



How To Monitor RED Implementation and Outcomes

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A note to users: We would greatly appreciate any feedback that you might have on how to improve this toolkit. This information should be directed to Project RED on its Boston University website, www.bu.edu/fammed/projectred/, and leave your comments or questions in the “contact us” section.

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1. Why Monitoring Is Important

This tool will assist the RED project management team to evaluate their implementation of the RED. Specifically, this tool discusses process and outcome measures and the way to use such data for continuous quality improvement of care transitions. In this way, monitoring the RED is not only an activity to ensure that the project is being implemented correctly, but also, to ensure that care processes continue to be adapted according to optimize care transitions. The activities described in this tool will likely be led by the interdisciplinary leadership of the hospital safety and quality committees or from the personnel from such committees tasked with improving care transitions. Specifically, representative stakeholders from nursing, medicine, and case management are appropriate. At times, personnel with additional areas of expertise will be needed to augment the core evaluation team to ensure success.

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2. Using Measures to Guide Quality Improvement

Without monitoring the implementation process and the outcomes, the project will not succeed. Monitoring helps staff meet their performance goals and learn from mistakes. In addition, the monitoring process itself identifies ongoing challenges and provides opportunities for refining the RED for local conditions.

2.1 Measuring Process

The process measures to be tracked will depend on the hospital's needs and goals. The data collected should be used to direct continuous quality improvement activities in the hospital. For example, if a hospital takes on the goal of making certain that all patients are discharged with an appointment with a responsible care provider, monitoring this activity should provide the opportunity to identify the clinical units that need improvement on this metric and corrective action should ensue. Guidance for specific process measures in the RED program can be found in [section 3](#) below.

Additional details for what should be measured have been advanced by the [National Quality Forum](#), [American College of Cardiology H2H \(Hospital to Home\) Program](#), and the joint ABIM, ACP, and SHM [Care Transitions program](#). Preliminary Recommendations have also been advanced by the [CMS Safe Transitions Program Technical Expert Panel](#) (see [Appendix A for additional information and links](#)).

2.2 Measuring Outcomes

The central outcome of interest that is typically discussed is the 30-day rate for readmission to the hospital. CMS bases its comparisons on disease specific risk-adjusted rates. The CMS readmission models estimate hospital-specific, adjusted, all-cause 30-day readmission rates for patients discharged alive to a non-acute care setting with a principal diagnosis of heart attack, heart failure, and pneumonia. It is likely that the list of diagnoses will expand beyond this starter set. For more information on CMS readmission rates and calculations please go to: <http://www.hospitalcompare.hhs.gov/staticpages/for-professionals/oc/risk-adjustments-and-covariates.aspx>

Hospitals should track all unplanned hospital utilization events. These include: urgent care visits, emergency department visits, observation visits, and rehospitalization. To identify important opportunities for improvement, events should be examined by department, service, and unit. Additional factors to examine will be time-based, such as day-of-week for discharge and readmission and the number of days from discharge to return for hospital utilization. Day of week phenomena for example may reflect staffing or process variation on weekends at the hospital or at subsequent facilities (e.g., skilled nursing units). The number of days from discharge to return may provide evidence for improving the linkage to primary care. Analyzing these outcomes by patient race/ethnicity and gender can also reveal health inequities at your health care center.

3. Tools for Monitoring the RED Process

3.1 Using the RED Workstation to Generate Measures

Collection of much of the information for RED process measuring is facilitated by using the discharge educator’s [Workbook, the Workstation, and electronic medical records. The use of these resources and the definition of terms are](#) described in greater detail in the RED tool “[How to Deliver the RED at Your Hospital](#)”.

Electronic RED Process Measures	Where collected
Length of index admission stay	Medical record
PCP appointment scheduled	Medical record, RED workstation
Date PCP appointment scheduled	Medical record, RED workstation
Medication reconciliation prior to discharge	Medical record, RED workstation
AHCP given to patient	Medical record, RED workstation
Time spent teaching AHCP	RED workstation
Family/ caregiver engagement	RED workstation
Discharge summary to PCP	Medical record, RED workstation
Date dc summary sent PCP	Medical record, RED workstation
How dc summary sent to PCP	Medical record, RED workstation
Post-DC telephone call- pts reached	RED workstation

3.2 Conducting Chart Reviews for Measures and Root-Cause Analysis

Hospitals should seek to more deeply understand readmissions in their facilities to identify opportunities to improve the care transition process. An effective way of doing this is to conduct root-cause analyses of unexpected readmissions. To do this a random chart review sample may be conducted. If this approach is needed, it will be important to proceed with at least 10% of the patients getting the RED in the first four months of the project to ensure that the various components of the project are happening.

