H·CUP **HEALTHCARE COST AND UTILIZATION PROJECT**

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A Comparison of All-Cause 7-Day and 30-Day Readmissions, 2014

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Introduction

There have been increasing efforts among health care policy makers, payers, and providers to measure and reduce hospital readmissions. Various time frames are used for identifying readmissions: 48 hours,[1] 7 days,[2] 15 days,[3,4] and 30 days after discharge of an initial stay.[5,6,7] The likelihood of readmission and associated contributing factors vary by the length of postdischarge time.[8,9] Thus, it is important to understand how readmission rates and the conditions associated with the highest readmission rates vary by different postdischarge time frames.

This Healthcare Cost and Utilization Project (HCUP) Statistical Brief presents data on rates of all-cause 7-day readmissions compared with all-cause 30-day readmissions in 2014. For diagnoses with the highest 7-day readmission rates, the percentage of 30-day readmissions that occurred within 7 days is also presented. Finally, 7-day and 30-day readmission rates are reported by expected payer.

Readmissions include stays for all causes, including planned and unplanned stays. Readmission rates reported by diagnoses reflect

Highlights

- In 2014, 14 percent of inpatient stays were readmitted within 30 days. More than one-third of these readmissions occurred within 7 days, reflecting a 7-day readmission rate of 5 percent.

- Diagnoses at index stays with the highest 7-day and 30-day readmission rates were similar. Schizophrenia, alcohol-related disorders, and congestive heart failure were among the leading diagnoses with both the highest 7-day and 30-day readmission rates.

- However, there were several differences in diagnoses associated with the two types of rates. Index stays with intestinal obstruction without hernia and acute myocardial infarction ranked in the top 20 diagnoses with the highest 7-day, but not 30-day, readmission rates.

- For both 7-day and 30-day readmissions, the rate of readmission was highest among patients with Medicare, followed by patients with Medicaid, no insurance, and private insurance.

- Among Medicaid patients who were discharged with congestive heart failure or schizophrenia at the index stay, nearly 1 in 10 stays resulted in readmission within 7 days.

- Among patients readmitted within 30 days of an index stay for septicemia or schizophrenia, uninsured patients were more likely than patients with insurance to return within 7 days.

[1] Colorado Medical Association. Inpatient/Outpatient Billing Manual. February 2014. www.colorado.gov/pacific/sites/default/files/IP%20and%20OP%20Hospital%20Billing%20Manual%20(February%202014).pdf. Accessed September 15, 2017.

[2] Chin DL, Bang H, Manickam RN, Romano PS. Rethinking Thirty-Day Hospital Readmissions: Shorter Intervals Might Be Better Indicators of Quality of Care. Health Affairs (Millwood). 2016;35(10):1867–75.

[3] Michigan Department of Health and Human Services. Medicaid Provider Manual. July 2017. www.mdch.state.mi.us/dch-medicaid/manuals/MedicaidProviderManual.pdf. Accessed September 15, 2017.

[4] Texas External Quality Review Organization. Potentially Preventable Readmissions in Texas Medicaid and CHIP Programs. December 2014. hhs.texas.gov/sites/default/files/documents/about-hhs/process-improvement/medicaid-chip-qei/PPR-Statewide-Report-FY2013.pdf. Accessed September 15, 2017.

[5] Ibid.

[6] Centers for Medicare & Medicaid Services. Hospital Readmissions Reduction Program (HRRP). April 2016. www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AcuteInpatientPPS/Readmissions-Reduction-Program.html. Accessed June 6, 2017.

[7] Washington State Health Care Authority. Potentially Preventable Readmissions (PPR) Policy. Frequently Asked Questions (FAQ) – CY 2016. February 2016. www.wsha.org/wp-content/uploads/WA-PPR-FAQ-Final.pdf. Accessed September 15, 2017.

[8] Chin et al., 2016. Op. cit.

[9] Herrin J, St Andre J, Kenward K, Joshi MS, Audet AM, Hines SC. Community factors and hospital readmission rates. Health Services Research. 2015;50(1):20–39.

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the principal diagnosis at the index (i.e., initial) inpatient stay, grouped into broad clinical categories. Condition-specific readmission rates for index stays related to nonspecific clinical categories (e.g., other respiratory diseases), cancer, and pregnancy are not reported. However, these stays contribute to the total readmission rate. All differences between estimates noted in the text are greater than 10 percent.

Findings

Diagnoses with the highest readmission rates, 2014
Table 1 presents all-cause 7-day readmission rates following index stays overall and for the top 20 principal diagnoses at the index stay. The top 20 diagnoses with the highest 30-day readmission rates also are shown for comparison. The diagnoses are sorted by the 7-day readmission rate.

