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An All-Payer View of Hospital Discharge to Postacute Care, 2013

Wen Tian, Ph.D., M.D.

Introduction

Following hospitalizations for injury or illness, many patients require continued postacute care (PAC) to support recovery, improve functional status, or manage chronic illness. PAC includes a range of medical services such as rehabilitation care, skilled nursing care, and palliative care. In 2014, PAC was provided in 1,177 inpatient rehabilitation facilities (IRFs), 422 long-term care hospitals (LTCHs),15,173 skilled nursing facilities (SNFs), and at home through 12,461 home health agencies (HHAs).[1] The four types of PAC settings overlap considerably in the conditions treated. However, each type of setting specializes in a specific array of care and therapies with different staffing, costs, and outcomes.[2] About 42 percent of Medicare fee-for-service (FFS) patients were discharged to a PAC setting after hospitalization in 2013.[3] Between 2001 and 2013, Medicare spending on PAC, both facility-based and in-home, doubled from $29 billion to $59 billion per year and has grown faster than most other major Medicare spending categories.[4]

Hospital discharge planning plays a key role in shaping downstream PAC use in terms of the numbers and types of patients discharged to different PAC settings. However, no clear clinical guidance exists to determine the type of PAC setting to which a patient with a specific condition should be discharged. Discharges to PAC often are driven by the availability of specific types of settings and by financial incentives that are not always aligned with clinical needs and may not be cost-effective.[5] Current studies on discharges to PAC are based on either Medicare FFS patients using Medicare claims data or small clinic-based cohorts using primary data collection. To date, there are no estimates of discharges to PAC based on a national all-payer dataset that can offer a complete picture including not only Medicare FFS but also other payers.

Highlights

■ Approximately 7.96 million inpatient stays were discharged to postacute care (PAC) settings, accounting for 22.3 percent of all hospital discharges in 2013.

■ The rates of discharge to PAC were 41.7 percent for Medicare, 11.7 percent for private insurance, 8.1 percent for Medicaid, and only 4.8 percent for uninsured stays.

■ Home health agencies accounted for 50 percent of discharges to PAC. More than 40 percent of discharges to PAC went to skilled nursing facilities (SNFs).

■ Stays discharged to PAC were much longer and more costly than those with routine discharges (7.0 days vs. 3.6 days; $16,900 vs. $8,300 on average).

■ Total hip/knee joint replacement accounted for nearly 10 percent of all discharges to PAC, among which 54.1 percent went to home health agencies, 37.3 percent went to SNFs, and 8.4 percent went to inpatient rehabilitation facilities.

■ Among the nine census divisions, the New England area had the highest rate of discharge to PAC, 32.8 percent. The Mountain and Pacific areas had the lowest rate of discharge to PAC, about 17.8 percent.

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[1] Medicare Payment Advisory Commission. Health Care Spending and the Medicare Program. MedPAC Annual Data Book. Section 8: Post-Acute Care. Washington, DC: Medicare Payment Advisory Commission; June 2015.
[2] American Hospital Association. TrendWatch: Maximizing the Value of Post-Acute Care. Washington, DC: American Hospital Association; November 2010.
[3] Medicare Payment Advisory Commission. Report to the Congress: Medicare Payment Policy. Chapter 7: Medicare's Post-Acute Care: Trends and Ways to Rationalize Payments. Washington, DC: Medicare Payment Advisory Commission; March 2015.
[4] Medicare Payment Advisory Commission. Health Care Spending and the Medicare Program. Op. cit.
[5] Buntin MB, Garten AD, Paddock S, Saliba D, Totten M, Escarce JJ. How much is post-acute care use affected by its availability? Health Services Research. 2005;40(2):413–34.

This Healthcare Cost and Utilization Project (HCUP) Statistical Brief presents data on hospital discharges to PAC settings in 2013 from an all-payer view. Using the 2013 National Inpatient Sample (NIS), this Statistical Brief estimates discharges to PAC for all types of payers and describes these discharges from the perspective of payers, patients, hospitals, conditions/procedures, and geographic regions. Discharges to PAC in this Statistical Brief are defined as those discharges to IRFs, LTCHs, SNFs, or home with HHA services. Discharges to outpatient PAC facilities and inpatient stays in Veterans Health systems are not included because data are not available in the NIS. All differences between estimates noted in the text are statistically significant at the .01 level or better.

Findings

Discharge disposition and discharges to PAC, 2013
Figure 1 presents the number and percentage of discharges to four types of PAC settings, routine discharges, and other discharges in 2013.

Figure 1. Discharge disposition of inpatient stays, 2013
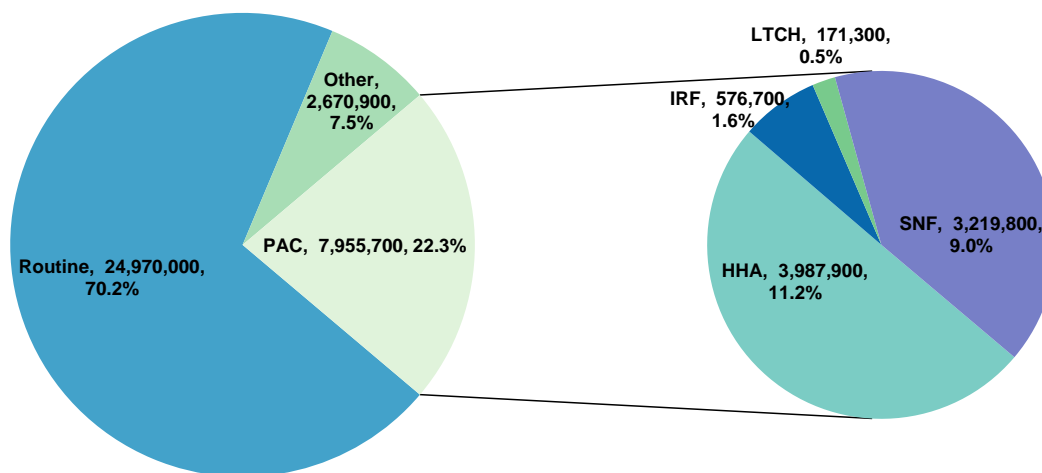
Abbreviations: HHA, home health agency; IRF, inpatient rehabilitation facility; LTCH, long-term care hospital; PAC, postacute care; SNF, skilled nursing facility