3.3 DE Help Line Logs

Monitoring of post-discharge processes can be done using DE call logs. All post-discharge communication with patients, pharmacies, physicians, etc., should be documented here. Specific measures (detailed below) can be tracked for each call. The outcomes measured by the call logs can include:

- Adherence to AHCP
- Post-discharge unanticipated problems
- Need for telephonic interpreter services
- Post-discharge areas of confusion or uncertainty
- Adequacy of social support services

3.4 Patient Surveys

Some monitoring will be conducted by patient survey (See Appendix B). Typically, mailed surveys have very low response rates. If possible, telephone surveys should be conducted 30 days post discharge on a

high portion of patients in the first four months of implementing the RED. Please note: this phone survey is an outcome assessment activity and is separate from the post-discharge phone call. In addition, weekly meetings with Discharge Educators should be conducted to learn about any difficulties they are having or resistance they may be facing in fulfilling their agenda. Outcomes measured by the patient surveys include:

- Rate of PCP appointment attendance
- Knowledge of discharge diagnosis
- CTM-3 questions
- RED discharge preparedness questions
- HCAHPS-Literacy selected questions

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4. Specific Measures for Monitoring the RED Implementation Process

The sections below describe the evaluation and monitoring of transitional care for Project RED. Forms that will assist hospitals in collecting and reporting patient-reported data are in Appendices B & C of this tool. The workbook used by DEs can be found in Appendix D in the tool, “*How to Deliver the Re-Engineered Discharge at Your Hospital.*” These data collection forms can be individualized for each hospital depending on priorities and goals. When using the RED Workstation and other electronic mechanisms to deliver the RED, many of the monitoring activities described below can be electronically generated. In such a scenario, data should be gathered for all patients monthly, examined to determine attainment of process and outcome goals, and to identify further opportunities for improvement.

RED Component	What to Measure	Where to Record & Find Information
1. Make appointments for follow-up medical appointments and post discharge tests/labs.	<ul style="list-style-type: none"> ▪ Rate of PCP appointment attendance ▪ % post-hospital services are scheduled (if needed) ▪ % best time for appointments clarified 	<ul style="list-style-type: none"> ▪ 30 Day post-discharge follow up survey ▪ EMR ▪ Workbook ▪ DE report
2. Plan for the follow-up of results from lab tests or studies that are pending at discharge.	<ul style="list-style-type: none"> ▪ Are patients getting a review of appointments and pending tests? 	<ul style="list-style-type: none"> ▪ DE report
3. Organize post-discharge outpatient services and medical equipment.	<ul style="list-style-type: none"> ▪ Are arrangements being made for necessary services and equipment, as indicated by hospital progress notes? 	<ul style="list-style-type: none"> ▪ Workbook
4. Identify the correct medicines and a plan for the patient to obtain and take them.	<ul style="list-style-type: none"> ▪ Rate of AHCP’s with medicines included 	<ul style="list-style-type: none"> ▪ Workstation
5. Reconcile the discharge plan with national guidelines.	<ul style="list-style-type: none"> ▪ % reconciliation of plan with national guidelines 	<ul style="list-style-type: none"> ▪ Workbook ▪ DE report
6. Teach a written discharge plan the patient can understand.	<ul style="list-style-type: none"> ▪ % RED patients go home with an AHCP? 	<ul style="list-style-type: none"> ▪ Workbook ▪ DE report
7. Educate the patient about his/her diagnosis.	<ul style="list-style-type: none"> ▪ % RED patients getting education about diagnosis? 	<ul style="list-style-type: none"> ▪ Workbook ▪ DE report ▪ 30 Day post-discharge follow up survey
8. Assess the degree of the patient’s understanding of this plan.	<ul style="list-style-type: none"> ▪ % DE determines RED patients’ comprehension of plan ▪ % teach-back used to ensure patient understanding 	<ul style="list-style-type: none"> ▪ DE report ▪ 30 Day post-discharge follow up survey
9. Review with the patient what to do if a problem arises.	<ul style="list-style-type: none"> ▪ % RED patients educated about what to do 	<ul style="list-style-type: none"> ▪ Workbook

