



2013 Health Care Cost and Utilization Report

October 2014

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Letter from the Executive Director

The Health Care Cost Institute (HCCI) is pleased to release the 2013 *Health Care Cost and Utilization Report*. This report is the first examination of 2013 data, and it details the health care cost and utilization trends for Americans younger than age 65 and covered by employer sponsored insurance (ESI).

In 2013, health care spending for the national ESI population grew 3.9%. This growth rate was similar to the rates observed in 2011 (4.0%) and 2012 (3.7%). Spending growth for 2013 was driven mainly by rising prices rather than by utilization, as use of many services declined. As in previous years, this growth in spending was not consistent across various ESI population groups. For this report, HCCI detailed the health care cost and utilization trends across age, gender, and geographic sub-populations. We hope that you find the report informative.

In reviewing the last year, HCCI has engaged in numerous efforts we want to make sure you are aware of.

- *Medicare data:* The Centers for Medicare & Medicaid Services (CMS) certified HCCI as the first national Qualified Entity, granting HCCI access to use for quality reporting Medicare Parts A, B, and D data for the entire country.
- *APCD collaboration:* HCCI's ongoing partnership with Vermont yielded the first HCCI-produced public report for the state's all payer claims database (APCD). This report, the 2007-2011 *Vermont Health Care Cost and Utilization Report*, described health care cost and use trends for Vermonters covered by ESI and compared these trends to the national ESI population for the years 2007 through 2011.
- *Academic research:* The HCCI dataset is being validated as a recognized data source for academic research. In the October 2013 issue of *Health Affairs*, HCCI published an article examining the longitudinal health care trends of the ESI population. The August 2014 issue of *Health Affairs* included the first article published by academic researchers using HCCI's dataset, "Health Spending Slowdown is Mostly Due to Economic Factors, Not Structural Change in the Health Care Sector."
- *Dataset access:* HCCI created the Academic Research Partnership program to expand access by academic researchers to HCCI-held claims data. The initial partners included major public and private universities, two actuarial associations, and two government agencies.
- *State health reform grants:* HCCI and the National Academy for State Health Policy (NASHP), with funding from the Laura and John Arnold Foundation, launched a grant program designed to promote academic research of state health reform efforts.
- *Transparency initiative:* HCCI has partnered with our data contributors and other stakeholders to develop a free Web-based portal to provide health care price and quality information to the public.

More information can be found on the HCCI Website (www.healthcostinstitute.org).

In addition to these activities, HCCI continues to be a source of public reporting on spending and utilization trends of the ESI population younger than age 65. Along with this report, HCCI recently produced the *Children's Health Spending: 2009-2012* report and an issue brief on the medical health care trends for young adults (ages 19–25).

Our work over the last year would not have been possible without ongoing support from our stakeholders and partners. We look forward to continue working with them on our expanding agenda of activities in 2015.

David Newman
Executive Director, HCCI

Executive Summary

This report, 2013 *Health Care Costs and Utilization*, is the fourth in a series of annual reports by the Health Care Cost Institute (HCCI) on the health care activity of individuals who are younger than age 65 and covered by employer-sponsored health insurance (ESI). The report's study period (2011–2013) covers the years after passage of the Affordable Care Act (ACA) and prior to the opening of health insurance exchanges. As in previous years, the report details the levels and changes in per capita expenditures (“spending”), utilization (“use”), and prices of medical and prescription services used by the ESI population. Also, for the first time, it details patterns of spending and service use by age-gender groups of the ESI population.

In 2013, spending for the national ESI population grew 3.9% (Table 1). Spending was driven up by rising prices of medical services and brand prescriptions (see “Key definitions”), while use of inpatient and outpatient services and brand prescriptions fell (Table 2). Separately, the use of filled days of generic prescriptions grew 4.5%, while the average price fell by 0.5%.

Despite uneven growth among ESI sub-populations, national trend remained stable

In 2013, ESI health care expenditures increased by 3.9% (\$183 per capita) to \$4,864 per insured (Table 1). Since 2010, per capita ESI health spending grew by an average 3.9% per year. This health care spending trend is considerably slower than historical

expenditure growth for the ESI population.

A number of spending trends from 2011 and 2012 continued in 2013. The Northeast region of the county continued to have the highest per capita expenditures (\$5,037 per insured) and the highest rate of spending growth (4.8%). The West continued to have the lowest expenditures (\$4,542 per insured) and lowest growth rate (3.0%). Children (ages 0–18) and young adults (ages 19–25) continued to have the lowest per capita expenditures (\$2,574 and \$2,676, respectively) and the fastest expenditure growth (4.6% and 4.5%).^{1,2}

A number of earlier trends, however, did not persist in 2013. Spending in the West grew faster in 2013 than in previous years. Spending growth in the South experienced the highest rate in 2012 but slowed to 3.6% in 2013, the second lowest growth rate. For young adults and intermediate adults (ages 26–44), spending growth also slowed by more than a percentage point, whereas spending growth for pre-Medicare adults (ages 55–64) grew faster than in 2012 by nearly two percentage points. Per capita health care spending for women (\$5,403) remained higher than spending for men (\$4,305), but the growth rate for men accelerated while the rate for women slowed.

Spending on medical services and prescriptions continued to rise in 2013

Spending trends in 2013 were similar to those observed in 2011 and 2012, with 20% of expenditures on acute

BY THE NUMBERS: 2013

3.9%

The increase in per capita health care spending per insured.

-0.5% & 5.8%

The decline in utilization and increase in price paid for outpatient services.

-15.5% & 21.2%

The decline in utilization and increase in price paid for brand prescriptions.

4.5% & -0.5%

The increase in utilization and decline in prices paid for generic prescriptions.

0.8% & 2.5%

The increase in utilization and increase in price paid for professional services.

8.0%

The increase in utilization of specialist office visits.

inpatient admissions, 28% of expenditures on outpatient care, 34% of expenditures on professional services, and the remaining 17% of expenditures on prescriptions. Spending on acute inpatient care (3.9%) and professional procedures (3.3%) grew faster in 2013 than in 2012 (1.7% and 2.9%, respectively). Outpatient services continued to be the fastest-growing medical service category in terms of spending, but between 2012 and 2013, growth slowed from 6.3% to 5.2%. Prescriptions spending rose by 3.1%, with a spending growth faster on generic (3.9%) than on brand (2.4%) prescriptions.

Professional service and generic prescription use rose

In 2013, professional service use rose 0.8% (Table 3), due to rising utilization of commonly used services, such as office visits to specialists (1,493 services per 1,000 insureds; Appendix Table A5) and laboratory and pathology (lab/path) services (4,719 services per 1,000 insureds). Office visits to specialists grew by 8.0%, and use of lab/path services increased by 1.9%. Increases in the use of these detailed categories offset declining use in other professional detailed service categories, such as office visits to primary care providers (-3.8%).

Also in 2013, generic prescriptions use increased by 4.5% (Table 3), the lowest growth rate observed since 2011. Generics accounted for 83.3% of prescription filled days in 2013. The four mostly commonly filled detailed categories of generic prescriptions were central nervous system (CNS) agents, cardiovascular drugs, hormones and synthetic substitutes, and anti-infective agents (Appendix Table A5). Of these prescriptions, only use of anti-infective agents declined (-1.8%).

Inpatient, outpatient, and brand prescription use fell

In 2013, medical service use fell for acute inpatient admissions, outpatient visits, and outpatient-other services (Table 3). Acute inpatient admissions per 1,000 declined 2.3% due to lower medical (-5.1%) and surgical (-3.7%) admissions per 1,000 insureds (Appendix Table A5). Driving the decline in the number of outpatient visits (-0.8%, or 3 visits per 1,000 insureds; Table 2) were declines in outpatient surgery and emergency room visits (Appendix Table A5). Use of outpatient-other services declined by 0.5% (Table 3) due to fewer ancillary and lab/path (Appendix Table A5) services used.

Also in 2013, use of brand prescriptions fell sharply by 15.5% (Table 3). Continuing a multiyear trend, use declined for the most commonly filled detailed categories (see “Key definitions”) of brand prescriptions (hormones and synthetic substitutes, cardiovascular drugs, CNS, and gastrointestinal drugs; Appendix Table A5).

Rising prices pushed up medical and brand prescription spending

In our annual analyses of ESI health care spending, HCCI examines changes in utilization rates and prices paid for care. Our findings for 2013 spending are consistent with those for 2011 and 2012: that rising prices, rather than utilization, were the primary drivers of spending growth for all medical service categories and brand prescriptions (Table 2 and Table 3). For acute inpatient, outpatient, and brand prescriptions, expenditures rose owing to rising prices and that growth was moderated by falling utilization. Exceptions to this trend were professional services and generic pre-

scriptions. Professional services showed increases in both average price and utilization, whereas higher use of generic prescriptions offset the effects of a lower average price.²⁰¹³

Notable trends: use of services by age-gender groups; emergency room spending; brand prescription spending; CNS agents; demographics of generic prescription use

Utilization by adult women higher than that of men until age 55.

In 2013 adult women (ages 19–54) had levels of outpatient and professional service use higher than those of adult men (Appendix Table A10a). In particular, use of outpatient and professional lab/path and radiology services was higher for women than for men within the same age group. After age 54, pre-Medicare adult men and women used these services at relatively similar rates.

Spending levels for emergency room visits similar across adult age groups, despite differences in use.

In 2013, spending on emergency room (ER) visits for young adults was \$310 per capita and \$314 per capita for pre-Medicare adults. Overall, ER use rates declined with age; however, the average price paid by older adults was higher than that paid by young adults, due to both higher prices and higher intensity of care for older adults.

Brand spending highest for antirheumatic agents.

In 2013, the top four classes of brand prescriptions, by per capita spending, were antirheumatic agents, biologic response modifiers, insulins, and antiretrovirals (Table 4). Spending on brand antirheumatic agents was \$49 per capita. Collectively, spending on

these drugs was \$154 per insured, totaling 28% of ESI spending on brand prescriptions.

CNS prescriptions dominated generic usage.

In 2013, spending per insured on CNS agents, drugs that affect the brain and spinal column, was \$90 (Appendix Table A4). CNS agents accounted for 31.4% of generic drug spending per capita and 27.1% of the generic filled days (Appendix Table A5). Antidepressants were the most commonly filled class of CNS generic prescriptions (Table 6) and the most used generic drug class for young adult men, intermediate adult men, middle age adult women, and pre-Medicare adult

women (Tables 9–12). For girls, young adult women, and intermediate adult women the most commonly used class of generics was contraceptives.

Conclusions

Differences in spending and use across these groups are relevant not only to the insureds, but also to employers and policymakers interested in health care trends during this pre-exchange period. For 2013, HCCI found that utilization rose for some services and populations affected by the ACA, including preventive visits and contraception, but these services generally contributed little to overall spending. ESI spending increased, at a

rate similar to those in 2011 and 2012. In each of those years, rising medical and brand prescription prices led to spending growth. However, unlike in 2011 and 2012, declining utilization in 2013 offset price increases, keeping expenditure growth historically slow.

KEY DEFINITIONS

What is per capita spending?

Per capita **spending** in this report is the estimate of total expenditures paid divided by the employer-sponsored insured population.

What are medical service, subservice, and detailed categories?

Three medical service categories are identified: inpatient facility, outpatient facility, and professional procedures. HCCI also reports on three facility subservice categories: acute inpatient, which includes labor and delivery, medical, mental health and substance use, newborn, and surgery claims; outpatient visits; and outpatient-other services.⁷ These are further classified into “detailed service” categories.

What are prescription service, subservice, detailed service categories, and subclasses?

HCCI analyzes prescription drug and device claims from pharmacies. The prescription service category is further classified by brand and generic drug subservice categories. These are further classified into “detailed service” categories, and further into subclasses.⁷

What is intensity?

Intensity is a measure of the complexity of a service, including the length of time, the severity of the illness addressed, and the amount of resources required for treatment. Many factors can account for changes in the intensity of services, including new and better forms of treatment, the health status of the population receiving services, and reimbursement system modifications that either encourage or discourage one form of treatment over another. HCCI does not currently calculate intensity of prescriptions.

What is an intensity-adjusted price?

Isolating the effect of intensity on the price paid per service allows for the calculation of an intensity-adjusted price. The patient never sees this price directly. In metrics, intensity equal to 1 would lead to no difference between prices paid and intensity-adjusted prices. Intensity greater than 1 would lead to intensity-adjusted prices being higher than prices paid; and an intensity-level less than 1 would mean that intensity-adjusted prices were less than the prices paid.

Annual Health Care Expenditures Per Capita

In this report, annual health care expenditures per capita consist of the spending on medical and pharmacy claims by individuals covered by ESI. Per capita expenditures were calculated for the national ESI population, across detailed sub-populations (including regions, genders, age groups, age-gender groups), and across broad and detailed service categories (see “Key definitions”).

For third year, national expenditures growth remained stable

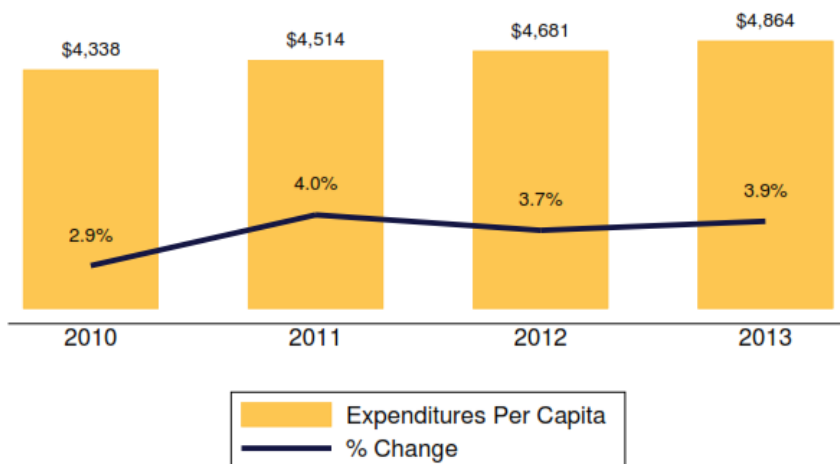
For the three years of the study period, per capita health spending by the ESI population grew at rates faster than those in 2010 but slower than rates between 2007 and 2009. This report does not investigate the reasons for that slower growth, but other research suggests many factors influ-

encing this trend, including slower economic growth, changing benefit designs, and health system reform.^{3,4,5}

Between 2012 and 2013, per capita expenditures for people age 65 or younger and covered by ESI rose \$183 per person to \$4,864 (Table 1 and Figure 1). This reflects a growth rate of 3.9%, similar to the rates observed in 2011 and 2012.

Although the annual spending growth rate was similar across these years, the underlying trends for those years were quite different. As shown in Table 1, 2013 health care expenditures per capita grew for all sub-populations examined (regions, age groups, and genders), but at rates different from those in 2011 and 2012.

Figure 1
ESI Expenditures Per Capita on Insureds, Younger than Age 65: 2010-2013



Source: HCCI, 2014.
Notes: All data weighted to reflect the national, younger than age 65 ESI population.
Data from 2012 and 2013 adjusted using actuarial completion.

KEY FINDINGS: 2013

Growth rate remained stable

Growth in per capita spending was 3.9%, a similar rate to 2011 (4.0%) and 2012 (3.7%).

\$4,864

The spending per capita for the national ESI population

\$2,574 & 4.6%

The spending per capita and growth rate for children, the lowest per capita spending and highest growth rate of any age group.

