HCCI HEALTH CARE COST INSTITUTE

Health Care Cost and Utilization Report: 2010

May 2012

www.healthcostinstitute.org

Copyright 2012 Health Care Cost Institute Inc. Unless explicitly noted, the content of this report is licensed under a Creative Commons Attribution Non-Commercial No Derivatives 3.0 License

Introduction to HCCI

The Health Care Cost Institute (HCCI) was created in September 2011 to provide comprehensive data on health care costs and promote independent, nonpartisan research and analysis on the causes of the rise in U.S. health spending. A better understanding of the forces driving health care cost growth will help policy makers and the public make decisions that lead to more accessible and affordable care.

This inaugural Health Care Cost and Utilization Report summarizes national trends in health care utilization and cost, focusing on 2009 to 2010. A report will be issued with 2011 data soon, followed by several research reports in the coming months. Our plan is to release the Health Care Cost and Utilization Report annually, and produce semi-annual supplements. The supplements will update calendar year trends, examine specific cost and utilization areas, and compare and contrast private and public insurance trends. Our reports will provide the most timely health expenditure and usage information available.

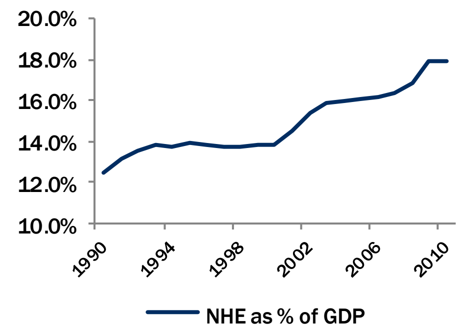
HCCI's research activities are based on de-identified data voluntarily provided by Aetna, Humana, Kaiser Permanente, and UnitedHealthcare, four of the nation's largest insurers. These insurers have agreed, for the first time, to share their data with HCCI, in compliance with applicable privacy laws, both for these reports and for making data more available to researchers to study what influences use and costs of health care services in the United States.

Large quantities of private claims data are needed for a more complete picture of the entire health care system than can be had by looking at publicly available data. Few researchers have access to private claims data, and then generally from only one commercial insurer. By including insurers whose combined membership comprises almost 40 percent of the privately insured population, HCCI's data will provide new, critical information to the public about health care costs. The 2010 report analyzed three billion claims for individuals covered by group employer-sponsored health insurance (ESI), representing approximately 20 percent of all individuals with ESI. We invite additional insurers and other holders of similar data to join this innovative and unique voluntary collaboration between the payers of health care costs and researchers.

Private insurers have agreed, for the first time, to share their claims data.

HCCI has a public mission of making these data available for research. We are granting access to de-identified data for the purposes of studying issues beyond those covered in this first report. Current research efforts using HCCI data include studies on aging and hospital markets. Additional research may include examining trends in spending on specific diseases such as cancer or diabetes or studying expenditures and use among subpopulations.

U.S. Health Expenditures as a Percentage of GDP[1]



1. Centers for Medicare and Medicaid Services. National Health Expenditure Accounts: tables 2010 [Internet]. Baltimore (MD): CMS; 2012 Jan [cited 2012 May 11]. Available from: http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/tables.pdf

Finally, this effort has involved the assistance of many people and organizations. In addition to honoring the data contributors, HCCI thanks the volunteer members of our Report Committee, the Society of Actuaries, and the members of our Scientific Review and Data Integrity committees, whose efforts have made this report possible. We also thank the HCCI Board and External Advisors for their guidance and support.

HCCI looks forward to working with all those who have an interest in improving the quality and delivery of health care services in our country. We encourage interested individuals to subscribe to email updates on these studies and HCCI's activities at www.healthcostinstitute.org.

Martin Gaynor
Chair of Governing Board, HCCI

David Newman
Executive Director, HCCI

Executive Summary

The 2010 HCCI *Health Care Cost and Utilization Report* is the first report of its kind to track changes in expenditures and utilization of health care services by those younger than 65 covered by employer sponsored, private health insurance (ESI). This report assesses the levels and changes in prices and utilization (including changes in the mix of services) focusing on 2009 and 2010. Additional analysis incorporating 2007 and 2008 data is available on the HCCI web site, www.healthcostinstitute.org/report. This report is also the first of what will be an ongoing series of reports from HCCI. Future reports will provide updated numbers as they become available and focus on additional aspects of health care costs and utilization.

Data and Methods

HCCI has access to roughly three billion health insurance claims for more than 33 million individuals covered by ESI from 2007 to 2010 (including both fully insured and self-funded benefit programs). This data was contributed to HCCI by a set of large health insurers who collectively represent almost 40 percent of the US private health insurance market. The claims used in this report represent about 20 percent of all individuals younger than 65 with ESI, making this one of the largest collections of data on the privately insured ever assembled.

HCCI received from the data contributors de-identified, Health Insurance Portability and Accountability Act (HIPAA) compliant information that included the allowed cost, or actual prices paid to providers for services. The numbers in this report reflect the actual expenditure on health care by payers and beneficiaries who filed claims with their group ESI.

HCCI used its claim database to estimate per capita health expenditures. To make our findings representative of the entire younger than 65 population with ESI, HCCI weighted the data. HCCI used United States Census Bureau data to create age, gender, and geographic weights that allowed HCCI to extrapolate the raw data into national estimates.

The statistics in this report focus on health care expenditures and their components of price, utilization and intensity at the regional and national levels. We do not report on premiums or their determinants. For more information on health insurance premiums and the multiple factors that affect them (including health care expenditures; beneficiary, group and market characteristics; benefit design; and the regulatory environment) see Congressional Research Service, Private Health Insurance Premiums and Rate Reviews, 2011; American Academy of Actuaries, Critical Issues in Health Reform: Premium Setting in the Individual Market, 2010; and Congressional Budget Office, Key Issues in Analyzing Major Health Insurance Proposals, Chapter 3, Factors Affecting Insurance Premiums, 2008.[1]

Categories of Service

HCCI divided claims into four categories of service: inpatient facility, outpatient facility (visits or procedures), professional procedure (including physician and nonphysician services), and prescription drug. Inpatient claims are from hospitals, skilled nursing facilities (SNF), and hospices where there is

BY THE NUMBERS

$4,255

Average annual per capita health care spending for beneficiaries younger than 65 and covered by employer-sponsored group insurance in 2010.

1.6% & 3.3%

The consumer price index (CPI-U), a measure of price inflation, and the growth rate of average per capita spending on group ESI beneficiaries younger than 65 (2009-2010). Per capita spending outpaced overall price inflation in 2010.

$14,662 & 5.1%

Average facility price paid in 2010 and average growth rate of prices for an inpatient stay, 2009 to 2010.

$2,224 & 10.1%

Average facility price paid in 2010 and average growth rate of prices for an outpatient visit, 2009 to 2010.

2.6% & 7.1%

Growth rate of estimated per capita health care spending by insurers and beneficiaries, respectively, between 2009 and 2010.

evidence that the insured stayed overnight. Outpatient facility claims are claims that did not require an overnight stay and include observation and emergency room claims. Both outpatient and inpatient claims comprise only the facility charges associated with such claims.

