JOHNS HOPKINS BLOOMBERG SCHOOL of PUBLIC HEALTH

The Benefits of Care Coordination:

A Comparison of Medicare Fee-for-Service and Medicare Advantage

Report Prepared for the Alliance of Community Health Plans

by

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September 1, 2009

Introduction

What happens when patients don't receive the right medical treatments at the right time? For millions of Medicare beneficiaries, it can mean a second, often avoidable, trip to the hospital – a hospitalization that no patient wants. As Dr. Gerard Anderson of Johns Hopkins University shows in this analysis of health plans that are members of the Alliance of Community Health Plans (ACHP), return visits to the hospital are not inevitable. It is possible to lower the rate of readmissions and preventable admissions in the Medicare program if the delivery system is structured to support coordinated care.

The regional, community-based health plans that are members of ACHP are able to keep more of their Medicare patients out of the hospital because they deliver the kind of coordinated, patient-centered medical care that traditional fee-for-service Medicare – in its current state – cannot consistently provide. ACHP members are innovators at providing robust care management, routine follow-up phone contact with patients and other critical supports to patients, their families, and their physicians so that enrollees have the best chance of adhering to a treatment plan and staying healthy.

To cite just two examples: At Security Health Plan in Marshfield, Wisconsin, nurse managers work with patients prescribed the anti-clotting drug Warfarin and their families to prevent falls, assure proper nutrition, and answer questions about the proper use, safe dosage and dangerous interactions with other medications. Security reduced the normal 7-10 percent risk of hospitalizations or death in patients taking Warfarin to less than 2 percent. Priority Health Plan of Grand Rapids, Michigan tracks patients with cardiovascular conditions as they are discharged from a hospital to make sure that their medications are correct, that they have a follow-up appointment with a physician, and that they receive the other services they need to help them adhere to a treatment plan. Just two out of 105 Medicare patients included in Priority's pilot project had an unplanned readmission within 30 days of being discharged.

While these may appear to be simply common-sense, "low-tech" measures, innovative strategies such as these are some of the most important investments we can make in Medicare. And as this report points out, they can make the difference between a patient who gets better after a hospital stay and one who does poorly and must be readmitted. Yet they are not implemented broadly across the health system. In health care reform legislation, Congress has the chance to structure Medicare payment incentives and encourage system reforms that foster coordinated care and continuous patient engagement. By focusing on quality and delivery system reforms, Congress can promote the positive outcomes described in Dr. Anderson's analysis of ACHP member plans.

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Executive Summary

In the current debate on health care reform, there has been significant attention not only to the question of expanding coverage for the uninsured but also to the equally difficult question of lowering the cost trend. This concern has led policymakers to insist that delivery system reform must be a part of whatever legislation is enacted. Policymakers have called for measures that would strengthen the coordination of care and lead to more organized systems as a way of correcting the fragmentation and negative incentives of fee-for-service payment.

Members of Congress, the Administration, and others such as the Medicare Payment Advisory Commission (MedPAC), have expressed specific concern that, in the Medicare fee-for-service program, hospital readmission rates are too high and that a lack of care coordination is causing unnecessary hospitalizations. The Alliance of Community Health Plans (ACHP) asked Dr. Gerard Anderson, Professor at Johns Hopkins University, to undertake a study examining hospital readmissions and preventable hospitalizations in order to compare the rates in fee-for service Medicare to the rates in the Medicare Advantage plans offered by ACHP member organizations. The study also estimates the possible cost savings if Medicare fee-for-service had the same rates of readmissions and preventable hospitalizations as ACHP member health plans. ACHP members are regional and community-based health plans across the country that emphasize coordination of care, integrated systems, and close plan/provider relationships.

The three measures used in the study – hospital readmissions within 30 days, preventable hospitalizations and preventable emergency department (ED) visits – reflect access to primary care, care coordination, and other active management of patients.

- Reducing hospital readmissions – measured in this study as return visits for any reason within 30 days – requires coordination among the hospital, ambulatory care clinicians, other service providers, and the beneficiary following discharge.
- Preventable hospitalizations and preventable emergency department visits are hospitalizations or ED vists that could have been prevented if there had been appropriate care for these "ambulatory care-sensitive conditions" (ACSCs). (ACSCs include such conditions as pneumonia, coronary artery disease, asthma, and diabetes.) This often requires coordination involving a wide range of clinicians and the Medicare beneficiary.

