

Tool 6: How To Monitor Re-Engineered Discharge Implementation and Outcomes

164. 1. Purpose of This Tool

Monitoring the RED lets you know whether each component of RED is being successfully implemented and whether your hospital is achieving the expected outcomes. This information can be used to:

Identify and address challenges and barriers in the implementation process,

Hold staff accountable for performance goals, and

Justify further investments in spreading the RED.

Monitoring helps staff learn from missteps. In addition, monitoring provides opportunities for adapting the implementation process to local conditions. This tool discusses implementation and outcome measures and the way to use such data for continuous quality improvement in the area of care transitions.

165. 2. Getting Started

Form a monitoring team to develop a monitoring plan before the RED implementation begins. You may assign this responsibility to the interdisciplinary implementation team that is tasked with improving care transitions. As described in Tool 2, How To Begin RED Implementation at Your Hospital, the implementation team should include representatives from such disciplines as nursing, medicine, case management, and information technology.

At times, personnel such as statisticians or health economists may be needed to ensure success. Your monitoring plan will describe what measures will be collected, how frequently they will be collected, who will collect them, and how the data will be used.

166. 3. Selecting and Specifying Measures

There are many different possible measures, but you will want to choose a manageable number to track. Your measurement set does not have to be static. You may want to phase in certain measures as your implementation of the RED evolves.

You need to select a combination of implementation and outcome measures that are:

Meaningful (understandable and important for accountability and/or quality improvement).

Credible (based on reliable data).

Feasible (can be produced without undue burden).

Timely (provide information in time for corrective action and decisionmaking).

Almost all the measures in this tool are rates and are expressed as percentages. That means that both the numerator and the denominator have to be adequately specified. For many of the measures, you can use the target population as the denominator. Using this approach means you measure the implementation and impact of the RED on everyone you intended to give the RED, whether or not they in fact got the RED.

You could also use the target population that is receiving any RED component as your denominator. This will allow you to measure the implementation and impact of the RED on those patients who actually receive the RED (or part of it). You may, however, find it difficult to calculate some measures using this denominator. For example, your hospital may be unable to compute outcome measures (e.g., readmission to the hospital) for only those patients who received the RED as opposed to the entire target population.

For some of the measures suggested in this tool, the appropriate denominator is actually a subset of patients who receive the RED. For example, you need to look only at patients for whom postdischarge tests have been ordered when measuring the percentage of patients for whom postdischarge tests have been scheduled.

Various organizations have suggested discharge-related measures (e.g., National Quality Forum, American College of Cardiology Hospital to Home Program, joint American Board of Internal Medicine, American College of Physicians, and Society of Hospital Medicine Care Transitions program). [Appendix A](#) has additional information about the measures and links to the organizations' Web sites. The rest of this section of this tool will cover possible implementation and outcome measures for the RED.

167. 3.1. Implementation Measures

To have the desired impact, the RED must be properly implemented. It is therefore important to measure the extent of RED implementation. Implementation measures can be used to identify where the implementation process can be improved. Take, for example, RED component #2, ensuring that all patients are discharged with an appointment for posthospital followup. Monitoring the percentage of patients who leave the hospital with an appointment with a primary care provider gives an opportunity to see whether most patients are leaving with appointments, and to take corrective action if they are not.

Table 1 shows examples of measures for each RED component and where to collect and record data.

Table 1. Implementation Measures by RED Component

RED Component	What To Measure	Where To Find and Record Information
168. Ascertain need for and obtain language assistance.	Percentage receiving needed interpreter services	Electronic health Record (EHR) RED Workbook

RED Component	What To Measure	Where To Find and Record Information
169. Make appointments for followup care (e.g., medical appointments and postdischarge tests/labs).	Percentage asked about best time for appointments Percentage with appointment with primary care clinician	Patient survey EHR RED Workbook After hospital care plan (AHCP)
170. Plan for followup of results from lab tests or studies that are pending at discharge.	Percentage getting a summary of pending tests in the AHCP	AHCP
171. Organize postdischarge outpatient services and medical equipment.	Percentage with arrangements being made for necessary services and equipment	RED Workbook AHCP
172. Identify the correct medicines and a plan for the patient to obtain them.	Percentage with medicine reconciliation completed	RED Workstation AHCP
173. Reconcile the discharge plan with national guidelines.	Percentage with reconciliation of plan with national guidelines	RED Workbook
174. Teach a written discharge plan the patient can understand.	Percentage who go home with an AHCP Percentage who report that all questions were answered satisfactorily Percentage who report that nurses explained things in a way that was easy to understand	RED Workbook Patient survey
175. Educate the patient about his or her diagnosis.	Percentage getting education about diagnosis Percentage who could report on diagnosis postdischarge	RED Workbook Followup phone call documentation Patient survey
176. Review with the patient what to do if a problem arises.	Percentage educated about what to do about problems	RED Workbook Followup phone call documentation
177. Assess the degree of the patient's understanding of the discharge plan.	Percentage whose understanding was confirmed	RED Workbook Patient survey
178. Expedite transmission of the discharge summary to clinicians accepting care of the patient.	Time between discharge and transmission of summary to followup clinician	RED Workbook
179. Provide telephone reinforcement of the discharge plan.	Percentage of people called within 2 to 3 days of discharge Percentage of calls completed	RED Workbook Followup phone call documentation

3.1.1. Is the RED Being Delivered to Target Patients?

Before measuring how well components of the RED are being implemented, you will need to know the proportion of patients targeted to receive the RED who are actually getting it. This is true whether you are implementing the RED for your entire hospital population or for a subset of your hospital's patients (e.g., patients with a specific condition or in a specific unit). (See Tool 2,

“How To Begin the Re-Engineered Discharge Implementation at Your Hospital,” for a discussion of the options for selecting a RED target population.)

Two measures to consider are:

Percentage of the target population receiving any RED component.

Percentage of the target population receiving all RED components currently being implemented.

The first measure tells you the proportion of targeted patients the RED is reaching at all, while the second measure tells you how comprehensively the RED is being implemented.