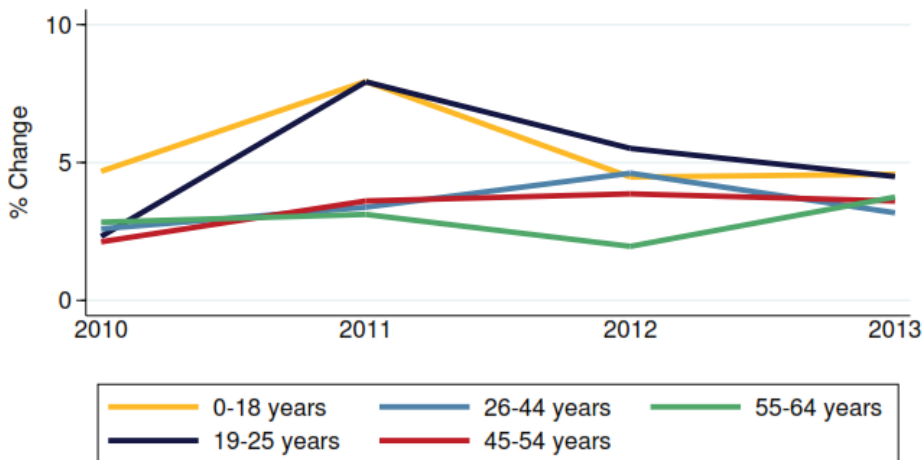
\$5,037 & 4.8%

The spending per capita and growth rate for the Northeast, the highest regional per capita spending and growth rate.

\$849 & 5.5%

The spending per capita and growth rate for outpatient visits, the highest service category growth rate.

Figure 2
Annual Percentage Changes in Expenditures
Per Capita by Age Group: 2010-2013



Source: HCCI, 2014.
Notes: All data weighted to reflect the national, younger than 65 ESI population.
Data from 2012 and 2013 adjusted using actuarial completion.

Health care expenditures grew fastest for men, children, and young adult men

Spending per capita in 2013 was more than \$1,000 higher for women than for men (\$5,403 versus \$4,305), consistent with prior years. Per capita spending rose \$173 for men and \$192 for women. However, per capita spending for men (4.2%) grew faster as compared with the rate for women (3.7%), which was also true in 2011.

In 2013, pre-Medicare adults had the highest expenditures per capita (\$9,232) and the largest dollar increase per capita (\$334; Table 1). They also had a growth rate higher than that in 2012: 3.7% versus 2.0% (Figure 2). Middle age adults experienced the second highest spending at \$6,314 per capita and a \$220 increase (3.6%) over 2012.

The increases in per capita spending for the youngest age groups (children and young adults) were \$113 and \$115, respectively. These age groups experienced the highest per capita spending growth rates (4.6% for chil-

dren and 4.5% for young adults) but the lowest per capita spending levels. Per capita expenditure growth was the slowest for intermediate adults (3.2%); spending for this group rose \$131 to \$4,258.

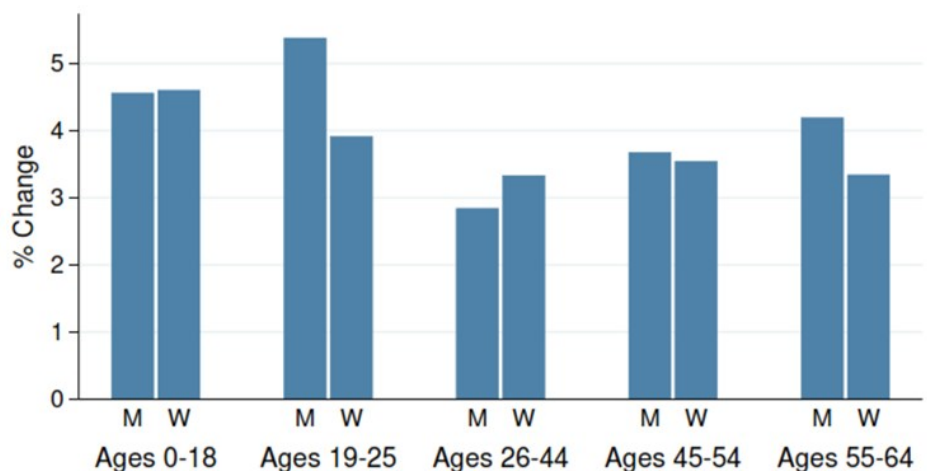
Within each age group in 2013, spending growth rates also varied by gender (Figure 3). Spending for young adult men grew more quickly than

spending for any other sub-populations, followed by spending for girls and boys. Conversely, spending for intermediate adult men grew the slowest of the age-gender groups studied, followed by intermediate adult women.

Between 2012 and 2013, per capita spending increased in every region (Table 1). However, during this time, spending growth slowed considerably in the South (from 4.6% to 3.6%), and sped up by more than a percentage point in the West (from 1.7% in 2012 to 3.0%).

For the third consecutive year, the Northeast had the highest regional per capita expenditures (\$5,037) and the fastest spending growth (4.8%). The West continued to have the lowest regional per capita expenditures (\$4,542) and the slowest expenditures growth (3.0%). Between 2012 and 2013, per capita spending in the South increased by \$173 to \$4,964. Per capita spending in the Midwest increased 4.2% to \$4,871, a \$196 increase.

Figure 3
Change in Expenditures Per Capita
by Gender and Age Group: 2013



Source: HCCI, 2014.
Notes: All data weighted to reflect the national, younger than 65 ESI population.
Data from 2012 and 2013 adjusted using actuarial completion.

Per capita expenditures rose slowest for brand prescriptions

Per capita spending in 2013 increased across all service categories. The distribution of per capita spending on these categories was similar to that of the previous two years (Table 1). Professional procedures continued to account for the largest share of spending, approximately 34% of the total. Acute inpatient admissions remained at 20% of expenditures, while outpatient services and prescriptions accounted for the remaining 28% and 17% of expenditures, respectively.

Between 2012 and 2013, spending on acute inpatient admissions grew from 1.7% to 3.9% (Table 1 and Figure 4). The spending increase in this category was \$37 per capita, more than twice the \$16 increase seen between 2011 and 2012.

Between 2012 and 2013, per capita spending on outpatient services slowed, including on both outpatient visits and outpatient-other services. In 2013, expenditures per capita for all outpatient services increased \$68,

66% of which was on outpatient visits, with the rest on outpatient-other services.

Per capita expenditures on professional procedures increased \$53 and grew more rapidly than in the previous year (3.3% versus 2.9%). Consistent with the previous two years, professional procedures also accounted for the most per capita dollars spent in 2013 (\$1,651).

Per capita spending on prescriptions grew somewhat more slowly in 2013 as compared with 2012 (3.1% versus 3.8%), following substantially slower growth in 2011 (1.7%). In 2013, per capita spending on brand prescriptions grew \$13 to \$550, a 2.4% increase, following a 0.6% decrease in 2012. Brand prescriptions had the lowest growth rate in 2013 of any subservice category. Expenditures on generic prescriptions grew 3.9%, after spending declined in 2011 (-3.0%) and grew 13.4% in 2012. Per capita expenditures on generics (\$287) were about half that of brand prescription expenditures (\$550) in 2013.

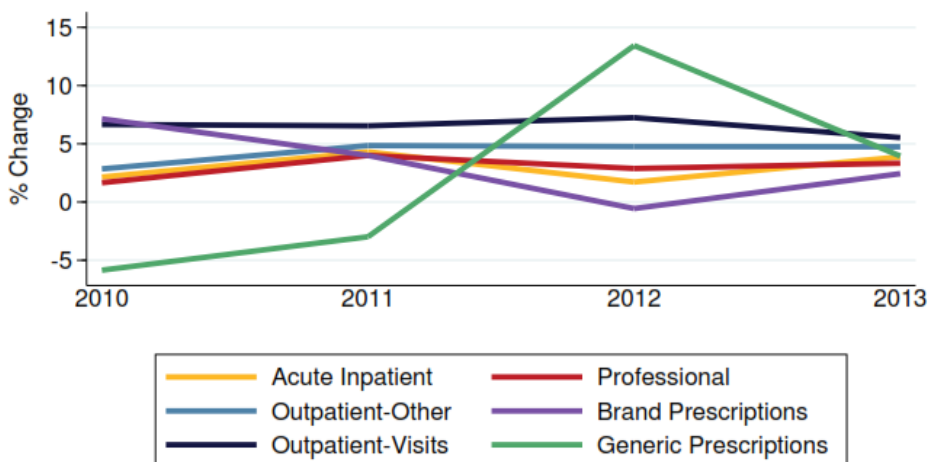
Per capita spending generally higher for adult women than adult men

In 2013, per capita spending for every service category was higher for boys than for girls, with the largest spending differential for brand prescriptions (an \$81 difference) and the smallest for outpatient-other services (a \$2 difference; Appendix Tables A9a and A9b). However, girls had higher growth rates for most services. Only on acute inpatient admissions did spending for boys (7.1%) grow faster than spending for girls (4.6%). Despite faster spending growth for girls, the overall spending differential between boys and girls widened in 2013.

Across all service categories in 2013, per capita expenditures were notably higher for young adult and intermediate adult women than for men in the same age groups. Per capita spending on acute inpatient services for young adult women was \$642 and \$1,088 for intermediate adult women as compared to \$390 for young adult men and \$485 for intermediate adult men. These represented gender differences of \$252 for young adults and \$603 for intermediate adults.

Per capita spending on most service categories was higher for middle age adult women and pre-Medicare adult women than for men in those age groups. Spending for middle age adult and pre-Medicare men was higher on acute inpatient admissions than for women, and spending on admissions grew more rapidly for the men. The differences in spending between men and women were smaller for these age groups than for intermediate adults.

Figure 4
Annual Percentage Changes in Expenditures
Per Capita by Subservice Category: 2010-2013



Source: HCCI, 2014.
Notes: All data weighted to reflect the national, younger than 65 ESI population.
Data from 2012 and 2013 adjusted using actuarial completion.

Summary

Between 2012 and 2013, growth in total ESI spending persisted at a rate similar to that of the two previous years, rising 3.9%. These expenditures rose across all regions, age groups, and genders. The Northeast continued to have the highest spending levels and growth, while the West continued to have the lowest spending levels and growth.

Among the different age groups in 2013, children experienced the fastest expenditure growth but the lowest per capita spending levels. Pre-Medicare adults had the highest per capita spending but, unlike spending in 2011 and 2012, the spending growth rate for this age group was not the lowest. Women's per capita spending remained higher than men's, but men's expenditures grew more quickly. Spending tended to increase with age, but the gender differentials in the older adult age

groups were generally smaller than those in the younger age groups.

Consistent with findings in other HCCI reports, this report found that spending levels and growth rates varied across age and gender.³ In 2013, spending for children was higher for boys than for girls, and was lower for men ages 19 to 54 than for women in those age groups. For the oldest age group, spending was similar for pre-Medicare and women.

HCCI AGE GROUPS

Children

Ages 0 through 18.

Young Adults

Ages 19 through 25.

Intermediate Adults

Ages 26 through 44.

Middle-Age Adults

Ages 45 through 54.

Pre-Medicare Adults

Ages 55 through 64.

Table 1: Annual Expenditures Per Capita (2011–2013)

	2011	2012	2013	Percent Change 2010 / 2011	Percent Change 2011 / 2012	Percent Change 2012 / 2013
Per Capita	\$4,514	\$4,681	\$4,864	4.0%	3.7%	3.9%
Per Capita by Region						
Northeast	\$4,601	\$4,805	\$5,037	4.5%	4.4%	4.8%
Midwest	\$4,512	\$4,675	\$4,871	4.0%	3.6%	4.2%
South	\$4,581	\$4,791	\$4,964	4.2%	4.6%	3.6%
West	\$4,337	\$4,409	\$4,542	3.5%	1.7%	3.0%
Per Capita by Age						
18 and Younger	\$2,356	\$2,461	\$2,574	7.9%	4.5%	4.6%
19-25	\$2,427	\$2,561	\$2,676	7.9%	5.5%	4.5%
26-44	\$3,945	\$4,127	\$4,258	3.4%	4.6%	3.2%
45-54	\$5,867	\$6,094	\$6,314	3.6%	3.9%	3.6%
55-64	\$8,727	\$8,898	\$9,232	3.1%	2.0%	3.7%
Per Capita by Gender						
Men	\$3,997	\$4,132	\$4,305	4.6%	3.4%	4.2%
Women	\$5,011	\$5,211	\$5,403	3.6%	4.0%	3.7%
Per Capita by Service Category						
Inpatient	\$947	\$962	\$999	3.7%	1.6%	3.8%
Acute Inpatient	\$933	\$949	\$986	4.3%	1.7%	3.9%
Outpatient	\$1,230	\$1,308	\$1,376	5.9%	6.3%	5.2%
Visits	\$750	\$804	\$849	6.5%	7.2%	5.5%
Other	\$481	\$504	\$528	4.8%	4.8%	4.7%
Professional Procedures	\$1,553	\$1,598	\$1,651	4.0%	2.9%	3.3%
Prescriptions	\$783	\$813	\$838	1.7%	3.8%	3.1%
Brands	\$540	\$537	\$550	4.0%	-0.6%	2.4%
Generics	\$243	\$276	\$287	-3.0%	13.4%	3.9%

Source: HCCI, 2014.

Notes: Data represents the population of insureds 0-64 covered by ESI. Actuarial completion was performed on data from 2012 and 2013. All per capita dollars calculated from allowed amounts. All figures rounded. Skilled nursing facility (SNF), hospice, and ungroupable claims were excluded from analysis of acute inpatient trends due to the lack of claims in this population.

Drivers of Spending Growth

Health care cost growth is the result of changes in the number of services provided (“utilization”) and the prices paid by insurers for those services. Because changes in price or utilization might reflect changes in how care is delivered, HCCI’s analyses also consider a third factor – changes in service intensity – the complexity of services used to provide care. Intensity is used to adjust utilization metrics (see “Key definitions”) or to adjust prices paid to a base price that all patients

would pay for a given service (“intensity-adjusted price”). HCCI uses intensity-adjusted prices to determine whether prices changed owing to differences in service intensity (the resources used to treat patients) or to changes in other factors.

In the following sections of the report, HCCI analyzes how the different components of spending affected health care trends for each of the subservice categories. For 2013, HCCI found that prices grew for all medical subservice

categories, while utilization declined for these categories, except for a small increase in use of professional services (0.8%; Table 2). While the spending growth rate for 2013 (3.9%) was very similar to the growth rate in 2012 (3.7%), the components of the 2013 trend – specifically, use of medical services – differed from those in 2012.

Table 2: Decomposition of Spending Changes (2013)

	2013 Expenditures Per Capita	Components of 2013 Expenditures Trend		Components of 2013 Price Trend	
		Utilization	Prices Paid	Intensity	Unit Price
Inpatient	3.8%	-2.7%	6.7%	N/A	N/A
Acute Inpatient	3.9%	-2.3%	6.3%	1.7%	4.5%
Outpatient	5.2%	-0.5%	5.8%	0.2%	5.5%
Visits	5.5%	-0.8%	6.4%	-0.5%	6.9%
Other	4.7%	-0.5%	5.2%	1.8%	3.4%
Professional Procedures	3.3%	0.8%	2.5%	1.8%	0.7%
Prescriptions - Filled Days	3.1%	0.7%	2.3%	N/A	N/A
Brands	2.4%	-15.5%	21.2%	N/A	N/A
Generics	3.9%	4.5%	-0.5%	N/A	N/A

Source: HCCI, 2014.