Summary of Findings

<u>Hospital Readmission Rates 30-Days Post-Discharge</u>

- For 2007, the Medicare fee-for-service readmission rate for the country was 18.6 percent. All but one of the 13 plans participating in the study had a readmission rate lower than the national average.

- The average readmission rate across the ACHP plans was 13.6 percent. In other words, the average health plan had a readmission rate that was 27 percent less than the national rate of readmissions.

Hospital Admissions and Emergency Department Visits for ACSCs

- The Medicare fee-for-service rate of inpatient admissions per 100 beneficiary months was 19.0 in 2007. The range in the 13 ACHP member plans was from 0.4 to 4.8 for inpatient admissions with a mean of 2.5.
- On average, ACHP member plans had preventable inpatient hospitalization rates in 2007 that were only 13 percent of the national average. The lowest plan had a rate than was 2 percent of the national average and the plan with the highest rate was only 28 percent of the national fee-for service average.
- The Medicare fee-for-service rate of preventable emergency department visits was 15.5 visits per 100 beneficiary months in 2007. The range across the 13 ACHP plans was from 0.5 to 7.8 with a mean of 2.2. The average ACHP plan had 86 percent fewer preventable emergency room visits than the Medicare fee-for- service program had.

Implications for Medicare Savings

- In a recent article in *New England Journal of Medicine*, Jencks *et al*. reported that readmissions were responsible for $17.4 billion in Medicare spending in 2004. If the Medicare fee-for-service program had the same readmission rate as the ACHP plan members, the Medicare program would have saved almost $5 billion dollars (a 27 percent reduction in readmission spending).
- The average Medicare payment per discharge in 2007 was $8,396. If the fee-for-service program had the same rate of preventable admissions as the ACHP plans, the Medicare program would have saved $4.5 billion.
- The average Medicare payment for an emergency department (ED) visit was $510. If the fee-for-service program had the same rate of preventable ED visits as the ACHP plans, the Medicare program would have saved $0.9 billion.
- In summary, if the Medicare fee-for-service program had similar rates of hospital readmissions within 30 days and preventable hospitalizations and preventable ED visits as the Medicare Advantage plans offered by ACHP members, the Medicare program would save approximately $10 billion.

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In the current debate on health care reform, there has been significant attention not only to the question of expanding coverage for the uninsured but also to the equally difficult question of lowering the cost trend. This concern has led policymakers to insist that delivery system reform must be a part of whatever legislation is enacted. Policymakers have called for measures that would strengthen the coordination of care and lead to more organized systems as a way of correcting the fragmentation and perverse incentives of fee-for-service payment.

Members of Congress, the Administration, and others such as the Medicare Payment Advisory Commission (MedPAC), have expressed specific concern that, in the Medicare fee-for-service program, hospital readmission rates are too high and that a lack of care coordination is causing unnecessary hospitalizations. This study examines hospital readmissions, preventable hospitalization rates, and preventable emergency department (ED) visit rates and compares the rates in fee-for service Medicare to the rates in health plans that are members of the Alliance of Community Health Plans (ACHP). It also estimates the possible cost savings if Medicare fee-for-service had the same rates of readmissions and preventable hospitalizations and preventable ED rates as ACHP member health plans. ACHP members include health plans across the country that are regional or community-based and emphasize coordination of care, integrated systems, and close plan/provider relationships.

There are many dimensions of quality of care that could be used to compare the quality of care provided to Medicare beneficiaries enrolled in ACHP member plans to those enrolled in Medicare fee-for-service. Many of these measures are disease specific, such as the likelihood that a person with diabetes will receive an eye exam. Given the recent attention that has been given to transitional care, care coordination, disease management, medical homes, accountable health plans and other initiatives

to integrate care, we decided to focus on two measures that reflect access to primary care, care coordination, and other active management of patients: hospital readmissions and preventable hospitalizations and emergency department (ED) visits.

- Hospital readmissions are return visits to the hospital within a specified period of time – in our study, 30 days for any reason. Some readmissions are unavoidable but many are preventable, and preventing hospital readmissions requires coordination among the hospital, ambulatory care clinicians, other service providers, and the beneficiary following discharge.
- Preventable hospitalizations are inpatient admissions or emergency department visits that could have been prevented if there had been appropriate ambulatory care – they are often referred to as "ambulatory care-sensitive conditions" (ACSCs). For example, regular monitoring of blood pressure and control of glucose levels can prevent diabetes patients from needing care in an emergency room or being hospitalized for conditions such as kidney disease, heart disease and stroke. These preventive measures often require coordination involving a wide range of ambulatory clinicians and the Medicare beneficiary.