3.1.2. Is the Correct Information Being Collected?

To deliver the RED properly, the hospital (often the discharge educator, known as the DE) needs to collect information from the patient and sometimes the patient’s caregiver. The following measures give an indication of whether the information needed for a re-engineered discharge is being collected.

Percentage who were asked about language preference for oral communication, phone calls, and written materials.

Percentage who were asked about English proficiency and need for interpreter services (of those whose language preference for oral communication is not English).

Percentage who were asked about English proficiency and need for translation services (of those whose language preference for written materials is not English).

Percentage who were asked about the best time for appointments.

Percentage with whom the ability to keep appointments was discussed.

Percentage who were asked about interest in treatment for addiction (of patients diagnosed as having addiction to tobacco, alcohol, or other substances).

Percentage who were asked about traditional healers, treatments, and dietary supplements.

Percentage who report that hospital staff asked whether they would have the help they needed when they left the hospital (of those who complete that survey question).

Percentage who report that nurses always or usually listened carefully (of those who completed that survey question).

3.1.3. Is Evidence-Based Care Being Delivered?

Several RED components are designed to ensure that the care being delivered is evidence based. The following measures examine whether both clinical treatment and the discharge are following standards and recommendations of national organizations:

Percentage for which medication reconciliation was completed.

Percentage for which the discharge plan has been reconciled with national guidelines.

Percentage for which a discharge summary is delivered to the clinicians accepting care of the patient within 24 hours of discharge.

Average time between discharge and delivery of discharge summary to the primary care provider. (Note: this measure is not a rate and therefore does not have a denominator.)

3.1.4. Is Appropriate Followup Care Being Arranged?

An important part of the RED is making arrangements for posthospital care. The following are some measures of whether the hospital is making those arrangements:

Percentage with an appointment with clinicians accepting care of the patient.

Percentage with appointments for tests and labs (of those for whom tests and labs were ordered).

Percentage with delivery dates for durable medical equipment (of patients needing new equipment).

Percentage with appointments for postdischarge services (e.g., visiting nurse services) (of patients for whom postdischarge services have been ordered).

Percentage who were provided with information for addiction treatment (of patients diagnosed as having addiction to tobacco, alcohol, or other substances).

3.1.5. Are Patients Being Prepared for Discharge?

Measures of the teaching and educational components of the RED include:

Percentage who received qualified interpreters for *all* encounters with a DE or whose DE was assessed as proficient in patient's preferred language for oral communication (of those without English proficiency).

Percentage who got education about all diagnoses.

Percentage who were instructed on how to take medicines (of patients prescribed medicine).

Percentage who report that hospital staff explained the purpose of a medicine in a way that was easy to understand (of those who completed that survey question).

Percentage who report that hospital staff explained in a way that was easy to understand how much to take of each medicine and when to take it (of those who completed that survey question).

Percentage with plan to obtain medicines (of patients prescribed medicine).

Percentage who got instruction on nutrition and exercise and activity limitations.

Percentage whose ability to make scheduled appointments was confirmed.

Percentage who were told what to do if problems arise.

Percentage who report that written information about what symptoms or health problems to look out for after discharge was easy to understand (of those who completed that survey question).

Percentage whose understanding of information and instructions was confirmed.

Percentage who report that nurses explained things in a way that was easy to understand (of those who completed that survey question).

Percentage who report that all questions were answered satisfactorily by the DE (of those who completed that survey question).

Percentage who were told how they would get pending test results (of patients with pending test results).

Percentage who received the AHCP.

Percentage who received AHCP in English **and** preferred language for written materials (of patients whose preferred language for written materials is not English).

3.1.6. Are Patients Receiving Postdischarge Care?

Percentage who received postdischarge followup phone call.

Percentage who received postdischarge followup phone call in preferred language for phone communication or with interpreter (of those whose preferred language for oral communication is not English).

Percentage who received postdischarge followup phone call within 3 days.

Average time between discharge and postdischarge followup phone call. (Note: this measure is not a rate and therefore does not have a denominator.)

Percentage who strongly agree or agree that all questions about medical care were answered during postdischarge followup phone call (of those who completed that survey question).

180. 3.2. Outcome Measures

Hospitals implement the RED to improve care transitions. Improved care transitions can result in:

Reduced hospital reutilization (i.e., patients returning to the hospital shortly after discharge),

Improved connections with primary care and other providers,

Increased knowledge for self-management, and

Increased patient satisfaction.

In addition to monitoring for expected results of implementing the RED, you also need to monitor for unintended consequences. For example, in the clinical trial of the RED, the average time of discharge was monitored. When it shifted by 30 minutes later in the day after the RED was introduced, RED implementers were able to successfully intervene. Length of stay is another measure you may want to monitor to catch unintended consequences.

In addition to generating outcome measures for patients targeted to receive or receiving the RED, you may want to generate measures for a comparison group. A comparison group might be patients in a similar hospital or comparable patients in your hospital who are not receiving the RED. Finding differences between RED and non-RED patients will add to your confidence that the RED was in fact responsible for changes in outcome measures observed over time.

3.2.1. Hospital Reutilization Measures

Most hospitals focus on the use of hospital services in the 30 days following discharge. Many hospital reutilizations in the 30 days following discharge are due to a cause other than the primary diagnosis for which the patient was originally hospitalized. While you could choose to evaluate the RED on whether it averts hospital reutilizations related to the original primary diagnosis, the RED is designed to be a comprehensive approach. By connecting patients with outpatient providers and other followup care, educating them on comorbidities as well as their primary diagnosis, and instructing them and confirming understanding of their medicines, the RED should be able to have an impact on 30-day all-cause hospital reutilization.

Furthermore, the Centers for Medicare & Medicaid Services (CMS) uses disease-specific risk-adjusted 30-day all-cause readmission rates when gauging excess hospital readmission. CMS currently reduces payments to hospitals with excess readmissions for three conditions: acute myocardial infarction, heart failure, and pneumonia. There are plans to expand beyond this “starter set” in the next few years.