Notes: Data represents the population of insureds 0-64 covered by ESI. Actuarial completion was performed on data from 2012 and 2013. All per capita dollars calculated from allowed amounts. All figures rounded. Skilled nursing facility (SNF), hospice, and ungroupable claims were excluded from analysis of acute inpatient trends due to the lack of claims in this population.

Acute Inpatient Services

Inpatient facility claims are submitted for facility charges associated with a hospital admission.⁷ In this section, HCCI analyzed trends for acute inpatient admissions (labor and delivery, medical, mental health and substance use, newborns, and surgery). For information about the non-acute inpatient admissions (hospice and skilled nursing facility), see “Non-acute inpatient services”.⁸

Acute inpatient spending grew faster in 2013

Between 2012 and 2013, spending on acute inpatient admissions increased 3.9% to \$986 per capita (Table 1). This \$37 per capita increase accounted for 20% of the ESI population’s total spending increase. The increases in the spending level and growth rate for acute inpatient admissions were higher for 2013 as compared with 2011 and 2012.

Use continued to decline for most insureds

Consistent with previous years’ trends, acute inpatient utilization declined in 2013, falling by 2.3% (Table 3 and Figure 5). This decrease in admissions is equivalent to fewer admissions per 1,000 insureds, which declined from 56 admissions per 1,000 in 2012 to 55 per 1,000 in 2013.

In 2013, acute admission rates declined for most age groups and for both genders (Appendix Tables A10a and A10b). The largest decline in admissions was for middle age and pre-Medicare women, whose use decreased by 4 admissions per 1,000 insured. However, girls experienced an increase of 1 admission per 1,000.

Prices jumped in 2013 due to rising intensity of care

In contrast to the falling utilization rate, the average price per acute inpatient admission rose for the third consecutive year, to \$18,030 in 2013 (Table 3). This

increase was \$1,067 over 2012. Acute inpatient prices rose in 2013 at a rate (6.3%) faster than in 2011 (5.9%) or 2012 (5.5%). Rising prices offset the fall in utilization, which led to the faster spending growth in 2013 compared to the two prior years.

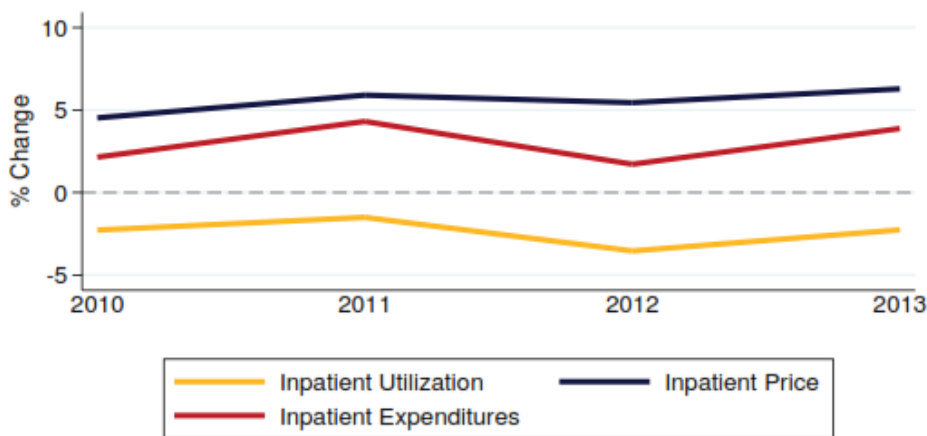
The faster growth in prices was driven in part by rising intensity of care. In 2013, the average intensity (see “Key definitions” and “Drivers of spending growth”) rose 1.7%, suggesting that the resources used to treat patients in an acute inpatient setting increased. This followed two years of decreased resource use; in 2011, there was a 4.4% decrease in intensity, and that intensity level persisted through 2012. In 2013, the average intensity-adjusted price increased by \$594 (4.5%) to \$13,812.

Medical and surgical admissions declined; prices and intensity increased

In 2013, about 62% of acute inpatient admissions were for medical and surgery services (Appendix Table A5 and Figure 5). Since 2011, however, utilization of medical and surgical admissions decreased (Figure 6). Between 2011 and 2013, medical admissions dropped from 21 medical admissions per 1,000 insureds to 19 admissions per 1,000. Similarly during this period, surgery admissions dropped from 16 per 1,000 insureds to 15 per 1,000.

Although medical and surgery admissions decreased, the average prices for those services rose (Appendix Table A6). In 2013, the average price of an inpatient surgery admission rose 8.5% (\$2,720) to \$34,583. The average price

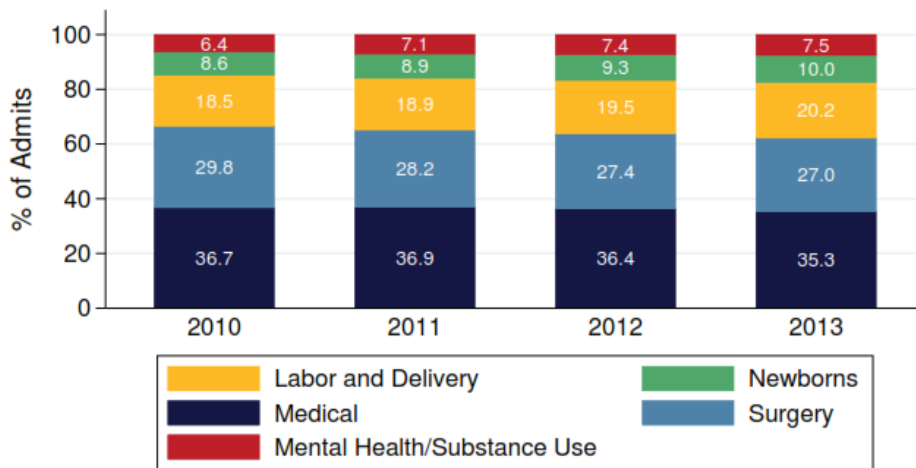
Figure 5
Annual Percentage Changes in Acute Inpatient Expenditures, Utilization per 1,000 Insureds, and Price: 2010-2013



Source: HCCI, 2014.

Notes: All data weighted to reflect the national, younger than age 65 ESI population. Data from 2012 and 2013 actuarially completed.

Figure 6
Percentage of Admissions per 1,000 Insureds by Acute Inpatient Detailed Service Category: 2010-2013



Source: HCCI, 2014.
 Notes: All data weighted to reflect the national, younger than 65 ESI population.
 Data from 2012 and 2013 adjusted using actuarial completion.

of a medical admission rose 7.4% (\$1,059) to \$15,413. The medical and surgical service categories also accounted for the largest increases in acute inpatient intensity, at 2.4% and 3.3%, respectively (Appendix Table A7). Thus, after accounting for service intensity, the average intensity-adjusted prices for medical and surgery admissions also rose (4.9% and 5.1%, respectively; Appendix Table A8).

Little change in labor, delivery, newborn, and behavioral health admission rates

For the third year in a row, admissions for labor and delivery (LD),

newborns, and mental health and substance use (MHSU) remained constant (Appendix Table A5). Additionally, in 2013, average prices for LD and newborn admissions rose (4.6% and 4.0%, respectively) at rates much slower than those in the previous two years (Appendix Table A6). The average price for a MHSU admission rose very slightly (0.4%). Intensity of care remained constant for LD admissions since 2011 (Appendix Table A7), while intensity increased slightly for MHSU and newborn admissions, which contributed slightly to the increase in prices paid for those services.

Summary

In 2013, utilization of acute inpatient services declined (Table 3). This overall decrease was observed for most age-gender groups, whereas girls had an increase of 1 admission per 1,000 (Appendix Table A10a). While utilization declined, the average price per acute inpatient admission rose 6.3% (Table 3). Accompanying the rise in prices was a rise in the average intensity of resource use. As a result, in 2013, the fastest acute inpatient spending growth was observed during the study period.

Across the study period, trends for the detailed categories of admissions remained nearly the same for most types of admissions. Most of the decline in utilization and increase in prices in 2013 came from the most commonly used admissions: medical and surgery (Appendix Table A5). Prices and intensity for these services rose, driving the rise in prices and intensity for the overall acute inpatient service category (Appendix Tables A6 and A7).

NON-ACUTE INPATIENT SERVICES

Skilled nursing facility (SNF) and hospice inpatient admissions differ in scope from the acute inpatient detailed categories. Inpatient SNF care includes claims for skilled professional care such as skilled nursing and rehabilitation. Inpatient hospice claims are for palliative care to terminally ill individuals. Hospice services can also be provided within an individual's home, but those services are not included in the HCCI hospice inpatient category.

These two categories had consistently low per capita expenditures over time (Appendix Table A5). During the study period, per capita annual expenditures were \$7 for SNF admissions and \$2 for hospice admissions. One reason for these comparatively low spending levels was low utilization. SNF and hospice admissions accounted for very few admissions in the younger than 65 ESI population. Combined, these two categories accounted for 2 admissions per 1,000 insureds in each year studied (Appendix Table A6).

Table 3: Changes in Utilization, Prices, Intensity, and Intensity-Adjusted Prices by Service Category (2011–2013)

	2011	2012	2013	Percent Change 2010 / 2011	Percent Change 2011 / 2012	Percent Change 2012 / 2013
Utilization per 1,000 insureds by Service Category						
Inpatient	61	59	57	-1.7%	-3.5%	-2.7%
Acute Inpatient	58	56	55	-1.5%	-3.5%	-2.3%
Outpatient	2,936	2,948	2,933	1.0%	0.4%	-0.5%
Visits	324	328	325	1.6%	1.3%	-0.8%
Other	2,612	2,620	2,608	0.9%	0.3%	-0.5%
Professional Procedures	16,133	16,452	16,579	1.1%	2.0%	0.8%
Prescriptions - Filled Days	278,316	279,959	282,012	0.1%	0.6%	0.7%
Brands	69,484	55,028	46,497	-12.0%	-20.8%	-15.5%
Generics	208,802	224,883	235,017	4.9%	7.7%	4.5%
Average Price Paid per Service by Service Category						
Inpatient	\$15,627	\$16,452	\$17,553	5.5%	5.3%	6.7%
Acute Inpatient	\$16,086	\$16,963	\$18,030	5.9%	5.5%	6.3%
Outpatient	\$419	\$444	\$469	4.8%	5.8%	5.8%
Visits	\$2,315	\$2,450	\$2,607	4.8%	5.8%	6.4%
Other	\$184	\$192	\$202	3.9%	4.4%	5.2%
Professional Procedures	\$96	\$97	\$100	2.9%	0.9%	2.5%
Prescriptions - Filled Days	\$3	\$3	\$3	1.6%	3.2%	2.3%
Brands	\$8	\$10	\$12	18.2%	25.6%	21.2%
Generics	\$1	\$1	\$1	-7.5%	5.3%	-0.5%
Average Intensity per Service by Service Category						
Acute Inpatient	1.28	1.28	1.31	-4.4%	-0.1%	1.7%
Outpatient	2.96	2.90	2.91	-1.2%	-1.9%	0.2%
Visits	16.79	16.07	16.00	-2.9%	-4.2%	-0.5%
Other	1.24	1.25	1.27	0.9%	0.6%	1.8%
Professional Procedures	1.91	1.89	1.93	0.1%	-0.9%	1.8%
Average Intensity-Adjusted Price per Service by Service Category						
Acute Inpatient	\$12,528	\$13,218	\$13,812	10.8%	5.5%	4.5%
Outpatient	\$142	\$153	\$161	6.1%	7.9%	5.5%
Visits	\$138	\$152	\$163	8.0%	10.5%	6.9%
Other	\$148	\$154	\$159	3.0%	3.8%	3.4%
Professional Procedures	\$50	\$51	\$52	2.8%	1.8%	0.7%

Source: HCCI, 2014.

Notes: Data represents the population of insureds 0-64 covered by ESI. Actuarial completion was performed on data from 2012 and 2013. All per capita dollars calculated from allowed amounts. All figures rounded. Skilled nursing facility (SNF), hospice, and ungroupable claims were excluded from analysis of acute inpatient trends due to the lack of claims in this population.

Outpatient Visits

Between 2012 and 2013, per capita spending on outpatient visits (emergency rooms, observation, and outpatient surgery) rose by \$45 to \$849, a 5.5% increase (Table 1). As in 2012, outpatient visits had the highest spending growth rate of any of the service categories. In 2013, per capita spending on outpatient visits accounted for 17.5% of total per capita spending, a small increase over 2012 and nearly 25% of the rise in per capita spending.

Between 2012 and 2013, per capita expenditures grew for the three detailed service categories (ER visits, observation, and outpatient surgery; Appendix Table A4). Per capita spending on observation visits rose at the fastest rate, 9.3%, compared with that of emergency room (ER) visits (5.9%) and surgical visits (5.0%). In contrast, observation visits remained a very small share of overall outpatient visit spending at 4.8% (\$41 per capita), compared with the share of surgery visits at 61.9% (\$526 per capita) and the share of ER visits at 33.1% (\$281 per capita).

Outpatient prices continued to rise

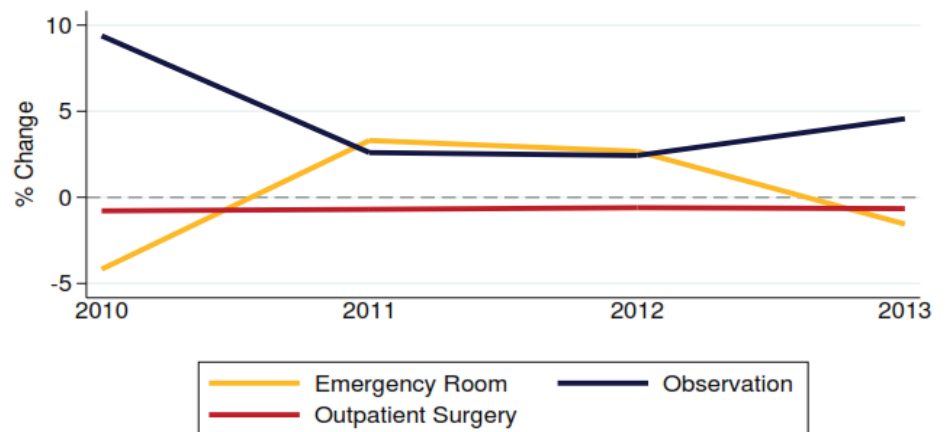
The average price for an outpatient visit rose 6.4% between 2012 and 2013 (Table 3), from \$2,450 to \$2,607. The average price (unadjusted for intensity of care) for ER visits grew by 7.6% to \$1,595 (Appendix Table A6); for outpatient surgery visits by 5.7% to \$4,107; and for observation visits by 4.5% to \$1,945.

Outpatient visits fell slightly in 2013

Between 2012 and 2013, the number of outpatient visits declined (-0.8%), falling from 328 visits per 1,000 insureds to 325 (Table 3). This was the first year in

Figure 7

Annual Percentage Changes in Utilization per 1,000 Insureds by Outpatient Visit Detailed Service Category: 2010-2013



Source: HCCL 2014.
Notes: All data weighted to reflect the national, younger than 65 ESI population.
Data from 2012 and 2013 adjusted using actuarial completion.

the study period in which the number of visits declined.

