Medicare Hospital Readmissions: Issues, Policy Options and PPACA

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Summary

Reductions in hospital readmissions (also referred to as rehospitalizations) have been identified by Congress and President Obama as a source for reducing Medicare spending. The Medicare Payment Advisory Commission (MedPAC) reported that in 2005, 17.6% of hospital admissions resulted in readmissions within 30 days of discharge, 11.3% within 15 days, and 6.2% within 7 days. In addition, variation in readmission rates by hospital and geographic region suggests that some hospitals and geographic areas are better than others at containing readmission rates.

People who are readmitted to the hospital tend, among other things, to be older and have multiple chronic illnesses. Yet much is unknown about which patient characteristics result in a higher probability of a hospital readmission. Some policy researchers and health care practitioners assert that the relatively high readmission rates for patients with chronic illness and others may be due to various factors, such as (1) an inadequate relay of information by hospital discharge planners to patients, caregivers, and post-acute care providers; (2) poor patient compliance with care instructions; (3) inadequate follow-up care from post-acute and long-term care providers; (4) variation in hospital bed supply; (5) insufficient reliance on family caregivers; (6) the deterioration of a patient's clinical condition; and (7) medical errors.

Although readmitting a patient to a hospital may be appropriate in some cases, some policy makers and researchers agree that reducing readmission rates could help contain Medicare costs and improve the quality of patient care. Although several entities have attempted to define just how many readmissions might be prevented, no consensus exists on how to distinguish among those readmissions that might be avoided and those that might not. Different approaches result in different potentially preventable readmission (PPR) rates.

On March 23, 2010, President Obama signed into law comprehensive health care reform legislation, the Patient Protection and Affordable Care Act (PPACA; P.L. 111-148), as amended by the Health Care and Education Reconciliation Act (HCERA; P.L. 111-152). The legislation contains a number of provisions that make changes to Medicare. Among these are provisions intended to reduce preventable hospital readmissions by reducing Medicare payments to certain hospitals with relatively high preventable readmissions rates. Other provisions include demonstrations and pilots that test reforms to the Medicare payment system for hospitals and other providers. And still others test improvements to patient care for people with chronic illnesses during the initial hospital stay, as patients transition out of the hospital, and while patients reside in home, community-based, Medicare post-acute care, and long-term care settings.

Some service delivery and financing reform strategies have the potential to improve the quality of care delivered to Medicare beneficiaries with chronic conditions, and may even reduce hospital readmission rates. Although savings from reducing readmissions may be considerable, this potential depends on the effectiveness of the design and implementation of proposals to reduce them.

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Introduction

Health care costs are imposing an increasing burden on the federal budget. Mandatory spending on Medicare, in particular, has been projected to increase by about 79% between 2010 and 2020, from $518.5 billion to $929.1 billion.[1] Despite relatively high spending in the Medicare program, many argue that the quality of care provided is not adequate for persons with multiple chronic conditions, or for other groups.

In 2008, Medicare payments for hospital inpatient care totaled $129.1 billion, representing 29% of total Medicare payments in that year ($444.9 billion). The Congressional Budget Office (CBO) estimates that Medicare spending on hospitals will increase by an average annual growth rate of 6%, reaching $234.9 billion in 2019.[2] Much of hospital spending pays for a small percentage of high-cost Medicare beneficiaries who use hospital services much more than other beneficiaries. High-cost beneficiaries tend to be older and have chronic conditions, such as diabetes and coronary artery disease.[3]

In the face of rapid cost growth and concerns about quality, Congress recently debated methods to contain Medicare spending while improving the quality of care delivered. During this debate, Medicare spending on hospitals was identified by the House and Senate as an appropriate target for reducing Medicare spending, in part because hospital services represent a relatively large share of Medicare outlays, and in part because estimates of future spending on hospital services indicate steady growth. On March 23, 2010, President Obama signed into law comprehensive health care reform legislation, the Patient Protection and Affordable Care Act (PPACA; P.L. 111-148).[4] The legislation contains a number of provisions that make changes to Medicare. Among these are provisions intended to reduce hospital readmissions (also referred to as *rehospitalizations*), which contribute to a significant proportion of total inpatient spending.

This report is intended to help Congress navigate the complex issue of hospital readmissions. After helping to define the issues, we discuss some of the diverse causes of hospital readmissions. We also provide a summary of approaches used to distinguish which hospital readmissions might be preventable. Finally, to help Congress evaluate strategies to reduce readmissions, we include a discussion of various strategies to lower the incidence of Medicare-covered hospital readmissions. The report is largely conceptual and does not track legislation moving through the House and Senate.[5] It does, however, summarize the PPACA changes to the Medicare program that are intended, among other things, to reduce hospital readmissions.

[1] Congressional Budget Office, "CBO's August 2010 Baseline: Medicare."

[2] Congressional Budget Office, "CBO's August 2010 Baseline: Medicare."

[3] CBO, *High-Cost Medicare Beneficiaries*, May 2005, http://www.cbo.gov/ftpdocs/63xx/doc6332/05-03-MediSpending.pdf.

[4] On March 30, 2010, the President signed into law H.R. 4872, the Health Care and Education Affordability Reconciliation Act of 2010 (the Reconciliation Act, or HCERA; P.L. 111-152). The Reconciliation Act makes changes to a number of Medicare-related provisions in PPACA and adds several new provisions.

[5] For information on legislative proposals related to hospital readmissions, please contact CRS.

Readmissions

Generally, a hospital readmission is seen as an admission to a hospital within a certain time frame, following an original admission and discharge. A readmission can occur at either the same hospital or a different hospital and can involve planned or unplanned surgical or medical treatments. Consensus has not been reached as to what time frame should be used in defining a readmission, but policy analysts often discuss readmissions as referring to hospital admissions within 7, 15, or 30 days following discharge from the initial hospital stay. In some cases, the time frame can be 60 or 90 days or even one year following discharge.

An April 2009 *New England Journal of Medicine* article by Stephen F. Jencks reports that 19.6% of Medicare fee-for-service beneficiaries who had been discharged from a hospital were readmitted to the hospital within 30 days, 34.0% within 90 days, and more than half (56.1%) within one year of discharge.[6] In addition, the Medicare Payment Advisory Commission (MedPAC) found that 17.6% of hospital admissions resulted in readmissions within 30 days of discharge, 11.3% within 15 days, and 6.2% within 7 days.[7] Further, it has been shown that readmissions are a costly component of Medicare-covered hospital services, with MedPAC reporting that readmissions within 30 days accounted for $15 billion of Medicare spending.[8]

The *New England Journal of Medicine* study also found that rates vary substantially by hospital and by geographic area, even after the type of disease and the severity level of the patient's condition are considered. Specifically, the study found higher readmission rates for some states, such as New Jersey (21.9%), Louisiana (21.9%), and Illinois (21.7%), and lower readmission rates for other states, such as Oregon (15.7%), Utah (14.2%), and Idaho (13.3%).[9]

Recently, the Centers for Medicare and Medicaid Services (CMS) has drawn increased attention to the topic of hospital readmissions by making publicly available 30-day readmission rates for hospitals nationwide on its Hospital Compare website. The website's information shows Medicare-certified hospitals' 30-day readmission rates for heart attack, heart failure, and pneumonia patients compared with the U.S. national average.[10] Beginning in FY2010, CMS's Reporting Hospital Quality Data for Annual Payment Update (RHQDAPU) program also includes the risk-adjusted 30-day readmission rate for heart failure patients as one quality measure.[11]

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[6] Stephen F. Jencks, M.D., Mark V. Williams, M.D., and Eric A. Coleman, M.D., M.P.H., "Rehospitalizations among Patients in the Medicare Fee-for-Service Program," *New England Journal of Medicine*, vol. 360 (April 2, 2009), pp. 1418-1428. These data refer to years 2003 – 2004.

[7] Medicare Payment Advisory Commission (MedPAC), *Report to Congress: Promoting Greater Efficiency in Medicare*, June 2007, Chapter 5. See http://www.medpac.gov/documents/Jun07_EntireReport.pdf. These data refer to 2005.

[8] Ibid.

[9] Stephen F. Jencks, M.D., Mark V. Williams, M.D., and Eric A. Coleman, M.D., M.P.H., "Rehospitalizations among Patients in the Medicare Fee-for-Service Program," *New England Journal of Medicine*, vol. 360 (April 2, 2009), pp. 1418-1428.

[10] The information enables the public to compare the 30-day risk-adjusted rate of readmission for a hospital to average rate for all hospitals in that state and in the nation. The information is based on Medicare billing records from July 2005 to June 2008.

[11] See http://www.qualitynet.org/dcs/ContentServer?cid=1138115987129&pagename=QnetPublic%2FPage%2FQnetTier2&c=Page (last accessed 12/7/09).

Although certain hospital readmissions are appropriate, policy makers assert that readmission rates, and therefore spending, are too high for certain types of services or procedures. Furthermore, variation in readmission rates by hospital and geographic region suggests that some hospitals and geographic areas are better than others at containing readmissions. Although not all readmissions are avoidable, some could be prevented if a higher quality of care were delivered to beneficiaries (1) their Medicare-covered hospital stay, (2) throughout the hospital discharge process, and (3) as a follow-up to beneficiaries post-discharge as they transition from a hospital into other care settings, such as their homes, post-acute care stays (i.e., a Medicare-covered home health episode, skilled nursing facility stay, inpatient rehabilitation facility stay, or long-term care hospital stay), and long-term care settings (e.g., a nursing home custodial stay, an assisted living facility, a group home).

Medicare Payment System

Some policy makers, analysts, and health care practitioners consider relatively high readmission rates for persons with chronic illnesses to be a symptom of a payment system under Medicare that works better for the treatment of acute care episodes—especially for younger, healthier people without complex, medical conditions—and works less well for the management of chronically ill patients who leave the hospital and enter other care settings. The current design of Medicare's payment system for inpatient hospital stays under fee-for-service Medicare in general and the inpatient prospective payment system (IPPS) in particular does not provide incentives to hospitals to contain avoidable readmissions for people with chronic illnesses and to promote the highest of quality outcomes.

Medicare's fee-for-service system,[12] in which provider payments are made for each unit of service, provides incentives to hospitals, post-acute care providers, and others to increase volume of care rather than to reduce it. Specifically, hospitals are paid for each discharge and thus have an incentive to maximize discharges. Thus, hospitals could lose income by reducing readmissions, as fewer rehospitalizations would result in fewer billable discharges. Similarly, physicians and post-acute care providers are each paid separately and receive more reimbursement for a greater number of services, episodes of care, or admissions they provide.

Regarding the IPPS, Medicare pays for most acute care hospital stays using a prospectively determined payment for each discharge, intended to cover the services provided during a hospital stay.[13] Under the IPPS, any differences between Medicare payments and hospitals' costs are retained by the hospital and any losses must be absorbed by the hospital. As a result, hospitals are financially rewarded for the efficient delivery of medical and surgical care and are more likely to discharge patients earlier.[14] Yet, efficient care and high quality care are not necessarily the same.

[12] In addition to fee-for-service, Medicare also makes capitated payments to managed care plans for Medicare-covered benefits, including hospital stays, for persons enrolled in Medicare Advantage plans.

[13] Payments under IPPS also depend on the relative resource use associated with a patient classification group, referred to as the Medicare severity diagnosis related groups (MS-DRGs), to which the patient is assigned based on an estimate of the relative resources needed to care for a patient with a specific diagnosis and set of care needs. Medicare's IPPS includes adjustments that reflect certain characteristics of the hospital. For instance, a hospital with an approved resident training program would qualify for an indirect medical education (IME) adjustment; hospitals that serve a sufficient number of poor Medicare or Medicaid patients would receive higher Medicare payments because of their disproportionate share hospital (DSH) adjustment. Hospitals in Maryland are not paid using IPPS; rather, they receive Medicare payments based on a state-specific Medicare reimbursement system.

[14] Medicare Payment Advisory Commission (MedPAC), *Report to Congress: Promoting Greater Efficiency in* (continued...)

In some instances, efficient care leads to high-quality outcomes and, in others, it does not. Comparable incentives to promote quality may be needed.

Furthermore, hospitals that participate in the Medicare program are required by Medicare's Conditions of Participation[15] to provide discharge care instructions to Medicare beneficiaries. Mechanisms for ensuring that this is done effectively are not built into the hospitals' IPPS. Hospitals that spend less on discharge planning receive the same payment as those that spend more, and hospitals that do discharge planning better receive the same payment as those that do less well. Although a more efficient IPPS system may be desirable, the payment system alone does not always guarantee a sufficiently effective discharge planning process to help reduce readmissions, among other things.