Notes: Discharges to IRFs and LTCHs were not identified in one State. As a result, the number of discharges to PAC may be underestimated by 1 percent, with the assumption that the rate of discharge to IRFs and LTCHs in this State is the same as the national rate. "Other" discharge dispositions include transfer to facilities other than PAC settings, against medical advice, died within hospital, and unknown destination.

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), National Inpatient Sample (NIS), 2013
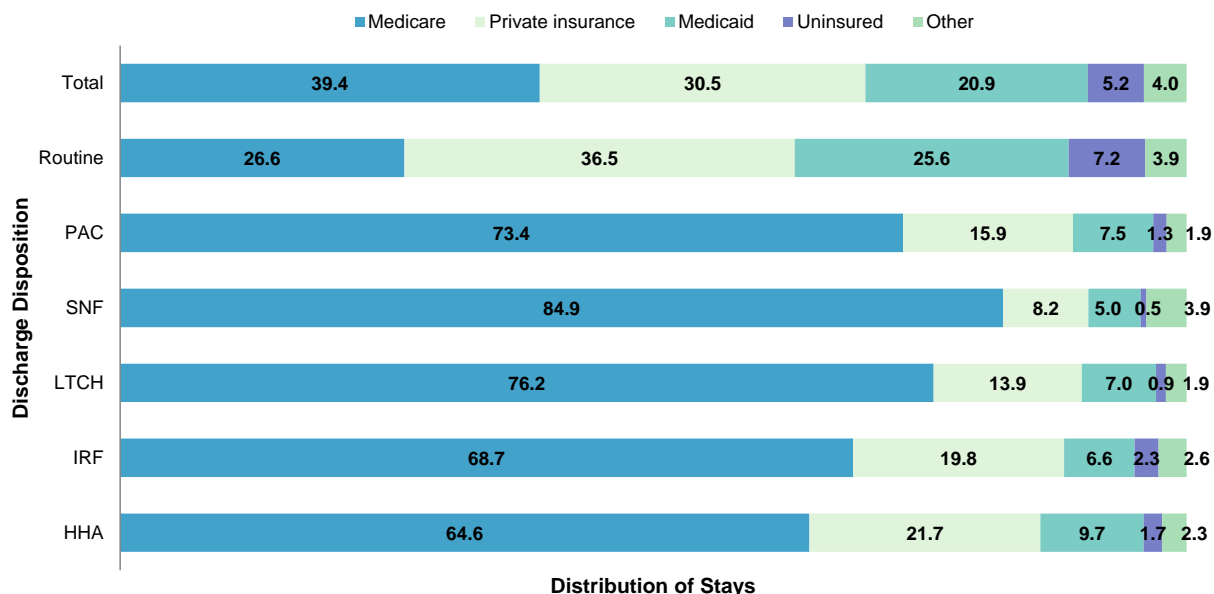
■ **In 2013, 22.3 percent of inpatient stays were discharged to a PAC setting.**

Nearly 8 million hospital stays were discharged with PAC services, accounting for 22.3 percent of all hospital discharges in 2013. HHA and SNF were the two most common PAC settings to which patients were discharged following their hospital stay. Over 11 percent of inpatient stays were discharged home with HHA services, and 9 percent were discharged to SNFs. Only 1.6 percent of all discharges went to IRFs. LTCH was the least used PAC setting and represented only 0.5 percent of all discharges.

Discharge disposition by payer, 2013
Figure 2 shows the percentage of different primary payers for inpatient stays by discharge disposition. Medicare discharges in this Statistical Brief include both FFS beneficiaries and Medicare Advantage plan enrollees.

Figure 2. Payer mix by discharge disposition, 2013

Legend: ■ Medicare ■ Private insurance ■ Medicaid ■ Uninsured ■ Other

Discharge Disposition	Medicare	Private insurance	Medicaid	Uninsured	Other
Total	39.4	30.5	20.9	5.2	4.0
Routine	26.6	36.5	25.6	7.2	3.9
PAC	73.4	15.9	7.5	1.3	1.9
SNF	84.9	8.2	5.0	0.5	3.9
LTCH	76.2	13.9	7.0	0.9	1.9
IRF	68.7	19.8	6.6	2.3	2.6
HHA	64.6	21.7	9.7	1.7	2.3

Distribution of Stays

Abbreviations: HHA, home health agency; IRF, inpatient rehabilitation facility; LTCH, long-term care hospital; PAC, postacute care; SNF, skilled nursing facility

Notes: Other includes Worker's Compensation, TRICARE/CHAMPUS, CHAMPVA, Title V, other government programs, and missing. Expected primary paper was missing for 0.15 percent of all stays, 0.17 percent of routine discharges, and 0.1 percent of discharges to PAC (0.1 percent to HHA, 0.1 percent to IRF, 0.11 percent to LTCH, and 0.08 percent to SNF).