These measures were chosen for several reasons. First, readmissions and preventable hospitalizations are expensive for the Medicare program. Second, there is an established literature on how to measure readmissions and preventable hospitalizations. Third, they can be used to evaluate if health plans can improve outcomes for Medicare beneficiaries and save money for the Medicare program.

Hospital Readmissions

In 1984, Anderson and Steinberg published an article in the *New England Journal of Medicine* showing that 19 percent of Medicare beneficiaries were readmitted to acute care hospitals within 30 days. In 2009, 25 years later, Jencks, Williams, and Coleman published an article in the *New England Journal of Medicine* which showed that 19.6 percent of Medicare beneficiaries were readmitted within 30 days. From these two studies, it is clear that readmission rates in Medicare fee-for-service have been relatively stable over the last 25 years. The Jencks, Williams and Coleman articles also showed that 34 percent of hospitalized patients were readmitted within 90 days and that 50 percent of Medicare beneficiaries discharged from the hospital who were readmitted did not have a follow-up visit within 30 days of discharge. Jencks, Williams and Coleman calculated the total cost of unplanned readmissions to the Medicare program in 2004 was $17.4 billion.

Preventable Hospitalizations

In 1995, Bindman and other researchers at UCSF published a paper in *JAMA* that showed that access to care in ambulatory care settings was inversely related to the hospitalization rate for five common chronic conditions. Bindman and his colleagues developed a list of medical conditions for which hospitalization could have been prevented if the person had received good ambulatory care. These became known as ambulatory care-sensitive conditions (ACSCs). Examples include asthma, congestive heart failure, diabetes, depression, and pneumonia – all conditions that can be controlled with good primary care, coordination among primary care and specialty doctors, and patient self-management. Subsequent use of this measure has shown that the rates of preventable hospitalizations increase with the number of chronic conditions, demonstrating a need for more care coordination in complex patients (Wolff, Starfield, and Anderson, 2002). The list of indicators has undergone multiple revisions and is now maintained by the U.S. Agency for Healthcare Research and Quality (AHRQ).

Methods

We used the models developed by Jencks *et al*. and Bindman *et al.* to compare the rates of readmissions and ACSCs in the fee-for-service Medicare program to the rates in the health plans that are members of ACHP. We examined:

- Hospital readmissions within 30 days
- Hospital admissions for ACSCs
- Emergency department visits for ACSCs

We compared the rates for the first half of 2007 and allowed the third quarter of 2007 to monitor any readmissions or follow-up care. We did not examine rates for the last three months of 2007 because changes in inpatient diagnosis codes (DRGs) in October 1 of that year would have complicated the analysis.

Where possible we attempted to replicate the methods used in the published papers; however, because of coding changes minor modifications were needed. When we were unsure of the exact methods used, we contacted the authors who graciously responded to our questions. A series of phone calls and email exchanges with the medical directors and programmers at the health plans standardized the data collection methods across the plans, and to the extent possible with the Medicare fee-for-service data. Because all of the patients covered by the study are already sick – they had previously been admitted

to the hospital – we did not adjust the data for different risk profiles (also called severity of illness). We were not aware of studies that link risk scores to readmission rates or ACSC hospitalizations.

We analyzed the Medicare 5 percent sample to obtain values for the fee-for-service beneficiaries. The 5 percent sample is a nationally representative sample of Medicare beneficiaries and is commonly used in research articles and by CMS. We compared rates between ACHP member plans and Medicare fee-for service at both the national and local market area levels. The market areas of the plans were determined by identifying the counties in which the health plans had at least 100 enrollees. The same counties were used to calculate a rate for Medicare fee-for-service.

Findings

We first compared the readmission rates in the 2007 Medicare fee-for-service data to the readmission rates published in the Jencks *et al*. article. Their article calculated data for 2004 so we would expect some minor differences. We found an 18.6 percent readmission rate within 30 days compared to the 19.6 percent readmission rate in the article.

