DEPARTMENT OF HEALTH

Minnesota Health Care Spending: 2015 and 2016 Estimates and Ten-Year Projections

REPORT TO THE MINNESOTA LEGISLATURE

February 2019

Minnesota Health Care Spending: 2015 and 2016 Estimates and Ten-Year Projections

Minnesota Department of Health
Health Economics Program
PO Box 64882
St. Paul, MN 55164-0882
651-201-3550
health.HEP@state.mn.us
www.health.state.mn.us/healtheconomics

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DEPARTMENT OF HEALTH

Protecting, Maintaining and Improving the Health of All Minnesotans

February 26, 2019

The Honorable Michelle Benson, Chair
Health and Human Services Finance & Policy Committee, Minnesota Senate
3109 Minnesota Senate Building
95 University Ave W.
Saint Paul, MN 55155-1606

The Honorable Jim Abeler, Chair
Human Services Reform Finance & Policy Committee, Minnesota Senate
3215 Minnesota Senate Building
95 University Ave W.
Saint Paul, MN 55155-1606

The Honorable Tina Liebling, Chair
Health and Human Services Finance Committee
Minnesota House of Representatives
477 State Office Building
100 Rev. Dr. Martin Luther King Jr. Blvd.
Saint Paul, MN 55155-1606

The Honorable Rena Moran, Chair
Health and Human Services Policy Committee
Minnesota House of Representatives
575 State Office Building
100 Rev. Dr. Martin Luther King Jr. Blvd.
Saint Paul, MN 55155-1606

The Honorable John Marty, Ranking Minority
Health and Human Services Finance & Policy Committee, Minnesota Senate
2211 Minnesota Senate Building
95 University Avenue W.
Saint Paul, MN 55155-1606

The Honorable Jeff Hayden, Ranking Minority
Human Services Reform Finance & Policy Committee, Minnesota Senate
2209 Minnesota Senate Building
95 University Avenue W.
Saint Paul, MN 55155-1606

The Honorable Joe Schomacker, Ranking Minority
Health and Human Services Finance Committee
209 State Office Building
100 Rev. Dr. Martin Luther King Jr. Blvd
Saint Paul, MN 55155

The Honorable Deb Kiel, Ranking Minority
Health and Human Services Policy Committee
Minnesota House of Representatives
255 State Office Building
100 Rev. Dr. Martin Luther King Jr. Blvd.
Saint Paul, MN 55155-1606

To the Honorable Chairs and Ranking Members:

The Minnesota Department of Health (MDH) has estimated actual total health care spending for Minnesota residents dating back to 1993, and more recently, compared those results with Minnesota health care spending projections.

This report summarizes health care spending trends in 2015 and 2016. As in previous years, an actuary has certified the appropriateness of the data used, methodologies employed, and assumptions made in the completion of historical health care spending estimates.

The major findings from this report are as follows:

- Health care spending in Minnesota reached $47.1 billion in 2016, representing an increase of 4.0 percent in 2015 and 1.9 percent in 2016;
- The deceleration of spending growth since 2014 was driven by changes in how the Minnesota Department of Human Services (DHS) negotiated payments to health plans for state public program enrollees. The observed modest spending growth for public programs is not projected to persist beyond 2016;
- Public health care spending declined by 1.9 percent between 2015 and 2016, this was the first time we have recorded a decline in public spending;
- Private health care spending continued to grow, despite slight declines in enrollment in private health insurance;
- Hospital spending remained the single largest spending category of health care service, accounting for nearly one-third of total spending (32.8 percent), or $15.5 billion;
- With accelerated average annual growth, health care spending is projected to double over the next decade, reaching $94.2 billion in 2026.

In recognition of the increasing pressure that health care spending growth places on the budgets of Minnesotans, businesses, and state and local government, this year's report includes an overview of evidence-based approaches to "bending the cost curve." State policymakers' choices about health care financing can have a dramatic impact on whether services purchased will improve patients' health status, provide long-term value, and emphasize the most effective strategies for lowering health care costs, while still providing access to community-level public health prevention activities and high-quality health care services.

This, and previous reports, are available on the Health Economics Program website, www.health.state.mn.us/healtheconomics.

Questions or comments on the report may be directed to Stefan Gildemeister, the State Health Economist at (651) 201-3550 or health.hep@state.mn.us.

Sincerely,

Jan K. Malcolm
Commissioner of Health
PO Box 64975
Saint Paul, MN 55164
www.health.state.mn.us

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Executive Summary

The Minnesota Department of Health (MDH) has been generating estimates of total health care spending for state residents for over 20 years, with estimates going back to 1993.[1] Following major state health reform in 2008, MDH now also produces ten-year projections from these estimates to help inform longer-term policy initiatives.

Over the past two decades of monitoring health care spending, one major lesson has emerged: health care spending generally grows each year and is incredibly resistant to attempts to change its trajectory. Despite numerous attempts, both grand and incremental, by the state and federal governments, business leaders, and legislators, health care spending has continued to grow, generally faster than other economic indicators.

The results of our analysis for the period between 2014 and 2016 are no different. Health care spending grew 4.0 percent in 2015 and 1.9 percent 2016, reaching $47.1 billion. By 2016, one out of every seven dollars spent in Minnesota was devoted to health care, or 13.9 percent of the state's economy (though economic growth that year actually outpaced health care spending growth). The modest increase of just 1.9 percent in health care spending in 2016 was entirely driven by changes in how the Minnesota Department of Human Services (DHS) negotiated payments to health plans for state public program (e.g., Medicaid and MinnesotaCare, or Minnesota Health Care Programs) enrollees in 2016; a trend which is not expected to continue.[2]

Private health care spending continued to grow between 2014 and 2016, increasing by 8.4 percent across the two years. This is notable because private health insurance, which makes up nearly three quarters of private spending, had a slight decline in enrollment during this period. This indicates that other factors—such as prices and the use of health care services—are likely primary causes of private health care spending growth.

Spending for public programs slowed between 2014 and 2016 (3.5 percent) and actually decreased between 2015 and 2016, the first time a reduction in public spending has ever been recorded by MDH. The decline was due to the aforementioned results of lower competitive bid payments from DHS to third party health plans for the Minnesota Health Care Programs (MHCP). Medicare spending increased by 10.7 percent across the two years, while MHCP increased by 5.5 percent in 2015, and decreased by 8.5 percent in 2016. Medicare enrollment gains have been driving some of the increases in Medicare spending, while the addition of younger adults and children, with less intense health care needs, likely contributed to limited spending growth in MHCP despite expanded enrollment.

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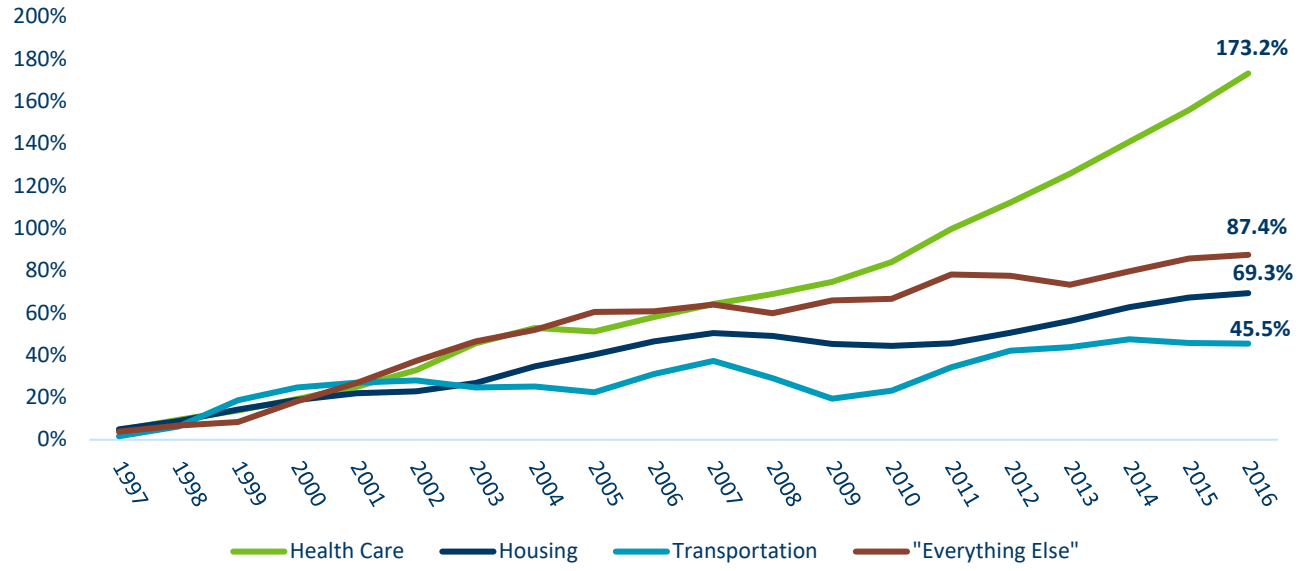
[1] The first publication of health care spending in Minnesota occurred in 1998, analyzing spending in 1996. Minnesota Department of Health, Health Economics Program. "Minnesota Health Care Expenditures and Trends: 1996." October 1998.

[2] The Minnesota Department of Human Services has used a form of competitive bidding for select plans since 2011, for plan year 2012. 2016 is the first year that it was used for all Minnesota counties. Chun R. "Information Brief, Research Department, Minnesota House of Representatives: Medical Assistance." October 2018.

Overall, health care spending growth has been more modest in the past decade (2007 to 2016, average yearly growth of 3.6 percent) than in the decade before (1997 to 2006, average yearly growth of 8.6 percent), a trend that is not expected to continue. Our projections again indicate a doubling of health care spending between 2017 and 2026 – to $94.2 billion – with average annual growth rates of 7.4 percent over this period, much closer to the growth rates of 1997 to 2006. If spending remains on its current trajectory, that means Minnesota will be devoting more than one out of every six dollars to health care spending in 2026, or 18.6 percent of our economy.

There are several reasons to be concerned over rising health care spending: First, there has been no substantial evidence that increased health care spending has led to similar gains in health.[3] Additionally, health care spending growth outpaces incomes or revenues, thereby limiting the resources available for other priorities—in households, businesses, and government budgets—and potentially affecting access to services. Indications of these dynamics abound: for example, household incomes grew 80 percent between 1997 and 2016, while family budgets devoted to health care spending rose more than twice as fast. Evidence shows that health care costs affect use of services and spending on other household needs.[4]

Figure E1: Cumulative Growth in Household Spending, Select Categories (1997-2016)



Source: MDH, Health Economics Program analysis of the U.S. Bureau of Labor Statistics, Consumer Expenditure Surveys for the Midwest; survey years 1996-1997 through 2016-2017. More information at https://www.bls.gov/cex/tables.htm. Pre-tax annual income growth of the same period was 80.0 percent; "Everything Else" is the remaining percent of income not spent, and includes food, clothing, education, and entertainment.

Health care spending also represents economic vitality, innovation, and stability in employment, it acts as a de facto "tax" on government and businesses, constraining the ability to invest, innovate and advance unless the burden of spending growth is fully passed on to employees. While growing

[3] Minnesota Department of Health. 2017 Minnesota Statewide Health Assessment. 2017.

[4] Minnesota Department of Health, Health Economics Program analysis of the Minnesota Health Access Survey.

health care spending could be a feature of economic growth that we as a society accept, indications are that stakeholders virtually across the board worry about the sustainability of trends. Therefore, this report also explores evidence about existing strategies to limit health care spending and the lessons learned from previous attempts to constrain spending growth. Among the conclusion is the realization that cost containment will be challenging: there appears to be no single solution to effectively curtail health care spending growth. As such, Minnesota will need to try multiple solutions, and each one will have winners and losers.

Introduction

It has been ten years since major bipartisan health reform legislation, focused on achieving quality, affordable and accessible health care, was passed in Minnesota.[5] The reforms included investments in public health, the development of health care home models, payment reforms, and a broader strategy to incentivize delivery system reforms consistent with the Triple Aim—to improve health, improve care, and reduce cost.

To help evaluate the impact of health reform activities, the Minnesota Department of Health (MDH) was tasked with developing projections of health care spending in Minnesota and placing them in the context of actual trends, work undertaken by the Health Economics Program.[6] This objective builds on the Health Economics Program's established research to monitor health care spending for Minnesota residents in order to inform policy discussions on trends in health care spending and attempts to constrain it.

This report marks the eighth time that we have submitted information to the Legislature on the total amount of resources spent on health care, the categories of service that make up health care spending by Minnesotans, and projections of future health care spending in the state. In light of the intensified concerns over the long-term viability of health care spending trends and lack of evidence that these increases led to similar gains in health for all Minnesotans, this year's report includes a discussion of the literature on strategies to "bend the cost curve" or to contain health care spending growth.[7]

The health care spending estimates in this report are generated using summary data from a variety of payers of health care services, rolled up to the state level (Figure 1). For that reason, this particular report cannot break down health care spending by geography or sociodemographic factors, including race and ethnicity, income, and education. Similar to prior years, this report is also not able to directly assess whether the amount of care and health services used by Minnesotans were quality-based, sufficient, efficient, or potentially wasteful.

Instead, the Health Economics Program produces other analyses to monitor health care spending trends more granularly, including at different levels of geography, and identify opportunities to promote improvements in health care efficiency and effectiveness. That research typically requires more fine-grained data than is available for this analysis and is, most often, conducted using the state's All Payer Claims Database (MN APCD).[8]

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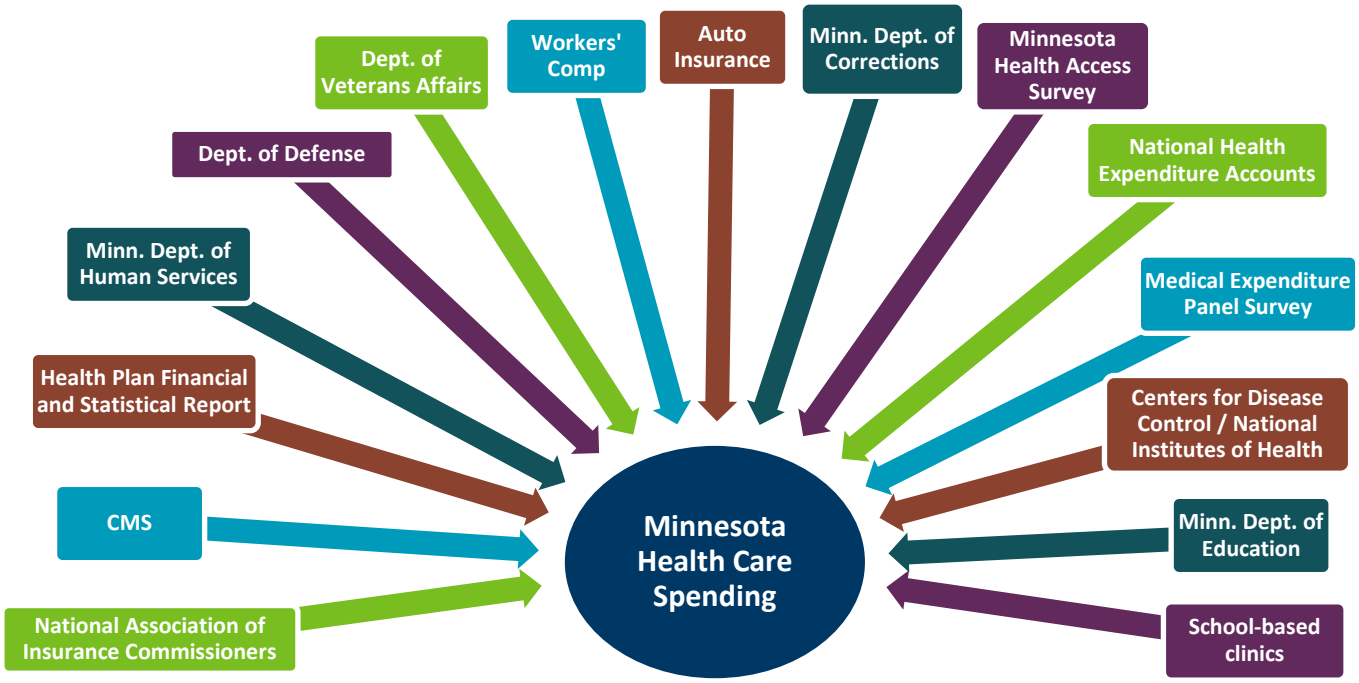
[5] Minnesota Laws of 2008: Chapter 358 S.F. 3780

[6] Minnesota Statutes 62U.10, subdivision 1-5.

[7] Minnesota Department of Health. 2017 Minnesota Statewide Health Assessment. 2017.

[8] Additional information on the Minnesota All Payer Claims Database is available online: www.health.state.mn.us/data/apcd/

Figure 1: Organizations and Data Sources Used to Annually Estimate Health Care Spending in Minnesota



Note: Some organizations noted provide data from multiple reports and areas; for example, data used from the Centers for Medicare & Medicaid Services (CMS) and the Minnesota Department of Human Services each include reports and data pulls from six different sources within each organization.
Source: MDH, Health Economics Program.