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), National Inpatient Sample (NIS), 2013

■ **Medicare accounted for nearly three-quarters of discharges to PAC.**

Of the approximately 8 million discharges to PAC, 5.8 million or 73.4 percent had Medicare as the primary payer. Medicare was the primary payer for the majority of discharges to each of the four PAC settings. The percentage of discharges to the four PAC settings for which Medicare was the expected primary payer was as follows:

- 84.9 percent of discharges to SNFs
- 76.2 percent of discharges to LTCHs
- 68.7 percent of discharges to IRFs
- 64.6 percent of discharges to HHAs

Private insurance was the primary payer for 15.9 percent of all stays discharged to PAC. Medicaid paid for 20.9 percent of all inpatient stays but only 7.5 percent of discharges to PAC. Only 1.3 percent of discharges to PAC were uninsured.

Figure 3 shows the percentages of discharge to each PAC setting, routine discharge, and others by payer group.

Figure 3. Discharge disposition by payer group, 2013
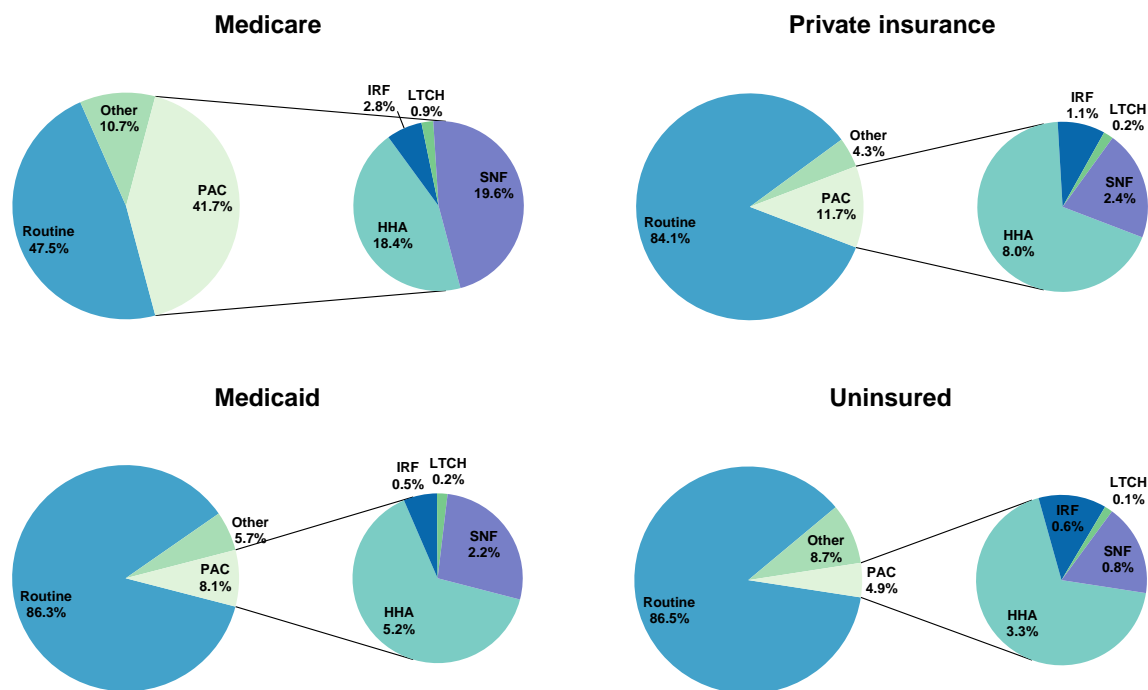
Abbreviations: HHA, home health agency; IRF, inpatient rehabilitation facility; LTCH, long-term care hospital; PAC, postacute care; SNF, skilled nursing facility

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), National Inpatient Sample (NIS), 2013

- **Patterns of discharge to PAC varied across payers.**

    Nearly 42 percent of Medicare inpatient stays were discharged to PAC, which was the highest among all payer groups. SNF was the leading disposition site for Medicare discharges to PAC and accounted for 19.6 percent of all Medicare inpatient discharges. HHA services accounted for 18.4 percent of all Medicare PAC.

    Compared with Medicare, other payer groups had much lower rates of discharge to PAC. Among privately insured stays, 11.7 percent were discharged to PAC, and among Medicaid-covered stays, 8.1 percent received PAC services. Only 4.9 percent of uninsured inpatient stays were discharged to PAC. Moreover, HHAs were the leading PAC setting for non-Medicare discharges in contrast to SNFs for Medicare discharges. HHAs accounted for 61–68 percent of non-Medicare discharges to PAC. SNFs represented 17–27 percent of discharges to PAC among non-Medicare payer groups.

Acute care hospital costs and length of stay by discharge disposition, 2013
Figure 4 presents the average costs and length of stay of acute care hospital stays by discharge disposition.