Table 1. Top 20 principal diagnoses with the highest 7-day and 30-day readmission rates, 2014

Principal diagnosis at the index stay	Index stays, N	7-day readmissions		30-day readmissions	
		Rank	Rate[a]	Rank	Rate[a]
Total inpatient stays	**27,698,101**	**—**	**5.0**	**—**	**13.9**
Schizophrenia and other psychotic disorders	374,097	1	9.0	2	22.9
Alcohol-related disorders	340,076	2	7.5	4	21.5
Congestive heart failure; nonhypertensive	795,709	3	7.4	1	23.2
Heart valve disorders	117,788	4	7.3	14	18.4
Hypertension with complications, secondary hypertension	223,396	5	7.2	6	20.9
Respiratory failure; insufficiency; arrest (adult)	311,005	6	7.2	3	21.6
Aspiration pneumonitis; food/vomitus	128,019	7	7.1	11	19.5
Acute and unspecified renal failure	436,833	8	7.0	8	20.1
Diabetes mellitus with complications	487,947	9	6.9	7	20.5
Complication of device; implant or graft	572,761	10	6.7	10	19.7
Septicemia	1,202,893	11	6.7	13	18.5
Deficiency and other anemia	171,160	12	6.6	5	21.2
Intestinal obstruction without hernia	313,596	13	6.6	25	15.2
Fluid and electrolyte disorders	338,954	14	6.5	12	18.8
Abdominal pain	113,331	15	6.5	18	17.2
Complications of surgical procedures or medical care	417,261	16	6.5	15	17.9
Gastrointestinal hemorrhage	331,739	17	6.5	20	16.9
Pancreatic disorders (not diabetes)	276,534	18	6.2	17	17.2
Chronic obstructive pulmonary disease and bronchiectasis	521,955	19	6.1	9	20.1
Acute myocardial infarction	480,338	20	6.1	29	14.2
Intestinal infection	195,644	24	5.7	16	17.5
Peripheral and visceral atherosclerosis	127,624	22	5.8	19	16.9

Notes: Diagnoses are grouped using the Clinical Classification Software (CCS). Only CCS with at least 100,000 index stays are shown; "other" CCS that group a nonspecific set of diagnoses, as well as diagnoses related to cancer and pregnancy, are excluded. Highlighting indicates diagnoses that were not ranked in the top 20 for either 7-day or 30-day readmissions.

[a] Rate per 100 index inpatient stays

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), Nationwide Readmissions Database (NRD), 2014

- **In 2014, the 30-day readmission rate was over 2 times higher than the 7-day readmission rate.**

  In 2014, the 30-day readmission rate was 13.9 per 100 index stays—more than twice as high as the 7-day readmission rate, which was 5.0 per 100 index stays.

- **The leading diagnoses with the highest 7-day readmission rates were largely the same as the leading diagnoses with the highest 30-day readmission rates.**

  Although the rank differed, the leading diagnoses with the highest 7-day readmission rates were largely the same as those with the highest 30-day readmission rates. Index stays with a principal diagnosis of schizophrenia and other psychotic disorders had the highest rate of readmission within 7 days (9.0 per 100 index stays) and the second highest rate of readmission within 30 days (22.9 per 100 index stays). Alcohol-related disorders and congestive heart failure (CHF) were also among the diagnoses with the highest 7-day and 30-day readmission rates.

  There were a few differences between diagnoses with the highest 7-day versus 30-day readmission rates. Whereas index stays with intestinal obstruction without hernia (7-day readmission rate of 6.6 per 100 index stays) and acute myocardial infarction (7-day readmission rate of 6.1 per 100 index stays) ranked in the top 20 diagnoses with the highest 7-day readmission rates, these diagnoses did not rank in the top 20 diagnoses with the highest 30-day readmission rates. Intestinal infection and peripheral visceral atherosclerosis were among the top 20 diagnoses with the highest 30-day readmission rates but did not rank in the top 20 for 7-day readmissions.

Timing of readmissions, 2014

Figure 1 displays the percentage of 30-day readmissions that occurred within 7 days following discharge, overall and for the top 20 principal diagnoses with the highest 7-day readmission rates. The 7-day readmission rate is listed on the y-axis for reference.

