailed process maps that examine specific steps in your high-level process map that you completed during Part A. Work through the questions below, and use the answers to these questions to shape your understanding of each step in the care transitions process. These maps will be very useful as you use the Project BOOST Toolkit in Section IV to develop interventions to address areas needing improvement.

Patient and family/caregiver preparedness for discharge
- When does this process start?
- Are there tools to assist in this process?
- How and when are patients and family/caregivers assessed regarding what their goals of care are and their understanding
  of medical issues (i.e., diagnoses, treatment, testing and results) and follow-up plan/care?
- How are patients and families/caregivers involved in the discharge preparation process?
- Who is responsible for teaching patients and their families/caregivers about their disease process and how to care for themselves?
- Do you include information on community resources and further outpatient education if needed?
- Do you provide up-to-date and comprehensive written information as appropriate?
- Do you have a reliable method for educating the patient whose primary language is not English?
  ○ Consider creating a patient and family/caregiver preparedness process map.

Medication safety at the time of discharge

- How is medication reconciliation accomplished?
- How are high-risk medications addressed? What kind of standardized monitoring is in place for medications that are high risk?
- How is patient understanding of medication administration assessed?
- How are issues related to medications and polypharmacy assessed and managed?
- How are pharmacists involved in medication safety?
- Is the expertise of the pharmacist optimally used?
- Have formulary issues between the inpatient and outpatient setting been identified and resolved?
  - ○ Consider creating a medication safety process map.

Follow-up care after hospital discharge

- What is the quality of the discharge communication to the outpatient follow-up clinician?
- What is the timing of this communication?
- How is quality assessed regularly?
- Are there any outpatient programs available for chronic disease management?
- How is care coordinated with the follow-up clinician? What information is transmitted to the follow-up clinician?
- What are the most common reasons for readmission?
- What is the relationship between readmission and the quality of the care transition?
  - ○ Consider creating a follow-up care process map.

Staff education about care transitions improvements

- What educational resources are routinely used to educate your staff about new topics or skills?
- What resources are available to hospital staff to provide education regarding optimizing the hospital care transitions?
- Is it widely available via intra- or Internet access?
- Is it interactive in the form of learner-based modules?
- Are the modules tailored to each specific role on the care team, such as those of nurses, physicians, case managers, and other providers?
- If you are at a teaching institution, is education appropriately targeted at house staff?
- Is there mandatory participation by key providers?
- Is the educational program case-based?
- Is there any method for tracking participation or competence/understanding of the most important concepts?
  - ○ Consider creating a plan for how you will educate the BOOST® unit staff on the new/improved care transition processes.

✏ TASK

Understand the details of each step in the care transition process and the outcomes that each step achieves.

Time Frame: 1 to 2 months

Action Items:

1. Each subgroup should complete a detailed process map of at least one step in the existing care transition process. Enter one of those maps in Appendix E: "Record Your Work."

2. Discuss your process maps with front-line staff, and revise them based on their feedback.

3. Discuss your process maps with your BOOST® mentor.

Part C: Adding Data to Your Process Map

To fully understand how a process is working, data must be used — both qualitative and quantitative. Too often, people rely exclusively on "numbers" (e.g., how often were patients asked if they had any questions at the time of discharge?) and eschew observation of the actual process. Remarkably valuable information can be gleaned from taking some time to observe the process as it occurs. While observing, assess the frequency with which each step is occurring, the consistency of each step and the time each step takes. How much variability exists in the discharge transition process? These data will help determine exactly how the process is performing, and which parts of the process need improvement.

✏ TASK

Understand the performance of the process by collecting data on how each step of your discharge process is functioning during actual care delivery.

Time Frame: 1 month

Action Items:

1. Observe each step in the care transition process. Collect key process data on these steps. For example, observe if and how the patient receives discharge instructions. Determine if, in fact, the patient understands those instructions. Was the patient simply asked "Do you understand?" or did the nurse or physician confirm understanding by assessing comprehension using the Teach Back approach? (See Appendix A: "Teach Back Process".) Since the discharge process can be long, complex and involve several team members, you may want to have each mini-team observe part of the process.

2. Show your data and observations to your team, and discuss it with your BOOST mentor.

3. Enter your data and observations in Appendix E: "Record Your Work."

Step 3: Establish a Quantitative Data Collection Plan

Part A: Collect Baseline Care Transition Data

In addition to collecting data on your care transition process, it is important to understand the *results* of the process overall. Work with your administrative and information technology (IT) support individuals to collect and review your hospital's care transitions data. Data should ideally be obtained for:

• Your hospital

• Your BOOST® unit (see how to select a BOOST unit in Section II, Step 7)

• A comparison unit (see how to select a control unit in Section II, Step 7)

• Service line (i.e., department or division level data) may also be informative if relevant and available.

Focus on outcomes such as:

• Length of stay (LOS)
  ○ Monthly average among inpatients for the preceding 12 months. The ability to identify "outliers" (5% of patients with longest LOS) will be helpful, if feasible. Alternatively, you can measure your *median* instead of *mean* LOS.

• 30-day rehospitalization rates
  ○ All-cause 30-day rehospitalization rates among all hospitalized patients for the preceding 12 months, by month.

• Patient satisfaction
  ○ Monthly ratings for the preceding 12 months.
    - Overall satisfaction scores as well as satisfaction survey elements specific to the discharge process. These will vary based on your survey vendor (e.g., HCAHPs, Press Ganey, Gallup). You will want to track the proportion of patients reporting the highest level of satisfaction for each question and also the overall summary score.
    - Listed below are examples of questions that your vendor may use to assess the discharge process:
      "Extent felt ready for discharge"
      "Speed of discharge process"
      "Instructions for care at home"
      "Explanations for taking medicines at home"

When you meet with your administrative and IT support individuals, a few questions should be asked:

• What measures does your institution use to assess the quality of its discharge processes?

• Is the methodology for acquiring and recording discharge measures standardized and reliable (that is, are there any concerns about data integrity and accuracy)?

• Are the data communicated to the front-line staff, and if so, how?

From our experience, most of these outcome measures are lagging metrics, meaning that the results are available to the BOOST team well after the patient has been discharged from the hospital. Some of these metrics, such as patient satisfaction scores, take months to return. By definition, 30-day readmission rates take at least a month (and often, pragmatically, two months) to be available. Because these metrics lag behind the actual patient experience, it is difficult for teams to make more immediate improvement based on these data. In addition, several of these outcome measures take 12 to 24 months to change because there are several factors that influence these measures. Consequently, we strongly suggest your team focus on developing and measuring key processes in the care transition (see Section II Step 6, regarding the development of process measures) and not focus solely on outcomes.

For example, your team may decide to work on ensuring that every patient is screened for readmission risk factors. Your team should then establish process measures to track your improvements in this effort and celebrate improvement in them, even if the outcome measures (i.e., readmission rates, LOS and patient satisfaction) have not yet changed. Your team should establish the baseline rate of the processes you are working to change, such as percent of patients screened for readmission risk factors, so you can track your improvement efforts.

It is often helpful to have a number of process measures to capture various aspects of an intended process improvement. A few examples of common BOOST® process measures include:

• Percent of patients screened for readmission risk factors during their hospital stay

• Patient and family/caregiver understanding of diagnosis, treatment and warning signs or symptoms and response

• Rate of completion of discharge summary within 48 hours of patient discharge

• Percent of patients receiving patient-centered discharge instructions

• Percent of patients who have a post-discharge follow-up appointment scheduled prior to discharge and show rates

• Percent of patients who have a medication reconciliation process occur prior to discharge.

The data for these process measures will likely come from different sources than the outcomes measures noted above and often require some chart audits or direct observations if no automated systems are available to track them.

The aim of this step is to establish a performance baseline that your team will then use to measure against after you implement the BOOST tools or other process improvement. Ideally, an accurate baseline is established using data over an appropriate period of time rather than a single snapshot, which can mislead the user because of numerous factors that can either worsen or improve it on a transient basis. Statistically speaking, you need 12 to 15 points of data to establish a baseline level of performance. These data may be collected daily, weekly or monthly — depending on the measure you are examining — and should reflect the performance of your system prior to any intervention or change.

For example, if you are looking at length of stay, incorporating your last 12 to 15 monthly reports into this number will allow you enough data to accurately establish what your true LOS is. This breadth of data (i.e., 12–15 points in time) will allow you to account for changes in season, staffing and other issues that impact a unit's performance over time. Note that these data are typically obtained retrospectively.

If, alternatively, you are looking at the frequency with which you perform follow-up phone calls to discharged patients on your BOOST unit, and you do not and have never done these calls from the unit, you can declare your baseline to be zero.

TASK

Collect 12 to 15 months of baseline care transition performance data.

Time Frame: 1 month

Action Items:

1. Collect 12 to 15 months of care transition data for the following outcome metrics:
   a. Length of stay   b. 30-day rehospitalization rates   c. Patient satisfaction.
2. Collect data for two to three key process measures for which you initially are most interested.
3. Record those data in Appendix E: "Record Your Work."

Part B: Establish a Prospective Data Collection and Reporting Plan

Now that baseline data on the key outcome and process measures for evaluating care transitions have been collected, you should establish an ongoing data collection and reporting routine for these same measures. Be sure to include any additional process measures that your team will be working to improve. Reporting these measures to your BOOST® team on a regular basis is critical for their understanding of the project's progress. Additionally, you should discuss with your executive leadership how frequently they would like to be briefed on your progress. This should typically be no less frequently than every six months, and at least quarterly.

TASK

Design and implement a data collection plan and reporting process for your Project BOOST team. Use and adapt the template provided below.

Time Frame: 1 week

Action Items:

1. Design and implement a data collection plan and reporting process for your Project BOOST team. Be as specific as possible with respect to who collects and reports the data, from which source, and the frequency of collection and reporting.

2. Record the plan in Appendix E: "Record Your Work."

Example data collection and reporting plan:

Metric (with operational definition)	Who collects the data?	Collection Frequency	How is it reported to BOOST team?	Who reports it?	How often is it reported to the BOOST team?	Notes
Length of Stay						
30-day readmission						
Other metrics you select						

Part C: Establish a Qualitative Report Describing Your Team, Its Efforts and Accomplishments

In addition to providing your executive team with quantitative data on your progress, it is important to give them qualitative updates on your team's efforts, especially as many of the hard outcomes may take many months to improve. Therefore, your team should develop a report that describes your activities from a qualitative perspective.

• Document project team activities (process mapping, process redesign, meetings with stakeholders, presentations, staff trainings, etc.).

• Prepare local media reports about your project.

• Describe barriers you encountered and how they were (or are being) handled.

• Document any early successes and stories from patients. Patient stories will likely be especially effective in reports to the hospital board.

As your team's efforts continue, use this report to augment your process improvement data during your regular reports to your senior executives, sponsors and stakeholders.

TASK

Develop a qualitative report describing your team, its efforts and its accomplishments.

Time Frame: Ongoing

Action Items:

1. Start a log of team and team member activities, and enter it in Appendix E: "Record Your Work."

2. Update this report on a regular basis (e.g., weekly or biweekly).

Step 4: Understand Why There Are Deficiencies in Your Current Process

By now you have a deep understanding of how your existing care transition process operates, the results it produces, the variability in the process and which steps in the process appear to fail. In developing this knowledge, your team has also likely generated several great ideas on how to "fix" the care transition process, and is eager to start the improvement work. But, before you can fix a failing process, you must first understand *why* the process is failing. Unless you identify and fix the root cause of a problem, the problem will continue to surface, and the process will continue to fail.

A handful of tools can help your team identify the root cause of the problem. One of the most common tools used is the *5 Whys* technique, which was developed by Sakichi Toyoda, the founder of the Toyota Motor Company. Using this technique, the problem solver asks "why?" approximately five times to determine the cause of the problem. By asking "why?" five times, the root of the problem is discovered, and the symptoms associated with that problem are identified.

Example of 5 Whys:

Patient was readmitted to the hospital. *Why?*

— The patient had problems with taking his new medication at home. *Why?*

— The new medication interacted with his existing medication. *Why?*

— The doctor did not know that the patient was on a medication that would interact with the new medication he prescribed. *Why?*

— The patient did not receive the proper medication reconciliation at discharge. *Why?*

— There is no process in place to ensure medication reconciliation occurs in a standardized manner at discharge. **(Root Cause)**

Many problems have more than one root cause, and often these causes are buried or hidden from view. Consequently, you may need to experiment with the process to determine cause-and-effect of potential root causes. Once you have identified the root causes of why your care transition process breaks down, you can then start using the BOOST® tools to fix the problems. As you proceed on the implementation pathway, revisiting this root cause analysis process as you learn may be useful to either confirm or correct your analysis.

TASK

Complete a root cause analysis.

Time Frame: 2 to 4 weeks

Action Items:

1. Complete root cause analysis or 5 Whys on one failure point in your care transition process. Use an actual patient readmission as a source for evaluation. Enter it in Appendix E: "Record Your Work."

2. Show your analysis to front-line staff, and revise it based on their feedback.

3. Discuss your analysis with your BOOST mentor.

Step 5: Select and Tailor Interventions to Fix the Root Causes of Any Deficiencies

Part A: Understanding the Principles Behind Successful Interventions

This step represents the fun part of process improvement, but cannot be undertaken without all the essential preparatory work in the previous steps. Here is where you and your team brainstorm ideas about how to fix the root causes of the problems you have identified in Steps 1–4. In thinking about interventions to improve care transitions, there are five core principles central to the Project BOOST® interventions described in this guide. They are:

- **Patient Centeredness:** This concept implies that the intervention focuses on identifying the needs, abilities and desires of patients and their families/caregivers with respect to ensuring a safe care transition. Also embodied in this principle is the idea that all materials and educational efforts are targeted at the language and literacy levels of patients and their families/caregivers.

- **Patient and Family/Caregiver Empowerment:** While preparing the patient and family/caregiver for discharge, the hospital care team should address patients' after-discharge needs, *and* empower patients and their families/caregivers to address them and to advocate for themselves in the event that further needs arise that they cannot address. Patients and families/caregivers should be provided information about, and access to, available resources that can assist patients after leaving the hospital. Patients and families/caregivers should be alerted to predictable adversities and their warning signs and symptoms, along with a plan to respond to such events. Additionally, patients and families/caregivers should be given tools for coping with unexpected adverse events, including access to families/caregivers and medical personnel who can assist patients in dealing with such adverse events.

- **Reduce Risk for Harm After Discharge:** Here, risk implies the chance that a patient will suffer an undesirable experience after discharge (e.g., medication error, missed therapy, unplanned rehospitalization, etc.). The literature has identified several risk factors that portend increased risk of harm after discharge. While many of those risk factors are not modifiable, some may be amenable to targeted interventions (e.g., consultation from a clinical pharmacist for patients new to warfarin or disease management programs for patients with heart failure), while others will be more general (e.g., a follow-up phone call after discharge, a transition coach or an expedited follow-up appointment). In addition, formally assessing an individual patient's risk (e.g., using a risk assessment tool such as the 8Ps found in Section IV) should help teams adjust resource utilization around the care transition process for patients at higher versus lower risk.

- **Team Oriented:** The successful transition of a patient out of the hospital typically requires the coordinated efforts of nurses, case managers, social workers, therapists, physicians, patients and their families/caregivers. To coordinate this care transition, clear communication about the patient's care is paramount. The hospital-based provider should communicate with the patient's primary care provider on a routine basis during the hospital stay, including on admission to the hospital, throughout the stay for significant events, and during the planning and execution of the transition out of the hospital. In addition, the hospital provider should communicate with aftercare providers (e.g., extended care facility physicians and ambulatory providers) on discharge as well. Using interdisciplinary tools that delineate roles for team members helps ensure timely, efficient communication between providers, team members and their patients. Because interprofessional teams can be large and unwieldy at times, it is important that there is one team member who oversees and takes ownership of the care transition process. The care transition leader need not be a process/content expert in all elements of the discharge process, but rather should serve as a coordinator to ensure that all parts of the process are completed.

- **Bridging the Care Transition Gap:** The care transition does not end at the time of hospital discharge. Indeed, medical research clearly indicates that patients are at high risk of complications during the time between hospital discharge and before being seen by an outpatient provider. Consequently, to bridge this gap in care, hospital care teams must work closely with aftercare providers and patients and their families/caregivers to ensure access and follow-up to help patients address issues and questions that arise after discharge. For some patients, additional resources such as visiting nurses, transition coaches or other community resources will be needed to ensure a safe post-discharge period.

These principles should be central to the interventions your team develops and deploys. In addition to these larger principles, your improvement ideas should be consistent with four more granular principles. First, your interventions should address the root causes identified in Step 4. Second, your interventions should be focused on *revising* or *improving* the existing process, not just adding another process to existing work. No member of your care team has time to do more work; instead, look for ways to remove low value, redundant or wasteful aspects of the existing work flow, and replace them with more meaningful work related to care transitions. Third, your interventions should use the concepts of the Project BOOST® tools, if not the actual tools themselves. For example, it is vital that your team assess each patient for the risk of harm that may occur after the patient is discharged. We believe the 8Ps tool is an effective way to achieve this task. Your team, however, should feel comfortable modifying the tool to meet your needs so long as the patient is screened for risk factors that may cause harm after discharge and a plan is developed to address the risks identified. Please visit the SHM BOOST website (www.hospitalmedicine.org/BOOST) for examples of modified BOOST tools shared by other BOOST sites. Last, your interventions should align with the strategic objectives and concerns of the hospital so as to ensure adequate resource allocation for intervention deployment. Work with your senior executive sponsor and BOOST mentor to ensure harmony between the intended intervention and the hospital.

TASK

Prioritize which aspects of the care transition process your team wants to improve first.

Time Frame: 1 to 2 weeks

Action Items:

1. Prioritize which aspects of the care transition process your team wants to improve first. Enter them in Appendix E: "Record Your Work."

2. Discuss your analysis with your BOOST mentor.

Part B: Selecting and Modifying BOOST® Improvement Interventions

Now that you have prioritized the areas on which your team would like to focus, it is time for your team to use or modify the BOOST tools to address your highest priority needs. As you brainstorm solutions, include the BOOST tools (see Section IV) that are relevant to your root causes, but do not limit brainstorming to using just the BOOST tools. Do not worry if the proposed solutions are not immediately practical or easy to implement. This is brainstorming, so balance practicality with creativity. Also remember that the BOOST tools can be modified to fit your needs. Ideally, again, you will brainstorm improvement interventions in an interprofessional group to get different perspectives and ideas. Note, we are not suggesting you implement all of the proposed solutions, but select those solutions that you believe will have the greatest impact most efficiently.

Once your team has developed a list of potential solutions, pick the top three to five solutions for each root cause, and organize them into a Root Cause-Solution Matrix, as below:

Root Cause	Potential Solutions
Patients do not see a doctor soon enough after discharge to identify and help prevent problems.	1. Arrange home health visit for high-risk patients. 2. Schedule doctor's appointment for patient prior to discharge and ensure the patient has transportation to it. 3. Arrange for a nurse or doctor to call the patient at home within 48 hours of discharge.
Patients do not understand the discharge instructions we provide them.	1. Use BOOST's Patient PASS (Patient Preparation to Address Situations Successfully) or DPET (Discharge Patient Education Tool). 2. Revise current EMR form to be more patient centered. 3. Give patient the JAMA or ACP Patient Education Page about their disease. 4. Engage the patient's family/caregiver as a supplemental or alternate target for education.

For your reference, we have created a Root Cause-Solution Matrix using the BOOST® tools.

Root Cause	Potential Solutions
Hospital does not assess patients for readmission risk factors.	Apply 8Ps.
Hospital does not assess patients for their preparedness for discharge.	Screen with General Assessment of Preparedness.
Hospital provides patients with discharge instructions that are hard to understand.	Patient PASS DPET
Hospital does not educate patients effectively about their illness, and how to care for themselves after discharge.	Use Teach Back technique with education. Ensure patient's family/caregiver are also involved in the education.
Hospital providers do not coordinate care.	Conduct interprofessional rounds.
Hospital has no mechanism to address patients' questions or concerns that arise after discharge.	Follow-up phone call to patient within 72 hours of discharge. Provide a phone number that patients can call after discharge to reach someone 24 hours/day.
Patients develop complications after discharge that may be preventable by a visit to a healthcare provider.	Schedule a follow-up appointment with patient's primary care provider so that the patient is seen shortly after discharge.
Post-acute care provider does not understand the patient's care plan after hospitalization.	Ensure discharge summary sent to post-acute care provider within at least three days of discharge.

Once you have developed a list of potential improvement ideas for one root cause, move on to the next root cause, until each root cause has a brief list of potential solutions.

✍ TASK

Complete a Root Cause-Solution Matrix.

Time Frame: 2 weeks

Action Items:

1. Complete a Root Cause-Solution Matrix. Enter it in Appendix E: "Record Your Work."

2. Show your matrix to front-line staff, senior executive sponsor and BOOST mentor, and revise it based on their feedback.

After completing the Root Cause-Solution Matrix, your team may feel overwhelmed with all the options — and potential work. Feeling overwhelmed at this point is not unusual, as improving transitions of care is a large challenge that affects many processes of care delivery within the hospital. Remind the team that you will not be implementing all these improvement ideas (certainly not all at once), but rather a select few that you think will have the largest impact on improving care transitions.

To help your team to decide where to focus your improvement efforts, we recommend using an Effort-Impact Matrix. An Effort-Impact Matrix is a 2x2 table that rates each potential solution on the *effort* it will take to implement the solution *at your institution*, and the *impact* that solution may have. Below is an example of an Effort-Impact Matrix for the potential solutions to the problem of "Patients don't understand their discharge instructions we provide them."

		Effort	
		High	**Low**
Impact	**High**	New Electronic Medical Record form	Use Patient-Centered Instructions (e.g., BOOST's PASS or DPET form) delivered via Teach Back
	Low	Purchase education materials to give to patients	Give patients freely available patient education material (e.g., JAMA Patient Page, ACP Patient Education handouts)

In general, select interventions that will require low effort to implement and have a high impact. Avoid choosing interventions that require high effort to implement and will have little impact. Choosing to implement interventions that are high effort/ high impact, or low effort/low impact should have obvious and clear justification to avoid wasted effort. Again, look to implement interventions that align with the hospital's strategic goals and priorities. And to help build momentum behind your improvement work, consider choosing to implement an idea that will result in an "early success" for your team. Such "early successes" involve making simple improvements that are visible to other members of your organization, are clearly a success and are related to improving care transitions. Your team may find it useful to discuss these interventions with your senior advisor and/or BOOST® mentor.

TASK

Complete an Impact-Effort Matrix for your potential improvement ideas.

Time Frame: 2 weeks

Action Items:

1. Complete an Impact-Effort Matrix. Enter it in Appendix E: "Record Your Work."

2. Show your matrix to front-line staff, senior advisor and BOOST mentor. Revise it based on their feedback.

3. Choose one solution to implement in Step 6.

Step 6: Implement Solutions to Improve Your Care Transition Process

Now that your team has identified a potential solution to implement, it is time to start improving! As an overview, Step 6 will take your team through the "Plan-Do-Study-Act" (PDSA) cycle, which helps you design and run small improvement cycles. The PDSA cycle is often referred to as the "engine" of change, as it helps improvement teams implement and adjust improvement ideas in a rapid, continuous fashion. The PDSA cycle works for only one solution at a time. Therefore, your team should use Step 6 to implement one solution at a time; your team *should not* try to implement all the solutions at once.

Part A: Planning the Implementation

Before implementing any solution, it is critical to plan your improvement efforts by specifying the steps your team will take. Often great ideas are implemented without any plan; that is, there is no consideration as to when the implementation starts, stops and how to know if the idea implemented was a success. Implementing improvement ideas in this manner will surely lead to failure and "change fatigue" felt so frequently by front-line staff. Instead, we recommend using the *Model for Improvement* and *PDSA cycle* to guide your improvement implementation efforts.

For more details on the *Model for Improvement* and *PDSA cycle*, visit our QI Primer on the QI Basics page at www.hospitalmedicine.org/thecenter or at the Institute for Healthcare Improvement at www.ihi.org.

To start, first clearly answer the following *Model for Improvement* questions:

1. What is the aim of implementing this improvement idea? That is, what are you hoping to achieve?
Make your aim SMART:

S: Specific
M: Measurable
A: Aggressive yet Achievable
R: Relevant, Realistic
T: Time-bound

For example, you might aim to screen 75% of all patients admitted to unit 3West using the BOOST® 8Ps tool by (insert specific date).

2. What change are you implementing?
List *one* intervention you have decided to implement.

3. How will you know if the implemented change resulted in improvement?

Knowing if your implemented change was successful generally requires measuring three types of metrics:

- **Outcome:** data to show the result of the intervention, as it relates to the broader purpose (e.g., rates of harm to patients after discharge or unnecessary rehospitalizations). These data may be similar to your larger outcome measures (e.g., rate of follow-up with primary care within seven days), or may be an outcome more specific to the intervention (e.g., percent of patients receiving medication teaching using Teach Back who understand their medication instructions).

- **Process:** data to show that the intervention or new process occurred (e.g., percent of patients receiving a follow-up phone call within 48 hours of discharge)

- **Balancing:** data to show what difficulties the intervention caused with the existing process. That is, what were the unintended consequences, either positive or negative, of performing the intervention (e.g., assessing nursing satisfaction with new follow-up phone call intervention).

Note that successfully implementing a new intervention may not change your outcome metric, particularly if the intervention does not fix the root cause of the problem. It is critical, therefore, to review all three types of metrics when deciding if an intervention was successful. Please see Section II of this manual for more detail on understanding metrics.

TASK

Answer the *Model for Improvement* questions.
Time Frame: 30 minutes
Action Items:

1. Answer the following *Model for Improvement* questions:

    a. What is the aim of implementing this improvement idea?
    b. What change are you implementing?
    c. How will you know if the implemented change resulted in improvement?

2. Identify the relevant outcome, process and balancing measures. Write your answers in Appendix E: "Record Your Work."

Part B: *The PDSA Cycle*

Once you have answered the *Model for Improvement* questions, you can plan your implementation. As Step "P" in the PDSA cycle, the planning step is the most critical step in the cycle itself. With this step, your team should outline exactly how the improvement idea will be implemented. Details such as start and stop date of the test, how the new idea is actually being implemented and how you will measure your results should be included. Use the template below to help in the planning phase. When planning your test of change, we recommend starting small. Choose one solution, try it out (*Do*) for a brief period of time, and then stop and reflect on what you learned. For example, you can try a solution for three patients, on one unit, for one day, and then stop. In this way, you test your idea with minimal risk. In addition, you will identify the most obvious problems with your implemented intervention and have a chance to address them before you have spent a lot of time and energy on spreading the intervention. After trying one solution for a brief period of time, re-evaluate the solution (*Study*), and adjust it to make the solution more successful (*Act*). In Step 6 Parts C and D we will discuss how to re-evaluate and adjust your solution to make it more successful. For now, though, understand that by using this small, iterative cycle of experimenting with a change idea, and improving the change idea based on your learning, you will move closer to accomplishing the aim your team has targeted with this change implementation.