Figure 4. Average costs and length of acute care hospital stays by discharge disposition, 2013
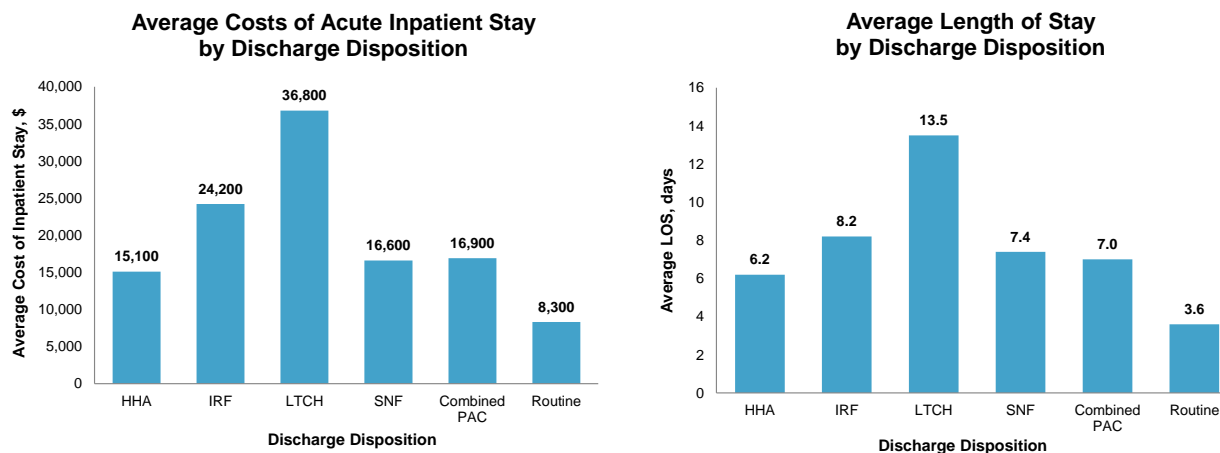
Abbreviations: HHA, home health agency; IRF, inpatient rehabilitation facility; LOS, length of stay; LTCH, long-term care hospital; PAC, postacute care; SNF, skilled nursing facility

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), National Inpatient Sample (NIS), 2013

- **Inpatient stays discharged to PAC were much longer and more costly than stays with a routine discharge.**

    The average length of an acute hospital stay for patients discharged to PAC was nearly 2 times longer than stays with a routine charge (7.0 days vs. 3.6 days). Among discharges to PAC, discharges to LTCHs were the longest—more 2 times longer than discharges to home with HHA services (13.5 days vs. 6.2 days).

    The average cost of inpatient stays discharged to PAC was $16,900, which was more than twice the average cost of inpatient stays with a routine discharge ($8,300). Stays discharged to LTCHs had the highest average cost, $36,800, and stays discharged to HHAs had the lowest average cost, $15,100, among all discharges to PAC.

Characteristics of hospital stays by discharge disposition, 2013
Table 1 shows patient and hospital characteristics for acute care hospital stays by discharge disposition.

Table 1. Patient and hospital characteristics by discharge disposition, 2013

Characteristics		Discharge disposition					
		PAC					Routine
		Combined PAC	HHA	IRF	LTCH	SNF	
Patient characteristics							
Age group, years, %	≤17	1.9	3.6	0.9	0.6	0.1	21.3
	18–44	5.6	8.1	7.4	7.5	1.9	31.5
	45–64	23.0	28.1	26.2	29.6	15.7	24.8
	≥65	69.5	60.1	65.5	62.3	82.2	22.4
Sex, %	Male	42.4	43.9	46.3	50.2	39.5	41.7
	Female	57.6	56.1	53.7	49.8	60.5	58.3
Race,[a] %	White	71.4	69.7	72.6	66.1	73.6	58.4
	Black	12.6	13.4	13.0	17.4	11.2	14.4
	Hispanic	6.5	7.3	5.5	7.5	5.6	13.4
	Asian	1.8	1.8	1.3	1.1	1.8	3.0
	Other	2.6	2.8	3.0	3.2	2.3	4.2
Community-level income, %	1st quartile (poorest)	27.5	28.1	28.7	34.3	26.0	28.8
	2nd quartile	25.7	25.2	26.1	28.3	26.1	25.7
	3rd quartile	23.9	23.6	23.8	21.9	24.4	23.7
	4th quartile (wealthiest)	21.0	21.0	19.3	13.2	21.7	19.5
Hospital characteristics							
Hospital teaching status, %	Rural	10.5	10.0	6.9	7.2	11.9	10.6
	Urban, nonteaching	38.2	36.1	34.5	39.8	41.3	36.7
	Urban, teaching	51.3	53.9	58.7	53.0	46.8	52.7
Hospital size, %	Small	17.3	17.2	16.0	17.1	17.5	16.4
	Medium	26.1	25.6	25.4	26.7	26.9	27.0
	Large	56.6	57.2	58.6	56.2	55.6	56.6
Hospital region, %	Northeast	24.3	25.2	22.3	14.0	24.2	17.1
	Midwest	23.4	22.0	22.3	27.5	25.2	22.1
	South	36.5	37.6	46.6	50.2	32.6	39.5
	West[b]	15.7	15.2	8.8	8.4	18.1	21.2

Abbreviations: HHA, home health agency; IRF, inpatient rehabilitation facility; LTCH, long-term care hospital; PAC, postacute care; SNF, skilled nursing facility

[a] About 6 percent all inpatient stays had missing value of race.

[b] Discharges to IRFs and LTCHs were not identified in one State in the West region. As a result, the number of discharges to PAC may be underestimated by 1% with the assumption that the rate of discharge to IRFs and LTCHs in this State is the same as the national rate.

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), National Inpatient Sample (NIS), 2013

- **Patients discharged to PAC were more likely to be older and to be White than those discharged routinely.**

  Of discharges to PAC, 69.5 percent were among patients aged 65 years or older, compared with 22.4 percent for routine discharges. Patients younger than 18 years and between 18 and 44 years accounted for only 1.9 percent and 5.6 percent, respectively, of discharges to PAC, in contrast to 21.3 percent and 31.5 percent of routine discharges. Discharges to SNF had a higher percentage of patients aged 65 years or older (82.2 percent) than did the other three types of PAC settings.

There was no difference in discharges to PAC versus routine discharges overall between females and males. However, a higher percentage of female patients were discharged to SNFs than to the three other types of PAC settings (60.5 percent vs. 56.1 percent for HHA, 53.7 percent for IRF, and 49.8 percent for LTCH).