The rates that you calculate will differ from CMS’s rates because they will not be risk adjusted and will not include readmissions to other hospitals. (For more information on how CMS calculated readmission rates, see [Appendix B](#)). If you want to try to capture your patients’ postdischarge use of other hospitals, you can use patient surveys. These reports, however, rely on patients’ recall of what hospital services they used in the 30 days after leaving the hospital.

Common measures of 30-day all-cause hospital reutilization are percentages of patients with:

All-cause readmissions (admission >24 hours) within 30 days of discharge.

All-cause observations (admission <24 hours) within 30 days of discharge.

All-cause emergency department visits within 30 days of discharge.

All-cause urgent care visits within 30 days of discharge.

These rates can be reported separately or in combination.

Consider examining reutilization rates by subsets to identify important opportunities for improvement. For example, if a specific nursing home was shown to have high rates of what

appear to be avoidable events, your hospital could work with the nursing home to determine the source of this problem and take corrective action. The Commonwealth Fund [*Health Care Leader Action Guide To Reduce Avoidable Readmissions*](#) suggests that hospitals could examine readmissions data in the following ways:

Rates for different conditions: To the extent feasible, examine readmission rates by diagnosis and significant comorbidities, and look for correlation with the patient’s severity.

Rates by practitioner: Examine the rates by physician, physician group, and service to determine if the patterns of readmissions are appropriate or if any type of practitioner or groups/services are associated with an unexpected readmission rate or trend for certain diagnostic groups.

Rates by readmission source: Examine the rates by readmission source (e.g., home, nursing home) to determine the places from which patients are most often being readmitted.

Rates at different times: Examine readmissions within a given time period, such as 7, 30, 60, and 90 days. Examining a shorter timeframe may bring to light issues more directly related to hospital care or flaws in the process of transitioning the patient to the ambulatory setting. Examining the longer timeframe may reveal issues with followup care and patients’ understanding of self-care or the hospital’s ability to arrange posthospital care.

Rates by sociodemographics: Examine readmissions by race, ethnicity, neighborhood (ZIP Code), and language preference to identify disparities and the adequacy of language and cultural services for patients throughout the transition process.

Rates by insurance: Examine readmissions by insurer type to ensure the appropriate use of benefits and identify the ways patients may be guided to optimize their benefits.

If outliers are identified, you may want to conduct a root cause analysis to figure out why they are experiencing high rates. (For more information on root cause analysis, see Section 6.1.)

3.2.2. Connections With Outpatient Providers

Research shows that patients who return to the hospital often have not seen a clinician since they left the hospital.¹ One of the most important components of the RED is that all patients go home with a followup appointment made in such a way that there is a good chance they will keep it.

As described in Tool 3, “How To Deliver the Re-Engineered Discharge,” the DE works with the patient to identify a date and time that the patient can attend a posthospital followup appointment. To monitor how successful your hospital has been in arranging an appointment that the patient can keep, you can measure:

Percentage who completed an appointment with their medical provider (of those who completed that survey question).

3.2.3. Knowledge for Self-Management

An important objective of the RED is to teach patients how to take care of themselves when they get home. The postdischarge followup phone call provides an opportunity to monitor whether teaching done in the hospital has improved the patients' knowledge of how to self-manage their conditions. Possible measures include:

Percentage who correctly report during postdischarge followup phone call the reason for their hospital visit (of those who completed a postdischarge followup phone call).

Percentage who correctly report during postdischarge followup phone call the symptoms to watch out for or things to do for their condition (of those who completed a postdischarge followup phone call).

Percentage who correctly report during postdischarge followup phone call how to take their medicines (of those who completed a postdischarge followup phone call and had prescribed medicines).

3.2.4. Patient Satisfaction

The RED is designed to improve communication, which in the RED trial was shown to improve overall patient satisfaction. Measures of patient satisfaction with hospitals include:

Percentage who rate hospital a 9 or 10 on a 1 to 10 scale (of those who completed that survey question).

Percentage who would probably or definitely recommend your hospital to friends and family (of those who completed that survey question).

Percentage who report nurses always or usually treated them with courtesy and respect (of those who completed that survey question).

Percentage who report doctors always or usually treated them with courtesy and respect (of those who completed that survey question).

181. 4. Collecting Data

Your monitoring plan will specify who will collect data and how data for each measure will be collected. This section of the tool discusses the various sources of data you can use to calculate measures. Expect to modify your data collection to generate the measures that you choose.

182. 4.1. RED Workbooks and Contact Sheets

Much of the data for monitoring RED implementation can be collected and recorded in the DE's Workbook. You can find a copy of the Workbook in Tool 3, "How To Deliver the Re-Engineered Discharge." If your hospital is not using the RED Workstation, you will have to manually calculate the measures using a spreadsheet. This can be done by conducting a chart review for at least 10 percent of RED patients, defined as patients receiving any RED component or as the entire target population whether or not they received the RED.

183. 4.2. Electronic Health Records and the RED Workstation

Some data needed for calculating measures will be available from your hospital's EHRs (if you have EHRs). For example, if your hospital routinely collects language preference data at admission, the measure of the percentage of patients asked about language preferences could be generated by using EHRs.

If your hospital is entering data from the Workbook into a RED Workstation, the Workstation can be programmed to generate many of the implementation measures automatically. The RED Workstation can also be linked to your EHR system so that it can pull data needed for measure calculation.

184. 4.3. Patient Surveys

Some measures, such as the patient satisfaction measures, require gathering data from patients after discharge. The patient survey should be conducted shortly after discharge (e.g., within 6 weeks). You can add questions to patient surveys your hospital already conducts to assess patient experiences and satisfaction with care if you implement the RED with your hospital's entire patient population. If, however, you implement the RED with a subset of patients, these anonymous surveys will not allow you to distinguish between RED patients and others. Therefore, you will need to field a separate patient survey to monitor the RED.

You can administer the surveys by mailing a survey to the patient after discharge or by administering the survey by phone. Mail surveys are less expensive but typically have low response rates. You may therefore choose to conduct telephone followup with patients who do not respond to a mail survey.

