This quarterly report examines current trends in U.S. health care spending, prices, utilization, and employment. The report builds on Altarum’s monthly Health Sector Economic IndicatorsSM (HSEI), and incorporates just-released data from the U.S. Census Bureau’s Quarterly Services Survey (QSS), as reflected in the Bureau of Economic Analysis spending data that are a primary source for our HSEI spending estimates. Current quarter trends are highlighted first, followed by a look at trends in a broader historical context from 2006 through the most recent quarter.

Summary of Current Quarter Trends: Q1 2018

1. **The rate of growth in U.S. health spending increased to 4.8% in Q1 2018, compared to 4.6% growth in 2017 and 4.3% growth in 2016.**

   ▲ HSEI estimates show year-over-year national health spending growth at 4.8% for Q1 2018.
   ▲ Spending on health care services, which represent more than 70% of health spending, grew by 4.5% in Q1 2018, close to the 2017 annual rate of 4.4%.
   ▲ Prescription drug spending, a much smaller but more volatile component of health spending, grew by 3.9% in Q1 2018, down from 5.0% in 2017 (see the black line on Figure S-1). As discussed in our March 2018 Trend Report, the 2017 and 2018 growth rates do not reflect drug manufacturer rebates, and it seems likely that the 2017 growth rate will be revised downward when CMS releases their official estimates in December.
   ▲ These spending growth rates reflect price and utilization growth, which are examined separately in much of the discussion that follows.

![Figure S-1: Growth in health care services spending by quarter, 2006 through Q1 2018](chart)

Source: Altarum Center for Value in Health Care. Growth above 4% is highlighted in red.

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1 The CMS figures are adjusted for rebates. Another reason to expect a lower growth rate is IQVIA data showing that sales of prescription drugs to retail pharmacies by wholesalers actually declined in 2017.
2. **Growth in health care utilization declined to 2.3% in Q1 2018, while health insurance coverage fell.**

- Based on the patterns of growth in insurance coverage and health services utilization (Figure S-2), expanded coverage in 2014 and 2015 drove higher growth in health services utilization, but the impact occurred with a lag and was spread over time. While the largest gain in coverage was in 2014, utilization growth peaked in 2015.

- The growth in health care coverage tapered off from 2014 through 2017, and some of the gains have begun to reverse, with coverage dropping by 1.5% in Q1 2018.

- Utilization growth continues to slow, and we anticipate further declines. The Q1 2018 growth rate of 2.3% is well below the 2015 peak of 5.1%, but is still higher than the average 2.0% growth seen in the years leading up to expanded coverage, suggesting that some lagged effects of coverage expansion remain.

- With the decline in coverage seen in Q1 2018, we anticipate that the growth in health services utilization will continue to decline in 2018, potentially falling below 2%.

**Figure S-2: Growth in health services utilization and change in health insurance coverage**

![Growth in health services utilization and change in health insurance coverage](image)

Source: Altarum Center for Value in Health Care. Utilization is measured implicitly from HSEI spending and prices. Change in coverage from CPS ASEC, NHIS for 2017, and Commonwealth Fund ACA Tracking Survey for Q1 2018.

3. **Health care price growth has been accelerating since Q4 2017, and climbed above 2% in Q1 2018.**

- The April 2018 Health Care Price Index reading of 2.3% annual growth is the highest since January 2012.

- While health care utilization growth was the primary driver of spending growth in the period of coverage expansion, price growth now accounts for about half of spending growth (Figure S-3).

**Figure S-3: Spending growth by price and utilization**

![Spending growth by price and utilization](image)

Source: Altarum HSEI Price Brief underlying data
4. In addition to an acceleration in price growth, Q1 2018 also shows a return to health care price growth above economy-wide inflation (Figure S-4).

△ A return to health care price growth outpacing overall inflation, and the potential for a return to the health care price growth of 3-4% seen before the Great Recession are both cause for concern in efforts to contain health care spending growth.

Figure S-4: Twelve-Month Growth Rates in the Health Care Price Index & GDP Deflator

5. The number of health care jobs added by quarter has moderated since the acceleration in hiring in 2015 and 2016, but has remained remarkably steady through Q1 2018.

△ In each of the past four quarters, the health sector added about 77,000 new jobs, down from the average of 94,000 jobs added per quarter in 2015 and 2016, but still showed solid growth (Figure S-5).

△ On a year-over-year basis, health job growth dropped below 1% in early 2014, peaked at 2.7% in mid- to late 2015, and has stabilized around 2.0% in 2017 and early 2018 (data not shown).

Figure S-5: Number of health care jobs added each quarter by setting, 2013 through Q1 2018

Source: Altarum Health Sector Economic Indicators underlying data
6. **The acceleration in health care utilization during expanded coverage was stronger than the acceleration in health care job growth, but growth rates appear to be coming back into alignment.**

   ▲ Health care jobs grew at a slower pace than health care utilization during coverage expansion, growing at half the pace (2.5% versus 5.1%) during the peak year of 2015 (Figure S-6).

