STate Action on Avoidable Rehospitalizations Initiative

Applying early evidence and experience in front-line process improvements to develop a state-based strategy

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Introduction

Delivering high-quality health care requires crucial contributions from many parts of the care continuum. However, as health care becomes increasingly specialized, coordination between providers and between settings is too often not conducted as a team effort. In the hospital setting, poor coordination of care often results in rehospitalizations, many of which are avoidable.

In part, poor coordination of care between settings is a function of a payment environment that rewards volume of services over quality of longitudinal care. Neither patients nor payers are receiving high value from the current volume-based, fragmented health care delivery environment. Even before the onset of a global economic crisis, the unsustainable increases in US health care costs had prompted state officials, administrators of purchasing and payer organizations, and other public and private sector leaders to focus on areas of high cost and low quality. In the current economic climate, the need to deliver effective care that minimizes avoidable waste is a high priority.

The June 2007 and 2008 Medicare Payment Advisory Commission (MedPAC) Reports to Congress highlighted avoidable rehospitalizations as an area of high cost and low quality. These reports, even in the absence of payment reform or publically reported data, have prompted leaders of health care systems across the country to begin to focus on avoidable rehospitalizations in anticipation of potential changes in the market. A number of commercial payers analyze their membership-specific rehospitalization rates and variably provide services for patient populations with high hospitalization rates. The Centers for Medicare & Medicaid Services (CMS) included a Care Transitions focus in its 9th Statement of Work, which started in 2008; as a result, Quality Improvement Organizations (QIOs) in 14 communities are now working to coordinate care and improve transitions with the specific aim of reducing rehospitalizations. Although there is currently no nationally adopted rehospitalization measure, a number of states are preparing to publicly report 30-day rehospitalization rates.

For these reasons, clinicians and hospital administrators are eager to find effective approaches to reducing avoidable rehospitalizations, and payers, policy makers and purchasers are eager to develop incentives to improve practice. There is reason to believe that rehospitalization rates can be improved; a number of approaches to reduce avoidable rehospitalizations have been successful locally. Less clear is which of the interventions are the most effective and which can be readily implemented in a wide variety of health care settings. Unlike traditional entity-based process improvement challenges, success in improving transitions of care and reducing avoidable rehospitalizations requires engaging clinicians and providers across organizational and service delivery types. Reducing rehospitalizations in a state or region will require coordinated effort among providers and organizations that lack financial and perhaps information-sharing relationships. Engagement of payers, purchasers, and policy makers will be essential to address a fundamental restructuring of the current volume-based incentives. Finally, the participation and engagement of patients and families is essential to improving coordination of care and accessing care at the right time, in the right place, that serves the needs of the individual.

This document reflects the work of the Institute for Healthcare Improvement (IHI) to develop a state-wide strategy for reducing avoidable rehospitalizations. It is organized as follows:

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State Action on Avoidable Rehospitalizations (STAAR) Initiative: A State-Based Strategy

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Background

Hospitalizations account for one-third of the $2 trillion in total health care expenditures in the United States.\(^1\) In the majority of situations, hospitalizations for acute and serious illnesses are necessary and appropriate; however, a substantial proportion of hospitalizations—approximately 28 percent—are avoidable.\(^2\) Avoidable hospitalizations and rehospitalizations are potentially harmful and expensive. They are symptomatic of multiple process defects in the health care system, including lack of:

- Timely or equitable access to care;
- Effective handoffs and coordination of care;
- Reliable and effective care;
- Safe care; and
- Patient-centered and appropriate end-of-life care.

Experience and published evidence suggest that avoidable hospitalization rates can be reduced; individual health systems and researchers have demonstrated reductions as high as 40 percent to 85 percent in 30-day readmission rates for certain patient populations.\(^3\) However, the gap between research, local innovations and standard practice is wide. Many of the current promising approaches represent a patch or workaround for one or another of these process defects. A whole system view of the problem highlights the misaligned financial incentives that create a void of accountability across care settings. A multi-faceted approach that spans traditional silos of care will be required to translate existing evidence into practice and reduce rates of avoidable hospitalizations.

At the center of the problem of avoidable rehospitalizations is the imperative of addressing the needs of affected patients and families. Our fee-for-service, episode-based, acute-care oriented medical environment is characterized by a lack of focus on patient preferences and experiences. Avoiding rehospitalization is a patient-centered goal. Working to reduce avoidable rehospitalizations should not be misconstrued as a rationing or withholding of care, but rather as a vital step in making care both effective and patient centered. Therefore, a critically important outcome of this work will be to evaluate patient and family satisfaction with care.

Reducing avoidable rehospitalizations is a challenge which creates an opportunity for providers, payers, and policy makers to create a platform to facilitate better patient care and support that is coordinated across the continuum. Working toward a more coordinated system of care delivery, health care leaders, payers, and policy makers have an opportunity to significantly improve care for the chronically ill and frail elderly population, as well as enjoy likely cost savings from reduced unnecessary utilization, achieve better results on performance reporting for hospital-specific 30-day readmission rates, and be better prepared for potential payment implications in the years to come. IHI believes these improvements can appreciably improve patient care and the patient experience of care and can be achieved with relatively low-tech interventions that may be readily implemented.

Classification of Avoidable Hospitalizations

Avoidable hospitalizations can be classified into three categories:

- Potentially preventable hospitalizations;
- Rehospitalizations (readmissions); and
- Inappropriate hospitalizations.
The characteristics of these types of hospitalizations are summarized below.

**Potentially Preventable Hospitalizations**
Potentially preventable hospitalizations generally are defined in the literature as those that occur as a result of one of fifteen “ambulatory care sensitive conditions” (ACSCs). ACSCs include five acute conditions and ten chronic conditions; four conditions relate to the consequences of uncontrolled diabetes; and the others are asthma, chronic obstructive pulmonary disease (COPD), congestive heart failure (CHF), hypertension, angina, pediatric gastroenteritis, dehydration, urinary tract/kidney infections, bacterial pneumonia, and perforated appendix. By definition, hospitalizations occurring as a result of these conditions may have been prevented by either timely access to quality outpatient care or adoption of healthy behaviors.

The resources consumed by hospitalizations due to ACSCs are significant:
- 4.4 million hospitalizations per year
- $29 billion in total hospital costs
- 10 percent of total hospital expenditures
- 31 percent of hospitalizations from nursing homes (in New York State)

In addition, other types of preventable hospitalizations occur as a result of poor quality of care, adverse drug events, lack of appropriate pain management or end-of-life planning and care, or poor follow-up or monitoring of side effects. These hospitalizations would be mitigated with timely, effective outpatient and home care.

**Rehospitalizations**
Rehospitalizations, or readmissions, are defined in various ways in the literature and in practice, but generally refer to a repeat hospitalization within a certain number of days following the most recent discharge (e.g., 30, 60, or 90 days, or one year). In Medicare, approximately one-third of rehospitalizations occur within 90 days, and 80 percent within a year.

Not all rehospitalizations are avoidable. Although the peer-reviewed literature does not provide a firm estimate of the rate of avoidable rehospitalizations, retrospective expert medical record review suggests that 14 percent to 46 percent of rehospitalizations could have been avoided. The resources consumed by rehospitalizations are significant:
- 5 million rehospitalizations per year
- 14 percent to 19 percent rehospitalization rate
- 25 percent of Medicare hospital costs
- 12 percent rate of rehospitalization of post-acute or nursing home patients even before the actual transfer process out of the hospital can be completed

**Inappropriate Hospitalizations**
Inappropriate hospitalizations occur with uncertain frequency in the general population. There are data suggesting that 40 percent of nursing-home-to-hospital transfers were considered inappropriate.

Hospitalizations that would be classified as inappropriate include those that:
- Facilitate an outpatient work-up;
- Facilitate placement into long-term care; and
• Manage conditions that do not meet the requirements of an inpatient level of care.

Populations Affected

General Hospitalized Population
Poor discharge processes, lack of timely follow-up, uncertainty regarding self-management tasks, and confusion about medications all result in highly variable care at times of transitions and affect a large proportion of all hospitalized patients.

Chronically Ill, Frail Elderly, and Socially Disenfranchised
High rates of avoidable rehospitalization are especially likely among patients with chronic illnesses, particularly those prone to acute exacerbations such as heart failure (HF) and chronic obstructive pulmonary disease (COPD); the frail elderly; patients residing in nursing homes or who receive home health care services; patients nearing the end of life; and individuals with psychiatric illness, substance abuse, and complex social challenges, including poverty. As a group, individuals with more than five chronic conditions have the most complex medical requirements and highest rates of rehospitalization.13

Heart failure is the leading admission diagnosis for all patients over 65 years old. Patients with HF are particularly vulnerable to rehospitalization; data from 2005 report that, of 616,000 patients discharged with HF,7,9

• 27 percent were rehospitalized within 30 days;
• 39 percent were rehospitalized within 60 days;
• Nearly 50 percent were rehospitalized within 90 days; and
• 53 percent of CHF rehospitalizations may have been prevented.

Recently published data from New York describe the high rates of hospitalization and rehospitalization among the nursing home population.14 Hospitalizations from nursing homes have increased 30 percent over the past five years. One-third (31 percent) of hospitalizations from nursing homes were potentially avoidable; the most frequent cause was pneumonia, and significant proportions of the rest were due to urinary tract infections, HF, and dehydration. Pressure ulcers and injuries due to falls also result in unnecessary hospitalizations.

Over three million episodes of home care are provided each year. The average risk-adjusted rate of home care episodes that end in acute care hospitalizations is approximately 30 percent, representing more than 950,000 hospitalizations.15 Improvement is possible; 25 percent of all agencies have achieved rates less than 23 percent, and demonstration projects in New York have attained hospitalization rates in the 20 percent range.

Retrospective data reveal high rates of hospitalizations at the end of life. Although it is difficult to predict the time to the end of life even in patients with progressive organ failure, a large body of evidence demonstrates considerable overuse of acute hospitalization, especially in intensive care units, with a corresponding adverse impact on quality of care, cost, and patient satisfaction.16 There is compelling evidence that patients with advanced directives are more likely to die outside of the hospital, according to their wishes; have fewer invasive adjuncts such as feeding tubes or ventilator support in the last month of life; and report improved satisfaction.17

Why Focus on Rehospitalizations?
A focus on reducing avoidable rehospitalization rates is warranted for the following reasons:
- The burden of harm and cost of millions of rehospitalizations is high;
- There is a large body of evidence suggesting ways to reduce rehospitalizations;
- The at-risk population and outcome of interest are identifiable and measurable; and
- Stakeholders are focused on reducing rehospitalizations per se as a quality marker of improvements in care coordination across the continuum.