There were fewer ER and outpatient surgery visits in 2013. ER visits fell by 3 visits per 1,000 insureds (-1.6%) to 176, while outpatient surgeries fell by 1 visit to 128 per 1,000 insureds (-0.7%; Appendix Table A5 and Figure 7). In contrast, observation visits rose by 1 visit (4.6%) to 21 per 1,000 insureds.

Visits rose with age, but use differed by gender

In 2013, the number of outpatient visits generally increased with age, but the number of services used differed by gender, as adult women had more visits than did men (Figure 8). Girls had the lowest use of outpatient visits (219 per 1,000), followed by young adult men (220 visits per 1,000; Appendix Table A10a). Use of outpatient visits was higher for pre-Medicare women (496 visits per 1,000) than for pre-Medicare men (454 visits per 1,000).

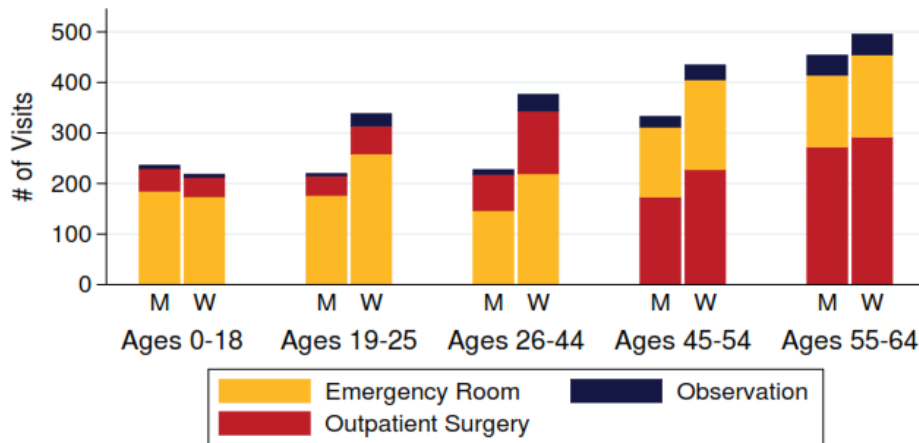
ER visits accounted for most of the outpatient visits among children, young

adults, and intermediate adult men and women (Appendix Tables A16a-A18a). Men and women over age 44 had fewer ER visits relative to those of younger ages, while surgery visits dominated older adults' outpatient visit usage (Appendix Tables A19a and A20a).

Overall, use of observation services rose with age. Between 2012 and 2013, use increased for both men and women in the two oldest age groups. Use increased by 3 visits to 40 visits per 1,000 for pre-Medicare men and by 3 visits to 41 visits per 1,000 for pre-Medicare women. Use increased by 1 visit to 21 visits per 1,000 for middle age men and by 2 visits to 29 visits per 1,000 for middle age women. Use among the other groups remained constant at the levels observed in 2012.

Between 2012 and 2013, outpatient surgery use levels also increased with age, while declining slightly for the national ESI population (-0.7%; Appendix Table A5). The younger groups (younger than age 45) had the lowest rates of outpatient surgery use and larger reductions

Figure 8
Number of Visits per 1,000 Insureds by Outpatient Visit
Detailed Service Category, Gender, and Age Group: 2013



Source: HCCI, 2014.
 Notes: All data weighted to reflect the national, younger than 65 ESI population.
 Data from 2012 and 2013 adjusted using actuarial completion.

in use. Outpatient surgery use increased for the pre-Medicare adults (3 visits per 1,000 pre-Medicare men and 1 visit per 1,000 pre-Medicare women) and was stable for middle age adult men.

Although spending on ER visits was similar across age groups, spending does not fully reflect utilization trends. In 2013, use of ER visits decreased with age, and the number of visits differed by gender. ER visits accounted for nearly 80% of the outpatient visits for children and young adults (Appendix Tables A16a and A17a) and for about 60% of the visits for intermediate adults ages (Appendix Table A18a). In contrast, ER

visits accounted for about 40% of the visits for middle age adults (Appendix Table A19a) and for about 30% of visits for pre-Medicare adults (Appendix Table A20a). Young adult women had the highest number of ER visits (258 per 1,000 young adult women; Appendix Table A17a), while pre-Medicare adult men had the lowest number (143 per 1,000 men; Appendix Table A20a).

ER visits accounted for most of the outpatient visits among children, young adults, and intermediate adult men and women (Appendix Tables A16a-A18a). Men and women over age 44 had fewer ER visits relative to those of younger

ages, while surgery visits dominated older adults' outpatient visit usage (Appendix Tables A19a and A20a).

Summary

Outpatient visits (ER, outpatient surgery, and observation visits) constituted the fastest growing category of medical spending for all three study years and totaled 17.5% of ESI per capita health care spending in 2013 (Table 1). At 6.4% growth in 2013, prices for these services rose faster than in 2011 or 2012 (Table 3). However, for the first time in the study period, in 2013 the number of visits per 1,000 fell. As in 2011 and 2012, relatively few outpatient visits were for observation stays in 2013 (Appendix Table A5). Among people younger than age 45, ER visits accounted for 60% of outpatient visits, whereas for those age 45 and older, outpatient surgeries made up the most of the outpatient visit use (Appendix Tables A16a-A20a).

Outpatient visits use varied by gender within age groups. Adult women, generally, used more outpatient services than adult men in the same age cohort. For observation and outpatient surgeries, spending reflected these differences in use by gender and age. However, per capita spending on adult ER visits was similar across adult age groups despite differences in utilization.

WHY IS ER SPENDING HIGH FOR OLDER ADULTS WHEN ITS USE BY THIS AGE GROUP IS RELATIVELY LOW?

In 2013, ER spending for the oldest adults was similar to that for the youngest adults – \$326 per pre-Medicare woman as compared to \$374 per young adult woman and it was \$302 per pre-Medicare man and \$246 per young adult man (Appendix Tables A12a and A15a). However, young adult women had 95 visits per 1,000 insureds more than pre-Medicare women; young adult men had 34 visits per 1,000 more than pre-Medicare men (Appendix Tables A18a and A20a).

Health care spending rises and falls as prices and utilization rise and fall, which helps explain the levels of ER use. The average intensity-adjusted prices for ER visits for the oldest adults and young adults was similar (\$263 per visits as compared to \$269 per visit; data not shown), but the intensity of care was different. ER visit service intensity (resources used) for pre-Medicare adults was 47% higher than that for young adults. Because of the higher intensity, the average ER price paid for young adults was \$628 lower than the average price paid for the oldest adults.

Outpatient Other Services

In 2013, per capita spending for outpatient-other services (ancillary, lab/path, radiology services, and miscellaneous outpatient services) accounted for 10.9% of total per capita ESI spending (Table 1). Between 2012 and 2013, per capita spending on outpatient-other services rose by \$24 to \$528. Spending for this service category grew 4.7% (\$24), accounting for 13.1% of total per capita ESI spending growth.

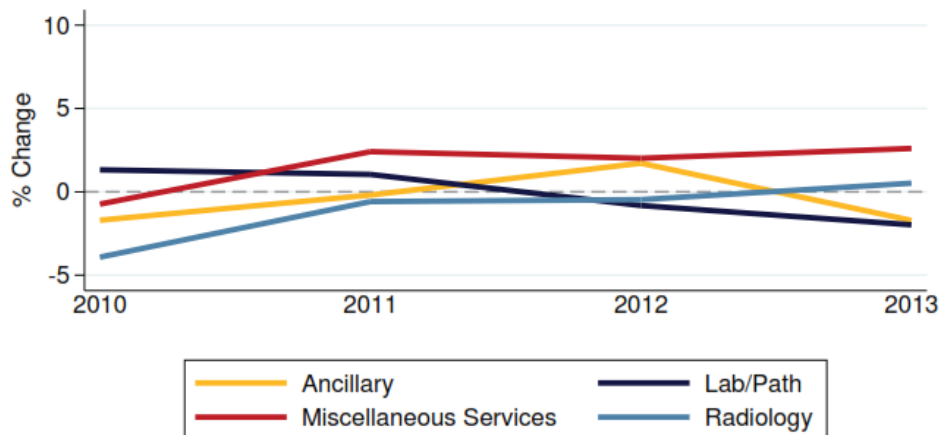
Per capita spending grew in 2013 for all four outpatient-other detailed service categories (Appendix Table A4). Ancillary services spending per insured grew by 3.7% to \$80, and lab/path services spending per insured rose by 2.3% to \$72. Together, these two categories made up 28.8% of outpatient-other spending. Miscellaneous services (e.g., outpatient dialysis services, rehabilitation, and mental health and substance use services) made up 33.7% (\$178 per capita) of outpatient-other spending per insured. The largest share of spending was on radiology services (\$198 per capita). Although radiology made up 37.5% of per capita spending for outpatient-other services, spending on radiology services grew relatively slowly (2.7%).

Outpatient prices continued to rise

The average price across all outpatient-other services rose 5.2% (Table 3). Av-

Figure 9

Annual Percentage Changes in Utilization Per Capita by Outpatient Other Services Detailed Service Category: 2010-2013



Source: HCII, 2014.

Notes: All data weighted to reflect the national, younger than 65 ESI population. Data from 2012 and 2013 adjusted using actuarial completion.

erage prices grew most rapidly for ancillary services (5.5%) and miscellaneous services (5.9%; Appendix Table A6). Prices for radiology services also grew, by 2.2% to \$501, while the average price for lab/path services grew by 4.4% to \$62.

Outpatient-other services use fell

Between 2012 and 2013, outpatient-other service use fell by -0.5% from 2,620 services per 1,000 insureds to 2,608 services per 1,000 insureds (Table 3). The 2013 decline in outpatient-other services was due to declines in use of ancillary and lab/path services

(Appendix Table A5). Ancillary service use fell by 1.7% (7 fewer services per 1,000 insureds), while lab/path use fell by 2.0% (23 fewer services per 1,000 insureds). However, lab/path services were still the most used of any of the outpatient-other services: 1,147 services per 1,000 insureds. At the same time, use of miscellaneous and radiology services increased 2.6% and 0.5%, respectively (Figure 9).

Outpatient-other spending rose with age

In 2013, per capita spending on outpatient-other services was highest for the

REGIONAL VARIATIONS IN OUTPATIENT-OTHER SPENDING

Regionally, over the three-year study period, outpatient-other spending in the West grew the slowest (an average 3.4% per year) and fastest in the Northeast (an average 5.4% per year; Appendix Table A1). The 2013 outpatient-other per capita spending was lowest in the West (\$431 per person) and highest in the Midwest (\$622 per person).

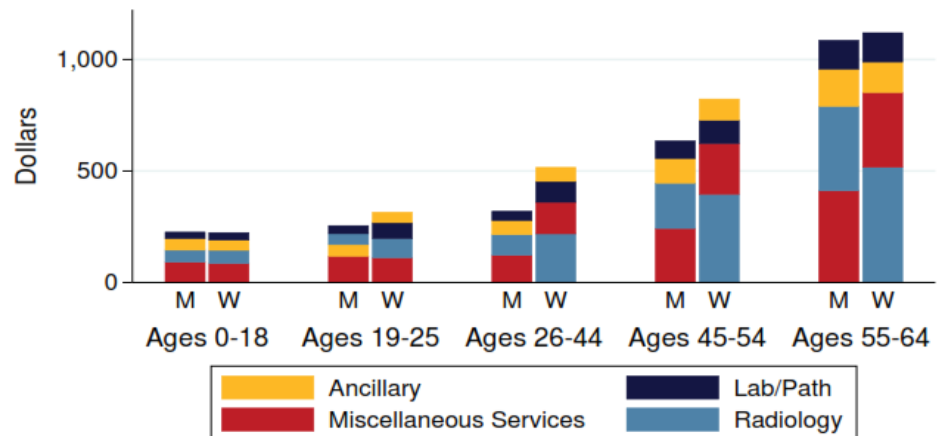
Changes in spending levels for the West were also low in comparison to the other regions. Between 2011 and 2013, per capita spending on outpatient-other services rose by \$59 in the Midwest and the Northeast and by \$42 in the South, but rose by \$28 in the West.

pre-Medicare group and lowest for children (Appendix Table A2 and Figure 10). Spending growth for young adult men, however, rose the most quickly – by 15.9% – to \$255 per young adult man (Appendix Tables A9a and A9b). Spending grew the slowest for intermediate adult women – at 2.8% – to \$516 per intermediate adult woman.

For the three oldest age groups (intermediate adults, middle age adults, and pre-Medicare adults), women had the highest per capita spending on radiology services, whereas men had the highest spending on miscellaneous services. Pre-Medicare women experienced the highest per capita spending for any age-gender group on radiology services (\$517; Appendix Table A15a). Pre-Medicare men experienced the highest per capita spending on miscellaneous services (\$411). For all children and young adults, the highest per capita spending was on miscellaneous services (Appendix Tables A11a and A12a).

Figure 10

**Expenditures Per Capita by Outpatient Other Services
Detailed Service Category, Gender, and Age Group: 2013**



Source: HCCL, 2014.

Notes: All data weighted to reflect the national, younger than 65 ESI population. Data from 2012 and 2013 adjusted using actuarial completion.

Summary

In 2013, outpatient-other services accounted for about 11% of total per capita ESI spending (Table 1). Spending on this category grew 4.7% over spending in 2012. Prices also increased; however, for the first time in the three-year study period, the number of services used per 1,000 decreased (Table 3).

In 2013, lab/path services were the most commonly used outpatient-

other services (Appendix Table A5) and were used most by adult women (Appendix Tables A17a-A20a). Radiology services, which had the lowest levels of utilization per 1,000 insureds, were also used most frequently by adult women and at rates much higher than those of adult men. The gender differences in outpatient-other service use drove spending for women on this category to \$115 per insured greater than spending for men (Appendix Table A3).

ADULT WOMEN THROUGH AGE 54 HAD RATES OF SERVICE USE HIGHER THAN THOSE OF MEN

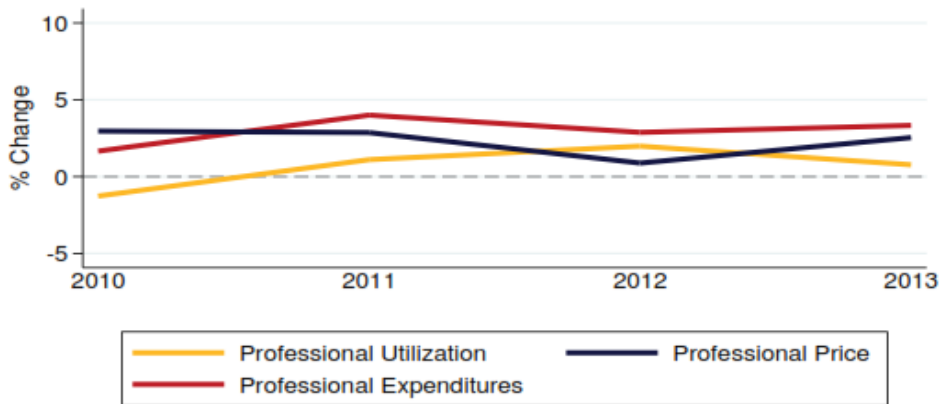
Compared to adult men, adult women through age 54 had higher rates of utilization for most outpatient-other detailed categories.