Appendices C and D of this tool are mail and phone versions of a survey that will assist you in collecting data from patients. These surveys do not capture all the data needed to calculate all the measures listed in this tool, but you can individualize the survey for your hospital to reflect your priorities and goals. A number of the survey items were developed for HCAHPS[®], the hospital survey of patients' experience of care, and have been validated as part of the CAHPS[®] development process. (CAHPS is the Consumer Assessment of Healthcare Providers and Systems, and HCAHPS is the hospital version.)

185. 5. Measurement Timing and Frequency

When and how often you want to generate RED measures will depend on the measure, the amount of progress you have made in implementing the RED, and the level of effort it takes to generate the measure.

For outcome measures, it is useful to get a baseline measurement, that is, to calculate the measure before RED implementation begins. Ideally, you will calculate outcomes measures for an extended time (e.g., the year before implementation) rather than only at one point in time (e.g., the month before implementation). You may then be able to identify seasonal variations or trends over time that will help you interpret your measures after RED implementation.

Subsequent calculations of outcome measures will depend on how quickly you expect the measure to respond to the RED. Set reasonable expectations for improvement. It will take a

while before the RED is fully and properly implemented, so there will be a lag in measurable results. For example, you should see an impact of patient satisfaction among those who receive the RED almost immediately, but the impact on the overall hospital patient satisfaction scores depends on the percentage of the hospital's patients that receives the RED.

Consider producing outcome measures that can be generated using electronic data on a monthly basis and track changes over time as well as differences from baseline. You may want to produce outcome measures that require patient surveys or spreadsheet calculations less frequently. You can, however, reduce the burden of producing those measures by using only a sample, rather than the universe, of RED patients.

Implementation measures can be calculated as soon as 30 patients have received the RED. At first, you will need to generate these very frequently (e.g., every other week). If electronic data cannot be used, you can generate these measures using a small sample of patients. The idea, however, is to generate these measures quickly so they can be used for continuous quality improvement.

As the RED matures, you may want to reduce the frequency of measurement. For example, once it has been determined that the RED components have been fully integrated into standard operating procedures, you may want to generate the measures that monitor those components infrequently or even drop them from the measurement set. Once a steady state has been reached, you may want to harmonize the intervals for RED outcome measurement with other key quality measures your hospital monitors.

186. 6. Other Means of Monitoring the RED

Qualitative methods can be useful to monitor RED implementation and outcomes and develop strategies for quality improvement.

187. 6.1. Root Cause Analysis

Root cause analysis is the study of when things go wrong to identify ways bad outcomes can be prevented. The goal is to identify underlying trouble that increases the likelihood of problems while resisting the urge to focus on mistakes by individuals.²⁻⁴

You start by identifying patients who have experienced a bad outcome, such as an avoidable readmission. Using a systematic approach, such as conducting chart reviews and structured interviews with patients, DEs, and other providers, you will uncover the underlying failures in the care process. Ideally, you will select cases from several different clinical units and include patients with varying diagnoses.

After you conduct a series of root cause analyses, you are likely to understand where processes are breaking down. If you conduct such analyses at least monthly during RED implementation, the findings will provide valuable feedback about times when the RED process is not working and advice about how to adapt the RED processes for your hospital. These monthly discussions can also generate enthusiasm for an organizational culture that emphasizes the importance of improving transitions of care.

188. 6.2. Discharge Educator Help Line Logs

The logs that DEs keep of patients who call the help line can help identify systematic problems. The RED Workstation can identify patterns in reports of:

Postdischarge unanticipated problems.

Postdischarge areas of confusion or uncertainty.

Need for additional social support services.

189. 6.3. Direct Observation

Many measures of RED implementation rely on staff self-report in the Workbooks and contact sheets. To augment these reports, direct observation by staff overseeing the delivery of the RED can give insight into implementation glitches.

190. 7. Taking Action

Monitoring the RED improves outcomes only if staff review the results and take action. Forums for reviewing RED monitoring data include:

Weekly meetings of DE and other members of the frontline RED clinical team.

Monthly meetings of the RED implementation team.

Reviews of other key quality indicators (e.g., hospital board meetings, quality committees).

Senior management resource allocation meetings.

When areas for improvement are identified, rapid-cycle, continuous quality improvement methods can be implemented to improve care delivered by individual providers, units, and systems. Once a process that needs improvement is identified, a team representing various stakeholders is gathered to understand the process and learn what can be done. Action to prevent future failures involves reaching consensus for what changes are needed, setting goals, transforming processes and educating staff, and measuring results. If necessary, the implementation plan may be revised based on the results so that improvement is ongoing.

191. 8. Summary

Developing a monitoring plan as suggested in this tool will help you identify what is going well and what needs to be improved. Monitoring the RED implementation measures lets you know whether you are successfully implementing the components of the RED, and monitoring the outcome measures tells if you are achieving the expected results. Collecting data should be limited to only that information that will help you determine if you are achieving the goals that you set for your hospital in the area of transitions in care.

192. References

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193. Appendix A. Discharge Measures Used by Other Organizations

194. A.1. National Quality Forum Safe Practice Discharge Measures

The principles of the RED program were incorporated into the National Quality Forum (NQF) Safe Practice as being essential for delivery of a safe and effective hospital discharge. The components of the NQF Safe Practice were harmonized with the recommendations of the Joint Commission, the Leapfrog group, Centers for Medicare & Medicaid Services (CMS), the Institute for Healthcare Improvement, and others and mirror the components of the RED program.⁵

The NQF Safe Practice does not target the rehospitalization rate as a key indicator, but identifies a key set of intermediate process variables leading toward rehospitalization. These performance measures do not all address external reporting requirements, but are suggested to support internal health care organization quality improvement efforts. The measures endorsed by the NQF are listed below.

Outcome measures include reduction in direct harm associated with adverse events and treatment misadventures, including death, disability (permanent or temporary), adverse drug events, or preventable harm requiring further treatment; missed diagnoses and delayed treatment; and inaccessible prior test information and medical records.