IHI anticipates that the system-wide interventions across the continuum of care that will be required to reduce rehospitalization rates in a population will have an impact on inappropriate and preventable hospitalizations as well. For example, implementing methods to improve chronic disease management, remote monitoring, home care, and end-of-life care would reduce both preventable hospitalizations and rehospitalizations. Improvements in patient and family self-management support or home care may reduce the inappropriate hospitalizations that do not require an inpatient level of care.

IHI anticipates that an emphasis on rehospitalizations will focus energy and attention on a commonly accepted goal and provide a concrete basis on which to initiate improvement activities. Improved hospital-based practices will center on comprehensive discharge planning with patient and family education and engagement that begins as soon as the patient is admitted. Optimal post-discharge support will require providers to reach beyond the walls of the hospital to communicate and coordinate care with home health agencies, skilled nursing facilities (SNFs), ambulatory providers, patients, and family and other caregivers.

Opportunities to reduce avoidable hospitalizations versus avoidable rehospitalizations include the following:

### Reducing Avoidable Hospitalizations
- Health insurance coverage
- Access to care
- Personal physician/provider
- Lifestyle/behaviors
- Early care seeking
- Evidence-based care for chronic conditions
- Receipt of preventive care
- Public health interventions

### Reducing Avoidable 30-Day Rehospitalizations
- Evidence-based inpatient care
- Error free inpatient care
- Enhanced patient and family education and coaching on self-management
- Appropriate referral for home care
- Written discharge instructions that incorporate health literacy principles
- Medication reconciliation occurs
- Timely post-acute follow-up
- Known emergency/urgent contact
- Documented care plan and goals

### Insights from Medicare Data

Because there is no uniformly adopted measure of rehospitalizations or a uniform process for collecting rehospitalization rates nationally, it is difficult to state with certainty how many rehospitalizations occur within 30 days and how many of these rehospitalizations were avoidable. However, a number of population-specific analyses of rehospitalization rates now exist, providing a clearer picture of the scope of the problem.
Publicly available national data on rehospitalization rates are limited. Because Medicare claims data files include both inpatient and outpatient billing information, Medicare data is a useful starting point to assess the extent of the rehospitalization problem and to search for underlying causes. A 2009 analysis of Medicare rehospitalization data by Jencks, Williams, and Coleman\(^7\) provides national-level insights into the epidemiology of rehospitalization in the US. Additionally, a 2007 MedPAC report\(^{18}\) and a 2007 Commonwealth Fund Scorecard\(^{19}\) demonstrated the high cost and high variability of rehospitalizations across the US.

**Rates**

As shown in Table 1, 19.6 percent of hospitalized Medicare beneficiaries were rehospitalized within one month and one-third (34 percent) experienced rehospitalization within three months. By one year after discharge, two-thirds of the Medicare patients were either deceased or experienced a rehospitalization.\(^7\)

**Table 1: Medicare Beneficiary Rehospitalizations and Deaths after Hospital Discharge**

<table>
<thead>
<tr>
<th>Days after discharge</th>
<th>Percent at risk</th>
<th>Cumulative rehospitalizations</th>
<th>Cumulative outpatient deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-30</td>
<td>100.0%</td>
<td>19.6%</td>
<td>3.5%</td>
</tr>
<tr>
<td>31-60</td>
<td>76.3%</td>
<td>28.2%</td>
<td>4.5%</td>
</tr>
<tr>
<td>61-90</td>
<td>67.3%</td>
<td>34.0%</td>
<td>5.1%</td>
</tr>
<tr>
<td>91-180</td>
<td>60.9%</td>
<td>44.8%</td>
<td>6.0%</td>
</tr>
<tr>
<td>181-365</td>
<td>49.3%</td>
<td>56.1%</td>
<td>6.8%</td>
</tr>
<tr>
<td>&gt;365 days</td>
<td>37.1%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

With such a high proportion of Medicare beneficiaries experiencing rehospitalizations, it is reasonable to consider whether or not risk-stratifying is essential; these data suggest a critically high proportion of individuals have poor experiences with discharge, regardless of presenting illness or other characteristics.

The leading medical diagnoses related to rehospitalization in Medicare beneficiaries are heart failure, pneumonia, COPD, and acute myocardial infarction (AMI); the most common surgical diagnoses are coronary artery bypass graft (CABG), percutaneous transluminal coronary angioplasty (PTCA), and other vascular procedures. Interestingly, of surgical patients rehospitalized within 30 days, 70 percent were readmitted for a medical diagnosis that was not related to the surgery.\(^7\)

**Cost**

Institute for Healthcare Improvement, March 2009
Rehospitalizations are not only prevalent, they are also costly. Of all Medicare hospitalizations, almost 18 percent are rehospitalizations within 30 days of discharge. These rehospitalizations account for $15 billion in spending annually in the US. \(^{18}\) A 2007 MedPAC analysis estimated that as many of 76 percent of Medicare rehospitalizations are avoidable. \(^{18}\) These rehospitalizations account for $12 billion in annual spending in the US.

**Variation**

Wide variation exists in the intra-state and inter-state rehospitalization rates. Medicare 30-day rehospitalization rates vary from 13 percent to 24 percent by state. \(^{19}\) States also vary in the proportion of avoidable hospitalizations, as shown in Figure 1.

**Figure 1: State Ranking of Avoidable Hospitalizations**

States that have published readmission rates have also reported wide variation in rates across their hospitals. For example, cardiac care readmission rates in Virginia varied from 6.7 percent to 24.7 percent, \(^{20}\) while in Florida a composite readmission rate ranged from a high of 39.5 percent to a low of 0 percent; \(^{21}\) in Pennsylvania, the highest composite readmission rate was over 62 percent while the lowest was 0 percent. \(^{22}\) One of the significant challenges in interpreting hospital- or state-specific rehospitalization rates is the wide variation in the definition of a readmission. Nonetheless, variation suggests there are opportunities for learning and improvement.

**Patterns**
Timing
The greatest risk for rehospitalization is soon after discharge (see Figure 2).7 In addition, Figure 2 suggests that while a baseline rate of rehospitalization is present, it is quite low.

Figure 2: Frequency of Rehospitalization

Relation to Outpatient Follow-Up
Of the Medicare patients rehospitalized within 30 days of discharge, half had no interim physician visit (see Figure 3). Note the dark line indicating the cumulative rate of patients who are rehospitalized without being seen by a provider between the time of discharge and the time of readmission.7

Figure 3: Medicare Fee-for-Service Patients Rehospitalized with No Interim Physician Visit

Relation to Length of Stay

Institute for Healthcare Improvement, March 2009
Rehospitalized patients had a longer length of stay (LOS) by 0.6 days for the same diagnosis-related group (DRG).7

Rehospitalization to the Same or Other Facility
Nationally, about 20 percent of rehospitalizations after HF, COPD, and pneumonia occur in another hospital; and about 40 percent of rehospitalizations after rehabilitation, psychosis, cardiac surgery, and stroke occur in another facility.7

Planned vs. Unplanned Rehospitalizations
Medicare data demonstrates a pattern of rehospitalization that is consistent either with clinical deterioration or with planned, scheduled rehospitalization, suggesting it is possible to identify planned rehospitalizations for some conditions, which are a different subgroup from unplanned, potentially avoidable rehospitalizations. Figure 4 demonstrates the difference between the data for rehospitalizations for various diagnoses. Plotting the data for the diagnoses of pneumonia, renal failure, and medical treatment of peripheral vascular disease reveals straight lines, suggesting clinical deterioration related to the condition treated during hospitalization. The data for rehospitalization after cardiac stent placement look very different, with peaks at one, two, three, and four weeks after discharge, probably due to the scheduling of follow-up appointments after discharge. The data for rehospitalization after chemotherapy show weekly spikes that are likely related to the timing of discharge planning rather than clinical deterioration related to the diagnosis at the index hospitalization. The majority of data for rehospitalization after a variety of diagnoses have trends similar to those for pneumonia, renal failure, and medical treatment of peripheral vascular disease; only a small minority of diagnoses show trends similar to rehospitalization after cardiac stent placement.7

Figure 4: Frequency of Rehospitalization for Five Diagnoses

![Graph showing the frequency of rehospitalization for five diagnoses over time.]

Predictive Modeling
There has been a great deal of interest and effort aimed at determining patient-specific variables that are predictive of rehospitalization. The Jencks analysis found that the strongest patient-specific indicators
include the number of hospitalizations in the past six months and whether the length of stay was two or more times that expected for the DRG (see Figure 5).\(^7\)

**Figure 5: Medicare Person-Level Predictors of Rehospitalization**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Hazard Ratio (p&lt;0.05 CI)</th>
<th>Variable</th>
<th>Hazard Ratio (p&lt;0.05 CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital Observed Expected Ratio</td>
<td>1.036-1.089*</td>
<td>ESRD</td>
<td>1.408-1.425*</td>
</tr>
<tr>
<td>National Rehospitalization Rate for DRG</td>
<td>1.267-1.270*</td>
<td>SS/</td>
<td>1.113-1.122*</td>
</tr>
<tr>
<td>Previous hospitalizations in last 6 mo</td>
<td>Male</td>
<td>1.053-1.059*</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1.374-1.383*</td>
<td>Age 55-64</td>
<td>0.978-0.968*</td>
</tr>
<tr>
<td>2</td>
<td>1.746-1.758*</td>
<td>Age 65-69</td>
<td>0.988-1.008</td>
</tr>
<tr>
<td>5 or more</td>
<td>2.495-2.513*</td>
<td>Age 70-74</td>
<td>1.012-1.035*</td>
</tr>
<tr>
<td>Stay &gt;2X expected for DRG</td>
<td>Age 75-79</td>
<td>1.039-1.064*</td>
<td></td>
</tr>
<tr>
<td>Stay &lt;0.5X expected for DRG</td>
<td>Age 80-84</td>
<td>1.088-1.113*</td>
<td></td>
</tr>
<tr>
<td>African-American</td>
<td>Age 85-89</td>
<td>1.111-1.136*</td>
<td></td>
</tr>
<tr>
<td>Disabled</td>
<td>Age &gt;89</td>
<td>1.125-1.151*</td>
<td></td>
</tr>
</tbody>
</table>

*p<0.05

**Political Context**

The increasing cost of health care is prompting payers and purchasers to address high-cost areas that yield low value. There are many areas in the current US health care delivery system that are in great need of improvement in order to realize better quality or value; care coordination is among the top issues receiving the most attention.