Furthermore, under the current system, Medicare reimbursement for patients with chronic illness is limited to care provided by hospitals, physicians' offices, and post-acute care providers. Medicare does not reimburse for continuous access to supportive services between care settings for people with complex medical conditions so as to maximize their well-being and health status and reduce readmissions. Medicare also does not pay hospitals or other providers for transitional care services, another activity considered by many to help reduce readmissions. As a result, hospitals and other providers may be deterred from providing telephone reminders about follow-up medical appointments, medication reminders, in-home check-ups, or care coordination with outpatient providers on behalf of the patient post-discharge because these extra services would result in extra costs for hospitals or other providers.

Characteristics of Readmitted Beneficiaries

Medicare beneficiaries with certain demographic characteristics and conditions are more likely than others to be readmitted to the hospital after a discharge. Regarding demographics, age, gender and race may be factors. For example, one study found that the likelihood of a readmission increases with age, as well as for females and African Americans, following coronary artery bypass graft surgery.[16] Poverty and whether an individual has a disability are also likely factors associated with readmissions.[17]

Relatively high readmission rates are found for Medicare beneficiaries with multiple chronic illnesses. In a meta-analysis of 44 studies, the mean readmission rate was 34% for patients with chronic illnesses.[18] In another study, those patients with five or more medically comorbid

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Medicare, June 2007, Chapter 5. See http://www.medpac.gov/documents/Jun07_EntireReport.pdf.

[15] 42 CFR 482 contains the Conditions of Participation for hospitals, which are the minimum health and safety standards that hospitals must meet to be Medicare and Medicaid certified. These include, among numerous requirements, requirements related to patients' rights, emergency services, outpatient services, medical record services, laboratory services. See http://www.cms.hhs.gov/CFCsAndCoPs/06_Hospitals.asp#TopOfPage.

[16] Edward L. Hanna, Michael J. Racz, and Gary Walford, et al., "Predictors of Readmission for Complications of Coronary Artery Bypass Graft Surgery," *Journal of the American Medical Association*, vol. 290, no. 6 (August 13, 2003), pp. 773-780.

[17] Presentation by Stephen F. Jencks, M.D. at the National Hospital Payment Reform Summit, Washington, DC, September 17, 2009.

[18] Karen L. Soeken, Patricia A. Prescott, and Dorothy G. Herron, et al., "Predictors of Hospital Readmission: A Meta-Analysis," *Evaluation & the Health Professions*, vol. 14, no. 3 (1991), pp. 262-281.

conditions had more than twice the likelihood of an unplanned readmission within 30 days than patients without those conditions.[19] An additional factor that may be associated with readmissions is a patient's history of medical readmissions.[20]

The Jencks study of Medicare fee-for-service beneficiary claims data from 2003 to 2004 shows readmission rates that ranged broadly by condition and procedure, with some of these conditions and procedures representing the majority of all hospital readmissions in that 12-month period. Specifically, 30-day readmission rates for heart failure (26.9%), pneumonia (20.1%), chronic obstructive pulmonary disease (COPD, 22.6%), psychoses (24.6%), and gastrointestinal conditions (19.2%) were higher than the 30-day readmission rates for cardiac stent placement (14.5%) and major hip or knee surgery (9.9%).[21] In a separate study, data from 2005 show that readmission rates for patients with end-stage renal disease are twice as high as readmission rates for patients without end-stage renal disease.[22]

Although these data show that readmission rates are associated with age, patient illness, and other factors, the specific reasons such persons are readmitted still warrant further exploration. Specifically, a variety of adverse events might occur before a hospital admission, during a hospital stay, as a patient is being discharged, or after a patient is home or in another setting that could result in rehospitalization. The reasons for readmission likely range by person, by hospital, and by care setting. A later section of this report provides a summary of some of the factors that lead to readmissions among people with chronic conditions and other groups.

Methods for Defining Potentially Preventable Readmissions and Rates

Although several entities have attempted to define just how many readmissions might be prevented, no consensus exists on how to distinguish among those readmissions that might be avoided and those that might not. Different approaches result in different potentially preventable readmission (PPR) rates. Identifying which share of readmissions could and should be avoided is complex because (1) no consensus has been yet developed on how best to define a readmission from which PPR rates would be calculated, and (2) the development of a PPR implies that reasonable strategies can be implemented to avoid such readmissions, even though there is no agreement on which strategies should be used.

The following provides four examples of approaches to determining PPR rates. They are (1) an analysis by Jencks in which he concludes that unplanned readmissions might be potentially preventable; (2) an application of a definition by the Geisinger Health System, which provides a

[19] E. R. Marcantonio, S. McKean, and M. Goldfinger, et al., "Factors Associated with Unplanned Hospital Readmission Among Patients 65 years of Age and Older in a Medicare Managed Care Plan," *The American Journal of Medicine*, vol. 107, no. 1 (July 1999), pp. 13-17.

[20] Presentation by Stephen F. Jencks, M.D. at the National Hospital Payment Reform Summit, Washington, DC, September 17, 2009.

[21] Stephen F. Jencks, M.D., Mark V. Williams, M.D., and Eric A. Coleman, M.D., M.P.H., "Rehospitalizations among Patients in the Medicare Fee-for-Service Program," *New England Journal of Medicine*, vol. 360 (April 2, 2009), pp. 1418-1428.

[22] Medicare Payment Advisory Commission (MedPAC), Report to Congress: Promoting Greater Efficiency in Medicare, June 2007, Chapter 5. See http://www.medpac.gov/documents/Jun07_EntireReport.pdf (see Table 5-1).

warranty that covers specified adverse events and/or readmissions resulting from a particular surgery; (3) the definition used by UnitedHealthcare, a health care insurer, which defines PPR more narrowly than Jencks; and (4) an analysis discussed by MedPAC defining preventable readmissions as readmissions related to selected medical conditions.

The following issues, among others, might be considered when defining PPRs:

- Whether a clinical relationship exists between an admission and a readmission.
- Which conditions or procedures should be counted as potentially preventable and which should not be counted (such as malignant cancers).
- How to capture, in the calculation of a hospital's readmission rate, patients who were readmitted to an acute care hospital that is different from the hospital of initial admission.

Framework for Understanding PPR, Proposed by Jencks

In a recent presentation to the National Medicare Readmissions Summit in Washington, DC, Jencks provided a useful tool to help distinguish which readmissions might be potentially preventable. Jencks considers that, in general, readmissions within 30 days that are unplanned (which constitute 90% of all 30-day readmissions, according to his study) can be identified as targets for cost savings to Medicare. **Table 1** provides four categories of readmissions, including those that are related and unplanned, those that are related and planned, those that are unrelated and planned, and those that are unrelated and unplanned.

Table 1. Four Kinds of Hospitalizations

Type	Examples
Related and Unplanned	Heart failure, pneumonia, stroke
Related and Planned	Chemotherapy, staged surgery
Unrelated and planned	Unrelated procedures
Unrelated and unplanned	Some kinds of trauma and harm from the environment

Source: Stephen F. Jencks, M.D., M.P.H., "Rehospitalization: Understanding the Challenge," Presentation at the National Medicare Readmissions Summit, Washington, DC, June 1, 2009.

Note: In his analysis, Jencks excluded patients who were transferred on the day of discharge to other acute care hospitals, including patients admitted to hospital specialty units, inpatient rehabilitation facilities, and long-term care hospitals, and patients rehospitalized for rehabilitation.

- **Related and Unplanned.** Some readmissions can be considered both related to the initial admission and unplanned. For instance, a person may be readmitted to a hospital to address an adverse event caused by an infection or sepsis, which resulted from problems occurring during a surgery. Another example is a person with heart failure who is readmitted for chest pain.
- **Related and Planned.** Other readmissions are those that are related to the initial hospitalizations and are scheduled in advance by a hospital to deliver follow-up medical care, perform medical procedures, or both. For example, a patient may

be admitted for heart failure and readmitted later for the placement of a cardiac stent.[23] Such readmissions are often part of the treatment plan for certain conditions.

- **Unrelated and Planned.** Still other readmissions are those that are unrelated and planned. An admission for chronic obstructive pulmonary disorder (COPD)[24] that is followed by a readmission for a scheduled hip replacement surgery.
- **Unrelated and Unplanned.** Finally, some readmissions are unrelated to the initial hospitalization and are also unplanned. For example, readmissions for burns or traumas that are caused by accidents can be both unrelated and unplanned. Another example might be an initial admission for a gastrointestinal disorder and a later readmission for skin cancer.

Examples of Private Industry Measures: Geisinger and UnitedHealthcare

Payers, providers, hospitals, and health systems have defined PPRs in different ways. The Geisinger Health System and UnitedHealthcare, for example, are two entities that have tried to define PPRs for the purpose of implementing strategies to reduce hospital readmissions rates. Under the Geisinger system, physicians performing nonemergency coronary artery bypass graft surgery agreed not to be paid for readmissions within 90 days that were "not unrelated" to the initial surgery. Examples of such readmissions include atrial fibrillation; venous thrombosis; infections due to an internal prosthetic device, implant, or graft; and postoperative infections. By using this broad approach to defining readmissions and those readmissions that might be preventable, Geisinger avoids having to finely distinguish between readmissions that are *clearly* related and those that are *possibly* related to the surgery.[25]

In its reporting of readmission rates for California hospitals, UnitedHealthcare uses a different approach. According to MedPAC, it counts only readmissions that can be reasonably preventable as those readmissions that are billed under the same Medicare payment diagnostic category, or MS-DRG,[26] or those that are for infections.[27] For example, a person who is initially admitted for chest pain (MS-DRG 313) and is readmitted under the same diagnostic category (MS-DRG 313) would be considered a reasonably preventable readmission. Yet, someone who is initially

[23] A stent is a tiny tube placed into an artery, blood vessel, or other duct (such as one that carries urine) to hold the structure open. Stents are commonly used to treat coronary heart disease and other conditions that result from blocked or damaged blood vessels.

[24] Chronic obstructive pulmonary disease (COPD) is a progressive disease that makes it difficult to breathe. Chronic bronchitis and emphysema are common examples of COPD.

[25] Medicare Payment Advisory Commission (MedPAC), *Report to Congress: Promoting Greater Efficiency in Medicare*, June 2007, Chapter 5. See http://www.medpac.gov/documents/Jun07_EntireReport.pdf.

[26] Medicare makes payments to most acute care hospitals under IPPS, using a prospectively determined amount for each discharge. A hospital's payment for its operating costs is the product of two components: (1) a discharge payment amount adjusted by a wage index for the area where the hospital is located or where it has been reclassified, and (2) the weight associated with the Medicare severity-diagnosis related group (MS-DRG) to which the patient is assigned. This weight reflects the relative costliness of the average patient in that MS-DRG, which is revised periodically, with the most recent update effective October 1, 2009. See CRS Report R40425, *Medicare Primer*, coordinated by Patricia A. Davis.

[27] Medicare Payment Advisory Commission (MedPAC), *Report to Congress: Promoting Greater Efficiency in Medicare*, June 2007, Chapter 5. See http://www.medpac.gov/documents/Jun07_EntireReport.pdf.

admitted for hypertension with major complications/comorbidities (MS-DRG 304) and is later readmitted for chest pain (MS-DRG 313) would not be considered a reasonably preventable readmission.

MedPAC

For the purpose of exploring an approach to defining PPRs, MedPAC has developed its own definition for PPR. Under this analysis, readmissions for a medical condition, in general, following an initial medical or surgical admission are likely to be considered preventable, whereas readmissions for a surgery following a medical or surgical admission are not.[28] A medical readmission would include, among others, heart failure, pneumonia, and chronic obstructive pulmonary disease (COPD), and a surgical readmission would include, among others, cardiac stent placement, major hip or knee surgery, and vascular surgery. Under this definition, a patient admitted with a heart attack and readmitted to the hospital for diabetes would be considered a PPR.[29] On the other hand, readmission for an appendectomy following an admission for pneumonia would not considered preventable.[30]

More specifically, this analysis defines a readmission as both clinically related to the initial admission and potentially preventable if expert panels determined that there was a reasonable expectation that the readmission could have been prevented by (1) provision of quality of care in the hospital; (2) adequate discharge planning; (3) adequate post-discharge follow-up; or (4) improved coordination between hospitals and providers outside of the hospital setting. For the purposes of this definition, exclusions include major or metastatic malignancies, multiple trauma, burns, certain chronic conditions such as cystic fibrosis, and neonatal and obstetrical admission, for which readmissions are comparatively rare. The analysis also excludes patients who left the hospital against medical advice.[31] According to MedPAC, for Medicare beneficiaries hospitalized in 2005, more than three-quarters of 30-day and 15-day readmissions, and 84% of 7-day readmissions, were potentially preventable.[32]

[28] Medicare Payment Advisory Commission (MedPAC), *Report to Congress: Promoting Greater Efficiency in Medicare*, June 2007, Chapter 5. See http://www.medpac.gov/documents/Jun07_EntireReport.pdf.