HCCI classified professional services provided by physicians and nonphysicians in those facilities according to procedure codes commonly used in the industry. HCCI also categorized professional claims into primary care or specialist care. HCCI coded prescription drug claims into thirty therapeutic classes and to simplify analysis, HCCI grouped them as either generic or brand name prescriptions.

Factors Account for Changes in Health Care Spending for the Insured

In this report, estimated health care expenditures are determined by the prices paid for each service, utilization or the number of services, and the mix of services or intensity. Total health spending will increase if the number of people with insurance coverage increases (holding per capita spending constant) and vice versa. If individuals increase the quantity of services they use or if the unit price paid goes up, spending will rise. If the mix of services changes in the direction of greater intensity of care (e.g., an inpatient stay in a hospital intensive care unit rather than a standard hospital ward), spending will also rise.

HCCI analysis shows that the increase in per capita health care expenditures from 2009 to 2010 was primarily driven by higher unit prices and not by the utilization (amount) or intensity (mix) of services.

Estimated average per capita expenditures paid by insurers and beneficiaries for claims filed under group ESI generally increased between 2009 and 2010. Growth was fastest for outpatient facility visits and inpatient admissions. Outpatient visits and inpatient admissions were also the two most expensive major categories.

The insurer's per capita expenditures and beneficiary out-of-pocket spending both rose between 2009 and 2010. Despite small changes in cost sharing rates overall, the growth rate of beneficiary out-of-pocket spending outpaced the growth rate of insurer spending.

Utilization of services was generally down in 2010 compared to 2009, with the largest declines in outpatient visits and inpatient admissions.

Using the mix of services, which reflects the intensity of care patients receive, an adjusted estimate of health care prices was calculated. For all major service categories, the growth rate of intensity was less than the growth rate for intensity-adjusted prices, supporting the conclusion that changes in prices in 2010 were a more significant driver of overall spending.

Estimates of National Health Care Expenditures

HCCI used a simple formula to assess the national growth rate of health care expenditures. HCCI estimated aggregate expenditures by multiplying the weighted per capita expenditure by the weighted total number of group ESI beneficiaries in the United States. This metric is a subset of overall national health care spending and is not comparable to other metrics of national spending in part because it only applies to persons with group ESI whom are younger than 65 years old. HCCI estimated that the number of beneficiaries in this population declined in 2010. The rise in per capita expenditures was only slightly offset by the decline in beneficiaries, resulting in an increase in the growth rate of overall health care spending.

Summary

We find continued growth in per capita and estimated aggregate health care spending in this population, although that growth is less than 4 percent. This is consistent with the Centers for Medicare & Medicaid Services' findings regarding national health expenditures. Patients' out-of-pocket share of prices paid went up, although the cost-sharing rate on a per capita basis (including beneficiaries who did not use services) did not change much. Prices increased across all categories of service, with outpatient services experiencing the fastest growth. Unlike other recent reports on health care spending, we find that the increased spending is mostly due to unit price increases rather than changes in the quantity or intensity of services.

---

1. Congressional Research Service. Private Health Insurance Premiums and Rate Reviews [Internet]. Washington (DC): CRS; 2011 Jan [cited 2012 May 11]. Available from: http://assets.opencrs.com/rpts/R41588_20110111.pdf; American Academy of Actuaries. Critical Issues in Health Reform: Premium Setting in the Individual Market [Internet]. Washington (DC): AAA; 2010 March [cited 2012 May 11]. Available from: http://www.actuary.org/pdf/health/premiums_mar10.pdf; and Congressional Budget Office. Key Issues in Analyzing Major Health Insurance Proposals, Chapter 3, Factors Affecting Insurance Premiums [Internet]. Washington (DC): CBO; 2008 December [cited 2012 May 11]. Available from: http://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/99xx/doc9924/ 12-18-keyissues.pdf. For additional information on insurers' administrative costs and profits, see Centers for Medicare and Medicaid Services. National Health Expenditure Accounts: tables 2010 [Internet]. Baltimore (MD): CMS; 2012 Jan [cited 2012 May 11]. Available from: http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/tables.pdf.

Annual Health Care Expenditures

HCCI estimated the national average per capita health care expenditure for services claimed by beneficiaries younger than 65 and covered by group, employer-sponsored private health insurance plans (ESI). In 2010, estimated average per capita spending for this subset of the privately insured increased by 3.3 percent, from $4,120 in 2009 to $4,255 in 2010 (Table 1). Spending growth in 2010 slowed relative to the 5.8 percent growth observed in 2009 and the 6.0 percent growth observed in 2008.

We analyzed spending by four major service categories: inpatient facility, outpatient facility (visits or procedures), professional, and prescription drugs. Per capita spending growth rates for the major service categories ranged from a low of 1.6 percent for inpatient spending to a high of 5.5 percent for outpatient facility spending (Table 1). Professional procedures performed by physician and nonphysician providers accounted for the largest portion of these expenditures (Figure 1).

HCCI also assessed spending by age group and Census region. Whereas beneficiaries age 18 and under had average per capita spending that was about a fourth of those aged 55 to 64, insured children had an annual average increase in spending of 4.5 percent, more than any other age group (Table 1). Across the four large Census regions of the country, spending differed and growth was considerably higher in the Northeast compared to the West (see also www.healthcostinstitute.org/maps).

Using United States Census data, HCCI estimated group ESI covered approximately 156.5 million individuals younger than 65 in 2010, a decline of 0.8 percent from 2009 (Table 1). Using this number, HCCI calculated an estimated total spending for this population. This simple calculation (population multiplied by per capita spending) suggests that total spending increased by 2.5 percent from 2009 to 2010. The slower rate of national growth reflects the decline in this privately insured population, whereas the higher rate of per capita growth reflects increases in the amount paid per beneficiary.

Plans and Beneficiaries' Relative Share of Expenditures

Per capita health care spending reflects the actual prices paid ("allowed costs") on average for services on behalf of the beneficiary. The payments made to providers are shared by health plans/self-funded employers ("payers") and beneficiaries ("insured"). Payers tend to examine per capita spending whereas the insured look to their out-of-pocket expenses.

Health care payers saw increases in their per capita spending (2.6%) and a decline in their share of the contribution to total health care expenditures (Table 2). Overall, health care plans paid 83.8 percent of aggregate, national group ESI beneficiaries' expenditures in 2010 (Figure 2).

Beneficiaries saw their out-of-pocket spending rise by 7.1 percent ($45) in 2010 (Table 2). In the same period, the share of total health care spending paid by beneficiaries out-of-pocket grew by 3.7 percent. Overall, the beneficiary paid 16.2 percent of all health care spending out-of-pocket in 2010, compared to 15.6 percent in 2009.

KEY DEFINITIONS

Per Capita—The sum of health expenditures divided by the insured population. Also calculated by multiplying utilization and price per service.

Price per Service—Average price per service for the population; includes both unit price and intensity effects.