Estimating health care spending is complex because there is no single source of data that contains detail on all payers and categories of health spending. In addition, there are multiple ways to analyze the data (e.g., by when health care services are received, who finances health care services, or when payment was provided for health care services and by whom). Throughout this report, we examine trends over time and the distribution (percentages) of spending, and make comparisons between Minnesota and the United States. We discuss spending in terms of *who* sponsors the coverage, and *what* categories of service the dollars paid for.

In this report, we generally focus our analysis on *actual* health care spending for the two-year period of 2014 to 2016. However, as this period represents unique one-year trends, we highlight individual year trends where appropriate. In addition, as noted, we project spending growth by public and private sources of spending for a ten-year period. Further, we provide additional context for spending and health policy through highlighted areas called “A Closer Look” and “In Depth.”

Health Care Spending in 2015 and 2016

For over 20 years, the Minnesota Department of Health (MDH) has been monitoring health care spending for Minnesota residents. From this, we know that spending has risen each year, most of the time at rates above the pace of inflation.[9] Year-over-year growth, however, has varied over time, influenced by economic trends, including a prolonged recession and slow recovery; the implementation of the Patient Protection and Affordable Care Act (ACA), which expanded health insurance coverage for thousands of Minnesotans; and an evolution in payment models, particularly by public payers.

Key Findings:

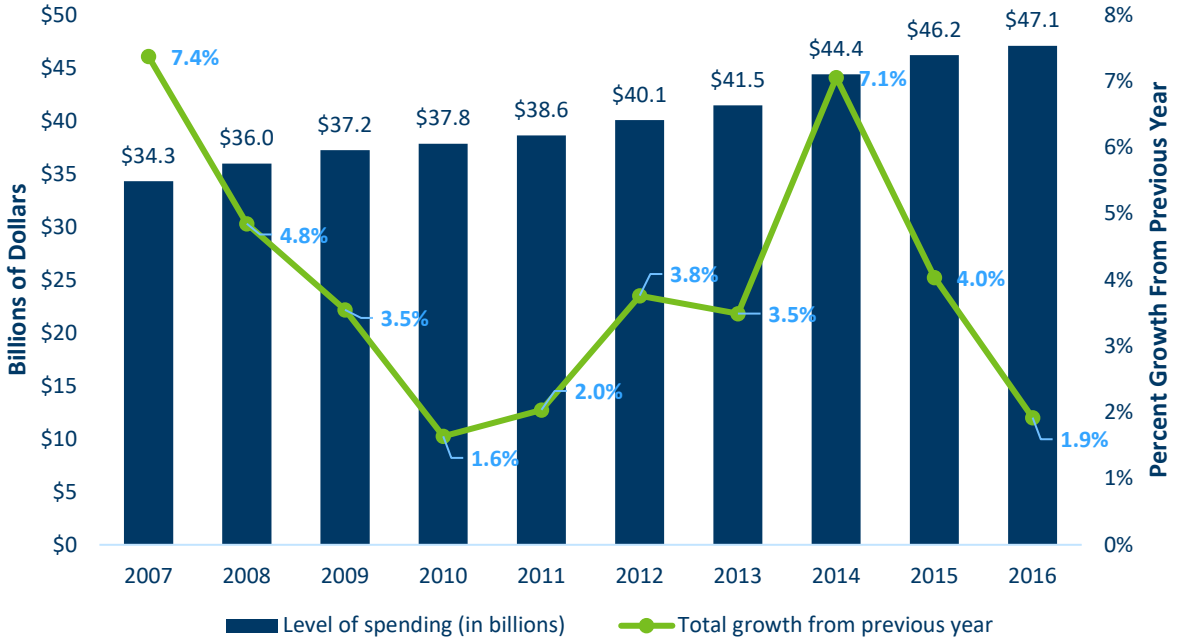
- Minnesota health care spending grew modestly since 2014, reaching $47.1 billion in 2016.
- Spending grew 4.0 percent in 2015 and 1.9 percent in 2016.
- For the first time, public spending decreased, driven by changes in how state Medicaid payments to health plans were negotiated.
- Nearly one out of every seven dollars in Minnesota's economy was devoted to health care in 2016 (13.9 percent).

As expected, Minnesota saw health care spending grow again in the most recent period, by 4.0 percent in 2015 and 1.9 percent in 2016, for a cumulative growth of approximately 6.0 percent (see Figure 2). In total, Minnesota health care spending, or spending by *all* payers on health care goods and services on behalf of Minnesota residents, amounted to $47.1 billion in 2016.[10]

[9] Minnesota Department of Health, Health Economics Program unpublished analysis of analyzing growth rates of total Minnesota health care spending and inflation growth rates from the U.S. Bureau of Labor Statistics, Consumer Price Index, Minneapolis-St. Paul-Bloomington, Minn.-Wis. All Urban Consumers (CPI-U), All Items; January 2018 data, accessed on September 9, 2018. Since 1993, Minnesota health care spending growth rates have been above the inflation growth rate for all years except 1994, 2010, and 2011.

[10] The term health care payers includes individuals, businesses, and state and federal government agencies.

Figure 2: Trends in Minnesota Health Care Spending (2007-2016)



Source: MDH, Health Economics Program.

Although the pace of spending growth in 2015 and 2016 exceeded inflation and other measures of economic performance similar to historical patterns, the year-over-year growth continues a period of relatively modest increases that began with the onset of the economic recession in December 2007. The outlier year in this trend was 2014, when spending growth of 7.1 percent coincided with ACA-related coverage gains in Minnesota and the release of high-priced brand name drugs to the national market.

Minnesota Health Care Spending in the National Context

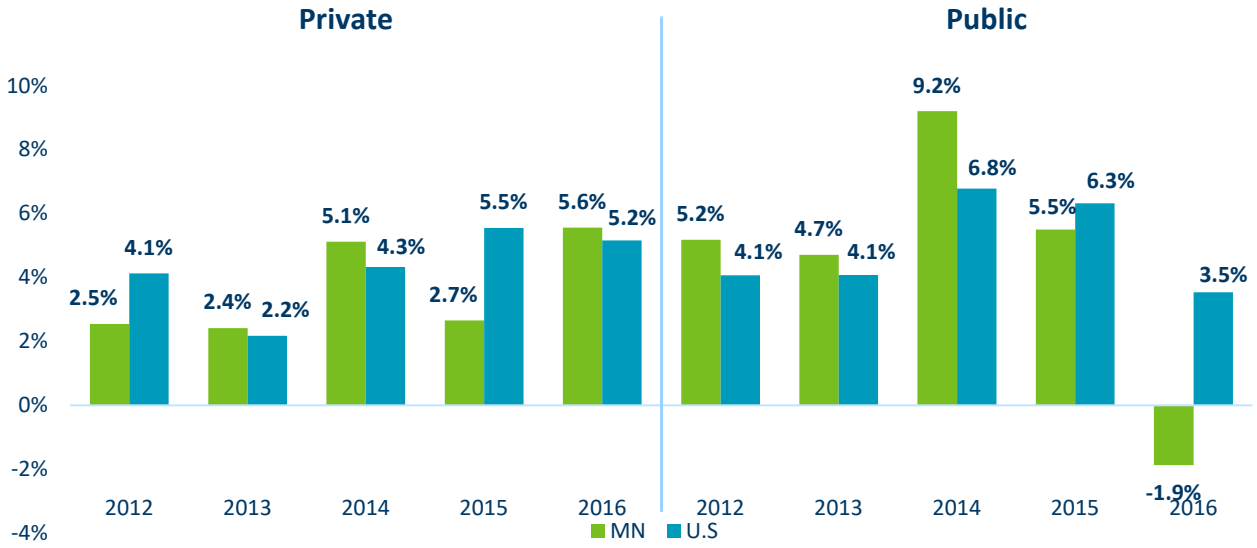
Directionally, patterns of health care spending growth in Minnesota and the United States are generally consistent, though the magnitude and payer-specific trends tend to differ somewhat. For example, from 2014 to 2016, national spending grew approximately 10.5 percent, compared to 6.0 percent in Minnesota; rates of growth in 2015 outpaced rates of growth in 2016 for both Minnesota and the nation.[11]

The slower growth in Minnesota in 2016 is the result of declining health care spending for state public programs (not just the declining rate of growth) compared to national trends (Figure 3). This is largely a result of decreasing total and per-enrollee spending in Minnesota Health Care Programs (MHCP),

[11] For this analysis, the Minnesota Department of Health, Health Economics Program used national estimates categorized as "health consumption expenditures," the closest national estimate to Minnesota's analytic focus in this report. The estimate includes some costs not considered in Minnesota's analysis, including, but not limited to, government costs associated with the administration of public health programs, employer worksite clinics, and payments made by philanthropy.

resulting from changes in how the Minnesota Department of Human Services (DHS) negotiated payments to provide health care to adults without children and to families for 2016 and 2017. This process resulted in lower payments per beneficiary to health plans for 2016 (discussed in detail on page 22).[12]

Figure 3: Health Care Spending Growth Rates for Minnesota and the United States, by Payer, 2012 to 2016

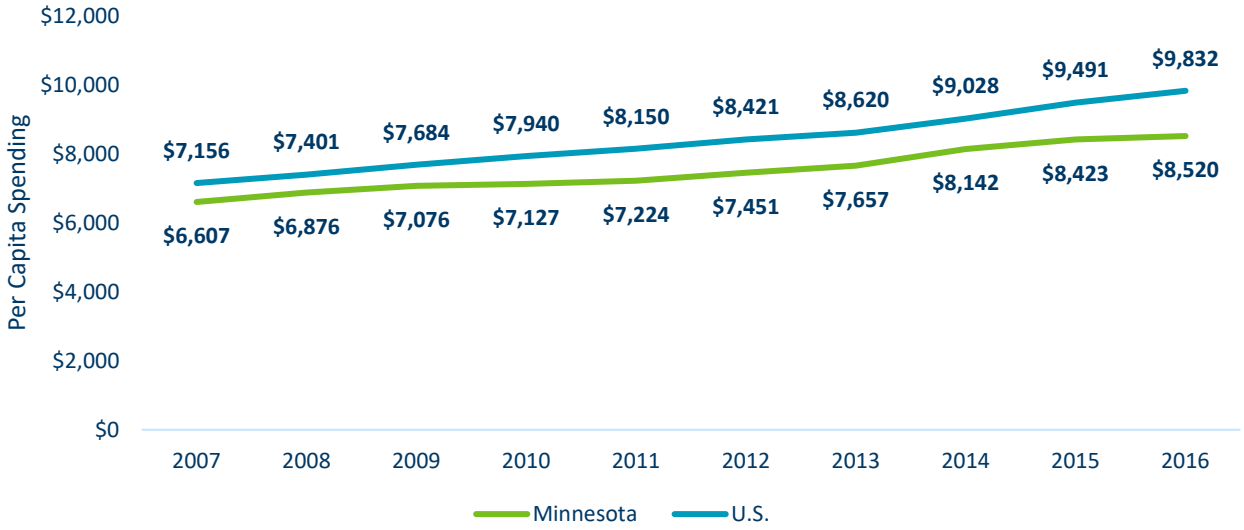


Source: MDH, Health Economics Program; MDH analysis of the Centers for Medicare & Medicaid Services: 2016 National Health Expenditure Accounts, NHE tables (Health Consumption Expenditures).

The two-year trends in per-person and aggregate spending for Minnesota was comparable to the respective trends for the United States. Nevertheless, the gap in spending per person between the United States and Minnesota widened slightly as public spending on the national level grew more quickly: nationally, per-person spending increased to roughly $10,000, whereas in Minnesota it reached approximately $8,500 (Figure 4).

[12] Office of Governor Mark Dayton. "State Health Care Contracting Reforms Save Taxpayers $650 million." July 18, 2015. The Minnesota Department of Human Services has used a form of competitive bidding for select plans since the 2012 plan year.

Figure 4: Per Capita Health Care Spending in Minnesota and the United States, 2007 to 2016



Source: MDH, Health Economics Program; MDH analysis of the Centers for Medicare & Medicaid Services: 2016 National Health Expenditure Accounts, NHE tables (Health Consumption Expenditures). Health care spending includes medical and prescription drug spending.

During the period studied in this report, 2014 to 2016, the United States and Minnesota economies experienced modest economic growth. As has been characteristic, health care spending outpaced growth of a number of economic indicators. For example, in 2015, health care spending (at 4.0 percent) grew 4.7 percentage points faster than Minnesota inflation, which was negative, and even outpaced total state economic growth by 1.3 percentage points. In 2016, health care spending (at 1.9 percent) was just above inflation (0.4 percentage points), but the state economy grew twice as fast.[13,14] In contrast, national health care spending outpaced inflation *and* the United States economy in both 2015 and 2016 (not shown).

Because of these trends, the share of the economy devoted to health care spending in the United States grew to 17.0 percent in 2016. In contrast, the share of the Minnesota economy devoted to health care spending stayed flat from 2014 to 2016, at approximately 13.9 percent.[15] If Minnesota had spent the same percentage of the economy as the United States on health care, our health care spending would have been $10.5 billion dollars higher in 2016, reaching $57.6 billion.

[13] Minnesota and United States health care spending and inflation growth rates are from the U.S. Bureau of Labor Statistics, Consumer Price Index, Minneapolis-St. Paul-Bloomington, Minn-Wis. All Urban Consumers (CPI-U), All Items and Table 24. Historical Consumer Price Index for All Urban Consumers (CPI-U): U.S. City Average, All Items; January 2018 data, accessed on September 9, 2018.

[14] Economic growth is based on the U.S. Department of Commerce, Bureau of Economic Analysis: Gross Domestic Product (nominal), updated through May 4, 2018 for Minnesota, accessed on September 24, 2018.

[15] Please refer to Appendix B for additional historical detail on the share of the economy devoted to health care spending.

Who Pays for Health Care in Minnesota?

Typically, analysts track health care spending by who *sponsored* coverage, and categorize them as either private payers (businesses and individuals) or public payers (government programs like Medicare and Medicaid). This helps illustrate spending trends related to budgets and benefit categories. However, these categories belie the fact that, ultimately, Minnesota residents finance health care directly, through:

- Premium payments, either directly to health insurance companies, as part of employer coverage, or to the government (e.g., Medicare);
- Forgone wages for employer-sponsored insurance (ESI) coverage;
- Taxes paid to finance public government programs (e.g., Medicare, Medicaid, non-group market premium subsidies, Medicare Part D coverage); and
- Out-of-pocket costs (e.g., deductibles, co-payments, coinsurance, and health care services not paid for by insurance coverage).

Key Findings:

- Private health insurance remains the single largest category of spending (38.7 percent).
- The pace of spending growth for private payers accelerated 8.4 percent between 2014 and 2016, despite declining private health insurance enrollment.
- At the same time, public spending grew modestly (3.5 percent), from contracting changes in state health care programs.

Understanding the difference between who *finances* and who *sponsors* health insurance coverage can be useful for considering the impact of health policy changes and the critical mass needed for any one policy to generate sufficient impact. Laws and policy changes are often focused at the sponsor level (e.g., a law may change how doctors are reimbursed for Medicare patients, which is sponsored by the federal government but financed by multiple sources – see "A Closer Look: Financing Medicare in 2016."). Because of this, we categorize health care spending in this report in terms of the *sponsors* of health insurance coverage, and refer to them as payers.[16] We further divide these payers into private sponsors (e.g., companies who offer insurance coverage to their employees, individuals who purchase their own coverage, and individuals who make direct payments to health care providers for services) or public sponsors (e.g., government, usually federal or state).

[16] At this time, the Minnesota Department of Health, Health Economics Program does not create estimates for who finances health care across all payers.

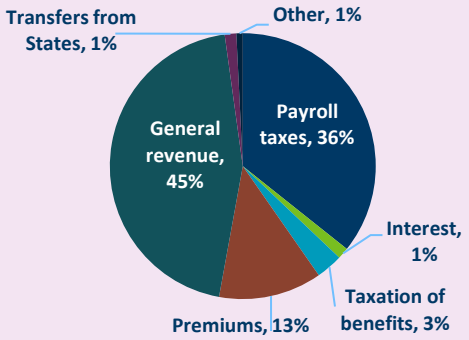
Based on this categorization, we have been able to track how spending has changed between private and public sponsors of health insurance coverage over the last 20 years. Again, in nearly every year, health care spending has increased for both public and private payers. From 2007 to 2016, private payer spending (consisting of private health insurance, out-of-pocket spending, and other private spending) increased from $20.1 billion to $24.9 billion. During this same period, public spending (consisting primarily of Medicare, Medicaid, and MinnesotaCare) increased from $14.2 billion to $22.2 billion.[17]

Figure 5 illustrates that, although the majority of spending in Minnesota has come from private payers (green), the *share* of spending from private sources has been declining as public spending (blue) has grown more quickly over time. In part, public spending has grown more quickly because of federal health reform starting in 2010, and because the aging population has increased Medicare enrollment. In 2007, private payers were responsible for 58.5 percent of health care spending for Minnesota residents, whereas by 2016 they accounted for just 52.8 percent of health care spending.[18]

A CLOSER LOOK: FINANCING MEDICARE IN 2016

The federal Medicare program provides a good example of how the perspective of *financing* of health care differs from that considering the *sponsor* of health care. While the sponsor of Medicare, the program for people who are age 65 or older, certain individuals with disabilities, and people with End-Stage Renal Disease, is the federal government, the figure below shows that the funding for Medicare actually comes from a variety of sources. The majority of Medicare is financed from general and payroll tax revenue that most Americans pay (not just the people receiving the care). Only one of every eight Medicare dollars (13 percent) comes from premiums paid by people enrolled in Medicare.