[29] According to the analysis, a medical readmission for an acute decompensation of a chronic problem that was not the reason for the initial admission, but was plausibly related to care either during or immediately after the initial admission, is considered to be clinically related to the initial admission, and thus potentially preventable. Norbert I. Goldfield, M.D., Elizabeth C. McCullough, M.S., and John S. Hughes, M.D., et al., "Identifying Potentially Preventable Readmissions," *Health Care Financing Review*, vol. 30, no. 1 (Fall 2008), pp. 75-91.

[30] Medicare Payment Advisory Commission (MedPAC), *Report to Congress: Promoting Greater Efficiency in Medicare*, June 2007, Chapter 5. See http://www.medpac.gov/documents/Jun07_EntireReport.pdf.

[31] Norbert I. Goldfield, M.D., Elizabeth C. McCullough, M.S., and John S. Hughes, M.D., et al., "Identifying Potentially Preventable Readmissions," *Health Care Financing Review*, vol. 30, no. 1 (Fall 2008), pp. 75-91.

[32] Medicare Payment Advisory Commission (MedPAC), *Report to Congress: Promoting Greater Efficiency in Medicare*, June 2007, Chapter 5. See http://www.medpac.gov/documents/Jun07_EntireReport.pdf.

Time Frame for Measuring Potentially Preventable Readmission Rates

Just as the PPR definition influences how high or low an estimate of a PPR would be, so too does the size of the time frame used. The time frame is the period between the date of initial discharge and the date of readmission. Consensus has not been reached as to what time frame should be used, but policy analysts often discuss readmissions as referring to hospital admissions within 7, 15, or 30 days following discharge from the initial hospital stay. In some cases, the time frame can also be defined as the period up to 2, 3, 4, or 12 months following discharge. Time frames selected by policy makers for legislative purposes can change PPR rates, either raising or lowering them (e.g., longer readmission frames potentially identify more readmissions).

More readmissions occur within the first month after discharge than any period afterward. For instance, according to MedPAC, 6.2% of Medicare beneficiaries in 2005 were readmitted to the hospital within 7 days, 11.3% were readmitted within 15 days, and 17.6% were readmitted within 30 days of discharge. Also, the Hospital Compare website, which publishes readmission rates for Medicare-certified hospitals voluntarily submitting data, uses a 30-day time frame.

One study finds that "early readmission is significantly associated with the process of inpatient care."[33] It may also be the case that readmissions that occur during longer time frames are more likely to be associated with the quality of post-acute, and outpatient follow-up care.

For the purposes of evaluating legislative options, longer time frames could provide Medicare the opportunity to save more money. Yet, such longer time frames raise challenges for identifying which entities would be held responsible for avoiding PPRs. MedPAC states that annual Medicare spending on PPRs is $5 billion for 7-day, $8 billion for 15-day, and $12 billion for 30-day readmissions.[34]

Factors Associated with Hospital Readmissions of Medicare Beneficiaries

Although sometimes a single factor may result in readmissions, other times a combination of factors is at fault. The following list, while not exhaustive, describes some of the factors that lead to readmissions, and PPRs, for Medicare beneficiaries. These factors may include

- an inadequate relay of medical- and care-related information by hospital discharge planners to patients, caregivers, and/or post-acute care providers;
- poor patient compliance;
- inadequate follow-up care from post-acute and long-term care providers;

[33] Carol M. Ashton, Deborah J. Del Junco, and Julianne Souchek, et al., "The Association between the Quality of Inpatient Care and Early Readmission: A Meta-Analysis of the Evidence," *Medical Care*, vol. 35, no. 10 (October 1997), pp. 1044-1059.

[34] Medicare Payment Advisory Commission (MedPAC), *Report to Congress: Promoting Greater Efficiency in Medicare*, June 2007, Chapter 5. See http://www.medpac.gov/documents/Jun07_EntireReport.pdf.

- variation in hospital bed supply;
- insufficient use of the supportive capacity of family caregivers;
- the deterioration of a patient's clinical condition; and
- medical errors in a hospital that may occur during an initial admission and result in illness, injury, or harm to a patient.

Expanded explanations of these factors are described below, as well as selected policy options to address these factors.

Hospital Discharge Planning

Hospital discharge planning can include instructions hospitals provide to patients, caregivers, outpatient physicians, and other post-acute providers. It can also include counseling for patients and caregivers to ensure the smooth and timely transition of a patient from the inpatient setting to a home, post-acute care setting or long-term care setting. Discharge planning is also designed to ensure that patients (and caregivers) are informed about how best to care for themselves after they leave the hospital.

Medicare regulations, under the discharge planning Conditions of Participation (42 CFR 482.43), requires participating hospitals (consisting of more than 90% of all acute-care hospitals in the United States) to have a discharge planning process that applies to all patients. Medicare-certified hospitals must identify patients expected to experience adverse health consequences upon discharge and provide them with a discharge planning evaluation. Hospitals must also provide this evaluation to other patients who request such an evaluation on their own or through their representative or physician. This evaluation must be made on a timely basis and must include an evaluation of the patient's likely need for post-acute services and the availability of those services. This information must be included in the patient's medical record. The hospital must discuss the evaluation results wit the patient or patient's representative.

If the discharge planning evaluation indicates a need for a discharge plan, the hospital must develop one. Both the discharge plan evaluation and a discharge plan must be developed by, or under the supervision of, a registered professional nurse, social worker, or other appropriately qualified personnel. The hospital must arrange for initial implementation of the patient's discharge plan and must update the discharge plan, when necessary, and counsel the patient and family members (or interested parties) to prepare them for post-hospital care. Among other requirements related to the discharge plan, the hospital must include, where appropriate, a list of home health agencies or skilled nursing facilities available to the patient, that are participating in the Medicare program and serving the area in which the patient resides or, for skilled nursing facilities, in the geographic area the patient requests.

Despite these requirements, some studies found instances in which discharge planning is incomplete and necessary information is not provided by hospitals to physicians and post-acute providers in a timely manner. Findings from a literature review of 55 observational studies published between 1970 and 2005, found that hospital physicians considered the following information to be among the most important components of discharge information: a patient's main diagnosis; pertinent physical findings; results of procedures and laboratory tests; and

discharge medications, with reasons for any changes to the previous medication regimen; among other information.[35]

However, these studies also found that audits of hospital discharge documents, which are often physician-dictated and transcribed, demonstrated a frequent absence of such information. Discussing a number of these studies, the authors found that discharge summaries lacked the following information (results were reported as a range of percentages): diagnostic test results, 33%-63% of the time; the treatment or hospital course, 7%-22% of the time; discharge medications, 2%-40% of the time; test results pending at discharge, 65% of the time; and follow-up plans, 2%-43% of the time.[36] In addition, only between 12% and 34% of physicians treating a patient after a hospital discharge had a copy of the patient's hospital discharge summary.[37] Outpatient physicians who do not have complete and timely information about a patient's case may not make adequate follow-up care decisions.

As discussed below, prominent care models have paid particular attention to transitional periods, such as between hospital discharge and the post-discharge period, as contributing to high readmission rates. Paying greater attention to the vulnerable period in which a patient leaves one care setting for home or another care setting may help prevent future acute incidents that lead to readmissions and therefore may be a good target policy intervention.

Discharge planning is also dependent on the availability of patient resources, such as housing and the presence of informal caregivers. In some instances, patients may be more likely to experience readmissions if they do not have the option of returning to a home or other living facility in the community. Similarly, those without support from family members or the resources to purchase home health care may be less likely to remain in the community when managing chronic illness or experiencing an acute medical episode.

One option for improving hospital discharge planning is to ensure hospitals are fully compliant with current statutory requirements and to establish new quality measures related to the discharge process. Another option is to better manage the discharge process through care coordination managers or interdisciplinary teams that would oversee the transition of patients from before discharge until the patient enters another care setting. Hospitals might also be encouraged to consistently include in the discharge plan a plan of care that articulates patient goals and likely outcomes.

Patient Follow-Through

Not all patients comply with recommended post-discharge behaviors, such as following recommended diets, taking prescribed medications, or adhering to the care plan created by the hospital discharge team. In addition, not all Medicare beneficiaries attend follow-up physician visits after a hospital discharge. In fact, Jencks found that outpatient physician claims were not

[35] S. Kripalani, F. LeFevre, and C. O. Phillips, et al., "Deficits in communication and information transfer between hospital-based and primary care physicians: implications for patient safety and continuity of care," *Journal of the American Medical Association*, vol. 297, no. 8 (February 28, 2007), pp. 831-841.

[36] Ibid.

[37] Medicare Payment Advisory Commission (MedPAC), Report to Congress: Promoting Greater Efficiency in Medicare, June 2007, Chapter 5. See http://www.medpac.gov/documents/Jun07_EntireReport.pdf.

submitted on behalf of half of Medicare patients with a medical condition who were readmitted within 30 days after discharge to the community.[38]

A number of factors may influence inadequate patient follow-through. A patient may not sufficiently understand his or her care plan. Ineffective communication by physicians to their patients has also been identified as factor leading to lack of prescribed medication compliance.[39] This could include information communicated in writing to patients with limited literacy or with instructions that conflict with a patient's cultural values. Other possible reasons for patients not following care plans are cognitive impairment and lack of access to services.

In addition, the quality of information received by patients can also sometimes be lacking. A randomly sampled study of patients in a single hospital between July 2002 and September 2003 showed that only 68% of all patients with heart failure received all discharge instructions, including information about worsening symptoms, diet, drug interactions, follow-up appointments, and weight monitoring.[40]

Enhancing support to patients by hospital discharge staff, transitional care teams, or other providers during and after the hospital stay may prove beneficial in improving patient follow-through. It may also help reduce readmissions for Medicare beneficiaries.

Post-Acute or Long-Term Provider Care

Under some circumstances, Medicare beneficiaries who are discharged from a hospital into a post-acute or LTC facility are sent back to hospitals by these providers. Such providers may send beneficiaries to the hospital because they are ill-equipped to deliver the appropriate level of care to a particular beneficiary. As mentioned above, some post-acute and LTC providers may also send patients to hospitals because they lack sufficient information about a beneficiary's unique care needs. Further, in some instances, lengths of stay in hospitals may be to short, resulting in greater utilization of chronic care and rehabilitation facilities after discharge. Such short lengths of stay can also lead to readmissions.[41]

Ensuring that timely and comprehensive discharge information is provided by the hospital to the post-acute and LTC provider is one of several options to improve follow-up care into post-acute and LTC settings. Policy makers have also suggested bundling Medicare payments to hospitals and post-acute care providers to encourage better collaboration among providers and to enhance accountability for patient outcomes and treatment costs. Electronic health records that contain comprehensive information on a patient's diagnoses, health history, and treatment information have also been proposed.

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[38] Stephen F. Jencks, M.D., M.P.H., "Rehospitalization: Understanding the Challenge," Presentation at the National Medicare Readmissions Summit, Washington, DC, June 1, 2009.

[39] Edward C. Rosenow III, MD, *Patients' Understanding of and Compliance With Medications: The Sixth Vital Sign?* Mayo Clinic Proceedings, vol. 80, no. 8 (August 2005), pp. 983-987.

[40] M VanSuch, JM Naessens, and RJ Stroebel, et al., "Effect of Discharge Instructions on Readmission of Hospitalized Patients with Heart Failure: Do All of the Joint Commission on Accreditation of Healthcare Organizations Heart Failure Core Measures Reflect Better Care?" Quality and Safety in Health Care, vol. 15, no. 6 (December 2006), pp. 414-417.

[41] Don D. Sin and Jack V. Tu, "Are Elderly Patients with Obstructive Airway Disease Being Prematurely Discharged?" *American Journal of Respiratory and Critical Care Medicine*, vol. 161, no. 5 (May 2000), pp. 1512-1517.