Process measures include the percentage of discharge summaries received by accepting practitioners; the number of patients who have and attend a posthospital followup appointment; and the timeliness of receipt and discussion of posthospital followup tests with the accepting provider.

Home management plan of care document given to patient/caregiver requires that documentation exists that the home management plan of care (HMPC), as a separate document, specific to the patient, was given to the patient/caregiver prior to or upon discharge.

Structure measures include verification of the existence of a systematic hospital discharge performance improvement program and explicit organizational policies and procedures addressing communication of discharge information; verification of educational programs; and the existence of formal reporting structures for accountability across governance, administrative leadership, and frontline caregivers.

Patient-centered measures include surveys of patient satisfaction about hospital discharge at the time of and after discharge. The NQF-endorsed HCAHPS[®] survey includes two relevant measures: “During your hospital stay, did hospital staff talk with you about whether you would have the help you needed when you left the hospital?” (Q19); and “During your hospital stay, did you get information in writing about what symptoms or health problems to look out for after you left the hospital?” (Q20). Additional self-report surveys, such as the 3-Item Care Transition Measure (CTM-3), may be considered as well.

195. A.2. American College of Cardiology H2H (Hospital to Home) Program

Another organization that has set a specific target for rehospitalization rate improvement is the initiative that is co-led by the American College of Cardiology and the Institute for Healthcare

Improvement. Other strategic partners include specialty societies, nursing organizations, hospital associations, integrated health systems, payers and patients, and family caregivers. The focus of this program is on medication management postdischarge, early followup, and symptom management. The overall goal of the H2H initiative is to reduce all-cause readmission rates among patients discharged with heart failure or acute myocardial infarction by 20 percent by 2012. The Web site is available at www.h2hquality.org/.

196. A.3. ABIM, ACP, SHM Care Transitions Performance Measurement Set

The American Board of Internal Medicine Foundation, American College of Physicians, and Society of Hospital Medicine have released the *Physician Consortium for Performance Improvement® - Care Transitions Performance Measurement Set*.⁶ This document lists key measures of success in improving outcomes, including:

Reduction in adverse drug events.

Reduction in patient harm related to medical errors of omission and commission.

Reduction in unnecessary health care encounters (e.g., 30-day all-cause hospital readmissions).

Reduction in redundant tests and procedures.

Achievement of patient goals and preferences (e.g., functional status, comfort care).

Improved patient understanding of and adherence to treatment plan.

197. A.4. CMS Safe Transitions Program Technical Expert Panel Recommendations

The CMS Community-Based Care Transitions Program^{7,8} has implemented demonstration projects in 14 Quality Improvement Organizations (QIOs) in 14 States representing more than 1 million beneficiaries. As part of this effort, the Technical Expert Panel (TEP) on Benchmarking of Hospital Discharge was formed to study and make recommendations about transition measures. The final report assists hospitals to understand how CMS is approaching the issue of rehospitalization measures.

The measures the TEP recommended include:

Patient satisfaction.

Standardized elements of discharge process.

Scheduling of followup visit.

Elements of transition.

All-cause 30-day readmission rates.

Intervening physician visits among those readmitted.

The TEP identified the following examples of optimal measures for hospital discharge transitions. The expected rates of improvement are shown in Table A.1.

30-day readmission rate.

30-day all-cause risk standardized readmission rate following congestive heart failure (CHF), acute myocardial infarction (AMI), and pneumonia.

Percentage of patients who rate hospital performance meeting HCAHPS performance standard for discharge information and information about medicines.

Percentage of patients readmitted ≤ 30 days not seen by a physician between discharge and readmission.

Percentage of care transitions in the targeted area for which interventions show improvement.

Table A.1. Expected rates of improvement

Measure	Expected Improvement
30-day readmissions	2 percentage points
AMI, CHF, and pneumonia 30-day readmissions	2 percentage points for one of these measures
HCAHPS measures	8 percent reduction in failure rate
MD visit between admission and readmission	8 percent reduction in failure rate
Percentage of care transitions for which interventions show improvement	1 or more interventions, affecting at least 10 percent of transitions

It appears that 30-day all-cause rehospitalization rates will be a key measure. For the purpose of quality improvement, the raw rates of rehospitalization are probably sufficient. However, when hospitals are compared in the public domain or for purposes of reimbursement, then risk adjustments are necessary (see Appendix B). If readmission rates are to be a key measure, then it is important that the definition be clear and the calculation of this rate be consistent. Although there is not yet a national consensus, the TEP suggested:

Including those discharged from short-term acute care facilities in the denominator.

Including readmission to an acute care hospital or having observation stay within 30 days of index hospital discharge, whether planned or unplanned, in the numerator.

Excluding patients who died during index hospitalization.

Excluding emergency department visits from the numerator or denominator.

Treating admission to and from chronic care facilities like any other hospitalization.

Including all payers, including all Medicare beneficiaries.

Tracking the proportion of readmissions to same versus other hospitals.

Using current risk-standardized measures (see Appendix B).

Refraining from using unadjusted measures to compare hospitals to each other.

The TEP also recommended that the calculation of physician followup include:

Beneficiaries in community ZIP Code with a readmission to short-term acute care facility (including chronic care facilities) within 30 days of index hospital discharge in the denominator.

The presence of any Part B evaluation and management (E&M) code between discharge and readmission in the numerator.

198. Appendix B. How CMS Measures the “30-Day All-Cause Rehospitalization Rate” on the Hospital Compare Web Site

Each hospital’s 30-day risk-standardized readmission rate (RSRR) is computed in several steps. First, the predicted 30-day readmission for a particular hospital obtained from the hierarchical regression model is divided by the expected readmission for that hospital, which is also obtained from the regression model. Predicted readmission is the number of readmissions (following discharge for heart attack, heart failure, or pneumonia) that would be anticipated in the particular hospital during the study period, given the patient case mix and the hospital’s unique quality of care effect on readmission. Expected readmission is the number of readmissions (following discharge for heart attack, heart failure, or pneumonia) that would be expected if the same patients with the same characteristics had instead been treated at an “average” hospital, given the “average” hospital’s quality of care effect on readmission for patients with that condition.