Sources of Funding for Medicare Program, U.S. (2016)

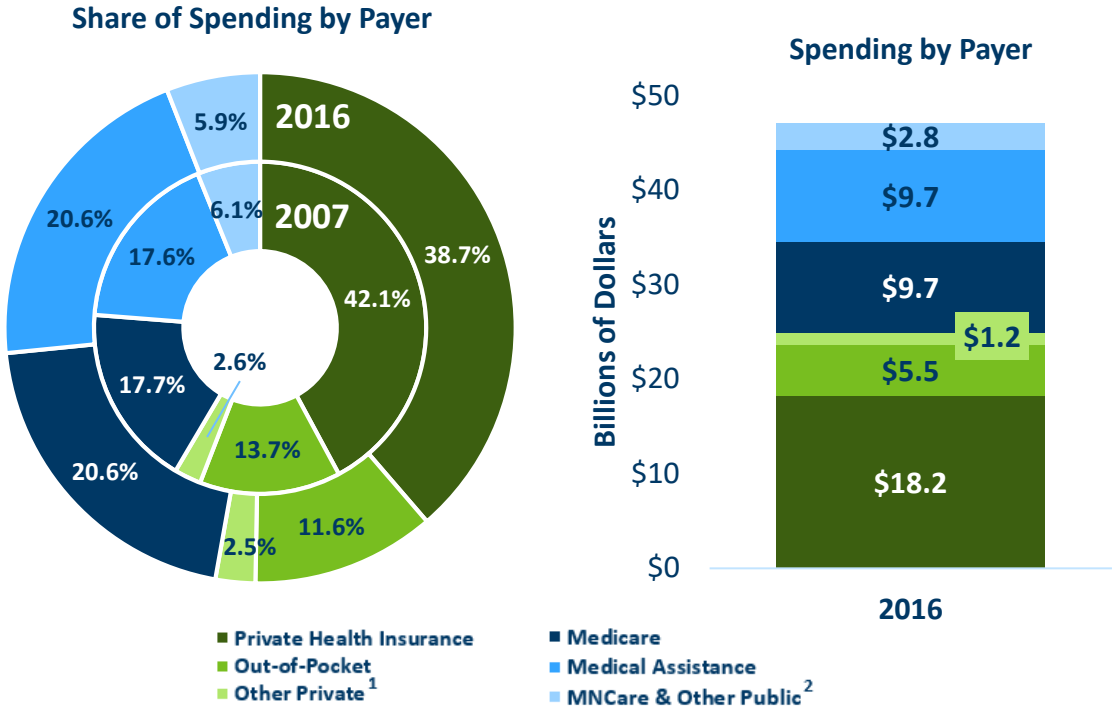


Sources: 2017 Annual Report of The Boards of Trustees of the Federal Hospital Insurance and Federal Supplemental Medical Insurance Trust Funds, Table II.B1, Medicare data for calendar year 2016.

[17] Please refer to Appendix B for additional historical detail.

[18] Appendix B includes further information on the distribution of spending by each payer category over time.

Figure 5: Payers of Health Care in Minnesota (2007 and 2016)



Source: MDH, Health Economics Program. Numbers may not sum to total due to rounding.
Note: MDH spending estimates for Medical Assistance and MinnesotaCare rely on payments made by the Department of Human Services (DHS) for services provided during a calendar year, including managed care capitation payments. As such, the estimates differ from DHS reports in their program forecast (data based on payment timing consistent with the state budget) and the 2018 Medicaid Matters report (data based on payments to providers for health care services rendered during the year regardless of when a claim was paid).
[1] Other major private payers include private workers' compensation and auto medical insurance.
[2] Other public spending includes government workers' compensation, Veterans Affairs, and public health spending.

Distribution of Private Health Spending

As shown in Figure 5, private health insurance spending in 2016 ($18.2 billion) represented the single largest category of total and private payer spending (38.7 percent and 73.2 percent, respectively).[19,20] Out-of-pocket spending (OOP) and other private spending (including workers' compensation and medical care covered by auto insurance) represent the remaining 14.1 percent of total spending from private payers.

From 2014 to 2016, private health insurance spending in Minnesota grew 9.4 percent (3.1 percent in 2015 and 6.1 percent in 2016), all while enrollment in private coverage declined slightly. This means that factors such as increasing prices and changes in service use drove spending growth, rather than

[19] For the purpose of this report, spending for employee health insurance by government entities (such as cities, counties, school boards, and the state) are included in private health insurance spending; however, some may consider them public, as employee compensation is covered by public funds.

[20] Medicare Advantage is a public program administered by private payers. As a result, spending for this program is divided between public and private spending categories, based on the relative proportions of capitation payments and enrollee premiums to total revenue. Appendix D contains further discussion.

increases resulting from greater enrollment. This is noteworthy as it continues historical trends in which spending increased during periods in which private enrollment was stagnant or declined slightly.[21,22]

Even with private spending growing between 2014 and 2016, the proportion of spending financed by private health insurance was declining, as shown in Figure 5 (from 42.1 percent in 2007 to 38.7 percent in 2016). This is part of an ongoing trend of fewer Minnesotans in private coverage, which was driven by a mix of demographic and policy changes, under which Minnesotans moved into Medicare coverage or enrolled in Medicaid and MinnesotaCare.[23] Labor market changes, including changes in the share of Minnesotans who are connected to an employer that offers coverage, have contributed to these persisting patterns as well.

The shift away from private coverage is one factor contributing to out-of-pocket spending, or direct payments from individuals to providers, declining as a share of total health care spending.[24] The share of out-of-pocket spending decreased from 13.7 percent in 2007 to 11.6 percent in 2016, though actual direct spending by individuals *increased* from $4.7 billion to $5.5 billion. Additional detail on this trend is available on the following page[25] but, at a high level, the following factors drove this change:

- Cost-sharing and deductibles are minimal for many public programs compared to private coverage, so a greater share of the population in these programs means less out-of-pocket spending;
- Some Medicare enrollees buy down their cost-sharing with the purchase of additional supplemental or private coverage; and
- A number of provisions of the Patient Protection and Affordable Care Act (ACA) limited exposure to cost-sharing for people with private coverage.[26]

The share of "other" private spending, which includes health care spending related to workers' compensation and auto medical insurance, stayed stagnant between 2007 and 2016, representing 2.6 percent and 2.5 percent, respectively.

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[21] Since the Minnesota Department of Health began tracking spending in 1993, there have been only two years in which stagnant or declining private enrollment coincided with declining spending (2010 and 2011). Those two years fell into the period following a prolonged recession that also, more generally saw, slow total aggregate health care spending growth.

[22] Minnesota Department of Health, Health Economics Program unpublished analysis.

[23] Minnesota Department of Health, Health Economics Program; University of Minnesota School of Public Health State Health Access Data Assistance Center (SHADAC). "Minnesota's Changing Health Insurance Landscape: Results from the 2017 Minnesota Health Access Survey." February 2018.

[24] Please refer to Appendix B for additional information on the share of spending by the various payers of health care.

[25] See "In Depth: Out-of-Pocket Spending."

[26] In 2013, 25 percent of Minnesota families with individual coverage faced over $12,700 as the maximum they would have to pay for health care; in 2014, only 5 percent of families faced the same potential costs. See Minnesota Department of Health, Health Economics Program, Chartbook 4; Minnesota Department of Health, Health Economics Program analysis of Small Group and Individual Market Survey. Includes Grandfathered plans.

In-Depth: Out-of-Pocket Spending

In aggregate, out-of-pocket (OOP) spending continued to grow moderately between 2014 and 2016 (5.2 percent), primarily led by higher growth in 2016 (4.0 percent). While declining as a share of total spending for most of the past 20 years, 2016 OOP spending surged to $5.5 billion, or 11.6 percent of total spending (Figure 5).

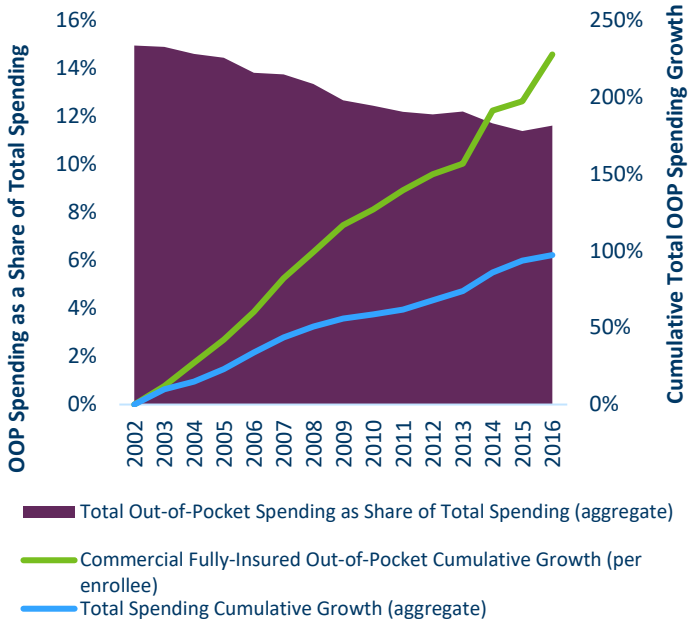
The historical pattern of moderate growth in direct spending by individuals, along with a declining share of overall spending, may seem inconsistent with the experience of many Minnesotans, who painfully feel the rising burden of increasing out-of-pocket costs. As noted, this seeming dissonance stems from a shift towards public coverage (Medicare and Minnesota Health Care Programs).

Beneficiaries with public health insurance typically are responsible for lower OOP costs. For example, enrollees in MHCPs, generally low-income individuals, either have no cost sharing, or modest requirements to contribute to OOP spending. While Medicare beneficiaries do have significant OOP obligations, they often purchase additional coverage (Medicare Supplement or Medicare Private Plans) which reduce their exposure. For lower income Medicare beneficiaries, additional assistance is available through Medicaid or other federal programs. Therefore, Medicare beneficiaries generally have more modest OOP spending requirements than do individuals with private coverage.

In contrast, people with private health insurance, whether through an employer, or coverage that they purchase directly from an insurance company, have experienced dramatic OOP spending growth (Figure 6, green line) that has been accelerating more quickly than overall spending (blue line). For example, between 2014 and 2016, commercial fully-insured OOP spending per enrollee grew twice as fast as total spending over the same time frame (12.5 percent, compared to 6.0 percent). This was driven, in part, by increasing coverage in high-deductible health plans (HDHPs), which are associated with higher overall cost-sharing obligations.[27]

Nevertheless, as the population with assumed lower OOP spending increased as a share of the total population, OOP spending accounted for a smaller share of total spending (shaded area).

Figure 6: Total Out-of-Pocket (OOP) and Per Capita Spending Growth as a Share of Total Spending in Minnesota (2002-2016)



Source: MDH, Health Economics Program. Fully-insured commercial spending is derived from an analysis of a subset of Minnesota health plan companies, representing nearly 90 percent of that market space at the end of calendar year 2016.

[27] Minnesota Department of Health, Health Economics Program analysis of the Minnesota Health Access Survey found a significant increase in the percent of people with employer-sponsored insurance reporting their plan was an HDHP (47 percent in 2015 compared to 55 percent in 2017). In addition, see: Cohen R, Zammitti E. "High-deductible Health Plans and Financial Barriers to Medical Care: Early Release of Estimates from the National Health Interview Survey, 2016." National Center for Health Statistics. June 2017.

Distribution of Public Spending

As noted, 47.2 percent of health care spending in Minnesota in 2016 ($22.2 billion) came from public payers, an increase of 5.7 percentage points from 2007.[28] As has been common historically, total public spending grew at a faster rate than total private spending over the last decade (5.1 percent, compared to 2.4 percent), with the exception of 2016 when public spending actually declined for the first time, by 1.9 percent.[29] Total public spending growth was limited in 2016, primarily because of changes in how the Minnesota Department of Human Services (DHS) negotiated payments to health plans for Minnesota Health Care Programs' (MHCP) enrollees.[30] We estimate spending for Medical Assistance declined 7.7 percent and other public spending (which includes MinnesotaCare) declined 2.1 percent. In contrast, Medicare spending grew 4.9 percent in 2016 (from 2015), still modest growth by historical standards.

Since the decline in total spending was caused by MHCP spending, we estimate that total spending, consisting of both public and private spending, would have grown over five percent (compared to the current 1.9 percent total growth)—with an additional $1.6 billion in spending—had MHCP spending maintained steady growth rates from 2015.

Minnesota's Medicare and Medical Assistance programs accounted for the vast majority (87.4 percent) of public spending, at 20.6 percent each of total spending (about $9.7 billion for each program).[31] Other sources of public spending, including MinnesotaCare, public health expenditures, and school-based health care spending, made up the remaining 5.9 percent of spending, or $2.8 billion.[32] Although the share of other public spending declined from 2007 to 2016 (down from 6.1 percent), this category's overall spending increased from $2.1 billion to $2.4 billion over the same period (Figure 5).[33]

[28] Public spending for purposes of this report includes spending for Medicare, Medicaid (Medical Assistance), and other public programs (e.g., MinnesotaCare, school-based health care, correctional facilities, public health).

[29] Public spending grew 5.5 percent in 2015, and declined 1.9 percent in 2016. Private spending grew 2.7 percent in 2015 and 5.6 percent in 2016.

[30] The Minnesota Department of Human Services started using a competitive bid process for most managed care contracts starting in the 2012 plan year.

[31] Medicare included under the public payer categorization does not include the portion of Medicare Advantage expenses funded through enrollee premiums. As is typical, they are considered "private" spending.

[32] Minnesota's analysis of "MinnesotaCare and Other Public Spending" now includes an estimate for school-based health care. Public spending in this report also includes spending by the Veterans Health Administration, workers' compensation, correctional facilities, and public health. We estimate public health spending to be less than one percent of total spending.

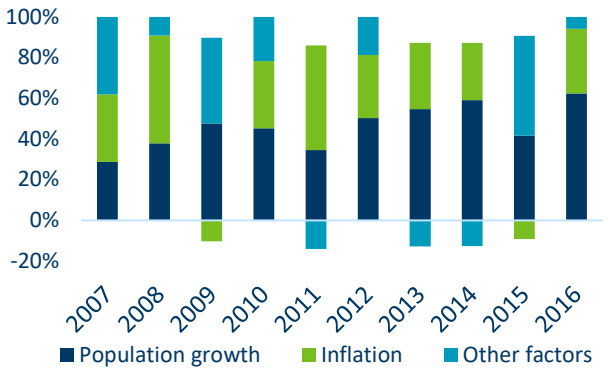
[33] Please refer to Appendix B for additional information on the share of spending by the various payers of health care.

In-Depth: Medicare

Over the past decade Medicare spending has increased continuously, averaging growth of 5.3 percent per year, and reached $9.7 billion in 2016. Medicare spending growth has outpaced growth in total spending by 1.7 percentage points over the past decade.

Although Medicare experienced some increases in spending per person, over half of the annual increases during the past ten years were attributable to population growth, as compared to inflation and other factors (Figure 7).

Figure 7: Factors Accounting for Medicare Spending Growth in Minnesota (2007-2016)



Source: MDH, Health Economics Program.

Consistent with this trend, Medicare enrollment in Minnesota grew 2.9 percent on average each year since 2007—nearly triple the rate of growth of the overall state population.[34]

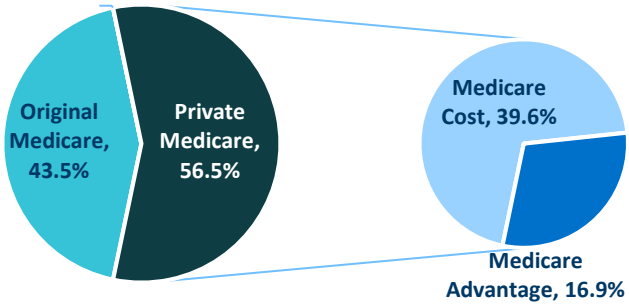
Medicare enrollees have choices for how they receive their coverage: they can have "traditional Medicare" where they have access to all Medicare benefits, but are responsible for all cost sharing; or they can opt for a private Medicare plan (see Private Medicare Plans illustration in the upper right corner for more information).

Private Medicare Plans offer Medicare Part A and B benefits through a private insurance company. These plans may be paired with a prescription drug (Medicare Part D) plan, and may offer benefits not normally covered under Original Medicare (i.e., hearing/vision). There are two primary types:

- **Medicare Advantage Plan (Medicare Part C):** Medicare pays the private insurance company a set amount per month to cover all services regardless of the actual services used (capitation), putting the insurer at risk if costs exceed expectations. The plan has a set provider network, and the enrollee *may* be responsible for paying for out-of-network services.
- **Medicare Cost Plan:** Medicare pays plan based on actual enrollee costs. While the plan does have a provider network, Medicare-covered services for out-of-network coverage are paid by Original Medicare.

Information abridged from Minnesota Health Care Choices. This annual publication provides detail on all plan offerings for Minnesota residents.

Figure 8: Minnesota Medicare Enrollment (2016)



Source: MDH, Health Economics Program, Chartbook 5.