   ▲ Faster utilization growth suggests an increase in productivity (more services utilization per job) that appears to be leveling off as both utilization growth and job growth converge around 2%.

**Figure S-6: Growth in health services utilization and health jobs**

![Graph showing growth in health services utilization and health jobs](image)

7. **Observations**

A decade after the start of the Great Recession and four years after the start of ACA coverage expansion, we are watching to see where health spending growth will stabilize before the next major disruption. In a full employment economy, will cost control pressures remain or will spending growth drift back to the 6-8% rates seen in the 2000s? Will rising economy-wide inflation or health care price growth be the driver? Our estimates provide an early window into answering these questions. Health spending growth remains below 5% through the first quarter of 2018, with services growth at 4.5% and drug spending growth down to 3.9%. Coverage declines are still modest. This is good news, at least in the short run. In the long run, our work and that of others have shown that we need to target health spending growth at or below the historically low rates of around 4% seen just prior to coverage expansion to stabilize the health share of the economy and prevent health spending from crowding out our remaining discretionary spending as more of the population ages into Medicare and retirement.

This report was authored by Ani Turner, ani.turner@altarum.org, with assistance from Charles Roehrig, Corwin Rhyan, Paul Hughes-Cromwick, and George Miller. All are with Altarum’s Center for Value in Health Care. The estimates of health spending, prices, and labor in this report are derived from Altarum’s monthly Health Sector Economic Indicators℠ (HSEI) data. HSEI spending estimates are constructed to be consistent with national health expenditures as defined in the National Health Expenditure Accounts (NHEA) maintained by the Centers for Medicare & Medicaid Services (CMS). HSEI spending and price data through 2016 are benchmarked to the most recent official annual estimates by CMS; HSEI data for 2017 and 2018 represent our best estimates of monthly NHE and monthly price growth, using methods described in the HSEI releases. HSEI labor estimates are based on Bureau of Labor Statistics Current Employment Survey data. All growth rates are year-over-year unless otherwise indicated.
Trends in a Broader Historical Context: 2006 through Q1 2018

I. Distribution of National Health Expenditures

To gain an understanding of trends and growth in health spending, it is useful to have a picture of the major components of national health expenditures (NHE) and their relative proportions. We present this information as background by using National Health Expenditure Account (NHEA) data from the Centers for Medicare & Medicaid Services (CMS) Office of the Actuary for 2016. Figure 1 breaks down NHE into the major spending categories. Health care products (goods) and services accounted for about 85% of NHE in 2016, with services alone accounting for 71.7%. Administration and net costs of insurance made up 7.9% of NHE. Public health, medical research, and investments in structures and equipment made up the remaining 7.2%.

Figure 1: NHE by Spending Category, 2016

Figure 2: NHE by Major Components of Categories, 2016

Figure 2 presents another way to divide NHE, identifying the largest components of the major spending categories. The largest components of health care services are hospitals and physicians, which together account for more than half (52.3%) of NHE. Health care products are dominated by prescription drugs (9.8% out of 13.2%), and the net cost of insurance accounts for most of the administrative and net costs of insurance category (6.6% out of 7.9%). Taken together, these 4 components—hospitals, physician and clinical services, prescription drugs, and the net cost of insurance—make up more than two-thirds of NHE (68.8%).

Source: CMS Office of the Actuary

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2 Per CMS, “Government administration and the net cost of health insurance includes the administrative cost of running various government health care programs, and the difference between premiums earned by insurers and the claims or losses incurred for which insurers become liable.”
II. Growth in NHE with Selected Components

The bars in Figure 3 show the annual growth rates in NHE from 2006 through Q1 2018. During 2006 and 2007, the years immediately preceding the recession, the growth rate exceeded 6%. In 2009, the last year of the recession, the rate dropped to 4% and remained close to 4% through 2012. The annual growth rate dipped further in 2013 to the all-time low of 2.9%.3 Growth then accelerated to 5.1% in 2014 and 5.8% in 2015. Quarterly data for 2015 (not shown) reveal that growth peaked in Q1 at 7.1% and declined steadily to a rate of 4.5% in Q4. This downward trend bottomed out at 4.3% in 2016, rising to 4.6% in 2017 and 4.8% by Q1 2018, although 2017 and 2018 growth rates do not yet account for changes in prescription drug rebates and may, as we anticipate, be revised lower.