Because of coding changes in how the ACSCs are calculated, it is inappropriate to compare the ACSC rates in 2007 to the rates in the original Bindman article from 1995. In 2007, there were 19 ACSC inpatient admissions and 15.5 ACSC emergency department (ED) visits per 100 months of enrollment in the Medicare fee-for-service population. If a person had an ED visit for an ACSC that immediately led to an inpatient admission, then only the inpatient admission was counted.

We used the Medicare fee-for-service data to compute the fee-for-service values for each of the market areas where the health plans have at least one hundred enrollees in the county. As expected, we found significant variation across the market areas. For example, 30-day readmission rates in the fee-for-service program varied from 12.3 to 23.0 percent across the market areas, suggesting differences in medical practice geographically as other studies have also found. The variation in the inpatient ACSC rate per 100 beneficiary months varied from 11.3 to 20.4 and the emergency department ACSC rate varied from 10.6 to 16.6 per 100 beneficiary months.

Of the 18 member health plans of ACHP, 13 plans responded to the request for information for this study. The findings are summarized in the following chart:

Summary **Readmission Rates and Hospitalizations/Ed Visits for ACSCs** *ACHP Medicare Advantage Plans Compared to Medicare FFS*			
	Readmission Rate per 100 Discharges Any DRG, 30 Days	Inpatient Discharges for ACSCs per 100 Member Months	ED visits for ACSCs per 100 Member Months
ACHP Plans - Average	**13.6**	**2.5**	**2.2**
Medicare Fee-for-Service	**18.6**	**19.0**	**15.5**

ACSC: Ambulatory Care Sensitive Condition

As noted earlier the overall readmission rate for the country was 18.6 percent. **All but one of the 13 plans had a readmission rate lower than the national average.** The average readmission rate (unweighted) across the 13 plans that reported was 13.6 percent. In other words, **the average ACHP member health plan had a readmission rate that was 27 percent less than the national fee-for-service rate of readmissions**. Jencks *et al.* reported that readmissions were responsible for $17.4 billion in spending in 2004. **If the Medicare fee-for-service program had the same readmission rate as the ACHP member plans, the Medicare program would save almost $5 billion dollars** (a 27 percent reduction in readmission spending). In addition, it is important to note the substantial impact on patients and their families in terms of cost and quality of life from keeping these people out of the hospital.

The rate of admission for ambulatory care sensitive conditions is significantly lower in the 13 ACHP member health plans than the national fee-for-service average. The national rate of inpatient admissions per 100 beneficiary months was 19.0. The range in the 13 plans was from 0.4 to 4.8 for ACSC inpatient admissions with a mean of 2.5. **On average, AHCP member plans had preventable inpatient hospitalization rates that were only 13 percent of the national fee-for-service average**. The lowest plan had a rate than was 2 percent of the national average and the plan with the highest rate was 28 percent of the national average.

For emergency department preventable admissions the national rate is 15.5 visits per 100 person months. The range across the 13 plans is from 0.5 to 7.8 with a mean of 2.2. This means that the

average ACHP member plan had 86 percent fewer preventable ED visits than the Medicare fee-for-service program had. Only one plan had a rate above the national average.

The average Medicare payment per discharge in 2007 was $8,396. **Assuming that the fee-for-service program had the same rate of preventable admissions as the ACHP plans, then the Medicare program would save $4.5 billion**. The average Medicare payment for an emergency room visit was $510 in 2007. **Assuming that the fee-for-service program had the same rate of preventable emergency room visits as the ACHP plans, then the Medicare program would save $0.9 billion.**

Because there is variation in medical practice across the United States, we also compared the rates in the health plans to the rates in the fee-for service area where the plan is located. In this comparison, 10 out of 13 plans were lower than the local fee-for service average in readmission rates. Twelve out of 13 plans were lower than the local fee-for-service average for inpatient and emergency department ACSCs.

Conclusion

Health plans that are members of ACHP generally have significantly lower rates of hospital readmissions, preventable hospitalizations, and preventable emergency department visits than the Medicare fee-for-service program. This suggests that the approaches adopted by these plans, which include greater focus on primary care, care coordination, transitional planning post-discharge, prevention measures, and active case management, are improving care for their beneficiaries, keeping people out of the hospital, and lowering costs. If the Medicare fee-for–service program had similar rates of readmissions and preventable hospitalizations, then the Medicare program would have saved approximately 10 billion dollars in the year of the study.

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