Where Minnesota has differed from national trends is that a greater share of enrollees elect private Medicare plans (32.6 percent nationally, compared to 56.5 percent in Minnesota; Figure 8). The majority of Minnesotans with a private Medicare plan in 2016 were enrolled in Medicare Cost Plans.[35] In 2019, a federal law that passed in 2003 will take effect, requiring most Cost Plan enrollees to either enroll in Medicare Advantage plans, or go back to Traditional Medicare.[36]

[34] Minnesota Department of Health, Health Economics Program unpublished analysis. Inflation from the U.S. Bureau of Labor Statistics, Consumer Price Index, Minneapolis-St. Paul-Bloomington, Minn.-Wis. All Urban Consumers (CPI-U), All Items; January 2018 data, accessed on September 9, 2018.

[35] Minnesota Department of Health, Health Economics Program. Chartbook 5; The Henry J. Kaiser Family Foundation Medicare Advantage Fact Sheet, October 2017.

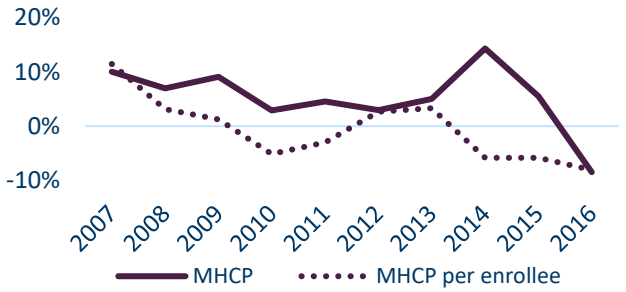
[36] Senior LinkAge Line and Minnesota Board on Aging. 2019 Minnesota Health Care Choices.

In-Depth: Minnesota Health Care Programs

Enrollment in Minnesota Health Care Programs (MHCP), primarily Medical Assistance (Minnesota's Medicaid program), MinnesotaCare, and the historical General Assistance Medical Care (GAMC) program, which ended in 2011, grew modestly between 2007 and 2014. With the full implementation of coverage provisions from the Patient Protection and Affordable Care Act (ACA) in 2014, the number of Minnesotans enrolled in MHCP increased by 120,000 to nearly 1.2 million.

Over this period, aggregate MHCP spending increased steadily, with spikes during the Great Recession (2007-2009), as Minnesotans lost coverage and income; in 2011 with Minnesota's "early" Medicaid expansion under the ACA; and in 2014 with the full ACA Medicaid expansion. The expansions increased the number of Minnesotans that were income-eligible for the program (Figure 9).

Figure 9: MHCP Spending Growth (2007-2016)



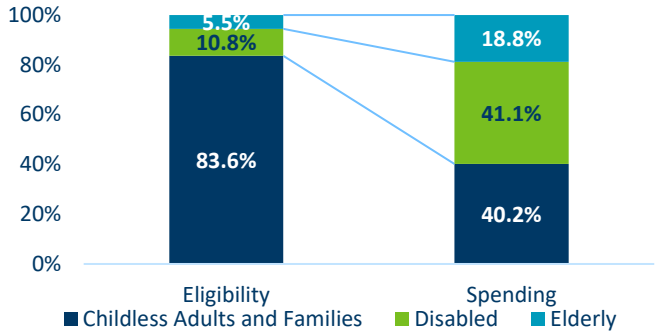
Source: MDH, Health Economics Program. Per-enrollee public program costs are calculated using gross enrollment costs, not by primary source of coverage.

Beginning in 2015, however, spending growth began to decelerate, with 2016 showing for the first time, an actual decrease in spending (-8.5 percent). As we noted, this contraction in MHCP spending resulted from how the Department of Human Services' (DHS) negotiated payments to health plans for 900,000 enrollees; and from experimentation with new health care delivery models.[37, 38]

Growth in spending per MHCP enrollee has varied over the past decade, with significant declines since 2014. The aforementioned changes in payment rates and towards a more favorable mix in the health of the population as the program grew, also played a role in this decrease.

Recent forecasts suggest that the decline in total MHCP spending is unlikely to continue.[39] This may be related to the relative stability in the population mix, and the fact that most spending for the program is related to health care for the elderly and disabled (see Figure 10). Deriving program efficiencies and cost savings for higher-need populations, who require substantial long-term care services and often have more chronic diseases, will be more complex than managing care delivery for the bulk of the MHCP population, which consists of adults without children and families.[40]

Figure 10: Medical Assistance Spending by Eligibility Category (2016)



Source: Minnesota Department of Human Services, data for calendar year 2016.

[37] Minnesota Department of Human Services. Managed Care Enrollment Figures. Through competitive bidding, DHS gathers bids from managed care organizations (MCOs) to cover all enrollees' services for a negotiated amount per month (capitation) regardless of the actual services the enrollee may use; thus, the MCO is at risk if costs exceed negotiated rates.

[38] Chun R. "Information Brief, Research Department, Minnesota House of Representatives: Integrated Health Partnerships Demonstration." December 2017.

[39] Minnesota Department of Human Services. Financial Reports and Forecasts website.

[40] Minnesota Department of Health, Health Economics Program. "Chronic Conditions in Minnesota: New Estimates of Prevalence, Cost and Geographic Variation for Insured Minnesotans, 2012." 2016.

What do Minnesota Health Care Dollars Pay For?

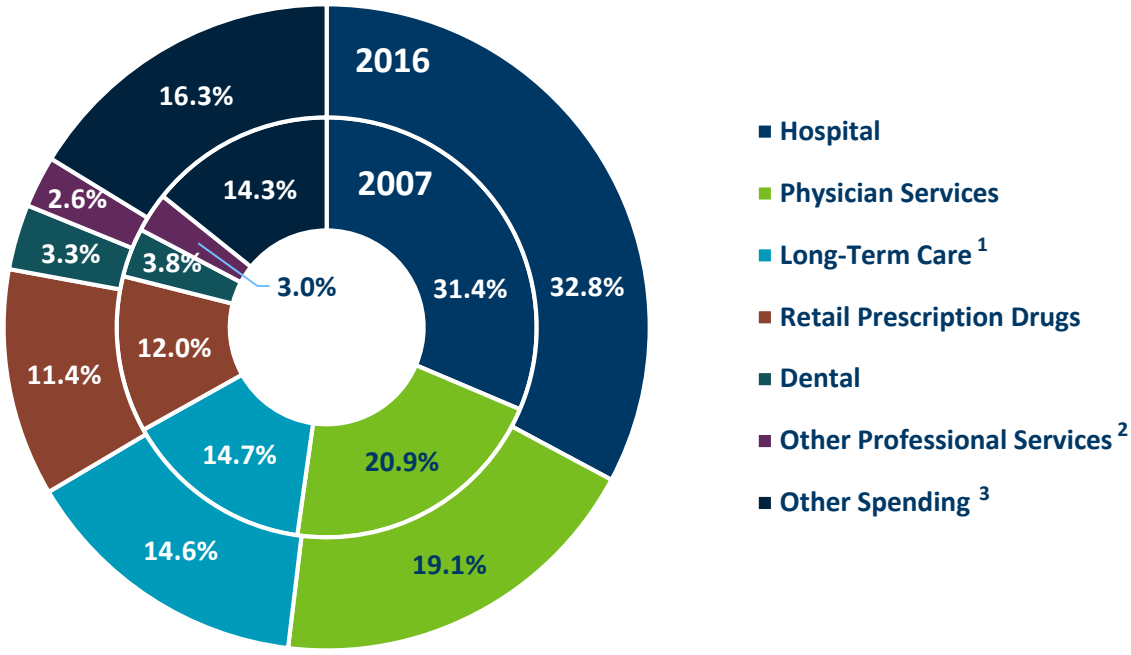
Reviewing health care spending in terms of who sponsors health insurance coverage provides needed detail for understanding how people access health care services. Breaking down spending by the categories of service purchased helps us understand the allocation of health care spending and identify potential drivers of changes over time.

In both 2015 and 2016, we found that the distribution of health care spending was relatively unchanged for most categories of service (Figure 11). Over the long-term, however, there were certain noteworthy, but modest, changes in the distribution, which we describe below.

Key Findings:

- Hospital-based spending remains the single largest category of service delivery, accounting for nearly one-third of total spending (32.8 percent), or $15.5 billion.
- All categories of service saw greater spending between 2007 and 2016.
- Over the past decade, spending on mental health and chemical dependency services grew in total (6.9 percent annually) and as a share of overall spending (from 2.2 percent to 2.9 percent).

Figure 11: Distribution by Health Care Service Categories in Minnesota (2007 and 2016)

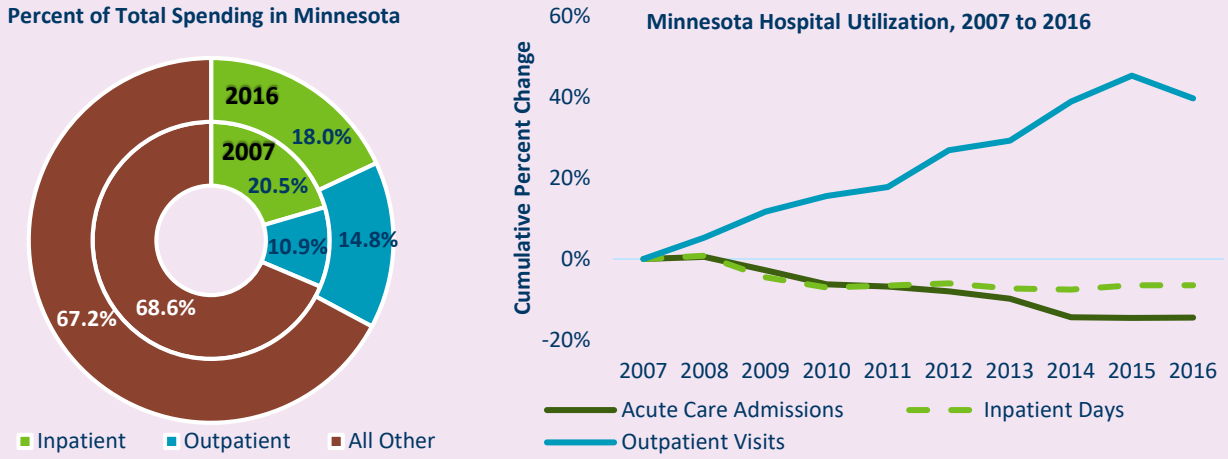


Source: MDH, Health Economics Program.
[1] Includes home health care services.
[2] Includes services provided by health practitioners who are not physicians or dentists.
[3] Includes chemical dependency/mental health (2.9 percent), other medical spending (includes not itemized and durable medical equipment; 7.3 percent), health plan administrative expenses and revenues in excess of expenses (4.2 percent), and uncategorized spending (for spending such as public health spending, correctional facility health spending, Indian Health Services, school based spending; 1.9 percent).

- Hospital care, which encompasses both inpatient services and outpatient care delivered by hospitals (i.e., treatment or surgical care not consisting of an overnight hospital stay), remained the single largest category of health care spending, and represented one-third of total spending, or $15.5 billion in 2016. The share of hospital spending grew 1.4 percentage points over the past decade to 32.8 percent in 2016, driven mainly by growth in outpatient hospital services.
- In contrast, physician services, which represented approximately one-fifth of all spending, saw a slight decrease (1.8 percentage points) in its share of spending over the past decade. Spending on services delivered by physicians increased $1.8 billion from 2007 to reach $9.0 billion in 2016.[41]

A CLOSER LOOK: INPATIENT AND OUTPATIENT HOSPITAL SERVICES

As described above, there has been a steady but gradual shift in how people receive care in hospital-based settings. The figure below illustrates the cumulative percent growth in acute care admissions, inpatient days, and outpatient visits in Minnesota Community Hospitals from 2007 to 2016. As illustrated, admissions and patient days have fallen over the past ten years, while the growth in outpatient visits has been dramatic. Many surgeries and procedures that were previously delivered in inpatient settings are now done on an outpatient basis, where a patient goes home the day of the surgery. At the same time, the number of clinics associated with hospitals (outpatient clinics) also increased. Clinics that are designated as "outpatient clinics" can charge a facility fee (as part of a hospital), in addition to charges for services received from doctors or other providers. This has the potential to make care received at outpatient clinics more expensive than care received at a physician clinic not associated with a hospital (i.e., an ambulatory care center).



Sources: MDH, Health Economics Program analysis of hospital annual report data, accessed September 22, 2018. Munnich E, Parente S. "Procedures Take Less Time at Ambulatory Surgery Centers, Keeping Costs Down and Ability to Meet Demand Up." Health Affairs. May 2014; U.S. Department of Health and Human Services. "Medicare and Beneficiaries Could Save Billions if CMS Reduces Hospital Outpatient Department Payment Rates for Ambulatory Surgical Center-Approved Procedures to Ambulatory Surgical Center Payment Rates." April 2014.

- The share of prescription drug spending, limited in this report to just retail drugs, experienced a small decrease (less than one percentage point) from 2007 to 2016, reaching 11.4 percent ($5.4 billion). The overall volume of drug spending was substantially higher and faster growing when one also considers spending on drugs administered in medical settings, such as chemotherapy drugs for cancer patients; our report considers drugs administered in medical settings as either

[41] Physician services spending may include some of the costs of pharmaceuticals and supplies administered or dispensed from the physician office and billed directly through the physician.

hospital or physician spending.[42] Over the past decade, there were particular instances when the share of spending on retail prescriptions contracted. These contractions were largely due to changes in the mix of drugs in the market (e.g., more, less expensive generic drugs entering the market without new brand name drugs entering) and faster spending growth in other service categories.

- Spending on mental health and chemical dependency services, which are aggregated as part of "other spending" in Figure 11, may have increased over the past decade because of federal legislation for mental health parity and the ACA.[43,44]

[42] Minnesota Department of Health, Health Economics Program. "Minnesota Health Care Spending: 2014 Estimates and Ten-Year Projections." October 2018; Minnesota Department of Health, Health Economics Program, Minnesota All Payer Claims Database (APCD) Issue Brief. "MN APCD Issue Brief: Pharmaceutical Spending and Use in Minnesota: 2009-2013." November 2016.

[43] Substance Abuse and Mental Health Services Administration (SAMHSA). "Trends in Insurance Coverage and Treatment Utilization by Young Adults." January 29, 2015. Busch A, et al. "The Effects of Parity on Mental Health and Substance Use Disorder Spending and Utilization: Does Diagnosis Matter?" American Journal of Psychiatry. February 1, 2013.

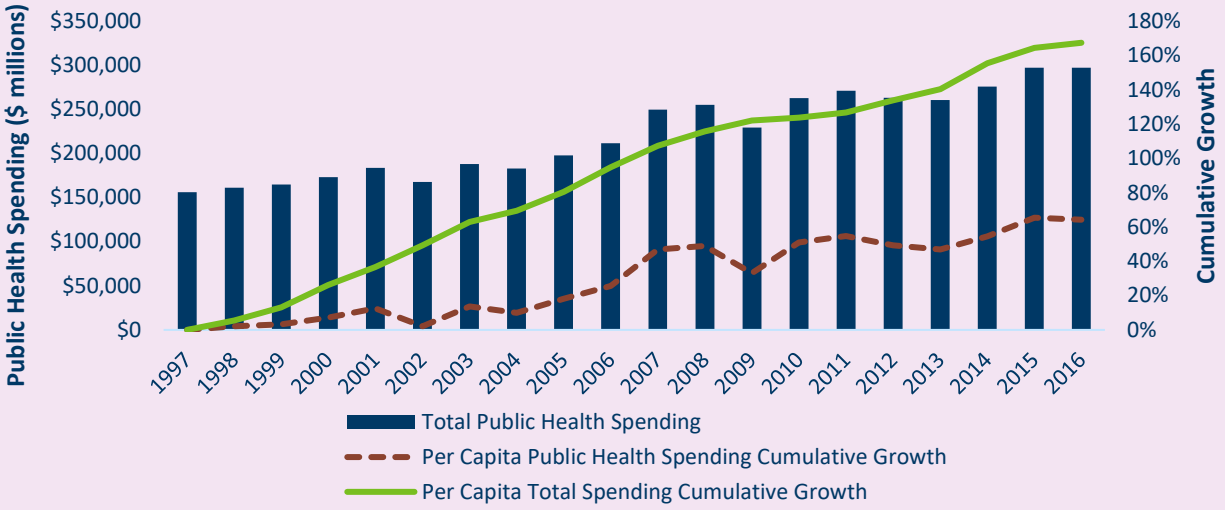
[44] Additional detail on spending by the categories of service is available in Appendix B.

A CLOSER LOOK: PUBLIC HEALTH SPENDING

Public health spending commonly includes expenditures on education efforts concerning diseases and conditions (e.g., the measles epidemic), on administration of local health services (e.g., vaccinations provided by local public health departments or contracted providers), research and health promotion (e.g., quitting smoking), and to support certain activities through grants and other mechanisms by community health centers and local partners. Funding takes the form of federal resources that supports activities at MDH or is passed through to local partners, and state funding for various activities.

Although, over time, spending for public health programs has grown in terms of dollars, it has grown more slowly than overall per-person spending in Minnesota. As a result, public health spending accounts now for less than 1 percent of total health spending (0.6 percent). In light of the evidence suggesting greater public health spending can improve outcomes *and* reduce medical care spending, particularly in communities with high rates of diverse populations, this level of public health spending in Minnesota suggests a missed opportunity for improvement.