![Figure 3: Growth in National Health Expenditures, Overall and by Major Components](image)

*Source: Altarum Center for Value in Health Care*

Figure 3 also displays the growth rates over this period for health care services, prescription drugs, and the cost of insurance, which together account for about 89% of NHE. While health care services constitute the largest component by far, and drive most of the movement in overall health expenditure growth, the volatility of spending on prescription drugs and the cost of insurance gives these two smaller components a disproportionate impact on NHE growth rates.

The increases in NHE during 2014 and 2015 were partially a result of expanded coverage under the Patient Protection and Affordable Care Act (ACA). The growth rate for services was 5.8% in 2015, well above the 2010-2012 average of 4.3%. Improved access to both public and private health insurance increased utilization over this period and drove up overall spending. Expanded coverage also had impacts on prescription drug spending and the cost of insurance. After a large spike in prescription drug spending in 2014 resulting, in part, from the introduction of the costly hepatitis C specialty drugs, growth remained high in 2015 due to lingering impacts of expanded coverage. The jump in growth

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3 Price inflation for the U.S. economy, as measured by the gross domestic product deflator, averaged 3.1% for 2005-2007 and 1.5% for 2009–2013, a drop of 1.6 percentage points. Thus, nearly 60% of the roughly 2.7-percentage-point decline in the health spending growth rate pre- and post-recession can be attributed to lower overall price inflation. See Charles Roehrig’s *Health Affairs* blog for a detailed breakdown of the post-recession spending slowdown. The recession began in December 2007 and ended in June 2009.
rates in administration and the net cost of insurance in 2014 is due partly to expanded coverage and partly to higher enrollment of Medicaid beneficiaries into managed care. In fee-for-service Medicaid, the cost of insurance is limited to government administrative costs. When beneficiaries transition to managed care, the net cost of insurance jumps as Medicaid Health Maintenance Organizations (HMOs) collect more in premiums than they pay out in benefits while government administrative costs are largely unaffected.

The slowdown in health spending growth after 2015 is indicative of the slowing expanded coverage from the ACA. Spending growth for health care services slowed from 5.8% to 4.8% between 2015 and 2016. In 2017, it dropped to 4.4%, close to its rate for 2010 through 2012. Growth in prescription drug spending slowed to 1.3% in 2016 but jumped to 5.0% in 2017. The 2016 figure is adjusted for rebates, but the 2017 and Q1 2018 figures are not, and a downward revision to at least 2017 growth is likely once rebates are considered.4

Figure 4 compares the growth rate in health care services spending to the growth rates of its two largest components: hospitals and physicians. During the years shown prior to coverage expansion (2006-2013), the average growth rate in hospital spending (5.6%) was substantially higher than the average growth rate for physician spending (4.1%). However, since coverage expansion began in 2014, physician spending has averaged 5.3% growth compared to 4.4% for hospitals. Thus, expansion appears to have affected physician spending more than hospital spending. As discussed in the next section, price growth during the coverage expansion period has been quite modest, suggesting that the growth seen in services spending has mostly been the result of utilization growth.

### III. The Role of Health Care Prices in Spending Growth

Total spending on health care can be represented by the familiar economic formula of $P \times Q$, where $P$ represents the price paid for the product or service and $Q$ represents the quantity purchased.5 The percentage growth in $P \times Q$ is well-approximated by the percentage growth in $P$ plus the percentage growth in $Q$.6 This means that the difference

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4 One piece of evidence pointing to a likely downward revision to the prescription drug growth rate for 2017 is IQVIA data showing that sales of prescription drugs to retail pharmacies by wholesalers actually declined in 2017.

5 It is well known that in health care, the price charged often bears little resemblance to the price actually paid, thanks to negotiated contracts that supersede list prices (charges). To address this problem, the Bureau of Labor Statistics (BLS) price indexes that Altarum uses are based on “transaction” prices (the agreed-upon payment) rather than charges. For prescription drugs, these transaction prices do not reflect rebates, which are a separate payment directly from the manufacturer.

6 To be precise, the growth in $P \times Q$ is equal to the growth in $P$ plus the growth in $Q$ plus the product of the growth rates. When growth rates are small, the product is negligible and the approximation is quite accurate.
between the growth rates in spending and prices is an indicator of the growth rate in the quantity of care consumed or, using the more familiar term, health care utilization.

Figure 5 plots the growth rate in spending on health care services along with the growth in prices for those services. For the pre-recession years of 2006 and 2007, the growth rate for spending on services averaged 6.2%, with 3.3% attributable to prices and 2.9% to utilization. Post-recession, from 2009 to 2013, growth in spending on services averaged 4.2%, with prices and utilization each accounting for 2.1%. Spending growth peaked at 5.8% in 2015 with prices contributing only 0.6%. Thus, utilization growth accelerated to 5.1% in 2015. This is the expected impact of expanded coverage as the newly insured use more care. For 2016 and 2017, spending growth averaged 4.6% with prices contributing 1.3%. Thus, utilization growth fell back to 3.3% as coverage expansion leveled off. In Q1 2018, utilization growth fell further to 2.3% while price growth rose to 2.2% to play a nearly equal role in spending growth.