Figure 1. The percentage of 30-day readmissions that occurred within 7 days, overall and for the top 20 diagnoses with the highest 7-day readmission rates, 2014
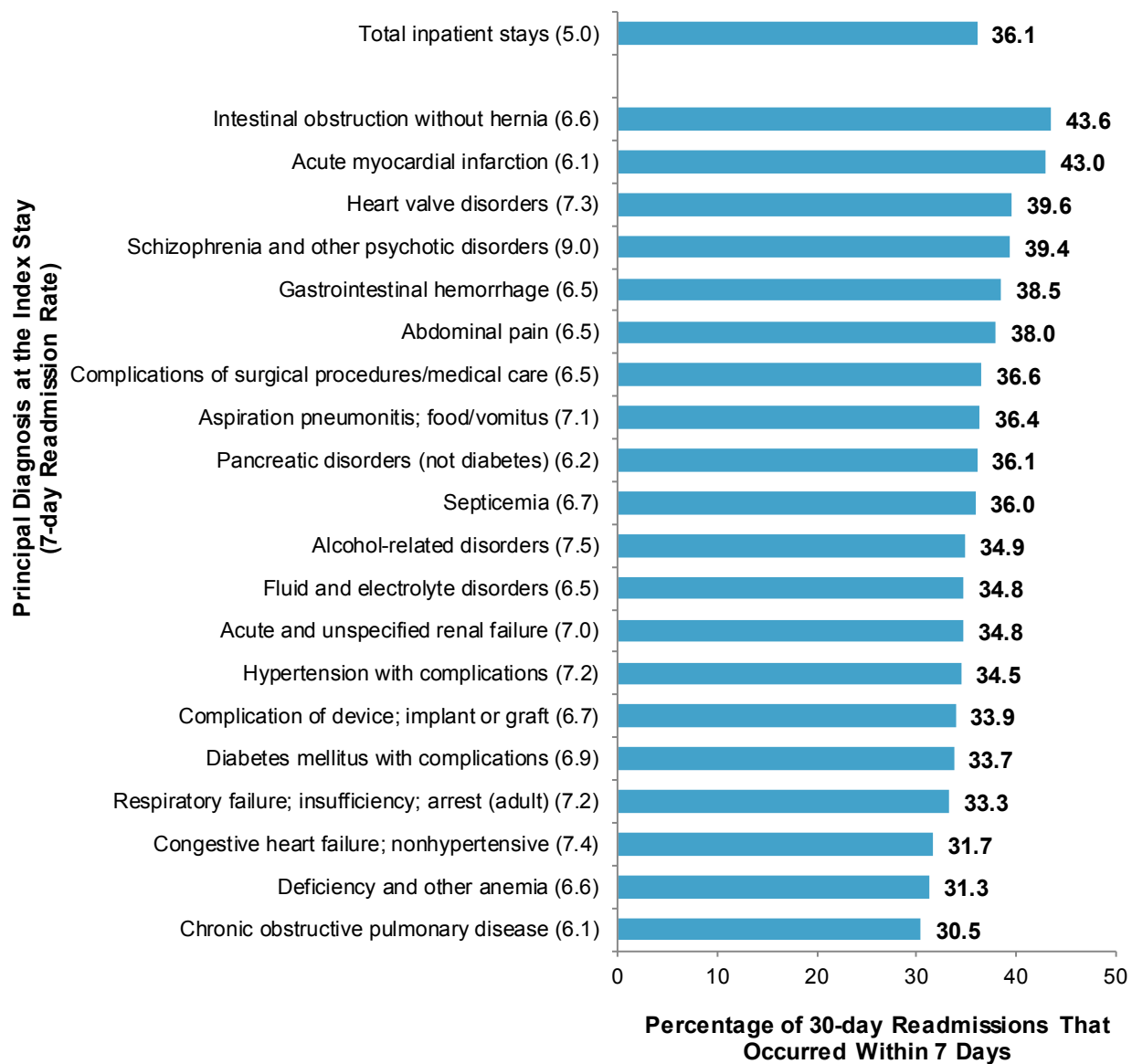
Notes: Readmission rates are per 100 index inpatient stays. The principal diagnosis is grouped using the Clinical Classification Software (CCS). Only CCS with at least 100,000 index stays are shown; "other" CCS that group a nonspecific set of diagnoses, as well as diagnoses related to cancer and pregnancy, are excluded.

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), Nationwide Readmissions Database (NRD), 2014

- **Over one-third of 30-day readmissions occurred within the first 7 days following discharge. This varied by the principal diagnosis at the index stay.**

    Overall, 36.1 percent of all 30-day readmissions occurred within 7 days. This ranged from 30.5 percent to 43.6 percent among index diagnoses with the highest 7-day readmission rates. For instance, a larger proportion of patients with intestinal obstruction without hernia at the index stay were readmitted within 7 days than were patients with other diagnoses: 43.6 percent of all 30-day readmissions following index stays with this diagnosis occurred within 7 days. Similarly, among patients with an index stay for acute myocardial infarction, 43.0 percent of all 30-day readmissions occurred within 1 week of discharge.

    In comparison, only 30.5 percent of patients readmitted within 30 days for chronic obstructive pulmonary disease returned to the hospital within 7 days following discharge.

Readmission patterns by expected payer, 2014
Figure 2 displays all-cause 7-day and 30-day readmission rates following index stays by expected payer.

Figure 2. All-cause 7-day and 30-day readmission rates, by expected payer, 2014
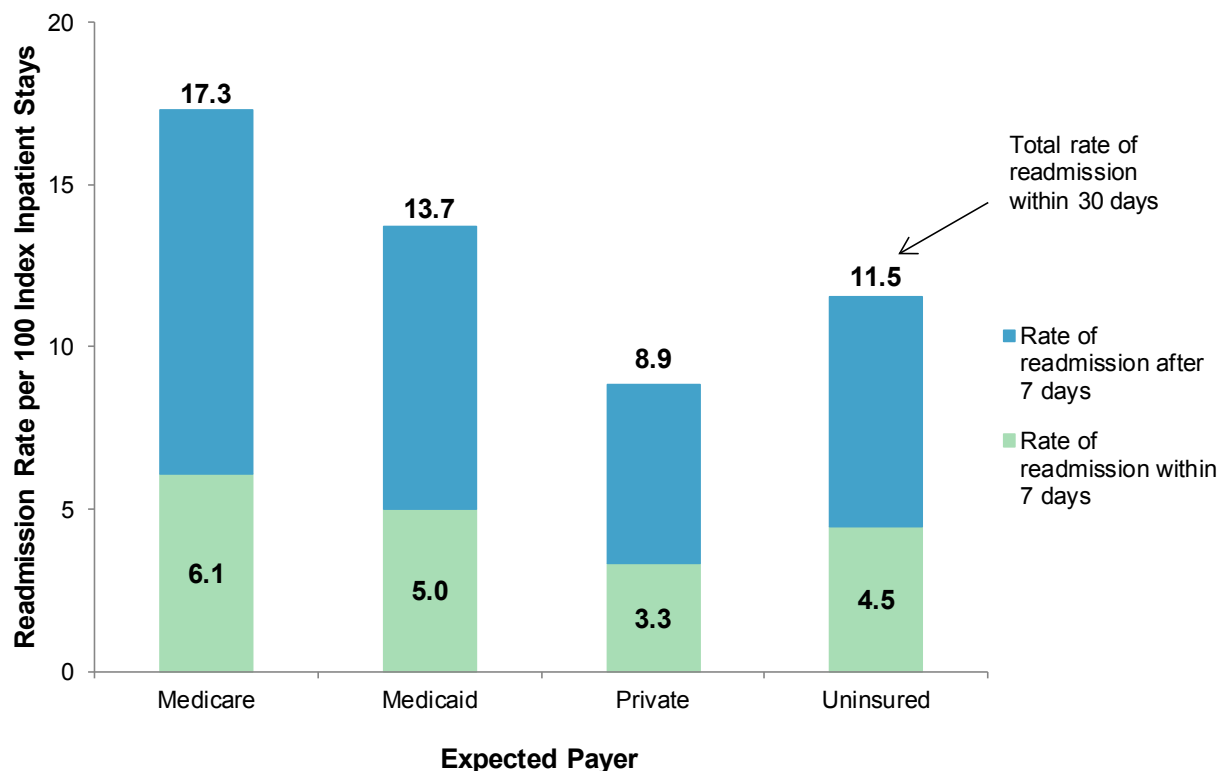
Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), Nationwide Readmissions Database (NRD), 2014