Utilization—Average rate of use per insured person.

Intensity—Complexity of services provided; a component of price per service.

Intensity-Adjusted Price—Price per service, standardized for changes in intensity; used as a measure of price inflation. Also known as "unit price."

FIGURE 1

Expenditures by Service Category: 2010

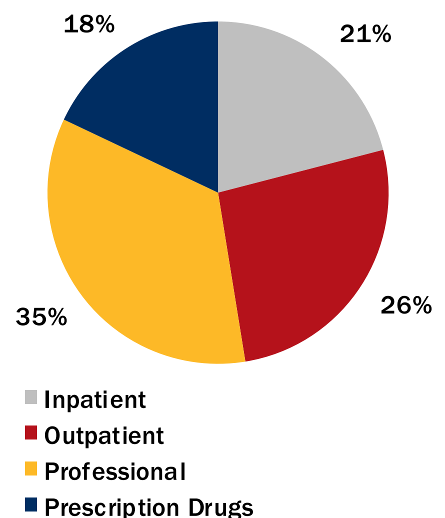


TABLE 1

Estimated Annual Expenditures: 2007—2010

	2007	2008	2009	2010	Percent Change 2009-2010
Estimated Average Per Capita Expenditure					
All Service Categories	$ 3,676	$ 3,895	$ 4,120	$ 4,255	3.3%
Percentage Change for All Service Categories		6.0%	5.8%	3.3%	
Inpatient	$ 799	$ 841	$ 879	$ 893	1.6%
Outpatient	$ 892	$ 972	$ 1,067	$ 1,126	5.5%
Professional	$ 1,314	$ 1,375	$ 1,439	$ 1,472	2.3%
Prescription Drug	$ 670	$ 707	$ 736	$ 765	4.0%
Estimated Average Per Capita Expenditure by Geographic Region					
Northeast	$ 3,581	$ 3,853	$ 4,137	$ 4,315	4.3%
South	$ 3,760	$ 3,974	$ 4,213	$ 4,338	3.0%
Midwest	$ 3,733	$ 3,945	$ 4,152	$ 4,292	3.4%
West	$ 3,569	$ 3,755	$ 3,931	$ 4,036	2.7%
Estimated Average Per Capita Expenditure by Age					
18 and Under	$ 1,790	$ 1,893	$ 2,031	$ 2,123	4.5%
19-44	$ 2,892	$ 3,070	$ 3,285	$ 3,362	2.3%
45-54	$ 4,855	$ 5,156	$ 5,441	$ 5,563	2.2%
55-64	$ 7,331	$ 7,731	$ 8,080	$ 8,327	3.1%
Estimated National Aggregates					
Estimated Commercially Insured Population (Mil)	166.3	164.3	157.8	156.5	-0.8%
Consumer Price Index for All Urban Consumers (CPI-U): U.S. City Average [1]					1.6%
Estimated Total Expenditure ($B)	$ 611.4	$ 639.9	$ 650.0	$ 666.1	2.5%

1. United States Department of Labor, Bureau of Labor Statistics. Consumer Price Index Detailed Report, Tables Annual Averages 2010 [Internet]. Washington (DC): BLS; [cited 2012 May 7]. Available from: http://www.bls.gov/cpi/cpid10av.pdf

Notes: All per capita expenditures weighted to reflect the national, younger than 65 ESI population. All figures rounded to the nearest integer, except for percentage changes and estimated national aggregates. Please refer to methodology and glossary for an explanation of terms at www.healthcostinstitute.org/report.

TABLE 2

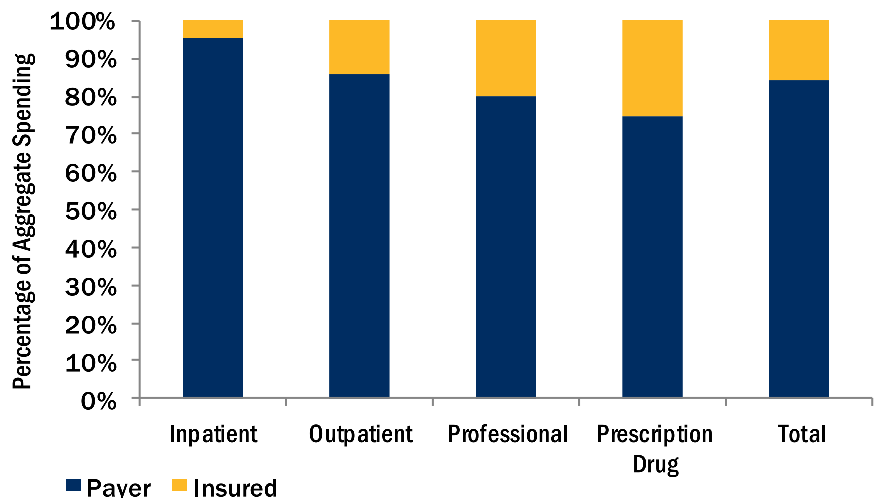
Estimated Annual Expenditures: 2009—2010

	2009	2010	Percent Change 2009-2010
Estimated Average Per Capita Beneficiary Out-of-Pocket			
All Service Categories	$ 644	$ 689	7.1%
Inpatient	$ 40	$ 43	7.0%
Outpatient	$ 146	$ 161	10.6%
Professional	$ 272	$ 294	8.0%
Prescription Drugs	$ 186	$ 192	3.0%
Out-of-Pocket as Percentage of Total Expenditure			
All Service Categories	15.6%	16.2%	3.7%
Estimated Average Per Capita—Payer (Net)			
All Service Categories	$ 3,477	$ 3,566	2.6%
Inpatient	$ 839	$ 850	1.3%
Outpatient	$ 921	$ 964	4.7%
Professional	$ 1,167	$ 1,178	1.0%
Prescription Drug	$ 550	$ 573	4.3%
Payer as Percentage of Total Expenditure			
All Service Categories	84.4%	83.8%	-0.7%

Notes: All per capita expenditures weighted to reflect the national, younger than 65 ESI population. All figures rounded to the nearest integer, except for percentage changes. Please refer to methodology and glossary for an explanation of terms (www.healthcostinstitute.org/report).

FIGURE 2

Payer Share Relative to Insured Share: 2010



Prices

Growth in the average payment per service appears to have driven the growth in per capita health care spending between 2009 and 2010. The average price paid per service for all major service categories increased from 2009 to 2010 (Table 3).

Facility Prices

The average price for an inpatient hospital admission was $14,662 in 2010, a 5.1 percent increase from 2009 (Table 3). The average facility price paid for an inpatient surgical admission rose from more than $25,000 in 2009 to more than $27,000 in 2010, a 6.4 percent increase (Figure 3 and Table 4). Stays for mental health and substance abuse admissions were less expensive than average payments, but grew faster (8.6%).

