Medicare Advantage Health Care Utilization: Hospital Readmissions

KEY FINDINGS

Hospital readmission rates in the Medicare Advantage population declined from 2010 through 2014.

The average decrease in hospital readmission was 0.8% per year.

Cardiac related admissions, heart failure and AMI, had the highest readmission rate and the largest decrease in rate, respectively.

The heart failure readmission rate declined 8.3% from 17.06 to 15.64. The AMI readmission rate decreased 8.9% from 12.41 to 11.30.

Trends in Medicare Advantage hospital readmissions

In this data brief, the Health Care Cost Institute (HCCI) reports on inpatient readmission trends in the Medicare Advantage population, aged 65 years and older, for the period 2010 through 2014.

Medicare Advantage (MA), formerly known as Medicare Part C, is a health insurance program available to individuals eligible for fee-for-service (FFS) coverage. The MA program allows individuals to obtain health insurance coverage through commercial health plans, in lieu of FFS coverage.[1]

Compared to the under age 65 commercially insured and Medicare FFS populations, the MA population has been studied less and the cost and utilization experience of MA enrollees is not as well-documented. However, the MA population accounts for a substantial amount of the Medicare eligible population and that share is growing. Over the past decade, the proportion of individuals enrolled in MA plans has nearly doubled. In 2006, MA plans covered approximately 16% of the Medicare eligible population; as of 2015, over 31% were enrolled in an MA plan.[2]

Limited research on the MA population has been due, in part, to limited availability of MA data. The HCCI data set, used here, provides a rich data source for research on the MA population. These data include health insurance membership and claims from MA enrollees in all 50 states and the District of Columbia. Over the study period, the HCCI data accounted for approximately 25% of the total MA population.[3] This data brief is the first analysis of the MA population by HCCI using these data.

Hospital readmissions

An admission to a hospital shortly after a previous hospital stay, e.g., a readmission, is considered, by many, to be an indicator of the quality of care during the initial hospitalization as well as any associated follow-up. More specifically, higher readmission rates are associated with lower quality care and as such hospital readmissions are often reported as a quality measure. For example, the Centers for Medicare & Medicaid Services (CMS) includes hospital readmission measures in the Hospital Compare database.[4] The Affordable Care Act also instituted Medicare payment penalties for hospitals related to a hospital's readmissions rates.[5]

In this brief, we report on five readmission rate measures that are commonly used to study the Medicare FFS population: 30-day all-cause hospital-wide readmissions and 30-day all-cause readmissions following acute myocardial infarction (AMI), heart failure, chronic obstructive pulmonary disease (COPD), and pneumonia.

For each readmission measure, the initial admissions or "index admissions" were first identified by member. Hospital-wide index admissions included hospitalizations with any diagnosis except those with a primary diagnosis for psychosis, rehabilitation, or medical treatment of cancer. Index admissions for the conduction specific measures (AMI, heart failure, COPD, and pneumonia) only included hospitalizations with condition specific diagnosis codes.

For each member with one or more index hospitalizations, a hospital admission within 30 days of the index admission was identified as a readmission. Consistent with common methodologies for identifying readmissions, including Medicare's methodology, a 30-day all-cause readmission includes readmissions within 30 days, regardless of whether the reason for the hospitalization is related to the initial hospitalization. (See the "Data and methods" section for more details regarding identifying index admissions and readmissions.)

Readmission rates varied across the five measures studied

Table 1 presents readmission rates for the 65 and older MA population in the HCCI data. The readmission rates in Table 1 express the number of all-cause readmissions within 30 days of an index admission for every 100 index admissions. For example, in 2014, there were 11.71 readmissions for every 100 hospital-wide index admissions. In other words, the percent of overall hospital admissions followed by a readmission for any cause within 30 days was 11.71%. The condition specific measures are interpreted in the same way. For example, in 2014 the number of hospital admissions for an AMI diagnosis followed by a readmission for any cause within 30 days was 11.30%.