RED Component	What to Measure	Where to Record & Find Information
10. Expedite transmission of the discharge summary to clinicians accepting care of the patient.	<ul style="list-style-type: none"> ▪ Average amount of time between discharge and transmission of summary to follow-up clinician 	<ul style="list-style-type: none"> ▪ Workbook
11. Provide telephone reinforcement of the Discharge Plan.	<ul style="list-style-type: none"> ▪ % of people called within 2-3 days of discharge ▪ % of calls completed (i.e. medications and appointments reviewed, questions answered) 	<ul style="list-style-type: none"> ▪ Workbook

4.1 Provide the RED discharge for the right patients

This indicator will depend upon the criteria for patient selection that a particular hospital uses to select patients. For example, selection criteria might include all patients, those from a particular hospital service (e.g., adult medicine, post-angioplasty), a unit, from a specific outpatient source such as a nursing facility, among others. This indicator would be expressed as a percent of the target population receiving any component of RED / the total target population.

4.2 Collect the correct information

This information gives an indication of how available is the information needed for a RED discharge.

- % days DE able to meet with the medical team for each RED Patient?
- % PCP and specialty appointments being made for RED patients?
- % medication reconciliation being done?
- % post-hospital services being scheduled (if needed)?
- % reconciliation of plan with national guidelines and critical pathways?
- % best time for appointments being clarified?
- % ability to keep appointments being discussed?

Most of these items can be monitored through the DE Workbook and can be monitored for every patient. The Discharge Educators can report at weekly meetings about any obstacles they are facing.

4.3 Provide Teaching and Education

Data to be collected about the teaching and educational components of RED include:

- % RED patients getting education about the diagnosis?
- % RED patients getting instructions on how to take medications?
- % RED patients getting instruction on nutrition and exercise?
- % RED patients getting review of appointments and pending tests?

- % RED patients getting having family members or other social support who may assist in symptom monitoring, food preparation, medication procurement, transportation to tests or appointments, or recognition of emergencies involved and informed about the treatment plan?

Most of these items are recorded by the Discharge Educator, but the only documentation is by their report. The Discharge Educators can describe any obstacles they are facing at weekly meetings; however, since these activities are all self-report, it is also useful to conduct direct observation with feedback. Each Discharge Educator should have direct observation of their work on a regular basis to be arranged by a supervisor. The frequency of this activity is dependent on the skills and commitment to teaching exhibited by the Discharge Educator.

4.4 Prepare the After Hospital Care Plan (AHCP)

This indicator gives information about the completeness of the AHCP. The indicator includes the percent of AHCPs that contain:

- Post-discharge follow-up appointment
- Medications that have been reconciled
- Pending laboratory tests
- Post-discharge studies
- Allergies
- The patients' pharmacy
- Appropriate language of interventions and materials

These items can be monitored through the RED workstation if it is being used to generate the AHCP. If the AHCP is being generated in a manner that does not include report generation, a sample of AHCP documents can be reviewed to monitor how thoroughly they are being completed.

4.5 Teach the AHCP

This indicator provides information about what components of the AHCP are taught. They include:

- % RED patients go home with an AHCP?
- % DE determine RED patients' comprehension of the AHCP and its content
- % "teach-back" used to ensure patient understanding of transition-of-care planning

Most of these items are recorded by the Discharge Educator, but the only documentation is by their report. The Discharge Educators can describe any obstacles they are facing at weekly meetings; however, since these activities are all self-report, it is also useful to conduct direct observation with feedback. Each Discharge Educator should have direct observation of their work on a regular basis to be arranged by a supervisor. The frequency of this activity is dependent on the skills and commitment to teaching exhibited by the Discharge Educator.

4.6 Respond to the DE Help Line

This indicator gives information about how well the DE follows-up the messages left by patients after discharge.