Public Health Program Funding, Minnesota (1997 to 2016)



Sources: MDH, Health Economics Program. Public health program spending includes estimated portions of Community Health Services spending, Centers for Disease Control spending, government block grants and federal funds, and public health grants.

See for example: Leider JP, et al. "Assessing the Value of 40 Years of Local Public Expenditures on Health." Health Affairs. April 2018; Mays GP, Mamaril CB. "Public Health Spending and Medicare Resource Use: A Longitudinal Analysis of U.S. Communities." Health Services Research. December 2017.

Health Care Spending Projections

To assess how health care spending might change in the future, and to monitor how our expectations over time are evolving, the Minnesota Department of Health (MDH) also produces projections of health care spending covering a ten-year forecast window. Our projections are based on historical health care spending, trends in health insurance coverage, and forecasts of macroeconomic variables and public program spending. These projections may be useful for policymakers for budget planning and as they consider health reform proposals. The projections might also inform business considerations of employers and other purchasers, as well as providers of health care services and insurance providers.

Key Findings:

- Health care spending is projected to double over the next decade to $94.2 billion by 2026.
- During this time, spending is projected to consume an increasing share of the Minnesota economy (18.6 percent).
- Spending from public sources is projected to draw even with private spending over the next ten years.

Our 2017 to 2026 projections consider spending in the context of current law (through 2016) and, because they focus on a relatively short period—ten years—do not capture planned or longer-term policy changes affecting health care, access to care, coverage, or the economy.[45] As in the past, the Minnesota health care spending projections rely on methodologies developed by the Centers for Medicare & Medicaid Services (CMS), aligned to Minnesota, and statistical modeling by both payer and provider type.[46] They are certified by an independent actuary (see Appendix A).

Future Health Care Spending

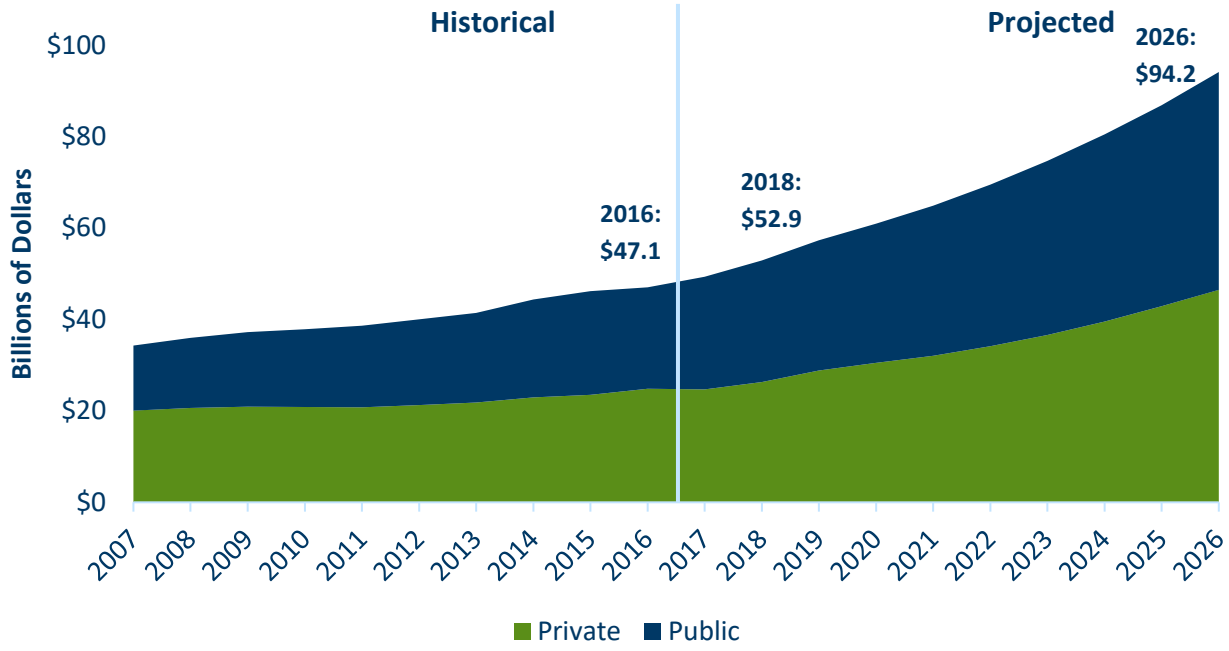
Minnesota's recent history of slower spending growth is not expected to continue over the next ten years.[47] Instead, we project spending to grow 7.4 percent on average each year from 2017 to 2026. At this rate, both aggregate spending and spending growth are doubling from what occurred over the past decade ($47.1 billion; 3.6 percent growth on average), resulting in Minnesota health care spending reaching approximately $94.2 billion by 2026 (Figure 12).

[45] These projections use *all* available historical spending information, including calendar year 2016 estimates, to project future Minnesota health care spending.

[46] Additional detail on the projection methodology is available in Appendix D.

[47] Cuckler G, et al. "National Health Expenditure Projections, 2017-26: Despite Uncertainty, Fundamentals Primarily Drive Spending Growth." Health Affairs. 2018. Vol 37:3 (482-492).

Figure 12: Minnesota Health Care Spending, 2007 to 2026 (Billions of Dollars)



Source: historical spending estimates from MDH, Health Economics Program; projections from Mathematica Policy Research. Health care spending includes medical and prescription drug spending.

As has been the case historically, health care spending growth is expected to outpace economic progress, resulting in a greater share of the Minnesota economy devoted to health care (18.6 percent by 2026, up from 13.9 percent in 2016).

Faster growth in health care spending is expected for all payers. For example, private spending is projected to rise at an average annual rate of growth of 7.3 percent through 2026, or three times the average annual rate of the past decade (2.4 percent). Similarly, public spending is projected to increase at an average annual rate of growth of 7.6 percent per year, about 2.5 percentage points above the rate of growth of the past decade (5.1 percent). Several factors will likely contribute to the projected accelerated spending growth:

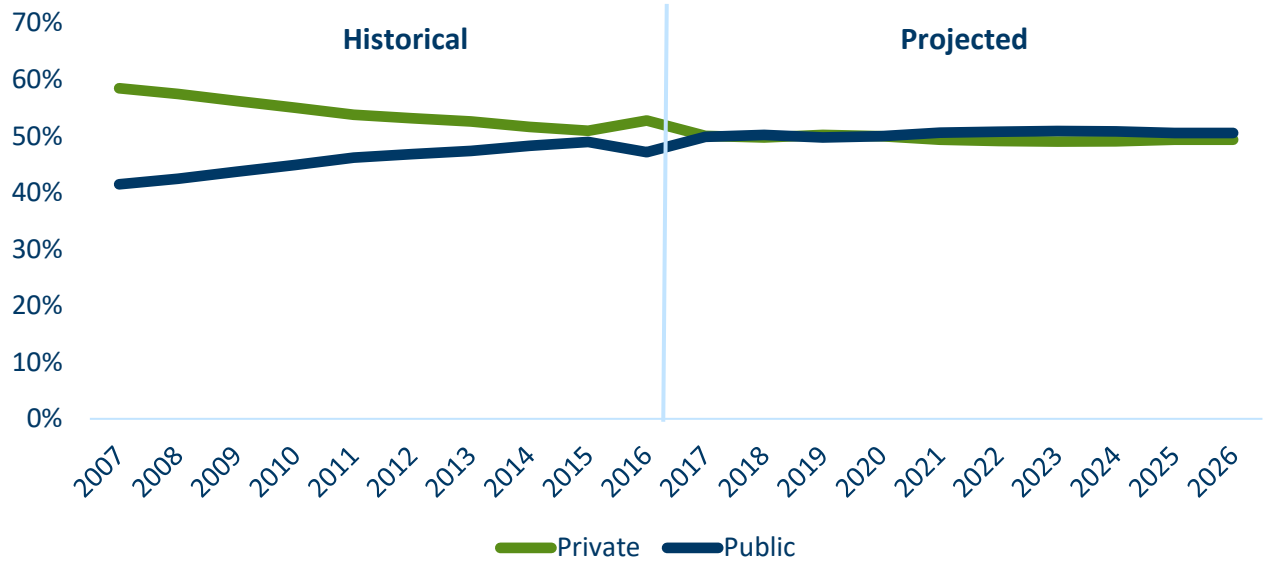
- **Prices, utilization and technology will be a major contributor.** Ongoing analysis by MDH suggests that factors other than enrollment, including changes in prices, technology, and use of health care, are likely to play a large role in increased spending over the projection period.[48] These findings seem to align with expected trends for the nation overall, that income growth and increased medical prices will contribute to spending increases in the next decade.[49]
- **Demographic shifts will still contribute to increased Medicare enrollment and greater spending to treat multiple chronic diseases.** While enrollment trends are not driving spending per se,

[48] Minnesota Department of Health, Health Economics Program unpublished analysis.

[49] Cuckler G, et al. "National Health Expenditure Projections, 2017-26: Despite Uncertainty, Fundamentals Primarily Drive Spending Growth." Health Affairs. 2018. Vol 37:3 (482-492). Furthermore, CMS anticipates the most significant increase in input prices for goods and services will be from retail prescription drugs, due to higher drug prices from specialty drugs.

enrollment will increase in public health care programs. The number of Minnesotans eligible for Medicare is projected to increase 3.3 percent per year, on average, between 2017 and 2026.[50] While public programs tend to have lower payment rates to providers than private coverage, these programs also cover a larger percentage of expensive services, including more than 75 percent of long-term care and home health care in the state. Rates of chronic disease among public program enrollees and the elderly are also twice as high as in the general adult population.[51]

Figure 13: Public and Private Health Care Spending, 2007 to 2026 (Share of Spending)



Source: historical spending estimates from MDH, Health Economics Program; projections from Mathematica Policy Research. Health care spending includes medical and prescription drug spending.

Figure 13 shows that the gap between public and private contributions to health care spending has been narrowing steadily. Our projections suggest that the share of public spending will draw even with private spending in the next few years. Continued success in managing spending growth for state public program beneficiaries and Medicare enrollees has the potential of pushing out the "cross-over" point beyond the projected date of 2018. Nevertheless, the inevitable demographic trends, paired with higher per-person spending for public program beneficiaries, make this cross-over highly likely over the next few years. Some analysts have argued that, as a nation, we have long passed that cross-over point. They suggest tax subsidies for private employer-sponsored insurance coverage, resulting in forgone federal and state revenue, and the cost of private health insurance

[50] Based on the Minnesota population expected to be 65 or older in each year of the projection period. Age data from the Minnesota State Demographic Center, "Age and Sex Projections," August 2015 re-release, accessed on August 29, 2018.

[51] Minnesota Department of Health, Health Economics Program. "Chronic Conditions in Minnesota: New Estimates of Prevalence, Cost and Geographic Variation for Insured Minnesotans, 2012." 2016.

benefits for public employees at local, state and federal levels, should be allocated to "public spending" instead of "private spending."[52]

[52] Himmelstein DU, Woolhandler S. "The Current and Projected Taxpayer Shares of US Health Costs." American Journal of Public Health. 2016. 106 (3): 449-452.

Looking Ahead: Bending the Cost Curve

Key Findings:

- Constraining health care spending is complex and challenging.
- There do not seem to be "silver bullets" to constraining health care spending growth.
- Effective strategies to constraining spending growth will not be universally appealing and will produce winners and losers.

Policymakers, payers, and other stakeholders have long been troubled about the long-term trajectory of national health care spending. In Minnesota, concern over health care spending—including the level of spending, the lack of health status improvements, and the rate of growth—have all been part of multiple attempts at health reform legislation since the early 1990s, and the focus of numerous bipartisan task forces, legislative deliberations and policy initiatives.

This concern over health care spending—in Minnesota and beyond—is threefold: first, we collectively worry that with ongoing increases in the underlying cost of health care, fewer individuals will be able to afford needed health care services, or will have to forgo other necessities such as housing, utilities, and food. Second, we fear that the underlying trends will mean that state and federal budgets need to devote more resources to health care, limiting investments on other policy priorities, like education, transit, and/or economic development. Third, there has not been substantial evidence that the annual increases in health care spending have resulted in similar gains in health status or health outcomes for Minnesotans.[53]

While apprehension about health care spending is widespread and bipartisan, growth in health care spending has been persistent and has proven exceedingly resistant to efforts at cost containment or attempts at system reform. For example, in the mid-1990s health care spending in Minnesota was below $15 billion and accounted for less than 10 percent of the economy, while family health insurance premiums averaged about $5,000 per year. Since then, health care spending has increased every year, most years at rates above inflation, obligating billions more dollars in economic activity to delivering health care for Minnesota residents and consuming roughly 14 percent of the economy, while pushing family premiums to over $18,000 per year. During this time, policymakers experimented with a number of cost containment strategies, and the health care market experimented with several tactics, including by employing managed care practices, investing in health information technology, transitioning to health insurance policies with greater cost sharing, and beginning to hold providers financially accountable for overall health care costs and the quality of care.[54]

The primary reasons why health care spending growth has been so resistant to change despite policy interventions, technological advancements, and changes in the business of health care include:

[53] Minnesota Department of Health. 2017 Minnesota Statewide Health Assessment. 2017.

[54] For example, see Laws of 2008: Chapter 358--S.F. 3780. Certain aspects of laws, such as the Provider Peer Grouping were repealed.

- **Health care delivers incomes and revenues:** Health care services and procedures generate employment and income for 14.7 percent (414,000) of Minnesotans.[55] Producing and delivering health care services creates revenue and profits for the health care industry and income for shareholders and investors. To the extent that they are not exempt from paying taxes, health care businesses also generate tax revenue for governments. Potential losers from any changes to controlling costs become powerful opponents of such initiatives.
- **Culture of care delivery acts as a barrier:** Given the enormous stakes involved in decisions about health and well-being, both individuals and the health care system often err on the side of delivering more health care, regardless of its potential effectiveness or efficiency. Attitudes towards end-of-life care, the promise of medical care and technology on the margin, transparency, provider accountability and litigation in health care all contribute to this.
- **Focus on care delivery, rather than what keeps us healthy:** Most of the growth in health care spending has been taking place to finance the delivery of medical care through increases in capacity, capability and prices, rather than to fund improvements in population and public health.[56] This short-term focus leaves Minnesota relatively unprepared for the increasing longer-term pressure associated with an aging society that lives with a greater chronic disease burden and growing demand for coordination between the medical care and social services systems. It also represents a missed opportunity to scale-up funding to promote prevention and address socio-demographic and environmental factors that contribute to medical spending through research and practice.
- **Health care markets lack the effectiveness of other industries:** Markets that work effectively can help organize the supply and demand for services under the best possible prices – or manage the allocation and distribution of resources, in economics vernacular. For a variety of complex reasons, technology and other innovations have failed to moderate price trends in health care markets or even drive out waste and inefficiency, as they have done in other industries.[57] Health care markets also struggle because of the particular nature of health and health care as distinct from typical consumer goods and services.[58] Markets are further disrupted by anti-competitive

[55] Minnesota Department of Employment and Economic Development. Quarterly Census of Employment and Wages (https://mn.gov/deed/data/data-tools/qcew), 2016. "Health care" includes the following industries: ambulatory health care services, hospitals, nursing and residential care facilities, medical equipment and supplies manufacturing, and direct health and medical insurance carriers.

[56] As noted on page 26 in "A Closer Look: Public Health Spending", Public Health spending represents less than one percent of all health care spending in Minnesota, and has not grown as quickly as other health care spending.

[57] See for example, Berwick DM, Hackbarth AD. "Eliminating Waste in US Health Care." JAMA. 2012. 307(14):1513-1516. Minnesota Department of Health, Health Economics Program, Minnesota All Payer Claims Database (APCD) Issue Brief. "Analysis of Low-Value Health Services in the Minnesota All Payer Claims Database". May 2017. Book RA, Fodeman J. "'Bending the Curve': What Really Drives Health Care Spending." The Heritage Foundation. February 17, 2010.

[58] In health care spending, there is often an inelastic demand, meaning that the demand for the use of health care services only is affected modestly with an increase or decrease in its price.

contracting practices and consolidation that has led to creation of large, horizontally and vertically integrated provider systems that put upward pressures on the underlying cost of health care.[59,60]

As noted, Minnesota has aimed to affect health care spending trends through targeted health care reforms in 1992 and 2008, as well as a host of policy changes and private and public purchasing initiatives.[61] Although some promising results have been emerging from recent Medicaid purchasing strategies, the state's Health Care Home initiative, and spill-over effects from Medicare reforms, they have been somewhat offset by routine health care price inflation and demographic trends. Other initiatives, such as the continuing but modest investments in population health and prevention, will likely require decades of consistent and increasing investment before we feel their impact on health care spending trends.

There isn't a "right" amount of spending on health care – in the end, a society's spending on health is largely an expression of the preferences and trade-offs it is willing to make. When health care also provides jobs, and brings technical innovation and new products to improve health, this leads to the possibility that, at least theoretically, as a society we favor increases in health care spending at the cost of other policy priorities. However, there seems to be a broad interest in Minnesota to not giving up on the goal to constraining both total health care spending and the rate of growth in spending.[62]

In Table 1, we offer one framework for thinking about strategies to "bend" the health care spending growth curve by categorizing them into whether they primarily affect the demand for services or supply and prices of services. These cost containment strategies are drawn from observations in literature and practice, and are generally associated with some measure of evidence.