Efforts to improve care coordination highlight several defects in the current delivery system: the lack of a valued, central role for primary care; fragmented providers in the inpatient and outpatient setting; poor information sharing across providers, resulting in unnecessary duplication; volume-based fee-for-service payment systems; and variable efforts at engaging patients in shared decision making, including at the end of life.

Over the past two years, rehospitalization rates have increasingly become a focus of attention for payers and policy makers as discrete symptoms of the deficiencies listed above. In general, the process of discharge from the hospital is intended to establish the patient, stably, in a new setting of care. Early rehospitalization signals a failure in that process. The insights from Medicare data discussed in the previous section suggest that rehospitalizations are prevalent, costly, and occur with high variability across geographies and providers.

**Current Environmental Scan**

Specific indicators of national or state-level interest in avoidable rehospitalizations include:

- MedPAC June 2007 and 2008 reports highlight avoidable rehospitalizations as an area of poor quality, making recommendations for data reporting and payment reform;\(^{18,23}\)
May 2008 National Quality Forum (NQF) endorsement of five outcome measures for care transitions;24

In June 2008, Florida becomes the first state to publically report potentially preventable rehospitalization rates;25

In August 2008, CMS launch of Care Transitions contracts in 14 communities, with the specific aim of improving transitions and care coordination across the continuum to reduce rehospitalizations;26

In November 2008, the National Priorities Partnership announced 6 priority areas for the United States, including care coordination and reducing 30 day readmissions;27

In January 2009, CMS extended the Care Management of High Cost Beneficiaries Demonstration;28

In February 2009, the Obama Administration 2010 budget highlights avoidable rehospitalizations as an area of poor quality, and recommends paying hospitals a flat fee for a hospitalization and the 30 days of follow-up care;29

A small number of state Medicaid agencies are considering or developing policy to establish a differential payment policy for rehospitalizations; and

Several states are currently examining how to obtain and analyze state-wide rehospitalization data.

In addition to the compelling cost and quality issues germane to many in the health policy arena, working to reduce avoidable rehospitalizations holds promise to achieve other important performance characteristics of the US health care system.

• Patient experience: By focusing on all-cause rehospitalization rates, the patient’s experience of care is the central focus of concern—not service lines, diagnostic categories, or other administrative divisions.

• Promoting system-ness: By focusing on rehospitalizations (to any facility) and not only readmissions (to the same facility), the central challenge of improving the processes of transitions is between settings and providers—whether or not these settings are organizationally or financially related.

Who Currently Has the Will to Reduce Avoidable Rehospitalizations?

Individuals, groups, and organizations that currently have the will to take the actions necessary to reduce rehospitalizations include:

• Payers and purchasers
• States
• Hospitals
• Hospital associations
• Integrated health systems
• Communities
• Clinicians/providers

Payers and Purchasers

Some public and private sector payers have signaled their intentions to develop payment strategies or other approaches to curb high rates of avoidable rehospitalizations. In the private sector, many commercial payers have identified their members with high resource utilization—usually including...
recurrent hospitalizations—and several have adopted programs of disease management or care
management to optimize the outpatient (and presumably lower cost) care of these individuals. In
addition, some commercial payers have developed global budgeting contracting options with providers
(physicians and hospitals); these arrangements are in relatively early stages of adoption.

Payment signals in the public sector are led by MedPAC recommendations. In June 2008, MedPAC
issued recommendations regarding rehospitalizations, including:\(^{23}\)

- Confidently report readmission rates for two years and then make data publicly available;
- Reduce payment to hospitals with high readmission rates for a set of conditions;
- Allow hospitals and physicians to share in savings gained from improved processes; and
- Conduct a voluntary pilot to test bundled payments for hospitalizations for a set of conditions.

In addition, a small number of state Medicaid agencies are examining differential payment policies for
avoidable rehospitalizations, although no policy changes have been implemented at this time.

Purchasers, including state employee health plans, are examining how to use their purchasing and
contracting leverage to promote greater value and efficiency, driven by an acute need to control the rise
in health insurance premiums at the state and local municipality level.

These private and public sector signals indicate an intention to overcome the limitations of the current
fee-for-service payment system and indicate movement toward payment for care across provider types
and across time.

**States**

Officials in several states are considering state-level initiatives that specifically address reducing
avoidable rehospitalizations. State officials are including these initiatives in state-wide health reform
efforts that also aim to increase coverage, reduce costs, and expand the use of the medical home. In
addition, state officials are interested in reducing rehospitalizations because of the states’ role as
purchasers/payers for Medicaid and state employee health plans.

In some cases, state agencies have access to all-payer data, which allows for transparency and
comparison of rehospitalization (not just readmission) rates. Understanding state and local
rehospitalization rates is an important starting point for developing policies to promote improved
performance and coordination in a locality.

Finally, reducing avoidable rehospitalizations and/or improving care coordination are high on a number
of state-level leadership agendas, in part due to the quality improvement technical assistance offered by
nonprofit organizations or foundations. Currently, the Commonwealth Fund supports the State Quality
Institute, in which public and private sector leaders in nine states are participating in a program that ties
state quality measures to state-level strategies for improvement.

Often rapidity of results is of concern to state officials, who may need to demonstrate programmatic
benefits within the same budgetary cycle. Unfortunately, the turnaround on investment and timetable for
potential gains are currently unknown.
Hospitals
Boards and administrators of hospitals may be interested in reducing rehospitalizations for several reasons, including:

- Opportunity for market differentiation during current shifts with public reporting of performance data, new payment policies, and bundling payment;
- Ability to compete based on making a business case to purchasers that highlights low-cost/high-quality care for market share;
- Bed capacity challenges and ED diversions; and
- Avoidance of costly capital expenditures.

However, a significant barrier to action is the current reimbursement and payment system. A single hospital may incur financial liability under the current system if rehospitalizations are reduced. Despite this disincentive, many hospital executives are embracing this challenge in anticipation of public reporting and/or payment policy changes. In some cases, hospital executives view reducing avoidable rehospitalizations as a means for freeing up bed capacity for higher acuity patients and relieving patient flow and space problems in the emergency department.

Hospital Associations
Hospital association leadership may be interested in working to reducing rehospitalizations for several reasons, including:

- Need to respond to a compelling local story for change (e.g., hospitals across the market that have diversion or capacity issues);
- Desire to provide leadership on quality improvement initiatives;
- Desire to make effective use of state discharge databases (for hospital associations that serve as repositories of state-wide data); and
- Ability to convene other trade associations across the continuum of care (e.g., skilled nursing facilities).

At the current time, a small number of hospital associations across the US are interested in addressing rehospitalizations because of competing quality priorities, concern about the financial impact of reduced volume on their member hospitals, or relative unfamiliarity with this new issue.

Integrated Health Systems
Administrators of integrated health systems are quite interested in reducing avoidable rehospitalizations within their organizations. Their motivations for engaging in this work include the following:

- Aligned financial incentives;
- Existing infrastructure and capacity across the continuum of care;
- Emerging IT integration;
- Market differentiation on low-cost/high-quality care; and
- Patient-centric focus.

To date, many of the efforts of integrated health systems have focused on patients with specific diagnoses (e.g., those that require anticoagulation, had heart failure, etc.). Many efforts are focused on enhanced outpatient care coordination, patient education, and proactive outreach.
Communities
Individuals, groups, and non-hospital providers within a community are becoming increasingly interested in improving care coordination across the continuum and reducing avoidable rehospitalizations. These groups include the 14 communities across the US that have been awarded QIO Care Transitions contracts. The contracts support work to improve care across the continuum, across settings, and across organizations.

In addition, non-hospital providers and service agencies in some communities across the US are beginning to consider transitions of care as a community-based challenge that requires shared ownership and close collaboration across settings.

Clinicians/Providers
A number of different clinicians and care providers are especially interested in reducing rehospitalizations, either because of their specialty focus on chronic care or because of performance incentives or performance review. These clinicians and providers include:

- Acute care nurses
- Hospitalists
- Primary care providers
- Geriatricians
- Specialists, such as heart failure clinicians
- Staff of skilled nursing facilities
- Home health nurses
- Providers of hospice and palliative care
- Providers of patients in Medicare and Medicaid Special Needs Programs (SNPs)

The challenges for individual providers to improve care coordination despite diligent efforts include the following: misaligned volume-based incentives that value productivity over quality and coordination; lack of information sharing agreements and health information technology in and between local health care organizations; restrictions on approvals for enhanced outpatient services without an inpatient stay; and others.

Is It Possible to Generate Greater Will?
As above, individual hospitals, health systems, or providers may encounter financial, political, or logistical or information-based challenges if they embark on efforts to improve their individual efforts at care coordination. At the very least, efforts to improve transitions in care involve the “senders” communicating and coordinating with the “receivers,” including patients and caregivers. This involves understanding the flow of patients across all settings of care in a community, and providing incentives or other structures to remunerate the effort spent on effective coordination, especially if it comes at the expense of volume. There are two primary methods for generating greater will to initiate actions to reduce rehospitalizations:

- Make data available
- Align incentives

Make Data Available
Some state hospital associations and/or state data authorities have all-payer hospital discharge data. A small number are actively analyzing and plan to report hospital-specific rehospitalization rates. A
statewide discharge database analysis using one method of defining rehospitalizations is an essential starting point; the wide variety of measurement methods is currently a significant limitation to the use of self-reported hospital-specific readmission rates. Some metrics are condition-specific (e.g., patients with CHF readmitted for CHF-related causes). Other metrics are service line-specific (e.g., postoperative patients readmitted for surgery-related causes). In addition, the time intervals used to calculate readmission metrics also vary (e.g., 7-, 15-, 30-, or 90-day or one-year rates). Finally, the denominator used may vary based on different exclusions used to filter the data (e.g., planned admissions, metastatic cancer, trauma, patients discharged against medical advice).

To generate greater will, uniformly analyzed rehospitalization rates form the prerequisite for a community-based and/or statewide discussion of local solutions to improve care coordination. In many cases, the optimal data do not exist; we will discuss the emerging approaches to address this technical challenge in the final section of this document.