Variation in Hospital Bed Supply

Variation in Medicare spending and service utilization may be associated with variable readmission rates by geographic region. Wennberg and Fisher, with the Dartmouth Institute for Health Policy and Clinical Practice, examined geographic variations in Medicare across the United States using a population-based approach and mostly relying on Medicare claims. They attributed much of the variation in the volume of medical care provided in different regions in the United States to the capacity of local health care systems.[42]

In particular, they found that, after adjusting for patient population characteristics, the supply of hospital beds and the number of internists and specialists in a local area explained a substantial amount of the widespread geographic variation in Medicare hospital spending and utilization. However, greater spending in high-utilization areas was not associated with care known to be effective in reducing morbidity or mortality, nor with increased use of surgical procedures where patients' preferences are important.[43]

In another study, the authors found that "the intensity of hospital care provided to chronically ill Medicare patients varies greatly among regions, independent of illness" and that "greater inpatient care intensity was associated with lower quality scores." The authors also found an association between hospital-bed availability and readmissions in a specific geographic area. Further, they raise the possibility of a threshold effect of hospital-bed availability on clinical decision making, in which available hospital resources and clinical judgments combine to determine per capita hospitalization rates.[44]

Policy makers may be able to draw on the findings of Wennberg and Fisher to address variation in utilization and spending, and possibly to help reduce future growth in hospital spending on readmissions. When exploring ideas for changing Medicare's policies, policy makers can consider how such changes would affect beneficiary access to care and whether such changes would lead to adverse patient outcomes.

Caregiving

Caregivers—family and friends who give care without compensation—play a significant role in the hospital discharge of Medicare beneficiaries. Caregivers assist patients as they transition from hospitals into their homes or other post-acute or LTC settings. In addition to providing other contributions, caregivers help patients comply with their care plans, including taking and accompanying patients to follow-up physician visits and diagnostic test appointments, as well as reminding patients to take their prescribed medications. In addition, caregivers may help patients

[42] Elliott S. Fisher and John E. Wennberg, "Health Care Quality, Geographic Variations, and the Challenge of Supply-Sensitive Care," *Perspectives in Biology and Medicine*, vol. 46, no. 1 (Winter 2003), pp. 69-79.

[43] Elliott S. Fisher and John E. Wennberg, "Health Care Quality, Geographic Variations, and the Challenge of Supply-Sensitive Care," *Perspectives in Biology and Medicine*, vol. 46, no. 1 (Winter 2003), pp. 69-79.

[44] Elliott S. Fisher, John E. Wennberg, and Therese A. Stukel, et al., "Hospital Readmission Rates for Cohorts of Medicare Beneficiaries in Boston and New Haven," *New England Journal of Medicine*, vol. 331 (October 13, 1994), pp. 989-995.

with activities of daily living (such as eating, bathing, and dressing)[45] and understanding or interpreting worsening medical symptoms.

One study suggests that patients who have access to caregiver support are at less risk for a hospital readmission than patients who live alone and have restricted access to caregivers.[46] Also, training of caregivers enhances the quality of the assistance that they provide to patients. In one study, a reduction in the likelihood of readmissions was found when caregivers and patients were trained by a transition coach.[47]

Additional training, counseling, and education could be provided to caregivers throughout the discharge process, either by hospital discharge planners or by transitional care teams. This could ensure that patients receive optimal assistance from caregivers and thus help to reduce readmissions.

Deterioration of a Clinical Condition

Patients who are sick, elderly, frail, or disabled may have worsening health conditions that would be best served in the resource-intensive environment of a hospital. Sometimes, however, those same patients can receive appropriate care in alternative settings. Although some conditions may be amenable to preventive treatment so as to avoid readmissions, other illnesses may continue to progress regardless of the type of care given. In the Jencks study, 90% of Medicare beneficiaries who underwent surgical procedures returned to the hospital for medical care because their health condition deteriorated, and not as a result of a problem with the treatment plan.[48]

Policy options to reduce this kind of readmission might include directing people to alternative care settings, when appropriate; providing care monitoring and supportive services to people in home and community-based settings that offer outpatient medical interventions, on a timely basis, to people at high risk for hospitalization; or educating beneficiaries about hospice, when appropriate.

Medical Errors

There is evidence that avoidable medical errors occur in the inpatient hospital setting and that these errors can cause adverse events[49] resulting in readmissions for some Medicare beneficiaries.

[45] Activities of daily living (ADL) are everyday tasks performed by individuals. These include eating, dressing, bathing, getting in and out of bed, and using the bathroom. Instrumental activities of daily living (IADL), which also can be included under the broader ADL category, involve activities related to independent living and include preparing meals, managing money, shopping, doing housework, and using a telephone.

[46] Alicia I. Arbage, M.D., M.P.H., Jennifer L. Wolff, Ph.D., and Qilu Yu, Ph.D., et al., "Postdischarge Environmental and Socioeconomic Factors and the Likelihood of Early Hospital Readmission Among Community-Dwelling Medicare Beneficiaries," *The Gerontologist*, vol. 48 (August 2008), pp. 495-504.

[47] Eric A. Coleman, M.D., M.P.H., Carla Parry, Ph.D., M.S.W., and Sandra Chalmers, M.P.H., et al., "The Care Transitions Intervention: Results of a Randomized Controlled Trial," *Archives of Internal Medicine*, vol. 166 (September 25, 2006), pp. 1822-1828.

[48] Stephen F. Jencks, M.D., M.P.H., "Rehospitalization: Understanding the Challenge," Presentation at the National Medicare Readmissions Summit, Washington, DC, June 1, 2009.

[49] An *adverse patient safety event* is a term used by the Agency for Healthcare Research and Quality's (AHRQ) Patient Safety Indicators, which measure health care quality, including potentially preventable surgical and procedural errors in the inpatient setting. The term has been defined by the Institute of Medicine, in its 2000 Report, "To Err is Human: (continued...)

Medical errors refer to difficulties with diagnosis, treatment, or the prescribing, modification, and administration of medications to patients and may result in ineffective or incorrect treatments, as well as in preventable injuries and death. Some of the most widespread medical errors are medication errors.[50] A Consumer Reports survey indicates that 11% of hospital nurses within the last work week observed incorrectly administered medication or dosage and 9% indicated that doctors had prescribed the wrong medicine or dosage.[51] These errors can result in a range of difficulties for older adults, as well as for persons of all ages, and can result in readmissions.

In addition, surgical errors, a subset of medical errors, such as mistakes or omissions made during and around the performance of surgical procedures, can increase the chance of adverse events such as wound infections, deterioration of a clinical condition, postoperative complications, and sometimes readmissions. One study found that, of patients undergoing a major surgery, those who experience a postsurgical adverse event are at substantially higher risk (one-third higher) of a hospital readmission than patients not experiencing such an adverse event.[52] According to MedPAC, about one in seven patients undergoing coronary artery bypass graft surgery was readmitted to a hospital, which may account for as much as $150 million in readmission costs in a given year.[53]

Although it is unlikely that all medical and surgical errors that result in readmissions could be eliminated, additional efforts might be made to minimize such errors and their implications. Options may include the implementation of system-wide quality improvements in hospitals, such as the establishment of new medical and surgical protocols (and checklists related to those protocols), payment incentives to providers for additional quality improvements or penalties for the lack of such improvements, and the addition of new training requirements for hospital staff, among others.

Selected Strategies to Reduce Medicare Hospital Readmissions

Proposals to reduce readmissions and improve quality have been made by policy makers, practitioners, and researchers. These proposals can be categorized into the following three groups: (1) service delivery reform, (2) financing reform, and (3) Medicare and Medicaid integrated service and financing reform. Although not all of these proposals are exclusively designed to reduce hospital readmissions, the strategies listed below may contribute to this outcome.

(...continued)

Building a Safer Health System," as "an injury caused by medical management rather than the underlying condition of the patient."

[50] The Agency for Healthcare Quality and Research (AHRQ) defines medication errors as "preventable mistakes in prescribing and delivering medication to patients, such as prescribing two or more drugs whose interaction is known to produce side effects or prescribing a drug to which the patient is known to be allergic."

[51] "Patients, Beware: 731 Nurses Reveal What to Watch Out for in the Hospital," *Consumer Reports*, September 2009, pp. 18-23.

[52] Didem Bernard and William E. Encinosa, Ph.D., "Adverse Patient Safety Events: Costs of Readmissions and Patient Outcomes Following Discharge," Abstract for AcademyHealth Meeting, San Diego, CA, 2004.

[53] Medicare Payment Advisory Commission (MedPAC), Report to Congress: Promoting Greater Efficiency in Medicare, June 2007, Chapter 5. See http://www.medpac.gov/documents/Jun07_EntireReport.pdf.

Quality measurement is also an integral part of service delivery and financing reform strategies to reduce readmissions. Without it, measuring improvements in care and service quality, as well as measuring the effectiveness of strategies, will be difficult. This report does not address quality measurement except briefly to explain how certain service and financing reforms are assessed.[54]

Service Delivery Reform

New ways to deliver care through care coordination and telehealth have been suggested as a means to improve the patient experience and potentially reduce hospital readmissions. In addition, strategies to improve patient compliance through financial incentives and care management have been used by some health care organizations to improve patient management of chronic disease and health outcomes. The following describes these initiatives.

Coordinated Care Models

Coordinated care models are designed to provide interdisciplinary care coordination to high-risk chronically ill and acutely ill patients as their needs change across settings. Some models would target time-limited post-discharge care for patients transitioning to different care settings, whereas other models offer longitudinal care that can extend for months or years, or until a patient is deceased or can no longer live at home or in the community. Some models are designed to monitor and assess a patient's health status, educate the patient about managing his or her condition, and manage services. Others offer these services along with the delivery of primary care in a patient's home.

The following models, Transitional Care Model (TCM), the Care Transitions Initiative (CTI), and Project RED, generally aim to provide (1) care coordination between the hospital and post-hospital settings and providers; (2) education of patient and family caregivers; (3) follow-up monitoring of a patient's health status after discharge; and (4) care from a transitional coach or team to manage clinical, psychosocial, rehabilitative, nutritional, and pharmacy needs after discharge. Although programs that have adopted these models have seen some success in reducing hospital readmissions, some have criticized them for creating new gaps in care when the programs end. The Department of Veterans Affairs (VA) Home Based Primary Care (HBPC) offers the services listed above, but it goes a step further by ensuring a longitudinal continuum of care that has no gaps in patient care. In addition, primary care is delivered directly to veterans in their homes by an interdisciplinary team. Further, the medical home model would also offer continuous care, but this care is directed from the physician's office. Other models that provide hospice and palliative care can help certain beneficiaries with terminal illnesses avoid hospitalizations and invasive procedures while maintaining a higher quality of end-of-life care.

Transitional Care Model (TCM)

The Transitional Care Model (TCM),[55] tested and refined for the past 20 years by a multidisciplinary team based at the University of Pennsylvania (including testing in three completed National Institutes of Health funded randomized, controlled clinical trials), establishes

[54] See the following CRS report for a general discussion about quality measurement, CRS Report R40749, *Measuring Health Care Quality: Measure Development, Endorsement, and Implementation*, by Amanda K. Sarata.

[55] See http://www.transitionalcare.info/ (last accessed 12/1/09).

a transitional care multidisciplinary team led by a master's prepared transitional care nurse (TCN) to treat a patient before, during, and after discharge from the hospital and to specifically target chronically ill high-risk older adults. Key components of the TCM program include (1) patient and family caregiver education, both in the hospital and during the transition from hospital to home, so that the patient thoroughly understands and can execute the plan of care; (2) helping patients manage health issues and effectively achieve their goals, beginning at the point of hospital admission across the one-to-three month TCM duration; (3) medication reconciliation and management, both during the hospitalization and at a post-discharge visit; and (4) transitional care to optimize patient outcomes throughout and following an acute episode of illness by assuring communication with primary care providers, and in some cases by facilitating access to continuing services (e.g., palliative care, hospice care, chronic case management).

Among other key elements, the TCN-led team would comprehensively assess both the patient and family caregiver in the hospital to develop an evidence-based plan of care. The team would make regular home visits and offer seven-day per week telephone support, as well as communicate to, between, and among the patient, caregivers, and health care providers. TCM would concentrate on the reason for the patient's hospitalization and on other complicating events. In a multi-site randomized control trial for persons age 65 and older and hospitalized with heart failure, the intervention TCM group had fewer readmissions in one year following hospital discharge. The total cost of care for the intervention group was 39% lower per patient than for the control group.[56]

Care Transitions Intervention (CTI)

Another approach to providing continuity of care across care settings is the Care Transitions Intervention (CTI),[57] a four-week program created by a physician based at the University of Colorado Denver. CTI provides a nurse transition "coach" (an advanced practice nurse) to assist patients with complex care needs, as well as family caregivers, in being more assertive during care transitions, having continuity of care across settings, and having their needs met in any care setting. The model is designed to be a low-cost, low-intensity intervention that could be implemented in different delivery systems to help with (1) medication self-management; (2) maintenance of an up-to-date patient-centered health record to facilitate continuity of care across providers and settings; (3) support for patients in setting up and completing follow-up visits, among others; and (4) education about "red flag" warning indicators that suggest deteriorating health and how to respond.