It may be prudent to the reader to consider the following list of *incomplete lessons* from a few decades of experimenting with constraining spending growth together with the set of strategies in Table 1:

1. **There are no "silver bullets" to affect the trajectory of health care spending.** Measurable and lasting change in health care spending will require ongoing commitment to using multiple approaches at once, with many aiming to produce marginal change. The disaggregated nature of the funding and sponsors of health care services means an approach that works for one type of coverage or care may not work for another.

[59] Curfman G. "Everywhere, hospitals are merging — but why should you care?" Harvard Health Blog. Harvard Health Publications. April 1, 2015; Baker LC, Bundorf MK, Kessler DP. "Vertical Integration: Hospital Ownership of Physician Practices is Associated with Higher Prices and Spending." Health Affairs. May 2014.

[60] Horizontal integration in health care is most often defined as consolidation of physician clinics or hospitals, creating larger entities. Vertical integration, in contrast, involve consolidation between provider clinics and hospitals, creating provider organizations across the spectrum of care delivery.

[61] For example, see Laws of 2008: Chapter 358--S.F. 3780, Minnesota Rules, Chapter 4652; Minnesota Statutes 62J.38. Additionally, the Minnesota Department of Health, Health Economics Program, "Health Care Spending and Projections, 2013" March 2016 report includes additional information on earlier initiatives.

[62] Cutler D. "What is the US Health Spending Problem?" Health Affairs. February 14, 2018.

2. **Constraining health care spending will make some individuals and organizations worse off.** As noted, health care spending represents income, revenue and profits. Constraining spending without making some stakeholders worse off is impossible. Because of the magnitude of the stakes in the current system, any perceived or actual change in access, service availability, or choice could drive these stakeholders to bring considerable political and economic power to any debate over reform.

3. **Recognizing short-term budgetary gains, let alone those tied to politically expedient timetables, will be extraordinarily difficult**. Much of health care spending is concentrated on the treatment of conditions that develop over a long time horizon, or is to serve patients with immediate acute health care needs. This means that the potential savings from initiatives to delay the onset of disease or its progression, through investments in prevention or changes in care delivery, will take a long time to materialize. This is made even more complex by the relative absence of robust data on the relationship between policy or practice changes and health care spending. There are notable exceptions that have proven to be both highly effective, relatively inexpensive to implement and based on a solid evidence base, but these are rare.[63]

4. **Some reforms of the delivery system, health care financing, or the culture of health may require upfront investments, potentially across sectors.** Whether it concerns restructuring health care delivery to better align with patients' needs or reducing future disease burden, upfront, sustained investments will likely be necessary. These investments will require solid data tools to evaluate success, and they may need to flow through multiple budgets beyond health care (e.g., the social service, economic development and community planning sectors). The benefits of these reforms may not directly impact the budgets they draw from.

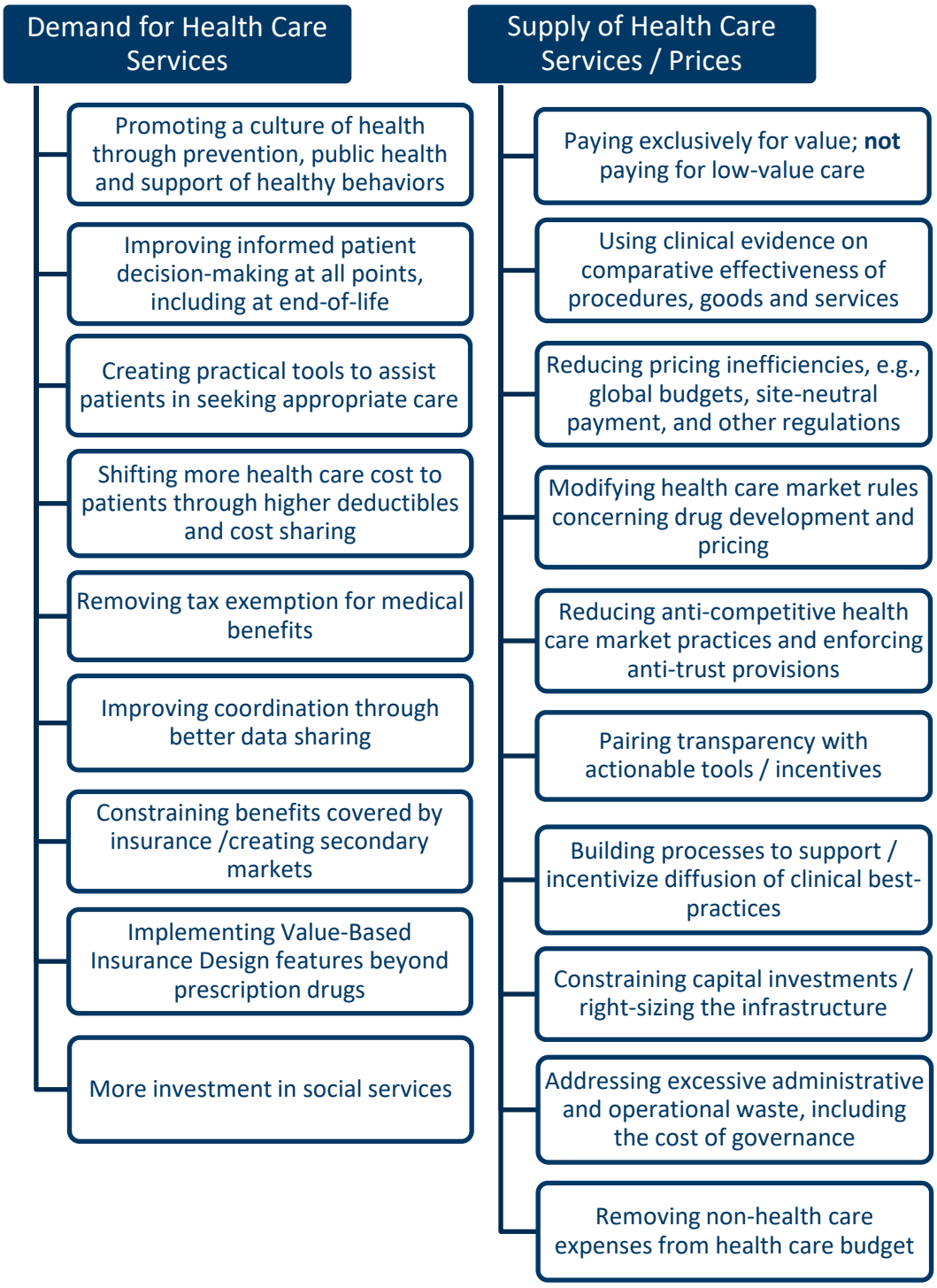
5. **Very few cost containment initiatives will appeal across the ideological spectrum.** Although the concept of "bending the cost curve" is bipartisan, certain approaches will appeal more to Minnesotans who have conservative perspectives, while others will better align with Minnesotans who hold more progressive viewpoints.

The following framework separates strategies to "bend the cost curve" into two categories, based on whether they: 1) primarily aim to affect the demand for health care services, or 2) seek to affect the supply of health care services or their price.[64] Strategies documented here are broadly focused and are presented as a summary of strategies—each item has their own set of advantages and trade-offs which we do not present.

[63] For example, see Diabetes Prevention Program Research Group. "10-year follow-up of diabetes incidence and weight loss in the Diabetes Prevention Program Outcomes Study." Lancet. 2009. 374 (9702):1677-1686; and Holton-Burke RC, Buck DS. "Social Interventions Can Lower Costs and Improve Outcomes." NEJM Catalyst. 2017.

[64] A few of these strategies, such as care coordination and perhaps paying for value might fit in both categories.

Table 1: Strategies to Bend the Health Care Cost Curve – An Exploration of the Evidence



Conclusion

This analysis of Minnesota trends in health care spending found continued growth in spending, albeit at modest rates of change. Although forecasters and health care market observers have been expecting accelerated growth for a number of years—after all, we are in the seventh year of modest spending growth, not including the increase in 2014—the 4.0 percent and 1.9 percent growth in 2015 and 2016 remain below the average growth of the preceding decade.

Nevertheless, these trends do not give cause for celebration or suggest we forego initiatives to affect the longer-term trajectory of health care spending. Besides our own forecasts, which project more rapid spending growth over the next ten years and a doubling of total health care spending, other evidence suggests there ought to be continued concern over the sustainability of health care spending trends:

- Despite modest health care spending growth for most of the past decade, the rate of change *typically* still outpaced inflation, household incomes, and growth in the economy.[65] This leads us to spend a greater share of our collective wealth on health care (13.9 percent of Minnesota's economy in 2016).
- People with private health insurance coverage are paying a greater portion of the cost of care, through higher cost-sharing, rising premiums, and re-configured benefits, including through high deductible health plans (HDHPs).[66]
- Trends in aging and the rising prevalence of chronic diseases will put increasing pressure on public programs as they increasingly deliver more long-term care services and more complex health care coordination. Without sufficiently scaled non-medicalized interventions, persons with chronic disease are expected to drive an increasing part of health care spending growth.[67]
- The increase in health care prices, magnified by growing health care consolidation and vertical integration, and the failure of technology and other innovations to moderate price trends, suggests there are few mechanisms to discipline the health care market.
- Despite increasing evidence about health care spending that is low-value or wasteful, there appears to be little progress in disrupting the pathways that contribute to a considerable volume of operational and clinical waste of health care spending.[68]

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[65] Minnesota Department of Health, Health Economics unpublished analysis. Based on review of Minnesota health care spending growth, compared to the U.S. Department of Commerce, Bureau of Economic Analysis: SA1 Personal Income Summary for Per Capita Personal Income (Minnesota), updated through March 22, 2018, accessed on September 20, 2018.

[66] See "In-Depth: Out-of-Pocket Spending" for more information on cost-sharing.

[67] Lantz P. "Early Opinion: The Medicalization of Population: Who Will Stay Upstream?" The Milbank Quarterly. December 2018; Minnesota Department of Health, Health Economics Program. "Chronic Conditions in Minnesota: New Estimates of Prevalence, Cost and Geographic Variation for Insured Minnesotans, 2012." 2016.

[68] Minnesota Department of Health, Health Economics Program, Minnesota All Payer Claims Database (APCD) Issue Brief. "Analysis of Low-Value Health Services in the Minnesota All Payer Claims Database." May 2017; Cutler D. "What is the US Health Spending Problem?" Health Affairs. February 14, 2018; Magi J, et al. "Low-Cost, High-Volume Health Services Contribute the Most to Unnecessary Health Spending." Health Affairs. October 2017.

- Increased growth in health care spending has not consistently resulted in similar positive gains in health for all Minnesotans.[69]

In this report, we have observed that health care spending growth in Minnesota appears largely resistant to change, as evidenced by it growing each year since MDH began tracking spending in 1993. Moreover, we have highlighted a number of reasons this persistent pattern continues, even in the face of creative private and public reform initiatives. Nevertheless, our overview of strategies from the literature to "bend the cost curve" suggests constraining spending ought to be possible.

Meaningful reform, ideally affecting both the level of spending and the rate of growth, would need to draw lessons from past attempts that have:

- Focused too much on broad-based initiatives;
- Looked to insulate certain stakeholders;
- Preferred strategies that fit an ideologically narrow spectrum; or
- Shied away from making necessary, persistent investments, including in establishing data systems and rigorous evaluation.

As discussed in this report, constraining health care spending will be complex and slow-moving. There is developing evidence (and hope) that *many smaller, targeted initiatives* that take advantage of real-world testing and evaluation, and "tinkering," might be able to produce meaningful results and address unintended consequences concurrently.[70] Particularly in light of the impact of prices in the prescription drug market, employers and governments seem to have reached the point where they are ready to consider new approaches.[71]

Minnesotans, who ultimately pay for rising health care expenses through increased premiums, cost-sharing, foregone wage growth, and taxes, have long been on-board with contributing to change. During statewide conversations convened by the Bush Foundation in 2012, intended to inform one of the many valuable health reform discussions in the state, Minnesotans asked for action steps to:

- Be empowered to "be co-creators and co-managers of their health;"
- Become equipped to "make healthy choices within the health care system;" and
- Create "environments that help reinforce healthy daily choices," particularly if paired with the "redesign of institutions."[72]

Since then, Minnesotans have been exposed to considerable health care market uncertainty surrounding the implementation of federal health reform, experienced a decline in the share of

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[69] Minnesota Department of Health. 2017 Minnesota Statewide Health Assessment. 2017.

[70] Einav L, Finkelstein A, Mahoney N. "Long-Term Care Hospitals: A Case Study in Waste." NBER Working Paper No. 24946, August 2018.

[71] See for example, U.S. Food & Drug Administration. "Statement by FDA Commissioner Scott Gottlieb, M.D. on the formation of a new work group to develop focused drug importation policy options to address access challenges related to certain sole-source medicines with limited patient availability, but no blocking patents or exclusivities." July 19, 2018; and "Amazon, Berkshire Hathaway and JPMorgan Chase & Co. to partner on U.S. Employee Healthcare." BusinessWire. January 30, 2018. In 2018, these three organizations began a joint venture focusing on tackling health care costs.

[72] Bush Foundation and Citizens League. "Public Conversations and Public Solutions: Making Health and Health Care Better in Minnesota, Engagement Results." August 2012, accessed December 16, 2018.

people with employer-sponsored insurance coverage, and found benefits and provider networks changing. Furthermore, with rising health care costs—over the past 20 years—more Minnesotans have experienced the trade-offs between paying for health care or other household expenditures. These trade-offs, at the societal-level, will increasingly become apparent and painful, affecting a host of policy priorities, particularly if health care spending does indeed double as is projected in this latest analysis.

Appendices

Appendix A: Actuarial Certification

Willis Towers Watson

June 15, 2018

Mr. Stefan Gildemeister
Director, Health Economics Program
Minnesota Department of Health
85 East Seventh Place, Suite 220
Saint Paul, MN 55101

Dear Stefan:

Actuarial Certification

Over the past several weeks, Willis Towers Watson has provided an actuarial review of the final estimates of statewide health expenditures in Minnesota developed by the Minnesota Department of Health (MDH). Our review considered the extensive tables that MDH provided, presenting sources of funding and categories of state health care expenditures for 2015, 2016, and previous years. Our review also included examination of supporting documentation, discussion of data sources and methodologies, and requests for additional documentation and clarification.

Based on this review, we find the data sources and methodologies MDH has used are valid and reasonable. We further certify that the health spending estimates for 2016, including statewide health care expenditures totaling $47.1 billion and total spending less Medicare and long-term care in the amount of $31.6 billion, are reasonable based on our review of the data used, the methodologies employed and health care spending trends observed nationally. The tables on the following page summarize these estimates.

Best Regards,

Scott Lund

Scott Lund, FSA, MAAA
Willis Towers Watson

cc: Alisha Simon, Michelle Wilson – MDH
David Jones, Deborah Chollet – Mathematica Policy Research
Ryan Lore – Willis Towers Watson

Scott Lund, FSA, MAAA

Suite 1700
8400 Normandale Lake Boulevard
Minneapolis, MN 55437

T +1 952 842 7000
D +1 952 842 6484
F +1 952 842 7001
E scott.lund@willistowerswatson.com
W willistowerswatson.com

Table 1
Where Minnesota Health Care Spending Came From in 2016

Source of Funding	Total Spending (Millions)	%	Total Spending Less Medicare and LTC (Millions)	%
Medicare	$ 9,701	20.6%		
Medical Assistance	$ 9,718	20.6%	$ 5,625	17.8%
Other Public	$ 2,796	5.9%	$ 2,685	8.5%
Private Health Insurance	$ 18,207	38.7%	$ 18,019	57.1%
Other Private	$ 1,184	2.5%	$ 1,184	3.7%
Out of Pocket	$ 5,468	11.6%	$ 4,051	12.8%
All Sources of Funding	**$ 47,073**	**100.0%**	**$ 31,564**	**100.0%**

Major sources of Other Public funding include the state public health programs (MinnesotaCare and General Assistance Medical Care), public workers compensation, public health spending and the Veterans Administration.

Other Private funding includes private workers compensation and auto medical insurance.

The amounts by funding source may not sum to totals due to rounding.

Table 2
Where Minnesota Health Care Dollars Were Spent in 2016

Spending Category	Total Spending (Millions)	%	Total Spending Less Medicare and LTC (Millions)	%
Hospital	$ 15,450	32.8%	$ 10,672	33.8%
Physician Services	$ 8,985	19.1%	$ 7,080	22.4%
Long-Term Care (incl. Home Care)	$ 6,865	14.6%		
Prescription Drugs	$ 5,365	11.4%	$ 4,369	13.8%
Dental	$ 1,539	3.3%	$ 1,518	4.8%
Other Professional Services	$ 1,216	2.6%	$ 1,093	3.5%
Chemical Dependency/Mental Health	$ 1,357	2.9%	$ 1,357	4.3%
Other Medical Spending	$ 4,305	9.1%	$ 3,592	11.4%
Other Nonmedical Spending	$ 1,991	4.2%	$ 1,883	6.0%
Total Spending	**$ 47,073**	**100.0%**	**$ 31,564**	**100.0%**

Other Professional Services spending includes spending for services by private-duty nurses, chiropractors, podiatrists and other health practitioners who are not physicians or dentists.