**Align Incentives**

Understanding and properly aligning incentives is a necessary ingredient for generating will among a community of providers to reduce rehospitalizations. A primary barrier is the volume-based, fee-for-service payment structure that neither recognizes nor rewards the work involved in effective longitudinal care and coordination. However, even where alternative contracting or demonstration projects exist, the challenges of effectively aligning incentives are substantial and may require additional skill sets and infrastructure. Some approaches to align incentives for this work include the following:

- Create incentives to work across traditional settings of care and between providers;
- Create incentives to communicate with patients and caregivers;
- Improve outpatient care coordination;
- Encourage efficiencies in coordination and communication (i.e., electronic medical records, email and phone interactions between providers and patients, group visits);
- Decrease barriers to change (e.g., gain-sharing);
- Implement catalysts for change (e.g., data transparency, payment reduction, “bundling”); and
- Invest in enhancements for high-risk patients, particularly during transitions.

**The Human Face of the Problem**

Patients and their families suffer from cycles of recurrent hospitalizations. The two brief case studies that follow serve as a reminder of the “real-world” circumstances that patients and their providers must navigate in order to effectively reduce avoidable rehospitalizations.

**Case Study 1: James**

James, a 68-year-old gentleman, lives at home with Martha, his wife of 48 years. He was admitted to the hospital with shortness of breath (SOB) and diagnosed with pneumonia and underlying onset of heart failure. He and Martha were instructed on new medications and diet before discharge and asked to see his physician in the office in two weeks. A few days after returning home, Martha reminded James to schedule his visit to the physician’s office, but James had difficulty reaching the scheduler. Finally, he was able to set up a visit for three weeks later.
James didn’t mention to Martha that he took the three-day supply of Lasix the hospital sent home with him but never filled his prescription; he felt well again and thought the expense unnecessary. When he noticed swelling in his legs, he didn't want to bother the “busy doctor” and dreaded the ordeal of calling the office again.

After 11 days, James was readmitted to the hospital with increased SOB, weight increase of 25 pounds, marked edema of his lower legs, and mildly elevated blood pressure. His hospital stay went well, but James’ stress level was high and his blood pressure was elevated, so another drug was added to his medication regimen.

While James was still in the hospital, Martha was admitted for an emergent surgery. After his discharge from the hospital, James began eating in fast food restaurants as he worried about his wife, juggled visits to Martha’s bedside, and managed the roofing project on their home. The day Martha came home from the hospital, James was readmitted with exacerbation of his HF.

Case Study 2: Rebecca
Rebecca lives in Whatcom County, Washington, and she suffers from diabetes, cardiomyopathy, congestive heart failure, and a number of other significant complications. During the worst of her health crises, she saw 14 doctors and took 42 medications. In addition to the challenges of understanding her conditions and the treatments they required, she was burdened by the job of coordinating communication among all her providers, and passing information to each one after every admission, appointment, and medication change.

Rebecca said if she were to dream up a tool that would be truly helpful, it would be one to help her keep her care team all on the same page. She described typical medical records as being “location- or process-centered, not patient-centered.” She also described how difficult it can be to navigate a large care system. “Patients are in the worst kind of maze, one filled with hazards, barriers, and burdens,” she said.

Think about your patients or a friend you know who has experienced repeated hospitalizations. How could the processes of information sharing, coordination, and follow-up have been improved to help those individuals?

Promising Approaches to Reduce Avoidable Rehospitalizations
A large body of published research has focused on methods to improve the hospital discharge process and post-discharge support services. This broad range of interventions include: identifying patients at high risk of post-discharge problems; intensive in-hospital discharge preparation; daily discharge rounds; transitional units; liaison nurses and discharge coordinators; clinical nurse specialists; pre-discharge home visits; post-discharge home visits; post-discharge support programs; telephone follow-up after discharge; discharge planning protocols; enhanced communication between hospital and primary care providers; improved patient and family education; and others. There also is strong evidence that post-discharge nurse coordination or self-management coaching are effective, supporting the hypothesis that enhanced post-discharge support reduces avoidable rehospitalizations.
This large body of heterogeneous evidence, particularly focused on patients with heart failure, supports the effectiveness of three general types of interventions to reduce rehospitalizations:

- Improvements to existing processes in transitions in care;
- Supplemental services during transitions; and
- Effective patient and family engagement based on sound health literacy principles.

This section will review the current evidence of the effectiveness of interventions to improve existing processes and interventions that involve supplemental services. The evidence supporting these interventions includes both the best available published data and the best or most promising practices across the continuum of care for reducing rehospitalizations. A discussion of the use of medical literacy interventions to improve patient engagement, which is a third important component for reducing avoidable rehospitalizations, is also included.

**Overview of Promising Approaches**

Our review of the literature highlights five interventions as promising, evidence-based approaches to reducing avoidable rehospitalizations.

1. **Comprehensive Discharge Planning with Timely Communication**

   There is evidence that thorough preparation of the patient and family for discharge, a strong discharge plan, and prompt post-discharge communication and follow-up can reduce rehospitalizations by 25 percent.\(^4^0\) In current practice, providing basic anticipatory guidance for self-care needs at home is highly unreliable,\(^5^3\) and timely and clinically meaningful communication between care settings is rare.\(^4^3,5^4,5^5,5^6\)

2. **Post-Discharge Support**

   Post-discharge support reduces rehospitalizations. In current practice, appropriate, indicated referral for home health services is highly unreliable,\(^5^3\) and patients are left to arrange their own post-discharge follow-up contacts. Early post-acute follow-up (by care coordinator, coach, telephone nurse, or clinician)\(^5^0,5^1,5^2\) have been shown to reduce rehospitalizations.

   In addition, enhanced services in the transition period from acute care are effective. For example, Naylor and her colleagues have demonstrated that hospital-based advanced practice nurses who facilitate the discharge process and provide intensive post-discharge care management and coordination are associated with a reduction in rehospitalizations.\(^5^0,5^1\) Coleman and colleagues have demonstrated reduced rehospitalization rates using a short-term intervention with hospital-based patient coaches.\(^5^2\)

3. **Multidisciplinary Team-Based Management**

   Multidisciplinary heart failure management programs have documented a 61 percent reduction in hospitalizations and an 85 percent reduction in total hospital days.\(^5^7\) The Program for All-Inclusive Care for the Elderly (PACE) provides comprehensive, interdisciplinary care through an adult day center coupled with PACE teams that provide care in the hospital, nursing home, or home, as needed. Early evaluations of the model have shown a reduction in hospitalizations.\(^5^8\)

   These model programs provide comprehensive medical and social management, including some or all of the following: prevention and detection of acute events through continuous monitoring and assessment; patient education and behavior modification through the use of highly trained multidisciplinary
personnel; specialized treatment plans coordinated by disease experts; and preserved continuity of care across patient care settings.\textsuperscript{59,60} The relative, unique contribution of each of these interventions to improving outcomes is not clear from the literature.

4. Patient Education and Self-Management Support

Patient education and self-management support are critical to the development of a commonly understood care plan that includes medications, diet, and activity prescriptions, clear action steps at early stages of clinical deterioration, and participation in chronic disease monitoring. Many studies demonstrate the relationship between rehospitalizations and patient understanding of and adherence to medication and diet prescriptions.\textsuperscript{61,62,63}

- 47 percent to 64 percent of CHF admissions are attributable to medication or diet non-compliance;
- Only 10 percent of elderly CHF patients were compliant with medications at one year post-discharge; and
- Medication and diet non-compliance rates increase as disease progresses.

Interventions aimed at improving patient education at discharge may have an impact on rehospitalizations. A one-hour teaching session with a nurse educator as an adjunct to the usual discharge process has been shown to reduce the risk of rehospitalization or death.\textsuperscript{44} In addition, proactive discussions of advanced care planning and/or end-of-life preferences, and reliable communication of those preferences among providers and between care settings, is effective in reducing undesired hospitalizations.\textsuperscript{64}

5. Remote Monitoring

Remote monitoring is a broad field that encompasses a variety of modalities to track the health and well-being of an individual. Remote monitoring, in all of its multiple forms, can be used in conjunction with other systems to provide the necessary support and services an individual requires to remain in the home\textsuperscript{65} and detect signs of clinical deterioration early before a hospitalization is required.

Interventions to Improve Existing Processes

Re-Engineering Discharge (RED)

Clinicians at Boston University Medical Center have developed an intervention called Re-Engineering Discharge (RED). The intervention includes 11 components, which are facilitated by a specially trained nurse called a Discharge Advocate with responsibility for the following:

- Educate the patient about his or her diagnosis throughout the hospital stay
- Make appointments for clinician follow-up and post-discharge testing
- Discuss with the patient any tests or studies that have been completed in the hospital and who is responsible for following up on the results
- Organize post-discharge services
- Confirm the medication plan
- Reconcile the discharge plan with national guidelines and critical pathways
- Review what to do if a problem arises
- Provide a written discharge plan to the patient at the time of discharge
State Action on Avoidable Rehospitalizations (STAAR) Initiative: A State-Based Strategy

- Expedite transmission of the discharge summary to the clinicians accepting responsibility for the patient’s care after discharge
- Provide telephone reinforcement of the discharge plan and problem solving two to three days after discharge

The RED intervention significantly reduced the combined endpoints of emergency department use and hospitalization within 30 days by 30 percent (incidence risk ratio 0.695, p=0.009).66 A study of the implementation of RED found that the intervention required approximately one hour for implementation.67 In recognition of the quality implications of the intervention, the National Quality Forum adopted RED as one of their “Safe Practices” in 2006.

Patient Discharge-Transfer Summary
A number of groups have investigated interventions that involve improving the existing process for transitioning a patient from hospital to home or SNF. Richard Balaban and colleagues at Harvard Medical School developed a low-cost, user-friendly patient discharge form. In a randomized controlled study, use of the discharge form coupled with telephone outreach calls from a nurse showed a higher rate of post-acute follow-up and a trend, although it did not reach statistical significance, toward a reduced 30-day rehospitalization rate.68

Comprehensive Discharge Planning: Results from Two Meta-Analyses
A meta-analysis of eight studies that evaluated comprehensive interventions to improve the transition home among patients with heart failure documented significantly reduced readmission rates with the interventions.40 During a mean observation period of eight months, fewer patients who received the discharge intervention were readmitted compared with controls (relative risk, 0.75; 95% confidence interval 0.64-0.88). However, a systematic review of randomized controlled trials of interventions to improve discharge planning did not find a significant reduction in rehospitalizations.49

A meta-analysis of 11 randomized clinical trials evaluating patients with heart failure found that hospitalizations were significantly reduced when disease management programs were employed (relative risk = 0.87, 95% CI 0.79 to 0.96).69 However, the various interventions differed in effectiveness: specialized follow-up by a multidisciplinary team was associated with a substantial reduction in the risk of hospitalization (RR = 0.77, 95% CI 0.68 to 0.86), whereas use of telephone contact with improved coordination of primary care services was not effective (RR = 1.15, 95% CI 0.96 to 1.37). The programs resulted in cost savings in seven of the eight trials that reported cost data.