The percentage of White patients among discharges to PAC was higher than among routine discharges (71.4 percent vs. 58.4 percent). Hispanic patients represented only 6.5 percent of discharges to PAC but 13.4 percent of routine discharges.

■ **Discharges to IRFs were more likely to be from urban teaching hospitals than from rural or urban nonteaching hospitals.**

Urban teaching hospitals accounted for 51.3 percent of discharges to PAC but a higher percentage, 58.7, of all discharges to IRFs and a lower percentage, 46.8, of discharges to SNFs.

Rural hospitals accounted for 10.5 percent of discharges to PAC but only 6.9 percent of discharges to IRFs and 7.2 percent of discharges to LTCHs.

■ **Rates of discharge to PAC differed across regions.**

Hospitals in the Northeast accounted for 17.1 percent of routine discharges but 24.3 percent of discharges to PAC. In contrast, hospitals in the West accounted for 21.2 percent of routine discharges but only 15.7 percent of discharges to PAC.

The South accounted for 36.5 percent of PAC discharges and a higher rate of discharge to IRFs and LTCHs: 46.6 percent of discharges to IRFs and more than half of discharges to LTCHs were from the South.

Differences in rate of discharge to PAC in census divisions, by payer, 2013
Figure 5 shows the rate of stays discharged to PAC in nine census divisions by payer group.

Figure 5. Rate of discharge to PAC in census divisions by payer, 2013
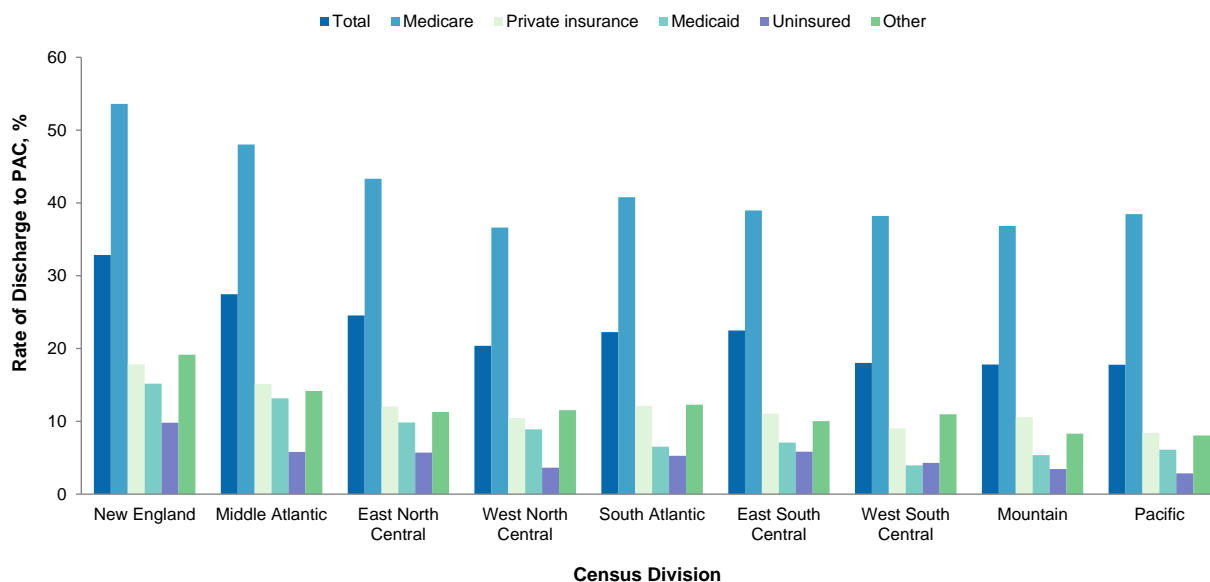
Abbreviation: PAC, postacute care

Note: Discharges to inpatient rehabilitation facilities and long-term care hospitals were not identified in one State in the Pacific area. As a result, the rate of discharge to PAC in the Pacific area may be underestimated.

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), National Inpatient Sample (NIS), 2013

- **Rates of discharge to PAC varied largely across nine census divisions.**

  New England had the highest rate of discharge to PAC. Approximately 32.8 percent of all inpatient stays were followed by PAC use in the New England area in 2013. Moreover, 27.5 percent of inpatient stays in the Middle Atlantic area and 24.6 percent in the East North Central area were discharged to PAC, representing the second and third highest rates of discharge to PAC, respectively. Both the Pacific area and the Mountain area had the lowest rate of discharge to PAC, at about 17.8 percent.

- **The geographic variation in discharge to PAC remained consistent within each payer group.**

  Within each of the five payer groups, the relative difference in rates of discharge to PAC between census divisions remained consistent. For all divisions, rates of discharge to PAC were highest for Medicare-covered patients and lowest for uninsured patients.

Most common conditions and procedures associated with discharge to PAC, 2013
Only 4 out of 751 MS-DRG groups did not have any stays with discharges to PAC; however, the top 10 MS-DRGs accounted for 37 percent of all discharges to PAC settings. Table 2 displays the top 10 conditions and procedures with the most discharges to PAC, the number and rate of discharge to PAC for these conditions and procedures, and number and rate of discharge to each type of PAC.