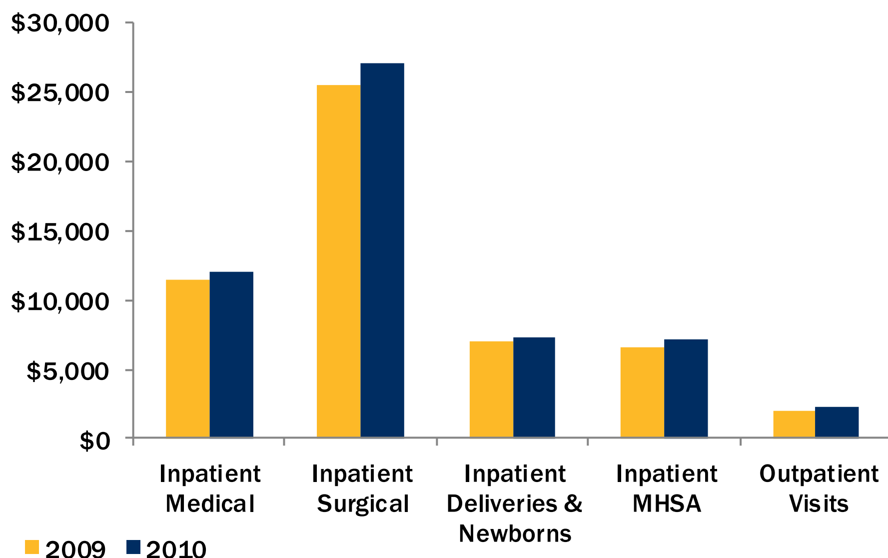
Prices for outpatient visits had higher growth than inpatient facility prices from 2009 to 2010. The average facility price paid for an outpatient visit rose to $2,224 in 2010, an increase of 10.1 percent from 2009. The price for an emergency room visit continued to grow in 2010 at 11.0 percent to $1,327.

Outpatient Procedures and Professional Prices

Payments for outpatient and professional procedures grew more slowly than other categories from 2009 to 2010. The average overall price for outpatient procedures was 1.7 percent higher in 2010 than 2009, and the price for professional procedures grew by 2.6 percent from 2009 to 2010 (Table 3). Payments for office visits grew by more than 5 percent in this period (Table 4) while payments for preventive services grew more slowly (1.5%-2.6%).

FIGURE 3

Facility Prices per Service: 2009—2010



KEY FINDINGS

Prices were the main driver of increases in per capita spending from 2009 to 2010.

6.4%

The increase in the average price paid for an inpatient surgical admission in 2009 ($25,469) compared to 2010 ($27,100).

8.9%

The increase in average facility price paid for outpatient surgery in 2009 ($3,163) compared to 2010 ($3,443).

11.0%

The increase in the average facility price for an emergency room visit in 2009 ($1,195) compared to 2010 ($1,327).

13.0% & -6.3%

The change in average price per brand name and generic drug prescription, respectively (2009 to 2010).

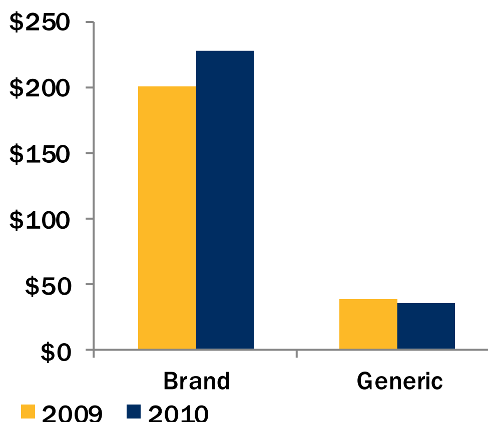
Prices

Prescription Drug Prices

Overall, average payments for prescription drugs increased by 3.0 percent from 2009 to 2010 (Table 3). However, there were notable pricing differences in brand and generic drugs, with brand name drugs increasing 13.0 percent from 2009 to 2010 and generic drugs decreasing 6.3 percent during the same period (Figure 4 and Table 4). Although the overall price per prescription increased on average, two therapeutic classes (central nervous system and gastrointestinal) decreased in average price (Table 4).

FIGURE 4

Price per Prescription Drug: 2009—2010



Payer and Insureds' Relative Share of Price Paid

Payments for services are generally shared between the payer, and the insured. Deductibles, coinsurance, and copays are the mechanisms for determining an insureds' share for any particular service. While HCCI does not have specific plan information, HCCI was able to separate amounts paid by payers and beneficiaries who used health care services. The out-of-pocket figures in this section of the report are per service (Figure 5 and Table 5).

In 2010, for inpatient admissions, beneficiaries paid an average of $700 out of pocket, a 10.7 percent increase from 2009 (Table 5). The beneficiaries' price paid per service also rose 10.7 percent for outpatient visits, to $162 out of pocket. Beneficiaries also experienced a 7.8 percent and 8.3 percent increase in prices paid per service for outpatient and professional procedures, respectively.

FIGURE 5

Out of Pocket Payments by Service Category: 2009—2010

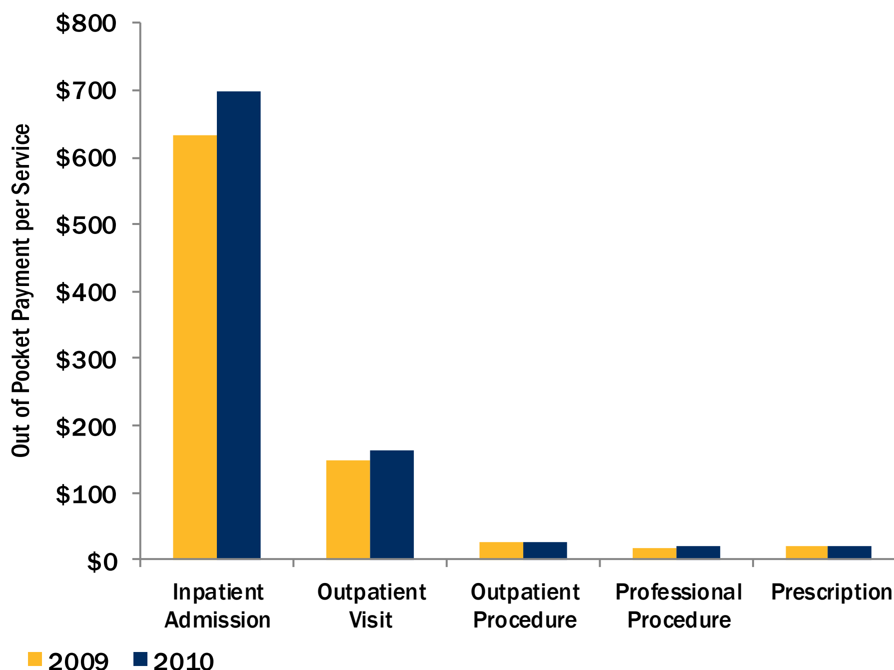


TABLE 3

Summary of Price: 2009—2010

	2009	2010	Percent Change 2009-2010
Price per Service			
Price per Inpatient Admission	$ 13,954	$ 14,662	5.1%
Outpatient			
Price per Visit	$ 2,019	$ 2,224	10.1%
Price per Procedure	$ 175	$ 178	1.7%
Price per Professional Procedure	$ 93	$ 95	2.6%
Price per Prescription	$ 80	$ 82	3.0%

Notes: All per capita expenditures weighted to reflect the national, younger than 65 ESI population. All figures rounded to the nearest integer except for percentage changes. All prices shown include both payer and beneficiary out-of-pocket payments. Please refer to methodology and glossary for an explanation of terms (www.healthcostinstitute.org/report).