Several organizations have sponsored initiatives to improve existing care processes to prevent unnecessary rehospitalizations. Most of the promising practices focus on improving the process by which patients transition from the hospital setting.

Transforming Care at the Bedside (TCAB)70
Launched in 2003, Transforming Care at the Bedside (TCAB) is a national program of the Robert Wood Johnson Foundation (RWJF) and IHI that engages leaders at all levels of the health care organization to:
- Improve the quality and safety of patient care on medical and surgical units;
- Increase the vitality and retention of nurses;
- Engage and improve the patient’s and family members’ experience of care; and
- Improve the effectiveness of the entire care team.

Institute for Healthcare Improvement, March 2009
One of the most promising changes developed within TCAB is “creating an ideal transition home” for patients who are being discharged from medical and surgical units within hospitals. The initial focus of the intervention was improving transitions home for patients with congestive heart failure. The four core elements of the intervention are:

- Enhanced admission assessment for post-discharge needs
- Enhanced teaching and learning
- Patient- and family-centered handoff communication
- Post-acute care follow-up

After implementing these changes, many participating hospitals documented reductions in rehospitalizations among patients with CHF. For example, staff at St. Luke’s Hospital in Cedar Rapids, Iowa, found that the intervention reduced rehospitalizations among patients with heart failure, as shown in Figure 6.

**Figure 6: Readmissions of Patients with CHF within 30 Days as a Percentage of Patients Discharged at St. Luke’s Hospital**

Better Outcomes for Older adults through Safe Transitions (BOOST)

An initiative of the Society for Hospital Medicine (SHM), Project BOOST, or Better Outcomes for Older adults through Safe Transitions, involves the development of an approach and practical tools to help clinicians improve the process of transition from the hospital. BOOST allows clinicians and staff to:

- Identify guidelines and core measures to guide the care transitions project and redefine related processes
- Select clinical tools to support an optimized discharge process
- Create and support a team approach to an optimized discharge process
- Identify patients at risk for readmission or other poor post-discharge outcomes
- Prepare patients and families for the discharge transition
Utilize the Teach Back process to ensure patients and family members understand care plans, self-care instructions, and follow-up appointments
- Communicate key information with receiving physicians
- Raise performance incrementally

SHM is currently providing coaching to hospital teams across the US, and plans to continuously update the BOOST tools based on their experience with implementation.

Outpatient Heart Failure Clinics: Example of St. Mary’s Duluth Clinic Heart Center
Staff and administrators at St. Mary's Duluth Clinic Heart Center, which serves Northern Minnesota and Northern Wisconsin, restructured outpatient care for patients with heart failure by incorporating a combination of chronic care and disease management principles and providing home telemonitoring for high-risk patients. Using these interventions, the six-month readmission rate was reduced from 20 to 25 percent to 3 to 4 percent. In addition, the program saved $1.25 million over a six-month period (savings from reduced hospital admissions and reduced ED visits for 29 patients with heart failure).\textsuperscript{72}

Visiting Nurse Service of New York Transitional Care Package
The Visiting Nurse Service of New York (VNSNY) is the largest, nonprofit home health company in the country, serving over 1,000 square miles in the New York City area. The organization has focused on interventions to improve care at transitions by creating efficient processes for embedding transitional care practices into daily work. Nurses use a transitional care package for all patients moving from one setting to another for the first 30 days of care. Outcomes from implementing the interventions are shown in Figure 7.

**Figure 7: VNSNY Collaborative: Percent of Patient Episodes Resulting in Hospitalization (All Payers)**

Providence Hospice/Home Care and The Everett Clinic
The Providence Hospice and Home Care and The Everett Clinic partnered to offer a clinic-based palliative care program that is dedicated to improving the quality and cost-effectiveness of care for seniors, and to addressing end-of-life care issues. In the program, palliative care nurses work with 18 physicians and about 700 patients in primary care clinics. Through the program, the nurses develop a relationship with the physicians and the clinic staff. They facilitate timely care and service referrals for
patients in need, thereby preventing a cycle of rehospitalizations when hospice or home care would be more appropriate.

Evaluations show that 53 percent of patients who received palliative care through the program were not admitted to the hospital in the 60 days prior to death, compared with 28 percent of patients who did not participate in the palliative care program.73

**Interventions Involving Supplemental Services**

**Transitional Care Model**

Mary Naylor, PhD, RN, and colleagues at the University of Pennsylvania School of Nursing created and tested the Transitional Care Model, which uses advanced practice nurses to provide pre- and post-discharge coordination of care for high-risk elderly patients with chronic illness. The core components of the model include:

- Transitional Care Nurse (TCN) as the primary coordinator of care
- Nurse practitioner-based inpatient care of older adults
- Comprehensive assessment for physical needs, depression screen, and review of patient and physician goals
- TCN designs and coordinates care and the discharge plan with multiple physicians
- TCN provides direct home care for one to three months and conducts home visits at critical intervals
- TCN attends the first physician visit after return to home and reviews medications and goals

Two randomized controlled trials have documented that the use of the model resulted in fewer rehospitalizations, lower overall health care costs, and improved patient satisfaction with care.50,51

**Care Transitions ProgramSM**

Eric Coleman, MD, MPH, and colleagues at the University of Colorado developed the Care Transitions ProgramSM, a four-week intervention that focuses on improving care transitions by fostering improved self-management skills.

There are four main components to the Care Transitions Program:

- Medication self-management
- Patient-centered record
- Follow-up with primary care physician or specialist
- Knowledge of “red flags” (or warning signs and symptoms) and how to respond

The program is designed for community-dwelling patients age 65 and older. A Transition Coach, who is a nurse or nurse practitioner, conducts a home visit within 72 hours of discharge and speaks with the patient by phone on post-discharge days 2, 7, and 14. During these communications the Transition Coach prepares the patient for upcoming encounters with health care providers. The Transition Coach also coaches the patient to reconcile or identify discrepancies in medications, encourages follow-up with care providers, and serves as a single point of contact.
According to a comparison study, patients who participated in the Care Transitions Program were significantly less likely to be rehospitalized than control group patients (using data from an administrative database) at 30, 90, and 180 days after discharge.\(^7^4\) In addition, the time to rehospitalization was significantly longer for the Care Transitions Program group than the control group. A more recent study found that patients who received the intervention had significantly lower rehospitalization rates at 30 and 90 days after discharge and lower associated costs at 180 days post-discharge than controls.\(^5^2\)

**Chronic Care Coordination Program**

The Kaiser Permanente health system has piloted a program called Chronic Care Coordination that has three primary components:

- Multidisciplinary chronic care team
- Needs-based care plans
- Seamless communication with patients

A multidisciplinary team, consisting of 17 specially trained nurses with experience in chronic disease management or geriatrics and two licensed clinical social workers, facilitates smooth transitions from acute care and long-term care settings for patients with chronic conditions. The team uses phone contact to communicate with patients on a regular basis and provides a number of services to facilitate care coordination, including medication reconciliation, review of discharge plans and recommendations, education and support, and coordination of services.

Eligible patients have at least one of the following characteristics:

- Four or more chronic illnesses
- Recent hospitalization
- High utilization of the emergency department
- Recently discharged from a skilled nursing facility

A study of 521 patients transferred from a SNF to home found that patients who received the intervention were 78 percent less likely to die within 60 days, 29 percent less likely to need an emergency department visit, and 17 percent more likely to follow up with post-discharge visits than patients in the usual care group.\(^7^5\) The estimated cost savings per patient per year was $5,276, due to fewer hospitalizations and ED visits.

**Guided Care Model**

Researchers at the Johns Hopkins Bloomberg School of Public Health created the Guided Care Model. The core elements of the intervention are:

- Nurse-physician teams
- Patient self-management
- Coordination of care services

Patients are eligible if age 65 or older and deemed to be at high risk for requiring hospitalization or other cost-intensive care (i.e., patients with the 25 percent highest costs, based on the previous year’s claims data). The intervention involves the placement of specially trained nurses within primary care offices. Working with the physician, these nurses:

- Assess needs and preferences
• Create an evidence-based “care guide” and an “action plan”
• Monitor patients proactively
• Support chronic disease self-management
• Communicate with providers in EDs, hospitals, specialty clinics, rehabilitation facilities, home care agencies, hospice programs, and social service agencies in the community
• Smooth transitions between care sites
• Educate and support caregivers
• Facilitate access to community services

A randomized trial is underway, comparing use of the model with usual care for patients at high risk. Early analysis demonstrates a higher rating of care among intervention participants than controls and higher ratings for satisfaction with interactions with patients and family members among participating physicians. Preliminary analysis also demonstrates a trend toward reduced frequency of early readmissions with Guided Care compared with usual care. Investigators estimate that the program will result in a net savings of $129,773 per year (based on 55 beneficiaries).

Evercare™ Model
Evercare™ is a care coordination program for Medicare and Medicaid plans that operates under the guidance of its parent corporation, United Healthcare.

The core elements of the intervention are delivered by nurse practitioners (NPs) and care managers, who are registered nurses and social workers, and include:

• Coordination of multiple services
• Facilitation of improved communication between physicians, administrators of institutions, patients, and family members
• Effective integration of treatments
• Development and management of personalized care plans

The program includes four levels of care, based on complexity of patient needs. The care provided by the NP or care manager varies depending on the patient’s designated care level. Patients eligible for the Evercare program include Medicare beneficiaries who meet at least one of the following criteria:

• Reside in a long-term care facility
• Are eligible for both Medicare and Medicaid
• Have severe or disabling chronic conditions and live in the community

A study of Evercare enrollees in five sites showed that the incidence of hospitalizations was twice as high in control patients as in Evercare enrollees (4.63 and 4.67 per 100 enrollees per month vs. 2.43 in the 15 months after census, P<.001). Researchers estimated that the program would save about $103,000 a year in hospital costs per nurse practitioner hired.