Table 2. Top 10 conditions and procedures with discharges to PAC, 2013

Conditions/ procedures	Total discharges to PAC		Discharges to PAC setting							
			HHA		IRF		LTCH		SNF	
	n	%	n	%	n	%	n	%	n	%
Total hip/knee joint replacement (MS-DRG 469, 470)	755,700	70.7	409,000	54.1	63,500	8.4	1,300	0.2	282,000	37.3
Septicemia or severe sepsis (MS-DRG 870–872)	441,400	39.4	172,500	39.1	15,200	3.4	17,700	4.0	236,000	53.5
Heart failure & shock (MS-DRG 291–293)	334,800	40.6	194,400	58.1	9,000	2.7	4,300	1.3	127,100	38.0
Stroke (MS-DRG 61–66)	247,400	47.9	65,500	26.5	80,700	32.6	2,300	0.9	99,000	40.0
Simple pneumonia & pleurisy (MS-DRG 193–195)	246,500	28.3	119,100	48.3	7,000	2.8	4,100	1.7	116,300	47.2
Renal failure (MS-DRG 682–684)	204,700	36.4	91,800	44.9	7,100	3.4	3,200	1.5	102,600	50.1
Kidney & urinary tract infection (MS-DRG 689–690)	199,500	39.2	78,800	39.5	5,800	2.9	2,100	1.1	112,900	56.6
Chronic obstructive pulmonary disease (MS-DRG 190–192)	197,500	27.0	125,700	63.6	4,700	2.4	2,700	1.4	64,500	32.6
Hip & femur procedure except major joint (MS-DRG 480–482)	186,300	75.7	24,700	13.3	31,800	17.1	1,300	0.7	128,400	68.9
Cellulitis (MS-DRG 602, 603)	127,500	24.1	78,600	61.6	2,630	2.1	2,500	1.9	43,800	34.4
All discharges in top 10 conditions/procedures	2,941,400	41.2	1,360,100	46.3	227,300	7.7	41,500	1.4	1,312,500	44.6
All discharges to PAC, %	37.0	—	34.1	—	39.4	—	24.2	—	40.7	—

Abbreviations: HHA, home health agency; IRF, inpatient rehabilitation facility; LTCH, long-term care hospital; PAC, postacute care; SNF, skilled nursing facility

Note: Approximately 174,000 rehabilitation (MS-DRG 945, 946) stays were discharged to PAC. These cases were not included here because they are considered PAC stays rather than acute inpatient stays.

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), National Inpatient Sample (NIS), 2013

■ **Total hip/knee joint replacement was the most common condition/procedure with discharge to PAC.**

Roughly 756,000 total hip/knee joint replacement stays were discharged to PAC, accounting for nearly 10 percent of all discharges to PAC. Nearly 71 percent of total hip/knee joint replacement stays were discharged to PAC, and 54.1 percent of these discharges went home with HHA services. The highest rate of discharge to PAC was another orthopedic procedure—hip and femur procedures—for which 75.7 percent of stays were discharged to PAC.

■ **The top 10 conditions and procedures had a high rate of discharge to PAC.**

The 10 most common conditions and procedures had a high rate of discharge to PAC, ranging from 75.7 percent to 24.1 percent, compared with an overall rate of 22.3 percent. Two pulmonary diseases, chronic obstructive pulmonary disease and pneumonia, and cellulitis had a rate of discharge to PAC below 30 percent, the lowest among the 10 conditions and procedures.

■ **The top 10 conditions and procedures accounted for 37 percent of all stays with discharges to PAC.**

The 10 most common conditions and procedures discharged to PAC were distributed across five different major diagnostic categories: two musculoskeletal system, two circulatory system, two urinary system, two pulmonary system, and two infectious diseases with unspecified sites.

The 10 most common conditions and procedures had a total of 2,941,400 stays with discharge to PAC and accounted for 37.0 percent of all discharges to PAC. They jointly represented 34.1 percent of discharges to HHAs, 39.4 percent of discharges to IRFs, 24.2 percent of discharges to LTCHs, and 40.7 percent of discharges to SNFs.

Data Source

The estimates in this Statistical Brief are based upon data from the Healthcare Cost and Utilization Project (HCUP) 2013 Nationwide Inpatient Sample (NIS). Information on discharge to postacute care was obtained from intramural data that is specific to each State and that required State-specific and year-specific algorithms to generate a measure of discharge status that was comparable across States. Supplemental sources included population denominator data for use with HCUP databases, derived from information available from the Bureau of the Census.[6]

Many hypothesis tests were conducted for this Statistical Brief. Thus, to decrease the number of false-positive results, we reduced the significance level to .01 for individual tests.

Definitions

Diagnosis-related groups (DRGs)
DRGs comprise a patient classification system that categorizes patients into groups that are clinically coherent and homogeneous with respect to resource use. DRGs group patients according to diagnosis, type of treatment (procedure), age, and other relevant criteria. Each hospital stay has one assigned DRG.

Types of discharge destinations
The definitions of discharges to PAC and routine discharges are:

- Routine discharge: discharged to home or self care
- Discharge to skilled nursing facility: discharged/transferred to a skilled nursing facility (SNF) with Medicare certification in anticipation of skilled care; and discharged/transferred to a skilled nursing facility (SNF) with Medicare certification with a planned acute care hospital inpatient readmission
- Discharge to home health agency: discharged/transferred to home under care of organized Home health service organization in anticipation of covered skilled care; and discharged/transferred to a home under care of organized home health service organization with a planned acute care hospital inpatient readmission
- Discharge to inpatient rehabilitation facility: discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part unit of a hospital; and discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital with a planned acute care hospital inpatient readmission
- Discharge to long-term care hospital: discharged/transferred to a Medicare certified long term care hospital (LTCH) with a planned acute care hospital inpatient readmission

Types of hospitals included in the HCUP National Inpatient Sample
The National Inpatient Sample (NIS) 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 NIS includes obstetrics and gynecology, otolaryngology, orthopedic, cancer, pediatric, public, and academic medical hospitals. Excluded are long-term care facilities such as rehabilitation, psychiatric, and alcoholism and chemical dependency hospitals. Beginning in 2012, long-term acute care hospitals are also excluded. However, if a patient received long-term care, rehabilitation, or treatment for a psychiatric or chemical dependency condition in a community hospital, the discharge record for that stay will be included in the NIS.