In a randomized controlled trial involving 750 subjects aged 65 and older in a large, integrated delivery system in Colorado, patients receiving the CTI had lower readmission rates at 30 days and at 90 days and lower mean hospital costs than those patients without the CTI intervention.[58] In addition, a qualitative review of the results appeared to indicate improved self-management and confidence about what was required of them on the part of study participants who received

[56] Mary Naylor, Ph.D., F.A.A.N, R.N., Dorothy Brooten, Ph.D., F.A.A.N, R.N., and Roberta Campbell, M.S.N., et al., "Transitional Care of Older Adults Hospitalized with Heart Failure: A Randomized Clinical Trial," *Journal of the American Geriatrics Society*, vol. 52, no. 5 (May 1, 2004), pp. 675-684.

[57] See http://www.caretransitions.org/ (last accessed 12/1/09).

[58] Eric A. Coleman, M.D., M.P.H., Carla Parry, Ph.D., M.S.W., and Sandra Chalmers, M.P.H., et al., "The Care Transitions Intervention: Results of a Randomized Controlled Trial," *Archives of Internal Medicine*, vol. 166 (September 25, 2006), pp. 1822-1828.

the intervention.[59] A number of hospitals and health systems have implemented the CTI model, including the implementation of CTI in 2007 in 10 California locations as part of a one-year, $650,000, effort funded by the California Health Care Foundation.[60]

Re-Engineered Hospital Discharge Program

A third care model, the Re-Engineered Discharge (RED) program,[61] created at Boston University Medical Center, uses discharge advocates (specially trained registered nurses) to address care transition elements. Advocates would use, among other things, an After Hospital Care Plan, or discharge plan, to prepare patients for the days between discharge and the first ambulatory care physician visit. Project RED involves 11 essential components: (1) educating patients about their condition, (2) making appointments for clinician follow-up and post-discharge testing, (3) discussing tests and studies with patients, (4) organizing post-discharge services, (5) confirming medication plans, (6) reconciling discharge plans with national guidelines, (7) teaching patients to identify and deal with emergency medical situations, (8) expediting the transmission of the discharge summaries to outpatient physicians, (9) asking patients to explain their care plans to assess patient's degree of understanding, (10) giving patients written discharge plans at the time of discharge, and (11) providing telephone support shortly after discharge to reinforce the patient's discharge plan.

In a study involving Project RED, 370 patients participating in the project were one-third less likely to be readmitted to the hospital or visit the emergency department than patients who did not participate in the project. Compared to roughly one-third of patients not in the project who left the hospital with a follow-up appointment, almost all project participants had an appointment at that time. Also, more than 90% of participants' primary care physicians received the patients' discharge information within one day of leaving the hospital. Medication review by pharmacists of project participants also successfully identified a number of medication errors.[62]

QIO Care Transitions Program

Quality Improvement Organizations (QIOs)[63] in 14 states have been funded by CMS to implement a Care Transitions Program for Medicare beneficiaries with relatively high readmission rates. The program is intended to test how certain interventions may improve coordination across the continuum of care and thus reduce hospital readmission rates. For the purpose of this program, the continuum of care starts during a hospital stay, continues through the discharge process, and concludes at home or in a skilled nursing care setting. QIOs in 14 participating states are working to promote seamless transitions from the hospital to home or

[59] Carla Parry, Heidi M. Kramer, and Eric A. Coleman, "A Qualitative Exploration of a Patient-Centered Coaching Intervention to Improve Care Transitions in Chronically Ill Older Adults," *Home Health Care Services Quarterly*, vol. 25, nos. 3 and 4 (2006), pp. 39-53.

[60] See http://www.chcf.org/topics/view.cfm?itemID=128306 (last accessed 12/1/09).

[61] See http://www.bu.edu/fammed/projectred/ (last accessed 12/1/09).

[62] Brian W. Jack, M.D., Veerappa K. Chetty, Ph.D., and David Anthony, M.D., et al., "A Reengineered Hospital Discharge Program to Decrease Rehospitalization," *Annals of Internal Medicine*, vol. 150, no. 3 (February 3, 2009), pp. 178-187.

[63] QIOs operate under the direction of CMS and consist of 53 entities responsible for each U.S. state, territory, and the District of Columbia. QIOs work with health care providers, consumers and stakeholders to help ensure that high quality care is delivered under Medicare.

skilled nursing care or home health care so as to reduce readmissions and develop proven care transition models. The 14 states operating Care Transitions programs with a selected geographic area are Rhode Island, New York, Pennsylvania, New Jersey, Georgia, Alabama, Indiana, Michigan, Nebraska, Louisiana, Colorado, Texas, Washington, and Florida.

Three types of interventions are being implemented in each state. They are:

1. Process improvements at the systems level that target hospital and community-based organizations who interact with patients during and after a hospital discharge. Examples of process improvements include the adoption of information technology and new protocols for transfers from hospitals to skilled nursing facilities.
2. Patient and family engagement and activation activities. Such interventions generally target individuals and their families with specific diseases or conditions that have relatively high readmission rates, such as acute myocardial infarction, congestive heart failure, and pneumonia. The provision of a transitional coach and education in self-management skills are examples of these interventions.
3. Interventions that address causes of readmissions for people living in the community, such as inadequate access to nutritional meals or palliative care. For these interventions, QIOs may facilitate, or even create, the provision of new services for selected Medicare beneficiaries at risk for a readmission.

At least two program evaluations will be released for these programs. The first is an interim report describing selected results of the first 28 months of operation. The second is a final report on all program results. The first interim report is expected sometime on or after January 1, 2011.[64]

Home-Based Primary Care

A fourth model provides longitudinal primary care and care coordination in the home for patients with complex, chronic, and often progressive diseases and who have problems with activities of daily living. Home-Based Primary Care (HBPC), operated throughout VA, offers physician-led, interdisciplinary care (including physician, nurse, pharmacist, rehabilitation therapist, psychologist, dietitian, and social worker) to frail, older veterans. Many of these veterans have multiple chronic illnesses, such as heart disease, diabetes, heart failure, cancer, chronic lung disease, and dementia. On average, care is delivered in the home three times per month to HBPC-enrolled veterans, with veterans remaining in the program for roughly one year. Veterans are not required to be strictly homebound or to require skilled nursing care to receive HBPC services.[65]

HBPC has been associated with significant decreases in hospital admissions and bed days of care for enrolled veterans, and high patient satisfaction scores. In FY2008, the program experienced a nearly 24% reduction in its 30-day readmission rate after enrollment. In addition, compared to utilization prior to enrollment in the home care program, newly enrolled veterans had 68% fewer

[64] Sources: QIO 9th Statement of Work Executive Summary Series for Medicare QIOs and Care Transitions, see http://www.ahqa.org/pub/uploads/CMS_SoW9_Summary_Care_Transitions_0807.pdf; the website for Care Transitions QIOSC, see http://www.cfmc.org/caretransitions/Default.htm; and CRS' telephone conversations with QIO staff operating Care Transitions programs in Florida, Colorado, and Rhode Island.

[65] The average age of veterans enrolled in HBPC is 77; 96% are male; and 47% are dependent in two or more activities of daily living. See http://www.aahcp.org/presentations2007/Home_Care_VA_AAHCP.ppt.

inpatient (hospital and long term care/nursing home) bed days of care in FY2008, including 44% fewer hospital bed days of care. In FY2002, there was a 63% decrease in hospital spending for these veterans. Overall, spending on home care per patient year under this program in FY2002 increased by 460% while the total cost of VA care per newly enrolled HBPC patient per year decreased by 24%.[66]

Medical Homes

A fifth model would provide care coordination to certain Medicare beneficiaries under a medical home model. In theory, a medical home would provide Medicare beneficiaries with access to a personal primary care physician, or specialist, and an office care team who would coordinate and facilitate care and provide guidance. Integrated health care is expected to enhance patient adherence to recommended treatment and avoid (1) hospitalizations, unnecessary office visits, tests, and procedures; (2) use of expensive technology or biologicals when less expensive tests or treatments are equally effective; and (3) patient safety risks inherent in inconsistent treatment decisions.

Section 204 of the Tax Relief and Health Care Act of 2006 mandated a three-year Medicare medical home demonstration project in eight states, which began in 2008. According to the establishing legislation, medical homes advocate for and provide ongoing support, oversight, and guidance to implement a plan of care that provides an integrated, coherent, cross-discipline plan for ongoing medical care developed in partnership with patients and including all other physicians furnishing care to the patient involved, among other activities.

Under the demonstration, monthly payments are made by CMS to the personal physicians or practices for each enrolled beneficiary. Medical homes also receive payment for 80% of Medicare savings that can be identified as attributable to the medical home (determined by using assumptions with respect to reductions in the occurrence of health complications, hospitalization rates, medical errors, and adverse drug reactions).

On October 26, 2009, CMS announced that implementation of this demonstration program has been delayed. CMS also announced that it is moving forward with another demonstration, entitled the Payer Advanced Primary Care Practice Demonstration, whereby Medicare would partner with existing multi-payer medical home pilots to improve care delivery.[67]

Hospice and Palliative Care

Some people who undergo multiple hospital readmissions may benefit from seeking alternative types of care, such as hospice and palliative care, preventing some hospital readmissions. Patients who are very ill and will most likely die in the near term from their illness can benefit from end-of-life care, which can include acute care and palliative care. Palliative care, which involves coordinated care provided by interdisciplinary teams, focuses on offering relief for the patient's suffering and reducing the severity of disease symptoms while improving the patient's quality of life. Hospice care is a form of palliative care that delivers comfort care to those who forgo

[66] See http://www.aahcp.org/james_burris.ppt (last accessed 12/1/09).

[67] See http://www.cms.hhs.gov/DemoProjectsEvalRpts/MD/itemdetail.asp?itemID=CMS1199247 (last accessed 12/1/09).

curative treatment and have a short life expectancy. Such care may reduce hospital and other acute care Medicare costs associated with the last six months of Medicare beneficiaries' lives, a period of time estimated to account for more than one-quarter of annual Medicare spending for the elderly.[68]

VA has developed a network of local hospice and palliative care programs, which include Palliative Care Consultative Teams at all VA facilities. These teams include staff with nursing, medicine, social work, mental health, and chaplain elements. VA offers hospice services to all enrolled veterans and has recently fostered the Hospice-Veteran Partnership, which links VA professionals and community hospices. Such partnerships have been developed throughout the country, coordinating assistance from VA professionals, veterans, volunteers, and organizations to improve the quality of care for veterans through the end of life.

Kaiser Permanente also has targeted palliative care, by creating a TriCentral Palliative Care Program Toolkit. This Toolkit is designed to help organizations create palliative care programs. The program uses an interdisciplinary team model to help patients manage pain and symptoms, to provide emotional support as well as education to patients and family members. According to a randomized, controlled trial, the program increased patient satisfaction, increased the proportion of patients dying at home rather than in the hospital, and decreased the number of emergency department visits, hospital admissions, and costs.[69]

Care Coordination Using Home Telehealth

Another option is home telehealth, which makes use of technology to enable continuous, remote care delivery or monitoring between a healthcare provider and a patient at home. Home telehealth generally involves the collection and transmission of clinical data through electronic information processing technologies, such as messaging devices, videophones, and cameras. Quality Improvement Organizations (QIOs) assist home health agencies in implementing and utilizing telehealth as a tool to help reduce acute care hospitalization. Home telehealth brings patients and providers in different, and sometimes remote, settings together for the collection of patient data to monitor patients' health status and provide patient education. In some cases, home telehealth can connect patients and providers via videophone, or other devices, for real-time, interactive consultations. Home telehealth can be used as a component of care coordination to increase its effectiveness in certain circumstances.