- **Patterns of 7-day readmissions across expected payers were consistent with the pattern of 30-day readmissions.**

    For both 7-day and 30-day readmissions, the rate of readmission was highest among patients covered by Medicare (6.1 and 17.3 per 100 index stays, respectively), followed by patients with Medicaid (5.0 and 13.7), no insurance (4.5 and 11.5), and private insurance (3.3 and 8.9).

    Across each expected payer, slightly more than one-third of 30-day readmissions occurred within 7 days. The percentage of 7-day readmissions, out of total 30-day readmissions, was similar across payers, ranging from 35.2 among patients with Medicare (6.1 out of 17.3) to 38.7 among those without insurance (4.5 out of 11.5).

Table 2 focuses on expected payer and presents the all-cause 7-day rate of readmission following index stays for the top five principal diagnoses at the index stay. The top five diagnoses with the highest 30-day readmission rates also are shown for comparison. The conditions are sorted by the 7-day readmission rate.

Table 2. Top five principal diagnoses with the highest 7-day and 30-day readmission rates, by expected payer, 2014

Principal diagnosis	Index stays, N	7-day readmissions		30-day readmissions	
		Rank	Rate[a]	Rank	Rate[a]
Medicare					
Schizophrenia and other psychotic disorders	150,743	1	9.3	3	23.9
Pleurisy; pneumothorax; pulmonary collapse	50,119	2	8.9	1	24.5
Alcohol-related disorders	67,838	3	8.3	2	24.4
Heart valve disorders	85,682	4	7.9	14	19.9
Hypertension with complications, secondary hypertension	141,206	5	7.7	8	22.6
Deficiency and other anemia	103,430	13	7.1	4	23.3
Congestive heart failure; nonhypertensive	613,829	9	7.4	5	23.3
Medicaid					
Schizophrenia and other psychotic disorders	151,794	1	9.9	6	24.9
Sickle cell anemia	50,187	2	9.8	1	34.4
Alcohol-related disorders	123,583	3	9.3	3	26.1
Congestive heart failure; nonhypertensive	78,938	4	9.0	2	28.5
Hypertension with complications, secondary hypertension	33,068	5	8.9	4	25.0
Complication of device; implant or graft	71,974	6	8.5	5	25.0
Private					
Acute and unspecified renal failure	54,314	1	6.4	3	17.2
Regional enteritis and ulcerative colitis	42,829	2	6.4	4	16.2
Schizophrenia and other psychotic disorders	35,493	3	6.2	5	15.8
Congestive heart failure; nonhypertensive	67,683	4	6.0	1	18.7
Deficiency and other anemia	29,565	5	6.0	2	17.6
Uninsured					
Schizophrenia and other psychotic disorders	23,574	1	7.4	4	17.3
Abdominal pain	9,104	2	6.8	8	16.2
Alcohol-related disorders	56,753	3	6.5	1	18.2
Mood disorders	82,318	4	6.5	11	15.3
Complications of surgical procedures or medical care	11,261	5	6.3	7	16.8
Regional enteritis and ulcerative colitis	6,630	—[b]	—[b]	2	18.1
Complication of device; implant or graft	8,777	7	6.1	3	18.1
Congestive heart failure; nonhypertensive	21,986	12	5.2	5	17.0

[a] Rate per 100 index inpatient stays

[b] Data are suppressed because cell contains fewer than 11 readmissions.

Note: Diagnoses are grouped using the Clinical Classification Software (CCS). Only CCS with at least 50,000 Medicare index stays, 20,000 Medicaid index stays, 25,000 privately insured index stays, and 5,000 uninsured index stays are shown. "Other" CCS that group a nonspecific set of diagnoses, as well as diagnoses related to cancer and pregnancy, are excluded. Highlighting indicates diagnoses that were not ranked in the top five for either 7-day or 30-day readmissions.