PDSA cycle step	Information to include
Plan	• Start and stop date of the intervention? • Who is using the new intervention? • Where will the new intervention be used? • Who is collecting the data/results of the new intervention?

TASK

Complete the "*Plan*" step of the PDSA Cycle Implementation Plan.

Time Frame: 30 to 60 minutes

Action Item:

1. Outline your implementation plan using the template above. Write your answers in Appendix E: "Record Your Work."

Part C: Executing the Implementation Plan

After outlining the implementation plan, your team should then execute (*Do*) the plan on a hospital unit. To execute the plan, make sure that relevant staff are educated about the intervention (any piece they will be a part of or come in contact with), and that the intervention occurs. In addition, collect observations about the new intervention in action. For example, did the intervention work the way you planned for it to work? Did patients or staff like the intervention? Did the intervention cause problems elsewhere for staff that you had not considered?

As your team observes the change in action, also collect the data relevant to your outcome, and process and balancing metrics associated with your intervention. You will use these data later as you learn from this experiment.

> ### TASK
>
> **Complete the *Do* phase of the PDSA Cycle Implementation Plan.**
>
> **Time Frame:** 30 to 120 minutes
>
> **Action Items:**
>
> 1. In preparation for the *Do* phase, identify three to four specific issues you want to look out for during implementation. Focus on process and balancing measures. Write your planned observations in Appendix E: "Record Your Work."
>
> 2. Record your data for your outcome, process and balancing measures for this PDSA cycle outlined in Step 6 Part A.

Part D: Evaluating the Success of Your Improvement Idea

Now that you have executed your improvement idea plan, observed the intervention in action and collected data, it is time to evaluate (*Study*) how the idea worked. Start with your observations for the following questions:

• Was the change implemented as intended? If not, why not?

• Did the implemented change result in the outcome predicted or anticipated for this specific PDSA cycle?

• Did the change cause problems for anyone? If so, what were those problems?

Next, review the data for your outcome, process and balancing metrics to determine if the intervention helped improve the process. As you review the data, your team will learn more about the process and root cause you are trying to improve, as well as the improvement idea itself. For example, a successful test of your intervention may confirm your root cause as the true source of the problem. Alternatively, if the intervention did not work as intended, that may indicate you have not correctly identified the root cause, or that perhaps the process operates differently from how you thought it would. Use this new knowledge and understanding of the process to help shape your next improvement idea and implementation plan.

Last, it is critical that you begin to share your learning with your team, those who helped or participated in the implementation and senior executives. By sharing your learning, you begin to engage others in your improvement effort, generate more ideas for improvement and demonstrate that small, incremental change is possible.

TASK

Describe your learning from your small test of change (*Study* phase of PDSA).

Time Frame: 30 to 60 minutes

Action Items:

1. Answer the following questions:

　a. Was the change implemented as intended? If not, why not?

　b. Did the implemented change result in the outcome you had predicted or anticipated?

　c. Did the change cause problems for anyone? If so, what were those problems?

2. Record your answers in Appendix E: "Record Your Work." Share new knowledge with your team, those involved in the experiment, your BOOST® mentor and, if appropriate, your senior executive sponsor.

Part E: Revising Your Improvement Idea for Better Outcomes

Using the results from the evaluation of your intervention, your team should now revise the intervention to make it more successful. Based on the answers to Part C, along with any other observations you may have had during the *Do* phase, adjust (*Act*) your improvement idea.

TASK

Revise your improvement idea (*Act* phase of PDSA)

Time Frame: 30 to 60 minutes

Action Item:

1. Revise your improvement idea based on the data and observations you collected. Describe the revised idea in Appendix E: "Record Your Work."

Once your team has revised the improvement idea accordingly, repeat the PDSA cycle. Start at Part A: Planning the Implementation, and use the three *Model for Improvement* questions and planning step of the *PDSA cycle*, then continue to adjust your improvement idea until you are obtaining the desired results.

Part F: Celebrate Your Success, and Share Your Story

It is critical that your team celebrates its success with each improvement effort. The investigating, planning, and execution of the improvement requires a lot of hard work, and your team deserves recognition and celebration of its efforts. And remember, there is no failure, only learning, with quality improvement work.

TASK

Celebrate the success of implementing your improvement idea.

Time Frame: 1 hour

Action Items:

1. Plan a celebration for your team after you have implemented a successful change.

2. Record a story or photo from your celebration in Appendix E: "Record Your Work." Share with hospital leadership, and consider generating a press release to the local newspaper or TV news.

Step 7: Track Your Performance

As your team monitors the performance of the improved process, you need a way to visualize how the process is performing over time. The preferred method of monitoring process performance over time is through run charts. A run chart displays data in a graph format as results occur over time. So, the x-axis (horizontal) represents time, and the y-axis (vertical) represents the result being measured. In this project, for example, a run chart could display average length of stay or rehospitalization rates on a monthly basis (see Appendix I). Run charts allow your team to readily identify variation in data that suggest changes in a process over time. Such a change in the process may be intentional, and related to your team's actions, or unintentional, and therefore related to an unforeseen force of change. A run chart may contain a straight line showing the median in order to more readily visualize deviations in the performance of the process. The chart may also contain notations indicating the time point when the process was modified so that you may visualize how the performance of the process changed in response to the modification.

Control Chart for
Average Length of Hospital Stay
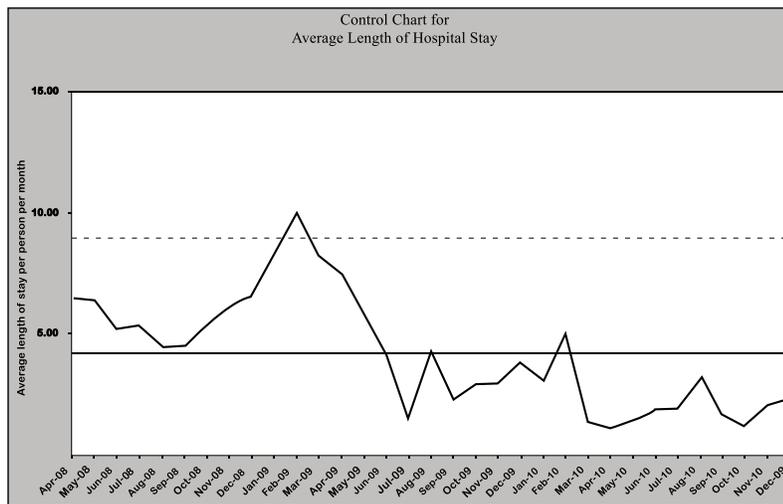
While run charts are very helpful for a quick, cursory look at your performance, using control charts allows for a more rigorous approach to tracking your performance (See Control Chart Above). Fortunately, run charts can be modified into control charts (also known as statistical process control charts) by placing control limits of the process on the graph. Control limits are horizontal lines on the chart that delineate that the area includes 2 standard deviations (95% confidence interval) from the mean; 3 standard deviations is the equivalent of a 99% confidence interval. Control limits are placed on either side of the mean, and the area within these lines reflects the expected variation in the performance of the process. Data points that fall outside either of these control lines indicate that the process has changed meaningfully. By detecting a change in a process, your team can correlate the solution you implemented with a change in performance. For more information on interpreting statistical process control (SPC) charts, see: http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/statistical_process_control.html.

✍ TASK

Set up run charts for your key outcome, process and balancing metrics.

Time Frame: 30 to 60 minutes

Action Item:

1. Have your QI or data team member help you set up and generate run charts for your key outcome, process and balancing metrics.

Step 8: Sustain the Success of Your Interventions

Once you have successfully improved one part of the care transition process by addressing a root cause, it may be tempting to move on to another root cause and to stop monitoring the improved process. But if you do not want all your hard work to go to waste, you need to resist this temptation. Do *not* assume the new process is "fixed" simply because you implemented your intervention. To hold the gains you have accomplished, keep monitoring the process. Although you may be able to reduce the intensity of the process monitoring over time, some ongoing assessment of how the process is functioning is absolutely necessary. In addition, new findings from research publications, new therapies and new patient situations arise frequently and may require you to revisit improving that process or intervention. The team should remain responsible for monitoring these issues, updating your tools and processes, and revising the intensity of scrutiny based on the stability of your metrics. Use the template below as a guide for the monitoring plan.

Metric (with operational definition)	Who collects the data?	Collection Frequency	How is it reported to BOOST® team?	Who reports it?	Reporting Frequency	Notes
Outcome metric						
Process metric						
Balancing metric						

TASK

Set up a process monitoring plan.

Time Frame: 30 to 60 minutes

Action Item:

1. Create a monitoring plan for your improved process. Include regular data review sessions in your plan. Outline the plan in Appendix E: "Record Your Work."

Step 9: Report Back to Your Stakeholders

It is critical that you keep your stakeholders and those to whom your team is accountable informed of your efforts, results and key learning points. If your stakeholders are not informed, they cannot be engaged in your efforts and cannot provide the support you need to be successful.

TASK

Set up a schedule with your senior executive sponsor and other key stakeholders to report on your care transition improvement efforts.

Time Frame: 30 to 60 minutes

Action Item:

1. Schedule regular updates with your senior executive sponsor to report the results of your care transition improvement efforts. Outline the main messages (bullet points) you wish to share in Appendix E: "Record Your Work."

Step 10: Spread the Improvement

Creating breakthrough levels of improvement is hard work, but it also can be exciting and rewarding. Indeed, the improvement in the care transition process your team engineered can serve as a model for other areas in your organization. Ideally, your improvement will spread as others learn from your experience, customize your idea to their own environment, and then implement the idea at a rapid pace. For more information on spreading improvement ideas throughout an organization, please visit the IHI website at www.ihi.org.

To paraphrase from the IHI's 2006 White Paper entitled "A Framework for Spread," it is never too early to think about spreading your improvement idea. Your improvement idea will be ready for spread when:

1) You have evidence of improvement.

2) You have a model for the improvement that others can use in your organization (e.g., implement on other units).

3) You have strong support from your senior leadership to spread the intervention.

Once you have achieved these three goals, your team should set forth a plan for spread. Just like the *Model for Improvement* and *PDSA cycle*, you need an aim for spread.

When developing your aim, consider the following:

• Which patient population or area to spread to next?

• Which specific improvements do you want to spread? (Not all may be appropriate for all populations.) You should expect to make modifications to some interventions as the locations/population of patients change.

• What time frame is most appropriate for the spread?

• What specific goals or targets for improvement are you attempting to achieve?

Next, develop a spread plan that uses the organization's approach to spread and rollout. Work with your senior executive sponsor when developing the spread plan. Last, as you execute the spread plan, be sure to measure your performance on the plan, and to obtain feedback on the spread plan, so that you may improve upon that plan for the next idea you want to spread. Again, for more details, see the IHI White Paper entitled "A Framework for Spread."[1]

TASK

Set up a plan for spreading your intervention.

Time Frame: 1 to 2 weeks

Action Items:

1. Create a plan to spread your new and improved process. Include a list of key stakeholders you will need to engage with this plan. Outline the plan in Appendix E: "Record Your Work," or upload it to your MyBOOST webpage.

2. Discuss your spread strategy with your BOOST® mentor.

Reference

1. Massoud MR, Nielsen GA, Nolan K, Schall MW, Sevin C. A framework for spread: from local improvements to system-wide change. IHI Innovation Series white paper. Cambridge, MA: Institute for Healthcare Improvement; 2006.

Section IV
The BOOST® Toolkit

Introduction to BOOST® Tools

Background

BOOST tools form the backbone of the intervention to improve the care transitions of your hospitalized patients. However, tools alone cannot carry your project and result in the changes you need. Tools support your efforts and help improve the reliability of your design changes but must be placed in the context of workflow, staff education, culture change and cycles of iterative improvement.

BOOST's tools are based on the principles previously outlined (see Section III) and were derived using the best published evidence available as well as expert opinion. They provide a foundation upon which to build your ideal care transition (see Section I). You will likely find that you still need to implement other tools not provided here to complete your process. Being a part of the BOOST community, members may find examples of variations of the BOOST tools on our member website, as well as other potentially useful tools.

Tailoring Tools to Your Site's Needs

In order for BOOST tools to be effectively implemented at your institution, they must be reviewed and modified for your local needs and your local resources. Elements of them may be used "off the shelf," while others may need significant local modification. The process of implementing Project BOOST (see Section III) with your mentor will guide you to the best approach.

Before introducing a tool into your practice pattern make sure that you:

1) Review it with local stakeholders to ensure it meets their needs.

2) Determine your organizational priorities so you can identify the best order to begin implementing BOOST tools. A stepwise approach (versus "all at once") has been more successful at most sites.

3) Get feedback from your colleagues on how to change and improve the tools for more effective use.

4) Go through rapid improvement cycles, e.g., PDSA cycles (see Section III), and adjust the tool as you go along so as to ensure the tool functions as you hope it will.

Touchpoints for Achieving BOOST Future State

As you consider your priorities for where to begin your improvement efforts and tool implementation, take time to identify which touchpoints or phases of the hospitalization process they impact — admission, hospital stay, discharge or the post-discharge period. By analyzing your current state process map (see Section III) as well as understanding how far you are from achieving your future state (see Section III), you will likely make the best decision regarding which intervention to implement first based on the team's priorities for improvement, and which tool will have the desired impact.

Assessing Patient Risk for Adverse Events After Discharge — The 8Ps

Touchpoints: Admission, During Hospitalization and Discharge

Background

It is important to identify and understand a patient's risk for adverse events after discharge so that the hospital team can work to begin to mitigate those risks while the patient is hospitalized. Several patient assessment tools exist, and sites use these tools in various ways to assess readmission risk and stratify patients by the severity of those risk factors. Given that resources are limited, stratifying patients by severity of risk assessment score would ideally allow a team to offer interventions only to those who are likely to benefit from them. Unfortunately, none of the risk stratification scoring systems works with a high degree of accuracy (c-statistics ranging from 0.53 to 0.83) and, moreover, fail to yield information about what you should do with the risk score you have obtained for a given patient.[1] Published risk scores such as LACE, HOSPITAL and PRA[2-4] use factors that you likely cannot affect and primarily reflect patients' severity of illness. Additionally, many of the more accurate risk scoring systems are cumbersome and require complex calculations to complete.

For BOOST®, we took a different approach. Given that numerous risk factors have been identified in the literature as being associated with increased risk for adverse events after discharge, including unplanned readmissions, we aim to "risk identify" rather than "risk stratify." That is, we advocate determining if the patient has a risk factor and then try to target interventions to mitigate that risk. The 8Ps Risk Assessment is not intended to be a score, but a checklist of risks that should be identified *and* addressed. The process has three steps:

1) **Identify:** Screen the patient for specific risk factors known to be associated with adverse post-discharge events.

2) **Mitigate:** Put in place risk-specific interventions that you believe will lessen the impact of the risk factor, and be sure you are clear who on the care team is responsible for carrying out the intervention.

3) **Communicate:** We recognize that most interventions cannot eliminate the risk completely, and certainly not in the amount of time most hospitalizations offer. Therefore, it is important to communicate the risk and the intervention to the next providers of care so efforts may continue to reduce the impact of the risk on the patient's health.

The Tool: The 8Ps

Described below are eight risk factors (the 8Ps) we believe should be identified and addressed for all hospitalized patients. While many of the factors have been defined in different ways in the literature, we provide a sample definition.

1) **Problems with medications:** Patients with polypharmacy — i.e., ≥10 routine medications — or who are on high-risk medications including anticoagulants (e.g., warfarin, heparin, Factor Xa or thrombin inhibitors), antiplatelet agents in combination (e.g., aspirin and clopidogrel), insulin, oral hypoglycemic agents, digoxin and narcotics.

2) **Psychological:** Patients who screen positive for depression or who have a history of depression. You may also choose to include anxiety and substance abuse in this screening.

3) **Principal diagnosis:** Patients with a principal diagnosis or reason for hospitalization related to cancer, stroke, diabetic complications, COPD or heart failure.

4) **Physical limitations:** Patients with frailty, deconditioning or other physical limitations that impair or limit their ability to significantly participate in their own care (e.g., perform activities of daily living, medication administration and participation in post-hospital care).

5) **Poor health literacy:** Patients who are unable to demonstrate adequate understanding of their care plan as demonstrated by their inability to complete "Teach Back" successfully (See Appendix A: "Teach Back Process").

6) **Poor social support:** The absence of a reliable caregiver to assist with the discharge process and to assist with care after the patient is discharged. This P also captures the concept of social isolation.

7) **Prior hospitalization:** Unplanned hospitalization in the six months prior to this hospitalization.

8) **Palliative care:** When thinking about this patient, would you be *surprised* if the patient died within a year? Does this patient have an advanced or progressive serious illness? This risk factor would be triggered if you answered no to the first or yes to the second question.

Risk-Specific Interventions

As noted, each identified risk should trigger a specific intervention or group of interventions to begin efforts to mitigate the associated risk. The provided 8P form (see Appendix K: "8P Tool") offers examples of the types of interventions your BOOST® program may want to include in this section. To develop your site's risk-specific interventions list, begin by looking at what internal resources you have already (e.g., do you have a diabetes team or diabetes specialists who can work with your patients who are starting insulin; do you have a mental health group who can work with your patients who screen positive for depression; do you have a clinical pharmacist who can educate patients on high-risk medications). Also consider protocols, order sets and other high-reliability structures to support your interventions (e.g., do you utilize a heart failure or anticoagulation care pathway or issue-specific patient education materials). Additionally, look to the SHM webpage for other tools and resources, both on the BOOST website at www.hospitalmedicine.org/BOOST and from other SHM QI resource rooms at http://www.hospitalmedicine.org/ResourceRooms.

It is important to recognize that each site will need to work in an interprofessional fashion to determine the best approach for addressing these factors considering your available resources. You must also remember that few of the identified risks can be eliminated prior to discharge so involving the ambulatory providers in the interventions is crucial if you hope to realize their full potential impact. For example, to address problem medications, you will likely need input from pharmacy, nursing, nutrition, case management and primary care providers to address issues of medication monitoring and interactions, patient education, drug cost/access and outpatient follow-up.

Accountability

One of the key lessons of quality improvement is that "everybody" cannot be responsible for a task. Such an approach effectively yields no one taking responsibility, and a needed task rarely gets handled satisfactorily. Assigning each intervention to a specific person — or at the very least, to a role (e.g., physical therapy) or small group (e.g., Mary and Sam) — is important to ensure that every necessary action is completed. Similarly, structuring follow-up to ensure completion of the task will increase the reliability that the tasks are, in fact, completed. Checklists have a highly functional role in accountability, especially if clear assignment and acceptance of responsibility for every task on a checklist is achieved.

Engagement and Goals of Care

As with any therapeutic intervention, patients should understand your concerns about the risks identified, and providers should engage patients so they want to participate in any strategy to mitigate the risk. Developing a plan to address risks for which the patient and family/caregiver have no interest in participating will likely lead to little tangible improvement, frustrated patients and wasted resources. Working with patients and families/caregivers around issues of risk reduction requires engaging them in discussions about the goals for their care (not just regarding end-of-life issues, though this is obviously critical), and will give you insights into the best strategies to employ. Additionally, patient and family/caregivers often have their own ideas of ways to reduce risk that may in fact be more useful to them than any plan the hospital could develop. Indeed, engaging post-hospital providers (i.e., primary care providers or other relevant outpatient specialists) also may be fruitful as they may have a better sense of strategies that either have been tried and failed previously or understand what that particular patient is more likely to follow outside the hospital. (See Appendix K: "8P Tool.")

Implementation Tips

Most successful BOOST® sites have implemented the 8Ps through structured interprofessional rounds (a.k.a. multidisciplinary rounds). This forum gives the care team an opportunity to review the risk factors — keeping risk identification on the minds of the care team — and assign interventions to the appropriate individuals who are likely present for the rounds. It also creates the obvious place for follow-up on the status of interventions on subsequent days.

Ideally, the 8P form (either paper or electronic) is available to all members of the care team for periodic review throughout the hospitalization, and should be reviewed if the patient's condition or situation changes. Also, the form should eventually be entered into the patient's medical record so future care teams can see your efforts.

Finally, since the final phase of using the 8Ps is communication to the next provider ("identify, mitigate, communicate" — see "Background" section above), developing a process for reliably transmitting information to post-hospital providers (e.g., in the discharge summary) about what risk factors the inpatient care team identified and what interventions were initiated will be important.

Assessing the Patient's Preparedness for Transitioning Out of the Hospital

Touchpoints: Admission, During Hospitalization and Discharge

Background

Patients and their families/caregivers often have concerns about areas that traditionally may not be routinely and reliably addressed by the inpatient team during a hospitalization. Importantly, these issues commonly impair the patient's ability to feel safe and comfortable transitioning out of the hospital or to thrive upon returning home.

The Tool: The GAP

The General Assessment of Preparedness (GAP) is a simple checklist tool that helps to identify patient concerns regarding their preparedness to transition out of the hospital. The tool groups these concerns into two major domains: logistical and psychosocial. Within each domain, the checklist is divided into three touchpoints: those that can be identified on admission, those during the later parts of the hospitalization and those that need to be addressed around the time of discharge. Like the 8Ps, this tool has a place for hospital staff to sign off on particular tasks, helping to assure that someone is responsible for its completion.

Grimmer K, Moss J, Falco J, Kindness H. Incorporating Patient Concerns into Discharge Plans: Evaluation of a Patient-Centered Checklist. The Internet Journal of Allied Health Sciences and Practice. 2006;4(1):1-8.

It is important that your front-line users have a chance to help develop the workflow for how to address issues identified by the GAP. (See: "GAP Tool.")

Implementation Tips

BOOST® sites have implemented the GAP successfully a number of different ways.

Two successful strategies include:

1) Integrating the questions into the electronic record of the case manager (assuming patients are routinely evaluated) as the questions on the GAP may be similar to some of the questions already commonly asked by this group.

2) Developing a form that is given to the patient and family/caregiver to complete privately. The form is then subsequently collected, and any concerns can then be addressed.

Patient-Centered Written Discharge Instructions

Touchpoints: Discharge and Post-Hospitalization

Background

Patients often leave the hospital with a thick stack of printed information: discharge plans, medication lists, information sheets, follow-up appointments, diet information, hospital literature, etc. The important, truly essential, information is commonly buried and not readily accessible to patients and/or their families/caregivers. Specifically, patients need immediate access to a patient-centered medication list and a patient-centered education tool in order to transition home safely.

To provide patients a concise resource that clearly conveys essential information at hospital discharge at an appropriate health literacy level, BOOST® offers two tools that succinctly compile the key information to address the vast majority of patients' anticipated needs. Depending on the needs of the patients and BOOST project team, your team may choose to implement one of the following:

1) Patient PASS (Patient Preparation to Address Situations Successfully)
2) DPET (Discharge Patient Education Tool)

Regardless of whether you adopt the Patient PASS or DPET, or create your own version, your BOOST team should implement a health literacy appropriate and concise resource that clearly identifies information the patient and family/caregiver need to know to transition safely home. The elements included in these tools meet that standard.

While Project BOOST does not provide a patient-centered medication list tool, we do offer the following concepts to consider when constructing your patient-centered discharge medication list. The list should:

- Clearly identify new, old, changed and discontinued medications.
- Allow enough space for large print for easy reading.
- Avoid jargon (e.g., say "by mouth" not "orally").
- Identify what the medication is for, and specifically how and when to take it.

An excellent example, called "My Medication List," is available from the American Society of Health System Pharmacists at http://www.ashpfoundation.org.

Finally, you will note that "post-hospitalization" is also listed above as a touchpoint. This is because many of our sites using these tools have had excellent feedback from post-hospital providers (e.g., primary care providers and home health nurses) who have reviewed the documents and felt well prepared to see the patient in the first post-hospitalization visit even when a discharge summary may not yet be available. (See Appendix M: "Patient PASS: A Transition Record and Discharge Patient Education Tool (DPET).")

Implementation Tips

Successful BOOST sites have employed the following strategies:

- Some sites fill in the components such as follow-up appointments and phone numbers themselves, but then review the form with the patient and fill in the rest of the fields with the patient and family/caregiver together. This offers an excellent opportunity to do Teach Back (see "Teach Back" section below) with the patient and reinforce that with the document.
- If you have an electronic medical record (EMR), work with your IT group to create the document in the EMR, or see if your EMR can create this document in place of your existing discharge plan so the work is not redundant.

BOOST Tools

Teach Back

Touchpoints: Admission, During Hospitalization, Discharge and Post-Hospitalization

Background

Growing research reinforces that patients and their families/caregivers who are actively engaged in their healthcare have better outcomes over time. According to the *Health Affairs* Health Policy Brief, Patient Engagement, "*patient activation* refers to a patient's knowledge, skills, ability, and willingness to manage his or her own health and care," while "*patient engagement* is a broader concept that combines patient activation with interventions designed to increase activation and promote positive patient behavior, such as obtaining preventive care or exercising regularly."[5]

While most of this research was undertaken in the ambulatory setting, these same strategies likely will provide tangible benefits if initiated in the hospital setting as well. A number of resources are available online to help sites desiring to improve the patient engagement infrastructure and culture of their organizations including:

• Guide to Patient and Family Engagement in Hospital Quality and Safety (http://www.ahrq.gov/professionals/systems/hospital/engagingfamilies/index.html). This document, produced by the Agency for Healthcare Research and Quality, focuses on improved involvement of patients and families as a step to improve patient safety, enhanced communications between healthcare providers and patients/families, augmented continuity of care achieved in hospitals via bedside nursing shift handoffs and discharge planning that directly involves patients and families/caregivers.

• A Leadership Resource for Patient and Family Engagement Strategies (http://www.hpoe.org/Reports-HPOE/Patient_Family_Engagement_2013.pdf). This document offers institutions specific approaches for assessing their organization's engagement environment, a guide for working to improve the culture and processes to be more engaging to patients and families/caregivers, and strategies for tackling barriers they may encounter as they work to implement change.

Assessing individual patient engagement and activation may be achieved through the use of validated tools like the PAM (Patient Activation Measure)® available at http://www.insigniahealth.com/solutions/patient-activation-measure.