The aim of such interventions is to reduce unnecessary hospital stays and to avoid costly and debilitating complications from patient illness by creating a new and continuous relationship between physicians and patients. Telehealth monitoring of people with chronic conditions allows providers to identify acute episodes early and then target more affordable interventions in an outpatient setting. In one study, hospitalizations among patients with congestive heart failure who were monitored by home-based telemonitoring were reduced by 43%, as opposed to 71% for the control group.[70]

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[68] Christopher Hogan, June Lunney, and Jon Gabel, et al., "Medicare Beneficiaries' Costs of Care in the Last Year of Life," *Health Affairs*, vol. 20, no. 4 (July 2001), pp. 188-195.

[69] See http://www.innovations.ahrq.gov/content.aspx?id=2366 (last accessed 12/1/09).

[70] Marie Elena Cordisco, R.N., Ainat Benjaminovitz, M.D., and Kim Hammond, R.N., et al., "Use of Telemonitoring to Decrease the Rate of Hospitalization in Patients with Severe Congestive Heart Failure," *The American Journal of Cardiology*, vol. 84, no. 7 (October 1, 1999), pp. 860-862.

Two examples of telehealth currently being implemented on a widespread basis involve VA and a Medicare demonstration project, each of which uses telehealth as a way to improve the coordination of care and disease management of chronic illness. In both cases, telehealth technology is used to educate patients about their health conditions and to allow providers to track patients' conditions and prevent acute episodes that may lead to hospitalization.

At VA, a growing percentage of enrolled veterans, numbering more than 30,000 as of FY2007, receive intensive case management associated with telehealth services in VA Medical Centers, community-based outpatient clinics, and their homes. In FY2007, nearly half of veterans receiving care coordination home telehealth (CCHT), most of whom were between the ages of 50 and 90, had diabetes. A substantial proportion had hypertension and cardiovascular heart failure, and one-third had multiple conditions. Data reported for a cohort of over 17,000 CCHT patients, comparing pre-and post-CCHT outcomes between FY2006 and FY2007, indicate a 25% decrease in the number of bed days of care, a 20% reduction in hospital admissions, and 86% mean patient satisfaction scores. The cost of CCHT can be considered to be low when compared with other VA non-institutional care programs and market nursing home care.[71]

The 2005 Care Management for High Cost Beneficiaries Demonstration (CMHCB) program also incorporated strategies using telehealth technology. CMHCB tested provider-based intensive care management services to improve quality of care and reduce costs for high-cost, chronically ill Medicare beneficiaries. One of the demonstration's participants, the Health Hero Network's Health Buddy program, targeted a starting population in the Pacific Northwest of nearly 2,000 Medicare patients with complex conditions. In the program, telehealth technology was used to remotely connect patients with clinical information databases and online decision support tools.[72] The technology used is the Health Buddy (the platform used extensively by the VA), an appliance placed in a beneficiary's home that is used to coach the patient on health issues, collect vital signs and symptoms, and transmit results to providers, who monitor behavior, knowledge, and symptoms.[73] The Health Buddy program was recently extended for a second three-year period by CMS because it had a positive impact on selected high-cost Medicare beneficiaries and met or exceeded the savings target required in the demonstration project.[74]

Initiatives to Improve Patient Compliance

Efforts to address patient behavior and compliance can be one means within a larger strategy to improve patient outcomes so that fewer patients need to be rehospitalized. By providing incentives to patients to adhere to treatment plans and by following up with patients once they leave the acute hospital setting, patient compliance might improve. One method for improving patient compliance is to directly engage patients in the management of their diseases, with the recognition that even those patients who wish to comply with a treatment plan may not be capable of doing so and that direct engagement may be an additional motivating factor. Patient compliance may improve by incentivizing individuals to engage in effective programs and to

[71] Adam Darkins, Patricia Ryan, and Rita Kobb, et al., "Care Coordination/Home Telehealth: The Systematic Implementation of Health Informatics, Home Telehealth, and Disease Management to Support the Care of Veteran Patients with Chronic Conditions," *Telemedicine and e-Health*, vol. 14, no. 10 (January 2, 2009), pp. 1118-1126.

[72] See http://www.telehealthlawcenter.org/?c=125&a=1945 (last accessed on 12/1/09).

[73] See http://www.cms.hhs.gov/DemoProjectsEvalRpts/downloads/CMHCB_HealthBuddy_FactSheet.pdf (last accessed on 12/1/09).

[74] See http://www.telehealthlawcenter.org/?c=125&a=1945 (last accessed on 12/1/09).

adhere to program guidelines. It may also improve from the delivery of comprehensive, interdisciplinary services to patients to manage chronic illness.

Patients may simply need more encouragement to self-manage their illnesses; one example that this may be the case is a program designed for employees of the Geisinger Health System, a physician-led healthcare system in northeastern and central Pennsylvania. While not directed specifically to Medicare beneficiaries, it may provide evidence of how incentives can change patient compliance. The Geisinger program, called ProvenEngagement, encourages employees, who are also patients of the health system, to participate in a care management program. The program provides payment incentives to employees who join. Specifically, it provides (1) signing bonuses for enrollment and continuation in the program over time and (2) limited cost-sharing for prescriptions for selected chronic conditions. According to Geisinger, preliminary results indicate that payment incentives resulted in a greater percentage of employee participation in the disease management and free prescription drug program. Such programs helped control factors related to chronic disease, such as blood pressure, cholesterol, lipid levels, and blood pressure.[75]

Another method that may effectively improve patient compliance is the use of telehealth technology, which can monitor patient health, ensure patient follow-through, and help patients manage personal health-related behaviors. Such efforts can be overseen by nurses who are trained to monitor patients on a daily basis using different types of telehealth equipment, which could be located in a patient's home, in outpatient clinics, or in medical centers. Care could be overseen by care coordinators to ensure that patients follow treatment plans and that patients share in the responsibility for managing their diseases. The Office of Care Coordination within the VA implemented a national telehealth program in 2003. It uses messaging devices, videophones, biometric devices, cameras, and telemonitoring devices to monitor changes in patient symptoms, knowledge, and health factors. For those veterans found to be "at-risk,"' additional help is offered, often by telephone from a case coordinator.

Financing Reform

Proposals to reform Medicare's payment system for hospitals, post-acute care providers, and physicians have been debated by policy makers, health policy researchers, and practitioners as a means to improving the quality of beneficiary care and reducing readmissions. Many assert that Medicare's current fee-for-service payment system reimburses providers based on the volume of persons served but does little to encourage coordination of care across settings or to reward providers for higher quality. Many also assert that the current system does not incorporate incentives for providers to reduce readmissions because such reductions would likely result in lower reimbursement. Medicare's payments to physicians are similarly influenced by service volume. The following provides a brief background on Medicare's current financing system for hospitals, physicians, and post-acute care providers. It then describes various financing reform proposals that would change this system and analyzes some of their strengths and weaknesses.

Current Medicare Payment Design for Selected Providers

In general, Medicare pays acute care hospitals using a prospectively determined payment for each discharge. The discharge payment is a single payment for each "spell of illness" (also referred to

[75] See http://www.ehcca.com/presentations/hosppayreform1/paulus_1.pdf (last accessed on 12/1/09).

as an episode of care) and defined as beginning on the day a patient enters a hospital and ending when he or she has not been in a hospital or skilled nursing facility for 60 days. An individual admitted to a hospital more than 60 days after the last discharge from a hospital begins a new benefit period. Payments are intended to cover many of the services provided to that patient during that hospital stay, including (1) bed and board; (2) nursing services; (3) use of hospital facilities; (4) drugs, biologicals, supplies, appliances, and equipment; and (5) diagnostic and therapeutic items and services.[76] Each payment is adjusted by a patient's payment classification group, or MS-DRG (medical severity-diagnosis related group). MS-DRGs are based on an estimate of the relative resource needs of the patient as determined by the diagnoses and needs assessment.

Payment for post-acute care providers, including skilled nursing facilities (SNFs), home health agencies (HHAs), long-term care hospitals (LTCH), and inpatient rehabilitation facilities (IRFs), are made under separate prospective payment systems.[77] Under this prospective payment system, the difference between Medicare payments and provider (e.g., hospital, HHA, SNF) costs are retained by the hospital and post-acute care providers, and any losses must be absorbed by these providers. This system creates an incentive for providers to deliver services as efficiently as possible.

In the case of physician services delivered to patients on an inpatient and outpatient basis, payments are made based on fee schedules. These fee schedules assign relative values to each of the services provided. In general, payments reflect the relative values of physician's work (based on time, skill, and intensity involved), practice expenses (including the cost of nurses and other staff), and malpractice expenses.

Medicare Payment Reform Proposals

The theory behind financing reform is that reform could lead to a higher quality of care, a more integrated care delivery system, and lower hospital readmissions. A number of restructuring proposals have been debated. Each proposal differs greatly by types of providers that would be grouped under a single payment structure. None would be simple to implement and all would raise new concerns.

Some of the suggested reforms include paying providers differently for good and poor performance, bundling payments across different providers of certain services, and protecting providers against risk by offering them service warranties for particular surgical and medical procedures. Not all of the reform proposals would be equally effective at reducing hospital readmissions. Policy makers could choose a single reform design to implement or could choose to combine more than one reform design. The following section briefly describes each of these payment reform approaches.

[76] Certain services delivered to patients on an inpatient basis are excluded from the hospital PPS and paid separately, including clinical laboratory services and certain durable medical equipment. For these services, Medicare pays on the basis of individualized fee schedules.

[77] CRS Report RL30526, *Medicare Payment Policies*, coordinated by Paulette C. Morgan.

Pay-for-Performance Initiatives

Under a pay-for-performance (P4P) model, a portion of payments would be based on the results of a performance assessment. The performance assessment could be based on measures of quality, profitability, volume, or customer or patient satisfaction. Under this model, higher payments would be made to providers for high-quality performance and lower payments would be made for lower-quality performance. Regarding readmissions, either a fraction, or the entire amount, of a reimbursement could be eliminated for certain potentially preventable readmissions. At the same time, those hospitals that would have lower readmission rates would receive financial rewards.

In general, financial incentives to obtain a reward and avoid a penalty might be an effective method for encouraging hospitals to devise and implement strategies to avoid readmissions. From Medicare's perspective, P4P could help the program ensure that the funds spent on purchasing care are directed toward higher-quality services. However, little is known about how and why readmission rates differ for hospitals with different characteristics (e.g., specialty versus non-specialty hospitals, urban versus rural, profit versus not-for-profit, teaching versus non-teaching) and different patient demographics (e.g., share of Medicare patients, race and ethnicity, income levels), making fair assessments of which readmissions could be potentially preventable difficult. Moreover, better readmissions-related measures that fairly and accurately capture the quality of patient care across provider settings are needed.

Bundled Payments

Bundled payments involve combining, or bundling, payments for various services into one unified payment. Under such a payment, hospitals and certain other providers could retain the difference between Medicare payments and providers' costs, and any losses could be absorbed by the providers. Bundled payments can vary by several dimensions.

- *Scope of Coverage* (i.e., the time period for which a bundled payment would apply and/or the types of providers that would be included in such a payment). In terms of the scope of coverage, a bundled payment could cover the period during which a patient is in the hospital only, or a period that would include a hospital stay plus a limited time following a hospital discharge. If the payment were to cover the former, then it might include, under a single payment, both inpatient hospital services and inpatient physician services. If the bundled payment were to include the latter, then it might combine, under a single bundled payment, the hospital and physician services with post-acute care provider services. Bundled payments could reimburse only for specific procedures and a limited set of services, or they could reimburse globally for all of a patient's procedures and services provided during a specified time period.
- *Amount of Bundled Payment.* The amount of the bundled payment might vary depending on the scope of coverage selected. A bundled payment might reflect the current average reimbursement amounts Medicare pays to providers for a selected time period or episode of care. Policy makers might also adjust payment amounts downward, to encourage cost-savings compared to current spending levels, or, adjust them upward to account for extra costs that might be incurred by providers who implement new services designed to, among other purposes, contain readmissions. Such services might include the coordination of care

during and after a hospital stay and/or other initiatives to improve the quality of patient care.

- *Sharing Payments Among Providers*. Administratively, bundled payments would require contractual agreements between partnering providers that would guide the distribution of a single bundled payment to each of the service providers. For example, for a hospital to receive a payment and then disburse the payment to inpatient providers, home health providers, and a skilled nursing facility, legal and administrative agreements would need to be developed between these providers. Such agreements could create partially integrated systems similar to some managed-care insurance plans in that they would establish networks of participating providers.