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), Nationwide Readmissions Database (NRD), 2014

- **A principal diagnosis of schizophrenia and other psychotic disorders at the index stay was among the top five diagnoses with the highest 7-day readmission rates across all payers.**

  Index stays with schizophrenia and other psychotic disorders had the highest rate of readmission within 7 days for patients with Medicare (9.3 per 100 index stays), Medicaid (9.9), and those who were uninsured (7.4). For patients with private insurance, index stays with schizophrenia had the third highest 7-day readmission rate (6.2 per 100 index stays).

  Schizophrenia also ranked in the top five diagnoses with the highest 30-day readmission rates for all payers, except for patients with Medicaid, for whom it ranked ninth for 30-day readmissions (24.9 per 100 index stays).

- **The diagnoses with the highest 7-day readmission rates differed from those with the highest 30-day readmission rates for all payers, except for those with private insurance.**

  Although rankings differed, the top five diagnoses with the highest 7-day readmission rates were the same as those with the highest 30-day readmission rates for patients with private insurance: acute and unspecified renal failure, regional enteritis and ulcerative colitis, schizophrenia and other psychotic disorders, CHF, and deficiency and other anemia.
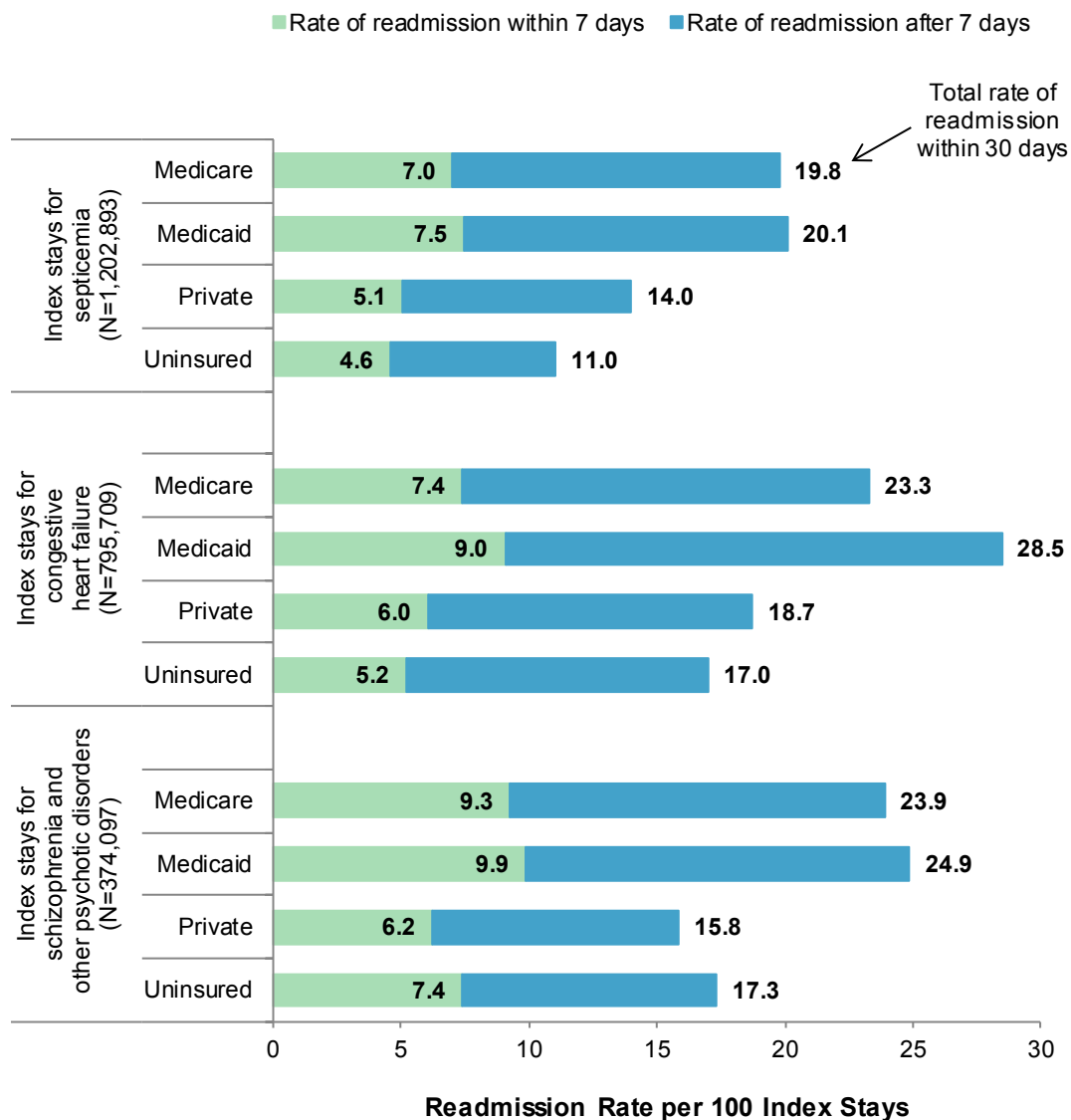
  For patients with Medicare, heart valve disorders and hypertension with complications were among the top five diagnoses with the highest 7-day readmission rates, but these diagnoses did not rank in the top five for 30-day readmissions. Instead, deficiency and other anemia and CHF ranked among the top five diagnoses with the highest 30-day readmission rates.