- % of messages left by patients or family on the DE Help Line addressed
- % of time telephonic interpreter services as needed to meet patients' linguistic needs
- % of calls unanticipated post-discharge issues with meals, medications, understanding of illness and treatment plan that are affecting adherence to AHCP are explored
- % of calls in which the discharge plan is adjusted or clarified
- % of calls PCP appointment confirmed

The workstation can be used to monitor these activities or if a paper-based approach is being used, the post-discharge phone call worksheets can be used (see the tool "[How to Conduct a Post-discharge Follow-up Phone Call](#)").

4.7 Arrange Linguistic Services

This indicator gives an indication of how well linguistic services are used.

- % RED patients whose preferred language is recorded in their chart
- % RED patients whose preferred language wasn't English whose need for interpreter services was recorded in their charts
- % RED patients whose preferred language wasn't English who needed interpreter services that received hospital interpreters for DE *all* encounters.
- % patients whose preferred language wasn't English that received the AHCP in both English and their preferred language.

4.8 Involvement of the Patient's Family

The indicators that help to measure the level of family involvement in discharge include:

- % RED patients in survey feedback, including the NQF-endorsed 3-Item hospital care transition measure <http://www.caretransitions.org/documents/CTM3Specs0807.pdf>
- % RED patient with family members involved in the AHCP teaching?

4.9 30-day Post-Discharge Survey

Supplementary information can be collected in various ways to evaluate aspects of transitions. This can be included in the surveys (e.g., Hospital Consumer Assessment of Healthcare Providers and Systems - HCAHPS) the hospital is already conducting 30-days post discharge – via mailed (Appendix A) or

telephone (Appendix B) survey. The HCAHPS discharge survey, includes questions about the readiness for discharge. Additional survey items can be included to ascertain whether patients have attended outpatient physician visits since discharge as well as hospital utilization events at other facilities. This information can be collected from patients who are discharged under the typical prevailing processes at each hospital and to an equal number of patients who have received the comprehensive discharge implemented by each hospital. As medicines are often the most complex element of care transitions, medicines are the focus of these survey questions. Hospitals have the opportunity to add additional questions that address their specific concerns with regards to care transitions.

4.10 Data Review to Improve Systems

In the post-discharge pharmacist phone call two days after discharge (see the RED tool entitled [How to Conduct a Post-discharge Follow-up Phone Call](#)) the data collected should not only be used to improve care for the individual patients being interviewed, but also to improve care for future patients. Rapid-cycle, continuous quality improvement methods should be implemented to identify opportunities to provide feedback and improve care provided by individual providers, units, and systems. The first part of this feedback is built in to the communication between you and the clinicians to correct errors.

The goal of this process is to improve the provision of services with an emphasis on future results. Problems will be uncovered, but the emphasis is on quality and adapting as needed. Once a process that needs improvement is identified, a team of knowledgeable people representing various stakeholders is gathered to understand the process and learn what can be done. Once specific expectations have been established for what changes are needed, implementation to preventing future failures involves the setting of goals, education, and the measurement of results. If necessary, the plan may be revised on the basis of the results, so that the improvement is ongoing. One of the most frequent examples of this in Project RED was errors in the medication reconciliation process.

In order to go beyond the feedback that is provided within the care of individual patients, data from the pharmacist phone call will need to be reviewed to look for patterns and opportunities for improvement. For example, data on discrepancies should be evaluated to determine if there are any specific providers, hospital units, or day of discharge that might be the source of repeated problems (e.g., with appointments, medication reconciliation, patient comprehension). This is an important feedback loop to ensure the fidelity of the RED procedures in the hospital. Data from the pharmacist follow-up calls should be reviewed along with any supplementary data collection (see section 8.9) on a regular basis (e.g., monthly) to identify actionable trends.

5. Monitoring Outcomes

5.1 Rates of Hospital Reutilizations

There are four common measures of 30-day hospital reutilizations:

- Readmissions (admission > 24 hours)
- Observations (admission < 24 hours)
- Emergency Department visits
- Urgent Care visits

The rates of each of these, separately or in combination, are easily assessed using most health information technology systems. In our studies of RCT, we reported a combined rate for readmissions and observations. We also calculated a combined rate of ED visits and urgent care visits. The inclusion of all four in a single rate is what we refer to as hospital “reutilization.”