Program of All-Inclusive Care for the Elderly (PACE)
The PACE program provides a full spectrum of health services—from primary care to acute care to long-term care for frail elderly individuals who are certified to require nursing home care. The services include but are not limited to those provided by Medicare and Medicaid. Services that must be provided in the PACE center include primary care services, social services, restorative therapies, personal care and supportive services, nutritional counseling, recreational therapy, and meals. Over 40 PACE
programs are currently operating in 23 states across the country. An analysis of 23 PACE programs found that certain characteristics of the programs (e.g., greater effectiveness of care teams) were associated with functional outcomes among patients at 12 months.\textsuperscript{79} Rehospitalization data were not reported.

Living Independently for Elders (LIFE)
LIFE is modeled after the national PACE program. According to data collected by the Pennsylvania Department of Public Welfare, the program has documented a rate of preventable hospitalizations of 162 per 1,000 people, which is less than half the rate for Pennsylvania nursing facilities (352.18 per 1,000 people), as shown in Figure 8.\textsuperscript{80}

**Figure 8: LIFE Program: Number of Preventable Hospitalizations per 1,000 Individuals**

![Graph showing lower preventable hospitalizations per 1000 in LIFE compared to Pennsylvania Nursing Facilities and LIFE at Penn Nursing.]

**Interventions to Improve Patient Engagement Using Principles of Medical Literacy**
A vital component of improving care transitions specifically, and quality of care in general, is greater engagement of patients in self-care. Both consumer and public health organizations have launched initiatives to improve consumer engagement. The most prominent of these interventions include:

- Improved medication management (e.g., patients carry an updated list of their medications to all care encounters)
- Development of “patient-owned” care plans (an example from the Whatcom County Pursuing Perfection Project is available at [http://www.patientpowered.org/login.aspx](http://www.patientpowered.org/login.aspx))
- Higher administration rates of pneumonia and influenza immunizations
- Improved health literacy (i.e., patients and family caregivers are more knowledgeable about self-care)

Poor health literacy is a growing problem that limits the ability to deliver care. Recent data suggest that half the US population may be at risk for misunderstanding health care instructions, excess hospitalizations due to an inability to self-manage chronic diseases, and other consequences of poor health literacy.\textsuperscript{81,82} Health literacy is a stronger predictor of health status than age, income, employment status, education level, or racial or ethnic group.\textsuperscript{83,84} Factors contributing to low health literacy include:

- General literacy
- Experience with the health system
- Complexity of information
- Cultural and language factors
- How information is communicated
- Cognitive decline

Of these factors, general literacy is the most influential contributor to the risk of poor health literacy. Individuals with low health literacy often experience difficulty understanding their medications, health education materials, and discharge instructions. Clearly, a firm understanding of this information is essential to self-care during and after the transition home.

*Wading Through the Evidence: Which Changes Will Result in Improvement?*

Recognizing that not all changes result in improvement and not all promising improvements are effectively transferable to other settings, IHI uses a three-stage model to identify interventions that are sufficiently promising to be ready for implementation (see Figure 9). Based on the degree of belief on the part of IHI faculty and partnering teams and on the developmental stage of testing of a particular change, IHI can distinguish successful changes from those that are unsuccessful in testing or that need further testing.

**Figure 9: Degree of Belief That Changes Will Result in Improvement**

As shown in Figure 10, changes that are deemed promising progress through a series of developmental testing phases, from research and development through prototype phase, pilot phase, adapt and spread phase, and full scale implementation. Over the course of this series of testing phases, IHI identifies the interventions that appear to have the greatest uptake and impact on improvement.
Creating an Ideal Transition Home: Passing the Baton

Just like a relay team passing the baton from one runner to the next, successfully transitioning a patient from the inpatient to the outpatient setting requires attention to detail, excellent communication, and superior teamwork. Rather than referring to the process as “discharge,” which brings to mind a sense of being relieved of a duty or obligation, perhaps “transition home” is a more appropriate term to describe the active process of establishing patients safely in the post-acute care setting. This section describes the experience of IHI and its front-line partners in creating an ideal transition home.

During the IHI Transforming Care at the Bedside (TCAB) initiative, both faculty and participants found that improving care at the transition home was an essential element of transforming the care of patients in medical and surgical units. Key lessons learned regarding the transition home include:

- Bidirectional communication and collaboration between clinicians across the continuum of care is essential
- The hospital staff (or “senders”) must actively involve patients and family members in formulating the transitional care plan and prepare them for the transition
- Critical information should precede the “handoff” (e.g., care plan, orders, pertinent clinical information)
- The community providers of care (or “receivers”) are capable and prepared

Getting Started: Listen to Patients, Families, and Providers

Listen to Patients and Their Families
Patients and family members can readily identify the gaps that currently exist in the transition home process. Because of their experiences, they are fully aware of the inconsistencies and deficiencies in the system, which include:

- Inadequately preparing for the next care setting
- Conflicting advice for illness management
- Inability of patients and caregivers to reach the right practitioner
• Repeatedly leaving follow-up or coordination assistance undone

A diagnostic interview with rehospitalized patients and their family members can be especially helpful for gathering this information. Ideally, patients and family members are interviewed during the hospitalization rather than by telephone after leaving the inpatient setting. Possible interview questions include:

- What do you think caused you to be readmitted to the hospital?
- Are there any self-care instructions that you may have misunderstood?
- Did you see a physician in his/her office before you came back to the hospital? If you did, which physician did you see? If you didn’t, why not?

A diagnostic chart review contributes to this detailed analysis of the failure modes leading to rehospitalization. The following questions can help identify problems with transitions in care:

- What is the number of days between the last discharge and this readmission date?
- Was the follow-up physician visit scheduled? Did the patient go?
- Were there any urgent clinic/ED visits before readmission?
- What was the functional status of the patient on discharge?
- Was a clear discharge plan documented?
- Was there evidence of Teach Back (clear patient and family understanding of the plan) documented?
- Was the readmission planned or unplanned?
- What were the documented reasons for readmission?

Ask the Outpatient Providers

Community providers of care are another source of useful information about the underlying causes of problems with transitions home. These providers include primary care physicians, specialists, home care nurses, case managers, and staff in skilled nursing and rehabilitation facilities. Including these providers on the team that is addressing transitions in care may encourage more forthright responses to the following questions that can help identify problems with transitions in care:

- Does the hospital staff have a good understanding of your needs and scope of services?
- Is the handoff information from the hospital staff to your facility accurate? Timely? Useful? Effectively communicated?
- What are the common factors that contribute to your patients being readmitted after discharge from the hospital?

Look at HCAHPS Survey Data

Make use of information that is already being collected, for example, responses to the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey can provide insight into patient experiences with rehospitalization. Three questions specifically focus on the transition home:

- During this hospital stay:
  - Did doctors, nurses, or other hospital staff talk with you about whether you would have the help you needed when you left the hospital?
  - Did you get information in writing about what symptoms or health problems to look out for after you left the hospital?

- After you left the hospital:
STate Action on Avoidable Rehospitalizations (STAAR) Initiative: A State-Based Strategy

- Did you go directly to your own home, to someone else’s home, or to another health facility?

The 2006 HCAHPS pilot survey shows several potential opportunities for improvement (see Figure 11).

**Figure 11: Data from HCAHPS Pilot Survey (2006)**

<table>
<thead>
<tr>
<th>H-CAHPS Pilot Item</th>
<th>Always</th>
<th>Usually</th>
<th>Sometimes/ Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Before giving you any new medicines, how often did hospital staff describe possible side effects in a way you could understand?”</td>
<td>42%</td>
<td>18%</td>
<td>40%</td>
</tr>
<tr>
<td>“During your stay did hospital staff talk with you about whether you would have the help you needed when you left the hospital?”</td>
<td>Yes</td>
<td>76%</td>
<td>No</td>
</tr>
<tr>
<td>“During your hospital stay did you get information in writing about what symptoms or health problems to look for after you left the hospital?”</td>
<td>82%</td>
<td>18%</td>
<td></td>
</tr>
</tbody>
</table>

**IHI’s Innovation Process: Identifying the “Vital Few” Changes**

It became clear to TCAB faculty that there were numerous potentially effective interventions to improve transitions out of the hospital. However, it also was clear that overwhelming front-line staff with too many requested interventions would be counterproductive. Identifying the “vital few” changes is a critical task in translating research and local best practice into recommendations for improvements across a wide variety of clinical settings. IHI’s innovation process for developing recommendations includes:

- Review clinical evidence
- Observe current processes to identify both failures and best practices
- Create a concept design of the “vital few” changes, to implement best practices and mitigate the identified failures
- Develop process and outcome measures
- Test individual changes and a composite of all changes
- Design processes to reliably implement successful changes
- Redesign and adapt the “vital few” changes until the desired results are achieved

As a result of this process, four “vital few” changes to improve the transition home for patients with heart failure were identified as part of the TCAB project (see Figure 12):

- Enhanced assessment of patients
- Enhanced teaching and learning
- Real-time, patient-centered handoffs
- Timely post-acute follow-up
Figure 12: Creating an Ideal Transition Home for Patients with Heart Failure

<table>
<thead>
<tr>
<th></th>
<th>Enhanced Admission Assessment for Post-Discharge Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Include family caregivers and community providers (e.g., home health nurses, primary care physicians, HF clinic nurses, etc.) as full partners in standardized assessment, discharge planning, and predicting home-going needs</td>
</tr>
<tr>
<td></td>
<td>• Reconcile medications upon admission</td>
</tr>
<tr>
<td></td>
<td>• Initiate a standard plan of care based on the results of the assessment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Enhanced Teaching and Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Identify the learner(s) on admission (i.e., the patient and family caregivers)</td>
</tr>
<tr>
<td></td>
<td>• Redesign the patient education process to improve patient and family caregiver understanding of self-care</td>
</tr>
<tr>
<td></td>
<td>• Use Teach Back daily in the hospital and during follow-up calls to assess the patient’s and family caregivers’ understanding of the discharge instructions and ability to do self-care</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Patient- and Family-Centered Handoff Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Reconcile medications for discharge</td>
</tr>
<tr>
<td></td>
<td>• Provide customized, real-time critical information to the next care provider(s) that: a) accompanies the patient to the next institution; and/or b) is transmitted to the receiving physician and/or home health agency or other care providers at the time of discharge</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Post-Acute Care Follow-Up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• High-risk patients: Prior to discharge, schedule a face-to-face follow-up visit (home care visit, care coordination visit, or physician office visit) to occur within 48 hours after discharge</td>
</tr>
<tr>
<td></td>
<td>• Moderate-risk patients: Prior to discharge, schedule a follow-up phone call within 48 hours and a physician office visit within 5 days</td>
</tr>
</tbody>
</table>

*Enhanced Assessment of Patients*

Organizations participating in TCAB identified the following common failures associated with admission assessments:

- Failure to actively include patients and family in planning for discharge (leading to poor understanding of the capacity to manage post-discharge care in the home)
- Lack of understanding of the patient’s physical and cognitive functional health status, resulting in a transfer to a care venue that does not meet the patient’s needs
- No discussions about advance directives
- Cause of readmission:
  - Discharged too early (not recognizing worsening clinical status in the hospital)?
  - Medication errors, poly-pharmacy?
  - Other reasons?