  For patients with Medicaid, schizophrenia was among the top five diagnoses with the highest 7-day readmission rates, but this diagnosis did not rank in the top five for 30-day readmissions. Instead, complication of device, implant or graft ranked among the top five diagnoses with the highest 30-day readmission rates.

  For patients without insurance, three of the five diagnoses with the highest 7-day readmission rates were related to mental health: schizophrenia, alcohol-related disorders, and mood disorders. In comparison, mood disorders did not rank in the top five diagnoses with the highest 30-day readmission rates. With respect to diagnoses that were unrelated to mental health, abdominal pain and complications of surgical procedures or medical care ranked in the top five diagnoses with the highest 7-day readmission rates, but these diagnoses did not rank in the top five for 30-day readmissions. Instead, regional enteritis and ulcerative colitis; complication of device, implant or graft; and CHF ranked among the top five diagnoses with the highest 30-day readmission rates for patients who were uninsured.

Figure 3 displays all-cause 7-day and 30-day readmission rates following index stays for select conditions by expected payer. The conditions shown are septicemia, CHF, and schizophrenia. These conditions were chosen as examples because they constitute a high volume of index stays and are among the conditions with the highest readmission rates. For instance, as shown in Table 1, septicemia constitutes a high volume of nonmaternal and nonneonatal stays and ranks among the top 20 diagnoses with the highest 7-day and 30-day readmission rates. Schizophrenia and CHF are both chronic conditions and among the top three diagnoses with the highest 7-day and 30-day readmission rates, with one being a mental illness and the other a physical condition. Schizophrenia also is among the top five diagnoses with the highest 7-day readmission rates for each payer category.

Figure 3. All-cause 7-day and 30-day readmission rates following index stays for three select conditions, by expected payer, 2014

Legend: ■ Rate of readmission within 7 days   ■ Rate of readmission after 7 days

Total rate of readmission within 30 days

Index stays for septicemia (N=1,202,893)
- Medicare: 7.0 | 19.8
- Medicaid: 7.5 | 20.1
- Private: 5.1 | 14.0
- Uninsured: 4.6 | 11.0

Index stays for congestive heart failure (N=795,709)
- Medicare: 7.4 | 23.3
- Medicaid: 9.0 | 28.5
- Private: 6.0 | 18.7
- Uninsured: 5.2 | 17.0

Index stays for schizophrenia and other psychotic disorders (N=374,097)
- Medicare: 9.3 | 23.9
- Medicaid: 9.9 | 24.9
- Private: 6.2 | 15.8
- Uninsured: 7.4 | 17.3

X-axis: Readmission Rate per 100 Index Stays (0, 5, 10, 15, 20, 25, 30)

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), Nationwide Readmissions Database (NRD), 2014

- **For septicemia, CHF, and schizophrenia, the pattern of 7-day readmissions across categories of expected payer was consistent with the pattern of 30-day readmissions.**

  For both 7-day and 30-day readmissions, the rate of readmission for septicemia, CHF, and schizophrenia was highest for patients with Medicare and Medicaid and lowest for patients with private insurance and those who were uninsured.

- **For all three conditions, 7-day and 30-day readmission rates were particularly high among patients with Medicare or Medicaid.**

  Among patients with Medicare or Medicaid who were discharged with one of these three conditions at the index stay, between 1 in 4 and 1 in 5 stays resulted in readmission within 30 days. The 7-day readmission rate was also highest for patients with Medicare or Medicaid. In particular, nearly 1 in 10 stays paid by Medicaid for patients with CHF or schizophrenia resulted in readmission within 7 days.

In addition to the rate of readmission per 100 index stays as shown in Figure 3, readmissions within 7 days are shown as a percentage of all 30-day readmissions in Table 3 for these same conditions (septicemia, CHF, and schizophrenia).

Table 3. All-cause 7-day readmissions as a percentage of 30-day readmissions following index stays for three select conditions, by expected payer, 2014

Expected payer	Septicemia		Congestive heart failure		Schizophrenia and other psychotic disorders	
	Number of 30-day readmissions	30-day readmissions within 7 days, %	Number of 30-day readmissions	30-day readmissions within 7 days, %	Number of 30-day readmissions	30-day readmissions within 7 days, %
Medicare	155,652	35.5	142,967	31.7	36,015	38.8
Medicaid	32,408	37.1	22,464	31.8	37,762	39.7
Private	25,848	36.3	12,685	32.3	5,625	39.2
Uninsured	5,102	41.4	3,738	30.5	4,087	42.7

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), Nationwide Readmissions Database (NRD), 2014

- **The percentage of 30-day readmissions that occurred within 7 days was higher for index stays with septicemia or schizophrenia than for those with CHF.**

  Across payers, the percentage of 30-day readmissions that occurred within 1 week of initial discharge ranged from 36 to 41 percent for index stays with septicemia and 39 to 43 percent for those with schizophrenia and other psychotic disorders. In comparison, 31–32 percent of 30-day readmissions for CHF occurred within 7 days across payers.