Like IPPS, bundled payments can create incentives to improve efficiency in spending during an episode of care. Requiring providers to share payments might also encourage them to increase communication about patient care across settings, possibly leading to lower readmission rates. However, bundled payments alone would not necessarily create an incentive to lower the volume of patients served because hospitals and providers could profit from additional episodes of care. This could have a negative effect on readmission rates. To have a larger impact on such rates, bundled payments would likely need to be implemented with another payment reform. Such payments also raise concerns about how providers would share the payment and any eventual savings and whether the sharing agreements would be negotiated fairly.

Patient Care Warranties

A related type of payment reform is a warranty. Under a warranty, a hospital[78] would provide a guarantee to the Secretary on the quality of services delivered. Specifically, a hospital would be paid a flat rate by Medicare. This rate would cover the costs to deliver the initial services (e.g., a surgical procedure or medical treatment) and follow-up treatments. In the event that a patient suffers complications from those services, no extra payment would be made as long as the complications occurred within a certain time period (e.g., an episode of care, 30 days, or 90 days). A warranty could vary in scope, covering care for only a portion of those adverse events related to medical or surgical treatments, or for all adverse events resulting from poor quality care.

Warranties might encourage hospitals to improve quality management for specific surgical procedures and medical treatments and thus reduce medical errors that lead to hospital readmissions. Longer warranty time periods could create an incentive for quality management beyond the initial procedures and treatment to include post-hospital care. This might reduce hospital readmissions due to errors, as well as address quality issues in post-hospital care that lead to readmissions. However, a warranty might be administratively complex to implement, and providers may not always agree whether patients' medical complications are related to the care initially provided.

[78] For the purposes of this report, the discussion of warranties will center on hospitals. However, warranties can be applied to other providers.

Integrated Financing and Service Delivery Models

Medicare and Medicaid integrated financing and service delivery models are intended to allow for the more seamless coordination of Medicare-covered acute and Medicaid-covered long-term care for dually-enrolled beneficiaries with disabilities, many of whom have chronic conditions. Such programs capitate[79] Medicare and/or Medicaid payments for enrollees in both Medicare and Medicaid,[80] and could, among other things, reduce readmissions as well as other Medicare-covered acute care costs.

Two examples of these models are as follows:

- The Program of All-Inclusive Care for the Elderly (PACE) is a Medicare and Medicaid capitated program designed to provide seamless coordinated care to certain low-income individuals aged 55 and older who would otherwise require nursing home care. Under PACE, an interdisciplinary team of physicians, nurses, physical therapists, social workers, and other professionals provides all needed health, medical, and social services, often in adult day care settings.[81]
- Medicare Special Needs Plans (SNPs)[82] are a type of capitated Medicare Advantage care plan focused on individuals with special needs. Dual eligible SNPs, one of the three types of SNP plans,[83] may combine Medicare and Medicaid financing and coordinate acute and long-term care benefits covered under both programs. In general, SNPs are intended to improve care for these populations by providing care coordination and continuity of care. They may also monitor health status, help manage chronic diseases, and avoid inappropriate hospitalizations, among others. The SNP program is scheduled to expire on January 1, 2011.[84]

By providing coordinated care to beneficiaries in inpatient and outpatient settings and capitating payments for acute and long-term care services, these programs are intended to control program

[79] Capitation refers to a payment on a "per member per month" (PMPM) basis, called a premium, for a specified set of services. In general Medicaid and/or Medicare managed care plans are paid capitation rates to deliver qualified services.

[80] Many of these alternative delivery systems are developed by states with the approval of the federal government. Some are also initiated by health plans and community-based organizations.

[81] PACE providers assume the risk for expenditures that exceed the revenue from the capitation payments. The Balanced Budget Act of 1997 made PACE a permanent benefit category under Medicare and a state plan optional benefit under Medicaid.

[82] See http://www.cms.hhs.gov/specialneedsplans/ (last accessed on 12/1/09).

[83] SNPs are allowed to target enrollment to one or more types of special needs individuals identified by Congress as (1) individuals with severe or disabling chronic conditions, (2) institutionalized, and (3) dually eligible.

[84] Congress has since passed additional legislation affecting SNPs. The original SNP authority established by MMA was to expire on December 31, 2008. Passage of the Medicare, Medicaid, and SCHIP Extension Act of 2007 (MMSEA, P.L. 110-173) authorized the SNP program through December 31, 2009, but also established a moratorium on the creation of SNPs after January 1, 2008, although existing plans could continue to enroll qualified individuals. More recently, the Medicare Improvements for Patients and Providers Act of 2008 (MIPPA, P.L. 110-275), extended the moratorium on designation of new SNPs until January 1, 2011, and authorized the SNP program through the same date. MIPPA also required SNPs to collect, analyze, and report data on their models of care before January 1, 2010. In addition to legislative changes, the CMS has issued regulatory guidance on recent legislative changes. CMS's guidance included an interim final rule that, among other issues, required data to be reported that demonstrates compliance with 10 quality indicators. Most recently, CMS issued a Final Rule in the January 12, 2009, *Federal Register*.

costs and reduce administrative complexity across programs. They are also intended to reduce readmissions and delay or prevent institutionalized long-term care. However, various challenges arise in developing, enacting, and implementing integrated Medicare and Medicaid programs to reduce institutional program costs, including readmissions. Some of the challenges include reconciling conflicting operational requirements between Medicaid and Medicare, ensuring sufficient experience of managed care plans with the needs of dual eligibles, and addressing provider and beneficiary resistance to managed care.

Health Reform Law: Strategies to Contain Hospital Readmissions

The recently enacted health reform law, Patient Protection and Affordable Care Act (PPACA, P.L. 111-148), modified Medicare's payment rules for hospitals and established a number of new programs, demonstrations, and pilots designed to reduce readmissions, among other purposes.[85] Some of these provisions could be categorized as emphasizing service delivery, financing or both.

The Hospital Readmissions Reduction Program is intended to reduce preventable readmissions by reducing Medicare payments to certain hospitals with relatively high preventable readmissions rates. The Community-Based Care Transitions Program, on the other hand, is intended to help reduce potentially preventable readmissions by covering a range of social services (e.g., medication reconciliation, coaching, disease management) during the transitional period of a hospital discharge into a home or post-acute care setting. Similarly, the Independence at Home Demonstration tests the addition of primary care and social services, provided by an interdisciplinary team, for certain beneficiaries provided on a longitudinal basis and not limited to the period of time surrounding a hospital discharge. Finally, the Medicare Shared Savings Program, and the National Pilot Program on Payment Bundling address the reduction of potentially preventable readmissions, among other things, by changing payment incentives to encourage improved quality. Although no one of these service and financing reforms are likely to single-handedly resolve this complex issue of potentially preventable hospital readmissions in the Medicare program, together they reflect a multi-pronged approach. The following describes each of these approaches.

Service Delivery Reform

PPACA establishes the Community-Based Care Transitions Program to test the effectiveness of covering transitional care services under Medicare. The following describes this grant program.

[85] PPACA was signed into law on March 23, 2010.

For additional information on Medicare provisions in PPACA, including a timeline with start dates, effective dates, and deadlines for those provisions, see CRS Report R41196, *Medicare Provisions in the Patient Protection and Affordable Care Act (PPACA): Summary and Timeline*, coordinated by Patricia A. Davis.

Community-Based Care Transitions Program for High-Risk Medicare Beneficiaries

PPACA provides funding to pay community-based organizations and/or certain hospitals with high readmission rates (that partner with certain community-based organizations) to deliver transition services to certain high-risk Medicare beneficiaries around the time of discharge from a hospital. Beneficiary eligibility will be based on a hierarchical condition category score, as determined by the Secretary. This score will be based on, among other things, the existence of multiple chronic conditions, previous substandard transitions into post-hospitalization care, or other risk factors associated with hospital readmissions. Examples of these risk factors include cognitive impairment, depression, a history of multiple readmissions, or others factors, as determined by the Secretary.

Examples of care coordination services that can be delivered under this grant program include (1) initiating transition services no later than 24 hours prior to discharge, (2) arranging timely post-discharge follow-up to educate patients and caregivers about responding to their own health symptoms, (3) providing assistance to ensure productive and timely interactions between patients and post-acute and out-patient providers, (4) providing self-management support (or caregiver support), or (5) conducting medication review, counseling, and management support.

In selecting the entities that participate, the Secretary is to give preference to those entities that participate in the care transitions program administered by the Administration on Aging (i.e., provides care transitions interventions with multiple hospitals and practitioners) or provide services to medically underserved populations, small communities, and rural areas.

Medicare is to pay a total of $500 million for this five-year program beginning in January 1, 2011. Further, the Secretary has the authority to continue or expand the scope and duration of the program if it is determined that quality of care is improved under the program and projected Medicare spending is reduced.

By providing assistance to persons with chronic and acute illness as they transition between a hospital setting and a post-acute or home care setting, the Community-Based Care Transitions Program may reduce some Medicare hospital readmissions. The hospitals and/or community-based organizations selected to receive grant funding may achieve some success if they can help bridge the communications gaps between medical professionals within and outside the hospital, including physicians and nurses in the hospital, the team of medical professionals in a post-acute care setting, and the outpatient primary care physicians and/or specialists visited by patients after patients have returned to their homes. Further, these hospitals and/or community-based organizations may also provide care coordination services to persons while they reside at home, to promote compliance with instructions given by hospitals, post-acute care providers, and physicians and to maximize the patient's independence and well-being.

The provision does not specify how long individuals must be served by the transitions program. Without this guidance, it is likely that participating entities will deliver care for varying lengths of time. Whereas some may deliver time-limited post-discharge care for 24 hours after a hospitalization, others may offer longitudinal care that can extend for weeks or even months after a discharge. Comparing and evaluating the success of these very different approaches to care transitions will be important and may be challenging.

Financing Reform

PPACA includes two provisions that can be characterized as financing reform initiatives designed to, among other things, reduce hospital readmissions. They are the Hospital Readmissions Reduction Program and the Medicare Shared Savings Program. The following describes these initiatives.

The Hospital Readmissions Reduction Program

The Hospital Readmissions Reduction Program is a new Medicare program that establishes a financial incentive for hospitals to lower readmission rates. Under this provision, starting for discharges on October 1, 2012, the Secretary must establish a hospital readmissions reduction program for potentially preventable Medicare inpatient hospital readmissions involving three high-volume and/or high-rate conditions. The number of conditions for which readmission rates are measured will be expanded by four conditions in FY2015. Under the program, for hospitals with excess readmissions (determined as a function of spending on such readmissions), Medicare's base operating DRG payment amounts will be reduced by an adjustment factor. The adjustment factor for a hospital in a fiscal year is the greater of two amounts: (1) a floor adjustment factor equal to a reduced percentage of the discharge payment or (2) a ratio involving Medicare payment for excess readmissions. The ratio compares a hospital's Medicare payments for excess readmissions to payments for all of a hospital's DRG payments. An excess readmission is a ratio of risk-adjusted actual readmissions to risk-adjusted expected readmissions, as determined by the Secretary.

Under this program, hospitals have several incentives to invest in strategies to reduce readmission rates. First, the penalty applies to all of a hospital's Medicare discharge payments during a fiscal year and not only to payments for preventable readmissions.[86] For hospitals with high Medicare service volume, and a high preventable readmissions rate, the aggregate effect of the payment penalty could be considerable, compared to hospitals with a low Medicare service volume and a relatively low preventable readmissions rate. Second, the program accounts for the socioeconomic or unique health attributes of a hospital's patient population by using a risk-adjustment methodology (to be determined by the Secretary). A high hospital readmission rate does not necessarily indicate that a hospital provides poor patient care; it could reflect a hospital patient population mix that is more likely, on average, to be readmitted after initial discharge. The risk-adjustment allows hospitals with complex patient populations to continue to have an incentive to treat complex patients, without necessarily receiving a large payment penalty.

However, despite the risk-adjustment and the financial incentive included in this program, some hospitals may find it more difficult than others to reduce readmission rates. Because of the patients that they treat or due to other factors, hospitals with more complex patient populations may have greater financial difficulty than other hospitals in responding to high readmission rates. Financial pressure may limit the resources that can be spent investing in strategies to reduce preventable readmissions. Because the payment penalty applies to only hospitals and not to other providers that may care for a patient following a patient discharge, the financial cost may be prohibitive for certain hospitals. Additionally, hospitals with more complex patient populations

[86] Hospital advocates may not have expected the penalty to be as broadly applicable. Jennifer Lubell, "Hospitals Cry Foul: Preventable Readmission Penalty Brings Concerns," *Modern Healthcare*, May 30, 2010, pp. 10-11.

may have more difficulty, on average, in preventing readmissions than hospitals with less complex patient populations. This could include complications caused by patient behavior, a factor which could vary by the area in which hospitals are located, and which could contribute to readmission rates.[87] Hospitals that have greater financial and/or other resources may be located in areas where the care provided outside the hospital during the time period during which readmissions is measured is more likely to prevent readmission.