Over the study period, 2010 through 2014,

the average hospital-wide, AMI, and pneumonia readmission rates were similar, 12 readmissions per 100 index admissions. The average COPD and heart failure readmission rates, however, were higher, 13.72 and 16.64, respectively.

Although there was variation in all of the readmission rates over time, the magnitude of the variation differed by measure. The pneumonia readmission rate had the smallest difference between the highest and lowest rate, 0.67. The difference for the hospital-wide measure was 0.85. This implies a difference of less than 1 readmission per 100 index admissions. However, AMI, heart failure, and COPD had differences between the highest and lowest readmission rates of 1.57, 1.55, and 1.25, respectively. Compared to the hospital-wide rate, there were almost twice as many readmissions for these three conditions, on average.

Readmission rates decreased from 2010 through 2014

Figure 1 depicts the trends in readmission rates over time. Over the five-year study period, all five readmission rates declined. The largest overall decrease was among AMI readmissions (-8.9%). Heart failure readmission rates declined 8.3% over the same period. Although all of the rates declined overall, there were increases in four of the five admission rates in 2011 relative to 2010: hospital-wide, AMI, heart failure, and COPD. Additionally, the change in the COPD readmission rate varied more than the other readmission rates with increases in 2011 and 2013.

Table 2 presents the annual changes in readmission rates for each measure and the average of the annual changes. Both the AMI and heart failure rates had average annual decreases of more than 2.0%. The average annual changes in hospital-wide and COPD readmission rates were less than 1.0%. The pneumonia readmission rate was the only rate that decreased each year; however, the average annual decrease in the pneumonia readmission rate was only 1.3%.

There was noticeable variability between measures in both the annual changes in readmission rates in a given year as well as over time for a given measure. For example, from 2012 to 2013, the largest decreases in readmission rates were in the hospital-wide and AMI measures, both decreased 3.4%. Over the same period, the heart failure readmission rate only decreased 0.8% and the COPD rate increased 4.8%. The following year, COPD had the largest decrease, 6.3%; the decrease in the heart failure readmission rate was 5.7%; and pneumonia had the smallest decrease of 0.5%.

Conclusion

The results presented in this brief show that for a large, national MA population, ages 65 and older for the years 2010 through 2014, 30-day all-cause hospital readmission rates declined. The declines were observed for both hospital-wide readmissions and for four common condition specific types of hospitalizations (AMI, heart failure, COPD, and pneumonia). The trends are generally consistent with trends reported elsewhere for Medicare and commercially insured populations.[6] Furthermore, there was substantial variation across the measures, both in the readmission rates and in the changes in rates over time.

Data and Methods

The analysis sample was limited to individuals aged 65 years and older enrolled in a MA plan in the HCCI national claims database. Inclusion in the study sample also required at least one inpatient hospitalization with three or more months of MA plan membership prior to a hospitalization and at least 30 days of membership following a hospitalization. The analysis was limited to admissions to short-term general acute care hospitals.

The readmission rate reported was based on methodology developed by CMS and the Yale Center for Outcomes Research.[7] The calculation required first identifying the set of all initial hospitalizations, i.e. the index admissions, for all MA members. Index admissions were limited to hospitalizations with an overnight stay at general acute care inpatient

hospitals. Hospital-wide readmissions index admissions were not limited to specific conditions but did not include admissions for medical treatment of cancer or admissions with a primary rehabilitation or psychiatric diagnosis. The index admissions for the condition specific measures were identified by condition-specific ICD-9 codes on the inpatient claims.

There were two other exclusion criteria applied to hospitalizations identified as possible index admissions for both the both the hospital-wide and condition specific. First, index admissions excluded hospitalizations with a discharge status code of discharged against medical advice or death. Second, if a patient was admitted to one hospital then transferred to another hospital only the hospitalization at the second hospital is counted as an index admission.