The amounts by spending category may not sum to totals due to rounding.

Appendix B: Additional Figures and Tables

This appendix includes additional figures and tables that represent health care spending results found in the broader *Minnesota Health Care Spending: 2015 & 2016 Estimates and Ten-Year Projections* report.

Table B1: Annual Health Care Spending Growth, Health Care Spending as a Share of the Economy, and Per Capita Health Care Spending, Minnesota and the U.S.

	2012	2013	2014	2015	2016
Annual Health Care Spending Growth (from the prior year):					
Minnesota	3.8%	3.5%	7.1%	4.0%	1.9%
U.S.	4.1%	3.1%	5.5%	5.9%	4.4%
Per Capita Health Care Spending:					
Minnesota	$7,451	$7,657	$8,142	$8,423	$8,520
U.S.	$8,421	$8,620	$9,028	$9,491	$9,832
Health Care Spending as a Share of the Economy:					
Minnesota	13.7%	13.6%	14.0%	14.2%	13.9%
U.S.	16.3%	16.2%	16.4%	16.7%	17.0%

Source: MDH, Health Economics Program; MDH analysis of the Centers for Medicare & Medicaid Services: 2016 National Health Expenditure Accounts, NHE tables (Health Consumption Expenditures); U.S. Department of Commerce, Bureau of Economic Analysis: Gross Domestic Product (nominal), updated through May 4, 2018 for Minnesota and August 29, 2018 for the United States, accessed on September 24, 2018. Health care spending includes medical and prescription drug spending.

Appendix Table B1 shows annual health care spending growth (from the prior year), per capita spending, and the share of the economy devoted to health care spending for both Minnesota and the United States from 2012 through 2016. Annual health care spending has grown each year in Minnesota and the United States, averaging 4.1 percent per year in Minnesota and 4.7 percent per year in the United States between 2012 and 2016. Over the same period, per capita spending reached $8,500 in Minnesota and nearly $10,000 nationally in 2016. Different growth rates, a stronger economy, and lower per capita health care spending in Minnesota, have resulted in the share of the economy devoted to health care spending being lower for Minnesota than the United States.

Table B2: Share of Minnesota Health Care Spending by Payer (2012-2016)

	2012	2013	2014	2015	2016
Public Spending, Total	**46.8%**	**47.4%**	**48.3%**	**49.0%**	**47.2%**
Medicare	20.2%	20.4%	19.7%	20.0%	20.6%
Medical Assistance	20.3%	20.6%	22.7%	22.8%	20.6%
Other Public Spending[1]	6.3%	6.4%	5.9%	6.2%	5.9%
Private Spending, Total	**53.2%**	**52.6%**	**51.7%**	**51.0%**	**52.8%**
Private Health Insurance	38.6%	37.9%	37.5%	37.2%	38.7%
Out-of-Pocket	12.1%	12.2%	11.7%	11.4%	11.6%
Other Private[2]	2.5%	2.5%	2.5%	2.4%	2.5%

Source: MDH, Health Economics Program. Numbers may not sum to total due to rounding.
[1]Other major private payers include private workers' compensation and auto medical insurance.
[2]Other public spending includes government workers' compensation and Veterans Health Administration.

Appendix Table B2 shows the share of public and private payers in Minnesota between 2012 and 2016. The share of public spending for health care in Minnesota increased steadily since 2012, with the exception of 2016. This was due to the decrease in spending for Minnesota Health Care Programs (Medical Assistance and MinnesotaCare, which is included in the "Other Public Spending" payer category) in 2016, driven by changes in how the Minnesota Department of Human Services (DHS) negotiated payments to health plans for state public program enrollees. We anticipate that the decrease in spending for Minnesota Health Care Programs will not continue past 2016.

Table B3: Health Care Spending and Distribution by Categories of Service (2012-2016)

Millions of Dollars	2012	2013	2014	2015	2016	Change from 2014	Change from 2015	Avg. Annual Growth (2012-2015)	Avg. Annual Growth (2012-2016)
Inpatient Hospital	$7,793	$7,946	$8,192	$8,508	$8,492	3.8%	-0.2%	3.0%	2.2%
Outpatient Hospital	$5,796	$5,880	$6,407	$6,758	$6,958	5.5%	3.0%	5.3%	4.7%
Physician Services	$7,680	$7,697	$7,959	$8,268	$8,985	3.9%	8.7%	2.5%	4.0%
Long-Term Care[1]	$5,912	$6,107	$6,469	$6,807	$6,865	5.2%	0.8%	4.8%	3.8%
Prescription Drugs	$4,034	$4,321	$4,918	$5,313	$5,365	8.0%	1.0%	9.6%	7.4%
Dental	$1,317	$1,369	$1,389	$1,522	$1,539	9.6%	1.1%	4.9%	4.0%
Other Professional Services[2]	$1,249	$1,232	$1,350	$1,377	$1,216	2.0%	-11.7%	3.3%	-0.7%
Other Spending[3]	$6,290	$6,918	$7,711	$7,634	$7,653	-1.0%	0.2%	6.7%	5.0%
Total	**$40,072**	**$41,470**	**$44,395**	**$46,187**	**$47,073**	**4.0%**	**1.9%**	**4.8%**	**4.1%**

Distribution of Spending	2012	2013	2014	2015	2016
Inpatient Hospital	19.4%	19.2%	18.5%	18.4%	18.0%
Outpatient Hospital	14.5%	14.2%	14.4%	14.6%	14.8%
Physician Services	19.2%	18.6%	17.9%	17.9%	19.1%
Long-Term Care[1]	14.8%	14.7%	14.6%	14.7%	14.6%
Prescription Drugs	10.1%	10.4%	11.1%	11.5%	11.4%
Dental	3.3%	3.3%	3.1%	3.3%	3.3%
Other Professional Services[2]	3.1%	3.0%	3.0%	3.0%	2.6%
Other Spending[3]	15.7%	16.7%	17.4%	16.5%	16.3%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: MDH, Health Economics Program.
[1] Includes home health care services.
[2] Includes services provided by health practitioners who are not physicians or dentists.
[3] Includes chemical dependency/mental health (2.9 percent), other medical spending (includes not itemized and durable medical equipment; 7.3 percent), health plan administrative expenses and revenues in excess of expenses (4.2 percent), and uncategorized spending (for spending such as public health spending, correctional facility health spending, Indian Health Services, school based spending; 1.9 percent).

Appendix Table B3 shows the change in dollars and the share of spending by categories of service between 2012 and 2016. While all categories of service increased in terms of total dollars spent in most years, the proportion of total dollars (or shares of spending) declined from 2012 and 2016 for some categories of service.

Table B4: Minnesota Private and Public Health Care Spending, Actual and Projected (2007-2026)

	Year	Private	Public	Total
Actual Spending	2007	$20.1	$14.2	$34.3
	2008	$20.7	$15.3	$36.0
	2009	$20.9	$16.3	$37.2
	2010	$20.8	$17.0	$37.8
	2011	$20.8	$17.8	$38.6
	2012	$21.3	$18.8	$40.1
	2013	$21.8	$19.6	$41.5
	2014	$22.9	$21.5	$44.4
	2015	$23.5	$22.6	$46.2
	2016	$24.9	$22.2	$47.1
Projected Spending	2017	$24.7	$24.6	$49.4
	2018	$26.3	$26.6	$52.9
	2019	$28.8	$28.5	$57.4
	2020	$30.5	$30.5	$61.0
	2021	$32.1	$32.9	$64.9
	2022	$34.2	$35.3	$69.5
	2023	$36.6	$38.0	$74.7
	2024	$39.6	$41.0	$80.6
	2025	$42.9	$44.0	$86.9
	2026	$46.5	$47.7	$94.2

Source: MDH, Health Economics Program.

Appendix Table B4 shows the historical and projected spending for private and public payers from 2007 to 2026. By 2026, total spending is expected to double to $94.2 billion.

Appendix C: Comparisons of Actual to Projected Health Care Spending, 2016

Background

The Minnesota Department of Health (MDH), Health Economics Program was tasked with developing projections of health care spending in Minnesota and placing them in the context of actual trends.[73] Beginning with the 2009 report on health care spending and projections, MDH worked with a contractor to develop health care spending projections that excluded the impact of the health reforms. Estimated actual spending was then compared to these projections, and the resulting difference analyzed to identify the portion attributable to state-administered programs, including Medicaid, MinnesotaCare, and the State Employee Group Insurance Program (SEGIP).[74]

The point of this exercise was not to assess technical precision—how accurately MDH forecasted future spending—but rather to gauge to what extent actual spending deviated from what would have been expected without the health reform legislation.[75] Furthermore, the desire in performing this analysis was to gain insight and understanding into whether spending trends, or changes in the level of spending, moved in a desirable direction. It is important to note that exercises such as this are associated with substantial technical complexities and limitations, and that projections do not capture impacts from future policy changes and other factors that evolve over time.

Between 2008 and 2013, MDH performed this analysis six times. In half of the years, we found actual spending to be *greater* than projected spending without reforms, and in the other half found actual spending to be *lower* than projected spending without reforms. When actual spending was *lower* than projected spending without reforms, we analyzed what portion of the savings was attributable to the state-administered programs (Medicaid – Medical Assistance and MinnesotaCare, and SEGIP). In our 2013 report on health care spending and projections, we certified that the difference between actual and projected spending attributable to state-administered programs was greater than $50 million. This triggered the repayment of the transfer stipulated in 62U.10, Subd. 4.[76]

As discussed in our 2014 report on health care spending and projections, the health care market and health policy space are never static.[77] Between 2010 and 2014 there were particularly dramatic changes, including the implementation of the Patient Protection and Affordable Care Act (ACA), provider consolidation, changes in payment practices and the emergence of pricing pressure from prescription drugs and new technology. One consequence of that dynamic is that it is no longer a

[73] Minnesota Statutes 62U.10, subdivision 1-5.

[74] Minnesota Statutes, Section 62U.10, subd., which defines the difference between actual and projected spending as "savings," ties the accumulation of this difference to a potential transfer of $50 million from the state's General Fund to the Health Care Access Fund.

[75] Minnesota Laws of 2008: Chapter 358--S.F. 3780.

[76] Minnesota Department of Health, Health Economics Program: Minnesota Health Care Spending and Projections, 2011. December 2013.

[77] Minnesota Department of Health, Health Economics Program. "Minnesota Health Care Spending: 2014 Estimates and Ten-Year Projections." October 2018.

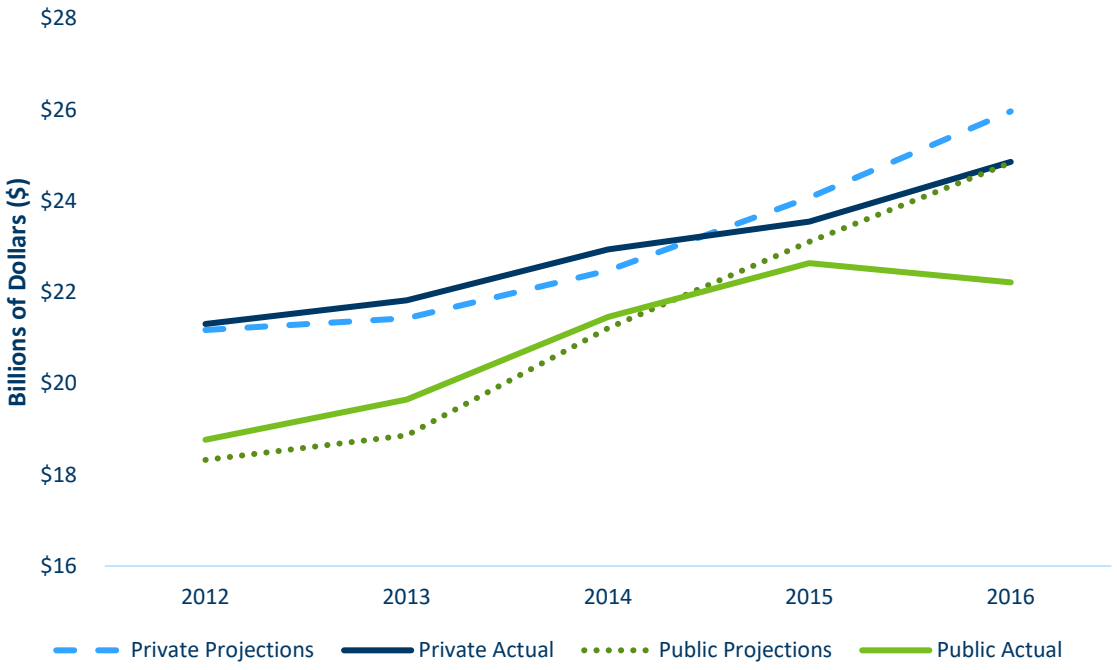
realistic analytic exercise, nearly a decade later, to isolate any remaining, independent influence of the Minnesota 2008 health reforms on trends in health care spending.

Nevertheless, comparing actual spending to previous projections does allow us to understand how variable our expectations for health care spending are and how difficult it is to forecast the impact of policy initiatives. To that end, we compare our *spending projections* for the years 2012 through 2016 to *actual spending* for 2012 through 2016.

Results

In Figure C1, we illustrate how actual and projected health care spending for private and public payers has varied over time, using our spending projections that began in 2012. We see that projected spending for private payers and public payers was higher than actual spending over the most recent two years (2015 and 2016), but lower in the preceding years.

Figure C1: Comparison of Spending Projections with Actual Spending, 2012 to 2016, by Sponsor of Coverage



Source: Historical spending estimates from MDH, Health Economics Program; projections from Mathematica Policy Research.

This comparison tells us that our near-term projections that specifically accounted for the impact of the ACA (in 2012) were fairly accurate, although spending has adjusted to the new realities of the ACA perhaps more quickly than assumed in 2012. Secondly, it demonstrates that our projections cannot fully account for unexpected major deviations. The decrease in actual public health care spending, as noted earlier in the report, was driven by changes in how the Minnesota Department of Human Services (DHS) negotiated payments to health plans for state public program (e.g., Medicaid

and MinnesotaCare, or Minnesota Health Care Programs) enrollees for 2016; a trend which is not expected to continue. The reason for the change in private spending may be due to decreased private health insurance enrollment, which was not expected. Prior to the ACA, it was anticipated that private health insurance coverage in Minnesota would increase more than it actually did.

Appendix D: Health Care Spending Estimate and Projection Methodology

Overview

The Minnesota Department of Health's (MDH), Health Economics Program (HEP) has been generating annual estimates of total health care spending for state residents for over 20 years, with estimates going back to 1993. MDH estimates health care spending not only in aggregate, but also by payers and categories of service. Generally, the data sources used for the development of Minnesota's health care spending estimates are provided in fairly aggregated form; thus, no patient-level information on volume or utilization and location of health care services is available.

What is "Health Care Spending"?

- The amount spent each calendar year (January 1 to December 31) as for Minnesota residents on:
  - Medical care and prescription drug costs;
  - Public health and administrative costs (to the government – federal, state and local); and
  - Program administrative costs and health insurer profits (i.e., net cost of insurance).
- Estimates do not explicitly include:
  - Private philanthropic care and investments (i.e., non-commercial research, structures, and equipment) in our spending estimates;
  - Charity care from hospitals or other providers, unless the costs are part of a "transactional" cost of care, meaning the item is part of a medical claim or is funded by public program payments; and
  - Capital expenditures by hospitals, clinics, and other providers, except in the sense that these costs are included in the prices paid for medical care from these providers.

The data originate with payers of health care expenditures, such as health plans, government agencies, and consumers. Minnesota's approach to spending estimates is a bottom-up approach, in that all health care spending for consumers is tracked by the source of payment. This is an important distinction from the top-down approach used by the Centers for Medicare & Medicaid Services (CMS); CMS uses a data flow from providers or equivalent estimates to construct their national spending estimates. While MDH works to align with the CMS framework, using similar payer and categories of service, the data sources used by CMS are not available with the geographic specificity necessary to directly reproduce these estimates. As such, MDH utilizes the CMS framework by following their categorization by payers and by categories of service, but by using different data sources that are available on a state-specific basis.

In addition to estimates of historic spending, MDH contracts with an outside consultant to develop projections of future health care spending. Similar to the spending estimates, projection models are refreshed and computed annually to incorporate new estimates, move the projection window forward, and maintain alignment with methods and data updates employed by CMS.

This document outlines the methodological approach used to generate the historical spending estimates and projections. It identifies data sources and key assumptions made when working to

isolate annual trends in expenses resulting from the use of health care services ("health care consumption") by Minnesota residents. Estimated and projected spending are divided by payers and into categories of service.

Estimating Historical Health Care Expenditures

Data on health care spending are available in aggregated form, generally submitted to MDH by payers of health care services. This means expenditure data that would allow for *detailed* decomposition of expenditure trends into drivers of health care growth, such as changes in mix of services (e.g., technology), health care demand due to aging or other population factors, or unit prices of various products and services are not readily available.