The growth in prices for health care services is determined primarily by prices for hospital and physician services, each plotted in Figure 6. Comparing pre-recession 2006–2007 with post-recession (and pre-expanded coverage) 2009–2014, average annual hospital price growth dropped from 3.9% to 2.3%; for physician services, there was a decline from 2.5% to 1.3%. From 2015 through 2017, hospital prices grew slowly. Physician prices actually decreased throughout 2015, returning to 0.2% average growth in 2016. This swing accounts for some of the change in physician and clinical spending observed in Figure 4. The negative physician price growth observed in 2015, followed by the return to positive growth in 2016 reflects the 2015 discontinuation of enhanced primary care payments for Medicaid providers

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7 Price growth is based on a health services price index constructed from the health care price index data obtained from CMS. Deflating by this measure gives an implicit measure of utilization.
under the ACA. In Q1 2018, physician price growth remains low, but hospital price growth appears to be accelerating, particularly under Medicare, for reasons that are not yet fully understood.

Figure 7 plots rates of growth in spending and prices for prescription drugs. Medicare Part D prescription drug coverage began in 2006; thus, the high rate of growth in prescription drug spending in that year is an outlier. After 2006, the rate of growth in drug spending ranged from about 5% to nearly 0%, but was well-controlled in a historic context until 2014, when the rate jumped to 12.4%, driven primarily by new specialty drugs. This high rate of spending growth trended down in 2015, dropped precipitously to 1.3% in 2016, and rebounded to 5% in 2017. The rebound in spending growth in 2017 may be revised downward once rebates are incorporated and appears to be moderating in 2018 at 3.9% growth in Q1.

The pattern of growth in drug prices has been less volatile than drug spending, suggesting that the rapid spending growth in 2006, 2014, and 2015 was driven by utilization. This is, of course, what would be expected from the expanded coverage that occurred in each of these years. Price growth through 2016 is based upon the BLS prescription drug CPI with CMS adjustments for rebates and patent cliffs. No adjustments have been applied to the 2017 or 2018 growth rates and, as with spending growth, a downward adjustment for at least 2017 seems likely once rebates have been incorporated into the official spending data.

IV. Health Care Services Jobs and Productivity

The health care services industry is a major employer, accounting for more than 15 million jobs, about 10.8% of all U.S. jobs (an all-time high). Interestingly, the distribution of jobs across types of services is quite different from the distribution of spending on types of services (Figure 8). For example, while hospitals account for 45% of health services spending, their share of health services jobs is only 32%. Similarly, physicians account for 28% of spending but only 16% of jobs. The remaining services, including nursing homes, home health, dentists, and other ambulatory services, account for more than half of all jobs but only 27% of spending.

There are various reasons for these large differences in the distribution of jobs and of spending. In the case of physician services, a key factor is that the job totals do not include unincorporated self-employed individuals, and many physicians fit into this category. More broadly, there are differences in the mix of occupations and salaries, and

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8 Labor data used in this report come from the BLS Current Employment Statistics monthly survey.
in the amount of nonlabor costs, associated with different categories of services. For example, the nonlabor share of hospital costs is about 48%, but for nursing homes, it is 38%.

If the method of producing health care services remained constant over time, the rate of growth in health services jobs would equal the growth in the utilization of such services. As noted earlier, the rate of growth in services utilization can be approximated by subtracting the rate of growth in prices from the rate of growth in spending. Figure 9 compares growth rates for jobs and utilization from 2006 through Q1 2018. The growth rates are similar through 2013, apart from a small bump in utilization growth in 2012. In 2014, utilization growth jumped well above job growth, with the gap peaking in 2015 and then declining in 2016, 2017, and early 2018. The difference between the utilization and job growth is a rough measure of productivity, in the sense that it represents the percentage change in services produced per job. By this measure, productivity has increased since 2005, with services per job up by 8.4% as of Q1 2018 (Figure 10). (Utilization growth in 2014 and 2015 may be somewhat overstated due to reductions in uncompensated care, which causes spending to rise faster than P x Q.) When observed over a longer time horizon, this rough productivity measure was relatively flat in the 1990s, grew slowly prior to the 2008 recession and then moderated until the spike in 2014 and 2015, as shown in Figure 10. Health services per job appear to be leveling off as both grow at a rate of about 2% year over year.

![Figure 9: Growth in Health Jobs versus Utilization](image)

![Figure 10: Health Services per Job Index](image)

Source: Altarum Center for Value in Health Care

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9 “Nonlabor costs” refers to costs not associated with employment.


11 More precisely, the formula is spending growth minus price growth, divided by the sum of 1 and the price growth.