This ratio is then multiplied by the national unadjusted readmission rate for the condition for all hospitals to compute an RSRR for the hospital. So, the higher a hospital’s predicted 30-day readmission rate, relative to expected readmission for the hospital’s particular case mix of patients, the higher its adjusted readmission rate will be. Hospitals with better quality will have lower rates.

The formula follows:

$(\text{Predicted 30-day readmission} / \text{Expected readmission}) * \text{U.S. national readmission rate} = \text{RSRR}$

For example, suppose the model predicts that 10 of Hospital A’s heart attack admissions would be readmitted within 30 days of discharge in a given year, based on their age, gender, and preexisting health conditions, and based on the estimate of the hospital’s specific quality of care. Then, suppose that the expected number of 30-day readmissions for those same patients would be higher—say, 15—if they had instead been treated at an “average” U.S. hospital. If the actual readmission rate for the study period for all heart attack admissions in all hospitals in the United States is 12 percent, then the hospital’s 30-day RSRR would be 8 percent.

$$\text{RSRR for Hospital A} = (10/15) * 12\% = 8\%$$

If, instead, 9 of these patients would be expected to have been readmitted if treated at the “average” hospital, then the hospital’s readmission rate would be 13.3 percent.

$$\text{RSRR for Hospital A} = (10/9) * 12\% = 13.3\%$$

In the first case, the hospital performed better than the national average and had a relatively low RSRR (8 percent); in the second case, it performed worse and had a relatively high rate (13.3 percent).

Hospitals with relatively low-risk patients whose predicted readmission is the same as the expected readmission for the average hospital for the same group of low-risk patients would have an adjusted readmission rate equal to the national rate (12 percent in this example). Similarly, hospitals with high-risk patients whose predicted readmission is the same as the expected readmission for the average hospital for the same group of high-risk patients would also have an adjusted readmission rate equal to the national rate of 12 percent. Thus, each hospital’s case mix should not affect the adjusted readmission rates used to compare hospitals.

Adjusting for Small Hospitals or a Small Number of Cases. The hierarchical regression model also adjusts readmission rate results for small hospitals or hospitals with few heart attack, heart failure, or pneumonia cases in a given reference period. This reduces the chance that such

hospitals' performances will fluctuate wildly from year to year or that they will be wrongly classified as either a worse or a better performer. For these hospitals, the model not only considers readmissions among patients treated for the condition in the small sample size of cases, but pools together patients from all hospitals treated for the given condition, to make the results more reliable.

In essence, the predicted readmission rate for a hospital with a small number of cases is moved toward the overall U.S. national readmission rate for all hospitals. The estimates of readmission for hospitals with few patients will rely considerably on the pooled data for all hospitals, making it less likely that small hospitals will fall into either of the outlier categories. This pooling affords a "borrowing of statistical strength" that provides more confidence in the results. For classifying hospital performance, extremely small hospitals will be reported separately.

199. Appendix C. Patient Outcome Survey (mailed version)

For hospitals needing translation services, a helpful reference to a national translation service is available at: www.atanet.org/onlinedirectories/.

HOSPITAL DISCHARGE SURVEY

SURVEY INSTRUCTIONS

You should fill out this survey only if you were the patient during the hospital stay named in the cover letter. Do not fill out this survey if you were not the patient.

Answer all the questions by checking the box next to your response.

HOSPITAL USE

1. Have you stayed in a hospital overnight since you left the hospital on {discharge date}? This means being admitted to a hospital floor (not just the emergency room).

¹ Yes ² No

If YES, please fill out the table below for each hospital visit. List the hospital, date of arrival, and reason for each hospitalization.

Hospital	Date You Arrived	Reason
1.		
2.		
3.		
4.		
5.		

200. Have you been to the emergency room since you left the hospital on {discharge date}? These would be emergency room visits that did not cause you to be admitted to the hospital (so you stayed in the emergency room the entire time and went home from the emergency room).

¹ Yes ² No

If YES, please fill out the table below for each emergency room visit. List the hospital, date of arrival, and reason for each visit.

Hospital	Date You Arrived	Reason
1.		
2.		
3.		
4.		
5.		

APPOINTMENTS

These next questions are about any appointments you had after you left the hospital on {discharge date}.

201. Do you have a particular doctor's office, clinic, health center, or other place that you usually go to if you are sick or need advice about your health?

¹ Yes ² No

202. Since you left the hospital on {discharge date}, have you seen your medical provider, sometimes called a primary care provider (or someone in their office)?

¹ Yes ² No

If YES, What date did you see this person? _____

DIAGNOSIS

203. During your hospital stay, the doctors and nurses may have told you the name of your primary diagnosis or main problem. Do you know what your main problem was?

¹ Yes ² No ³ N/A, reason: _____

If YES, Can you please list the name of your primary diagnosis or main problem? _____

These next questions ask about your visit at {hospital name} from {admit date} to {discharge date}.

YOUR HOSPITAL STAY

204. During this hospital stay, how often did nurses treat you with courtesy and respect?

¹ Never

² Sometimes

³ Usually

⁴ Always

205. During this hospital stay, how often did nurses listen carefully to you?

¹ Never

² Sometimes

³ Usually

⁴ Always

206. During this hospital stay, how often did nurses explain things in a way you could understand?

¹ Never

² Sometimes

³ Usually

⁴ Always

207. During this hospital stay, how often did doctors treat you with courtesy and respect?

¹ Never

² Sometimes

³ Usually

⁴ Always

208. During this hospital stay, how often did doctors listen carefully to you?

¹ Never

² Sometimes

³ Usually

⁴ Always

209. During this hospital stay, how often did doctors explain things in a way you could understand?

¹ Never

² Sometimes

³ Usually

⁴ Always

210. During this hospital stay, how often were your questions answered to your satisfaction?

¹ Never

² Sometimes

³ Usually

⁴ Always

211. How often did hospital staff listen to you when they decided the plan for your care?

¹ Never

² Sometimes

³ Usually

⁴ Always

MEDICINES

212. During this hospital stay, were you told to take any medicine after you left the hospital? Include prescription and nonprescription medicines as well as any medicines you were already taking before your hospital stay.