To sustain organizational efforts on reducing avoidable reutilizations, these data could be included among the key quality indicators tracked and reported to hospital boards, other quality committees, and front line clinical staff. Examination of each reutilization rate by sub-sets may direct attention to important opportunities for improvement. For example, if a specific nursing home was shown to have high rates of what appear to be avoidable events, an assessment could then be done to determine the source of this problem. This could lead to improved collaboration and coordination with this nursing home. The Commonwealth Fund [*Health Care Leader Action Guide to Reduce Avoidable Readmissions*](#) suggests that hospitals could examine readmissions data for the following conditions:

- **Rates for different conditions:** To the extent feasible, examine readmission rates by diagnosis and significant co-morbidities, and look for correlation with the patient’s severity.
- **Rates by practitioners:** Examine the rates by physician, physician groups and by 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, etc.) to determine the places from which patients are most often being readmitted.
- **Rates at different time frames:** 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 follow-up care and patients’ understanding of self care or the ability of the hospital to arrange post-hospital care.
- **Rates by socio-demographics:** Examine readmissions by ethnicity, neighborhood (zip code) and language preference to identify the adequacy of language services for patients throughout the transition process. You can also examine readmissions by insurer type to

ensure the appropriate use of benefits and identify the ways patients may be guided to optimize their benefits.

The term “rates” as used here can include readmissions, observations, ED visits, urgent care visits and total hospital reutilizations.

5.2 Chart Review and Root-cause Analyses

Identify patients who have who have been admitted repeatedly from various sources. In reviewing these charts, hospitals can follow the trajectory of patient’s care to understand why the patient was readmitted and what could have been done to prevent the readmissions. Analyzing individual cases of readmitted patients will help health care leaders and front line clinical staff to understand the underlying failures that occurred in the care process and also witness the detrimental impact of the readmissions.

The goals of this exercise are to understand the failure modes that are common in your hospital and/or community to ensure that corrective action plans are successful. As such, chart review and root-cause analyses should be done at the start of the readmission reduction program and continue as a mode of ongoing process evaluation. Cases should be selected from several different clinical units and departments and include patients with varying diagnoses.

After the review of approximately a dozen root-cause analyses the hospital’s RED project team will likely have an understanding of important failure modes and should establish how frequently additional root-cause analyses should be conducted to evaluate the efficacy of the RED. Once the RED is fully operational additional root-cause analyses for patients who have experienced early unplanned readmissions will still be warranted.

If this is conducted at least monthly, discussion of the findings of a monthly case can serve as the stimulus to identify additional potential areas for improvement and will help generate enthusiasm for an organizational culture that emphasizes the importance of transitions of care. The personnel in these quality improvement activities will have opportunities to provide feedback about instances the RED process is not being adequately fulfilled and advice about how to adapt the RED processes for the hospital.

5.3 Patient-Centered Outcomes

Administer the patient-centered HCAHPS to identify the patient experience of their hospital stay. HCAHPS focuses on perceived communication and preparedness to leave the hospital. For additional information and copies of this tool, please see: <http://www.hcahponline.org/home.aspx>

6. Summary

Measurement of hospital processes is complex, and challenging. Despite this, it is hoped that hospital personnel can use these suggested measures to assess and improve the care transition process using a program like RED and identify whether program outcomes meet defined objectives.

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APPENDIX A

Discharge Measures Used by Other Organizations

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, Leapfrog group, CMS, IHI and others and mirror the components of the RED program.¹

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 healthcare organization quality improvement efforts. The measures endorsed by the NQF are listed below.

- **Outcomes 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 percent of discharge summaries received by accepting practitioners; the number of patients who have and attend a post-hospital follow-up appointment; and the timeliness of receipt and discussion of post-hospital follow-up tests with the accepting provider.
- **Home Management Plan of Care Document Given to Patient/Caregiver:** 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.