In 2013, these differences are observable in use of lab/path and radiology services. For young adult women, the use of lab/path services was nearly three times higher than men's use in the same age group (1,020 per 1,000 women versus 346 per 1,000 men; Appendix Table A17a). Similarly, for radiology services, young adult women's use was two times higher than young adult men's use (156 per 1,000 women versus 74 per 1,000 men). These differences in use by gender continued in the older age groups. Intermediate adult women used 2.4 times more lab/path services and nearly 4 times more radiology services than did men in the same age group (Appendix Table A18a). Middle age adult women used 1.3 times more lab/path services and nearly 4 times more radiology services than did men in the same age group (Appendix Table A19a). Women's higher use of radiology services continued, even as they neared Medicare-eligibility, with pre-Medicare women using more than 2.5 times more radiology services than did men in that age group (Appendix Table A20a). However, pre-Medicare women and men used nearly identical rates of lab/path services (2,213 per 1,000 men and 2,235 per 1,000 women).

This study did not investigate which types of lab/path or radiology services drove these patterns or whether the specific services in question were gender-specific.

Professional Procedures

Figure 11
Annual Percentage Changes in Professional Procedure Expenditures, Utilization per 1,000 Insureds, and Price: 2010-2013



Source: HCCI, 2014.
Notes: All data weighted to reflect the national, younger than age 65 ESI population. Data from 2012 and 2013 actuarially completed.

In 2013, per capita spending on professional procedures was \$1,651 (Table 1 and Figure 11). Spending increased slightly – by \$53 per capita – over 2012, which accounted for 29% of the total ESI spending increase. Professional services grew at the lowest rate (3.3%) of any of the medical service categories

Unlike in 2012, rising prices in 2013 contributed more than did utilization to increased spending on professional services (Table 2). Prices for professional services grew by 2.5% (Table 3). This price growth equaled a \$3 increase in the average price per service, which rose to \$100. At the same time, use of professional services increased slightly by 127 services (0.8%), to 16,579 services per 1,000 insureds.

Spending on professional services rose 5.1% in Northeast

In 2013, professional services spending rose in all four regions but grew most rapidly in the Northeast, up 5.1% to \$1,855 per insured (Appendix Table A1). Spending was about \$169 per cap-

ita more than the next highest spending region (the South) and grew 1.9 percentage points faster than the next-fastest region (the Midwest). In 2012, the South had the fastest-growing professional services spending (4.0%) and second highest spending per capita (\$1,641); in 2013, the South saw spending rise by 2.7% to \$1,686 per capita.

Spending for women on professional procedures was nearly \$600 more than for men

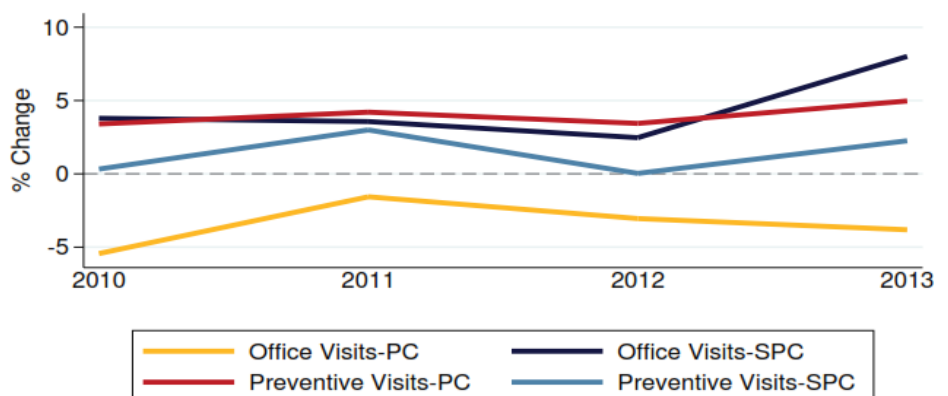
In 2013, both men's and women's spending on professional procedures grew by 3.3% (Appendix Table A3). However, spending for women reached \$1,939 per capita, \$586 more than per capita spending for men.

Professional services expenditures were highest among pre-Medicare adults, at \$2,781 per capita, and lowest among young adults, at \$931 per capita (Appendix Table A2). However, spending growth was fastest for young adults (4.2%), whereas it rose 3.4% for pre-Medicare adults.

Highest use of professional procedures by pre-Medicare women

In all age groups, women used more professional services as compared with men (Appendix Table A10a). This gender differential was minimal for children, with 301 per 1,000 more services for girls than for boys. Among young adults and intermediate adults, use by

Figure 12
Annual Percentage Changes in Utilization per 1,000 Insureds by Professional Procedure Primary Care and Specialist Visit Detailed Service Category: 2010-2013



Source: HCCI, 2014.
Notes: All data weighted to reflect the national, younger than age 65 ESI population. Data from 2012 and 2013 adjusted using actuarial completion.

women was nearly twice the use by men. Use was highest among the pre-Medicare adults, but the gender difference in use in that age group was the smallest of the adult age groups. Pre-Medicare men's utilization was 23,025 services per 1,000, compared to 28,177 services for pre-Medicare women.

Office visits to specialists increased by 8.0%

In 2013, specialist office visits rose 8.0% (an increase of 111 visits per 1,000 insureds) to 1,493 services per 1,000 insureds (Appendix Table A5 and Figure 12); spending on these visits rose by 10.6% to \$150 per capita (Appendix Table A4). Conversely, office visits to a primary care provider (PCP) fell by 3.8% to 1,472 per 1,000 insured. This was the first year in which the number of specialists' office visits per 1,000 insureds was higher than the number of PCP office visits. Many factors influence trends in physician visits, including billing practices

and patterns, physician supply, and population health.

Of the non-visit detailed categories within the professional procedures category, utilization of three service types declined between 2102 and 2013 (Appendix Table A5): miscellaneous services (-0.3% - the most used professional service); radiology (-1.2%); and surgery (-0.1%). In contrast, use increased for other services, including preventive visits to PCPs (5.0%) and lab/path services (1.9%).

In 2013, lab/path services were the second-most commonly used professional services (4,719 per 1,000 insured). As with office visits, the use of lab/path services varied by age and gender. Among children, per 1,000, boys used fewer lab/path services than did girls (1,524 and 1,996 services, respectively; Appendix Table A16a). Young adult women utilized substantially more lab/path services (5,044 per 1,000) than men did (1,982 per 1,000) in that age group (Appendix

Table A17a), and more than children of both genders. The pattern of substantially higher lab/path services use by women within an age group persisted for all of the adult age groups (Appendix Tables A18a-A20a)

Summary

As in prior years, in 2013, the ESI population spent more on professional services per capita than on other medical services (Table 1). Professional procedure spending growth (3.3%) was similar to the growth in 2012 (2.9%), but utilization growth (0.8%) was slower than in 2012 (2.0%; Table 3).

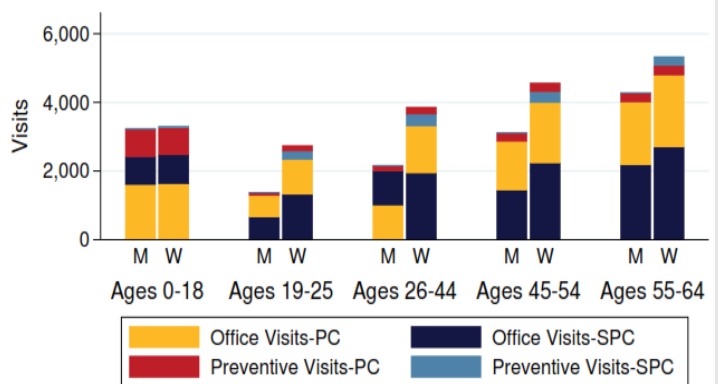
Analysis of professional services trends found distinct utilization differences between women and men. Utilization of lab/path services continued to rise and, within each age group, women used more of these services than did men. Additionally, specialist office visit use increased in 2013, surpassing the use of PCP office visits for the first time in the study period.

VARIATION IN SPECIALIST OFFICE VISITS

From 2012 to 2013, specialist office visits rose by 111 visits per 1,000 insureds, while PCP visits declined by 58 visits per 1,000 insureds (Appendix Table A5). On net, over the study period, the total number of office visits per 1,000 insureds grew by 1.3%, but this overall rate obscures important utilization trends for these services. For example, in 2013, children's office visits to PCPs were more common than were specialist visits (Appendix Table A16a), whereas for adults, specialist office visits were generally more common than PCP visits (Appendix Tables A17a-A20a and Figure 13).

PCP office visits are among the most common services used by children, with use rates in 2013 of about 1,600 visits per 1,000 girls or boys – nearly twice as many as specialist visits (Appendix Table A16a). In contrast, for adult women, specialist visits outnumbered PCP office visits. Of all of the adult groups, only intermediate adult men used PCP visits more often than specialist visits (Appendix Table A18a). Use of specialist office visits increased for all age-gender groups more than in previous years in the study period. This report did not examine what factors may have influenced the increase in specialist office visits. Physician billing and coding practices, insurance benefit structures, and patient preferences, among other factors, may have influenced the trends observed in utilization rates.

Figure 13
Number of Visits per 1,000 Insureds to Primary Care (PC) Providers and Specialists (SPC) by Gender and Age Group: 2013



Source: HCCI, 2014.
Notes: All data weighted to reflect the national, younger than 65 ESI population.
Data from 2012 and 2013 adjusted using actuarial completion.

Brand Prescriptions

In 2013, spending on brand prescriptions rose 2.4% to \$550 per capita (Table 1), and made up 11.3% of total per capita ESI spending (\$4,864). In 2011 and 2012, spending on brand prescriptions rose 4.0% to \$540 per capita and then declined slightly (-0.6%) to \$537. Between 2012 and 2013, spending increased by \$13 per capita and made up 7.1% of the total spending growth for the national ESI population.

Between 2012 and 2013, the number of filled days of brand prescriptions per 1,000 insureds declined 15.5%, or 8,531 filled days per 1,000 insureds to 46,497 (Table 3). Brand filled days made up only a small percentage (16.5%) of total filled days of prescriptions (282,012 filled days per 1,000 insureds). At the same time, the average price per filled day of brand prescriptions increased 21.2%, to \$12.

Spending on hormones continued to rise

HCCI classified brand prescriptions into nine HCCI detailed categories that were further subdivided into subclasses using the *American Hospital Formulary System* (AHFS) classifications. Of the nine detailed brand categories, the four with the highest number of filled days in 2013 are the focus of this section (excluding the “other therapeutic classes” detailed category, which is composed of multiple therapeutic drug types). These four were cardiovascular drugs, hormones and synthetic substitutes (“hormones”), central nervous system (CNS) agents, and gastrointestinal drugs (Appendix Table A5).

In 2013, spending on cardiovascular drugs, hormones, CNS agents, and gastrointestinal drugs made up 50.9% (\$280 per capita) of brand prescription spending (Appendix Table A4). Of these four categories, per capita spending was highest for hormones (\$100

per insured) and increased by 10.0% (Figure 14). Per capita spending on gastrointestinal brand prescriptions was the lowest (\$33 per capita) and rose 7.9%. Conversely, between 2012 and 2013, per capita spending on CNS agents and cardiovascular drugs declined (-2.0% and -10.5%, respectively). Insureds spent \$89 per capita on CNS agents and \$58 per capita on cardiovascular drugs.

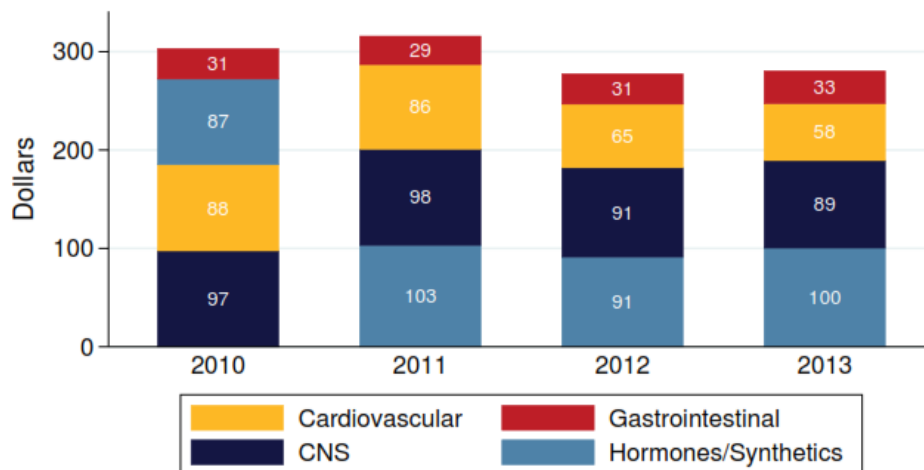
For the first time, HCCI examined subclasses of prescriptions within the detailed categories. Table 4 displays the four subclasses of brand prescriptions with the highest per capita spending for the ESI population in 2013. Of these classes, only insulins is contained in one of the top four detailed categories (hormones). In 2013, spending on the four subclasses made up 28.0% of ESI spending on brand prescriptions.

Use of cardiovascular brand drugs declined 21.2% in 2013

In 2013, the top four brand detailed categories constituted 73.2% of the total filled days per 1,000 insureds of brand prescriptions (Appendix Table A5). However, use of these categories declined. The most filled days was for hormones (11,426 filled days per 1,000 insureds), which declined 6.6%. The largest decline in the number of filled days was for cardiovascular drugs, at 21.2% to 10,763 filled days per 1,000 insureds. Use of CNS agents declined 13.4% to 8,732 filled days per 1,000 insureds. Use of gastrointestinal drugs declined 4.9% to 3,124 filled days.

Table 5 displays the four subclasses of brand prescriptions with the highest number of filled days per 1,000 insureds for the ESI population in 2013.

Figure 14
Expenditures Per Capita by Top 4 by Use Brand Prescription Detailed Service Categories: 2010-2013



Source: HCCI, 2014.
Notes: All data weighted to reflect the national, younger than 65 ESI population.
Data from 2012 and 2013 adjusted using actuarial completion.

Of these subclasses, only corticosteroids is not in one of the top four detailed categories; two of the classes are in the cardiovascular category. Only insulins showed both high per capita spending and high use. Together, the top four used subclasses accounted for 25.4% of total brand filled days by the ESI population.

Brand prescription use varied with age and gender

Generally, prescription use levels rose with age, and use was higher for women. In 2013, however, for the top four brand categories, women's use was only higher than men's use among young adults (a 15,734 filled day difference; Appendix Table A17a) and intermediate adults (an 8,934 filled day difference; Appendix Table A18a and Figure 15).

Among the top four brand categories, the difference in filled days between men and women for young adults and intermediate adults was due largely to women's use of hormones. Young adults' use of the top four categories was 23,535 filled days per 1,000 young

adult women compared to 7,801 filled days per 1,000 young adult men (Appendix Table A17a). Intermediate adults' use of the top four categories was 26,427 filled days per 1,000 women and 17,493 filled days per 1,000 men (Appendix Table A18a).

Among children, use of the top four brand categories amounted to 10,442 filled days per 1,000 boys and 7,312 per 1,000 girls (Appendix Table A16a). Nearly 82% of those filled days for boys were CNS agents (8,498 days per 1,000 boys); 12.0% were hormones (1,249 days per 1,000 boys). In contrast, 51.4% of filled days for girls were CNS agents (3,761 days per 1,000 girls), while 40.7% were hormones (2,978 days per 1,000 girls).