¹ Yes ² No → If No, Go to Question 21

213. During this hospital stay, did hospital staff explain the purpose of each of the medicines you were to take at home?

Yes No → If No, Go to Question 17

214. Was the explanation of each medicine's purpose easy to understand?

Never

Sometimes

Usually

Always

215. During this hospital stay, did hospital staff explain how much to take of each medicine and when to take it when you were at home?

Yes No → If No, Go to Question 19

216. How often was their explanation of how and when to take each medicine easy to understand?

Never

Sometimes

Usually

Always

217. During this hospital stay, did hospital staff ask you to describe how much you would take of each medicine and when you would take it when you were at home?

Yes No

218. During this hospital stay, did hospital staff tell you whom to call after you left the hospital if you had questions about your medicines?

Yes No

219. During this hospital stay, did hospital staff talk with you about whether you would have the help you needed when you left the hospital?

Yes No

220. During this hospital stay, did you get information in writing about what symptoms or health problems to look out for after you left the hospital?

¹ Yes ² No → If No, Go to Question 24

221. Were these written instructions easy to understand?

¹ Yes ² No

WHEN YOU LEFT THE HOSPITAL

222. After you left the hospital, did you go directly to your own home, to someone else's home, or to another health facility?

¹ Own home

² Someone else's home

³ Another health facility

223. After you left the hospital, did someone from the hospital call you to check how you were doing?

¹ Yes ² No → If No, Go to Question 27

If YES, please tell me how much you agree with the following statement:

224. After the call, all of my questions about my medical care were answered.

Strongly disagree

Disagree

Agree

Strongly Agree

OVERALL RATING OF HOSPITAL

225. Using any number from 0 to 10, where 0 is the worst hospital possible and 10 is the best hospital possible, what number would you use to rate this hospital during your stay?

_____ (0-10)

226. Would you recommend this hospital to your friends and family?

Definitely no

Probably no

Probably yes

Definitely yes

227. Did you feel that your family and you were treated with respect?

¹ Yes ² No

ABOUT YOU

There are only a few remaining items left.

228. What is your age?

¹ 18-30 years

² 31-50 years

³ 51-70 years

⁴ 71-above years

229. In general, how would you rate your overall health?

¹ Excellent

² Very good

³ Good

⁴ Fair

⁵ Poor

230. What is the highest grade or level of school that you have completed?

¹ Some elementary or high school but did not graduate

² High school graduate or GED

³ Some college or 2-year degree

⁴ 4-year college graduate

231. Are you of Spanish, Hispanic, or Latino origin or descent?

¹ No, not Spanish/Hispanic/Latino

² Yes

232. How would you describe your race? Please choose one or more.

¹ White

² Black or African American

³ Asian

⁴ Native Hawaiian or Other Pacific Islander

⁵ American Indian or Alaska Native

233. What language do you mainly speak at home?

¹ English

² Spanish

³ Some other language (please print): _____

THANK YOU

Please return the completed survey in the postage-paid envelope.

234. Appendix D. Patient Outcome Survey (phone version)

If contact sheet indicates patient needs an interpreter for phone communication, arrange for interpreter services before the call.

235. Overview

This phone interview script is provided to assist interviewers while attempting to reach the respondent. The script explains the purpose of the survey and confirms necessary information about the respondent. Interviewers must not conduct the survey with a proxy respondent.

236. General Interviewing Instructions

Survey is administered to patients beginning 30 days after the date of index hospital discharge.

Patients are called up to 60 days after the date of index hospital discharge.

All questions and all answer categories must be read exactly as they are worded.

No changes are permitted to the order of the answer categories.

All transitional statements must be read.

Index admission date: ____ / ____ / ____

Index discharge date: ____ / ____ / ____

Date initial call attempt: ____ / ____ / ____

Caller records the call attempts and time talking with patient:

#1: Date(mo/day/yr): ____ / ____ / ____ Time of day ____:____ action taken/time with subject: _____

#2: Date(mo/day/yr): ____ / ____ / ____ Time of day ____:____ action taken/time with subject: _____

#3: Date(mo/day/yr): ____ / ____ / ____ Time of day ____:____ action taken/time with subject: _____

#4: Date(mo/day/yr): ____ / ____ / ____ Time of day ____:____ action taken/time with subject: _____

#5: Date(mo/day/yr): ____ / ____ / ____ Time of day ____:____ action taken/time with subject: _____

#6: Date(mo/day/yr): ____ / ____ / ____ Time of day ____:____ action taken/time with subject: _____

#7: Date(mo/day/yr): ____ / ____ / ____ Time of day ____:____ action taken/time with subject: _____

#8: Date(mo/day/yr): ____ / ____ / ____ Time of day ____:____ action taken/time with subject: _____

237. INTRODUCTION

Hello. may I please speak to [patient name]?

This is [name of caller] from [hospital name]. We are conducting a survey about the hospital discharge process. I am calling to talk to {patient name} about a recent health care experience.

Our records show that you were recently a patient at {name of hospital} and discharged on {date of discharge}. Because you had a recent hospital stay, we are asking for your help. This survey is part of an ongoing effort at {name of hospital} to improve the way they get patients ready to return home from the hospital. These results will help this hospital to understand if its improvements are helping patients.

Your participation is voluntary and will not affect your health benefits. You do not need to answer these questions. Your answers will only be shared with people who are trying to improve the hospital and the care that is given to patients.

If you have any questions about this survey, please call {hospital project manager name} at {project manager phone number}. Thank you for helping to improve health care for all patients.

This survey will take approximately 10 minutes. Are you willing to complete the survey now?
With acknowledgment, caller continues.

According to our records, you stayed in {hospital name} from {start date} to {discharge date}. Most of the questions on this survey are about this stay in the hospital.

Please tell me which response most closely matches your answer.