For additional information, please see the Glossary and Appendix at www.healthcostinstitute.org

TABLE 4

Price per Service: 2009—2010

	2009	2010	Percent Change 2009 to 2010
Price per Inpatient Admission			
All Categories	$ 13,954	$ 14,662	5.1%
Medical	$ 11,418	$ 12,036	5.4%
Surgical	$ 25,469	$ 27,100	6.4%
Deliveries & Newborns	$ 6,953	$ 7,371	6.0%
Mental Health & Substance Abuse	$ 6,549	$ 7,114	8.6%
Skilled Nursing Facility	$ 5,376	$ 5,205	-3.2%
Price per Outpatient Visit			
All Categories	$ 2,019	$ 2,224	10.1%
Emergency Room	$ 1,195	$ 1,327	11.0%
Outpatient Surgery	$ 3,163	$ 3,443	8.9%
Observation	$ 1,767	$ 1,812	2.5%
Price per Outpatient Procedure			
All Categories	$ 175	$ 178	1.7%
Lab/Pathology	$ 57	$ 59	3.8%
Radiology Services	$ 438	$ 455	3.9%
Ancillary Services	$ 161	$ 167	3.3%
Other Categories	$ 226	$ 227	0.3%
Price per Professional Procedure			
All Categories	$ 93	$ 95	2.6%
Office Visits—Primary Care Providers	$ 82	$ 86	5.3%
Office Visits—Specialists	$ 86	$ 91	5.4%
Preventive Visits—Primary Care Providers	$ 112	$ 115	2.6%
Preventive Visits—Specialists	$ 125	$ 127	1.5%
Surgery	$ 365	$ 371	1.8%
Administered Drugs	$ 350	$ 362	3.3%
Anesthesia	$ 678	$ 694	2.4%
Pathology/Lab	$ 27	$ 28	2.2%
Radiology	$ 117	$ 118	1.1%
Other Procedures	$ 76	$ 77	2.3%

Notes: All per capita expenditures weighted to reflect the national, younger than 65 ESI population. All figures rounded to the nearest integer except for percentage changes. All prices shown include both payer and beneficiary out-of-pocket payments. Please refer to methodology and glossary for an explanation of terms (www.healthcostinstitute.org/report).

TABLE 4 (CONTINUED)

Price per Service: 2009—2010

	2009	2010	Percent Change 2009-2010
Price per Prescription by Major Therapeutic Class			
All Classes	$ 80	$ 82	3.0%
Anti-infectives	$ 69	$ 70	1.3%
Cardiovascular	$ 62	$ 64	3.0%
Central Nervous System	$ 72	$ 70	-2.0%
Gastrointestinal	$ 140	$ 130	-7.1%
Hormones	$ 72	$ 78	8.4%
Other Therapeutic Classes	$ 106	$ 114	7.4%
Price per Prescription by Type			
All Types	$ 80	$ 82	3.0%
Brand	$ 201	$ 228	13.0%
Generic	$ 38	$ 35	-6.3%

Notes: All per capita expenditures weighted to reflect the national, younger than 65 ESI population. All figures rounded to the nearest integer except for percentage changes. All prices shown include both payer and beneficiary out-of-pocket payments. Please refer to methodology and glossary for an explanation of terms (www.healthcostinstitute.org/report).

TABLE 5

Out of Pocket Payments: 2009—2010

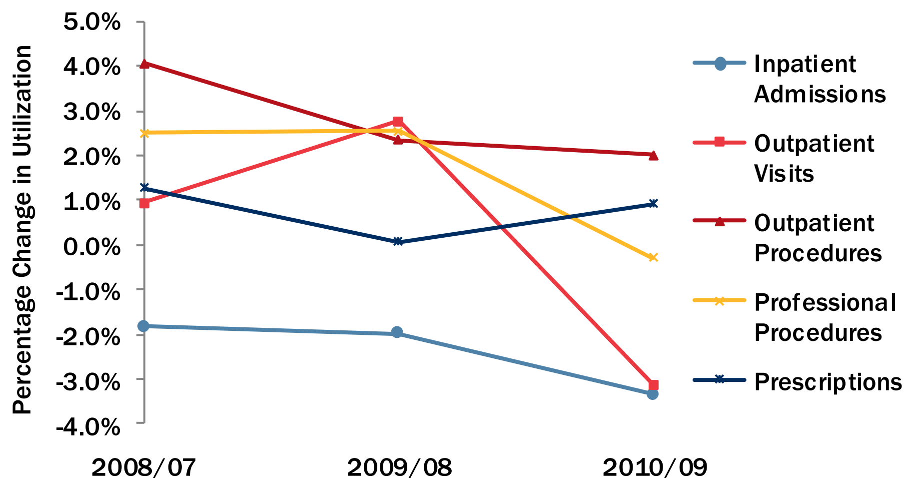
	2009	2010	Percent Change 2009-2010
Average Out-of-Pocket Payment per Service			
Per Inpatient Admission	$ 632	$ 700	10.7%
Outpatient			
Per Visit	$ 147	$ 162	10.7%
Per Procedure	$ 25	$ 27	7.8%
Per Professional Procedure	$ 18	$ 19	8.3%
Per Prescription	$ 20	$ 21	2.1%

Notes: All per capita expenditures weighted to reflect the national, younger than 65 ESI population. All figures rounded to the nearest integer except for percentage changes. Please refer to methodology and glossary for an explanation of terms (www.healthcostinstitute.org/report). Payments shown in Table 5 include only amounts paid by the insured.

Utilization

FIGURE 6

Change in Utilization: 2007—2010



Overall utilization trends were flat or declining from 2007 to 2010 (Figure 6). The average number of inpatient admissions, outpatient visits, and professional procedures per 1,000 beneficiaries declined between 2009 and 2010 (Table 6). Utilization of outpatient procedures and prescriptions for drugs per 1,000 beneficiaries rose between 2009 and 2010.

Facility-Based Services

For every 1,000 beneficiaries, there were 60.9 inpatient admissions in 2010, down 3.3 percent from 2009 (Table 6). Though inpatient rates of mental health and substance abuse admissions and skilled nursing facility stays were small compared to other inpatient categories, they had the highest rates of growth (Table 7). The average length of stay for inpatient admissions remained the same from 2009 to 2010.

Rates of outpatient facility visits, such as emergency room and outpatient surgery, decreased 3.1 percent from 2009 to 2010 (Table 7). The use of outpatient radiology services also decreased in 2010, by 2.7 percent. During this same period, the use of laboratory and pathology services (i.e., diagnostic testing) increased by 2.4 percent.