A part of engaging patients is ensuring that the communications tools and methods employed are understandable and the information and skills being taught are meaningfully learned so the patient and family/caregiver have a reasonable chance of adhering to the plan. Health literacy, the ability of a patient to comprehend and effectively use information relevant to one's medical condition, is insufficient in a high proportion of hospitalized patients.[6,7] Add to this issue many others (e.g., language barriers, anxiety, sleep deprivation, pain and medications that impair the ability of the patient to learn the important information needed to transition out of the hospital safely) and it is no wonder patients do not understand and remember what they need to do after discharge. The issue of patients not understanding information provided has been associated with numerous adverse events and poorer outcomes. Compounding this, providers often use medical jargon, assume too much baseline, or pre-existing knowledge, and do not assess whether the patient actually does adequately understand the information provided.

Two key concepts that BOOST® endorses to address these issues are "Teach Back" and the related topic "identifying the learner."

Teach Back is a patient-centered communication style that is based on the premise that we providers (i.e., the "teachers" of the information) contribute significantly to the miscommunication issue despite making every effort to be as clear as possible. This miscommunication occurs because we do not stop to verify meaningfully that the learner has actually learned and processed the information or skill we are teaching. Therefore, it is imperative that providers confirm that patients actually comprehend what we tell them. Providers can accomplish this by speaking slowly with patients, avoiding medical jargon

and explaining important skills or new knowledge carefully to the patients … **and** taking the time to ask patients to explain in *their own words* (not just repeating ours!) their understanding of what they learned; or in the case of a new skill demonstrate that skill to ensure correct technique. The concept is not complicated, but performing it takes practice. Using Teach Back allows the teacher to identify learning deficits in real time and to ascertain whether patients have sufficient health literacy.

Identifying the learner is simply the idea that before you teach the patient a new skill or piece of information, you must first determine whether the patient is capable of learning it or will need someone else to help. In general, when possible, one should always include the patient in the process. Yet, sometimes the patient alone will not be able to handle the volume or complexity of the education needed (e.g., patients affected by medications or patients with cognitive impairment). You may need to involve a spouse, child, parent or friend who will be an involved caregiver as another learner. This crucial engagement ensures the information is transmitted faithfully and to the correct people. It never hurts to have an extra set of eyes and ears during teaching.

So which do you do first, Teach Back or identifying the learner? It depends. Sometimes we may try Teach Back first and discover the patient has some difficulty learning the information or skill. That is a perfect time to identify another learner who can support the patient. Or, you do Teach Back about a topic, e.g., medications, but the patient says "my daughter always puts out my medications for me." Bringing engaged families/caregivers into the picture is crucial to successful patient education.

At other times, your clinical sense will tell you that you need another individual involved in the learning process from the start. Identify the appropriate learners in advance, then, before starting Teach Back.

The Tool: Teach Back

BOOST® provides you access to a 20-minute video about Teach Back and a 60- to 90-minute curriculum to help train your colleagues in this technique. These are available at the SHM Store at www.hospitalmedicine.org/SHMSTORE.

Implementation Tips

Using the available BOOST Teach Back curriculum and video to facilitate your training and implementation is fun. What is challenging are the metrics for assessing the impact of Teach Back. Consider the following options:

- Track the number of providers being trained. Ideally, interprofessional trainings are best. This demonstrates that patient education is not the responsibility of a single person or discipline.

- Develop a method of documenting the use of Teach Back in the medical record — typically this is in the patient education documentation area. However, to be sure, documenting Teach Back and doing Teach Back may be quite different. Simply checking a box that "patient voiced understanding" is inadequate.

- Require Teach Back as a competency for providers and new employees, and track that training.

- Do peer shadowing — have one provider observe another doing patient education using Teach Back and give feedback on the event, and track that.

- In some ways, traditional metrics are insufficient to foster uptake by staff as part of their routine. Stories can be more effective to convey the importance of Teach Back to staff. Consider having one provider every week at meetings tell a story about a Teach Back experience. They may be funny. They may be sad. They may be poignant. The point is they will keep Teach Back on people's minds and show how Teach Back uncovers issues that affect healthcare delivery, giving providers a real-time chance to address them.

Follow-up Telephone Calls

Touchpoint: Post-Hospitalization

Background

Connecting with patients after they have left the hospital has, in multiple studies, demonstrated that many aspects of their care change after they leave the support of the hospital setting. For example, patients do not fill medication prescriptions; memory about therapeutic plans fade; clinical conditions worsen; services or supplies do not arrive as planned; and work and family responsibilities compete with best intentions for self-care. In short, life happens. And it often does so quite quickly after discharge. Thus, hospital providers or the healthcare community (e.g., medical home) must reach out to patients and help them re-establish their care plan once they are home. Telephone follow-up calls made within 72 hours of discharge can effectively begin to identify many of the new issues and barriers patients may have faced during the critical few days immediately after discharge.

In order to be effective, providers should recognize the most common domains in which patients have difficulties once they leave and target these areas with questions designed to identify them. These domains are:

- **General clinical conditions since discharge:** How is the patient's health since leaving, especially with respect to the reason they were in the hospital previously (though not exclusively)?

- **Medications:** Repeating the medication reconciliation process post-discharge will ensure that the patient was able to obtain any needed medications and is having no adverse events from them. Additionally, such a review will document that the patient is taking the correct medications and doses. Ideally, for this medication reconciliation, patients will have all their pill bottles available to review with the caller. Pharmacists are particularly effective at this review.

- **Follow-up plans:** Ensuring the patient's understanding of pending tests, procedures, services and follow-up appointments is important to confirm so care plans are not dropped across the transition from hospital to home.

Many patients receive multiple follow-up calls already. These may originate from specific disease management programs, from insurance companies, from outpatient practices or from the hospital inquiring about patient satisfaction. BOOST® programs must be aware whether patients are already receiving calls, the purpose of those calls and who is making them. It would not be useful to frustrate or confuse patients by having five different calls from five different people about five different topics — and maybe giving them five different and potentially contradictory messages! The Project BOOST team may want to catalog all these potential calls and develop mechanisms to consolidate them into just one comprehensive and effective follow-up contact. The information learned from the call can shed light on potential areas of concern for the patient as well as system and clinical deficits the care team and BOOST team may want to address.

So what are the characteristics of a well-done call? Your follow-up phone calling system should do the following:

- Use callers with a clinical background (e.g., nurse, case manager, physician or pharmacist).

- Ensure that callers have access to information about the hospitalization to answer questions. Ideally, they will also have access to the information from the 8Ps and patient-centered discharge education materials so they can address issues noted on those tools.

- Address the three areas noted above: clinical status, medications and follow-up plans.

- Use open-ended language to inquire about these areas (see script below for an example of language) and not yes/no questions; use Teach Back.

- Encourage the patient to bring his/her medication bottles (or at least his/her medication list) to the phone for review.

- The phone call should be documented in the medical record with issues identified being actively transmitted to the appropriate providers. For example, if a patient can no longer attend the follow-up appointment with his/her primary care physician (PCP), the caller must ensure that the PCP is notified. If the patient inadvertently failed to receive a prescription at discharge, the prescribing physician should be contacted.

- Whether the calls should originate from the hospital or from the outpatient practices responsible for the patient's follow-up is a question to be decided locally. Hospital-based callers may have better access to information and people germane to the hospitalization, while outpatient-based calls may be more successful at getting the patient back into his/her primary care (or relevant specialist) practice more efficiently if needed.

Implementation Tips

- At least initially, issues identified on the calls should be tracked so BOOST® teams can demonstrate the types of problems that callers are facing and how they are addressing them. The different types of issues should be classified along with the interventions provided. The issues could be classified as follows:

  ○ Clinical deterioration

  ○ New symptom management

  ○ Medication reconciliation

  ○ Medication adverse event

  ○ Medication misuse/non-use

  ○ Prescription-related issues

  ○ Follow-up plan issues

  ○ Access to services issues

  ○ General education (about disease, medications, symptoms, etc.)

  Collecting the data above as well as stories about how specific calls identified problems that might have led to an adverse event (e.g., a trip to the emergency department for the patient) are powerful points when communicating the value of the service for patient care to the executive who needs to authorize personnel time to make the calls.

- Training a number of individuals to make these calls ensures your ability to do them even if one person is on vacation or out sick. This also makes it easier once you take follow-up calls to scale and spread them across your hospital.

- Using the script is crucial to ensure standardization (reliability) in the questions and topics covered.

- You should anticipate finding 40–60% of calls yielding some type of intervention required by the caller.

- Calls will average approximately 10 minutes once callers gain experience. Some will be longer (and some shorter).

- Ensure that patients (or their families/caregivers if appropriate) are informed that someone will be calling, and set up a specific time (i.e., an appointment) that is convenient for that patient (or caregiver) to receive the call. It is also prudent to confirm with the patient the correct telephone number to use for the call. These strategies will reduce the chance that the caller needs to make multiple call attempts.

Follow-up Appointments

Touchpoints: Discharge and Post-Hospitalization

Background

The timely follow-up visit to a PCP presents a critical opportunity to address the conditions that precipitated the hospitalization, to prepare the patient and family/caregiver for self-care activities, and to prevent unnecessary hospital readmissions. Studies demonstrate that increased PCP follow-up is significantly and independently associated with a decreased risk of hospital readmission, particularly among patients with chronic diseases like heart failure and COPD[8,9] (though this has been harder to prove with other patient populations studied). Unfortunately, patients too often do not consistently receive appropriate follow-up care or ongoing outpatient management of other conditions after leaving the hospital. When patients do not receive adequate follow-up care and do not know who to contact to arrange such care, visits to the emergency department may increase.

One in three adult patients, aged 21 and older, who is discharged from a hospital to the community does not see a physician within 30 days of discharge, according to a national study by the Center for Studying Health System Change.[10] Among Medicare beneficiaries readmitted to the hospital within 30 days of a discharge, half have no contact with a physician between their first hospitalization and their readmission.[11]

More than a quarter (26.1%) of all readmissions in the 30 days after discharge were for conditions unrelated to any conditions identified in the initial or index admission. At one year post-discharge, more than a third (37.4%) of all readmissions or rehospitalizations were unrelated to the initial admission. In Medicare beneficiaries, the proportion of patients readmitted for the same condition was 35.2% after the index heart failure hospitalization, 10.0% after the index acute myocardial infarction hospitalization and 22.4% after the index pneumonia hospitalization.[12] Clinicians who see ambulatory and sub-acute patients after discharge should be aware of the diverse spectrum of readmission diagnoses, and should perform surveillance and preventive measures accordingly. Also many patients require substantial attention well beyond the initial follow-up visit. Patients who do not see a physician post-hospitalization may be at high risk of readmission because of their other chronic conditions or physical limitations.

No consensus exists about how soon patients need to be seen after discharge from the hospital. Here is one suggestion: identify each patient's medical and social risks for readmission, and base the timing of follow-up on those risks:

- High-risk patients: Before discharge, schedule a face-to-face visit with the home care service or physician's office within 48 or 72 hours.
- Moderate-risk patients: Schedule a physician office visit within seven days.
- Low-risk patients: Schedule a physician office visit as deemed medically reasonable by the attending physician.

Tools

Follow-up Appointment Scheduling Checklist:

- Confirm patient's contact information including best and alternative phone numbers.
- Confirm patient's PCP and office number.
- Ask patient if anyone else (family member, friend, etc.) should be involved in scheduling.
- Ask how patient will get to and from physician's office.
- Determine what days or times work for scheduling appointments and which should be avoided.
- Identify if there are any potential problems keeping appointments; e.g., transportation or safety issues returning home late in the evening.

Implementation Tips

Scheduling post-discharge follow-up appointments is integral to good care, but not necessarily easy for patients or providers. We believe that engaging patients and their caregivers is a critical element of a safe and effective transition. While an increasing number of organizations have adopted this best practice, the process of scheduling and securing high show rates for these appointments may be more difficult than expected. Who should help patients and families/caregivers to schedule the follow-up appointment depends on the staff model and work flow at each organization. You should map the flow of this process to identify appropriate staff who may be able to assist with scheduling when needed. It is important for the scheduler to work with the patient/caregiver to ensure the scheduled appointment optimizes the likelihood of the patient showing up.

When implementing this process, consider it in two parts: 1) the "behind the scenes" part to establish systems and linkages to develop capacity and access to follow-up care and 2) the process by which patients and families/caregivers actually engage in that care.

Creating capacity and linkages:

- Develop scheduling agreements with local clinics such as system-affiliated ambulatory care clinics and Federally Qualified Health Clinics (FQHCs).
- Create processes for assigning patients to a PCP if they do not have one.
- Ensure efficient telephone or computer access to ambulatory care sites to facilitate scheduling without excessive "hold times."
- Establish a method to receive feedback from downstream providers regarding adequacy of communication of relevant information from the hospital as well as no-show rates.

Developing processes for patients and families/caregivers to access follow-up:

- Empower patients and families/caregivers to be part of the transition process. This may include having them schedule their own follow-up appointments during the hospitalization and providing the appointment dates/times to the hospital staff to include in discharge paperwork.
- Educate them about the necessity of timely and appropriate follow-up.
- When scheduling the appointment, identify and address the barriers that contribute to cancellation and/or no-shows; e.g., scheduling conflicts, transportation difficulties, etc.
- Provide patients with telephone numbers for their discharging units so that they can call with questions.

A few additional tips:

- Take follow-up phone calls as the opportunity to reinforce follow-up appointments.
- Tactics to enhance outpatient follow-up when there is limited local primary care access include:
  ○ Structuring a hospital-managed outpatient clinic for focused disease management (e.g., heart failure, diabetes, COPD)
  ○ Developing a hospitalist- or midlevel-provider-run discharge clinic
  ○ Consider working with ambulatory providers to develop group visits.

Interprofessional Rounds

Touchpoints: During Hospitalization and Discharge

Background

When patients with complex conditions spend short periods of time in the hospital setting, tight communication among members of the care team is critical to ensure that information is not dropped and that the patient has the greatest chance of moving smoothly through the hospitalization and on to the next site of care. Historically, however, professional silos and cultural and structural barriers that prevent working and communicating effectively together have predominated in the hospital setting.

Interprofessional rounds (a.k.a. "multidisciplinary rounds," but the term "interprofessional" is preferred as it emphasizes that each member of the team is a professional and brings important information to the discussion) ideally will begin to break down these silos and allow all the members of the care team to get on the same page. If successful, the improved communications these rounds create will have an impact on other aspects of the healthcare team's functions as the rounds help familiarize members of the care team with each other, helping each member understand other members' roles and strengths.

Successful interprofessional rounds:

• Include, at a minimum, the major stakeholders: bedside nurses, case managers, social workers, physicians, therapists, dieticians and pharmacists. If possible, bringing representation from aftercare sites (ambulatory practices, visiting nurses, nursing facilities, hospice, etc.), even if only intermittently, can enrich the value of these rounds.

• Explicitly lay out the roles of each participant such that each person coming is prepared with information he/she needs to bring to the group and has thought about what information he/she needs to get from the group.

• Occur daily (or at least Monday to Friday) at a set time, typically in the mid-morning.

• Require an "owner." This person, typically the nurse manager or case manager, keeps the rounds focused and moving smoothly.

• Take advantage of technology. Projecting patient lists on a screen, allowing electronic orders to be placed during rounds or seeking quick answers in labs or notes for the purpose of planning can happen in real time during these rounds.

• Use a script or checklist such that everyone knows who needs to speak when and what information is to be presented. If it is a participant from a specific discipline's turn to speak and there is nothing to report, that fact should be stated so it is clear that all have contributed.

• Should be brief. These rounds should average 60 to 90 seconds per patient focusing on "need to know" information for the current day and for planning for the next day or two and discharge. Long recitations, e.g., about the medical history or interactions with families or specialists, can occur offline if needed.

• Should have an eye toward identifying anticipated questions (from care team members and patients) and addressing barriers to moving the patient through his/her hospitalization. Since many of the barriers patients face with respect to discharge are encapsulated in the 8Ps, these rounds are often effective times to discuss them and put risk-specific interventions in place.

• Need to be documented so that plans put in place may be followed up and responsible individuals are held accountable.

By the end of rounds, all members on the care team will be on the same page with respect to the care plan. This fact will allow them all to talk with the patient and family/caregiver with a unified voice about the care plan. Care team members will also find that they need to seek out other members of the team later in the day to ask questions less frequently as many will have been answered during the rounds, thus saving everyone time.

Tools

Remarkably few studied models of interprofessional rounds exist.[13] Structured Inter-Disciplinary Rounds (SIDRs) offer one successful model that has been studied.[14-16] The original article describing this model is available online at http://onlinelibrary.wiley.com/doi/10.1002/jhm.714/full. For more information on this method, see the INTERdisciplinary Approaches to Communication and Teamwork (INTERACT) website at http://www.medicine.northwestern.edu/11/mar/interdisciplinary-approaches-communication-and-teamwork-interact.

Another example for structuring interdisciplinary rounds is to use the acronym HoME FuNDS. Each part of the name is an individual topic and can be "owned" by a specific member of the care team:

Ho: Hospital issues — what the current active medical issues are
M: Medication issues — interactions, monitoring, access, teaching, etc.
E: Education issues — topics such as disease, diet, medications, wound care, etc.
Fu: Functional issues — generally related to physical therapy, occupational therapy or speech therapy
N: Nutritional issues — dietary teaching, oral intake, feeds
D: Discharge issues — any planning or anticipated barriers and an assessment of anticipated discharge date/time
S: Safety issues — including lines, tubes, mobility, skin care, glycemic control, VTE prophylaxis, etc.

Implementation Tips

Successful implementation requires:

- Engaged unit leadership who are willing to put the effort into creating the structure and culture of the rounds.

- A team who is willing to try out a method, give feedback and make change using rapid cycle improvements.

- Participation of many disciplines (not all of whom may reside "permanently" on the unit where rounds occur). But, as we say in the QI world, *don't let perfection be the enemy of progress.* If you can only have a pharmacist every other day, so be it. If you need to structure your rounds so that the hospitalist who makes rounds on three different units can pop in and out in order to get to rounds on each unit for a few minutes, try to make it work. If you need someone to facilitate calling the bedside nurses into rounds a couple minutes before it is their turn so they can maximize their floor time, go for it. If you need to bring an extra computer into the room where rounds occur so people waiting to speak (e.g., the next nurse) can chart to keep the time efficient, that is great.

- Sometimes rounds are not done in a conference room. They may be done by walking around the unit. While these rounds may not be efficient enough to meet the time and content needs of participants if they include patients and families/caregivers, in some cases walking around the floor as opposed to sitting in a conference room may still make more sense. Notably, patient and family/caregiver team rounding is becoming increasingly routine in pediatric hospitals.[17]

Post-Acute Care Transitions

Touchpoint: Post-Hospitalization

Background

After short-term acute care hospitalizations, about one in five Medicare beneficiaries requires continued, specialized treatment in the three typical Medicare Post Acute Care Facility settings: inpatient rehabilitation facilities (IRFs), long-term acute care hospitals (LTACHs) and skilled nursing facilities (SNFs). Services and capabilities vary at these sites.

Setting	Services	Target Population
Long-Term Acute Care Hospital 30-day readmit rate ≈ 10%	Acute care hospital services, often including ICU level care, over a prolonged episode of care measured in weeks	Medically complex patients who require a prolonged length of stay averaging 25 or more days
Inpatient Rehabilitation Facility 30-day readmit rate ≈ 10%	Intensive rehabilitation care aiming to help patients to function outside of an inpatient environment	Medically stable patients who require and can tolerate intensive rehabilitation
Skilled Nursing Facility 30-day readmit rate ≈ 25%	Provide treatment and continuing observation of skilled care such as nursing or rehabilitation services in an institutional setting	Medically stable patients who require short-term skilled care in a supervised setting

Current Issues and Challenges in Post-Acute Care Transitions

The Hospital Readmissions Reduction Program (HRRP) mandated by the Patient Protection and Affordable Care Act prompts short-term acute care hospitals (STACHs) to partner with their SNF providers to reduce readmissions. Future payment reforms (e.g., bundling) will reinforce this by promoting across-setting accountability. These partnerships must address the daunting problems of the discontinuities created by facility-to-facility transfer of inpatients with multiple medical needs and the substantial decrement in clinical resources, including staff devoted to patient care at SNFs compared to STACHs.

Common errors can occur as a result of a few issues:

Communication Failures

- Inadvertent discontinuation of vital therapies such as antibiotics.

- Unintentional discontinuation of chronic medications.

- Not providing hard copies of Schedule II drug (narcotics, sedatives) prescriptions to the SNF may lead to prolonged delays in providing pain control for patients as Drug Enforcement Administration (DEA) policies prevent nurses from accepting voice orders for Schedule II drugs.

- Not transferring advanced directive information may lead to violating patient treatment preferences.

Staffing

- While variable from state to state, typically a few registered nurses (RNs) oversee a large group of licensed practical nurses (LPNs) and clinical nurse assistants (CNAs). Patient-to-nurse ratios commonly exceed 50-to-1 for RNs and 20-to-1 for LPNs.

- High turnover rate (66% per year) of staff is common.[18] Stability of clinical staff has been shown to improve patient outcomes.

Clinical Service Model

- Poor turnaround response times for lab tests and radiology results.

- Lack of on-site pharmacies and staffing from consulting pharmacists who acquire medications from an off-site central pharmacy owned by their organizations.

- Inadequate physician staffing of SNFs may delay care. Physicians are legally allowed to wait up to 72 hours to see newly admitted patients, and are frequently not on site as they traditionally devote fewer than two hours per week to the care of patients at nursing homes. Physician coverage on the weekend is commonly absent.

- The combination of unclear or incomplete SNF admission orders and a paucity of physician availability on a Friday evening or over the weekend can lead to a rehospitalization over that weekend or when the patient is finally seen on Monday morning.

Implementation Tips

Partnerships between STACHs and SNFs can ameliorate the problems of poor care plan communication and reduced clinical resources at SNF. Such partnerships are employing two critical strategies for improving transitions:

- Cross-continuum teams:
  These teams represent joint quality efforts that ensure engagement from all the stakeholders needed to address this transition. They include membership from staff at the STACH and SNF including physicians caring for patients at the two sites (e.g., hospitalists and SNFists). The team determines mutual objectives and areas of collaboration.

- Rigorous process improvement:
  The cross-continuum team becomes the nexus for rigorous process improvement aimed at creating interventions to improve the transition by addressing the common issues leading to patient care deterioration and subsequent STACH readmission. Using a structured approach, the team can implement and maintain quality improvements in the two clinical settings. Anecdotally, the most success at reducing readmission rates occurs when local partnerships perform rigorous root cause analysis, failure modes and effects analysis, examine staffing at common times of transfers, evaluate and train front-line providers, and then develop and maintain strategies targeting identified issues.

Medication Reconciliation

Touchpoints: Admission and Discharge

Background

Many hospitals find that one major barrier to reducing hospital readmission rates is the persistence of medication discrepancies, or unexplained differences in medication lists, at discharge. Discrepancies in discharge medication regimens are incredibly common, occurring in up to half of all patients, with up to a quarter of all discrepancies having potential for patient harm.[19-21] The consequences of medication discrepancies in the post-discharge period include wasted time and frustration by patients, families/caregivers and providers, poor disease control, adverse drug events and, in some cases, readmissions to the hospital.

To reduce medication discrepancies, high-quality medication reconciliation is essential. Most hospitals perform medication reconciliation well enough to meet the requirements of The Joint Commission standard, but unfortunately the methods employed are often not good enough to prevent errors in medication history-taking and reconciliation of discharge orders, steps that are crucial to ensure a discharge medication list free of discrepancies.

If your BOOST® team decides that improvements in medication reconciliation should be part of your readmission prevention efforts, we recommend taking advantage of another SHM resource, the MARQUIS toolkit. MARQUIS stands for Multi-center **M**edic**A**tion **R**econciliation **QU**ality **I**mprovement **S**tudy. It consolidates best practices in medication reconciliation and uses a mentored implementation approach to help hospitals implement these practices.

Tools

As part of this effort, MARQUIS created a toolkit that is publicly available on the SHM website at www.hospitalmedicine.org/marquis.

The toolkit contains a number of components:

- An introduction to QI methods, similar to that available in the BOOST Toolkit.
- A detailed explanation of the medication reconciliation process, including a description of the skills, data sources and other tools necessary for each step, allowing sites to assign appropriate personnel to each.
- Step-by-step descriptions of each component of the medication reconciliation intervention. These components include:
  - ○ Assigning roles and responsibilities to clinical personnel to avoid redundancy and increase the likelihood that each step is completed
  - ○ Improving access to preadmission medication sources, e.g., from patients, community pharmacies, other healthcare facilities and electronic data sources such as outpatient medical records and pharmacy prescription fill databases
  - ○ Provider education in taking a "best possible medication history" (BPMH)
    (This component includes materials for certification of competency using simulation)
  - ○ Provider education in counseling patients and families/caregivers regarding their discharge medications, including the use of Teach Back to confirm understanding
  - ○ Stratifying patients into average risk and high risk for developing medication-related problems during transitions in care
  - ○ A standard bundle of medication reconciliation activities to be provided to average-risk patients, including medication history-taking, reconciliation of medications at discharge, patient counseling, and providing medication information to the next provider(s) of care
  - ○ An intensive bundle of activities to be provided to high-risk patients, including the use of specially trained personnel who are provided adequate time to perform these activities in depth

o Improvements in information technology used to support medication reconciliation where applicable

o Phasing in implementation of interventions and using other quality improvement approaches

o Use of social marketing techniques aimed at both patients and providers and the engagement of community resources

- An appendix that includes a number of tools, including talking points for engaging hospital leadership, sample medication reconciliation forms and lists of vendors of medication reconciliation products.

- Non-print materials, including instructional videos on how to take a best possible medication history and counsel patients and families at discharge.

For those sites interested in pursuing more in-depth quality improvement efforts in medication reconciliation, SHM will soon offer a new mentored implementation program for the MARQUIS program. Talk with your BOOST® mentor if you are interested.

Implementation Tips

The MARQUIS project offers an entire resource room on the SHM website: www.hospitalmedicine.org/marquis.

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Section V
Best Practices in Care Transitions
Annotated Bibliography

Outline

I. Determining Patient Risk for Readmission

    a. Polypharmacy and Problematic Medications

    b. Cognitive, Psychological and Behavioral Health Issues

    c. Social Support

    d. Physical Limitations and Functional Status and Frailty

    e. Health Literacy

    f. Disease Specific

    g. Palliative Care and End-of-Life Care

II. Medication Reconciliation

III. Patient, Family/Caregiver Engagement and Education

IV. Communication

    a. Interprofessional (Interdisciplinary) Rounds

    b. Provider Communication

    c. Cross-Setting Provider Communication and Strategies

V. Reengineering Systems

    a. Discharge Planning

    b. Follow-Up Appointment

    c. Follow-Up Phone Call

    d. After-Discharge Care

VI. Readmission Prediction Model

VII. Readmission Measures, Quality and Policy

VIII. Readmission Epidemiology

IX. Interventions

X. Utilization and Costs

I. Determining Patient Risk for Readmission

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> Patients with a substance abuse diagnosis were more likely to reutilize the emergency department and inpatient hospital when compared to patients without a substance use diagnosis. Patients with drug use diagnoses had higher reutilization rates than those with exclusively alcohol diagnoses.