- **Among patients who were readmitted within 30 days of an index stay for septicemia or schizophrenia, those who were uninsured were readmitted earlier than patients with any type of health insurance coverage.**

  The percentage of 30-day readmissions related to septicemia and schizophrenia that occurred within 7 days was highest for uninsured patients (41.4 and 42.7 percent, respectively) and lowest for patients with Medicare (35.5 and 38.8 percent, respectively).

About Statistical Briefs

HCUP Statistical Briefs provide basic descriptive statistics on a variety of topics using HCUP administrative health care data. Topics include hospital inpatient, ambulatory surgery, and emergency department use and costs, quality of care, access to care, medical conditions, procedures, and patient populations, among other topics. The reports are intended to generate hypotheses that can be further explored in other research; the reports are not designed to answer in-depth research questions using multivariate methods.

Data Source

The estimates in this Statistical Brief are based upon data from the Healthcare Cost and Utilization Project (HCUP) 2014 Nationwide Readmissions Database (NRD).

Definitions

Diagnoses and Clinical Classifications Software (CCS)
The *principal diagnosis* is that condition established after study to be chiefly responsible for the patient's admission to the hospital.

CCS categorizes ICD-9-CM diagnosis codes into a manageable number of clinically meaningful categories.[10] This clinical grouper makes it easier to quickly understand patterns of diagnoses use. CCS categories identified as Other typically are not reported; these categories include miscellaneous, otherwise unclassifiable diagnoses that may be difficult to interpret as a group.

Readmissions
The 30-day readmission rate is defined as the number of admissions for each condition for which there was at least one subsequent hospital admission within 7 or 30 days, divided by the total number of admissions from January through November of the same year. That is, when patients are discharged from the hospital, they are followed for 7 or 30 days in the data. If any readmission to the same or different hospital occurs during the specified time period, the admission is counted as having a readmission. No more than one readmission is counted within the 7- or 30-day period, because the outcome measure assessed is "percentage of admissions that are readmitted." If a patient was transferred to a different hospital on the same day or was transferred within the same hospital, the two events were combined as a single stay and the second event was not counted as a readmission; that is, transfers were not considered a readmission.

Every qualifying inpatient stay is counted as a separate initial (starting point) admission, called an index stay. Thus, a single patient can be counted multiple times during the course of the January through November observation period. In addition, index stays do not require a prior "clean period" with no hospitalizations; that is, a hospital stay may be a readmission for a prior stay and the initial admission for a subsequent readmission. Admissions were disqualified from the analysis as index stays if they could not be followed for 7 or 30 days for one of the following reasons: (1) the patient died in the hospital, (2) information on length of stay was missing, or (3) the patient was discharged in December.

Types of hospitals included in the HCUP Nationwide Readmissions Database
The Nationwide Readmissions Database (NRD) is based on data from community hospitals, which are defined as short-term, non-Federal, general, and other hospitals, excluding hospital units of other institutions (e.g., prisons). The NRD includes obstetrics and gynecology, otolaryngology, orthopedic, cancer, pediatric, public, and academic medical hospitals. Excluded are long-term care facilities such as rehabilitation, long-term acute care, psychiatric, and alcoholism and chemical dependency hospitals. However, if a patient received long-term care, rehabilitation, or treatment for a psychiatric or chemical

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[10] Agency for Healthcare Research and Quality. HCUP Clinical Classifications Software (CCS) for ICD-9-CM. Healthcare Cost and Utilization Project (HCUP). Rockville, MD: Agency for Healthcare Research and Quality. Updated October 2016. www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp. Accessed January 31, 2017.

dependency condition in a community hospital, the discharge record for that stay will be included in the NRD.

Unit of analysis
The unit of analysis is the hospital discharge (i.e., the hospital stay), not a person or patient. This means that a person who is admitted to the hospital multiple times in 1 year will be counted each time as a separate discharge from the hospital.

Payer
Payer is the expected payer for the hospital stay. To make coding uniform across all HCUP data sources, payer combines detailed categories into general groups:

- Medicare: includes patients covered by fee-for-service and managed care Medicare
- Medicaid: includes patients covered by fee-for-service and managed care Medicaid
- Private Insurance: includes Blue Cross, commercial carriers, and private health maintenance organizations (HMOs) and preferred provider organizations (PPOs)
- Uninsured: includes an insurance status of *self-pay* and *no charge*
- Other: includes Workers' Compensation, TRICARE/CHAMPUS, CHAMPVA, Title V, and other government programs

Hospital stays billed to the State Children's Health Insurance Program (SCHIP) may be classified as Medicaid, Private Insurance, or Other, depending on the structure of the State program. Because most State data do not identify patients in SCHIP specifically, it is not possible to present this information separately.

For this Statistical Brief, a hierarchy was used to assign the payer category based on the primary and secondary expected payer:[11]

- If the primary or secondary expected payer indicates Medicare, then the payer category is assigned to Medicare. This categorization includes patients who are dually eligible for Medicare and Medicaid under Medicare.
- If not Medicare and the primary or secondary expected payer indicates Medicaid, then the payer category is Medicaid.
- If not Medicare or Medicaid and the primary or secondary expected payer indicates private insurance, then the payer category is private.
- If not Medicare, Medicaid, or private and the primary expected payer indicates self-pay or no charge, then the payer category is uninsured.
- Stays for other types of payers are not reported in this Statistical Brief because this is a small group of mixed payers such as State and local programs.