Professional Procedures

The utilization of professional services decreased, driven by a reduction in office visits to primary care providers and lower use of radiologists (Table 7). The average insured visited a health professional about 3.3 times in 2010: 1.6 primary care office visits, 1.3 specialist office visits, 0.3 preventive visits with a primary care provider, and 0.1 preventive visits with a specialist.

Aside from primary care office visits and radiology, use of all other professional services increased, especially primary care preventive visits (3.9%) and anesthesia services (1.9 %). See Figure 7 for more detail on how 2010 procedures were distributed between major categories.

KEY FINDINGS

Growth in the use of most health care services slowed in 2010.

Utilization rates declined by over 5 percent for medical inpatient admissions, emergency room visits, primary care provider office visits, and radiology procedures.

Utilization rates increased by at least 5 percent for mental health and substance abuse facility admissions, skilled nursing facility admissions, outpatient observation visits and other outpatient procedures.

Prescription Drug Use

The average beneficiary filled 9.3 drug prescriptions in 2010, an increase of 0.9 percent since 2009. The number of brand-name drug prescriptions decreased by 3.9 percent, whereas the number of generic drug prescriptions increased by 2.5 percent (Figure 8).

TABLE 6

Summary of Utilization of Services: 2007—2010

	2007	2008	2009	2010	Percent Change 2009-2010
Utilization of Services per 1,000 Insureds					
Inpatient Admissions	65.4	64.3	63.0	60.9	-3.3%
Outpatient					
Outpatient Visits	310	313	321	311	-3.1%
Outpatient Procedures	2,241	2,332	2,387	2,435	2.0%
Professional Procedures	14,735	15,103	15,487	15,444	-0.3%
Prescriptions	9,077	9,193	9,200	9,285	0.9%

Notes: All per capita expenditures weighted to reflect the national, younger than 65 ESI population. All figures rounded to the nearest integer except for inpatient admissions and percentage changes. Please refer to methodology and glossary for an explanation of terms (www.healthcostinstitute.org/report).

FIGURE 7

Professional Utilization by Category: 2010

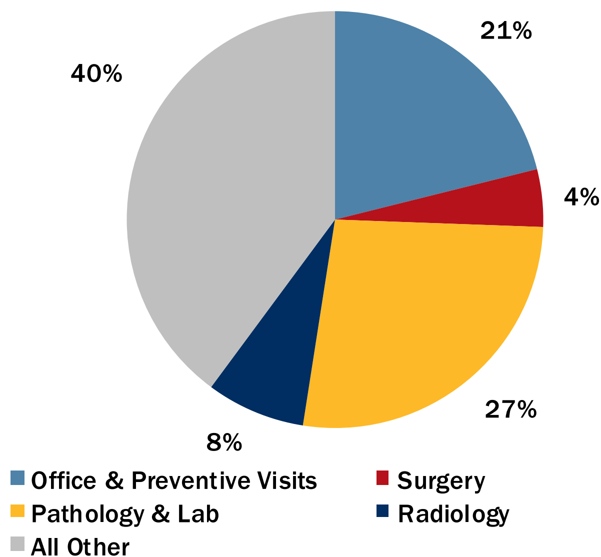
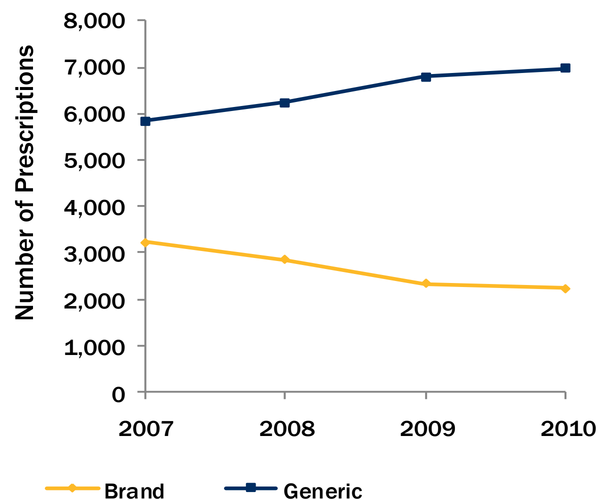


FIGURE 8

Prescription Drug Trends per 1,000 Insured: 2007—2010



HOW IS UTILIZATION MEASURED?

Utilization is measured by admissions, length of stay, visits, procedures, and prescriptions. Utilization rates shown in this report are expressed as average rates per member multiplied by 1,000, rather than the absolute quantity of services provided to the national younger than 65 ESI population.

TABLE 7

Utilization of Services — Facility: 2009—2010

	2009	2010	Percent Change 2009-2010
Inpatient Utilization of Services			
Admissions per 1,000 Insured			
All Categories	63.0	60.9	-3.3%
Medical	23.8	22.6	-5.2%
Surgical	18.3	17.4	-4.9%
Deliveries & Newborns	15.9	15.7	-1.5%
Mental Health & Substance Abuse	3.6	3.8	5.0%
Skilled Nursing Facility	1.4	1.5	7.2%
Average Length of Stay			
All Categories	4.3	4.3	0.0%
Medical	4.0	4.0	-1.0%
Surgical	4.2	4.1	-2.2%
Deliveries & Newborns	3.1	3.1	-0.2%
Mental Health & Substance Abuse	6.9	7.3	5.1%
Skilled Nursing Facility	17.1	16.3	-4.9%
Outpatient Utilization of Services			
Outpatient Visits per 1,000 Insured			
All Categories	321	311	-3.1%
Emergency Room	174	165	-5.3%
Outpatient Surgery	130	128	-1.3%
Observation	18	19	5.3%
Outpatient Procedures per 1,000 Insured			
All Categories	2,387	2,435	2.0%
Lab/Pathology	1,069	1,095	2.4%
Radiology Services	400	389	-2.7%
Ancillary Services	401	403	0.6%
Other Categories	517	548	5.9%

Notes: All per capita expenditures weighted to reflect the national, younger than 65 ESI population. All figures rounded to the nearest integer except for admissions per 1,000 insured, average length of stay, and percentage changes. Please refer to methodology and glossary for an explanation of terms (www.healthcostinstitute.org/report).

TABLE 7 (CONTINUED)

Utilization of Services — Non-Facility: 2009—2010

	2009	2010	Percent Change 2009-2010
Professional Services Utilization			
Professional Procedures per 1,000 Insured			
All Categories	15,487	15,444	-0.3%
Office Visits—Primary Care Providers	1,660	1,574	-5.2%
Office Visits—Specialists	1,205	1,252	3.9%
Preventive Visits—PCP	300	311	3.9%
Preventive Visits—Specialists	122	123	0.4%
Surgery	688	689	0.1%
Administered Drugs	366	369	0.8%
Anesthesia	125	127	1.9%
Pathology/Lab	4,111	4,155	1.1%
Radiology	1,253	1,185	-5.4%
Other Procedures	5,657	5,659	0.0%
Prescription Drug Utilization			
Prescriptions per 1,000 Insured — By Therapeutic Class			
All Classes	9,200	9,285	0.9%
Anti-infectives	1,048	1,002	-4.4%
Cardiovascular	1,831	1,851	1.1%
Central Nervous System	2,387	2,471	3.5%
Gastrointestinal	361	361	0.1%
Hormones	1,438	1,452	1.0%
Other Therapeutic Classes	2,135	2,148	0.6%
Prescriptions per 1,000 Insured — By Type			
All Types	9,200	9,285	0.9%
Brand Drugs	2,332	2,241	-3.9%
Generic Drugs	6,799	6,972	2.5%

Notes: All per capita expenditures weighted to reflect the national, younger than 65 ESI population. All figures rounded to the nearest integer except for percentage changes. Please refer to methodology and glossary for an explanation of terms (www.healthcostinstitute.org/report).