Wang SY, Shamliyan TA, Ramakrishnan R, Kane RL. Not just specific diseases: Systematic review of the association of geriatric syndromes with hospitalization or nursing home admission. *Arch Gerontol Geriatr.* Jul-Aug 2013; 57(1):16-26.

> Associations between common geriatric syndromes and hospitalization/nursing home admission after controlling for the presence of specific diseases was examined. Polypharmacy, cognitive impairment, frailty and disability were associated with higher risk of hospitalization and/or nursing home admission. Results demonstrate that common geriatric syndromes should be evaluated and addressed as part of clinical and diagnostic examinations because prevention of disability and frailty in younger adults could result in a substantial increase in nursing home admission-free survival.

a. Polypharmacy and Problematic Medications

Avorn J. Medication use in older patients: better policy could encourage better practice. *JAMA.* 2010;304(14):1606-1607.

Bitton A, Choudhry NK, Matlin OS, Swanton K, Shrank WH. The impact of medication adherence on coronary artery disease costs and outcomes: a systematic review. *Am J Med.* 2013;126(4):357 e7-e27.

> This literature review reveals that medication adherence significantly improves health outcomes. More specifically, high levels of adherence are associated with a lower risk of hospitalization, reduction in hospital costs and lower risk of mortality, when compared to patients with low adherence.

Budnitz DS, Lovegrove MC, Shehab N, Richards CL. Emergency hospitalizations for adverse drug events in older Americans. *N Engl J Med.* 2011;365(21):2002-2012.

> Of the emergency department visits for adverse drug events, 27% required hospitalization, and were more likely to involve unintentional overdoses and ≥5 concomitant medications. Warfarin, insulins, oral antiplatelet agents and oral hypoglycemic agents accounted for 67% of adverse drug event hospitalizations.

Bushardt RL, Massey EB, Simpson TW, Ariail JC, Simpson KN. Polypharmacy: misleading, but manageable. *Clin Interv Aging.* 2008;3(2):383-389.

Desai R, Williams CE, Greene SB, Pierson S, Hansen RA. Medication errors during patient transitions into nursing homes: characteristics and association with patient harm. *Am J Geriatr Pharmacother.* 2011;9(6):413-422.

> When looking at the incidents of medication errors that occur in nursing homes, 11% involved a patient transitioning to a nursing home. Medication errors during a transition were more likely to be a repeated error and also had higher odds of patient harm in comparison to medication errors not involved with a transition.

Garfinkel D, Mangin D. Feasibility study of a systematic approach for discontinuation of multiple medications in older adults: addressing polypharmacy. *Arch Intern Med.* 2010;170(18):1648-1654.

> Elderly patients in a community-dwelling environment often have the potential to eliminate their medication load and therefore reduce the risk of side effects, misuse and overuse. This study determines that reduction in medication load was achievable in more than 80% of cases with no significant adverse events or deaths associated with the discontinuation.

Hamilton H, Gallagher P, Ryan C, Byrne S, O'Mahony D. Potentially inappropriate medications defined by STOPP criteria and the risk of adverse drug events in older hospitalized patients. *Arch Intern Med.* 2011;171(11):1013-1019.

> Potentially inappropriate medicines (PIMs) are strongly associated with adverse drug events (ADEs) that contribute to urgent hospitalization and rehospitalization. This study concluded that the STOPP (Screening Tool of Older Persons' potentially inappropriate Prescriptions) criteria is more sensitive to PIMs prescribed to elderly patients that result in ADEs when compared to the Beers criteria and is thus more clinically relevant.

Lucado J, Paez K, Elixhauser A. Medication-Related Adverse Outcomes in U.S. Hospitals and Emergency Departments, 2008: Statistical Brief #109. Healthcare Cost and Utilization Project (HCUP) Statistical Briefs. Rockville MD; 2006.

Murphy JG, Dunn WF. Medical errors and poor communication. *Chest.* 2010;138(6):1292-1293.

Oberg EB, Fitzpatrick AL, Lafferty WE, Logerfo JP. Medication management among Medicaid myocardial infarction survivors. *Wash State J Public Health Pract.* 2008;1(1):1-12.

Steinman MA, Hanlon JT. Managing medications in clinically complex elders: "There's got to be a happy medium." *JAMA.* 2010;304(14):1592-1601.

Zhang Y, Baicker K, Newhouse JP. Geographic variation in the quality of prescribing. *N Engl J Med.* 2010; 363:1985-1988.

b. Cognitive, Psychological and Behavioral Health Issues

Lindquist LA, Go L, Fleisher J, Jain N, Baker D. Improvements in cognition following hospital discharge of community dwelling seniors. *J Gen Intern Med.* 2011;26(7):765-770.

> Cognition tests were given to community-dwelling seniors to measure the frequency of low cognition at hospital discharge and one month post-discharge. Significant improvements in cognition occurred between the two time points. Cognitive impairment in the hospital poses a threat to comprehension and fulfillment of discharge instruction and supports the effectiveness of post-acute education.

Phelan EA, Borson S, Grothaus L, Balch S, Larson EB. Association of incident dementia with hospitalizations. *JAMA.* 2012;307(2):165-172.

> Over a span of 13 years, admission rates were measured for patients, 65 years of age and older, with and without dementia. The incidence of dementia was determined to be significantly associated with increased risk of hospitalization, including hospitalizations that were considered potentially preventable with timely and appropriate ambulatory care.

c. Social Support

Calvillo-King L, Arnold D, Eubank KJ, Lo M, Yunyongying P, Stieglitz H, et al. Impact of social factors on risk of readmission or mortality in pneumonia and heart failure: systematic review. *J Gen Intern Med.* 2013;28(2):269-282.

> A systematic review of the literature reveals that a broad range of social factors affect the risk of post-discharge readmission and mortality in patients with community-acquired pneumonia (CAP) and heart failure (HF). Social factors studied include race, age, socioeconomic status, social support and neighborhood.

Felland LE, Ginsburg PB, Kishbauch GM. Improving health care access for low-income people: lessons from Ascension Health's community collaboratives. *Health Aff* (Millwood). 2011;30(7):1290-1298.

Rodriguez-Artalejo F, Guallar-Castillon P, Herrera MC, Otero CM, Chiva MO, Ochoa CC, et al. Social network as a predictor of hospital readmission and mortality among older patients with heart failure. *J Card Fail.* 2006;12(8):621-627.

d. Physical Limitations and Functional Status and Frailty

Clegg AP, Barber SE, Young JB, Forster A, Iliffe SJ. Do home-based exercise interventions improve outcomes for frail older people? Findings from a systematic review. *Rev Clin Gerontol.* Feb 2012;22(1):68-78.

> High rates of completion and exercise adherence suggest that home-based exercise interventions are acceptable and feasible for frail older people. However, there is significant uncertainty regarding the effects of home-based exercise interventions on important outcomes such as quality of life and long-term care admission.

Gobbens RJJ, Van Assen MALM. Frailty and its prediction of disability and health care utilization: the added value of interviews and physical measures following a self-report questionnaire. *Arch Gerontol Geriatr.* 2012;55:369-379.

> The Tilburg Frailty Indicator (TFI) was the most powerful and general predictor of the six indicators of healthcare utilization. However, for predicting disability it was recommended to use the TUG test, which measures handgrip strength, with the TFI.

Kelley AS, Ettner SL, Morrison RS, Du Q, Sarkisian CA. Disability and decline in physical function associated with hospital use at end of life. *J Gen Intern Med.* 2012;27(7):794-800.

> During the last few months of life, functional decline and severe functional disability were powerfully associated with hospital use. Hospital use varied by region and was impacted by medical condition(s).

Krumholz HM. Post-hospital syndrome: an acquired, transient condition of generalized risk. *N Engl J Med.* 2013;368(2):100-102.

e. Health Literacy

Agency for Healthcare Research and Quality. Health Literacy Interventions and Outcomes: An Updated Systematic Review. Evidence Report/Technology Assessment: AHRQ; 2011:1-941.

Cloonan P, Wood J, Riley JB. Reducing 30-day readmissions: health literacy strategies. *J Nurs Adm.* 2013;43(7-8):382-387.

Coleman EA, Chugh A, Williams MV, Grigsby J, Glasheen JJ, McKenzie M, et al. Understanding and execution of discharge instructions. *Am J Med Qual.* 2013 Sep-Oct;28(5):383-391.

> A significant percentage of patients who were labeled "noncompliant" in fact did not comprehend their instructions in the first place because of unrecognized low health literacy, cognitive impairment and low self-efficacy. Discharge diagnosis, discharge complexity and education were not significant predictors of comprehension and execution of discharge instructions.

Lindquist LA, Jain N, Tam K, Martin GJ, Baker DW. Inadequate health literacy among paid caregivers of seniors. *J Gen Intern Med.* 2011;26(5):474-479.

> It was found that one-third of paid non-familial caregivers, who are often essential for many seniors to live at home independently, have inadequate health literacy and experience difficulties following medication-related instructions. This presents a problem if physicians assume higher than actual health literacy levels in caregivers. Thus determining the health literacy of a caregiver before assigning health-related tasks can eliminate the risks posed by inadequate health literacy and allow for optimal care for seniors.

Makaryus AN, Friedman EA. Patients' understanding of their treatment plans and diagnosis at discharge. *Mayo Clinic Proceedings.* 2005;80(8):991-994.

Maniaci MJ, Heckman MG, Dawson NL. Functional health literacy and understanding of medications at discharge. *Mayo Clinic Proceedings.* 2008;83(5):554-558.

Marvanova M, Roumie CL, Eden SK, Cawthon C, Schnipper JL, Kripalani S. Health literacy and medication understanding among hospitalized adults. *J Hosp Med.* 2011;6(9):488-493.

> Patients' understanding of their preadmission medications' purpose, strength per unit, number of units taken at a time and dosing frequency was examined. Lower health literacy, cognitive impairment, male gender and black race were found to be independently associated with lower understanding of preadmission medications.

Mitchell SE, Sadikova E, Jack BW, Paasche-Orlow MK. Health literacy and 30-day postdischarge hospital utilization. *J Health Commun.* 2012;17 Suppl 3:325-38.

> Low health literacy was associated with higher rates of hospitalization (30-day readmissions and return to the emergency department) when compared to patients with marginal and adequate health literacy. Patients with low health literacy were more likely to be insured by Medicaid, black, unemployed, disabled, retired, low income or less educated.

Rosenow EC, III. Patients' understanding of and compliance with medications: the sixth vital sign? *Mayo Clinic Proceedings.* 2005;80(8):983-987.

f. Disease Specific

American College of Surgeons. Surgeons Identify Postoperative Complications Posing the Strongest Risk for Hospital Readmissions Among General Surgery Patients. Press Release. *J Am Coll Surg.* Aug 2012.

Azimuddin K. Readmissions after colorectal surgery cannot be predicted. *Dis Colon Rectum.* 2001;44(7):942-946.

I. Determining Patient Risk for Readmission
(Continued)

Baillargeon J, Wang Y, Kuo YF, Holmes HM, Sharma G. Temporal trends in hospitalization rates for older adults with chronic obstructive pulmonary disease. *Am J Med.* 2013;126(7):607-614.

> Between 1999 and 2008, hospitalization rates decreased substantially among Medicare beneficiaries diagnosed with COPD. A number of factors may have contributed to the reduction in hospitalization, including use of long-acting beta agonists with corticosteroids, decrease in adult smoking and rate at which older adults received influenza vaccinations.

Bucknall CE, Miller G, Lloyd SM, Cleland J, McCluskey S, Cotton M, et al. Glasgow supported self-management trial (GSuST) for patients with moderate to severe COPD: randomised controlled trial. *BMJ.* 2012;344:e1060.

Dharmarajan K, Hsieh AF, Lin Z, Bueno H, Ross JS, Horwitz LI, et al. Diagnoses and timing of 30-day readmissions after hospitalization for heart failure, acute myocardial infarction, or pneumonia. *JAMA.* 2013;309(4):355-363.

> Diagnoses associated with 30-day readmission are diverse and not associated with patient demographics or time after discharge for older patients with heart failure, acute myocardial infarction or pneumonia.

Dobrzanska L, Newell R. Readmissions: a primary care examination of reasons for readmission of older people and possible readmission risk factors. *J Clin Nurs.* 2006;15(5):599-606.

Dunlay SM, Redfield MM, Weston SA, Therneau TM, Hall Long K, Shah ND, et al. Hospitalizations after heart failure diagnosis a community perspective. *J Am Coll Cardiol.* 2009;54(18):1695-1702.

Fan VS, Gaziano JM, Lew R, Bourbeau J, Adams SG, Leatherman S, et al. A comprehensive care management program to prevent chronic obstructive pulmonary disease hospitalizations: a randomized, controlled trial. *Ann Intern Med.* 2012;156(10):673-683.

> A randomized control study conducted in Veteran Affairs outpatient clinics evaluated the efficacy of a comprehensive care management program (CCMP) in reducing the risk for COPD hospitalization. The CCMP focused on patient education, an action plan for identification and treatment of exacerbations, and scheduled proactive case management telephone calls. When the trial was stopped prematurely, data showed the CCMP did not decrease COPD-related hospitalizations and was associated with unanticipated excess mortality.

Gheorghiade M, Peterson ED. Improving postdischarge outcomes in patients hospitalized for acute heart failure syndromes. *JAMA.* 2011;305(23):2456-2457.

Gioia LC, Filion KB, Haider S, Pilote L, Eisenberg MJ. Hospital readmissions following abdominal aortic aneurysm repair. *Ann Vasc Surg.* 2005;19(1):35-41.

Kazaure HS, Roman SA, Sosa JA. Association of postdischarge complications with reoperation and mortality in general surgery. *Arch Surg.* 2012;147(11):1000-1007.

Khawaja FJ, Shah ND, Lennon RJ, Slusser JP, Alkatib AA, Rihal CS, et al. Factors associated with 30-day readmission rates after percutaneous coronary intervention. *Arch Intern Med.* 2012;172(2):112-117.

> Nearly one in ten patients who underwent a percutaneous coronary intervention (PCI) were readmitted within 30 days, and most readmissions were due to a cardiovascular cause. Patients with a 30-day readmission after PCI were associated with a higher risk of one-year mortality compared with those who were not readmitted.

Podulka J, Barrett M, Jiang HJ, Steiner C. 30-Day Readmissions following Hospitalizations for Chronic vs. Acute Conditions, 2008: Statistical Brief #127. Healthcare Cost and Utilization Project (HCUP) Statistical Briefs. Rockville MD; 2006.

Shorr AF, Zilberberg MD, Reichley R, Kan J, Hoban A, Hoffman J, et al. Readmission following hospitalization for pneumonia: the impact of pneumonia type and its implication for hospitals. *Clin Infect Dis.* 2013;57(3):362-367.

Vorhies JS, Wang Y, Herndon JH, Maloney WJ, Huddleston JI. Decreased length of stay after TKA is not associated with increased readmission rates in a national Medicare sample. *Clin Orthop Relat Res.* 2012;470(1):166-171.

g. Palliative Care and End-of-Life Care

Agency for Healthcare Research and Quality. Palliative Care Nurses in Primary Care Clinics Reduce Hospital Admissions, Increase Use of Hospice and Home Care for Patients Nearing End-of-Life. AHRQ Healthcare Innovations Exchange:1-7.

Aragon K, Covinsky K, Miao Y, Boscardin WJ, Flint L, Smith AK. Use of the Medicare posthospitalization skilled nursing benefit in the last 6 months of life. *Arch Intern Med.* 2012:1-7.

Finucane AM, Stevenson B, Moyes R, Oxenham D, Murray SA. Improving end-of-life care in nursing homes: Implementation and evaluation of an intervention to sustain quality of care. *Palliat Med.* 2013 Sep;27(8):772-778.

> The Gold Standards Framework for Care Homes (GSFCH) program is an evidence-based approach that aims to improve the care provided to residents approaching end of life. This study investigated if a lower level of support sustains the results achieved by GSFCH. The sustainability project appeared to assist in the implementation of key processes, maintained and even further increased most improved outcomes; however, an increase in total hospital deaths was reported.

Gozalo P, Teno JM, Mitchell SL, Skinner J, Bynum J, Tyler D, et al. End-of-life transitions among nursing home residents with cognitive issues. *N Engl J Med.* 2011;265(13):1212-1221.

> This study examined healthcare transitions in the last months of life of nursing home residents with advanced cognitive and functional impairment. Findings suggest transitions are commonly burdensome, vary according to state and are associated with markers of poor quality in end-of-life care.

II. Medication Reconciliation

Agency for Healthcare Research and Quality. Medication Adherence Interventions: Comparative Effectiveness. Evidence Report/Technology Assessment: AHRQ; 2012:685.

American Pharmacists Association, American Society of Health-System Pharmacists, Steep D, et al. Improving care transitions: optimizing medication reconciliation. *J Am Pharm Assoc.* 2012;Jul-Aug;52(4):e43-52.

Bell CM. Discontinuity of chronic medications in patients discharged from the intensive care unit. *J Gen Intern Med.* 2006;21(9):937-941.

Budnitz DS, Shehab N, Kegler SR, Richards CL. Medication use leading to emergency department visits for adverse drug events in older adults. *Ann Intern Med.* 2007;147(11):755-765.

> According to the Beers criteria, approximately 3.6% of emergency department visits were for medication-related adverse events and considered to be inappropriate. Of these medication-related adverse events, 33.3% were from three medications: warfarin, insulin and digoxin. Performance measures and interventions targeting these three medications could significantly prevent emergency department visits for adverse events.

Care Quality Commission. Managing patient's medicines after discharge from hospital. Care Quality Commission National Report; 2009:1-56.

Coleman EA, Smith JD, Raha D, Min SJ. Posthospital medication discrepancies: prevalence and contributing factors. *Arch Intern Med.* 2005;165(16):1842-1847.

DeWalt DA. Ensuring safe and effective use of medication and health care: perfecting the dismount. *JAMA.* 2010;304(23): 2641-2642.

Gleason KM, McDaniel MR, Feinglass J, Baker DW, Lindquist L, Liss D, et al. Results of the medications at transitions and clinical handoffs (MATCH) study: an analysis of medication reconciliation errors and risk factors at hospital admission. *J Gen Intern Med.* 2010;25(5):441-447.

> More than one-third of patients had medication errors at admission, the majority of errors originating in medical histories. Attempts to reduce medication errors should focus on improved accuracy of medication histories, particularly in older patients taking a larger number of medications. Presenting a medication list upon admission reduced the risk of errors and highlights the importance of providing patients with complete, accurate and understandable medication lists.

Greenwald JL, Halasyamani LK, Greene J, LaCivita C, Stucky E, et al. Making inpatient medication reconciliation patient centered, clinically relevant, and implementable: a consensus statement on key principles and ncessary first steps. *Jt Comm J Qual Pt Safe* 2010;36(11):504-513.

Hohmann C, Neumann-Haefelin T, Klotz JM, Freidank A, Radziwill R. Adherence to hospital discharge medication in patients with ischemic stroke: a prospective, interventional 2-phase study. *Stroke.* 2013;44(2):522-524.

Ketchum K, Grass CA, Padwojski A. Medication reconciliation: verifying medication orders and clarifying discrepancies should be standard practice. *Am J Nurs.* 2005;105(11):78-79, 81-82, 84-85.

Kripalani S, Roumie CL, Dalal AK, Cawthon C, Businger A, Eden SK, et al. Effect of a pharmacist intervention on clinically important medication errors after hospital discharge: a randomized trial. *Ann Intern Med.* 2012;157(1):1-10.

> This randomized control study found that clinically important medication errors commonly occur during the 30 days after a cardiac hospitalization and at a much higher incidence than previously shown for preventable or ameliorable ADEs, as well as potential ADEs. A health-literacy-sensitive pharmacist intervention (PILL-CVD), which included pharmacist-assisted medication reconciliation, inpatient pharmacist counseling, low-literacy adherence aids and individualized telephone follow-up, did not significantly alter the per-patient number of clinically important medication errors.

Pippins JR, Gandhi TK, Hamann C, Ndumele CD, Labonville SA, Diedrichsen EK, et al. Classifying and predicting errors of inpatient medication reconciliation. *J Gen Intern Med.* 2008;23(9):1414-1422.

Rodehaver C, Fearing D. Medication reconciliation in acute care: ensuring an accurate drug regimen on admission and discharge. *Jt Comm J Qual Patient Saf.* 2005;31(7):406-413.

Tam VC, Knowles SR, Cornish PL, Fine N, Marchesano R, Etchells EE. Frequency, type and clinical importance of medication history errors at admission to hospital: a systematic review. *CMAJ.* 2005;173(5):510-515.

Wolf MS, Curtis LM, Waite K, Bailey SC, Hedlund LA, Davis TC, et al. Helping patients simplify and safely use complex prescription regimens. *Arch Intern Med.* 2011;171(4):300-305.

> Patients tend to self-administer multidrug regimens more times a day than necessary, and those with limited literacy are at a greater risk. There is a need for strategies to help patients not only to understand how to take their medications but also how to consolidate and simplify their complete regimen. Results support a proposed universal medication schedule for standardizing prescribing practices.

III. Patient, Family/Caregiver Engagement and Education

Agency for Healthcare Research and Quality. Guide to Patient and Family Engagement. 2013.

Carman KL, Dardess P, Maurer M, Sofaer S, Adams K, Bechtel C, et al. Patient and family engagement: a framework for understanding the elements and developing interventions and policies. *Health Aff* (Millwood). 2013;32(2):223-231.

Coleman EA, Mahoney E, Parry C. Assessing the quality of preparation for posthospital care from the patient's perspective: the care transitions measure. *Med Care*. 2005;43(3):246-255.

Coleman EA, Parry C, Chalmers S, Min SJ. The care transitions intervention: results of a randomized controlled trial. *Arch Intern Med*. 2006;166(17):1822-1828.

> The care transition intervention was designed to encourage patients and their caregivers to assert a more active role during care transitions. Coaching focused on medication self-management, transfer of information, timely follow-up with primary care, and awareness of worsening in condition and how to respond. Patients who completed the intervention had significantly lower rehospitalization rates at 30 and 90 days post-discharge.

Coleman EA, Smith JD, Frank JC, Min SJ, Parry C, Kramer AM. Preparing patients and caregivers to participate in care delivered across settings: the care transitions intervention. *J Am Geriatr Soc*. 2004;52(11):1817-1825.

Greene J, Hibbard JH. Why does patient activation matter? An examination of the relationships between patient activation and health-related outcomes. *J Gen Intern Med*. 2012;27(5):520-526.

Greene J, Hibbard JH, Sacks R, Overton V. When seeing the same physician, highly activated patients have better care experiences than less activated patients. *Health Aff* (Millwood). 2013;32(7):1299-1305.

Health Policy Brief. Patient Engagement. People actively involved in their health and health care tend to have better outcomes—and some evidence suggests, lower costs. *Health Aff*. 2013;86:1-6.

> This article summarizes key findings regarding patient activation and engagement found in the February 2013 issue of *Health Affairs*. Evidence shows that patients who are more actively involved in their healthcare have better care experiences, improved health outcomes and lower costs.

Hibbard JH, Cunningham PJ. How engaged are consumers in their health and health care, and why does it matter? *Res Brief*. 2008(8):1-9.

Hibbard JH, Greene J. What the evidence shows about patient activation: better health outcomes and care experiences; fewer data on costs. *Health Aff* (Millwood). 2013;32(2):207-214.

> A growing body of evidence shows that patients who are more activated have better health outcomes. Therefore, it is recommended that activation levels be measured and interventions tailored to strengthening patients' roles in managing their healthcare.

III. Patient, Family/Caregiver Engagement and Education
(Continued)

Hibbard JH, Greene J, Overton V. Patients with lower activation associated with higher costs; delivery systems should know their patients' 'scores.' *Health Aff* (Millwood). 2013;32(2):216-222.

> This article examined the relationship between patient activation, the skills and confidence that prepare patients to be engaged in their healthcare and billed care costs. Patient activation was found to be a significant predictor of cost. Patients with low activation levels had greater healthcare costs when compared to patients with high activation levels, even after adjusting for risk.

Hibbard JH, Greene J, Tusler M. Improving the outcomes of disease management by tailoring care to the patient's level of activation. *Am J Manag Care*. 2009;15(6):353-360.

> This article describes a disease management intervention that assessed patients' capabilities for self-management and tailored coaching support to meet patients' self-management needs. This tailored intervention increased activation scores, improved clinical outcomes and reduced utilization rates when compared to a usual disease management approach.

Judson TJ, Detsky AS, Press MJ. Encouraging patients to ask questions: how to overcome "white-coat silence." *JAMA*. 2013;309(22):2325-2326.

> Recent initiatives, the AHRQ's "The Questions Are the Answer" campaign and The Joint Commission's "Speak Up" strive to overcome the barriers of "white coat silence" and empower patients to ask questions. Increasing a patient's likelihood to ask their physician questions has the potential to enable shared decision making, improve patient adherence and satisfaction, and better align care plans to a patient's values and preferences.

Koh HK, Brach C, Harris LM, Parchman ML. A proposed 'health literate care model' would constitute a systems approach to improving patients' engagement in care. *Health Aff* (Millwood). 2013;32(2):357-367.

Remmers C, Hibbard J, Mosen DM, Wagenfield M, Hoye RE, Jones C. Is patient activation associated with future health outcomes and healthcare utilization among patients with diabetes? *J Ambul Care Manage*. 2009;32(4):320-327.

Shen Q, Karr M, Ko A, Chan DK, Khan R, Duvall D. Evaluation of a medication education program for elderly hospital in-patients. *Geriatr Nurs*. 2006;27(3):184-192.

IV. Communication

a. Interprofessional (Interdisciplinary) Rounds

Henneman EA, Kleppel R, Hinchey KT. Development of a checklist for documenting team and collaborative behaviors during multidisciplinary bedside rounds. *J Nurs Adm.* 2013;43(5):280-285.

> A 23-item tool was developed for collecting objective data about team-related behaviors of healthcare staff, patients and their families during bedside rounds. Optimal bedside-teaching rounds were those that were patient centered, involved the nurse and family, were efficient and included a supportive teaching environment.

O'Leary KJ, Buck R, Fligiel HM, Haviley C, Slade ME, Landler MP, et al. Structured interdisciplinary rounds in a medical teaching unit: improving patient safety. *Arch Intern Med.* 2011;171(7):678-684.