An additional factor confronting hospitals under this new program is financial incentives that compete with the payment penalty incentive. Although the payment penalty may encourage most hospitals to find ways to reduce readmissions, there are additional financial incentives that may partially discourage such efforts. First, prevention strategies could be costly, particularly for some hospitals, as discussed above. Second, hospitals will be continued to be paid for each readmission, despite the payment penalty applied to the per discharge Medicare reimbursement, meaning hospitals can potentially reduce losses from the penalty with income from the readmissions. Third, there are annual caps on the payment penalty, which could create an incentive for some hospitals to limit their investments in patient safety and other readmission reduction strategies if the costs of such investments are greater than the potential payment penalty. Fourth, hospitals may be able to use administrative classifications to avoid measurement of some readmissions; for instance, patients classified under observation status are considered outpatients and thus observational bed days would not count toward a hospital readmission.[88]

Medicare Shared Savings Program

Accountable Care Organizations (ACOs) are collaborations of providers, such as physicians (particularly primary care physicians), hospitals, and others, who form an organization around the ability to receive shared saving bonuses by achieving measured quality targets and demonstrating real reductions in overall spending growth for a defined population of patients.[89]

PPACA creates a permanent arrangement under Medicare under which groups of providers who meet certain statutory criteria, including quality measurements, can be recognized as ACOs and be eligible to share in the cost-savings they achieve for the Medicare program. An eligible ACO is defined as a group of providers and suppliers who have an established mechanism for joint decision making, and are required to participate in the shared savings program for a minimum of three years, among other requirements. An ACO can include practitioners (physicians, regardless of specialty; nurse practitioners; physician assistants; and clinical nurse specialists) in group practice arrangements; networks of practices; and partnerships or joint-venture arrangements between hospitals and practitioners, among others.

[87] Ibid. According to hospital advocates, patient characteristics may lead to a fairly high chance of readmission for certain conditions, regardless of how the hospital delivers treatment to the patient.

[88] Observation units are paid for the Outpatient Prospective Payment System (OPPS). According to MedPAC, in FY2008, CMS effectively loosened the definition of observation bed days. This policy change went into effect on January 1, 2008. From 2007 to 2008, growth in the rate of the volume of observation units, in terms of hours of care, was 17%. Medicare Payment Advisory Commission, *Report to the Congress: Medicare Payment Policy*, Washington, DC, March 2010, p. 45, http://www.medpac.gov/documents/Mar10_EntireReport.pdf (accessed 8/26/2010).

[89] This definition is a modified version of that developed in Aaron McKethan, Mark McClellan, and Elliot Fisher, et al., "Moving from Volume-Driven Medicine Toward Accountable Care, *Health Affairs, Health Affairs Blog, August 20, 2009.*

Beginning no later than January 1, 2012, this shared savings program will enable eligible ACOs to qualify for an annual incentive bonus if they achieve a threshold savings amount, established by the Secretary, for total per beneficiary spending under Medicare Parts A and B for those beneficiaries assigned to the ACO.

To generate savings, an ACO could potentially reduce preventable emergency department visits and readmissions, develop care protocols to improve coordination of care and management of diseases, improve information flow among providers within the ACO to reduce unnecessary testing and services, or coordinate the purchase and use of expensive equipment, among other activities. The level of readiness of an ACO in terms of leadership, experience with contracting, affiliation with primary care and specialty care providers, among others, will help determine how well such providers will be able to deliver integrated care, and whether the program could improve outcomes such as lowering readmission rates.[90]

Service and Financing Reform

PPACA establishes a demonstration and pilot that combine features of both service and financing reform models. These programs are intended to test strategies to improve care quality, including reducing hospital readmissions, and reduce Medicare expenditures. Although their test goals are similar, their program designs are not. The following describes these programs, namely the Independence at Home Demonstration Program and the National Pilot Program on Payment Bundling.

Independence at Home Demonstration Program

Under PPACA, the Secretary is required to establish, beginning no later than January 1, 2012, the Independence at Home (IAH) Demonstration Program. This program is designed to test a payment incentive and service delivery model that uses physician- and nurse practitioner-directed teams to deliver care to certain chronically ill Medicare beneficiaries in their homes. In addition to physician and nurse practitioners, these interdisciplinary teams will consist of other nurses, physician assistants, pharmacists, and other health and social services staff, as appropriate. IAH practice staff are required to make in-home visits and be available 24 hours per day, 7 days per week to implement care plans tailored to the individual beneficiary's chronic conditions. IAH demonstration practices will also use electronic health information systems, remote monitoring, and mobile diagnostic technology to monitor and communicate health status information with patients from their homes. The coverage of this unique set of services under Medicare will test whether team-based interdisciplinary home care can improve health outcomes and even lower hospital readmissions for this population.

This program is targeted toward certain Medicare beneficiaries. PPACA specifies that Medicare beneficiaries can voluntarily enroll in IAH and must have two or more chronic illnesses, such as congestive heart failure, diabetes, Alzheimer's Disease and neurodegenerative diseases (and other dementias), chronic obstructive pulmonary diseases, ischemic heart disease, stroke, or other high cost diseases and conditions (designated by the Secretary). To be eligible, these beneficiaries must have had a nonelective hospital admission and received acute or subacute rehabilitation services within the past 12 months. They must also have two or more functional dependencies (such as

[90] Ibid.

bathing, dressing, toileting, walking, or feeding) that require the assistance of another person; and meet such other criteria as the Secretary determines appropriate.

In addition to innovating in service delivery, this demonstration also innovates in program financing. First, IAH demonstration practices will be evaluated on whether they achieve savings for caring for Medicare beneficiaries as compared to an estimate of what would have been spent on these individuals under fee-for-service Medicare (i.e., Parts A and B). Second, if at least a 5% savings is achieved, as compared to the target, and if the practice meets certain quality performance measures, the IAH practice is eligible to receive financial rewards. These rewards are referred to as incentive payments. Practices will be eligible to receive them if the Secretary determines that the IAH practice's per capita spending, plus the incentive payment, totals less than 95% of what would have been spent under fee-for-service Medicare for these individuals.

Agreements with practices under the program cannot cover more than a three-year period and each practice must serve at least 200 beneficiaries per year. No more than 10,000 beneficiaries may be served under the demonstration program. The Secretary is required to conduct an independent evaluation of the demonstration and submit a final report to Congress. The Secretary will also be required to submit a plan, no later than January 1, 2016, for expanding the program if the Secretary determines that such expansion would result in improving or not reducing the quality of patient care and reducing spending under this provision. Five million dollars in appropriations are provided to the CMS Program Management Account for each of fiscal years 2010 through 2015 to administer the demonstration program.

Team-based home care programs generally coordinate the medical and social services appropriate to enable individuals to remain at home as they age, and connect participants to specialists, social services, and community-based long-term care services, including those services covered under Medicaid and the Administration on Aging. Finally, such programs have been known to report lower institutional expenditures for these beneficiaries.[91] Largely, this is because more costly hospitalizations and other acute and post-acute care services are replaced with lower cost home care visits. Home visits are generally time- and staff-intensive. And, Medicare pays for some, but not all, home care visits (e.g., Medicare does not cover visits made by care coordinators or social workers and only covers certain visits made by primary care physicians and nurses). Incentive payments that may be available under this IAH demonstration, if savings are achieved, may cover some of these uncompensated costs.

National Pilot Program on Payment Bundling

Under PPACA, the Secretary is required to establish and evaluate a pilot to test an alternate payment methodology(ies) for integrated care around a hospitalization. Starting no later than January 1, 2013, this pilot will pay entities, including hospitals, physician groups, skilled nursing facilities, and/or home health agencies, for services delivered during an entire care episode. Under this pilot, a care episode consists of three days prior to a hospital admission, the hospital stay, and the first 30 days following discharge. In addition to delivering Medicare's traditional services of acute inpatient care; physicians' care in and outside the hospital; and post-acute care (including home health services, skilled nursing services, inpatient rehabilitation services, among others), participating providers are expected to deliver certain services that are not traditionally covered under Medicare. These include care coordination, medication reconciliation, discharge planning

[91] See discussion of Home-Based Primary Care earlier in this report.

and transitional care services, and other patient-centered activities, as determined appropriate by the Secretary.

Participating providers will be paid using a different payment methodology. Specifically, the Secretary is required to develop provider payment methods that could include bundled payments. A single bundled payment will be expected to cover all of the costs of applicable services for all providers delivered during a care episode. Further, payments for all services provided during the episode must meet a budget neutrality standard; meaning that they may not exceed the Secretary's estimate of what would otherwise have been spent on these beneficiaries in the absence of the pilot.

Finally, if the Secretary determines that the expansion of this program would reduce Medicare spending without reducing quality of care, the Secretary may expand the duration and scope of the pilot after January 1, 2016.

This pilot tests whether bundling a payment across an episode of care can generate incentives across providers to improve the quality of care and thus reduce hospital readmissions, among other purposes. Identifying a mix of providers that will agree to share payments may be challenging, unless provider groups are already organized under a single umbrella entity. Further, whether and how well providers will deliver coordinated care across an episode remains unclear.

Health Law Reform Concluding Observations

By inserting new payment and service delivery options into the Medicare program, PPACA could create a number of incentives for providers to be more accountable for how patient care is provided and for the costs of such care. Incentives include bonus payments for cost savings in patient care, which can be shared among providers, potential bundling of payments that encourage avoidance of service overutilization, and financial penalties for poor health outcomes, such as hospital readmissions. In addition, payments for the development and implementation of specific care models that target some of the problem areas associated with hospital readmissions provide a mechanism for providers to be accountable for service delivery and health outcomes as patients move between care settings.

In turn, the development of provider accountability for patient outcomes could encourage providers to increase the oversight and quality of care associated with patient health and outcomes over time. This might lead to increased patient care coordination, sharing of information across providers, and development of technologies and protocols that promote efficient, team-based care for Medicare beneficiaries. With financial and other incentives to do so, providers might identify and track patient problems longitudinally, rather than treat emergent care crises after they have occurred. Using team-based care could also be more efficient, thus allowing primary care to be delivered to a greater number of Medicare beneficiaries, potentially preventing a greater number of adverse patient outcomes, including hospital readmissions.

On the other hand, existing incentives in the Medicare program, as well as some of the incentives within PPACA provisions, could raise questions about how much accountability providers will have for patient outcomes, such as readmissions. The fee-for-service payment system will still reimburse the majority of providers for the volume of services they provide, even though new PPACA provisions introduce moderate changes to aspects of the payment system for some providers. Thus, while some providers could be paid a bundled payment for certain services, or could be penalized for having too many patient readmissions, these payment changes will be

limited to certain conditions or procedures, while other payments will still be fee-for-service payments.

Also, hospital readmissions depend not only on the quality of inpatient, post-acute and outpatient care, but also on physician behavior. Physicians provide patient referrals for inpatient hospital stays and are often paid under a fee-for-service system. Therefore, more inpatient referrals could lead to additional revenue for physicians. Hospitals and physicians do not, however, generally share financial incentives, since hospitals and not physicians are penalized under PPACA for overuse of certain services, such as readmissions. Gainsharing, where hospitals share savings with physicians to encourage better management of service utilization, among others,[92] is prohibited, with the exception of a limited, demonstration program in Medicare.[93] Thus, the effect of PPACA provisions on hospital readmission rates could still be limited.

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[92] Gainsharing is one of MedPAC's recommended tools to overcome limitations of the current Medicare payment system in order to increase the value for Medicare beneficiaries and taxpayers. See Medicare Payment Advisory Commission, *Report to the Congress: Improving Incentives in the Medicare Program*, Washington, DC, June 2009, p. xii, http://www.medpac.gov/documents/Jun09_EntireReport.pdf. In another report on physician-owned specialty hospitals, MedPAC recommended that Congress should grant the Secretary authority to allow gainsharing arrangements between physicians and hospitals, as long as the gainsharing arrangements are structured in such a way as to avoid concerns about stinting of care and quality. Medicare Payment Advisory Commission, *Report to the Congress: Physician-Owned Specialty Hospitals*, Washington, DC, March 2005, p. ix, http://www.medpac.gov/documents/Mar05_SpecHospitals.pdf.

[93] Section 3027 of PPACA extends two ongoing gainsharing projects from December 31, 2009, to September 30, 2011.