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 is co-led by the American College of Cardiology (ACC) and the Institute of Healthcare Improvement (IHI). 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 post-discharge, early follow-up, 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 website is: <http://www.h2hquality.org/>

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

A recent document released by the ABIM Foundation, American College of Physicians and the Society of Hospital Medicine's *Physician Consortium for Performance Improvement® - Care Transitions Performance Measurement Set*.¹ This document lists key measures of success in improving outcomes include:

- Reduction in adverse drug events
- Reduction in patient harm related to medical errors of omission and commission
- Reduction in unnecessary healthcare 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

Document can be found at: <http://qualitymeasures.ahrq.gov/browse/by-organization-indiv.aspx?objid=178>

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

The best information regarding the target outcome measures for transitional care comes from the federal Center for Medicare Services (CMS) *Care Transitions* Program that has implemented demonstration projects in 14 Quality Improvement Organizations (QIOs) in 14 states representing more than 1,000,000 beneficiaries. As part of this effort, the *Technical Expert Panel on Benchmarking of Hospital Discharge* (TEP) was formed to study and make recommendations about transition measures.¹ The final report from this group is not yet released, but the preliminary recommendations presented here will assist hospitals to understand how CMS is approaching the issue of rehospitalization measures. This tool will be updated as the TEP recommendations are released. To date, the measures recommended by the CMS-CIO *Care Transitions* Program TEP include:

- Patient satisfaction
- Standardized elements of discharge process
- Scheduling follow up visit
- Elements of transition
- All cause 30 day readmission rates
- Intervening physician visits among those readmitted

For additional information go to: <http://www.cfmc.org/caretransitions/about.htm>

As of February 2010, the CMS- TEP identified the following examples of optimal measures for hospital discharge transitions. The expected rates of improvement so far presented are shown in the table.

- 30-day readmission rate
 - 30-day all-cause risk standardized readmission rate following HF, AMI, and Pneumonia
 - Percent of patients who rate hospital performance meeting HCAHPS performance standard for discharge information and information about medicines
 - Percent of patients readmitted ≤ 30 days not seen by a physician between discharge & readmission
 - Percent of care transitions in the targeted area for which interventions show 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% reduction in failure rate |
| MD visit between admission and readmission | 8% reduction in failure rate |
| % of care transitions for which interventions show improvement | 1 or more interventions, affecting at least 10% 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 adjustment is necessary (see section E below). If readmission rates are to be a key measure as it appears, then it is important that its definition is clear and the calculation of this rate is consistent. Although there is not yet a national consensus, the TEP is suggesting that:

- Denominator includes those discharged from short-term acute care facility
- Numerator include readmission to an acute care hospital or having observation stay within 30 days of index hospital discharge whether planned or unplanned
- Patients who died during index hospitalization be excluded
- Emergency department visits should not be in the numerator or denominator
- Admission to and from chronic care facilities should be treated as any other hospitalization
- All payers should be included, including all Medicare beneficiaries
- Track the proportion of readmissions to same vs. other hospitals
- Rate risk-adjusted condition-specific readmission using current risk-standardized measures (see “Hospital Compare” below)

The calculation of physician follow-up is suggested as follows:

- Denominator beneficiaries in community zip code with a readmission in short-term acute care facility (including chronic care facilities) within 30 days of index hospital discharge
- Numerator includes the presence of any Part B E&M code between discharge and readmission

Other TEP recommendations include:

- Unadjusted measures should *not* be used to compare hospitals to each other
- Readmission measure is appropriate to use as a “test” measure for tracking community improvement in readmission rates

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APPENDIX B
Patient Outcome Survey (mailed version)

For hospitals needing translations services a helpful reference to a national services translate service is:
<http://www.atanet.org/onlinedirectories/>

HOSPITAL DISCHARGE SURVEY

SURVEY INSTRUCTIONS

- ❖ You should only fill out this survey 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 UTILIZATION

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).

- Yes
- 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.		

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 (and so you stayed in the emergency room the entire time and went home from the emergency room).

- Yes
- 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}.

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?

- Yes
- No

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)?

- Yes
- No

If YES, What date did you see this person?

DIAGNOSIS

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?

- Yes
- No
- 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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

MEDICATIONS

During this hospital stay, were you told to take any medicine after you left the hospital?

Include prescription and non-prescription medicines as well as any medicines you were already taking before your hospital stay.

- ¹ Yes
- ² No → If No, Go to Question 17

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

- ¹ Yes
- ² No → If No, Go to Question 13

How often was the explanation easy to understand?

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

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?

- ¹ Yes
- ² No → If No, Go to Question 15

How often was the explanation easy to understand?

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

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?

- ¹ Yes
- ² No

During this hospital stay, did hospital staff tell you whom to call if you had questions about your medicines?