In 2013, both middle age adult men and pre-Medicare men used more filled days than did women in the same age groups. Middle age adult men used 50,142 filled days per 1,000 men as compared to 49,437 filled days per 1,000 middle age adult women (Appendix Table A19a). Pre-Medicare men used 89,359 filled days per 1,000

men whereas women in that age group used 88,099 days per 1,000 women (Appendix Table A20a). For men in these two age groups, the most highly used category was cardiovascular drugs (24,856 days per 1,000 middle age adult men and 48,624 days per 1,000 pre-Medicare adult men). For women in these age groups, the highest use was of hormones (17,077 filled days per middle age adult women and 31,262 filled days per pre-Medicare adult women).

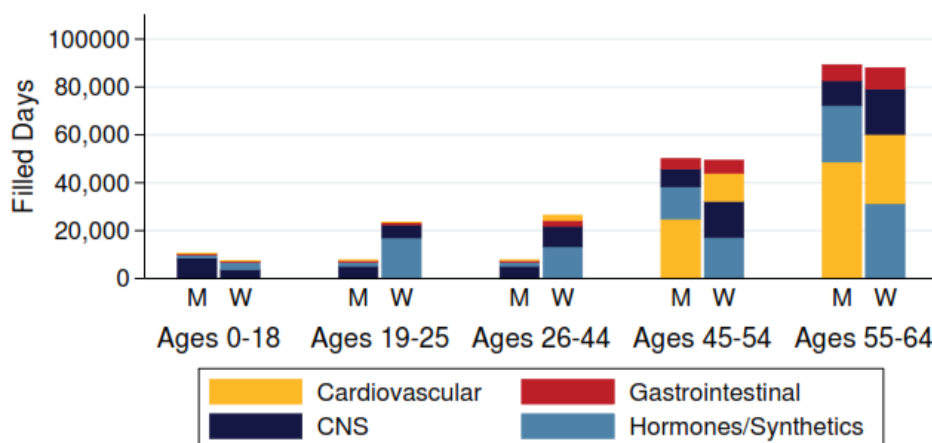
Summary

In 2013, spending on brand prescriptions rose 2.4% to \$550 per capita (Table 1), and the average price paid per brand prescription day rose 21.2% (Table 3). Use of brand prescriptions declined for the third consecutive year, down 15.5% to 46,497 filled days per 1,000 insureds.

About 72% of spending on brand prescriptions was accounted for by 4 categories of brand prescriptions (cardiovascular drugs, hormones, CNS agents, and gastrointestinal drugs) and three subclasses (antirheumatic agents, biologics, and antiretrovirals). Similarly, 79% of filled days of brand prescriptions were for the same four categories and the corticosteroids subclass.

Overall, the highest use of brand prescriptions by the ESI population was for hormones; however, this was due mainly to use of this category by young adult and intermediate adult women. The second-most highly used category was cardiovascular drugs, largely owing to use by adult men older than age 25.

Figure 15
Filled Days per 1,000 Insureds by Top 4 by Use Brand Prescription Detailed Service Categories, Gender, and Age Group: 2013



Source: HCCI, 2014.
Notes: All data weighted to reflect the national, younger than 65 ESI population.
Data from 2012 and 2013 adjusted using actuarial completion.

Table 4: Top 4 Highest Spending Per Capita Brand Prescription Subclasses: 2013 ESI

Subclass Name (Number)	HCCI Detailed Category	Common Use	Expenditures Per Capita	Filled Days per 1,000 Insureds
Disease-Modifying Antirheumatic Agents (92:36.00)	Other Therapeutic Classes	Various types of arthritis, such as rheumatoid arthritis and psoriatic arthritis	\$49.31	543
Biologic Response Modifiers (92:20.00)	Other Therapeutic Classes	Autoimmune conditions, such as multiple sclerosis, rheumatoid arthritis, Crohn's disease	\$39.23	250
Insulins (68:20.08)	Hormones and Synthetic Substitutes	Manage blood sugar levels, type 1 and type 2 diabetes	\$35.48	3,136
Antiretrovirals (08:18.08)	Anti-Infective Agents	Prescribed for HIV infections and prevention of HIV infection after virus exposure	\$29.87	752

Source: HCCI, 2014.

Table 5: Top 4 Brand Prescription Subclasses Used per 1,000 Insureds: 2013 ESI Population

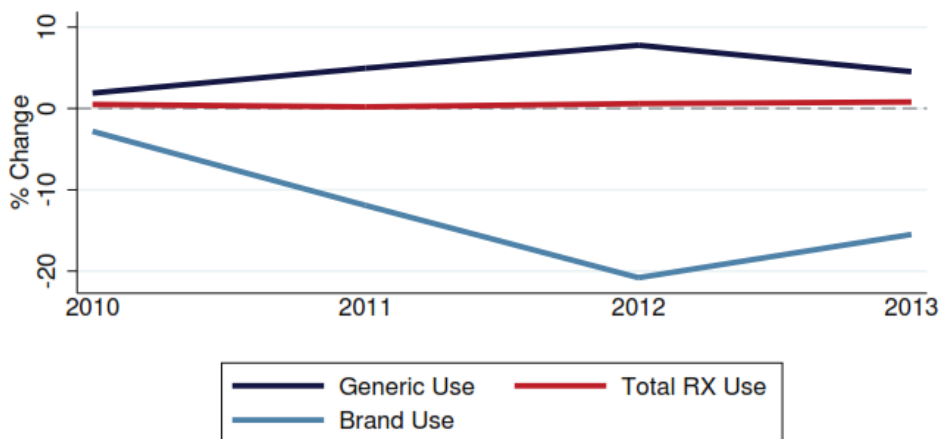
Subclass Name (Number)	HCCI Detailed Category	Common Use	Filled Days per 1,000 Insureds	Expenditures Per Capita
HMG-CoA Reductase Inhibitors (24:06.08)	Cardiovascular Drugs	Management of high cholesterol	3,226	\$17.31
Insulins (68:20.08)	Hormones and Synthetic Substitutes	Manage blood sugar levels, type 1 and type 2 diabetes	3,136	\$35.48
Corticosteroids (48:10.08)	Respiratory Agents	Reduce inflammation related to respiratory conditions, such as asthma and chronic obstructive pulmonary disorder	2,821	\$20.89
Contraceptives (68:12.00)	Hormones and Synthetic Substitutes	Commonly known as "birth control", includes oral, intravaginal, and transdermal forms	2,620	\$8.50

Source: HCCI, 2014.

TOTAL PRESCRIPTION FILLED DAY USE IN 2013

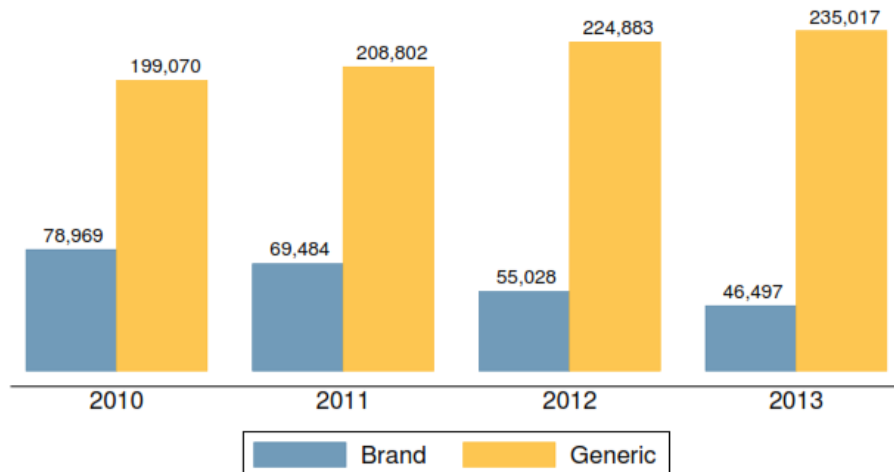
In 2013, use of filled days of prescriptions by the ESI population increased 0.7%, equaling 2,053 more filled days per 1,000 insureds (Figure 16). Use of generic prescription filled days increased 4.5%, equaling 10,134 filled days per 1,000 insureds (Figure 17). Offsetting this increase in generic prescription use was a 15.5% decline in the use of brand prescription filled days. Changes in use of prescriptions between 2012 and 2013 varied by age group and gender (Appendix Table A10b). Use of prescriptions declined for children and for pre-Medicare adults, with the largest decline in filled days use per 1,000 insureds for pre-Medicare adult women (17,059 filled days). The other three age groups – young adults, intermediate adults, and middle age adults – increased their use of prescriptions. The largest increase was for young adult women (6,342 filled days), followed by middle age adult women (3,576 filled days).

Figure 16
Annual Percentage Changes in Brand, Generic,
and Total Prescription Filled Days Use
per 1,000 Insureds: 2010-2013



Source: HCCI, 2014.
Notes: All data weighted to reflect the national, younger than 65 ESI population.
Data from 2012 and 2013 adjusted using actuarial completion.

Figure 17
Annual Filled Days Use of Generic and Brand
Prescriptions per 1,000 Insureds: 2010-2013



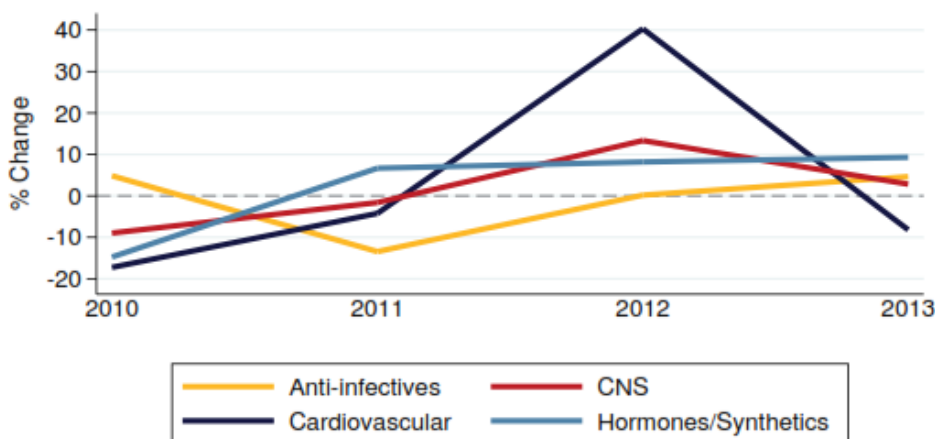
Source: HCCI, 2014.
Notes: All data weighted to reflect the national, younger than 65 ESI population.
Data from 2012 and 2013 adjusted using actuarial completion.

Generic Prescriptions

In 2013, national ESI spending on generic prescriptions constituted 5.9% of total per capita ESI spending and 34.2% of total prescription spending (Table 1). Between 2012 and 2013, per capita spending on generic prescriptions grew 3.9%, from \$276 to \$287, an \$11 increase that accounted for 6.0% of the total increase in spending for the national ESI population.

In 2013, about 83% of prescription filled days were for generics (Table 3), up from 75% of filled days in 2011. Over the study period, the number of filled days of generic prescriptions per 1,000 insureds rose in each year, with the largest increase (7.7%) occurring in 2012. In 2013, use of generic prescriptions rose 4.5% to 235,017 filled days per 1,000 insureds. Additionally, the average price per filled day of generic prescriptions rose in 2012 (5.3%) but declined slightly in 2013 (-0.5%). In both years, the average price per day was less than \$1.50.

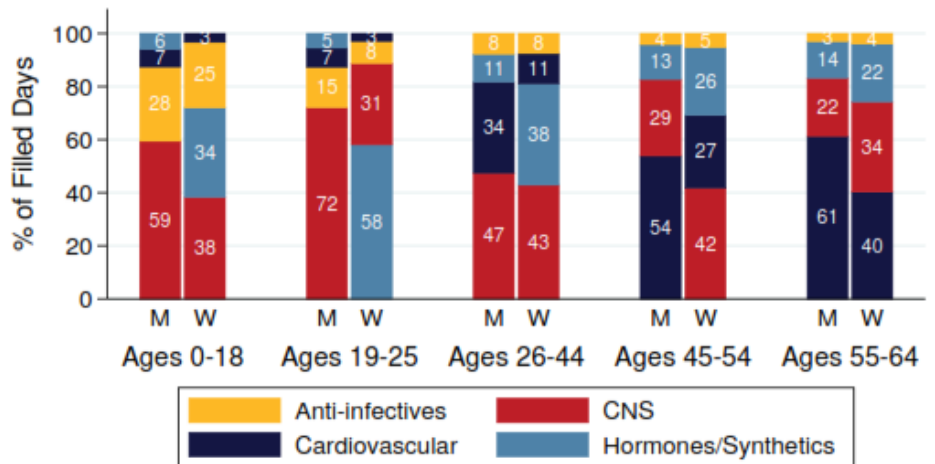
Figure 18
Annual Percentage Changes in Expenditures Per Capita by Top 4 by Use Generic Prescription Detailed Service Categories: 2010-2013



Source: HCCI, 2014.
Notes: All data weighted to reflect the national, younger than 65 ESI population.
Data from 2012 and 2013 adjusted using actuarial completion.

Figure 19

Share of Filled Days by Top 4 by Use Generic Prescription Detailed Service Categories, Gender, and Age Group: 2013



Source: HCCI, 2014.
Notes: All data weighted to reflect the national, younger than 65 ESI population.
Data from 2012 and 2013 adjusted using actuarial completion.

CNS agents accounted for 31% of generic prescription spending in 2013

HCCI classified generic prescriptions into nine detailed prescription categories,

and subdivided them into subclasses to better understand the drivers of generic prescription trends. Analysis of generics focused on those four detailed categories having the highest number of filled days per 1,000 insureds in 2013 (excluding the “other therapeutic classes” detailed category). Three of the top four generic prescription categories – cardiovascular drugs, hormones, and CNS agents – were also among the highest used categories of brand prescriptions. The fourth high-use generic category was anti-infective agents (Appendix Table A5).

Spending on the top four categories made up 66.9% of the total per capita spending on generic prescriptions (Appendix Table A4). In 2012 and 2013, spending per capita for three of the top four generic detailed categories increased (Figure 18). The highest per capita spending in 2013 was on CNS agents; spending increased 2.8% to \$90 per capita, which accounted for

31.4% of spending on generics. Spending on hormones (9.3%) and anti-infective agents (4.6%) also rose, to \$36 and \$26 per capita, respectively. Cardiovascular drug spending dropped 8.2% to \$40 per capita.

Table 6 displays the four subclasses with the highest per capita spending for the ESI population in 2013. All four subclasses are in the CNS agents category.

The highest per capita spending in 2013 was on antidepressants (\$18.48), which also had the highest use of any subclass – 24,223 filled days per 1,000 insureds. This accounted for 10.3% of all generic prescription filled days. The other three subclasses (amphetamines, opiate agonists, and anticonvulsants) had similar per capita spending, between \$12 and \$13, and lower rates of use as compared to antidepressants.

Generic hormone use rose 5% in 2013

In 2013, the top four detailed categories of generic prescriptions (CNS agents, hormones, cardiovascular drugs, and anti-infectives) made up 75.3% of filled days (Appendix Table A5). Filled days of three of these categories increased, while use of anti-infective agents declined 1.8%, to 11,096 filled days per 1,000 insureds.