238. HOSPITAL USE

1. Have you stayed in a hospital overnight since you left the hospital on {discharge date}? This means being admitted to a hospital floor (not just the emergency room).

¹ Yes ² No

If YES, please fill out the table below for each hospital visit. Ask for the hospital, date of arrival, and reason for each hospitalization.

Hospital	Date You Arrived	Reason
1.		
2.		
3.		
4.		

5.		
----	--	--

239. Have you been to the emergency room since you left the hospital on {discharge date}? These would be emergency room visits that did not cause you to be admitted to the hospital (so you stayed in the emergency room the entire time and went home from the emergency room).

¹ Yes ² No

If YES, please fill out the table below for each emergency room visit. Ask for the hospital, date of arrival, and reason for each visit.

Hospital	Date You Arrived	Reason
1.		
2.		
3.		
4.		
5.		

240. APPOINTMENTS

These next questions are about any appointments you had after you left the hospital on {discharge date}.

241. Do you have a particular doctor's office, clinic, health center, or other place that you usually go if you are sick or need advice about your health?

¹ Yes ² No

242. Since you left the hospital on {discharge date}, have you seen your medical provider, sometimes called a primary care provider (or someone in their office)?

¹ Yes ² No

If YES, What date did you see this person? _____

243. DIAGNOSIS

244. During your hospital stay, the doctors and nurses may have told you the name of your primary diagnosis or main problem. Do you know what your main problem was?

¹ Yes ² No ³ N/A, reason: _____

If YES, Can you please tell me the name of your primary diagnosis or main problem? _____

These next questions ask about your visit at {hospital name} from {admit date} to {discharge date}.

245. YOUR HOSPITAL STAY

246. During this hospital stay, how often did nurses treat you with courtesy and respect?

- ¹ Never
- ² Sometimes
- ³ Usually
- ⁴ Always

247. During this hospital stay, how often did nurses listen carefully to you?

- ¹ Never
- ² Sometimes
- ³ Usually
- ⁴ Always

248. During this hospital, stay, how often did nurses explain things in a way you could understand?

- ¹ Never
- ² Sometimes
- ³ Usually
- ⁴ Always

249. During this hospital stay, how often did doctors treat you with courtesy and respect?

- ¹ Never
- ² Sometimes
- ³ Usually
- ⁴ Always

250. During this hospital stay, how often did doctors listen carefully to you?

- ¹ Never
- ² Sometimes
- ³ Usually
- ⁴ Always

251. During this hospital stay, how often did doctors explain things in a way you could understand?

- ¹ Never
- ² Sometimes
- ³ Usually
- ⁴ Always

252. During this hospital stay, how often were your questions answered to your satisfaction?

- ¹ Never
- ² Sometimes
- ³ Usually
- ⁴ Always

253. How often did hospital staff listen to you when they decided the plan for your care?

- ¹ Never
- ² Sometimes
- ³ Usually
- ⁴ Always

MEDICINES

254. During this hospital stay, were you told to take any medicine after you left the hospital? Include prescription and nonprescription medicines as well as any medicines you were already taking before your hospital stay.

- ¹ Yes ² No ➔ If No, Go to Question 21

255. During this hospital stay, did hospital staff explain the purpose of each of the medicines you were to take at home?

Yes No → If No, Go to Question 17

256. Was the explanation of each medicine's purpose easy to understand?

Never

Sometimes

Usually

Always

257. During this hospital stay, did hospital staff explain how much to take of each medicine and when to take it when you were at home?

Yes No → If No, Go to Question 19

258. How often was their explanation of how and when to take each medicine easy to understand?

Never

Sometimes

Usually

Always

259. During this hospital stay, did hospital staff ask you to describe how much you would take of each medicine and when you would take it when you were at home?

Yes No

260. During this hospital stay, did hospital staff tell you whom to call after you left the hospital if you had questions about your medicines?

Yes No

261. During this hospital stay, did hospital staff talk with you about whether you would have the help you needed when you left the hospital?

Yes No

262. During this hospital stay, did you get information in writing about what symptoms or health problems to look out for after you left the hospital?

¹ Yes ² No → If No, Go to Question 24

263. Were these written instructions easy to understand?

¹ Yes ² No

WHEN YOU LEFT THE HOSPITAL

264. After you left the hospital, did you go directly to your own home, to someone else's home, or to another health facility?

¹ Own home

² Someone else's home

³ Another health facility

265. After you left the hospital, did someone from the hospital call you to check how you were doing?

¹ Yes ² No → If No, Go to Question 27

If YES, please tell me how much you agree with the following statement:

266. After the call, all of my questions about my medical care were answered.

¹ Strongly disagree

² Disagree

³ Agree

⁴ Strongly Agree

OVERALL RATING OF HOSPITAL

267. Using any number from 0 to 10, where 0 is the worst hospital possible and 10 is the best hospital possible, what number would you use to rate this hospital during your stay?

_____ (0-10)

268. Would you recommend this hospital to your friends and family?

¹ Definitely no

² Probably no

³ Probably yes

⁴ Definitely yes

ABOUT YOU

There are only a few remaining items left.

269. What is your age?

¹ 18-30 years

² 31-50 years

³ 51-70 years

⁴ 71-above years

270. In general, how would you rate your overall health?

¹ Excellent

² Very good

³ Good

⁴ Fair

⁵ Poor

271. What is the highest grade or level of school that you have completed?

¹ Some elementary or high school but did not graduate

² High school graduate or GED

³ Some college or 2-year degree

⁴ 4-year college graduate

272. Are you of Spanish, Hispanic, or Latino origin or descent?

¹ No, not Spanish/Hispanic/Latino

² Yes

273. How would you describe your race? Please choose one or more.

¹ White

² Black or African American

³ Asian

⁴ Native Hawaiian or Other Pacific Islander

⁵ American Indian or Alaska Native

274. What language do you mainly speak at home?

¹ English

² Spanish

³ Some other language (please print): _____

Those are all the questions I have. Thank you for your time. Have a good (day/evening).