To address the identified failures, TCAB participants focused on three key interventions to provide enhanced assessment of patients:
• Include family caregivers and community providers (e.g., home health nurses, primary care physicians, HF clinic nurses, etc.) as full partners in:
  o Standardized assessment
  o Discharge planning
  o Predicting home-going needs
• Reconcile medications upon admission
• Initiate a standard plan of care based on the results of the assessment

Enhanced Teaching and Learning
TCAB participants identified the following common failures associated with patient and family caregiver education:
• Assumption that the patient is the key learner
• Poor discharge instructions
• Patient and family caregiver confusion about self-care instructions and medications
• Patient lack of adherence to medications, therapies, self-care activities, etc.

To address the identified failures, TCAB participants focused on three key interventions to provide enhanced teaching and learning:
• Identify the learner(s) on admission (e.g., the patient and family caregivers)
• Redesign the patient education process to improve patient and family caregiver understanding of self-care
• Use Teach Back daily in the hospital and during follow-up calls to assess the patient’s and family caregivers’ understanding of discharge instructions and ability to perform self-care activities

Identify the Learner(s) on Admission
TCAB participants found that identifying the learner(s) early in the hospital admission process was extremely helpful in directing educational efforts. It was important to appreciate that visitors to the hospital are not necessarily the persons who will be helping the patient with self-care at home. Hospital staff found it helpful to ask the patient, “Who will be helping you when you go home?” to ensure that they involved the appropriate learners in all critical patient education.

Redesign the Patient Education Process to Improve Patient and Family Understanding of Self-Care
TCAB participants found that the following tips helped them provide self-care education that patients and family caregivers could more readily understand:
• Identify how the patient and family caregivers learn best
• Redesign written educational material
• Redesign patient teaching (e.g., teach throughout the hospitalization, not just on day of discharge)
• Use plain language
• Slow down
• Use easy-to-learn segments of critical information

At St. Luke’s Hospital of the Iowa Health System the staff uses a tool to help patients understand the warning signs and symptoms of heart failure and appropriate actions to take should these develop (see Figure 13).
Figure 13: St. Luke’s Hospital Heart Failure Warning Signs and Symptoms Checklist

Staff at the hospital also created a refrigerator magnet to help patients with heart failure (and their families) understand warning symptoms and appropriate actions to take (see Figure 14). When patients leave the hospital for home, staff ask where they will display the magnet. On follow-up phone calls, staff ask the patient or family caregiver if they have the magnet displayed.

Figure 14: St. Luke’s Hospital Signs of Heart Failure Magnet

Use Teach Back Daily in the Hospital and During Follow-Up Calls
TCAB participants used the “Ask Me 3”™ tool to focus education and the Teach Back technique to confirm correct understanding of information. They found that using the Teach Back method several
times during admission was more effective than using it once at the time of transition home. The Ask Me 3 tool, which was developed by the Partnership for Clear Health Communication, encourages patients to ask three questions of providers in every health care encounter:  

1. What is my main problem?
2. What do I need to do?
3. Why is it important for me to do this?

Health care providers can “teach to the test” by ensuring they provide the information patients need to answer these questions.

TCAB participants found the following tips helpful for effective use of the Teach Back technique:  

- Explain needed information to the patient or family caregiver
- Ask in a non-shaming way for the individual to explain in his or her own words what was understood (e.g., “I want to make sure I did a good job teaching you.”)
- If a gap in understanding is identified, offer additional teaching or explanation followed by a second request for Teach Back

Data from St. Luke’s Hospital of the Iowa Health System showed that the Teach Back technique can rapidly improve gaps in education that can affect patient understanding (see Figure 15). Similarly, data from the hospital also demonstrated an improved understanding with Teach Back, whether administered by an advanced practice nurse (APN) or a nurse from a Visiting Nurses Association (VNA), as shown in Figure 16.

**Figure 15: Teach Back at St. Luke’s Hospital: Measuring Patient Understanding**

*Teach Back* questions:  

1. What is the name of your “water pill”?
2. What weight gain should you report to your doctor?
3. What foods should you avoid?
4. Do you know what symptoms to report to your doctor?

**Figure 16: Teach Back Rate at St. Luke’s Hospital: Percent of Patients Who Can Successfully Teach Back Care Instructions**
Real-Time, Patient-Centered Handoffs

TCAB participants identified the following common failures associated with communication at handoffs to the next care provider(s) and care setting(s):

- Medication discrepancies
- Poor communication of the care plan to the nursing home team, home health care team, or primary care physician
- Discharge plan did not adequately convey important anticipated next steps
- Discharge instructions missing, inadequate, incomplete, or illegible
- Current and baseline functional status of patient was rarely described, making it difficult to assess progress and prognosis
- Patient returning home without essential equipment (e.g., scale, supplemental oxygen, or equipment used to suction respiratory secretions)

To improve effectiveness of communication at handoffs, TCAB participants found the following tips helpful:

- Reconcile medications at time of discharge
- Provide customized, real-time critical information to the next care provider

Reconcile Medications at the Time of Discharge
TCAB found the following tips helpful in the medication reconciliation process:

- If the patient’s prior prescriptions for medications have changed, clearly instruct the patient regarding which medications they should not take
- If some of the patient’s regular medications have been held while the patient has been hospitalized, reassess the need for these medications
- Assess whether a home care nurse should review and reconcile medications in the patient’s home setting

Provide Customized, Real-Time Critical Information to the Next Care Provider

TCAB participants focused on properly informing the subsequent provider caring for the patient by ensuring the information accompanied the patient to the next institution, or was transmitted to the
receiving physician, home health agency, or other care providers at the time of discharge. To effectively transfer information, staff would:

- Speak with the “emergency contact” listed on the discharge instructions before or immediately after discharge and provide critical information about the patient’s status
- Consider use of shared care plans
- Establish collaboration across the care continuum by:
  - Asking receiving care teams for their preferred format and mode of communication, and specific information needs about the patient’s prior functional status
  - Sharing patient education materials and education processes across all care settings
  - Developing creative solutions for bidirectional communication and feedback processes, coordination, and greater understanding of patient needs
  - Committing to continual improvement by aggregating the experience of patients, families, and caregivers and designing improvements

**Timely Post-Acute Care Follow-Up**

TCAB participants identified the following common failures associated with post-acute care follow-up:

- Medication errors
- Poor discharge instructions regarding when and with whom to follow-up
- No follow-up appointment
- Follow-up occurred too long after hospitalization
- Lack of social support
- Patient confusion about self-care instructions and medications
- Lack of adherence to medications, therapies, and daily weights, and adjustment to medication and diet as a result

To address the identified failures, TCAB participants focused on two different approaches, depending on the patient’s relative level of risk of rehospitalization. High-risk patients included those admitted two or more times in the past year and/or patients (or family caregivers) who failed Teach Back (or the patient or family caregiver has low degree of confidence to carry out self-care at home). Patients deemed to be at moderate risk included those admitted once in the past year and patients (or family caregivers) who have moderate degree of confidence to carry out self-care at home.

For high-risk patients, TCAB participants tested the following interventions:

- Prior to discharge, schedule a face-to-face follow-up visit (home care visit, care coordination visit, or physician office visit) to occur within 48 hours after discharge
- Ensure that the patient and family caregiver have the phone number for questions and concerns
- Consider use of home care or a discharge coach

For moderate-risk patients, TCAB participants tested the following intervention:

- Prior to discharge, schedule a follow-up phone call within 48 hours and a physician office visit within 5 days

**Promising Results**
Use of the TCAB processes for improving the transition home for patients with heart failure has shown promising results. At St. Luke’s Hospital of the Iowa Health System, these interventions resulted in higher patient satisfaction with discharge instructions and with the discharge process (see Figures 17 and 18). The interventions also resulted in a reduction in the proportion of patients with heart failure readmitted to the hospital within 30 days (see Figure 19). Staff at Kaiser Permanente Roseville in California also demonstrated a reduction in readmissions within 30 days for heart failure and pneumonia patients (see Figure 20).

**Figure 17: Heart Failure Patient Satisfaction with Discharge at St. Luke’s Hospital**

![Graph showing heart failure patient satisfaction with discharge at St. Luke’s Hospital over time.]

**Figure 18: Heart Failure Patient Satisfaction with Discharge Instructions at St. Luke’s Hospital**

![Bar chart showing heart failure patient satisfaction with discharge instructions at St. Luke’s Hospital.]

*Teach Back* study began in August 2008

**Figure 19: Heart Failure Readmissions Within 30 Days of Discharge at St. Luke’s Hospital**

Institute for Healthcare Improvement, March 2009
Figure 20: All-Cause Heart Failure and Pneumonia Readmissions Within 30 Days of Discharge at Kaiser Permanente Roseville
Receiving the Baton: A Multi-Step Process of Communication and Verification

The metaphor of “passing the baton” is useful to understand the roles of the “sender” and the “receiver” in the handoff communication process when the patient is transitioned out of the hospital to home or another care setting. When we watch world-class athletes prepare for and execute a handoff, we see there are defined roles, defined timing, and iterative communication. Despite this skill development and practice, the baton is occasionally dropped. Handoffs require the work and focus of both the sender and the receiver.

Importantly, unlike a relay race, the patient and family caregivers are central to the transition process and essential partners in managing their care over time. Enhanced patient and family caregiver education and engagement in proactive discussions about care preferences is important in all settings and across the continuum of care.

However, patients are not solely responsible for successfully navigating the health care system—there is much that receiving clinicians can do to facilitate better coordination of care, including:

- Review critical information from the hospital and amend the plan of care as necessary (including medication reconciliation);
- Assess patient and family caregiver understanding of the plan of care (and self-care capability for patients living at home); and
- Ensure that there are structures and processes in place to coordinate the plan of care with other clinicians in the community.