ANTIDEPRESSANT USE BY THE ESI POPULATION (2009-2013)

In each of the previous five years (2009-2013), generic antidepressants were the subclass of generic prescriptions most used by the national ESI population. In 2009, generic antidepressant use was 18.1 filled days per person; by 2013, this had increased to 24.2 filled days per person (Table 7). Use of generic prescriptions increased every year during this period, with the largest increase occurring in 2012. During that same period, use of brand antidepressants decreased in every year, with the largest decrease seen in 2012. In 2009, there were 6.4 filled days of brand antidepressants per person; use declined to 2.3 filled days by 2013. Overall, every year between 2009 and 2013, there was a net increase in the use of antidepressants (combined brand and generic) by the ESI population. In 2009, there were 24.5 filled days per person of antidepressants and 26.6 filled days in 2013. Over that period, antidepressants also made up an increasing share of all prescriptions. In 2009, filled days of antidepressants made up 8.8% of filled days of all prescriptions for the ESI population. By 2013, filled days of antidepressants were nearly 10% of all prescription filled days.

Table 6: Use of brand and generic antidepressants in filled days per 1,000 insureds for the national ESI population: 2009-2013

Antidepressants (28:16.04)	2009	2010	2011	2012	2013
Brand					
Filled Days per 1,000	6,439	6,035	4,918	2,985	2,345
Percent Change in Use	*	-6.3%	-18.5%	-39.3%	-21.4%
Generic					
Filled Days per 1,000	18,058	18,801	20,522	23,138	24,223
Percent Change in Use	*	4.1%	9.2%	12.7%	4.7%
Combined					
Filled Days per 1,000	24,497	24,836	25,440	26,123	26,568
Percent Change in Use	*	1.4%	2.4%	2.7%	1.7%
Difference from Previous Year of Filled Days	*	339	604	683	445
All Prescriptions					
Filled Days per 1,000	276,821	278,065	278,316	279,959	282,012
Antidepressants Share of All Prescriptions	8.8%	8.9%	9.1%	9.3%	9.4%

Source: HCCI, 2014.

The generic category used most was CNS agents, use of which increased 3.5%, to 63,670 filled days per 1,000 insureds. Use of cardiovascular drugs increased 4.9%, to 61,668 filled days, the largest increase in the number of filled days between 2012 and 2013 (2,869 filled days).

Hormone use rose 5.0%, to 40,457 filled days per 1,000 insureds. The most commonly filled subclass was contraceptives, which made up 30.8% of filled days in the hormones category (12,469 filled days per 1,000 insureds; data not shown).

For most common classes of generics, women used more generic drugs than men of the same age

For each of the top four detailed categories of generic prescriptions in 2013,

women's filled days were higher than men's for each age group. The difference in use between genders was largest for young adults (97,205 filled days; Appendix Table A17a) and intermediate adults (93,622 filled days; Appendix Table A18a), due mainly to the number of filled days of hormone use among women in those age groups (78,194 filled days per 1,000 young adult women and 70,786 filled days per 1,000 intermediate adult women; Figure 19). The smallest gender difference in generic prescription use was seen between girls and boys – 5,784 more filled days for girls (Appendix Table A16a).

Summary

In 2013, spending on generic prescriptions increased, constituting slightly

more than a third of total spending on prescriptions. The relatively low per capita spending on generic prescriptions, however, as compared to brand prescriptions, masks the higher use rates of generics.

Generic prescription use by the ESI population rose every year between 2011 and 2013. At the same time, the average price paid per generic filled day remained below \$1.50. CNS agents had the highest per capita spending of the top four categories and included antidepressants, the subclass with the highest per capita spending and highest use.

Table 7: Top 4 Highest Spending Per Capita Generic Prescription Subclasses for ESI Population: 2013

Subclass Name (Number)	HCCI Detailed Category	Common Use	Expenditures Per Capita	Filled Days Per 1,000 Insureds
Antidepressants (28:16.04)	CNS Agents	Management of various conditions including depression, anxiety disorders, obsessive compulsive disorder	\$18.48	24,223
Amphetamines (28:20.04)	CNS Agents	Primarily used for narcolepsy and ADHD	\$12.96	2,939
Opiate Agonists (28:08.08)	CNS Agents	Pain killers	\$12.68	7,227
Anticonvulsants, Miscellaneous (28:12.92)	CNS Agents	Treatment of seizure disorders	\$12.07	6,104

Source: HCCI, 2014.

Special Supplement: 2013 Generic Prescription Use by Age and Gender

As part of the 2013 analysis of prescription use by the ESI population, HCCI analyzed filled days of generic prescriptions for men and women by age group. This analysis reflects a growing interest at HCCI in how different age-gender groups covered by ESI used prescriptions in 2013 and whether patterns emerged in prescription use as insureds aged. HCCI did not examine changes in use over time.

In this supplement, HCCI described for generic prescriptions the four detailed categories and four subclasses used most commonly for each age-gender group. All the statistics in this supplement have been converted from filled days per 1,000 insureds to filled days per person.

Only 13 subclasses made up the prescription classes most commonly used, representing 31% to 62% of generic prescription use by the different age-gender groups.

The 13 subclasses were contained within 5 of HCCI's 9 detailed categories of drugs:

- Anti-infective agents (penicillins);
- Cardiovascular drugs (angiotensin-converting enzyme inhibitors, dihydropyridines, HMG-CoA reductase inhibitors, β -adrenergic blocking agents);
- CNS agents (amphetamines, miscellaneous anticonvulsants, antidepressants, opiate agonists, and respiratory and CNS stimulants);
- Hormones (contraceptives and thyroid agents); and
- Respiratory agents (leukotriene modifiers).

CNS agents were the most common drug category used by children

For both boys and girls, the category of drugs used most was CNS agents (18.5 filled days per boy and 14.1 per girl; Appendix Table A16a and Figure 20). For boys, the second most-used category of drugs was anti-infective agents (8.7 filled days per boy). The second most-used category of drugs for girls was hormones (12.4 filled days per girl).

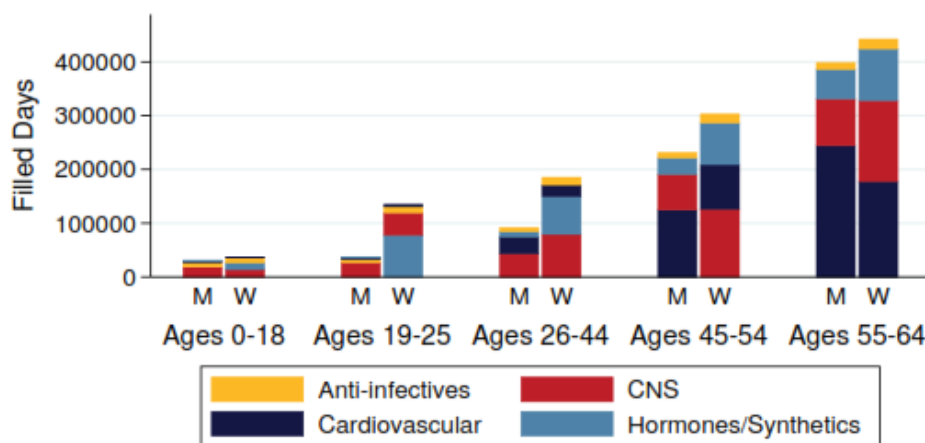
The first and third most used subclass of drugs for boys and second most used for girls were in the CNS agent category (Table 8). For boys, the subclass used most was respiratory and CNS stimulants (5.7 days per boy), which made up 30.8% of the CNS filled days for boys. Filled days of antidepressants constituted 24.3% of CNS use for boys (4.5 days per boy) and 39.7% for girls (5.6 days per girl).

For girls, the subclass used most was contraceptives (9.5 days per girl), which made up 76.6% of girls' hormone use. Penicillins were the third most-used subclass for girls (3.5 days per girl) and fourth most used for boys (3.5 days per boy); this subclass accounted for 38.5% and 40.2% of anti-infective agent use for girls and boys, respectively. Leukotriene modifiers were the second most-used subclass for boys (4.6 days per boy) and fourth most-used for girls (3.2 days per girl).

Young adult women used more prescriptions than young adult men

Young adult women had more filled days of the top four detailed categories

Figure 20
Filled Days per 1,000 Insureds by Top 4 by Use Generic Prescription Detailed Service Categories, Gender, and Age Group: 2013



Source: HCCI, 2014.
Notes: All data weighted to reflect the national, younger than 65 ESI population. Data from 2012 and 2013 adjusted using actuarial completion.

MOST COMMON ON-LABEL USES OF SELECTED AHFS SUBCLASSES^{9,10}

Anti-infective agents

Penicillins are a group of antibiotics that treat a large range of bacterial infections, including pneumonia, strep throat, and staph infection.

Respiratory agents

Leukotriene modifiers are a type of respiratory agent taken to control the symptoms of mild-to-severe asthma.

Hormones and synthetic substitutes

Thyroid agents are used to treat both diminished and increased thyroid function.

Cardiovascular drugs

HMG-CoA reductase inhibitors, more commonly known as statins, are one of the primary ways to manage high cholesterol levels. In addition, they may be prescribed to prevent heart disease and heart attack in individuals who have multiple risk factors, such as smoking and age. In 2013, the American Heart Association and the American College of Cardiology revised the recommendations for statin therapy, which increased the importance of physicians considering risk factors (such as age, gender, race, smoking habits, etc.) rather than focusing on cholesterol levels. This revision in the recommendations increased the number of individuals said to benefit from statin therapy to about one-third of Americans.¹¹

Angiotensin-converting enzyme inhibitors, more commonly known as ACE inhibitors, are used to treat high blood pressure, often in conjunction with other drugs. These drugs can also be used to treat congestive heart failure and general chest pain that is associated with restricted blood flow to the heart.

CNS agents

Antidepressants are used to treat many conditions, including depression, anxiety disorders, obsessive compulsive disorder, and many others.

Opiate agonists are mainly opiate pain killers, such as codeine and morphine, used to treat mild-to-severe pain.

Amphetamines are a type of stimulant primarily used to treat narcolepsy and attention deficit hyperactivity disorder (ADHD) in adults and children.

Anticonvulsants are primarily used to treat a broad range of seizure disorders; they can also treat agitation or episodes associated with mental health disorders such as schizophrenia or bi-polar disorder.

of generic prescriptions as compared with the number for young adult men. Young adult women had the most filled days of hormones, 78.2 filled days per young adult woman (Appendix Table A17a). Of these filled days of hormones, 69.0 (88.2%) were for contraceptives, the subclass most commonly used by young adult women (Table 9). Use of contraceptives made up 43.7% of filled days of generic prescriptions for young adult women. The most-used detailed category for young adult men and the second most-used detailed category for young adult women were CNS agents (27.0 days per young adult man and 41.4 filled days per young adult woman).

For young adult men, the four subclasses of generic prescriptions used most were all CNS agents. Antidepressants – the subclass used most by young adult men – constituted 31.5% of the CNS filled days for young adult men (8.5 days per man), and 16.5% of total generic prescription days. For young adult women, three of the four most-used subclasses were CNS agents; the most commonly used CNS agent (and second most common subclass) was antidepressants (17.7 days per young adult woman), which made up 42.8% of CNS use.

Antidepressants accounted for nearly 15% of generic filled days for intermediate adult women

Similar to use among young adults, intermediate adult women had higher use of three of the top four detailed categories, while men of this age cohort had higher use of cardiovascular drugs. The highest-used category for both intermediate adult men and women was CNS agents: 43.5 filled days per intermediate adult man and 79.4 days per intermediate adult

woman (Appendix Table A18a). For both intermediate adult men and women, the subclass of CNS agent used most was antidepressants (15.0 days per man and 34.2 days per woman; Table 10). Within this age group, use of antidepressants accounted for 34.5% of CNS use by men and 43.1% of CNS use by women. Use of antidepressants made up 14.7% of total filled days of generic prescriptions for intermediate adult women and 12.2% of generic days for intermediate adult men.

The second most-used detailed category of generic prescriptions for intermediate adult women was hormones (70.8 filled days per intermediate adult woman). The most common type of hormone, and the most used subclass, for intermediate adult women was contraceptives (43.3 days per intermediate adult woman), constituting 61.2% of the hormone use for this group.

For intermediate adult men, the second most-used detailed category was cardiovascular drugs (31.4 filled days per man). The most common subclass of cardiovascular drugs for men in this age group was angiotensin-converting enzyme inhibitors (“ACE inhibitors”; 9.0 days per man), which accounted for 28.7% of their cardiovascular use.

Cardiovascular drugs were most common generics for middle age adult men

Middle age adult men used more filled days of cardiovascular drugs than any other category (124.5 per man; Appendix Table A19a); this category contained three of the top four subclasses used by these men (Table 11). The most commonly used subclass for middle age adult men was HMG-CoA

reductase inhibitors (“statins”; 37.0 days per man), which made up 29.7% of their cardiovascular filled days. Statins were the third most-used subclass for middle age adult women (21.0 days per woman) and made up 25.4% of their cardiovascular filled days.

CNS agents were the category used most by middle age adult women (126.5 days per woman) and the second most-used category for men of the same age group (66.7 days per man). The most used subclass for middle age adult women was antidepressants (52.2 days per woman), accounting for 41.3% of their CNS use. Antidepressants were also the third most-used class for middle age adult men (21.6 days per man), accounting for 32.4% of their CNS filled days.

The second most-used category for middle age women was hormones, at 77.4 filled days per woman. The most used subclass of hormone by middle age adult women, and the second most used subclass overall for these women, was thyroid agents (33.3 days per woman), which made up 43.0% of their filled days of hormones.

Before Medicare eligibility, cardiovascular generic use rose for group

The category most used by pre-Medicare adult men and women was cardiovascular drugs (244.2 filled days per man and 178.0 filled days per woman; Appendix Table A20a). Likewise, all of the top four subclasses for men in this age cohort were in the cardiovascular category (Table 12). The most common subclass for pre-Medicare adult men, as with middle age adult men, was statins (71.7 days

per man), accounting for 29.4% of cardiovascular filled days for men in this age group. Statins were also the second most used drug class for pre-Medicare adult women (52.9 days per woman), accounting for 29.7% of their cardiovascular filled days.

The second most-used detailed category of generic prescriptions for both pre-Medicare men and women was CNS agents: 87.3 filled days per man and 150.5 filled days per woman. Overall, antidepressants were the most used subclass by pre-Medicare adult women (61.5 days per woman), and it made up 40.9% of CNS filled days for this group. For pre-Medicare women, as with middle age adult women, the subclass of hormones used most commonly was thyroid agents (47.6 days per woman), which constituted 49.6% of their hormone use.

Summary

Thirteen therapeutic subclasses constituted the top four most commonly filled generics for the age-gender groups. These classes were drawn from five of the nine HCCI detailed drug categories: anti-infective agents, cardiovascular drugs, CNS agents, hormones, and respiratory agents.

These findings document how generic prescription use in filled days varied by age and gender among the ESI population. HCCI found several patterns among the detailed categories used most commonly. Subclasses of drugs that were in the respiratory and anti-infective agent categories were commonly used only among boys and girls. Hormone subclasses ranked highest in use for women of each age group but not for men in any age group. CNS agents were in the top

four for nearly all age-gender groups. Cardiovascular drugs were common in the adult populations, more predominantly for men.

At the subclass level several other patterns emerged. Antidepressants were in the top four most-used subclasses for nearly all age-gender groups. The only exception was use by pre-Medicare men, whose top four subclasses were all cardiovascular drugs. Within the cardiovascular category, statins and ACE inhibitors were prevalent in the older age groups, for both men and women. Hormone use by women was common in every age group; however, use transitioned from contraceptives before age 45 to thyroid medications after age 25.