After identifying index admissions, all hospitalizations within 30 days of an index admission for that member were identified as possible readmissions. The readmission rates were calculated as the total readmissions divided by the total index admissions for the entire population. The ratio of readmission to index admissions was multiplied by 100 in order to report a rate in terms of the number of readmissions per 100 index admissions.[8]

Consistent with the CMS/Yale Center for Outcomes Research methodology, both the hospital-wide and condition specific measures only count the first hospitalization within 30 days of an index admission as a readmission. However, a readmission could also be counted as an index admission in the hospital-wide measure. For the condition specific measures, the sets of index admissions and readmissions were mutually exclusive. Additionally, hospital-wide readmissions excluded hospitalizations for planned procedures and same-day readmissions to the same hospital for the same condition; AMI readmissions excluded planned readmissions for revascularization procedures.

Limitations

Although, this report provides new sta-

tistics on the utilization of health care within the MA population, the results may not be generalizable to all MA plans or members. The HCCI data set is a convenience sample from three insurers and may not reflect the utilization of the full MA population or the trends of other MA payers. Additionally, the scope of this brief was intentionally limited to a small set of inpatient hospital related measures. There are many other measures of health care services utilization and quality, which may provide additional insight into the utilization patterns of the MA population.

Finally, there were likely numerous factors influencing readmission rates during the study period but no causal inferences can be drawn from the results presented in this brief. Moreover, the analyses did not attempt to identify any causes underlying the observed rates or trends. Moreover, the analyses did not evaluate the impact of any particular federal, state, or insurer policies or initiatives intended to reduce readmissions.

Endnotes:

1. Centers for Medicare and Medicaid Services. "Medicare Advantage Plans," Medicare.gov. Web.

2. Jacobson G. et al. "Medicare Advantage 2015 Spotlight: Enrollment Market Update," Washington DC: Henry J. Kaiser Family Foundation, June 2010.

3. Average HCCI annual membership was calculated as the sum of member months in year divided by 12.

4. Centers for Medicare and Medicaid Services. "Hospital Compare," Medicare.gov. Web.

5. Centers for Medicare and Medicaid Services. "Readmissions Reduction Program (HRRP)," CMS.gov. Web. 2016.

6. Fingar, K., Washington R. "Trends in Hospital Readmissions for Four High-Volume Conditions, 2009-2013," HCUP Statistical Brief #196. Agency for Healthcare Research and Quality, Rockville, MD, November 2015.

7. The detailed methodologies are available from the Centers for Medicare and Medicaid Services. "Measure Methodology," CMS.gov. Web. 2016.

8. The MA readmission rates reported in this brief are not directly comparable to all publically available readmission rates. Many readmission rates, including some reported by CMS, are risk-adjusted. The rates reported in this brief were not risk adjusted.

Authors
Eric Barrette and Katharine McGraves-Lloyd

Contact
Eric Barrette
ebarrette@healthcostinstitute.org
571-257-1584

Health Care Cost Institute, Inc.
1100 G Street NW, Suite 600
Washington, DC 20005
202-803-5200

HCCI HEALTH CARE COST INSTITUTE

Table 1. Thirty-day, all-cause hospital readmissions per 100 index admissions

	Hospital-wide	AMI	Heart failure	COPD	Pneumonia
2010	12.09	12.41	17.06	13.63	12.58
2011	12.56	12.87	17.19	14.40	12.48
2012	12.41	12.02	16.73	13.40	12.30
2013	11.99	11.61	16.58	14.04	11.97
2014	11.71	11.30	15.64	13.15	11.91
5 year average	12.15	12.04	16.64	13.72	12.25

Source: HCCI, 2016.

Figure 1. Thirty-day, all cause hospital readmissions per 100 index admissions

Source: HCCI, 2016.