A significant barrier to care after the transition to home is the timely availability of outpatient follow-up visits with providers. In the United States, only 46 percent of adults seeking medical attention are able to obtain an appointment on the same day or next day (see Figure 21).88

**Figure 21: Waiting Time to See Doctor When Sick or Need Medical Attention**

Currently there is minimal data available to guide interventions to improve the reception of the patient into the ambulatory setting or SNF after hospitalization. To address this, IHI partnered with institutions willing to iteratively test interventions to mitigate the apparent failures in the system. As a result of this testing, IHI identified the most promising changes in practice discussed below.
Promising Changes: Office Practices

IHI’s preliminary work with providers in the post-acute ambulatory setting highlight three promising changes to create an ideal transition from the hospital to the clinical office practice setting by mitigating the typical failures or problem areas associated with this transition.

Provide Timely Access to Care Following a Hospitalization

- Review on a daily basis information received from the hospital about admissions and discharges
- Provide appropriate and timely follow-up for discharged patients
  - Ensure that high-risk patients are seen by the outpatient physician (or a home care or care coordination clinician) within 48 hours after discharge
  - Ensure that moderate-risk patients receive a follow-up phone call within 48 hours and are seen by a physician within 5 days

Assess the Patient and Initiate a New Plan of Care at the First Post-Discharge Office Visit

- Re-evaluate the patient’s clinical status since discharge
- Reconcile the treatment plan and medications from pre- and post-hospitalization
- Assess the patient’s goals, wishes, and ability to manage self-care
- Initiate a new overall plan of care that is developed collaboratively with patient

Coordinate Care Across Outpatient Providers and Settings

- Send the new overall plan of care to other clinicians and providers in the community with whom the patient will interact
- Establish daily opportunities to communicate with other clinicians and providers

Promising Changes: Skilled Nursing Facilities

IHI’s preliminary work with providers in post-acute skilled nursing facilities highlights four promising changes to create an ideal transition from hospitals to skilled nursing facilities.

Ensure SNF Staff Are Ready and Capable to Care for the Patient

- Receive and confirm understanding of patient care needs from hospital staff
- Resolve any questions regarding patient transition status
- Identify an emergency provider contact for the patient

Reconcile the Treatment Plan and Medications

- Re-evaluate patient clinical status since transition
- Reconcile the treatment plan and medications based on the assessment of the patient’s clinical status, information from the hospital, and past knowledge of the patient (if patient was a previous resident)

Engage the Patient and Family Caregivers in a Partnership for the Overall Plan of Care

- Assess patient and family caregiver desires and understanding of the plan of care
- Reconcile the care plan developed collaboratively with the patient and family
Provide Timely Consultation When the Patient’s Condition Changes

- Provide clear protocols that guide treatment plan changes for all providers

Systemic Barriers to Reducing Avoidable Rehospitalizations

Researchers and providers have been aware of and studying the causes of rehospitalization among various patient populations for decades. A national scan of best practices reveals very few ongoing, robust efforts to provide care that demonstrably reduce avoidable rehospitalizations. If leaders in states and health care systems endeavor to measurably reduce avoidable hospitalizations, understanding the systemic barriers to reducing rehospitalizations may be informative.

Lack of Uniform Data

Currently there is a lack of population-based data on rehospitalizations. The best available data nationally is the recently published Jencks analysis of Medicare claims data. Payers (commercial and Medicaid) and integrated health systems have rehospitalization data for their members, but this data is not in the public domain. Individual hospitals may track readmission data, but this data is highly variable depending on operational definitions of readmission (such as time frame, specific condition, exclusions) and universally do not capture information when patients are rehospitalized at a different facility. Pennsylvania publically reports 30-day readmission rates for 50 common medical procedures and treatments. Florida was the first state in the US to publically report 15- and 30-day “potentially preventable” rehospitalization rates across all conditions.

There are efforts to standardize measures of rehospitalization at the national level. The National Quality Forum has endorsed five measures of rehospitalization:

- 3-item Care Transition Measure (CTM-3) – Eric Coleman/University of Colorado-Denver
- 30-Day All-Cause Risk Standardized Readmission Rate Following Heart Failure Hospitalization – CMS
- 30-Day All-Cause Risk Standardized Readmission Rate Following Acute MI Hospitalization – CMS
- 30-Day All-Cause Risk Standardized Readmission Rate Following Pneumonia Hospitalization – CMS
- All-Cause Readmission Index (total inpatient readmissions within 30 days from discharge to any hospital) – Pacificare

None of the above measures have been widely adopted. The CMS measures require sophisticated risk-adjustment techniques which may preclude widespread interpretation and adoption. A collaborative effort of the American Board of Internal Medicine Foundation, American College of Physicians, Society of Hospital Medicine, and Physician Consortium for Performance Improvement formed the Care Transitions Work Group to identify and define quality measures for national use. There is currently a Care Transitions Performance Measurement Set that is available for public comment. Similarly, the National Quality Forum is reviewing submitted measures of care coordination, including rehospitalizations.
Financial Implications of Reducing Rehospitalizations on an Individual Entity

Currently, the financial impact of reducing avoidable rehospitalizations on individual provider entities is largely unexamined. This is an issue at the forefront of concern for hospitals, skilled nursing facilities, and physicians. Understanding the financial implications of successfully reducing avoidable rehospitalizations is fundamental to promoting well-informed payment policy changes.

Payment Policy

In the eyes of many providers, current regulatory and financing systems create barriers to reducing rehospitalization rates. Several state and national level payers have expressed strong interest in developing new payment frameworks that would encourage improved performance on care coordination and avoidable hospitalizations.

Coordinating and Information Sharing Across Non-Financially Related Organizations

Leaders who embrace the challenge of reducing rehospitalizations understand the importance of working across organizational boundaries to improve transitions of care for patients. In each state or region, engaging hospitals, health care delivery systems, non-hospital providers, payers, purchasers, public sector leaders, and patients is a vital component of improving transitions, and requires new lines of communication and partnerships.

Leadership Attributes

Addressing these systemic barriers at a state or regional level requires leadership from key public and private sector stakeholders. A list of desirable attributes of public-private leadership coalitions is summarized in Table 2.

Table 2: Desirable Attributes of State Leadership Coalitions to Reduce Avoidable Rehospitalizations

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence of strong hospital, primary care, home health, and/or skilled nursing networks with a history of working together on common initiatives</td>
<td>These networks will enable stakeholder groups to share lessons learned, disseminate successful practices, and recruit more participants to expand initiatives.</td>
</tr>
<tr>
<td>Focused attention and leadership from ranking state government officials</td>
<td>There are several unique levers state-level leadership can bring to bear on this initiative, including innovations in state-employee/Medicaid payment, data transparency initiatives.</td>
</tr>
<tr>
<td>Timely availability of 30-day rehospitalization data, preferably with unique patient identifiers</td>
<td>Data with unique patient identifiers will allow states to track rehospitalizations regardless of whether the patient is readmitted to the same or different facility.</td>
</tr>
<tr>
<td>Potential payment mechanisms</td>
<td>Aligning payment incentives (rewards for</td>
</tr>
</tbody>
</table>
### A Strategy to Reduce Avoidable Rehospitalizations

Success in reducing avoidable rehospitalizations in a state or region will require not only front-line process improvement, but also identification and mitigation of barriers to system-wide improvement, especially policy and payment reforms that will reduce fragmentation and encourage coordination across the continuum of care. Such reforms are necessary to address the shortcomings of the current volume-based incentives, and to place a premium on the quality of the patient’s experience across the continuum of care. Prioritizing longitudinal care will create new public and professional norms in which avoidable emergency department visits and avoidable rehospitalizations are seen as system defects. At the core of this challenge is improving care in the “white spaces” between settings of care, promoting enhanced “system-ness” in a fragmented environment.

A strategy to reduce avoidable rehospitalizations at the state or regional level will couple front-line process improvement efforts with strategies to reduce barriers to change at the system level. The goal is to leverage market or regulatory incentives to accelerate the widespread adoption of best practices and drive toward measurable results at the state or regional level.

The overarching strategic paradigm is based on IHI’s change framework of “will, ideas, and execution.” The driver diagram below (see Figure 22) summarizes how the content contained in this document—the political context, the human face and scope of the problem, the promising ideas, systemic barriers to change, and executing process improvements on the front lines of care—are integral to this strategy.
Figure 22: Driver Diagram of Key Strategies for Reducing Avoidable Rehospitalizations

Key Strategies for Reducing Avoidable Rehospitalizations

**Primary Drivers**

**Aim:**
To dramatically reduce rehospitalizations in states / regions

**Outcome Measures:**
1. Rehospitalization rates (Target: reduce by 30%)
2. Patient and family satisfaction with:
   - Transition out of the hospital (Target: 50% increase)
   - Coordination of care in community (Target: 50% increase)

**Who**
- Multi-stakeholder coalitions
- Hospital associations
- Health care systems
- Payers
- Communities
- Clinicians / providers of care

**How**
- Aligned incentives, policy change, and payment reform
- Transparent statewide measurement

**Secondary Drivers**

**Ideas**
- Optimizing the transitions in care after hospitalizations
- Providing enhancements / supplemental to routine care for patients at high risk for rehospitalization
- Engaging consumers and their family caregivers in their own care (and medication management)

**Execution**
- Microsystem capability for reliable delivery of key processes across the continuum of care
- Customized sequencing of work
- Robust, timely, and actionable measurement that can help drive improvement (provides feedback over time)
- Learning system
  - Collaborative learning
  - Local support for improvement

Drawing upon IHI’s experience with large-scale initiatives, IHI recommends creating a learning system in which all stakeholders are encouraged to engage in the work, learn collaboratively, and share the knowledge gained with others. Key elements of an IHI learning system include:

- Collaboratively defining the challenge and the case for change
- Sense-making of possible approaches
- Setting goals and a timeframe
- Creating and using practical toolkits
- Ensuring the availability of local technical assistance
- Employing collaborative learning (calls, collaboratives, etc.)
- Sharing results
- Celebrating successes

Implementing effective change to reduce avoidable rehospitalizations is not a linear, sequential process. Instead, it is an iterative experience: discovery of effective changes leads to stronger will, which may result in more effective execution. By iteratively developing and strengthening the will, refining the ideas, and developing the execution capabilities, public and private leadership coalitions can take effective action to reduce avoidable rehospitalizations at the state or regional level.

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10. Calculated as an estimated 15% of 35 million discharges.


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