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.

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[6] Barrett M, Hickey K, Coffey R, Levit K. Population Denominator Data for Use with the HCUP Databases (Updated with 2014 Population Data). HCUP Methods Series Report #2015-07. September 1, 2015. U.S. Agency for Healthcare Research and Quality. http://www.hcup-us.ahrq.gov/reports/methods/2015-07.pdf. Accessed February 17, 2016.

Costs and charges
Total hospital charges were converted to costs using HCUP Cost-to-Charge Ratios based on hospital accounting reports from the Centers for Medicare & Medicaid Services (CMS).[7] *Costs* reflect the actual expenses incurred in the production of hospital services, such as wages, supplies, and utility costs; *charges* represent the amount a hospital billed for the case. For each hospital, a hospital-wide cost-to-charge ratio is used. Hospital charges reflect the amount the hospital billed for the entire hospital stay and do not include professional (physician) fees. For the purposes of this Statistical Brief, costs are reported to the nearest hundred.

How HCUP estimates of costs differ from National Health Expenditure Accounts
There are a number of differences between the costs cited in this Statistical Brief and spending as measured in the National Health Expenditure Accounts (NHEA), which are produced annually by CMS.[8] The largest source of difference comes from the HCUP coverage of inpatient treatment only in contrast to the NHEA inclusion of outpatient costs associated with emergency departments and other hospital-based outpatient clinics and departments as well. The outpatient portion of hospitals' activities has been growing steadily and may exceed half of all hospital revenue in recent years. On the basis of the American Hospital Association (AHA) Annual Survey, 2012 outpatient gross revenues (or charges) were about 44 percent of total hospital gross revenues.[9]

Smaller sources of differences come from the inclusion in the NHEA of hospitals that are excluded from HCUP. These include Federal hospitals (Department of Defense, Veterans Administration, Indian Health Services, and Department of Justice [prison] hospitals) as well as psychiatric, substance abuse, and long-term care hospitals. A third source of difference lies in the HCUP reliance on billed charges from hospitals to payers, adjusted to provide estimates of costs using hospital-wide cost-to-charge ratios, in contrast to the NHEA measurement of spending or revenue. HCUP costs estimate the amount of money required to produce hospital services, including expenses for wages, salaries, and benefits paid to staff as well as utilities, maintenance, and other similar expenses required to run a hospital. NHEA spending or revenue measures the amount of income received by the hospital for treatment and other services provided, including payments by insurers, patients, or government programs. The difference between revenues and costs include profit for for-profit hospitals or surpluses for nonprofit hospitals.

Hospital location/teaching status
Hospital urban/rural designation was based on the Core Based Statistical Area (CBSA). Hospitals residing in counties with a CBSA type of metropolitan were considered urban, while hospitals with a CBSA type of micropolitan or non-core were classified as rural.

A hospital is considered to be a teaching hospital if it has a residency program approved by the American Medical Association (AMA), is a member of the Council of Teaching Hospitals (COTH), or has a ratio of full-time equivalent interns and residents to beds of .25 or higher. Rural hospitals were not split according to teaching status because rural teaching hospitals were rare.

Hospital bed size
Hospital bed size categories are based on hospital beds and are specific to the hospital's location and teaching status (see Table 3). Bed size assesses the number of short-term acute beds in a hospital. Hospital information was obtained from the AHA Annual Survey of Hospitals.

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[7] Agency for Healthcare Research and Quality. HCUP Cost-to-Charge Ratio (CCR) Files. Healthcare Cost and Utilization Project (HCUP). 2001–2013. Rockville, MD: Agency for Healthcare Research and Quality. Updated November 2015. http://www.hcup-us.ahrq.gov/db/state/costtocharge.jsp. Accessed February 17, 2016.
[8] For additional information about the NHEA, see Centers for Medicare & Medicaid Services (CMS). National Health Expenditure Data. CMS Web site May 2014. http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/index.html?redirect=/NationalHealthExpendData/. Accessed February 17, 2016.
[9] American Hospital Association. TrendWatch Chartbook, 2014. Table 4.2. Distribution of Inpatient vs. Outpatient Revenues, 1992–2012. http://www.aha.org/research/reports/tw/chartbook/2014/table4-2.pdf. February 17, 2016.

Table 3. Hospital bed size categories

Location and teaching status	Hospital bed size		
	Small	**Medium**	**Large**
Northeast region			
Rural	1–49	50–99	100+
Urban, nonteaching	1–124	125–199	200+
Urban, teaching	1–249	250–424	425+
Midwest region			
Rural	1–29	30–49	50+
Urban, nonteaching	1–74	75–174	175+
Urban, teaching	1–249	250–374	375+
Southern region			
Rural	1–39	40–74	75+
Urban, nonteaching	1–99	100–199	200+
Urban, teaching	1–249	250–449	450+
Western region			
Rural	1–24	25–44	45+
Urban, nonteaching	1–99	100–174	175+
Urban, teaching	1–199	200–324	325+

Median community-level income
Median community-level income is the median household income of the patient's ZIP Code of residence. Income levels are separated into population-based quartiles with cut-offs determined using ZIP Code demographic data obtained from the Nielsen Company. Patients in the first quartile are designated as having *low* income, and patients in the upper three quartiles are designated as having *not low* income. The income quartile is missing for patients who are homeless or foreign.

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, when more than one payer is listed for a hospital discharge, the first-listed payer is used.