O'Leary KJ, Haviley C, Slade ME, Shah HM, Lee J, Williams MV. Improving teamwork: impact of structured interdisciplinary rounds on a hospitalist unit. *J Hosp Med.* 2011;6(2):88-93.

O'Leary KJ, Wayne DB, Haviley C, Slade ME, Lee J, Williams MV. Improving teamwork: impact of structured interdisciplinary rounds on a medical teaching unit. *J Gen Intern Med.* 2010;25(8):826-832.

Olsen L, Wagner L. From vision to reality: how to actualize the vision of discharging patients from a hospital, with an increased focus on prevention. *Int Nurs Rev.* 2000;47(3):142-156.

Preen DB, Bailey BE, Wright A, Kendall P, Phillips M, Hung J, et al. Effects of a multidisciplinary, post-discharge continuance of care intervention on quality of life, discharge satisfaction, and hospital length of stay: a randomized controlled trial. *Int J Qual Health Care.* 2005;17(1):43-51.

b. Provider Communication

Alpers A. Key legal principles for hospitalists. *Am J Med.* 2001;111(9B):5S-9S.

Flacker J, Park W, Sims A. Hospital discharge information and older patients: do they get what they need? *J Hosp Med.* 2007;2(5):291-296.

> The present study confirms earlier findings that providing verbal and written health information on hospital discharge significantly increases the knowledge of patients and caregivers. Patients were more likely to report that they understood their care instructions "very well," more likely to comply with medication instructions and significantly more likely to call from home about problems when provided with verbal and written information.

Hess DR, Tokarczyk A, O'Malley M, Gavaghan S, Sullivan J, Schmidt U. The value of adding a verbal report to written handoffs on early readmission following prolonged respiratory failure. *Chest.* 2010;138(6):1475-1479.

Olson DP, Windish DM. Communication discrepancies between physicians and hospitalized patients. *Arch Intern Med.* 2010;170(15):1302-1307.

> This study compared patients' knowledge and perspectives of inpatient care with physicians' assessments of patients' understanding. Physicians grossly overestimated patients' ability to identify who their inpatient physician was, correctly state their diagnosis and report that they were made aware of new medications and adverse effects. These results highlight the disparity in communication between providers and patients.

Ouslander JG. A piece of my mind. A murmur of music. *JAMA.* 2010;304(17):1875.

c. Cross-Setting Provider Communication and Strategies

Bell CM, Schnipper JL, Auerbach AD, Kaboli PJ, Wetterneck TB, Gonzales DV, et al. Association of communication between hospital-based physicians and primary care providers with patient outcomes. *J Gen Intern Med.* 2009;24(3):381-386.

> The objective of this study was to determine whether primary care providers' knowledge of their patients' hospital admission, receipt of a discharge summary and direct communication with the inpatient medical team are associated with 30-day patient outcomes of death, hospital readmission or emergency department visit. The results provide no direct link between physician communication and important patient outcomes; however, they do demonstrate that communication between hospital physicians and primary care physicians can be substantially improved.

Brock J, Mitchell J, Irby K, Stevens B, Archibald T, Goroski A, et al. Association between quality improvement for care transitions in communities and rehospitalizations among Medicare beneficiaries. *JAMA.* 2013;309(4):381-391.

> Community-wide efforts facilitated by QIOs to implement evidence-based interventions and improve care transitions through technical support, performance monitoring and effectiveness evaluation had positive results. Compared to non-involved communities, the intervention communities had lower all-cause 30-day rehospitalization and all-cause hospitalization per 1,000 Medicare fee-for-service beneficiaries.

Carrier E, Yee R, Holzwart A. Coordination Between Emergency and Primary Care Physicians. Research Brief No 3: National Institute for Health Care Reform; 2011:1-11.

Coleman EA, Berenson RA. Lost in transition: challenges and opportunities for improving the quality of transitional care. *Ann Intern Med.* 2004;141(7):533-536.

Editors. Frustrations with hospitalist care: need to improve transitions and communication. *Ann Intern Med.* 2010;152(7):469.

Gobel B, Zwart D, Hesselink G, Pijnenborg L, Barach P, Kalkman C, et al. Stakeholder perspectives on handovers between hospital staff and general practitioners: an evaluation through the microsystems lens. *BMJ Qual Saf.* 2012;21 Suppl 1:i106-113.

> This study offers an innovative approach to assessing and addressing gaps between current handover practices from the hospital to the community by viewing this interface as a virtual microsystem made up of patients, hospital physicians, hospital nurses and community-based practitioners. The analysis suggests that each healthcare professional attempts to provide the best possible care, but does so in isolation, without the benefit of the knowledge and expertise of the other members of the microsystem.

Hesselink G, Schoonhoven L, Barach P, Spijker A, Gademan P, Kalkman C, et al. Improving patient handovers from hospital to primary care: a systematic review. *Ann Intern Med.* 2012;157(6):417-428.

> A systematic review of interventions aimed at improving patient handovers from hospital to primary care was done. Overall methodological quality of the studies was relatively high. Almost 95% of studies consist of multicomponent interventions, and 70% of studies reported statistically significant effects in favor of the intervention group. Given the complexity of interventions and outcome measures, the review is not able to identify which interventions had positive effects.

Kripalani S, Jackson AT, Schnipper JL, Coleman EA. Promoting effective transitions of care at hospital discharge: a review of key issues for hospitalists. *J Hosp Med.* 2007;2(5):314-323.

> This review highlights important challenges for physicians who seek to provide high-quality care during hospital discharge and the subsequent period of transition. Based on the best available evidence, recommendations are provided for how to improve communication and facilitate care for adult inpatients returning home.

Kripalani S, LeFevre F, Phillips CO, Williams MV, Basaviah P, Baker DW. Deficits in communication and information transfer between hospital-based and primary care physicians: implications for patient safety and continuity of care. *JAMA.* 2007;297(8):831-841.

> A systematic literature review was performed to characterize the types and prevalence of deficits in communication and information transfer between hospital-based physicians and primary care physicians. The review revealed that communication occurred at low levels between physicians, there was limited availability of discharge summaries at post-discharge visits and discharge summaries often lacked important information. Interventions involving computer-generated summaries and standardized forms may facilitate more timely transfer of patient information and make discharge summaries more consistently available during follow-up care.

McCarthy D, Johnson MB, Audet AM. Recasting readmissions by placing the hospital role in community context. *JAMA.* 2013;309(4):351-352.

Oduyebo I, Lehmann CU, Pollack CE, Durkin N, Miller JD, Mandell S, et al. Association of self-reported hospital discharge handoffs with 30-day readmissions. *JAMA Intern Med.* 2013:1-6.

> The successful direct communication between inpatient providers and outpatient providers occurred 36.7% of the time. Variables associated with direct communication included patient cared for by hospitalist without house staff, higher expected 30-day readmission rate, longer LOS, female sex, and insured by Medicare and private companies.

O'Malley AS, Cunningham PJ. Patient experiences with coordination of care: the benefit of continuity and primary care physician as referral source. *J Gen Intern Med.* 2009;24(2):170-177.

> The majority of patients who met with a specialist in a 12-month period reported less than ideal coordination between their primary care physician and specialist. Patient interviews revealed that care coordination was better, from the patient perspective, when patients saw the same primary care physician for most of their visits and if specialist referrals were made by the primary care physician rather than through another means.

Pantilat SZ, Lindenauer PK, Katz PP, Wachter RM. Primary care physician attitudes regarding communication with hospitalists. *Am J Med.* 2001;111:15S-20S.

Rosenthal JM, Miller DB. Providers have failed to work for continuity. *Hospitals.* 1979;53(10):79-83.

Wachter RM. The relationship between hospitalists and primary care physicians. *Ann Intern Med.* 2010;152(7):474.

Best
Practices

V. Reengineering Systems

a. Discharge Planning

Anderson D, Price C, Golden B, Jank W, Wasil E. Examining the discharge practices of surgeons at a large medical center. *Health Care Manag Sci.* 2011;14(4):338-347.

Balaban RB, Weissman JS, Samuel PA, Woolhandler S. Redefining and redesigning hospital discharge to enhance patient care: a randomized controlled study. *J Gen Intern Med.* 2008;23(8):1228-1233.

> Inadequate communication between inpatient physicians and primary care providers exacerbates patients' ill-preparedness for transition from hospital to home. A low-cost intervention, including a patient-friendly discharge form and telephone outreach, was implemented to reconnect patients to their "medical home." By better connecting patients to their primary care physicians, rates of outpatient follow-up and completed workups improved.

Finn KM, Heffner R, Chang Y, Bazari H, Hunt D, Pickell K, et al. Improving the discharge process by embedding a discharge facilitator in a resident team. *J Hosp Med.* 2011;6(9):494-500.

> Embedding a discharge facilitator into a resident medical team to help with the discharge process improved timeliness of completing discharge summaries, increased the number of early follow-up appointments and improved the patient's self-reported understanding of discharge instructions. There was, however, no improvement in readmission rates and emergency department utilization.

Graumlich JF, Grimmer-Somers K, Aldag JC. Discharge planning scale: community physicians' perspective. *J Hosp Med.* 2008;3(6):455-464.

Graumlich JF, Novotny NL, Aldag JC. Brief scale measuring patient preparedness for hospital discharge to home: Psychometric properties. *J Hosp Med.* 2008;3(6):446-454.

Greysen SR, Schiliro D, Horwitz LI, Curry L, Bradley EH. "Out of sight, out of mind": housestaff perceptions of quality-limiting factors in discharge care at teaching hospitals. *J Hosp Med.* 2012;7(5):376-381.

Horwitz LI, Moriarty JP, Chen C, Fogerty RL, Brewster UC, Kanade S, et al. Quality of discharge practices and patient understanding at an academic medical center. *JAMA Intern Med.* 2013 Aug 19 [Epub ahead of print].

Kind AJ, Thorpe CT, Sattin JA, Walz SE, Smith MA. Provider characteristics, clinical-work processes and their relationship to discharge summary quality for sub-acute care patients. *J Gen Intern Med.* 2012;27(1):78-84.

Manning DM, Tammel KJ, Blegen RN, Larson LA, Steffens FL, Rosenman DJ, et al. In-room display of day and time patient is anticipated to leave hospital: a "discharge appointment." *J Hosp Med.* 2007;2(1):13-16.

Metzjer J. Preventing Hospital Readmissions: The First Test Case For Continuity of Care. Global Institute for Emerging Healthcare Practices. Computer Science Corporation. Jul 2012;1-12.

Moore C, McGinn T, Halm E. Tying up loose ends: discharging patients with unresolved medical issues. *Arch Intern Med.* 2007;167(12):1305-1311.

> Hospital physicians frequently recommend that patients complete outpatient workups after hospital discharge. Although it appears a large percentage of discharge summaries were successfully received by primary care physicians, less than half contained documentation on recommended workups. Lack of documentation and increased time to initial post-discharge primary care visit was associated with lower workup completion rates.

V. Reengineering Systems
(Continued)

O'Leary KJ, Liebovitz DM, Feinglass J, Liss DT, Evans DB, Kulkarni N, et al. Creating a better discharge summary: improvement in quality and timeliness using an electronic discharge summary. *J Hosp Med.* 2009;4(4):219-225.

> An electronically generated discharge summary was well accepted by inpatient physicians and significantly improved the quality and timeliness of discharge summaries. The electronically generated discharge summary incorporated pre-existing patient data, streamlined delivery to outpatient physicians and created an electronic reminder system for those summaries that were outstanding 24 hours after discharge. Hospitals are encouraged to expand their use of EMRs and take advantage of opportunities to leverage functionality to improve quality and timeliness of discharge summaries.

Ong MS, Magrabi F, Jones G, Coiera E. Last Orders: Follow-up of tests ordered on the day of hospital discharge. *Arch Intern Med.* 2012;172(17):1347-1349.

> Tests requested on the day of discharge disproportionally contribute to the total number of tests not followed up with at time of discharge and two months after discharge. This raises concerns regarding patient safety, as 14.7% of missed test results at discharge and 10.8% of missed test results two months after discharge were abnormal. In an effort to minimize missed test results, researchers suggest implementing a targeted computer intervention to alert physicians of pending results.

Poon EG, Gandhi TK, Sequist TD, Murff HJ, Karson AS, Bates DW. "I wish I had seen this test result earlier!": Dissatisfaction with test result management systems in primary care. *Arch Intern Med.* 2004;164(20):2223-2228.

Rhodes KV. Completing the play or dropping the ball?: The case for comprehensive patient-centered discharge planning. *JAMA* Intern Med. 2013 Aug 19 [Epub ahead of print].

Roy CL, Poon EG, Karson AS, Ladak-Merchant Z, Johnson RE, Maviglia SM, et al. Patient safety concerns arising from test results that return after hospital discharge. *Ann Intern Med.* 2005;143(2):121-128.

> Discontinuity of care at the inpatient-to-outpatient transition has been shown to be associated with failures to follow up on results of laboratory tests and radiologic studies that return after discharge. In this study, physicians were unaware that 62% of actionable test results were returned after discharge, and inpatient physicians were dissatisfied with their current ability to follow up on such results. Future studies should focus on fail-safe communication and follow-up systems for test results.

Shepperd S, Lannin NA, Clemson LM, McCluskey A, Cameron ID, Barras SL. Discharge planning from hospital to home. *Cochrane Database Syst Rev.* 2013;1:CD000313.

> This study reviewed the effectiveness of an individualized discharge plan in the hospital setting. For older patients with a medical diagnosis, being allocated to the discharge planning experience reduced hospital length of stay and readmission rate. There was some evidence (three trials) to suggest that patients receiving discharge planning experience increased levels of satisfaction with their hospital and discharge care. Only three out of 24 studies reported a cost savings result from implementing discharge planning.

Soong C, Daub S, Lee J, Majewski C, Musing E, Nord P, et al. Development of a checklist of safe discharge practices for hospital patients. *J Hosp Med.* 2013; 8(8):444-449.

> By taking a multi-angled approach to checklist development, this discharge rubric represents a new standardized process of aiding care teams in navigating the complexities and nuances of patient discharge. An important feature of this checklist is its proposed timeline, which initiates discharge planning from the day of admission, implying that successful discharges are comprehensive, coordinated efforts.

Best Practices

VanSuch M, Naessens JM, Stroebel RJ, Huddleston JM, Williams AR. Effect of discharge instructions on readmission of hospitalised patients with heart failure: do all of the Joint Commission on Accreditation of Healthcare Organizations heart failure core measures reflect better care? *Quality & Safety in Health Care*. 2006;15(6):414-417.

> This study presents strong evidence that documentation of discharge information and patient education, particularly instructions on activities, appears to be associated with reductions in readmissions. Providing patients with comprehensive discharge instructions seems to contribute to keeping patients out of the hospital, and may be a valid approach to preventing future hospital readmissions.

Weiss ME, Piacentine LB, Lokken L, Ancona J, Archer J, Gresser S, et al. Perceived readiness for hospital discharge in adult medical-surgical patients. *Clin Nurse Spec*. 2007;21(1):31-42.

Weiss ME, Yakusheva O, Bobay KL. Quality and cost analysis of nurse staffing, discharge preparation, and postdischarge utilization. *Health Serv Res.* 2011; 46(5):1473-1494.

> Little is known about the relationship between nurse staffing during hospitalization and post-discharge outcomes. This study looked at the relationships between nurse staffing structure and post-discharge readmission and emergency utilization. Post-discharge utilization costs were found to be reduced by investing in nursing care hours to better prepare patients at discharge.

Were MC, Li X, Kesterson J, Cadwallader J, Asirwa C, Khan B, et al. Adequacy of hospital discharge summaries in documenting tests with pending results and outpatient follow-up providers. *J Gen Intern Med*. 2009;24(9):1002-1006.

b. Follow-Up Appointment

Beck AM, Kjaer S, Hansen BS, Storm RL, Thal-Jantzen K, Bitz C. Follow-up home visits with registered dietitians have a positive effect on the functional and nutritional status of geriatric medical patients after discharge: a randomized controlled trial. *Clin Rehabil.* 2012;27(6):483-493.

> Follow-up home visits with registered dieticians have a positive effect on the functional and nutritional status of geriatric medical patients after discharge but no effect on risk of readmission or mortality.

Gheorghiade M, Bonow RO. Early follow-up after hospitalization for heart failure. *Nat Rev.* 2010;7:1-3.

Hernandez AF, Greiner MA, Fonarow GC, Hammill BG, Heidenreich PA, Yancy CW, et al. Relationship between early physician follow-up and 30-day readmission among Medicare beneficiaries hospitalized for heart failure. *JAMA.* 2010;303(17):1716-1722.

> Previous studies show that patients who have an early follow-up visit after hospital discharge have a lower risk of 30-day readmission. Despite the high risk of readmission among patients hospitalized for heart failure, most patients in this study did not visit a physician within a week of discharge. Outpatient follow-up is a central element of transitional care and varies significantly across hospitals. These findings highlight the need for improvement and greater consistency in coordination of care from inpatient to outpatient settings.

Sharma G, Kuo YF, Freeman JL, Zhang DD, Goodwin JS. Outpatient follow-up visit and 30-day emergency department visit and readmission in patients hospitalized for chronic obstructive pulmonary disease. *Arch Intern Med.* 2010;170(18):1664-1670.

> One in five patients discharged with COPD are readmitted to the hospital within 30 days of discharge. These readmissions are costly and potentially preventable. This study shows that patients with COPD who had an early follow-up appointment with their primary care physician or pulmonologist after acute hospitalization had lower odds of a 30-day emergency department visit or hospital readmission, compared with patients with no such follow-up.

V. Reengineering Systems
(Continued)

c. Follow-Up Phone Call

Beebe LH. Community nursing support for clients with schizophrenia. *Arch Psychiatr Nurs*. 2001;15(5):214-222.

Beney J, Devine EB, Chow V, Ignoffo RJ, Mitsunaga L, Shahkarami M, et al. Effect of telephone follow-up on the physical well-being dimension of quality of life in patients with cancer. *J Pharmacother*. 2002;22(10):1301-1311.

Bowles KH, Holland DE, Horowitz DA. A comparison of in-person home care, home care with telephone contact and home care with telemonitoring for disease management. *J Telemed Telecare*. 2009;15(7):344-350.

> Telephone follow-up may not only result in no difference in the outcome of rehospitalization, but may actually point toward a trend in increased health resource utilization. The problem of communication and collaboration between care providers can exacerbate problems with poorly structured telephone follow-up programs.

Brandon AF, Schuessler JB, Ellison KJ, Lazenby RB. The effects of an advanced practice nurse led telephone intervention on outcomes of patients with heart failure. *Appl Nurs Res*. 2009;22(4):e1-7.

> Using a structured education and care approach to heart failure care management, an APN-led telephone intervention can be an effective means of reducing readmissions and improving quality of life for patients.

Braun E, Baidusi A, Alroy G, Azzam ZS. Telephone follow-up improves patients satisfaction following hospital discharge. *Eur J Intern Med.* 2009;20(2):221-225.

> Based on this study, there is likelihood for improving patient satisfaction, medication compliance and discharge recommendation compliance with the use of telephone follow-up.

Caljouw MA, Hogendorf-Burgers ME. GYNOTEL: telephone advice to gynaecological surgical patients after discharge. *J Clin Nurs.* 2010;19(23-24):3301-3306.

> Gynecologic patients undergoing surgery with an anticipated postoperative stay of >24 hours on the hospital ward subjectively benefitted from advice given by experienced nurses with regards to common postoperative and post-discharge complications, including symptoms of wound healing, pain, urination, constipation, vaginal bleeding and mobility. Results support the gender-based idea that women carry more roles at home (caregiving) and therefore may need more instructions on daily life after discharge to help incorporate self-care into their daily routines and multi-tasking roles.

Chaudhry SI, Mattera JA, Curtis JP, Spertus JA, Herrin J, Lin Z, et al. Telemonitoring in patients with heart failure. *N Engl J Med*. 2010;363(24):2301-2309.

> This multicenter telemonitoring trial, designed for patients recently hospitalized with heart failure, was found to have no reduction in the risk of readmission or death from any cause when compared to usual care. Subgroup analysis also failed to identify a group for which a telemonitoring intervention would be effective. This study underscores the need for a rigorous, independent evaluation of disease-management systems before their adoption.

Chen YH, Ho YL, Huang HC, Wu HW, Lee CY, Hsu TP, et al. Assessment of the clinical outcomes and cost-effectiveness of the management of systolic heart failure in Chinese patients using a home-based intervention. *J Int Med Res*. 2010;38(1):242-252.

> Results show significant reductions in all-cause admission rate, all-cause hospital length of stay and medical costs for patients enrolled in a home-based telephone intervention. Important to note, there is a difference between "telephone case management" and a "home-based intervention" with telephone calls. This study highlights the benefits of a comprehensive program of phone calls to assist patients who are at home with chronic conditions such as congestive heart failure.

V. Reengineering Systems
(Continued)

Crocker JB, Crocker JT, Greenwald JL. Telephone follow-up as a primary care intervention for postdischarge outcomes improvement: a systematic review. *Am J Med*. 2012;125(9):915-921.

> Existing literature was reviewed to investigate the strength of telephone follow-up as an effective primary care based intervention in improving quality outcomes and reducing readmission and associated medical costs during the post-discharge period. None of the studies reported a statistically significant impact of telephone calls on hospital readmission rates. All of the studies reported improved post-discharge primary care contact as a result of telephone follow-up.

D'Amore J, Murray J, Powers H, Johnson C. Does telephone follow-up predict patient satisfaction and readmission? *Popul Health Manag*. 2011;14(5):249-255.

> Researchers comprehensively examined patient response differences on a mail satisfaction survey after receiving a nurse-facilitated telephone follow-up. Telephone follow-up was a significant predictor of survey response for patients who receive a post-discharge callback compared to those who did not. Unexpectedly, telephone follow-up did not predict patient satisfaction ratings for nursing or overall care.

Deiker TE, Villemarette TJ. Liberal telephone policy in treatment and aftercare helps reduce readmissions. *Hosp Community Psychiatry*. 1973;24(2):71 passim.

> This study provides evidence in support of telephone follow-up. Telephone access to hospital staff was shown to benefit psychiatric patients and their families/caregivers and prevent readmissions.

Dudas V, Bookwalter T, Kerr KM, Pantilat SZ. The impact of follow-up telephone calls to patients after hospitalization. *Am J Med*. 2001;111:26S-30S.

> Pharmacists may provide a valuable service in the context of follow-up discharge phone calls; however, in this study the pharmacists had a high case load and were unable to enroll the majority of patients discharged during the time frame of the study due to time and resource limitations. The average call time was approximately 30 minutes per call.

Ezenkwele UA, Sites FD, Shofer FS, Pritchett EN, Hollander JE. A randomized study of electronic mail versus telephone follow-up after emergency department visit. *J Emerg Med*. 2003;24(2):125-130.

> Telephone follow-up was shown to be superior to electronic communication with email in communicating with patients. However, this study did not discuss the impact of telephone follow-up on readmissions or repeated visits to the emergency department.

Fallis WM, Scurrah D. Outpatient laparoscopic cholecystectomy: home visit versus telephone follow-up. *Can J Surg*. 2001;44(1):39-44.

> Telephone calls are an appropriate means of follow-up for same-day surgery patients undergoing laparoscopic cholecystectomy, and should be performed within 24 hours of discharge.

Hanssen TA, Nordrehaug JE, Hanestad BR. A qualitative study of the information needs of acute myocardial infarction patients, and their preferences for follow-up contact after discharge. *Eur J Cardiovasc Nurs*. 2005;4(1):37-44.

Harrison PL, Hara PA, Pope JE, Young MC, Rula EY. The impact of postdischarge telephonic follow-up on hospital readmissions. *Popul Health Manag.* 2011;14(1):27-32.

> This study suggests that hospitals should take a population-level view of telephone follow-up. Cost savings resulting from follow-up are likely to be realized by insurers and Medicare for found improvements in readmission rates.

Hodgins MJ, Ouellet LL, Pond S, Knorr S, Geldart G. Effect of telephone follow-up on surgical orthopedic recovery. *Appl Nurs Res.* 2008;21(4):218-226.

> Results highlight that follow-up calls need to be structured and training should be provided with regards to appropriate timing, length of call and topics covered in the call.

Jerant AF, Azari R, Nesbitt TS. Reducing the cost of frequent hospital admissions for congestive heart failure: a randomized trial of a home telecare intervention. *Med Care.* 2001;39(11):1234-1245.

> Patients with congestive heart failure benefit from telephone or tele-care follow-up. These interventions reduce readmissions and costs related to congestive heart failure but not all-cause readmissions and costs.

Johnson MB, Laderman M, Coleman EA. Enhancing the effectiveness of follow-up phone calls to improve transitions in care: three decision points. *Jt Comm J Qual Patient Saf.* 2013;39(5):221-227.

> Telephone follow-ups are a relatively low-cost intervention for improving care transitions and reducing hospital readmissions, yet there is little standardization on how they should be conducted. This article identifies some initial steps that organizations can take to develop and implement telephone follow-up programs. More specifically, it addresses who should make the calls, what information is essential, and the timing, frequency and duration.

Lawlor M, Kealy S, Agnew M, Korn B, Quinn J, Cassidy C, et al. Early discharge care with ongoing follow-up support may reduce hospital readmissions in COPD. *Int J Chron Obstruct Pulmon Dis.* 2009;4:55-60.

> The use of telephone follow-up as part of a greater package of interventions targeting patients with COPD is described in the article. The intervention was seen to reduce readmissions and emergency department visits.

Lee L. Improving the quality of patient discharge from emergency settings. *Br J Nurs.* 2004;13(7):412-421.

> This study demonstrates that a structured quality improvement program around telephone follow-ups will lead to improved discharge documentation and plans for patients and the hospital.

Mistiaen P, Poot E. Telephone follow-up, initiated by a hospital-based health professional, for postdischarge problems in patients discharged from hospital to home. *Cochrane Database Syst Rev.* 2006(4):CD004510.

> There is no agreement about the critical elements of an effective telephone follow-up intervention. Large variations were identified on how telephone follow-up is completed, and effects were not consistent across studies or within patient groups. We need larger scale, higher quality studies with more comparable interventions in order to answer questions regarding effects.

Morgan GJ, Craig B, Grant B, Sands A, Doherty N, Casey F. Home videoconferencing for patients with severe congenital heart disease following discharge. *Congenit Heart Dis*. 2008;3(5):317-324.

> The feasibility of videoconferencing with families and patients after discharge is important to consider prior to implementing such strategies. Impact of videoconferencing on readmissions was unfortunately not measured in this study.

Nelson JR. The importance of postdischarge telephone follow-up for hospitalists: a view from the trenches. *Am J Med*. 2001;111(9B):273-275.

Riley J. Telephone call-backs: final patient care evaluation. *Nurs Manage*. 1989;20(9):64-66.