Categorization of readmission counts by expected payer was based on the index stay. The concordance between the expected payer coded at the index stay and the expected payer coded at readmission varies by payer: 98 percent for Medicare, 95 percent for Medicaid, 93 percent for private, and 80 percent for uninsured (percentages based on the 2013 NRD).

About HCUP

The Healthcare Cost and Utilization Project (HCUP, pronounced "H-Cup") is a family of health care databases and related software tools and products developed through a Federal-State-Industry partnership and sponsored by the Agency for Healthcare Research and Quality (AHRQ). HCUP databases bring together the data collection efforts of State data organizations, hospital associations, and private data organizations (HCUP Partners) and the Federal government to create a national information resource of encounter-level health care data. HCUP includes the largest collection of longitudinal hospital care data in the United States, with all-payer, encounter-level information beginning in 1988. These

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[11] The 2013 NRD available for purchase through the HCUP Central Distributor includes the data element for the primary expected payer but not the data element for the secondary expected payer.

databases enable research on a broad range of health policy issues, including cost and quality of health services, medical practice patterns, access to health care programs, and outcomes of treatments at the national, State, and local market levels.

HCUP would not be possible without the contributions of the following data collection Partners from across the United States:

Alaska Department of Health and Social Services
Alaska State Hospital and Nursing Home Association
Arizona Department of Health Services
Arkansas Department of Health
California Office of Statewide Health Planning and Development
Colorado Hospital Association
Connecticut Hospital Association
District of Columbia Hospital Association
Florida Agency for Health Care Administration
Georgia Hospital Association
Hawaii Health Information Corporation
Illinois Department of Public Health
Indiana Hospital Association
Iowa Hospital Association
Kansas Hospital Association
Kentucky Cabinet for Health and Family Services
Louisiana Department of Health
Maine Health Data Organization
Maryland Health Services Cost Review Commission
Massachusetts Center for Health Information and Analysis
Michigan Health & Hospital Association
Minnesota Hospital Association
Mississippi State Department of Health
Missouri Hospital Industry Data Institute
Montana Hospital Association
Nebraska Hospital Association
Nevada Department of Health and Human Services
New Hampshire Department of Health & Human Services
New Jersey Department of Health
New Mexico Department of Health
New York State Department of Health
North Carolina Department of Health and Human Services
North Dakota (data provided by the Minnesota Hospital Association)
Ohio Hospital Association
Oklahoma State Department of Health
Oregon Association of Hospitals and Health Systems
Oregon Office of Health Analytics
Pennsylvania Health Care Cost Containment Council
Rhode Island Department of Health
South Carolina Revenue and Fiscal Affairs Office
South Dakota Association of Healthcare Organizations
Tennessee Hospital Association
Texas Department of State Health Services
Utah Department of Health
Vermont Association of Hospitals and Health Systems
Virginia Health Information
Washington State Department of Health
West Virginia Department of Health and Human Resources, West Virginia Health Care Authority
Wisconsin Department of Health Services
Wyoming Hospital Association

About the NRD

The HCUP Nationwide Readmissions Database (NRD) is a calendar-year, discharge-level database constructed from the HCUP State Inpatient Databases (SID) with verified patient linkage numbers that can be used to track a person across hospitals within a State. The 2010–2014 NRD is available for purchase through the HCUP Central Distributor. The NRD is designed to support various types of analyses of national readmission rates. The database includes discharges for patients with and without repeat hospital visits in a year and those who have died in the hospital. Repeat stays may or may not be related. The criteria to determine the relationship between hospital admissions are left to the analyst using the NRD. The NRD was constructed as a sample of convenience consisting of 100 percent of the eligible discharges. Discharge weights for national estimates are developed using the target universe of community hospitals (excluding rehabilitation and long-term acute care hospitals) in the United States. Over time, the sampling frame for the NRD will change; thus, the number of States contributing to the NRD will vary from year to year. The NRD is intended for national estimates only; no regional, State-, or hospital-specific estimates can be produced.

For More Information

For other information on readmissions and revisits, refer to the HCUP Statistical Briefs located at www.hcup-us.ahrq.gov/reports/statbriefs/sb_readmission.jsp. For additional HCUP statistics, visit:

- HCUP Fast Stats at www.hcup-us.ahrq.gov/faststats/landing.jsp for easy access to the latest HCUP-based statistics for health information topics
- HCUPnet, HCUP's interactive query system, at www.hcupnet.ahrq.gov/

For more information about HCUP, visit www.hcup-us.ahrq.gov/.

For a detailed description of HCUP and more information on the design of the Nationwide Readmissions Database (NRD), please refer to the following database documentation:

Agency for Healthcare Research and Quality. Overview of the Nationwide Readmissions Database (NRD). Healthcare Cost and Utilization Project (HCUP). Rockville, MD: Agency for Healthcare Research and Quality. Updated December 2016. www.hcup-us.ahrq.gov/nrdoverview.jsp. Accessed January 31, 2017.

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AHRQ welcomes questions and comments from readers of this publication who are interested in obtaining more information about access, cost, use, financing, and quality of health care in the United States. We also invite you to tell us how you are using this Statistical Brief and other HCUP data and tools, and to share suggestions on how HCUP products might be enhanced to further meet your needs. Please e-mail us at hcup@ahrq.gov or send a letter to the address below:

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