Mix of Services

We find that the mix of services grew more complex between 2009 and 2010 for inpatient and outpatient visits, and less complex for outpatient and professional procedures. However, for all major categories of service, the increases in intensity observed between 2009 and 2010 were lower than the growth rate of unit prices. Prices, therefore, were a bigger factor in increased spending in 2009-2010 than the intensity of services.

Definition of Intensity and Intensity-adjusted Price

This report has explored the major components that drive health care spending: the price and utilization of services. However, an additional component contributes to health care spending--the mix of services used or *intensity* of the services.

Isolating the change in intensity from changes in utilization and price associated with each service allows for the calculation of an intensity-adjusted price. This price is never seen by the patient or provider directly, and is only used to assess whether overall price, utilization, or intensity drives spending trends.

Intensity refers to the complexity of each service. For example, one patient has a simple 15-minute appointment with a physician, but another patient has a more complicated 30-minute visit with the same physician. Intensity of services is greater for the second patient, even though each was counted as a single office visit. As patients grow sicker, they may demand more time with their doctors or require complicated medical care, so the mix of services they will use is likely to change, and the intensity of medical services is likely to grow, leading to higher expenditures.

HCCI measures intensity by assigning a weight to each health care service. HCCI did not calculate intensity of prescriptions drugs, as this is typically examined by the number of pill or dosage days per prescription and because changes in prescriptions types are fully captured by the price of the drug.

The intensity-adjusted price, or "unit price", was calculated by dividing the price paid for the service by the intensity of the service. A comparison between the two rates of growth is required to determine whether the mix of services drove overall price changes.

For example, no change in the mix of services at the same time that the intensity-adjusted price of services rises would suggest that increases in unit prices drove the overall price of services, not more intensity of service. An increase in the mix of services matched with no change in intensity-adjusted price would suggest that increased intensity drove overall price paid per service.

Changes in Intensity and Intensity-adjusted Price

For inpatient admissions and outpatient visits, intensity of services grew by 0.7 percent and 4.6 percent, respectively (Table 8). Intensity of services declined overall for outpatient procedures (-2.3%) and professional procedures (-0.5%), but rose 2.1 percent for specialist office visits (Table 9). Within outpatient visits, all three subcategories (emergency room visits, outpatient surgery, and observation) had lower intensity growth rates than the overall outpatient growth rate of 4.6 percent (Table 9).

Intensity-adjusted price rose between 3.1 and 5.3 percent for all major service categories in 2010 (Table 9). Intensity-adjusted price did not decline for any specific form of admission, visit, or procedure. Intensity-adjusted price rose by more than 5 percent for delivery/newborn admissions (5.5%), mental health and substance abuse admissions (9.0%), emergency room

KEY FINDINGS

Prices grew at faster rates than the intensity of services.

The intensity of inpatient admissions increased only 0.7% from 2009 to 2010, whereas the intensity adjusted price increased 4.6 percent.

Intensity and intensity-adjusted price were both major contributors to the 10.1% trend in prices paid per outpatient visit, such as emergency room and outpatient surgery visits. However, unit prices grew more than intensity (5.3% and 4.6%, respectively).

With the exception of office visits, surgery, and pathology/lab services, intensity of professional procedures declined between 2009 and 2010.

Mix of Services

visits (7.1%), outpatient surgery visits (5.3%), outpatient radiology services (8.5%), and administered drugs (7.6%).

A review of these trends suggests that the growth in mix of services was less than the growth in intensity-adjusted prices in all major categories, as shown in Figure 9. This would suggest that rising payments are a response to rising unit prices for each individual service, more than a response to changes in the mix of services.

Impact of Mix of Services and Utilization Trend on Expenditures

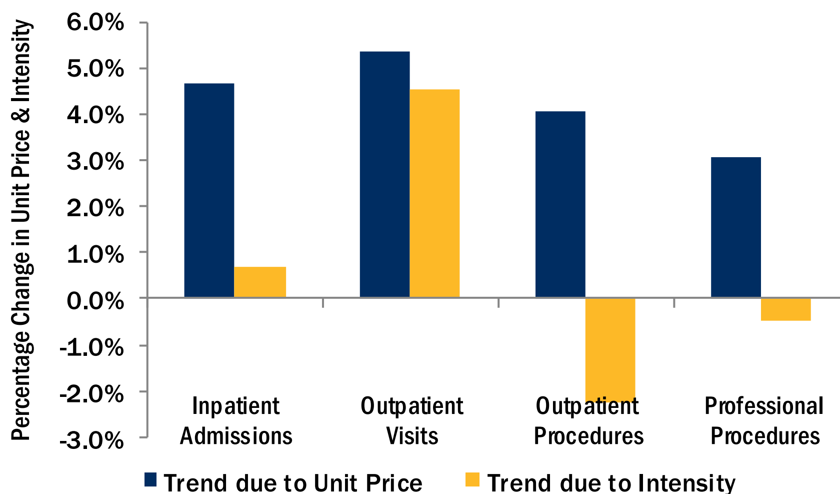
Table 8 provides a look into the relative contribution of the three components underlying spending: utilization rate, intensity-adjusted price, and intensity.

Decomposition of the overall trend in expenditures suggests that changes in the intensity of services were less than the changes in overall price – supporting the finding that changes in price, not service mix, led to rising expenditures. For inpatient admissions, the intensity of services (0.7%) grew much slower than the price per service (4.6%), indicating change in unit prices in inpatient services contributed the most to the rise in inpatient prices paid (Table 8).

The growth rate of price per service was consistently higher than the growth rate of utilization, suggesting changes in utilization helped slow overall per capita increases. Inpatient admission utilization declined by 3.3 percent whereas intensity rose 0.7 percent and unit prices rose 4.6 percent for a net 1.6 percent increase in per capita spending.

FIGURE 9

Components of Price per Service Trend: 2009—2010



WHAT IS INTENSITY?

Intensity is a metric designed to weigh the resource use of patients with different diagnoses and different procedures. HCCI based the intensity weights on the type and place of service. More can be read about the design of intensity weights at www.healthcostinstitute.org/report.