> Benefits of call-back are unique to each system, but can include the improvement of care delivery and readjustment of services to better meet patient needs.

Roebuck A. Telephone support in the early post-discharge period following elective cardiac surgery: does it reduce anxiety and depression levels? *Intensive Crit Care Nurs.* 1999;15(3):142-146.

> Telephone follow-ups do not reduce patient anxiety or depression levels, but do provide some perceived benefit to patients after cardiothoracic surgery.

Rosen CS, DiLandro C, Corwin KN, Drescher KD, Cooney JH, Gusman F. Telephone monitoring and support for veterans with chronic posttraumatic stress disorder: a pilot study. *Community Ment Health J.* 2006;42(5):501-508.

> This study emphasized the need for close (tight) telephone-based follow-up as a means of ensuring compliance with outpatient therapy for psychiatric patients.

Spaniel F, Vohlidka P, Hrdlicka J, Kozeny J, Novak T, Motlova L, et al. ITAREPS: information technology aided relapse prevention programme in schizophrenia. *Schizophr Res.* 2008;98(1-3):312-317.

> This study utilizes questionnaires filled out by the patient and/or their family members, which are sent by text messaging to a program that then automates whether or not an alert should be sent to the psychiatrist. The use of specialized text messages to prevent rehospitalizations revealed positive results and should be considered.

Thibodeau LG, Chan L, Reilly KM, Reyes VM. Improving telephone contact rates of patients discharged from the emergency department. *Ann Emerg Med.* 2000;35(6):564-567.

> One question was identified as most useful in acquiring patient contact information for purpose of follow-up after discharge. Asking patients the simple question: "What number can we reach you at to discuss lab or x-ray results?" yielded the best results.

Wennberg DE, Marr A, Lang L, O'Malley S, Bennett G. A randomized trial of a telephone care-management strategy. *N Engl J Med.* 2010;363(13):1245-1255.

> A telephone-based intervention that substantially reduces total health care costs and utilization of healthcare services by supporting patients' involvement in the decision-making process. Patients with chronic and high-risk conditions also saw reductions in readmissions and emergency department visits. Similar interventions could be an effective component of healthcare reform.

Wheeler EC, Waterhouse JK. Telephone interventions by nursing students: improving outcomes for heart failure patients in the community. *J Community Health Nurs.* 2006;23(3):137-146.

d. After-Discharge Care

Bray-Hall ST. Transitional care: focusing on patient-centered outcomes and simplicity. *Ann Intern Med.* 2012;157(6):448-449.

Cain CH, Neuwirth E, Bellows J, Zuber C, Green J. Patient experiences of transitioning from hospital to home: an ethnographic quality improvement project. *J Hosp Med.* 2012;7(5):382-387.

> Patients and families/caregivers experience several challenges while transitioning from hospital to home. More specifically, patients felt that their anxiety about leaving the hospital affected the amount of information absorbed during discharge and led to overestimating their ability to function independently. Once home, patients and families/caregivers expressed uncertainty about medication management, transportation and who to call for information and assistance.

Epstein K, Juarez E, Loya K, Gorman MJ, Singer A. Frequency of new or worsening symptoms in the posthospitalization period. *J Hosp Med.* 2007;2(2):58-68.

> Clinicians routinely advise patients to contact their outpatient provider as a safety net measure if any new or worsening symptoms occur at home. However, findings in this study show that a significant percentage of patients do experience new or worsening symptoms shortly after discharge and are minimally more likely to have made a follow-up appointment. In addition to limited follow-up appointments, these patients are also more likely to have medication issues and problems with receiving home healthcare services.

Kane RL. Finding the right level of posthospital care: "We didn't realize there was any other option for him." *JAMA.* 2011;305(3):284-293.

Tsilimingras D, Bates DW. Addressing postdischarge adverse events: a neglected area. *Jt Comm J Qual Patient Saf.* 2008;34(2):85-97.

van Walraven C, Mamdani M, Fang J, Austin PC. Continuity of care and patient outcomes after hospital discharge. *J Gen Intern Med.* 2004;19(6):624-631.

> The effects of hospital-physician continuity of care upon early patient outcomes are increasingly important because community physicians are becoming less likely to see patients in the hospital setting. Results show that patient outcomes can be improved if early post-discharge visits are with physicians who treated the patient in the hospital rather than another physician. Follow-up visits with a hospital physician could be a modifiable factor to improve patient outcomes after discharge.

VI. Readmission Prediction Model

Allaudeen N, Schnipper JL, Orav EJ, Wachter RM, Vidyarthi AR. Inability of providers to predict unplanned readmissions. *J Gen Intern Med*. 2011;26(7):771-776.

> Risk stratification is one tool that has the potential to be very useful when addressing readmissions. Evidence suggests that inpatient providers currently make informal predictions of readmission with unknown accuracy. This study shows neither providers (physicians, case managers and nurses) nor an algorithm (Pra) were successful in predicting 30-day readmissions or cause of readmission of older patients.

Kansagara D, Englander H, Salanitro A, Kagen D, Theobald C, Freeman M, et al. Risk prediction models for hospital readmission: a systematic review. *JAMA.* 2011;306(15):1688-1698.

> Because of rising hospital readmission rates, much is needed to improve the current readmission risk prediction models. A literature review revealed that most readmission risk prediction models were developed for comparative and clinical purposes and had poor predictive ability.

Koekkoek D, Bayley KB, Brown A, Rustvold DL. Hospitalists assess the causes of early hospital readmissions. *J Hosp Med*. 2011;6(7):383-388.

Lopez-Aguila S, Contel JC, Farre J, Campuzano JL, Rajmil L. Predictive model for emergency hospital admission and 6-month readmission. *Am J Man Care*. 2011;17(9):e348-357.

Smith DM, Giobbie-Harder A, Weinberger M, Oddone EZ, Henderson WG, Asch DA, et al. Predicting non-elective hospital readmissions: a multi-site study. Department of Veterans Affairs Cooperative Study Group on Primary Care and Readmissions. *J Clin Epidemiol*. 2000;53(11):1113-1118.

van Walraven C, Dhalla IA, Bell C, Etchells E, Stiell IG, Zarnke K, et al. Derivation and validation of an index to predict early death or unplanned readmission after discharge from hospital to the community. *CMAJ*. 2010;182(6):551-557.

> This study identified and validated an index to predict risk of death or unplanned readmission within 30 days after discharge from the hospital to the community. The LACE index was found to be an easy-to-use, accurate tool, with good discriminative abilities. By identifying an index to quantify the risk of readmission or death after discharge, clinicians can better target patients who can benefit from more intensive post-discharge care.

VII. Readmission Measures, Quality and Policy

Agency for Healthcare Research and Quality. 2009 National Healthcare Quality Report. U.S. Department of Health and Human Services; 2010:1-155.

Ayanian JZ. The elusive quest for quality and cost savings in the Medicare program. *JAMA*. 2009;301(6):668-670.

Axon RN, Williams MV. Hospital readmission as an accountability measure. *JAMA*. 2011;305(5):504-505.

Berenson RA, Paulus RA, Kalman NS. Medicare's readmissions-reduction program: a positive alternative. *N Engl J Med*. 2012;366(15):1364-1366.

Berenson J, Shih A. Higher readmissions at safety-net hospitals and potential policy solutions. Issue Brief (Commonwealth Fund). 2012;34:1-16.

Bhalla R, Kalkut G. Could Medicare readmission policy exacerbate health care system inequity? *Ann Intern Med*. 2010;152(2):114-117.

Bindman AB, Blum JD, Kronick R. Medicare's transitional care payment: a step toward the medical home. *N Engl J Med*. 2013;368(8):692-694.

> The Affordable Care Act provides primary care physicians participating in Medicare with a financial incentive for actively participating in care coordination and for tailoring outpatient services to match patients' needs. New transitional codes is one of the first steps CMS made to move away from a fee-for-service payment model and support efforts in improving transitional care.

Bonner A, Schneider C, Weissman J. Massachusetts Strategic Plan for Care Transitions. Massachusetts State Quality Improvement Institute; 2010:1-72.

Bozak A, Volland P, Weiss L. Expanding Research on Care Coordination for Older Adults: A Discussion of Programs, Methods, and Outcomes. The New York Academy of Medicine. 2013;1(1).

Chollet D, Barrett A, Lake T. Reducing Hospital Readmissions in New York State: A Simulation Analysis of Alternative Payment Incentives. NYS Health Foundation; 2011.

Clancy CM. Commentary: reducing hospital readmissions: aligning financial and quality incentives. *Am J Med Qual*. 2012;27(5):441-443.

Farmer SA, Black B, Bonow RO. Tension between quality measurement, public quality reporting, and pay for performance. *JAMA*. 2013;309(4):349-350.

Fontanarosa PB, McNutt RA. Revisiting hospital readmissions. *JAMA*. 2013;309(4):398-400.

Glass D, Lisk C, Stensland J. Refining the Hospital Readmissions Reduction Program. Advising the Congress on Medicare Issues: MedPAC; 2012:1-19.

Gerhardt G, Yemane A, Hickman P, Oelschlaeger A, Rollins E, Brennan N. Medicare Readmission Rates Show Meaningful Decline in 2012. *MMRR*. 2013;3(2):E1-E12.

> The analysis indicates that hospital readmission rates for all Medicare fee-for-service beneficiaries dropped noticeably during the calendar year 2012, compared to data from 2007 through 2011. Further analysis showed hospitals participating in the Partnership for Patients program saw consistently lower readmission rates than those not participating. However, the reasons behind the apparent reduction are not yet clear and merit further investigation. A shift from "admission" status to "observation" might explain this as there was simultaneously a marked increase in patients placed in observation (outpatient) status.

Golden R, Brock J, Shephard B. Breaking Down Silos of Care: Integration of Social Support Services with Health Care Delivery. National Health Policy Forum; 2012.

Gorodeski EZ, Starling RC, Blackstone EH. Are all readmissions bad readmissions? *N Engl J Med.* 2010;363(3):297-298.

Guo L, Chung ES, Casey DE, Jr., Snow R. Redefining hospital readmissions to better reflect clinical course of care for heart failure patients. *Am J Med Qual.* 2007;22(2):98-102.

Hernandez AF, Curtis LH. Minding the gap between efforts to reduce readmissions and disparities. *JAMA.* 2011;305(7):715-716.

Horwitz L, Partovian C, Herrin J, Grady J, Conover M, Montague J, et al. Hospital-Wide All-Cause Unplanned Readmission Report. Yale New Haven Health Services Corporation/Center for Outcomes Research & Evaluation (YNHHSC/CORE); 2012:1-98.

Horwitz LI, Wang Y, Desai MM, Curry LA, Bradley EH, Drye EE, et al. Correlations among risk-standardized mortality rates and among risk-standardized readmission rates within hospitals. *J Hosp Med.* 2012;7(9):690-696.

Jeffs L, Law MP, Straus S, Cardoso R, Lyons RF, Bell C. Defining quality outcomes for complex-care patients transitioning across the continuum using a structured panel process. *BMJ Qual Saf.* 2013;0:1-11.

> Patients with complex needs associated with their multiple diseases, comorbidities and conditions frequently require care in multiple settings, and are particularly vulnerable to poorly executed transitions in care. Through a structured panel process, researchers identified five quality measures for care tranisitions involving complex-care patients. By identifying specific quality measures, organizations can ascertain how well they are doing, make improvements where necessary and be accountable to the patients who are transitioning.

Jencks SF, Williams MV, Coleman EA. Rehospitalizations among patients in the Medicare fee-for-service program. *N Engl J Med.* 2009;360(14):1418-1428.

> Medicare claims data was examined to describe patterns of rehospitalization. Almost one-fifth of Medicare beneficiaries were rehospitalized within 30 days, and an additional one-third were rehospitalized within 90 days. Readmissions were found to be associated with longer hospital lengths of stay and higher costs when compared to hospitalization of patients with similar medical conditions but not experiencing a rehospitalization.

Jha AK, Orav EJ, Epstein AM. Public reporting of discharge planning and rates of readmissions. *N Engl J Med.* 2009;361(27):2637-2645.

> Improvements made on current discharge planning measures are unlikely to have a meaningful effect on 30-day readmissions and patient-reported discharge measures (HCAHPS) for patients with CHF and pneumonia.

Joynt KE, Jha AK. A path forward on Medicare readmissions. *N Engl J Med.* 2013;368(13):1175-1177.

Joynt KE, Jha AK. Characteristics of hospitals receiving penalties under the Hospital Readmissions Reduction Program. *JAMA.* 2013;309(4):342-343.

> The federal Hospital Readmissions Reduction Program (HRRP) began penalizing hospitals whose readmission rates were higher than predicted by CMS models based on case mix. Researchers in this article examined the relationship between risk of penalty and hospitals that care for a large population of medically complex and socioeconomically vulnerable patients. Hospitals that were large, teaching or safety net hospitals were found to have a higher risk.

Joynt KE, Jha AK. Thirty-day readmissions—truth and consequences. *N Engl J Med*. 2012;366(15):1366-1369.

Kangovi S, Grande D. Hospital readmissions—not just a measure of quality. *JAMA*. 2011;306(16):1796-1797.

Katz MH. Emergency department care: when needed—not when better choices are unavailable. *Arch Intern Med*. 2012;172(8):609-610.

Katz MH. Interventions to decrease hospital readmission rates: who saves? who pays? *Arch Intern Med*. 2011;171(14):1230-1231.

Kocher RP, Adashi EY. Hospital readmissions and the Affordable Care Act: paying for coordinated quality care. *JAMA*. 2011;306(16):1794-1795.

Kocher R, Sahni NR. Rethinking health care labor. *N Engl J Med*. 2011;365(15):1370-1372.

Koh HK, Berwick DM, Clancy CM, Baur C, Brach C, Harris LM, et al. New federal policy initiatives to boost health literacy can help the nation move beyond the cycle of costly "crisis care." *Health Aff* (Millwood). 2012;31(2):434-443.

Marks E. Complexity science and the readmission dilemma. *JAMA Intern Med*. 2013;173(8):629-631.

MedPAC. Care coordination in fee-for-service Medicare. In: Medicare and the Health Care Delivery System. Report to the Congress: MedPAC; 2012:33-58.

MedPAC. Health Care Spending and the Medicare Program. MedPAC; 2010:1-233.

MedPAC. Medicare and the Health Care Delivery System. Report to Congress: MedPAC; 2011;1-207.

MedPAC. Medicare Payment Policy. Report to Congress: MedPAC; 2010:1-381.

MedPAC. Post-acute care providers: Common themes. Report to the Congress: MedPAC; 2010:165-169.

Mor V, Besdine RW. Policy options to improve discharge planning and reduce rehospitalization. *JAMA*. 2011;305(3):302-303.

Naylor MD, Aiken LH, Kurtzman ET, Olds DM, Hirschman KB. The care span: The importance of transitional care in achieving health reform. *Health Aff* (Millwood). 2011;30(4):746-754.

Naylor MD, Kurtzman ET, Grabowski DC, Harrington C, McClellan M, Reinhard SC. Unintended consequences of steps to cut readmissions and reform payment may threaten care of vulnerable older adults. *Health Aff* (Millwood). 2012;31(7):1623-1632.

> This article outlines three provisions of the Affordable Care Act that were designed to enhance care transitions for adults with chronic illness. Major concerns are noted regarding unintended consequences for older adults receiving long-term services. Because new provisions focus on the acute care setting, issues related to the fragmentation of care are not adequately addressed.

Newman JR, Scoville E, Smith R, Van Brunt N. Some to Take in and Some to Refuse: A Historical Perspective on Hospital Admissions. Collaborative Case Management:3-5.

Pham HH, Grossman JM, Cohen G, Bodenheimer T. Hospitalists and care transitions: the divorce of inpatient and outpatient care. *Health Aff* (Millwood). 2008;27(5):1315-1327.

Sadownik S, Ray N. Population-based measures of ambulatory care quality: potentially preventable admissions and emergency department visits. Advising the Congress on Medicare Issues: MedPAC; 2012:1-15.

Stefan MS, Pekow PS, Nsa W, Priya A, Miller LE, Bratzler DW, et al. Hospital performance measures and 30-day readmission rates. *J Gen Intern Med*. 2012;28(3):377-385.

The Dartmouth Institute for Health Policy & Clinical Practice. The Revolving Door: A Report on U.S. Hospital Readmissions. Robert Wood Johnson Foundation; 2013:1-60.

Trivedi AN, Moloo H, Mor V. Increased ambulatory care copayments and hospitalizations among the elderly. *N Engl J Med*. 2010;362(4):320-328.

> This study examined the changes in the use of outpatient and inpatient care of Medicare beneficiaries enrolled in plans that increased copayments for ambulatory care. In the year after copayments were increased, fewer annual outpatient visits and additional hospital admissions and inpatient days were identified. The effects of increased copayments was particularly negative for enrollees who were elderly, living in low-income areas, or had hypertension, diabetes or a history of acute myocardial infarction.

Vaduganathan M, Bonow RO, Gheorghiade M. Thirty-day readmissions: the clock is ticking. *JAMA*. 2013;309(4):345-346.

van Walraven C, Bennett C, Jennings A, Austin PC, Forster AJ. Proportion of hospital readmissions deemed avoidable: a systematic review. *CMAJ*. 2011;183(7):E391-402.

> The validity of hospital readmissions as an indicator of quality depends on the extent that readmissions are avoidable. The median proportion of readmissions deemed avoidable in this study was 27.1%, significantly lower than the 76% reported by the Medicare Payment Advisory Commission. Although the variation in proportion of avoidable readmissions seen in this study could reflect true differences in quality of patient care, it also reflects the subjectivity of the outcome itself.

van Walraven C, Wong J, Hawken S, Forster AJ. Comparing methods to calculate hospital-specific rates of early death or urgent readmission. *CMAJ*. 2012;184(15):E810-E817.

Williams MV. A requirement to reduce readmissions: take care of the patient, not just the disease. *JAMA*. 2013;309(4):394-396.

VIII. Readmission Epidemiology

Anderson D, Golden B, Jank W, Wasil E. The impact of hospital utilization on patient readmission rate. *Health Care Manag Sci.* 2012;15(1):29-36.

Arbaje AI, Wolff JL, Yu Q, Powe NR, Anderson GF, Boult C. Postdischarge environmental and socioeconomic factors and the likelihood of early hospital readmission among community-dwelling Medicare beneficiaries. *Gerontologist.* 2008;48(4):495-504.

Boulding W, Glickman SW, Manary MP, Schulman KA, Staelin R. Relationship between patient satisfaction with inpatient care and hospital readmission within 30 days. *Am J Manag Care.* 2011;17(1):41-48.

> Using the HCAHPS patient satisfaction survey, hospitals where patients reported higher overall satisfaction on their interactions among the hospital, staff, and more specifically their experience with the discharge process, had lower 30-day readmission rates. These findings support the idea of using patient-reported information in combination with objective clinical measures to assess quality of care.

Bueno H, Ross JS, Wang Y, Chen J, Vidan MT, Normand SL, et al. Trends in length of stay and short-term outcomes among Medicare patients hospitalized for heart failure, 1993–2006. *JAMA.* 2010;303(21):2141-2147.

> During the last decade a substantial decrease in the length of stay for patients with heart failure has been observed. This study examined temporal changes in length of stay and short-term outcomes among older patients with heart failure and found that between 1993 and 2006 the risk-adjusted 30-day mortality and readmission risks changed progressively and inversely.

Cheng SH, Chen CC, Hou YF. A longitudinal examination of continuity of care and avoidable hospitalization: evidence from a universal coverage health care system. *Arch Intern Med.* 2010;170(18):1671-1677.

Epstein AM, Jha AK, Orav EJ. The relationship between hospital admission rates and rehospitalizations. *N Engl J Med.* 2011;365(24):2287-2295.

> This study looked at regional variation in readmission rates among patients initially hospitalized for congestive heart failure or pneumonia. A substantial association between regional rates of rehospitalization and overall admission rates was identified. All-cause admission rates were strong predictors of regional differences in readmission.

Falconio-West M. Hospital Readmissions: Facts, Challenges, and Real-Life Solutions. Improving Quality of Care Based on CMS Guidelines: Quality Improvement Organization:24-28.

Feigenbaum P, Neuwirth E, Trowbridge L, Teplitsky S, Barnes CA, Fireman E, et al. Factors contributing to all-cause 30-day readmissions: a structured case series across 18 hospitals. *Med Care.* 2012;50(7):599-605.

Forster AJ, Clark HD, Menard A, Dupuis N, Chernish R, Chandok N, et al. Adverse events among medical patients after discharge from hospital. *CMAJ.* 2004;170(3):345-349.

> Adverse events occur frequently in the peri-discharge period. The incidence of adverse events in this study was 19%, of which 12% were either preventable or ameliorable. Patients were significantly more likely to experience an adverse event if they were female, older in age, had a longer inpatient length of stay and had type 2 diabetes, atrial fibrillation, pneumonia, acute renal failure or an acute exacerbation of congestive heart failure.

Forster AJ, Murff HJ, Peterson JF, Gandhi TK, Bates DW. The incidence and severity of adverse events affecting patients after discharge from the hospital. *Ann Intern Med.* 2003;138(3):161-167.

> One in five patients experienced an adverse event during the transition from hospital to home, ranging in severity of laboratory abnormalities to permanent disability. Almost half of the adverse events were found to be either preventable or ameliorable. The most common deficit associated with preventable adverse events was inefficient communication between hospital caregivers and patients or primary care physician.

Guttmann A, Schull MJ, Vermeulen MJ, Stukel TA. Association between waiting times and short term mortality and hospital admission after departure from emergency department: population based cohort study from Ontario, Canada. *BMJ.* 2011;342:d2983.

Hansen LO, Williams MV, Singer SJ. Perceptions of hospital safety climate and incidence of readmission. *Health Services Research.* 2011;46(2):596-616.

Kalra AD, Fisher RS, Axelrod P. Decreased length of stay and cumulative hospitalized days despite increased patient admissions and readmissions in an area of urban poverty. *J Gen Intern Med.* 2010;25(9):930-935.

Kangovi S, Grande D, Meehan P, Mitra N, Shannon R, Long JA. Perceptions of readmitted patients on the transition from hospital to home. *J Hosp Med.* 2012;7(9):709-712.

Konetzka RT, Karon SL, Potter DE. Users of Medicaid home and community-based services are especially vulnerable to costly avoidable hospital admissions. *Health Aff.* 2012;31(6):1167-1175.

Mor V, Intrator O, Feng Z, Grabowski DC. The revolving door of rehospitalization from skilled nursing facilities. *Health Aff.* 2010;29(1):57-64.

> A review of Medicare claims data suggests that skilled nursing facility rehospitalizations have been growing in frequency, are quite costly and vary considerably across states. By 2006, more than one-fifth of all hospital discharges to a skilled nursing facility resulted in a rehospitalization, at a total cost of $4.34 billion per year to the Medicare program.

Mueller SK, Donze J, Schnipper JL. Intern workload and discontinuity of care on 30-day readmission. *Am J Med.* 2013;126(1):81-88.

Mueller SK, Lipsitz S, Hicks LS. Impact of hospital teaching intensity on quality of care and patient outcomes. *Med Care.* 2013;51(7):567-574.

> Increasing hospital teaching intensity is significantly associated with higher risk-adjusted readmission rates but lower 30-day mortality rates. Therefore, high teaching intensity and safety-net institutions may be disproportionately affected by upcoming changes in hospital payment models.

Ouslander JG, Berenson RA. Reducing unnecessary hospitalizations of nursing home residents. N Engl *J Med.* 2011;365(13):1165-1167.

> Hospitalizations are common among nursing home residents. Many believe a significant percentage of these hospitalizations are inappropriate, avoidable and related to symptoms that could be treated outside the hospital setting. One of the fundamental problems in reducing hospitalizations among nursing homes is not clinical but misalignment in the Medicare and Medicaid payment model. Researchers recommend restructuring the Medicare payment system and making investments in additional nursing home staff.

Ouslander JG, Diaz S, Hain D, Tappen R. Frequency and diagnoses associated with 7- and 30-day readmission of skilled nursing facility patients to a nonteaching community hospital. *J Am Med Dir Assoc.* 2011;12(3):195-203.

> Eighteen percent of patients readmitted to a skilled nursing facility (SNF) were readmitted within 30 days of hospital discharge. One-third of these readmissions occurred within the first week after discharge. Such rapid readmissions may be associated with premature discharge, inadequate communication, tranisition problems and mediation discrepancies and therefore a good target for quality improvement initiatives among collaborating hospitals and SNFs.

Ouslander JG, Lamb G, Perloe M, Givens JH, Kluge L, Rutland T, et al. Potentially avoidable hospitalizations of nursing home residents: frequency, causes, and costs. *J Am Geriatr Soc.* 2010;58(4):627-635.

> A large proportion of hospitalizations from nursing homes were found to be avoidable. Findings suggest that many nursing home residents could be safely treated at their nursing home rather than being transferred to the hospital, resulting in less emotional and physical harm that occurs in older adults in the hospital.

Press MJ, Silber JH, Rosen AK, Romano PS, Itani KM, Zhu J, et al. The impact of resident duty hour reform on hospital readmission rates among Medicare beneficiaries. *J Gen Intern Med.* 2011;26(4):405-411.

Schuur JD, Venkatesh AK. The growing role of emergency departments in hospital admissions. *N Engl J Med.* 2012;367(5):391-393.

Spector WD, Limcangco R, Williams C, Rhodes W, Hurd D. Potentially avoidable hospitalizations for elderly long-stay residents in nursing homes. *Med Care.* 2013;51(8):673-681.

Vest JR, Gamm LD, Oxford BA, Gonzalez MI, Slawson KM. Determinants of preventable readmissions in the United States: a systematic review. *Implement Sci.* 2010;5:1-28.

Woz S, Mitchell S, Hesko C, Paasche-Orlow M, Greenwald J, Chetty VK, et al. Gender as risk factor for 30 days post-discharge hospital utilisation: a secondary data analysis. *BMJ.* 2012;2(2):e000428.

> This study evaluates the association between gender and hospital utilization within 30 days of discharge. Men had a higher rate of hospital utilization within 30 days of discharge than women. The single predictive risk factor for women was hospitalization within the past six months, while additional socioeconomic-related risk factors were identified for men.

IX. Interventions

Amarasingham R, Patel PC, Toto K, Nelson LL, Swanson TS, Moore BJ, et al. Allocating scarce resources in real-time to reduce heart failure readmissions: a prospective, controlled study. *BMJ Qual Saf*. 2013.

> Researchers developed a risk prediction model in an electronic medical record (EMR) based software program to extract real-time clinical and nonclinical data from the patients' records in the first 24 hours after admission for heart failure, and stratified 30-day readmission risk for each day. Using the EMR-based software combined with the use of evidence-based interventions was found to reduce readmission risk for patients with heart failure.