- ¹ Yes

² No

WHEN YOU LEFT THE HOSPITAL

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

¹ Own home

² Someone else's home

³ Another health facility → If Another, go to question 23

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

¹ Yes

² No

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

Were the written instructions easy to understand?

¹ Yes

² No

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

¹ Yes

² No

If YES, please tell me how much you agree with each of the following statements.

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

Strongly disagree

Disagree

Agree

Strongly Agree

OVERALL RATING OF HOSPITAL

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)

Would you recommend this hospital to your friends and family?

Definitely no

- Probably no
- Probably yes
- Definitely yes

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.

What is your age?

- ¹ 18-30 years
- ² 31-50 years
- ³ 51-70 years
- ⁴ 71-above years

In general, how would you rate your overall health?

- ¹ Excellent
- ² Very good
- ³ Good
- ⁴ Fair
- ⁵ Poor

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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

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

- ¹ No, not Spanish/Hispanic/Latino
- ² Yes

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

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.

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Appendix C
Patient Outcome Survey from Post-Discharge Telephone Survey

HOSPITAL DISCHARGE SURVEY

Telephone Script (English)

**If the hospital does not provide interpreter service whereby the telephone interview can be conducted with a local interpreter, reference national service directory:
<http://www.atanet.org/onlinedirectories/>**

Overview

This telephone 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.

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: _____ |

Contact notes:

INTRODUCTION

Hello [name of subject]? 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 healthcare 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 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 acknowledgement, 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.

HOSPITAL UTILIZATION

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).

Yes

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.		

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 (and so you stayed in the emergency room the entire time and went home from the emergency room).

Yes

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}.

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?

Yes

No

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)?

Yes

No

If YES, What date did you see this person?

DIAGNOSIS

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?

Yes

No

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

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

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

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

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

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

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

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

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

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

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

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

- ¹ Never
- ² Sometimes

- Usually
- Always

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

- Never
- Sometimes
- Usually
- Always

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

- Never
- Sometimes
- Usually
- Always

MEDICATIONS

During this hospital stay, were you told to take any medicine after you left the hospital?

Include prescription and non-prescription medicines as well as any medicines you were already taking before your hospital stay.

- Yes
- No → If No, Go to Question 17

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 13

How often was the explanation easy to understand?

- Never
- Sometimes
- Usually
- Always

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 15

How often was the explanation easy to understand?

- Never
- Sometimes
- Usually
- Always

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?

- ¹ Yes
- ² No

During this hospital stay, did hospital staff tell you whom to call if you had questions about your medicines?

- ¹ Yes
- ² No

WHEN YOU LEFT THE HOSPITAL

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

- ¹ Own home
- ² Someone else's home
- ³ Another health facility → If Another, go to question 23

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

- ¹ Yes
- ² No

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

Were the written instructions easy to understand?

- ¹ Yes
- ² No

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

- ¹ Yes
- ² No

If YES, please tell me how much you agree with each of the following statements.

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

- Strongly disagree
- Disagree
- Agree
- Strongly Agree

OVERALL RATING OF HOSPITAL

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)

Would you recommend this hospital to your friends and family?

- Definitely no
- Probably no
- Probably yes
- Definitely yes

ABOUT YOU

There are only a few remaining items left.

What is your age?

- 10 18-30 years
- 20 31-50 years
- 30 51-70 years
- 40 71-above years

In general, how would you rate your overall health?

- 10 Excellent
- 20 Very good
- 30 Good
- 40 Fair
- 50 Poor

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

- 10 Some elementary or high school, but did not graduate
- 20 High school graduate or GED
- 30 Some college or 2-year degree
- 40 4-year college graduate

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

- 10 No, not Spanish/Hispanic/Latino
- 20 Yes

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

- 10 White
- 20 Black or African American
- 30 Asian

40 Native Hawaiian or other Pacific Islander

50 American Indian or Alaska Native

What language do you mainly speak at home?

10 English

20 Spanish

30 Some other language (please print): _____

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

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APPENDIX D

How is the “30 Day All Cause Rehospitalization Rate” Measured on Hospital Compare?

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.

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

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 pre-existing 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 were 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 U.S. is 12 percent, then the hospital’s 30-day risk-standardized readmission rate 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 risk-standardized readmission rate (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' performance 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 result 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, as described

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