TABLE 8

Decomposition of Price and Utilization Trend: 2010

		Components of Trend		
	Trend Per Capita	Utilization	Intensity-Adjusted Price	Intensity
Major Service Category				
Inpatient	1.6%	-3.3%	4.6%	0.7%
Outpatient				
Outpatient Visits	6.7%	-3.1%	5.3%	4.6%
Outpatient Procedures	3.7%	2.0%	4.0%	-2.3%
Professional	2.3%	-0.3%	3.1%	-0.5%
Prescription Drug	4.0%	0.9%	N/A	N/A

Notes: All per capita expenditures weighted to reflect the national, younger than 65 ESI population. Please refer to methodology and glossary for an explanation of terms (www.healthcostinstitute.org/report).

TABLE 9

Effect of Changes in Intensity on Changes in Prices: 2009—2010

	Changes in Price per Service 2009-2010	Unit Price: Intensity-Adjusted Price			Mix of Services: Intensity Weight per Service		
		2009	2010	Trend	2009	2010	Trend
Inpatient Admissions							
All Categories	5.1%	$ 11,335	$ 11,857	4.6%	1.25	1.26	0.7%
Medical	5.4%	$ 12,517	$ 13,025	4.1%	0.91	0.92	1.3%
Surgical	6.4%	$ 11,415	$ 11,962	4.8%	2.23	2.27	1.5%
Deliveries & Newborns	6.0%	$ 9,607	$ 10,132	5.5%	0.72	0.73	0.5%
Mental Health & Substance Abuse	8.6%	$ 8,182	$ 8,918	9.0%	0.80	0.80	-0.3%
Skilled Nursing Facility[1]	-3.2%	N/A	N/A	N/A	N/A	N/A	N/A
Outpatient Visits							
All Categories	10.1%	$ 114	$ 120	5.3%	17.67	18.48	4.6%
Emergency Room	11.0%	$ 181	$ 194	7.1%	6.61	6.85	3.6%
Outpatient Surgery	8.9%	$ 93	$ 98	5.3%	33.95	35.11	3.4%
Observation	2.5%	$ 235	$ 239	1.8%	7.52	7.57	0.7%
Outpatient Procedures							
All Categories	1.7%	$ 132	$ 138	4.0%	1.32	1.29	-2.3%
Lab/Pathology	3.8%	$ 248	$ 254	2.7%	0.23	0.23	1.0%
Radiology Services	3.9%	$ 201	$ 218	8.5%	2.18	2.09	-4.3%
Ancillary Services	3.3%	$ 47	$ 48	1.8%	3.40	3.46	1.5%
Other Categories	0.3%	$ 173	$ 181	4.3%	1.30	1.25	-3.8%
Professional Procedures							
All Categories	2.6%	$ 55	$ 56	3.1%	1.70	1.70	-0.5%
Office Visits—PCP	5.3%	$ 38	$ 40	4.2%	2.14	2.16	1.0%
Office Visits—Specialists	5.4%	$ 40	$ 41	3.3%	2.17	2.21	2.1%
Preventive Visits—PCP	2.6%	$ 45	$ 46	2.7%	2.51	2.50	-0.1%
Preventive Visits—Specialists	1.5%	$ 45	$ 46	2.1%	2.77	2.75	-0.6%
Surgery	1.8%	$ 50	$ 51	1.7%	7.24	7.24	0.0%
Administered Drugs	3.3%	$ 324	$ 349	7.6%	1.08	1.04	-4.0%
Anesthesia	2.4%	$ 104	$ 108	3.4%	6.50	6.44	-1.0%
Pathology/Lab	2.2%	$ 48	$ 48	0.5%	0.57	0.58	1.7%
Radiology	1.1%	$ 54	$ 57	4.4%	2.16	2.09	-3.2%
Other Procedures	2.3%	$ 54	$ 56	3.3%	1.40	1.39	-1.0%

1. HCCI did not calculate intensity for skilled nursing facilities, due to the bundling of multiple services.

Notes: All data weighted to reflect the national, younger than 65 ESI population. All prices rounded to the nearest whole dollar. Please refer to methodology and glossary for an explanation of terms (www.healthcostinstitute.org/report).

HCCI's Health Care Cost and Utilization Reports are just the starting point for many independent research studies focused on health care costs in the United States. The following are some of the studies currently underway, by independent researchers, using the Institute's claims-based data:

EFFECTS OF AGING ON HEALTH CARE COSTS. As individuals age, an important question is to what extent are health care costs driven by greater consumption of higher cost medical services. This study will address this question across different age groups, and major service categories (inpatient, outpatient, professional, and pharmacy). The study, supported by the Society of Actuaries and directed by Dale Yamamoto, will be released in fall 2012.

ECONOMIC DOWNTURNS AND CHANGES IN HEALTH INSURANCE RISK POOLS. Whereas premium increases in the individual health insurance market surged in some locations during the recession, there has been little or no empirical work examining how insurance risk pools change during economic downturns. Three Northwestern University researchers, David Dranove, Craig Garthwaite, and Chris Ody, are using HCCI data to assess (1) whether individuals who retain their health insurance during an economic downturn are relatively sicker than those who do so at other times in the business cycle, (2) how changes in the risk pool affect the average cost of medical care for the insured, and (3) what portion of rising health insurance premiums can be explained by this business cycle effect?

DETERMINANTS OF AND VARIATION IN HOSPITAL PRICING. Researchers at Carnegie Mellon University (Martin Gaynor) and the London School of Economics (Zack Cooper and John Van Reenen) are studying (1) variation in hospital pricing and the extent to which more expensive hospitals provide better care, (2) the relative contribution of rising prices to rising hospital spending, (3) the influence of hospital market structure on the prices hospitals charge for care, and (4) whether hospitals cost shift, i.e., raise the prices they charge to private patients as publicly funded patients' reimbursement rates fall. This study will be the first to examine these questions using national data on actual payments.

Additional studies under review address cost and health information technologies, and whether prices or utilization are driving increases in Medicare Advantage costs. As studies are approved, they will be posted on the HCCI Website.

A Closer Look at Mental Health and Substance Abuse

In future reports, HCCI will take a "closer look" at some of its results. Here we briefly call out results in the facility-based Mental Health and Substance Abuse (MHSA) service category. MHSA services are often contracted to specialty firms on a capitated basis. HCCI's data, which covers only the remaining population, shows:

- Inpatient utilization increased 5.0 percent in 2010 compared to 2009;
- Average lengths of stay increased 5.1 percent;
- The facility price paid per admission was $6,678 in 2010, an increase of 8.6 percent from 2009;
- The use of central nervous system drugs (used for MHSA treatment) increased 3.5 percent; and
- Intensity of services utilized declined 0.3 percent.

Though MHSA treatment is only a small component of total health care spending and private insurance pays for only a part of this, both prices and utilization of MHSA services are increasing. These trends warrant future analysis.

HCCI HEALTH CARE COST INSTITUTE

Copyright 2012 Health Care Cost Institute Inc. Unless explicitly noted, the content of this report is licensed under a Creative Commons Attribution Non-Commercial No Derivatives 3.0 License

1310 G Street NW, Suite 720
Washington, DC 20005

202-803-5200

www.healthcostinstitute.org