Auerbach A, Fang M, Glasheen J, Brotman D, O'Leary KJ, Horwitz LI. BOOST: Evidence needing a lift. *J Hosp Med*. 2013.

Berkowitz RE, Fang Z, Helfand BK, Jones RN, Schreiber R, Paasche-Orlow MK. Project ReEngineered Discharge (RED) lowers hospital readmissions of patients discharged from a skilled nursing facility. *J Am Med Dir Assoc*. 2013 Oct;14(10):736-740.

> Modifying the Project ReEngineered Discharge (RED) intervention, previously utilized in the acute care setting, for a skilled nursing facility, resulted in successful reduction of 30-day rehospitalization rates, increased appointment attendance and higher levels of discharge appointment and medication regime understanding.

Berkowitz RE, Jones RN, Rieder R, Bryan M, Schreiber R, Verney S, et al. Improving disposition outcomes for patients in a geriatric skilled nursing facility. *J Am Geriatr Soc*. 2011;59(6):1130-1136.

Bettger JP, Alexander KP, Dolor RJ, Olson DM, Kendrick AS, Wing L, et al. Transitional care after hospitalization for acute stroke or myocardial infarction: a systematic review. *Ann Intern Med*. 2012;157(6):407-416.

> A systematic review of medical literature examining transitional care services that aim to improve outcomes for patients after hospitalization for acute stroke or myocardial infarction. Authors developed a conceptual framework of transitions of care, identified four major types of interventions and primary components among studies. Available evidence showed that hospital-initiated transitional care can improve some outcomes for patients who have had a stroke or myocardial infarction, although evidence regarding benefits and harm was insufficient.

Boutwell AE, Johnson MB, Rutherford P, Watson SR, Vecchioni N, Auerbach BS, et al. An early look at a four-state initiative to reduce avoidable hospital readmissions. *Health Aff* (Millwood). 2011;30(7):1272-1280.

Bradley EH, Curry L, Horwitz LI, Sipsma H, Thompson JW, Elma M, et al. Contemporary evidence about hospital strategies for reducing 30-day readmissions: a national study. *J Am Coll Cardiol*. 2012;60(7):607-614.

> A Web-based survey was used to conduct a cross-sectional study of the prevalence of practices being used in hospitals to reduce 30-day readmissions of patients with acute myocardial infarction and heart failure. Most hospitals were found to have written objectives to reduce readmissions and dedicated quality improvement teams. However, the implementation of such practices varied widely.

Brown RS, Peikes D, Peterson G, Schore J, Razafindrakoto CM. Six features of Medicare coordinated care demonstration programs that cut hospital admissions of high-risk patients. *Health Aff* (Millwood). 2012;31(6):1156-1166.

> Less than half of the studies examined in this article were found to successfully reduce readmissions among Medicare beneficiaries. Six common educational and communication approaches were identified among successful interventions and appear to be cost neutral. Beneficiaries with at least one common high-risk condition and a hospitalization in the previous year were found to yield the most consistent benefits.

IX. Interventions
(Continued)

Burke RE, Coleman EA. Interventions to decrease hospital readmissions: keys for cost-effectiveness. *JAMA Intern Med.* 2013;173(8):695-698.

> Working within a hospital's current financial and organizational resources, five best practices are outlined to maximize odds of success in reducing 30-day readmissions. It is recommended that physician-led efforts should target high-risk patients, avoid commonly used but unproven interventions, select interventions with sustainable effects and establish a high-functioning team prior to implementation.

Burke RE, Kripalani S, Vasilevskis EE, Schnipper JL. Moving beyond readmission penalties: creating an ideal process to improve transitional care. *J Hosp Med.* 2013;8(2):102-109.

> There is much concern about using readmission as a hospital quality measure and about how to reduce readmissions. This article outlines the ideal transition process in hopes of addressing deficiencies in the science of transitional care and providing a common vocabulary for research efforts. Ten key components of an ideal transition of care are identified and described.

Chen HF, Kalish MC, Pagan JA. Telehealth and hospitalizations for Medicare home healthcare patients. *Am J Manag Care.* 2011;17(6 Spec No.):e224-30.

Chumbler NR, Quigley P, Li X, Morey M, Rose D, Sanford J, et al. Effects of telerehabilitation on physical function and disability for stroke patients: a randomized, controlled trial. *Stroke.* 2012;43(8):2168-2174.

Counsell SR, Callahan CM, Tu W, Stump TE, Arling GW. Cost analysis of the Geriatric Resources for Assessment and Care of Elders care management intervention. *J Am Geriatr Soc.* Aug 2009;57(8):1420-1426.

> To provide a cost analysis of the Geriatric Resources for Assessment and Care of Elders (GRACE) intervention, which has proven to be an effective intervention in improving quality of care and patient outcomes. The GRACE intervention did tend to be more costly to the healthcare delivery system than usual care, although cost differences were not statistically significant. For patients with high risk of hospitalization, costs were similar between intervention and usual care.

Evans M. Residential therapy. Hospitals take on finding housing for homeless patients, hoping to reduce readmissions, lower costs. *Mod Healthc.* 2012;42(39):6-7, 16, 1.

Feldblum I, German L, Castel H, Harman-Boehm I, Shahar DR. Individualized nutritional intervention during and after hospitalization: the nutrition intervention study clinical trial. *J Am Geriatr Soc.* 2011;59(1):10-17.

> Patients received individualized nutritional treatment by a dietician during their hospital stay and during three home visits after discharge. Although nutritional treatment had no effect on functional, cognitive or depression status, significant lower mortality rates were identified. This suggests there are potential benefits with an individualized model of nutritional treatment for older adults after acute hospitalization.

Fjaertoft H, Rohweder G, Indredavik B. Stroke unit care combined with early supported discharge improves 5-year outcome: a randomized controlled trial. *Stroke.* 2011;42(6):1707-1711.

Goldfield N. Strategies to decrease the rate of preventable readmission to hospital. *CMAJ.* 2010;182(6):538-539.

Greenwald J, Denham C, Jack B. The hospital discharge: a review of a high risk care transition with highlights of a reengineered discharge process. *J Patient Saf.* 2007;3:97-106.

Hansen LO, Greenwald JL, Budnitz T, Howell E, Halasyamani L, Maynard G, et al. Project BOOST: Effectiveness of a multihospital effort to reduce rehospitalization. *J Hosp Med*. 2013 Aug;8(8):421-427.

> A semicontrolled pre-post study determining the effect of Project BOOST on rehospitalization rates and length of stay. Hospitals implementing Project BOOST interventions and tools and receiving external physician mentoring saw on average a relative reduction in readmissions of 13.6%. No significant difference was identified in length of stay. The diverse hospital sample of this study lends confidence that these results can be replicated in a wide variety of acute care settings.

Hansen LO, Young RS, Hinami K, Leung A, Williams MV. Interventions to reduce 30-day rehospitalization: a systematic review. *Ann Intern Med*. 2011;155(8):520-528.

> This systematic review describes pre-discharge, post-discharge and bridging interventions aimed at reducing hospitalization within 30 days of discharge. Among the 43 articles reviewed, no single intervention or bundle of interventions implemented was regularly associated with reduced risk for 30-day rehospitalization.

Hebert PL, Sisk JE, Wang JJ, Tuzzio L, Casabianca JM, Chassin MR, et al. Cost-effectiveness of nurse-led disease management for heart failure in an ethnically diverse urban community. *Ann Intern Med*. 2008;149(8):540-548.

Jack BW, Chetty VK, Anthony D, Greenwald JL, Sanchez GM, Johnson AE, et al. A reengineered hospital discharge program to decrease rehospitalization. *Ann Intern Med*. 2009;150:178-187.

> Project RED decreased hospital utilization within 30 days of discharge by approximately 30% among patients on a general medical service. More intervention group participants reported seeing their primary care physician for follow-up and reported higher levels of preparedness for discharge.

Jencks SF. Defragmenting care. *Ann Intern Med*. 2010;153(11):757-758.

Jha AK. BOOST and readmissions: Thinking beyond the walls of the hospital. *J Hosp Med*. 2013;8(8):470-471.

Kim CS, Flanders SA. In the Clinic. Transitions of care. *Ann Intern Med*. 2013;158(5 Pt 1):ITC3-1.

Manning DM, O'Meara JG, Williams AR, Rahman A, Myhre D, Tammel KJ, et al. 3D: a tool for medication discharge education. *Qual Saf Health Care*. 2007;16(1):71-76.

McCarthy D. University of California, San Francisco Medical Center: Reducing Readmissions Through Heart Failure Care Management. In: Fund TC, ed. Case Study: Innovations in Care Transitions: The Commonwealth Fund; 2012:1-20.

Mittler JN, O'Hora JL, Harvey JB, Press MJ, Volpp KG, Scanlon DP. Turning readmission reduction policies into results: some lessons from a multistate initiative to reduce Rreadmissions. *Popul Health Manag*. 2013 Aug;16(4):255-260.

Motheral BR. Telephone-based disease management: why it does not save money. *Am J Manag Care*. 2011;17(1):e10-16.

Osei-Anto A, Joshi M, Audet AM, Berman A, S J. Health Care Leader Action Guide to Reduce Avoidable Readmissions. Chicago, IL: Health Research & Educational Trust; Jan 2010.

Pandor A, Gomersall T, Stevens JW, Wang J, Al-Mohammad A, Bakhai A, et al. Remote monitoring after recent hospital discharge in patients with heart failure: a systematic review and network meta-analysis. *Heart*. 2013;99(23):1717-1726.

Parry C, Kramer HM, Coleman EA. A qualitative exploration of a patient-centered coaching intervention to improve care transitions in chronically ill older adults. *Home Health Care Serv Q.* 2006;25(3-4):39-53.

> Patients who received the Care Transitions Intervention (CTI) reported enhanced self-management in medication management and knowledge acquisition with respect to warning signs and adverse effects of medications. Home visits were consistently mentioned as the most beneficial component of the intervention.

Peikes D, Chen A, Schore S, Brown R. Effects of care coordination on hospitalization, quality of care, and health care expenditures among Medicare beneficiaries: 15 randomized trials. *JAMA.* 2009;301(6):603-618.

> Care coordination programs without a strong transitional care component are unlikely to yield Medicare cost savings. Programs with ample in-person contact, which target patients with moderate to severe conditions, such as the nurse-facilitated education and monitoring intervention described in this study, can be cost-neutral and improve some aspects of care.

Rennke S, Nguyen OK, Shoeb MH, Magan Y, Wachter RM, Ranji SR. Hospital-initiated transitional care interventions as a patient safety strategy: a systematic review. *Ann Intern Med.* 2013;158(5 Pt 2):433-440.

Rosenberg CN, Peele P, Keyser D, McAnallen S, Holder D. Results from a patient-centered medical home pilot at UPMC Health Plan hold lessons for broader adoption of the model. *Health Aff* (Millwood). 2012;31(11):2423-2431.

Takahashi PY, Pecina JL, Upatising B, Chaudhry R, Shah ND, Van Houten H, et al. A randomized controlled trial of telemonitoring in older adults with multiple health issues to prevent hospitalizations and emergency department visits. *Arch Intern Med.* 2012;172(10):773-779.

> Testing of a telemonitoring device that measures symptoms and biometrics of older adults. In a combined end point for time-to-event analysis of mortality, hospitalizations and emergency department visits, no difference was noted between the telemonitoring and usual care groups.

Tang N. A primary care physician's ideal transitions of care—where's the evidence? *J Hosp Med.* 2013 Aug;8(8):472-477.

Tibaldi V, Isaia G, Scarafiotti C, Gariglio F, Zanocchi M, Bo M, et al. Hospital at home for elderly patients with acute decompensation of chronic heart failure: a prospective randomized controlled trial. *Arch Intern Med.* 2009;169(17):1569-1575.

> It is possible to treat patients at home with results similar to those obtained with traditional hospital care. There was no difference in mortality, number of subsequent hospital admissions, functional, cognitive or nutritional status, and caregiver burden at the end of a six-month follow-up between inpatient and hospital-at-home care models.

Silow-Carroll S, Edwards J, Lashbrook A. Reducing Hospital Readmissions: Lessons from Top-Performing Hospitals. The Commonwealth Fund; 2011:1-20.

Voss R, Gardner R, Baier R, Butterfield K, Lehrman S, Gravenstein S. The care transitions intervention: translating from efficacy to effectiveness. *Arch Intern Med.* 1;171(14):1232-1237.

> The Care Transitions Intervention (CTI) has significantly reduced 30-day readmissions in a randomized control study conducted in an integrated health system but required real-world testing in a non-integrated system. Patients recruited from nine non-integrated acute care hospitals who met with a health coach and completed one home visit and two follow-up calls saw significantly reduced readmission rates compared to those who did not receive CTI.

X. Utilization and Costs

Friedman B, Henke RM, Wier LM. Most Expensive Hospitalizations, 2008: Statistical Brief #97. Healthcare Cost and Utilization Project (HCUP) Statistical Briefs. Rockville MD; 2006.

Jiang HJ, Wier LM. All-Cause Hospital Readmissions among Non-Elderly Medicaid Patients, 2007: Statistical Brief #89. Healthcare Cost and Utilization Project (HCUP) Statistical Briefs. Rockville MD; 2006.

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> Diagnostic group (cancer, respiratory disorder, circulatory disorders and other) was the most important predictor of mortality, and individuals with ill-defined conditions (symptoms and signs) had the lowest risk of mortality at all time-points. There was no difference between diagnostic groups for risk of readmission; age and comorbidity did increase risk. This study is consistent with the premise that readmissions may be indicative of chronic, rather than acute, needs.

Appendices

Appendix A:
Teach Back Process

Step 1: Using simple lay language, explain the concept or demonstrate the process to the patient/family/caregiver. Technical terms should generally be avoided. If the patient/family/caregiver has limited English proficiency, a professional translator should be utilized to reduce miscommunication.

Step 2: Ask the patient/family/caregiver to repeat, in his or her own words, how they understand the concept explained. If a process was demonstrated to the patient, ask the patient/family/caregiver to demonstrate it, independent of assistance, for the clinician.

Step 3: Identify and correct misunderstandings or incorrect procedures for the patient/family/caregiver.

Step 4: Ask the patient/family/caregiver to demonstrate their understanding or procedural ability again to ensure the above-noted misunderstandings are now corrected.

Step 5: Repeat Steps 3 and 4 until the clinician is convinced that the patient/family/caregiver's comprehension about the concept or ability to perform the procedure accurately and safely is ensured.

New Concept:
Health Information,
Advice, Instructions or
Change in Management

Clinician Assesses Patient Recall & Comprehension/ Asks Patient to Demonstrate

Clinician Explains/ Demonstrates New Concept

Patient Recalls and Comprehends/ Demonstrates Mastery

Clinician Clarifies & Tailors Explanation

Clinician Re-assesses Recall & Comprehension/ Asks Patient to Demonstrate

Adherence/ Error Reduction

Schillinger D, Piette J, Grumbach K, et al. Closing the loop: physician communication with diabetic patients who have low health literacy. *Arch Intern Med.* 2003;163:83-90.

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Appendix B:
Talking Points to Garner Institutional Support

Failed transitions lead to substantial costs, morbidity, mortality and reputational risk

- Nearly one in five patients experiences an adverse event (AE) during the transition from the hospital to home. Research shows that one-third of the AEs may be preventable and another third could be ameliorated. Ineffective communication represents the major factor leading to such events. The majority of AEs in one study (66%) were related to medications.[1]

- Almost half of patients discharged from hospitals have lab results still pending and outpatient physicians may be unaware of almost two-thirds of the results, despite the fact that 12.6% require urgent action.[2]

- One study found that outpatient workups were recommended on approximately one-third of patients being discharged from the hospital, but these workups were not completed more than a third (35.9%) of the time. The most common workups not completed were CT scans to follow up on abnormalities seen on previous x-rays and endoscopic procedures to follow up on gastrointestinal bleeding.[3]

- Optional Point: Internal medical-legal data reveals that handoff issues not only represent significant quality and service problems for _____ (hospital name) patients, but they also represent financial liability to our organization. In 2013 (or whatever time period), medical-legal costs involving handoff issues exceeded $_____ or an average of $_____ per claim. These cases specifically involved _____(e.g., handoff issues between departments or providers, patient/family non-compliance, or lack of patient education). This may be confidential and sensitive information that some institutions would be reluctant to share so you should omit this if there is not a culture of "open disclosure," or consider enlisting senior leaders, a department chief or quality personnel to obtain relevant information and speak to this aspect.[4]

Insert your local data here:
- Service/Patient Satisfaction/H-CAHPS scores
- PCP feedback/satisfaction rates
- Readmission rates
- Attachment with story of a patient's adverse event or problematic outcome after discharge from your hospital

Hospital discharge is a critical transition point in need of redesign

- Nearly half (49%) of hospitalized patients experience at least one medical error in medication continuity, diagnostic work-up or test follow-up.[5]

- A study of patients surveyed at discharge to assess their knowledge revealed the following: only 41.9% were able to state their diagnosis or diagnoses; 27.9% were able to list all their medications; 37.2% were able to state the purpose of their medications; 14% were able to state common side effects of their medications.[6]

- The availability of a discharge summary at the first post-discharge visit was low (12-34%) and remained poor (51-77%) at 4 weeks, affecting the quality of care in approximately 25% of follow-up visits and contributing to primary care physician dissatisfaction.[7]

- Literature on hospital discharge suggests that interventions aimed at reliable handoff communications between a primary care provider (PCP) and hospitalist, close follow-up and engagement of patients and families/caregivers may significantly reduce adverse events.[8, 9, 10]

- In addition to the growing literature on discharge process failures and financial liabilities, regulatory agencies such as The Joint Commission (TJC), Centers for Medicare & Medicaid Services (CMS) and National Quality Forum (NQF) are now focusing on handoffs and transitions of care.

Appendix B:
Talking Points to Garner Institutional Support
(Continued)

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Appendix C:
Sample Letter to Administration

From Chief Hospitalist to CEO or
Other individual or stakeholder group to appropriate senior executive

Dear _____,

As Hospitalists, one of our key goals for patients is a safe transition from hospital to home.

Despite our best efforts, patients are sometimes negatively affected by systems that have not been optimally designed to address their increasingly complex needs and ensure safe transitions during the hospital discharge process.

Attached are findings of a preliminary evaluation of current state of the discharge process at our hospital. I have also attached information about what is occurring nationally in this area. In the interest of optimizing the care of our patients, I/we would like to request: (choose most appropriate)

- A meeting at your earliest convenience to discuss this topic and how improving the discharge process could align with the strategic goals for our organization.
- A meeting of stakeholders including _____ to discuss next steps in improvement of the discharge process
- The following pilot project to address gaps in the current discharge process:

I/we look forward to further discussions with you.

Sincerely,

_____

Appendix D:
Project BOOST® Return on Investment (ROI)

Your organization may be very enthusiastic about your work to improve the discharge process in theory, but in order to transform that theoretical enthusiasm into real support you will have to consider the return on investment (ROI) that the organization will have with BOOST. We offer some of the keys to understanding, creating and communicating this ROI.

Background

Impacts of Project BOOST

Implementation of BOOST may well impact utilization of inpatient resources. Streamlining your discharge process through using the BOOST Toolkit may help eliminate unnecessary bed days. Alternately, assessing and intervening on the wide range of issues that influence discharge preparedness might actually increase hospital stays for some patients. Creating a generally higher-quality discharge should (we hope!) reduce readmissions. The length, cost and frequency and reimbursement for hospital admissions will have financial implications for your hospital. So too will any costs associated with implementing the program – if new positions (FTE) need to be added as part of your implementation plan. In addition, there are outcomes that may flow out of BOOST that, while not purely financial, may have financial ramifications. Influencing patient and family/caregiver, physician or nursing satisfaction are indicators your hospital may care deeply about, even if improving these measures cannot be proven to have direct financial benefits.

BOOST and Your Institution: Procuring Support

Ultimately, your institution needs to decide if investing resources in Project BOOST makes sense. In making this decision clinical and administrative leaders will consider issues of quality, efficiency and finances. It is imperative that early on you come to understand the priorities of the individuals who will be making resource allocation decisions, and the methods they will use to judge the value of your project. The easier you make it for all to see that BOOST is well-aligned with institutional priorities the better your chances of securing the resources you need to successfully implement and sustain BOOST. Early on you should partner with administrative and financial professionals at your site to make sure everyone understands what BOOST is expected to do, and how the project will be evaluated. You should also incorporate into your evaluation plan mechanisms for capturing any data that are needed to conduct the evaluations that will influence resource allocation decisions.

Steps to Understanding and Creating a Positive ROI

Build a Clinical-Finance-Administrative Partnership

No matter how committed they are to quality, your hospital administrators will need to consider financial outcomes when deciding if and how to implement BOOST. Not every program in the hospital needs to or is intended to save money or create new revenue opportunities, but it is certainly easier to sustain a program that "pays for itself." It will be useful for you to develop an understanding of the financial impact of changing length of stay (LOS) and admission patterns for the patients who will likely be touched by BOOST. To do so, you should partner with hospital staff, who are experts in cost and reimbursement issues.

What to communicate in this partnership:

- What you are trying to achieve (e.g., "reduce unnecessary readmissions")
- Identify the patients you are targeting (e.g., "all patients discharged from the medical service")
- Specify the resources you need to implement the program. Your partner in Decision Support, or the CFO's office, or even staff in Utilization Review or Performance Improvement will have access to the utilization, cost and revenue information you will want to analyze to understand the financial issues pertinent to your proposed project.

Evaluate "Direct" Financial Outcomes

Understanding how hospitals get paid for their services will help you understand how the changes in the utilization of inpatient services that result from BOOST will influence your hospital's bottom line.

How Hospitals Get Paid

Different types of facilities use different methods for evaluating the interplay of number of patients seen, types of services rendered, revenues collected for those services and the net effect of reducing the cost of inpatient care. Generally speaking, there are two types of models to consider:

- Fixed "Global Budgets"
  - Funding will not vary according to the volume of services provided in a discrete time period
- "Utilization-Based Budgets"
  - Revenues vary according to the number of patients who access hospital services, the types of services provided, and the mix of payers who will compensate the hospital for those services.

Global budgets. Some hospitals, notably the Veterans Health Administration facilities and some integrated health delivery systems (Kaiser), operate under a "global budget" structure. Rather than collecting payments for each care episode, individual facilities receive a fixed amount of funding (from the federal government or parent organization) that is intended to cover all operational expenses in a given time frame. The amount of funds allocated to individual facilities is based on the number of patients the site expects to care for and the types of services it expects to provide. Individual sites must then allocate these fixed resources to match services to patient needs, regardless of actual volumes or costs.

Hospitals operating under a global budget structure are incented to manage resource utilization. Reductions in costs associated

with one type of service (e.g., the cost of pharmaceuticals supplied to patients who die in the hospital) create the opportunity to shift resources to new services (e.g., a dedicated discharge coach), allowing the hospital or health system to better meet the needs of the populations they serve. Because monies saved in one setting are redirected to other settings, programs like BOOST that improve the efficiency of care delivery are often considered revenue neutral, but still excellent investments in that quality is improved at no additional cost.

Utilization-based budgets. For most institutions, compensation for acute hospital care comes from a variety of sources. The combination of revenue streams, known as the "payer mix," and the range and volume of services provided determine the revenues the institution collects.

Payers

Medicare

Traditional "fee-for-service" Medicare coverage uses a prospective payment system, where a fixed amount, a "case-rate," is paid for all hospital services provided during an admission. To determine payment, hospital administrative data describing the patient's clinical condition and the services rendered during the hospitalization are used to assign each case to a Medicare Severity — Diagnosis Related Group (MS-DRG). The compensation rate for each MS-DRG is based on national data describing average lengths of stay and average costs for that MS-DRG, adjusted for regional differences in wages and other costs. Except in cases where incurred costs are extraordinarily high, MS-DRG payments are not influenced by the actual cost of a given hospitalization. Under the case-rate prospective payment system, hospitals are financially rewarded for controlling costs for Medicare admissions.

Medicaid

Medicaid is available to financially disadvantaged children, their parents, the elderly and those with disabilities. Some Medicaid programs operate on a fee-for-service system, while others operate as managed care programs. For both types of programs, payments to hospitals are lower than the rates that Medicare pays and typically are far less than the total cost of providing inpatient care. Because compensation is generally lower than costs, hospitals are rewarded for controlling costs for Medicaid admissions.

Commercial Insurance

While a very small percentage of commercial payers offer indemnity or pure fee-for-service coverage, where hospital charges are paid in full, the majority of commercial coverage is administered in a managed care model. Here, payers contract with hospitals to provide acute care services to covered patients. Payment rates are negotiated with each hospital or health system and typically reflect a discount on the hospital's usual charges. The most common payment mechanisms are described below.

Case rates. As with the Medicare prospective payment system, compensation is structured according to fixed rates, which reflect the expected cost of providing care for particular types of diseases or procedures. Negotiated payments are based on a payer-specific fee schedule or Medicare reimbursement rates (e.g., 105% of MS-DRG payment). As with Medicare, the amount of payment will not vary according to resource use or hospital costs. Because they are at risk for expenses in excess of the fixed payment amount, hospitals are rewarded for controlling daily costs and minimizing LOS when services are reimbursed on a case-rate basis.

Negotiated per diem. In this model, payment is based on a contracted daily rate, which may be adjusted according to the intensity of care provided. Because payments are fixed, hospitals are rewarded for monitoring resource utilization during the admission. Payers may deny payment for days they deem not to meet criteria for acute care services, a control designed to motivate hospitals to monitor LOS. While interventions that shorten hospital stays result in reduced hospital revenues, these losses may be offset by a reduction in the number of bed days that per diem payers decline to cover.

Capitation. In this model, the hospital agrees to provide a defined portfolio of services to covered patients in exchange for "per-member/per-month" payments. Payments are based on actuarial estimates of average healthcare costs for defined populations over time. Payments are made on a monthly basis and are not directly linked to service volumes, actual costs or a fee schedule. Because per-patient revenues are fixed, the hospital is rewarded for controlling costs. Relatively few hospitals have large, full-risk populations, but those that do support programs, like BOOST, which are designed to control resource utilization while maintaining or improving the quality and scope of provided services.

Discounted fee-for-service (DFFS). In this model hospitals are paid a percentage (typically 30% - 80%) of usual charges. Because revenues are tied to resource utilization, fiscal benefits resulting from interventions that reduce length of stay are typically limited to those derived from increasing hospital capacity (e.g., at an institution that is turning away cases because of limited ICU capacity, shortening LOS for some cases will open beds for other patients). This payment model is rare among major payers.