HCCI HEALTH CARE COST INSTITUTE
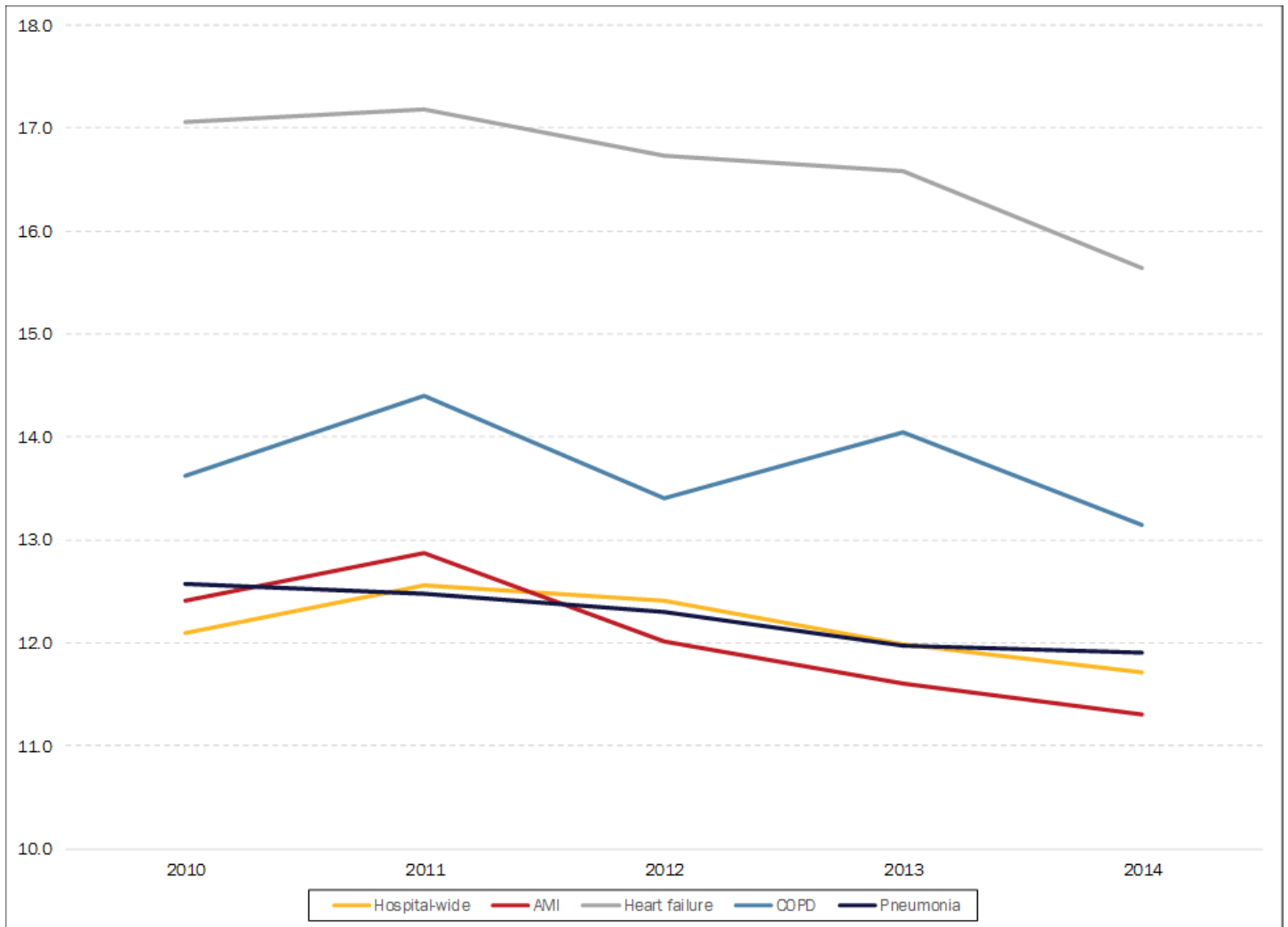
Table 2. Annual percentage change in thirty-day, all-cause hospital readmissions per 100 index admissions

	Hospital-wide	AMI	Heart failure	COPD	Pneumonia
2010 to 2011	3.9%	3.7%	0.8%	5.6%	-0.7%
2011 to 2012	-1.2%	-6.6%	-2.7%	-6.9%	-1.4%
2012 to 2013	-3.4%	-3.4%	-0.8%	4.8%	-2.7%
2013 to 2014	-2.3%	-2.7%	-5.7%	-6.3%	-0.5%
Average annual percentage change	-0.8%	-2.3%	-2.1%	-0.7%	-1.3%

Source: HCCI, 2016