Region
Region is one of the four regions defined by the U.S. Census Bureau:

- Northeast: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania

- Midwest: Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas
- South: Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, and Texas
- West: Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, California, Alaska, and Hawaii

Census divisions
Census division is one of the nine divisions defined by the U.S. Census Bureau[10]:

- New England: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut
- Mid-Atlantic: New York, Pennsylvania, New Jersey
- East North Central: Wisconsin, Michigan, Illinois, Indiana, Ohio
- West North Central: Missouri, North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Iowa
- South Atlantic: Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida
- East South Central: Kentucky, Tennessee, Mississippi, Alabama
- West South Central: Oklahoma, Texas, Arkansas, Louisiana
- Mountain: Idaho, Montana, Wyoming, Nevada, Utah, Colorado, Arizona, New Mexico
- Pacific: Alaska, Washington, Oregon, California, Hawaii

Reporting of race and ethnicity
Data on Hispanic ethnicity are collected differently among the States and also can differ from the Census methodology of collecting information on race (White, Black, Asian/Pacific Islander, American Indian/Alaska Native, Other (including mixed race)) separately from ethnicity (Hispanic, non-Hispanic). State data organizations often collect Hispanic ethnicity as one of several categories that include race. Therefore, for multistate analyses, HCUP creates the combined categorization of race and ethnicity for data from States that report ethnicity separately. When a State data organization collects Hispanic ethnicity separately from race, HCUP uses Hispanic ethnicity to override any other race category to create a Hispanic category for the uniformly coded race/ethnicity data element, while also retaining the original race and ethnicity data. This Statistical Brief reports race/ethnicity for the following categories: Hispanic, non-Hispanic White, non-Hispanic Black, Asian/Pacific Islander, and non-Hispanic Other.

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 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 State Hospital and Nursing Home Association
Arizona Department of Health Services
Arkansas Department of Health

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[10] U.S. Census Bureau. Census Regions and Divisions of the United States. http://www.census.gov/geo/maps-data/maps/pdfs/reference/us_regdiv.pdf. Accessed April 29, 2016.

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 and Hospitals
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 Department of Health
Missouri Hospital Industry Data Institute
Montana MHA - An Association of Montana Health Care Providers
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 Health Care Authority
Wisconsin Department of Health Services
Wyoming Hospital Association

About Statistical Briefs

HCUP Statistical Briefs are descriptive summary reports presenting statistics on hospital inpatient and emergency department use and costs, quality of care, access to care, medical conditions, procedures, patient populations, and other topics. The reports use HCUP administrative health care data.

About the NIS

The HCUP National Inpatient Sample (NIS) is a nationwide database of hospital inpatient stays. The NIS is nationally representative of all community hospitals (i.e., short-term, non-Federal, nonrehabilitation hospitals). The NIS includes all payers. It is drawn from a sampling frame that contains hospitals comprising more than 95 percent of all discharges in the United States. The vast size of the NIS allows the study of topics at the national and regional levels for specific subgroups of patients. In addition, NIS data are standardized across years to facilitate ease of use. Over time, the sampling frame for the NIS has changed; thus, the number of States contributing to the NIS varies from year to year. The NIS is intended for national estimates only; no State-level estimates can be produced.

The 2012 NIS was redesigned to optimize national estimates. The redesign incorporates two critical changes:

- Revisions to the sample design—starting with 2012, the NIS is now a *sample of discharge records from all HCUP-participating hospitals*, rather than a sample of hospitals from which all discharges were retained (as is the case for NIS years before 2012).

- Revisions to how hospitals are defined—the NIS now uses the *definition of hospitals and discharges supplied by the statewide data organizations* that contribute to HCUP, rather than the definitions used by the AHA Annual Survey of Hospitals.

The new sampling strategy is expected to result in more precise estimates than those that resulted from the previous NIS design by reducing sampling error: for many estimates, confidence intervals under the new design are about half the length of confidence intervals under the previous design. The change in sample design for 2012 necessitates recomputation of prior years' NIS data to enable analysis of trends that uses the same definitions of discharges and hospitals.

About HCUPnet

HCUPnet is an online query system that offers instant access to the largest set of all-payer health care databases that are publicly available. HCUPnet has an easy step-by-step query system that creates tables and graphs of national and regional statistics as well as data trends for community hospitals in the United States. HCUPnet generates statistics using data from HCUP's National (Nationwide) Inpatient Sample (NIS), the Kids' Inpatient Database (KID), the Nationwide Emergency Department Sample (NEDS), the Nationwide Readmissions Database (NRD), the State Inpatient Databases (SID), and the State Emergency Department Databases (SEDD).

For More Information

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

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

For information on other hospitalizations in the United States, refer to the following HCUP Statistical Briefs located at http://www.hcup-us.ahrq.gov/reports/statbriefs/statbriefs.jsp:

- Statistical Brief #180, Overview of Hospital Stays in the United States, 2012
- Statistical Brief #181, Costs for Hospital Stays in the United States, 2012
- Statistical Brief #186, Most Frequent Operating Room Procedures Performed in U.S. Hospitals, 2003–2012
- Statistical Brief #162, Most Frequent Conditions in U.S. Hospitals, 2011

For a detailed description of HCUP and more information on the design of the National Inpatient Sample (NIS), please refer to the following database documentation:

Agency for Healthcare Research and Quality. Overview of the National (Nationwide) Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP). Rockville, MD: Agency for Healthcare Research and Quality. Updated November 2015. http://www.hcup-us.ahrq.gov/nisoverview.jsp. Accessed February 17, 2016.

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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:

David Knutson, Director
Center for Delivery, Organization, and Markets
Agency for Healthcare Research and Quality
5600 Fishers Lane
Rockville, MD 20857