Understanding the payer mix of patients who are touched by BOOST will allow you to understand how reducing LOS will influence hospital revenues. If at your site most patients have fee-for-service coverage, then reducing LOS will actually cost your hospital money. Given the growing number of older patients in the US and that most older patients have Medicare as a primary payer, reducing LOS for a given admission will carry a financial benefit for your hospital.

How Will Changes Resulting from BOOST Influence Costs and Revenues?

You can create financial benefit for your institution by lowering costs, increasing revenues or some combination of the two. With Project BOOST, you are implementing a project that should help you identify specific patient readmission risks and intervene on those risks, and you will be doing a lot of assessments so you can ensure that patients and families/caregivers are prepared for and understand what will happen post-hospitalization. You will be asking that providers use a Teach Back process during discharge education, to make sure the conveyed information is understood. You will be making sure that outpatient providers and receiving sites get a useful, standardized discharge record. For high-risk patients, you will schedule an outpatient follow-up visit and/or conduct a 72-hour follow-up call with the patient and family/caregiver. So what are the fiscal implications of those interventions?

The changes that may result once BOOST is implemented include:
- Reducing the length of the index (initial) hospital stay
- Reducing the cost of the index hospital stay (if it is shorter)
- Reducing the frequency, duration and cost of readmissions

Appendix D:
Project BOOST® Return on Investment (ROI)
(Continued)

As noted above, in nearly all cases reducing the length and cost of a hospital admission is a good thing for your hospital. But one thing to consider is the scope of your project — how many bed days did your efforts save? The reason this is important is that the majority of hospital costs are linked to personnel expenses — the salary and benefit costs from staffing the hospital with nurses, lab technicians, respiratory therapists, etc. — all the people who provide services. And for the most part, those costs are fixed. If your BOOST effort was small but successful and saved 200 bed days in its first year, it is unlikely that those freed bed days translated into real savings for the hospital — you would not have changed occupancy or staffing enough to allow your site to actually send staff home on a given day or make a permanent adjustment to staffing levels. On the other hand, if your intervention was larger, and you saved 2,000 bed days, it is very likely that the change in utilization of inpatient resources was large enough to allow your hospital to change staffing levels — the surest way of truly influencing hospital costs. It is important to understand that not every "saved" dollar translates into reduced expenses (i.e., lower staffing costs), so you need to work with your hospital's financial staff to understand the true benefits of your efforts. It may well be that your hospital realizes a direct financial benefit for reducing costs or shortening stays for a small number of patients. In such cases, the quality benefits of the BOOST project may still be significant enough to justify funding the program.

Another issue to consider is your site's **occupancy rate**. If your hospital is typically full then reducing readmissions could be considered fiscally neutral (someone else will fill that bed, so there will be no net loss of revenue) or it could convey financial benefits (reducing readmissions might make room for more complex patients, which might be more profitable than the general medical admissions your project is preventing). If your site is so full that your emergency department is forced to divert cases to other sites, freeing up bed days may give your hospital the opportunity to accommodate more admissions – a potential means of increasing revenues. Alternately, reducing the number of readmissions might help your site make more efficient use of inpatient resources. Many public hospitals have very high occupancy rates, so while there may be no direct financial benefit associated with reducing readmissions, doing so might help the hospital make more efficient use of scarce inpatient beds.

Keep in mind that the readmission rate is an outcome that peaks **payer interests**. Your site might be able to reference BOOST outcomes as evidence that your hospital is doing all it can to prevent readmissions, data that can be used in negotiations with payers. Similarly, your hospital administrators will be interested to know that the Medicare Payment Advisory Commission (MedPAC) recommended to Congress in June 2007 that hospital readmission rates be reported publicly, and that these rates eventually be tied to hospital reimbursement (MedPAC. Payment policy for inpatient readmissions. In: Report to the Congress: Promoting Greater Efficiency in Medicare. Washington, DC: MedPAC; June 2007:103-120. http://www.medpac.gov/documents/Jun07_EntireReport.pdf).

Secondary Benefits

In addition to primary financial outcomes, your institution will also be interested in outcomes which have secondary or potential financial benefits. While these outcomes are not directly financial, your hospital will likely consider them important. Interventions that improve patient and family/caregiver satisfaction influence your hospital's reputation among admitting physicians, payers and healthcare consumers. If BOOST improves patient and family/caretaker satisfaction it may well improve your site's ability to compete for market share, either because patients are more likely to select or recommend your site to others, or because admitting providers prefer a site that is preferred by their patients. Similarly, improving admitting or referring (primary care) physician satisfaction also carries market share benefits. Reducing the frustration around frequent readmissions or a disjointed or confused discharge process may improve RN satisfaction, an outcome of keen interest to sites that operate in areas where nurse retention is critically important.

Appendix D:
Project BOOST® Return on Investment (ROI)
(Continued)

Summarizing ROI

Generally speaking the more dedicated resources your project needs (i.e., staff time needed to carry out interventions) and the more patients you expect to impact, the more interested your site will be in evaluating expected financial outcomes for your project. Partnering with appropriate representatives in hospital administration to explore financial issues is an important job for your project team, a role that is commonly tackled by the project director. You do not need to become an expert in health economics; you just need to develop a basic understanding of the financial variables your hospital administrators will consider when deciding if they can afford to fund and support your project.

Key Questions To Ask When Assessing ROI

- What is the current LOS for patients who will be touched by BOOST?
- What is the cost of these cases?
- Do we currently make money or lose money on these cases?
- What is the payer mix? Will reducing the length or cost of these admissions help or hurt our hospital's bottom line?
- What is the readmission rate for potential BOOST patients?
- Do we currently make money or lose money on the readmissions?
- Are the readmissions longer or more costly than the initial admissions?
- What is our occupancy rate?
- If we free up bed days are there patients that might fill those beds, potentially increasing hospital revenues?
- Does our emergency department need to go on divert frequently?
- Are there specific diagnoses for which LOS and readmissions are being tracked or publically reported? Can BOOST help with these outcomes?
- Do we have issues with denied days? Are those days linked to disposition issues or patient readiness for discharge? Can BOOST help with this?
- What do we know about the current level of patient/family/caretaker/physician/staff satisfaction with the discharge process? Is there room for improvement?

Appendix E:
Record Your Work

Section II: Laying the Foundation for Improvement

Task: Ensure institutional support from your senior executive committee or sponsor.

Notes:

Task: Assemble an effective team and subgroups.

Notes:

Task: Identify key stakeholders, reporting hierarchy and approval process.

Notes:

Task: Survey prior and ongoing care transitions improvement work.

Notes:

Appendix E:
Record Your Work
(Continued)

Task: Set SMART goals and a timeline for achieving those goals.

Notes:

Task: Decide on key metrics and a measurement plan.

Notes:

Task: Choose a BOOST® unit and a control unit.

Notes:

Appendix E:
Record Your Work
(Continued)

Section III: Getting to Work on Improving Transitions of Care

Task: Why is improving the transition of care process important to your organization?

Notes:

Task: Develop a detailed process map for at least one step in the existing care transition process.

Notes:

Task: Collect data on how each step of your discharge process is functioning during actual care delivery.

Notes:

Task: Collect 12 to 15 months of care transition data for **Length of stay.**

Notes:

Appendix E:
Record Your Work
(Continued)

Task: Collect 12 to 15 months of care transition data for **30-day rehospitalization rates**.

Notes:

Task: Collect 12 to 15 months of care transition data for **patient satisfaction.**

Notes:

Task: Collect at least 12 to 15 months of care transition data for two to three key process measures for which you initially are most interested.

Notes:

Task: Design and implement a data collection plan and reporting process for your Project BOOST team.

Notes:

Appendix E:
Record Your Work
(Continued)

Task: Log team and team member activities, efforts and accomplishments.

Notes:

Task: Complete a root cause analysis or 5 Whys on one failure point in your care transition process.

Notes:

Task: Prioritize which aspects of the care transition process your team wants to improve first.

Notes:

Appendix E:
Record Your Work
(Continued)

Task: Complete a Root Cause-Solution Matrix.

Notes:

Task: Complete an Impact-Effort Matrix.

Notes:

Appendix E:
Record Your Work
(Continued)

Task: Identify relevant outcome, process and balancing measures.

Notes:

Task: Outline implementation plan (using Planning step of PDSA Cycle).

Notes:

Task: Identify three to four specific issues you want to look out for during implementation.

Notes:

Task: Evaluate success of program: was the change implemented as intended, did it result in the outcome you predicted, and did it cause problems for anyone?

Notes:

Appendix E:
Record Your Work
(Continued)

Task: Revise your improvement ideas based on the data and observations you collected.

Notes:

Task: Celebrate success: submit a story or photo from your celebration.

Notes:

Task: Create a monitoring plan for your improved process.

Notes:

Task: Outline key messages you wish to share with your senior executive sponsor in reporting the results of your efforts.

Notes:

Appendix E:
Record Your Work
(Continued)

Task: Create a plan to spread your new and improved process.

Notes:
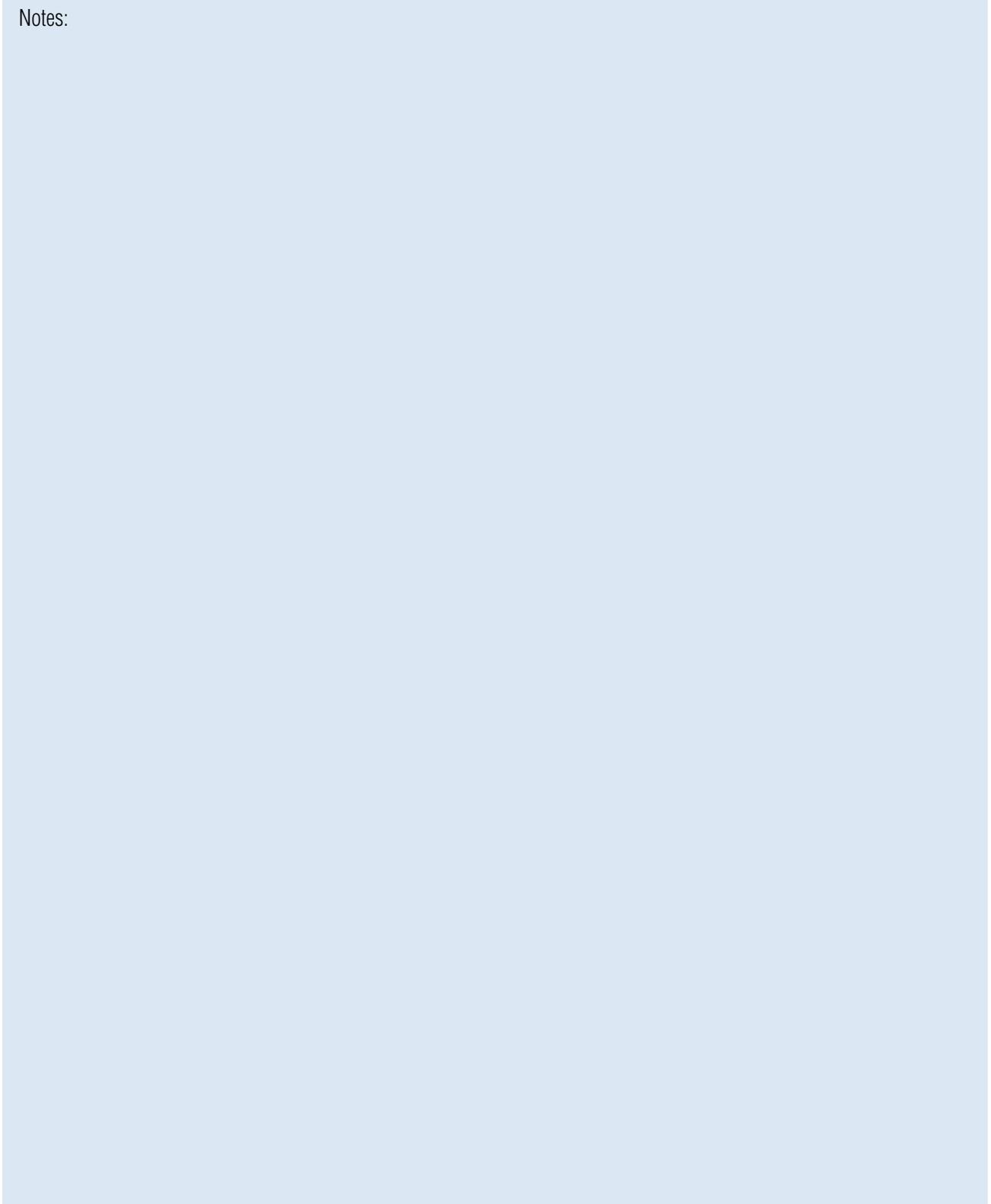
Appendix F:
Tools for Running an Effective Meeting

TASK

Establish team rules and post a large, readable version at each team meeting.

Task Assignment_____ (Team Facilitator)

Team Ground Rules:

- All team members and opinions are equal.

- Team members will speak freely and in turn.

    - We will listen attentively to others.

    - Each must be heard.

    - No one may dominate.

- Problems will be discussed, analyzed or attacked (not people).

- All agreements are kept unless renegotiated.

- Once we agree, we will speak with "one voice" (especially after leaving the meeting).

- Honesty before cohesiveness.

- Consensus versus democracy: we each get our say, not our way.

- Silence equals agreement.

- Members will attend regularly.

- Meetings will start and end on time.

Appendix G:
Tools for Care Transition Improvement Team Roster

TASK

Fill out the names and contact information of members of your care transition team* and construct a team roster and group email to help the team communicate.

*You may identify only 3 or 4 key personnel at the outset but may draft others onto the team as additional team member needs become clear.

Task Assignment: _____

Time Line for Completing: _____
We recommend trying to enroll a range of personnel early, within 2-3 weeks.

Team Leader
(Physician)

Name: _____

Email: _____

Phone: _____ Pager: _____
Team leader is often, but not always, a hospitalist

Team Leader
(Non-Physician)

Name: _____

Email: _____

Phone: _____ Pager: _____

Team Facilitator

Name: _____

Email: _____

Phone: _____ Pager: _____

Content Expert

Name: _____

Email: _____

Phone: _____ Pager: _____
Local expert with expertise in the management of care transitions

Hospitalist 2

Name: _____

Email: _____

Phone: _____ Pager: _____

AHP - PA or NP

Name: _____

Email: _____

Phone: _____ Pager: _____

TASK

PCP

Name: _____

Email: _____

Phone: _____ Pager: _____

Home Care

Name: _____

Email: _____

Phone: _____ Pager: _____

Subacute Physician

Name: _____

Email: _____

Phone: _____ Pager: _____

Data Analyst

Name: _____

Email: _____

Phone: _____ Pager: _____

Nurse Supervisor

Name: _____

Email: _____

Phone: _____ Pager: _____

Nurse

Name: _____

Email: _____

Phone: _____ Pager: _____

Social Worker

Name: _____

Email: _____

Phone: _____ Pager: _____

Nutrition/Dietary

Name: _____

Email: _____

Phone: _____ Pager: _____

TASK

Case Manager

Name: _____

Email: _____

Phone: _____ Pager: _____

ED Personnel

Name: _____

Email: _____

Phone: _____ Pager: _____

Patient Representative

Name: _____

Email: _____

Phone: _____ Pager: _____

Health Information

Name: _____

Email: _____

Phone: _____ Pager: _____

Your team roster may vary from this, and you should be flexible as you address different aspects of achieving optimal management of the hospital discharge transition. Typically, the larger the team, the harder it can be to move forward and ensure accountability. Thus, a core group of 4 to 8 people should drive the process with involvement of others on an as-needed basis. Regardless, senior administration buy-in and support is essential to successful implementation of quality improvement efforts and sustaining change.

Appendix H:
Tool for Identifying Key Stakeholders, Committees, and Groups

TASK A

Identify key stakeholders, committees and special groups that need to be aware of your efforts to improve the discharge care transition. You also need to understand where your team fits into the organization's quality improvement structure. This understanding is critical, especially if the group identifies barriers that require broader organizational support to overcome. In addition, clarifying this relationship will assist other QI teams and will help to standardize the approach to clinical care improvement.

Stakeholders:

Committees:

Special Groups (including consumer groups):

Assignment for Task A _____ (Team Leader)

Time Line for beginning and completing: _____

TASK B

Clarify the reporting structure and approval process for your interventions, and resource approval (include names, titles, and if helpful, an organizational chart that reflects the process).

Reporting Structure:	Approval Process:

Assignment for Task B _____ (Team Leader)

Time Line for beginning and completing: _____

Appendix I:
Tool for Performing Institutional Assessment

✐ TASK

Perform an institutional assessment of your current practice.

Task 1 Administrative support
Task Assignment: _____
Time line for completing: _____

Task 2 Multidisciplinary team
Task Assignment: _____
Time line for completing: _____

Task 3 Data flow/metrics
Task Assignment: _____
Time line for completing: _____

Task 4 Understand current discharge process and propose areas for standardization
Task Assignment: _____
Time line for completing: _____

Task 5 Family/caregiver preparedness
Task Assignment: _____
Time line for completing: _____

Task 6 Medication safety issues
Task Assignment: _____
Time line for completing:_____

Task 7 Follow-up care
Task Assignment: _____
Time line for completing: _____

Task 8 Educational issues
Task Assignment: _____
Time line for completing: _____

Appendix J:
Tools for Establishing General Aims

TASK

Establish general aims.

General Aim 1: _____
_____
_____
_____
_____

General Aim 2: _____
_____
_____
_____
_____

General Aim 3: _____
_____
_____
_____
_____

General Aim 4: _____
_____
_____
_____
_____

Task Assignment: *The Improvement Team*
Time Line for Completing: *First Team Meeting*

Appendix K:
8P Tool

The 8Ps:
Assessing Your Patient's Risk For Adverse Events After Discharge

Risk Assessment: 8P Screening Tool (Check all that apply.)	Risk Specific Intervention	Signature of individual responsible for insuring intervention administered
Problems with medications (polypharmacy – i.e. ≥10 routine meds – or high risk medication including: anticoagulants, insulin, oral hypoglycemic agents, aspirin & clopidogrel dual therapy, digoxin, narcotics) ☐	☐ Medication specific education using Teach Back provided to patient and caregiver ☐ Monitoring plan developed and communicated to patient and aftercare providers, where relevant (e.g. warfarin, digoxin and insulin) ☐ Specific strategies for managing adverse drug events reviewed with patient/caregiver ☐ Elimination of unnecessary medications ☐ Simplification of medication scheduling to improve adherence ☐ Follow-up phone call at 72 hours to assess adherence and complications	
Psychological (depression screen positive or history of depression diagnosis) ☐	☐ Assessment of need for psychiatric care if not in place ☐ Communication with primary care provider, highlighting this issue if new ☐ Involvement/awareness of support network insured	
Principal diagnosis (cancer, stroke, DM, COPD, heart failure) ☐	☐ Review of national discharge guidelines, where available ☐ Disease specific education using Teach Back with patient/caregiver ☐ Action plan reviewed with patient/caregivers regarding what to do and who to contact in the event of worsening or new symptoms ☐ Discuss goals of care and chronic illness model discussed with patient/caregiver	
Physical limitations (patients with deconditioning, frailty, or other physical limitations that impair their ability to participate in their own care) ☐	☐ Engage family/caregivers to ensure ability to assist with post-discharge care assistance ☐ Assessment of home services to address limitations and care needs ☐ Follow-up phone call at 72 hours to assess ability to adhere to the care plan with services and support in place.	
Poor health literacy (inability to do Teach Back) ☐	☐ Committed caregiver involved in planning/administration of all discharge planning and general and risk specific interventions ☐ Post-hospital care plan education using Teach Back provided to patient and caregiver ☐ Link to community resources for additional patient/caregiver support ☐ Follow-up phone call at 72 hours to assess adherence and complications	
Patient support (social isolation, absence of support to assist with care, as well as insufficient or absent connection with primary care) ☐	☐ Follow-up phone call at 72 hours to assess condition, adherence and complications ☐ Follow-up appointment with appropriate medical provider within 7 days after hospitalization ☐ Involvement of home care providers of services with clear communications of discharge plan to those providers ☐ Engage a transition coach	
Prior hospitalization (non-elective; in last 6 months) ☐	☐ Review reasons for re-hospitalization in context of prior hospitalization ☐ Follow-up phone call at 72 hours to assess condition, adherence and complications ☐ Follow-up appointment with medical provider within 7 days of hospital discharge ☐ Engage a transition coach	
Palliative care (Would you be surprised if this patient died in the next year? Does this patient have an advanced or progressive serious illness? "No" to 1st or "Yes" to 2nd = positive screen) ☐	☐ Assess need for palliative care services ☐ Identify goals of care and therapeutic options ☐ Communicate prognosis with patient/family/caregiver ☐ Assess and address concerning symptoms ☐ Identify services or benefits available to patients based on advanced disease status ☐ Discuss with patient/caregiver role of palliative care services and the benefits and services available to the patient	

General Assessment of Preparedness (GAP)

Prior to discharge, evaluate the following areas with the patient/family/caregiver(s). Communicate concerns identified as appropriate to principal care providers.
A = beginning upon Admission; **P** = Prior to discharge; **D** = at Discharge

Logistical Issues

1.	Functional status assessment completed (P)	YES ¨	NO ¨	N/A ¨
2.	Access (e.g. keys) to home insured (P)	YES ¨	NO ¨	N/A ¨
3.	Home prepared for patient's arrival (P)	YES ¨	NO ¨	N/A ¨
	(e.g. medical equipment, safety evaluation, food)			
4.	Financial resources for care needs assessed (P)	YES ¨	NO ¨	N/A ¨
5.	Ability to obtain medications confirmed (P)	YES ¨	NO ¨	N/A ¨
6.	Responsible party for insuring med adherence	YES ¨	NO ¨	N/A ¨
	identified/prepared, if not patient (P)			
7.	Transportation to initial follow-up arranged (D)	YES ¨	NO ¨	N/A ¨
8.	Transportation home arranged (D)	YES ¨	NO ¨	N/A ¨

Psychosocial Issues

1.	Substance abuse/dependence evaluated (A)	YES ¨	NO ¨	N/A ¨
2.	Abuse/neglect presence assessed (A)	YES ¨	NO ¨	N/A ¨
3.	Cognitive status assessed (A)	YES ¨	NO ¨	N/A ¨
4.	Advanced care planning documented (A)	YES ¨	NO ¨	N/A ¨
5.	Support circle for patient identified (P)	YES ¨	NO ¨	N/A ¨
6.	Contact information for home care services	YES ¨	NO ¨	N/A ¨
	obtained and provided to patient (D)			

Confirmed by: _____ _____ ___/___/___
  Signature Print Name Date

Grimmer K, Moss J, Falco J, Kindness H. Incorporating Patient Concerns into Discharge Plans: Evaluation of a Patient-Centered Checklist. The Internet Journal of Allied Health Sciences and Practice. 2006;4(1):1-8.

Patient PASS

Patient **P**reparation to **A**ddress **S**ituations (after discharge) **S**uccessfully

I _____ ecause

If I have the following problems …

1. _____
2. _____
3. _____
4. _____
5. _____

I should …

1. _____
2. _____
3. _____
4. _____
5. _____

My appointments:

1. On: ___/___/___ at __:__ am/pm
   For: _____
2. On: ___/___/___ at __:__ am/pm
   For: _____
3. On: ___/___/___ at __:__ am/pm
   For: _____
4. On: ___/___/___ at __:__ am/pm
   For: _____

Other instructions:

1. _____
2. _____
3. _____

Important contact information:

1. My primary doctor: _____
   (___) _____
2. My hospital doctor: _____
   (___) _____
3. My visiting nurse: _____
   (___) _____
4. My pharmacy: _____
   (___) _____
5. Other: _____
   _____

Tests and issues I need to talk with my doctor(s) about at my clinic visit:

1. _____
2. _____
3. _____
4. _____
5. _____

I understand my treatment plan. I feel able and willing to participate actively in my care:

_____
Patient/Family/Caregiver Signature

_____
Provider Signature

___/___/___
Date

Hospital Patient Safe-D(ischarge) Project　　　　　　**DPET**　　　Medical Record # _____

Name: _____　　　Phone Number: _____

Admission Date: _____ Discharge Date: _____ Days in the Hospital: _____

Primary Care Doctor: _____　　　Phone Number: _____

Hospitalist Doctor: _____　　　Phone Number: _____

Other Doctor: _____　　　Specialty: _____
Other Doctor: _____　　　Specialty: _____
Other Doctor: _____　　　Specialty: _____

DIAGNOSIS

I had to stay in the hospital because: _____

The medical word for this condition is: _____

I also have these medical conditions: _____

_____

TESTS

While I was in the hospital I had these tests:	which showed:

TREATMENT

While I was in the hospital I was treated with:	The purpose of this treatment was:

Discharge Patient Education Tool　　　　　　　　　　　　　Page 1

Hospital Patient Safe-D(ischarge) Project **DPET** Medical Record # _____

FOLLOW-UP APPOINTMENTS
_____After leaving the hospital, I will follow up with my doctors.
(initials)

Primary Care Doctor: _____ Phone Number: _____

DATE: _____, ___ ___, 201__ **TIME:** ____:____ __m

Specialist Doctor: _____ Phone Number: _____

DATE: _____, ___ ___, 201__ **TIME:** ____:____ __m

FOLLOW-UP TESTS
_____After leaving the hospital, I will show up for my tests.
(initials)

TESTS	LOCATION	DATE	TIME
		, , 201	: m
			: m
			: m

Call your Primary Care Doctor for the following:
Warning signs

1)	4)
2)	5)
3)	6)

LIFE STYLE CHANGES
_____After leaving the hospital, I will make these changes in my activity and diet.
(initials)

Activity:_____, because _____

Diet: _____, because _____

Smoking:
□ Non-smoker
□ Smoker-Plan for quitting: _____

Follow-up Phone Call DATE: _____, ___ ___, 201__ **TIME:** ____:____ __m

Patient Signature:_____

Doctor or Nurse Case Manager Signature:_____ **Date:** _____/_____/ 201__

If you have any problems or questions about your health after leaving the hospital, please call_____.
If you have any questions about your participation in this research study, please call _____.

Discharge Patient Education Tool Page 2

Hospital Patient Safe-D(ischarge) Project   **DPET**   Medical Record # _____

MEDICATIONS

When I leave the hospital and go home, I will be taking the medicines on my Prescription Form.

_____ I understand which medicines I took before I came to the hospital and will now STOP.
(initials)   (If applicable)

_____ I understand the medicines I will continue taking and new medicines I will take.
(initials)

_____ I understand why and when I need to take each medicine.
(initials)

_____ I understand which side effects to watch for.
(initials)

Please bring all of your medicines to your follow-up appointments.

Discharge Patient Education Tool   Page 3

Appendix N
The Project BOOST® Advisory Board
(original toolkit)

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Appendices