Table 8: Top 4 Highest Used per 1,000 Insureds Generic Prescription Subclasses for Children: 2013

Subclass Name (Number)	HCCI Detailed Category	Utilization Filled Days per Boy/Girl	Spending per Boy/Girl
Boys (ages 0-18)			
Respiratory and CNS Stimulants (28:20.32)	CNS Agents	5.68	\$25.12
Leukotriene Modifiers (48:10.24)	Respiratory Agents	4.57	\$5.52
Antidepressants (28:16.04)	CNS Agents	4.53	\$2.92
Penicillins (08:12.16)	Anti-Infective Agents	3.46	\$5.27
Girls (ages 0-18)			
Contraceptives (68:12.00)	Hormones	9.51	\$8.66
Antidepressants (28:16.04)	CNS Agents	5.56	\$3.32
Penicillins (08:12.16)	Anti-Infective Agents	3.49	\$5.16
Leukotriene Modifiers (48:10.24)	Respiratory Agents	3.21	\$3.79

Source: HCCI, 2014.

Table 9: Top 4 Highest Used per 1,000 Insureds Generic Prescription Subclasses for Young Adults: 2013

Subclass Name (Number)	HCCI Detailed Category	Utilization Filled Days per Man/Woman	Spending per Man/Woman
Men (ages 19-25)			
Antidepressants (28:16.04)	CNS Agents	8.51	\$6.52
Amphetamines (28:20.04)	CNS Agents	5.24	\$22.25
Anticonvulsants, Miscellaneous (28:12.92)	CNS Agents	3.08	\$11.40
Opiate Agonists (28:08.08)	CNS Agents	1.71	\$2.99
Women (ages 19-25)			
Contraceptives (68:12.00)	Hormones and Synthetic Substitutes	69.03	\$66.35
Antidepressants (28:16.04)	CNS Agents	17.74	\$11.49
Amphetamines (28:20.04)	CNS Agents	5.93	\$24.39
Anticonvulsants, Miscellaneous (28:12.92)	CNS Agents	4.70	\$11.33

Source: HCCI, 2014.

Table 10: Top 4 Highest Used per 1,000 Insureds Generic Prescription Subclasses for Intermediate Adults: 2013

Subclass Name (Number)	HCCI Detailed Category	Utilization Filled Days per Man/Woman	Spending per Man/Woman
Men (ages 26-44)			
Antidepressants (28:16.04)	CNS Agents	15.01	\$10.93
Angiotensin-Converting Enzyme Inhibitors (24:32.04)	Cardiovascular Drugs	8.99	\$2.40
HMG-CoA Reductase Inhibitors (24:06.08)	Cardiovascular Drugs	8.01	\$4.89
Opiate Agonists (28:08.08)	CNS Agents	6.06	\$9.97
Women (ages 26-44)			
Contraceptives (68:12.00)	Hormones and Synthetic Substitutes	43.25	\$41.76
Antidepressants (28:16.04)	CNS Agents	34.19	\$24.88
Thyroid Agents (68:36.04)	Hormones and Synthetic Substitutes	16.35	\$7.57
Anticonvulsants, Miscellaneous (28:12.92)	CNS Agents	8.05	\$14.42

Source: HCCI, 2014.

Table 11: Top 4 Highest Used per 1,000 Insureds Generic Prescription Subclasses for Middle Age Adults: 2013

Subclass Name (Number)	HCCI Detailed Category	Utilization Filled Days per Man/Woman	Spending per Man/Woman
Men (ages 45-54)			
HMG-CoA Reductase Inhibitors (24:06.08)	Cardiovascular Drugs	36.96	\$24.94
Angiotensin-Converting Enzyme Inhibitors (24:32.04)	Cardiovascular Drugs	30.55	\$8.58
Antidepressants (28:16.04)	CNS Agents	21.62	\$16.54
β-Adrenergic Blocking Agents (24:24.00)	Cardiovascular Drugs	18.53	\$9.94
Women (ages 45-54)			
Antidepressants (28:16.04)	CNS Agents	52.20	\$41.81
Thyroid Agents (68:36.04)	Hormones and Synthetic Substitutes	33.33	\$14.71
HMG-CoA Reductase Inhibitors (24:06.08)	Cardiovascular Drugs	21.02	\$12.83
Angiotensin-Converting Enzyme Inhibitors (24:32.04)	Cardiovascular Drugs	18.60	\$5.06

Source: HCCI, 2014.

Table 12: Top 4 Highest Used per 1,000 Insureds Generic Prescription Subclasses for Pre-Medicare Adults: 2013

Subclass Name (Number)	HCCI Detailed Category	Utilization Filled Days per Man/Woman	Spending per Man/Woman
Men (ages 55-64)			
HMG-CoA Reductase Inhibitors (24:06.08)	Cardiovascular Drugs	71.68	\$53.06
Angiotensin-Converting Enzyme Inhibitors (24:32.04)	Cardiovascular Drugs	53.12	\$15.78
β-Adrenergic Blocking Agents (24:24.00)	Cardiovascular Drugs	41.24	\$21.81
Dihydropyridines (24:28.08)	Cardiovascular Drugs	27.28	\$14.46
Women (ages 55-64)			
Antidepressants (28:16.04)	CNS Agents	61.45	\$50.45
HMG-CoA Reductase Inhibitors (24:06.08)	Cardiovascular Drugs	52.90	\$35.91
Thyroid Agents (68:36.04)	Hormones and Synthetic Substitutes	47.58	\$19.20
Angiotensin-Converting Enzyme Inhibitors (24:32.04)	Cardiovascular Drugs	34.33	\$10.08

Source: HCCI, 2014.

Data & Methods

Data

HCCI's dataset contains several billion de-identified commercial health insurance claims for the years 2009 through 2013. Three major health insurers contributed data to HCCI for the purposes of producing a national, multi-payer, commercial health care claims database. These data include claims for individuals covered by group insurance (fully insured and administrative services only), individual insurance, and Medicare Advantage plans. The claims data include prices paid to providers by both insurers and insureds and details about the services used. Furthermore, HCCI's claims data are compliant with the Health Insurance Portability and Accountability Act (HIPAA).

For the 2013 *Health Care Cost and Utilization Report*, HCCI performed analysis on a subset of data for approximately 40 million insureds per year (2009-2013), totaling approximately 5 billion claim lines.¹² This analytic subset consisted of all claims for insureds younger than age 65 and covered by ESI. The data set used for this report represented about 27% of the national ESI population, making this one of the largest datasets on the privately insured ever assembled.

Methods

The analytic subset was weighted using U.S. Census Bureau age-gender-geographic-based estimates of the ESI population to make the analytic subset representative of the national ESI population. Claims in the analytic subset from 2012 and 2013 were actuarially completed to account for claims that had been incurred but not adjudi-

cated. Claims for years 2009 through 2011 were not adjusted and were considered 100% adjudicated.

HCCI used the weighted, actuarially completed dataset to estimate per capita health expenditures, average prices, utilization of services, unit prices, and service intensity for 2009 through 2013. HCCI did not correct dollars for inflation; thus, all reported expenditures and prices were in nominal dollars.

HCCI analyzed four major categories of services, several subservice categories, and detailed service categories. Inpatient facility claims were from hospitals, skilled nursing facilities (SNFs), and hospices where detail was sufficient to identify an overnight stay by an insured. Outpatient facility claims did not entail an overnight stay, and include observation and emergency room services. Both outpatient and inpatient claims consisted of only the facility charges associated with such claims. Professional procedures included claims billed by physicians and non-physicians according to the industry's standard procedure coding practices. Prescription data are prescriptions filled at both retail and mail order pharmacies.

For a more detailed description of HCCI's methodology and dataset, see the Analytic Methodology on HCCI's website.⁷

HCCI recognizes that the terms "health care spending" and "health spending" could be interpreted differently; however, they were used interchangeably in this report.

Limitations

This report, like all research, had several limitations that affect the generalizability and interpretation of the findings. For this reason, HCCI considers the work a starting point for analysis and research on individuals covered by ESI rather than as a conclusive analysis of the ESI population's effect on health care in the United States.

First, our findings were estimates for the US ESI population ages 0 to 64 based on a sample of approximately 27% of these insureds.

Second, the analysis and results were descriptive, and the findings were not causal and cannot be used to determine causal relationships.

Third, the effect of individual or population health status, such as existence of chronic conditions, was not specifically investigated or discussed in the report.

A note on premiums

HCCI does not report on premiums or their determinants. For more information on health insurance premiums and the multiple factors that affect them (including health care expenditure; 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*.^{13,14,15}

Changes in 2013

HCCI's analytic methodology underwent a number of changes to enhance reporting for the 2013 *Health Care Cost and Utilization Report*. See the methodology document available on HCCI's Website for details on these changes.⁷

Data changes.

In the 2013 report, new data were provided for 2011 through 2013 from the data contributors, resulting in changes in the membership, expenditures, utilization, and prices in all years. This is an unavoidable consequence of updating and refining the dataset over time. As a result, the trends reported in the 2013 report are somewhat different from those in the 2012 report.

The data were adjusted to account for new and revised data for 2013. For the 2013 analytic dataset, 2009 through 2011 data were considered complete, and no actuarial adjustment was performed. The 2012 and 2013 claims were actuarially completed using the new data. The average intensity weights were changed for some of the outpatient and professional procedure subservice categories due to improved imputation for missing weights and the introduction of some new weights in 2013.

Weighting methodology was updated.

The weighting methodology was updated to reflect the national ESI population younger than age 65 as measured by the American Community Survey. The methodology was also updated to better account for fluctuations in the population within a year.

Analysis changes. For the 2013 report, HCCI reported on health care trends by age-gender groups, further enhancing the specificity of the analysis. In response to public inquiries about the data, HCCI enhanced the reporting on prescriptions by reporting on even more

detailed pharmaceutical categories. See the 2013 *Health Care Cost and Utilization Report Methodology* for more information.

Suggested citation for 2013 report:

"2013 Health Care Cost and Utilization Report." Health Care Cost Institute, Inc., Oct. 2014. Web.

Endnotes

¹ Health Care Cost Institute. 2012 Health Care Cost and Utilization Report. HCCI, Sep. 2013. Web.

² Herrera, Carolina-Nicole, Martin Gaynor, David Newman, Robert J. Town, and Stephen Parente. "Trends Underlying Employer-Sponsored Health Insurance Growth for Americans Younger Than Age 65." *Health Affairs*. 32.10 (2013): 1715-1722. Print.

³ Dranove, David, Craig Garthwaite, and Christopher Ody. "Health Spending Slowdown Is Mostly Due To Economic Factors, Not Structural Change In The Health Care Sector." *Health Affairs* 33.8 (2014): 1399-1406.

⁴ Ryu, Alexander J., et al. "The slowdown in health care spending in 2009–11 reflected factors other than the weak economy and thus may persist." *Health Affairs* 32.5 (2013): 835-840.

⁵ Council of Economic Advisors. "Recent Trends in Health Care Costs, Their Impact on the Economy, and the Role of the Affordable Care Act." 2014 Economic Report to the President (2014): 147-178. Web.

⁶ Yamamoto, Dale H. "Health Care Costs - From Birth to Death." Health Care Cost Institute (2013): 1-39. Society of Actuaries. Web.

⁷ Health Care Cost Institute. 2013 Health Care Cost and Utilization Report Analytic Methodology v.3.3. Health Care Cost Institute, Oct. 2014. Web.

⁸ All inpatient admissions that could not be classified as any of the detailed categories of admissions were considered

"ungroupable". These are not considered acute or non-acute inpatient admissions.

⁹ McEvoy, Gerald K., ed. AHFS Drug Information. Bethesda, MD: American Society of Health-System Pharmacists, 2014. PEPID. Web.

¹⁰ Details about common uses of prescription drug classes is for informational purposes only, and is not medical advice.

¹¹ American Heart Association. "Doctor Discussion is Key for Cholesterol Treatment." Blog.heart.org. 30 Nov. 2013. Web.

¹² Health Care Cost Institute, Inc. Aggregated ESI Cost and Utilization Dataset (2009-2013). Health Care Cost Institute, 2014. Digital file.

¹³ Congressional Research Service. *Private Health Insurance Premiums and Rate Reviews* [Internet]. Washington (DC): CRS; 2011 Jan. Web.

¹⁴ American Academy of Actuaries. *Critical Issues in Health Reform: Premium Setting in the Individual Market*. Washington (DC): AAA; 2010 March. Web.

¹⁵ Congressional Budget Office. *Key Issues in Analyzing Major Health Insurance Proposals, Chapter 3, Factors Affecting Insurance Premiums*. Washington (DC): CBO; 2008 December. Web.

Trend to Watch

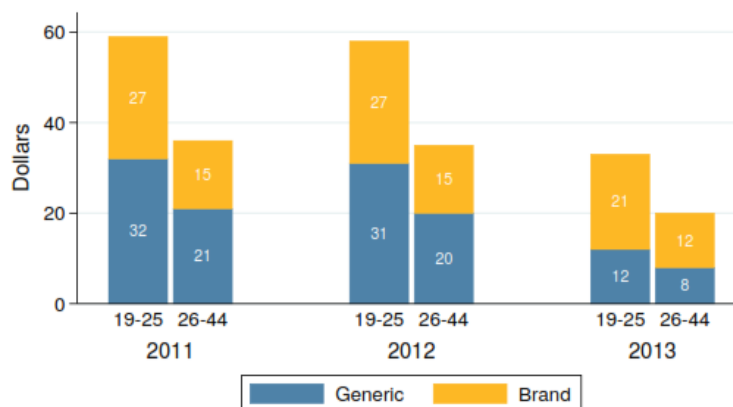
In 2013, there was a notable break in trend for out-of-pocket spending growth for adult women (ages 19–44). Out of pocket spending growth slowed considerably for young adult women (ages 19–25) and intermediate adult women (ages 26–44) compared to the two prior years. For the first time in 2013, HCCI observed that there was no increase in out-of-pocket expenditures for young adult women (0.0% growth). For intermediate adult women, out-of-pocket spending growth slowed considerably, increasing by 3.2% as compared to 6.4% growth the previous year.

Driving these breaks in trends were changes in out-of-pocket spending on contraceptive prescriptions. Out-of-pocket spending per capita by young adult and intermediate adult women on generic contraceptives fell by 61% to \$20, and brand contraceptive spending fell by 21% to \$33 (Appendix Table A29). At the same time, use of contraceptives increased by 4% for young adult women and 2% for intermediate adult women (Appendix Table A30).

Lower out-of-pocket spending and rising contraceptive use coincided with the first full calendar year of Affordable Care Act (ACA) provisions requiring full coverage (no cost-sharing) of some preventive services, such as contraceptives, prenatal screenings and tests, cervical cancer screenings, diabetes and blood pressure screenings. Although the ACA was likely a large influence on the 2013 per capita out-of-pocket spending trends, other factors also influence spending and use trends. For example, in 2011, changes in out-of-pocket spending on contraceptives were observed following launches of generic versions of brand-name contraceptives, such as Yaz™ and Seasonique™.

Additional details and further discussion of out-of-pocket spending are discussed in *Out-of-Pocket Spending Trends (2013)*.

**Out-of-Pocket Spending Per Capita on Contraceptives
by Women Ages 19-25 and 26-44: 2011-2013**



Source: HCCI, 2014.
Notes: All data weighted to reflect the national, younger than 65 ESI population.
Data from 2012 and 2013 adjusted using actuarial completion.



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