Changes to Historical Methodology

MDH utilizes the most up-to-date available data sources when creating health care spending estimates, including both public and not public sources. As a result, MDH's historical health care spending estimates are *not* static, meaning that estimates from previous years are revised on an annual basis (e.g., for the spending report that includes 2016 as the most recent year of estimates, we historically updated data for all prior years). This is similar to many of our data producers who update their data on an ongoing basis, like the federal government for Medicare spending or the Centers for Medicare & Medicaid Services (CMS) National Health Expenditure Accounts (NHEA).

On an annual basis, we routinely consider and review details[78] such as if:

- There has been a change in the data collection process by a data provider;
- The data source used for analysis continues to be available;
- The definitions for categories of service have stayed consistent;
- New source data becomes available;
- Methodology can be improved; and
- National spending estimates produced by CMS changed source data or methodology.

We attempt to make updates to historical spending for at least five years if we use a new source of data, unless it is not available historically. In cases where there is a new source of data, or the methodology for a particular data source changed, we attempt to blend data to eliminate large fluctuations, particularly for categories of service spending, over time.

Data Sources

The sources of funding are grouped by payer using similar categories to the National Health Expenditure Accounts (NHEA), a nationwide spending estimate conducted by CMS. The broad categories include private health insurance, out-of-pocket spending, spending by other private payers, and spending by public payers, including Medicare, Minnesota Health Care Programs (MHCP), and other public sources. In addition to health care spending, data on types of health insurance

[78] This is not an exhaustive list, rather it is an example of the types of questions we consider as we generate and revise our historical health care spending estimates.

coverage and the state population are used to estimate per capita and per-enrollee spending, and the size of the overall Minnesota market. As shown in Table D1, we use a number of primary data sources to create health care spending estimates. The first three data sources, covering private spending, spending for state public program enrollees, and Medicare fee-for-service program spending, consistently capture the majority of total health care spending in the state.

Table D1: Major Data Sources Used in Minnesota Health Care Spending

Data Source Name	Types of Data	Sources of Data	Data Use
Health Plan Financial and Statistical Report (HPFSR)	Aggregated expenditure data, enrollment, revenue	Group purchasers (health plan companies)	Fully-insured and self-insured private health plans, Medicare Advantage, Medicare Supplement, and Medicare Prescription Drug Plan spending
Reports and Forecasts Division, Minnesota Department of Human Services (DHS)	Aggregated expenditure data, enrollment	Minnesota DHS	Minnesota Health Care Programs (MHCP) spending
Medicare Fee-for-Service (FFS) Spending Estimate	Aggregated expenditure	Centers for Medicare & Medicaid Services (CMS)	Medicare spending
Medicare Part D	Expenditure data, enrollment	Group purchasers (health plan companies), CMS	Estimating Medicare Part D and Medicare Advantage-PDP spending
Medical Expenditure Panel Survey (MEPS)	Out-of-pocket cost estimates	Agency for Healthcare Research and Quality (AHRQ)	Estimating out-of-pocket costs
National Health Expenditure Accounts	Out-of-pocket cost estimates	CMS	Estimating out-of-pocket costs
Various administrative reports and data	Aggregate expenditures, enrollment	Federal and state agencies	Other public and private spending

The remainder of this section discusses approaches to estimating spending by primary payers in two broad categories: private and public sources of spending.

Private Expenditures

Private payer spending includes all health care expenses incurred by non-public contributors to health care financing. This includes claims paid by private insurers, costs paid by consumers out-of-pocket, and expenses paid by other entities such as automobile insurance carriers, third-party administrators, and others.

Private Insurance

For the fully-insured market, estimates of private health insurance spending are computed using data reported to MDH by health insurance carriers licensed to provide health insurance coverage in Minnesota. The vehicle of data collection is the annual Health Plan Financial and Statistical Report (HPFSR). Carriers report the data by 13 categories of service and by type of insurance product, which means the data system includes information beyond private insurance spending, like spending for people with Medicare Supplement coverage. Spending under Medicare Supplement policies is calculated consistently with commercial spending. Our commercial market health care spending estimates include individuals who have fully-insured health insurance coverage through an employer, or purchased it individually (i.e., coverage purchased on the individual market directly from a health insurance carrier, through MNsure, or through a broker).

A significant share of privately insured Minnesotans (approximately 65 percent) receive coverage through self-insured employers. Total self-insured spending is estimated by creating a product of a calculated per capita ratio of fully-insured to self-insured spending and an estimate of the number of self-insured Minnesotans. The estimate of the number of self-insured residents in Minnesota is derived as a population residual using information on the distribution of health insurance coverage for Minnesota residents.

High-Risk Pools (Ended in 2014)

Spending for Minnesotans who were covered in two high-risk pool programs – the Minnesota Comprehensive Health Association (MCHA) and the federal Pre-existing Condition Insurance Plan (PCIP) – was calculated separately for each program. MCHA spending was derived from aggregated claims data obtained from the plan administrator in Minnesota. PCIP private spending was calculated based on reported average monthly premiums per enrollee. The portion of PCIP spending that was funded by the federal government for the small number of Minnesota enrollees is included in the analysis as public spending (under other public spending). In 2014, both MCHA and PCIP programs terminated due to the onset of additional Patient Protection and Affordable Care Act (ACA) provisions. MCHA ended December 31, 2014 and PCIP ended April 30, 2014.

Medicare Advantage Private Expenses

Health insurance carriers offering Medicare Advantage policies report those expenditures via the HPFSR to MDH. The expenditures are divided between public and private payer categories by subtracting CMS capitation payments from total expenditures to provide an estimate of the additional premiums paid by enrollees to cover costs, exclusive of cost sharing.

Out-of-Pocket Costs

MDH estimates out-of-pocket spending from a ratio of national estimates of out-of-pocket spending to covered-spending (the share of spending paid by an insurance carrier). This analysis is conducted at the expenditure category level and is based on aggregated health expenditure data drawn from the household component of Medical Expenditure Panel Survey (MEPS) (Midwest) and the NHEA. MDH weights this ratio to the distribution of coverage in Minnesota, to account for the difference in coverage distribution between Minnesota and the Midwest region overall. The results are multiplied by an estimate of Minnesota-covered spending. Due to delays in data availability, the most recent year of out-of-pocket spending is estimated based on average ratios of out-of-pocket spending to total spending for the preceding three years of data. Future spending reports are updated once data for that year is available.

Other Private Spending

Other private spending includes spending estimates for a number of smaller-volume payers, including workers' compensation spending for non-government workers and automobile insurance medical spending. Health care spending for the private portion of the workers' compensation program is calculated as the product of total spending and a ratio of private-to-public employment. The estimate of health care spending paid by automobile insurance, the other component of this spending category, is based on a ratio of medical paid losses to total paid losses. This ratio, which is derived from "Best's Averages & Aggregates," a publication for the property and casualty industry, is applied to an estimate of total Minnesota paid losses, estimated from historic data on medical paid losses.

Public Expenditures

Public expenditures include public spending for government-sponsored health insurance programs, such as Medicare, Medical Assistance (Medicaid) and MinnesotaCare, and spending for other programs including the Veterans Health Administration, Department of Defense (for TRICARE), workers' compensation, state and federal correctional systems, and public health.

Medicare

Medicare expenses include costs for beneficiaries enrolled in fee-for-service (FFS) Medicare and payments made to health plans as part of the Medicare Advantage and Prescription Drug programs – again, the private portion of these payments is included in private spending. FFS spending is based on a series of data tables prepared by CMS for Minnesota (residence-based) Medicare Parts A and B spending. An estimate of managed care payments (capitation) paid by CMS to Medicare Advantage plans is added to this value for public Medicare spending. The amount Medicare Advantage plans report on the HPFSR as revenue from CMS is used to represent public Medicare capitation payments.

Prescription drug spending for beneficiaries enrolled in standalone Medicare Part D and the prescription benefit included in some Medicare Advantage plans is based on reporting from CMS, adjusted for pharmacy rebates and member spending (already accounted for within out-of-pocket spending estimates). Due to delays in data availability, estimates for the most recent year of prescription drug spending are based on trending the prior year's prescription drug per member

spending against current year enrollment. All data are benchmarked against CMS monthly enrollment reports, when possible, and updated when new data is available.

Minnesota seniors eligible for both Medicare and Medicaid may enroll in Minnesota Senior Health Options (MSHO), a program that blends Medicare and Medicaid benefits into one managed care product. CMS and the Minnesota Department of Human Services (DHS) make capitated payments directly to the managed care organizations (HMOs).[79] These HMOs report revenue and expenditures as part of their annual financial reporting on the Minnesota Supplement Report #1. To avoid double counting of expenses and ensure accurate allocation of payer-type data, DHS administrative records are used to subtract Medicaid contributions to MSHO, leaving the Medicare capitations. The distribution of these payments across service categories is calculated based on the distribution observed for Medicare Advantage enrollees. The remaining payment stream (the DHS capitation amounts) is captured in Medical Assistance managed care spending within Minnesota Health Care Programs.

Minnesota Health Care Programs

Spending estimates for Medical Assistance (MA), Minnesota's Medicaid program, are computed separately for the managed care and FFS portions of the program. DHS reports MA FFS data directly. The managed care component of health care spending for MA are distributed across categories of service using historical estimates provided by DHS. 2013 and 2014 spending included estimates on the additional federal funding related to the temporary (2013 and 2014) ACA provision that increased payments for primary care services to be equal to Medicare Part B payments. To avoid double counting of expenses, payments for Individualized Educational Program (IEP) and medical transportation services spending captured in estimates for school-based health care spending are removed.

Aggregated MinnesotaCare spending by calendar year is obtained from the DHS Reports and Forecasts division. DHS also provided historical expenditure distributions that MDH used to allocate spending across categories of service. Historically, the methodology for deriving spending estimates for enrollees in MinnesotaCare and GAMC was nearly identical. However, GAMC underwent significant program changes in fiscal year 2010. For 2010 and 2011, spending estimates are based on program reports for each component. They explicitly include budgetary expenses that the DHS Forecast no longer carries. This reconfigured program ended in 2011, and remaining enrollees moved to Medical Assistance.

In our reporting, Medical Assistance is its own category, while MinnesotaCare is included in the Other Public spending category.

[79] Health Maintenance Organizations (HMOs) are defined and regulated under Minnesota Statutes Chapter 62D; the Minnesota Department of Human Services is only allowed to contract with licensed Minnesota HMOs to provide services to enrollees in Minnesota Health Care Programs.

Other Public Spending

In addition to Medicare and Minnesota Health Care Programs, the estimate of public health care spending includes spending by the Veterans Health Administration, Department of Defense (for TRICARE), government workers' compensation, public health programs, the Indian Health Service (IHS), school-based health care spending, and the state and federal correctional systems.

Veterans Health Administration health care spending for Minnesota beneficiaries (medical care and general operating expenses) is obtained directly from the U.S. Department of Veterans Affairs website. Federal fiscal year data are converted to calendar years and allocated across expenditure categories based on historic information from the U.S. Office of Management and Budget (for years prior to 1997) and from the CMS NHEA (for years 1997 forward). In limited circumstances when the most recent fiscal year is not available, a five-year annual growth rate trend is applied. Future spending reports are updated with complete data once data is available. The Department of Defense (DOD) reports TRICARE spending.[80] They report the data by expenditure category, which are aligned to those in the Minnesota estimation model.

Estimates of workers' compensation spending for state and local employees rely on data from the Minnesota Department of Labor and Industry (DOLI). Total Minnesota non-federal workers' compensation claims are multiplied by the share of the workforce employed by state and local government units. Estimates of workers' compensation spending for federal employees who are Minnesota residents are based on total federal workers' compensation expenses in the state from the U.S. Department of Labor.

The estimate of public health spending for the state of Minnesota draws on data from a range of sources to estimate spending at the federal, state, and local public health level. The federal public health care spending estimate relies on data from USASpending.gov, the U.S. Department of Health & Human Services Health Resources and Services Administration data warehouse, and the Substance Abuse and Mental Health Services Administration website, which reports information on block grants and other major federal grant programs. State public health data are obtained from the DHS forecast and from a division of MDH that awards public health grants to local public health departments. Those data are converted from federal and state fiscal year to calendar year.

The estimate of data on federal health care spending by the Indian Health Service (IHS) are obtained from the IHS Bemidji area office and converted to a calendar year estimate. Because the data are not available by expenditure categories, all IHS expenditures are currently reported as uncategorized other public spending.

MDH's estimation approach includes spending estimates for the medical care of individuals incarcerated in federal prisons located within the state and in state correctional facilities. The federal data are obtained directly from the Federal Bureau of Prisons. Data on medical spending at state correctional facilities is obtained directly from the Minnesota Department of Corrections. To calculate

[80] TRICARE is health insurance coverage for members of the United States Military and their families.

state spending, MDH multiplies per diem costs for "health services" and "behavioral health" by the average annual population utilizing health services in state correctional facilities.

The estimate of school-based health care spending draws on a range of sources, and specifically estimates spending for public schools, non-public schools, Individualized Educational Program (IEP)/medical transportation, and school-based health clinics. Spending estimates begin in calendar year 2001, as prior year data was not available. Public school-based spending is estimated by multiplying full-time equivalent (FTE) job classification school nurse data from the Minnesota Department of Education by an estimate of school nurse salaries based on the Registered School Nurse salary estimates from the U.S. Bureau of Labor Statistics, Occupational Employment Statistics. Non-public school-based spending uses data from the Minnesota Department of Education converted to a calendar year estimate. IEP planning and medical transportation services spending uses data from the Minnesota Department of Human Services (DHS). School-based clinics spending is based on completed data requests from Minnesota school-based clinics; for clinics without available data, the spending estimates are extrapolated and averaged from completed data requests.

Lastly, to align with CMS' NHEA methodology, we began to include estimates of the ACA's Advanced Premium Tax Credit (APTC) as uncategorized other public spending. We based the estimate on data received from MNsure. Data related to the ACA's Cost-Sharing Reductions (CSR) are assumed to be included in the 2014 to 2016 estimates of private commercial spending. Overall Minnesota CSR payments are too small (less than $2 million) to have a significant impact on the total health care spending estimates.

Differences between MDH and CMS Estimation Approaches

As mentioned earlier, Minnesota has developed health care expenditure estimates since the mid-1990s, relying on data explicitly collected from payers for this effort and advancing the methodological approach and data sources used over time. While the data used for Minnesota's estimates differ from those at the national level—Minnesota uses data from payers, while the NHEA from CMS largely relies on data from providers— by design both estimates use similar categories for payers and categories of service. Minnesota compares its results relative to a subset of CMS expenditure data, the health consumption category, which includes spending for personal health care, government administration, the net cost of private health insurance, and government public health activities. Both estimates exclude resources spent on investments and research that are not explicitly built into prices by providers and paid for by payers. This category of national spending offers the best comparison with the Minnesota estimates, and provides context for spending, both at a per capita level, and as a percent of the economy.

Systemic differences do exist between Minnesota's state spending analysis and CMS' effort to estimate the state portion of their national health expenditure account initiative. CMS historically had developed the State Health Expenditure Account (SHEA), in which CMS attempted to translate expenditures at the point of service into a point-of-residency perspective in order to estimate state-level health spending for personal health expenditures. The estimates involved a two-step process of

first generating estimates based on provider location, and then, using Medicare claims data, estimating the extent to which residents crossed state lines for care.[81] A historical independent analysis by an MDH contractor of the CMS SHEA approach did not reveal any factors that suggest CMS' approach is characterized by methodological strengths relative to Minnesota's approach, or vice versa. Rather, the CMS approach appears to be a tool that uses statistical methods to compensate for a lack of available data that is comparable for all (or most) states by apportioning a pre-defined spending amount across the nation.

Health Care Expenditure Projections

Minnesota develops projections for the primary purposes of projecting future health care spending, as required by Minnesota Statutes, section 62U.10. MDH contracted with Mathematica Policy Research to develop the macroeconomic model used to project health care spending for this report (2017 through 2026). The method to develop health care spending projections is based on the methodology used by CMS to produce national health care spending projections, and, where appropriate, is customized to Minnesota's health care and data environment, based on the current policy landscape.[82]

For all spending projections, a growth rate specific to each year is projected, and applied to actual spending from the preceding year. In previous years, projections to estimate what future spending would have been without the impact of 2008 Minnesota health care reforms, or the Patient Protection and Affordable Care Act (ACA), were also undertaken. Now nearly ten years removed from 2008 reforms, and with full implementation of the ACA that began in 2014, continuation of this projection series is no longer a realistic analytic endeavor, as discussed below and in Appendix C.

Macroeconomic Forecast

Similar to CMS' projection approach, Minnesota's approach aims to project an overall model of health care spending. It does so by modeling payer and service categories and benchmarking results to form a more predictive total spending model.

Public Spending

Three types of public spending are included in the MDH projections: Medicare, Medical Assistance (Medicaid), and other public spending (which includes MinnesotaCare). Projected values for each are determined separately.

- Medicare spending projections are based on growth rates published by the CMS Office of the Actuary.

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[81] Further information on the methodology used by CMS to generate state-level spending estimates through 2016 can be found on the CMS State Health Expenditure web site https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsStateHealthAccountsResidence.html

[82] CMS projection methodology is available at the CMS projection methodology website: https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/index.html. MDH works to align its projections with the CMS methodology framework.

- MHCP projections, which include Medical Assistance, MinnesotaCare, and (prior to 2011) GAMC, are derived from the Minnesota Department of Human Services (DHS). DHS provided data from their forecast based on program type and demographic categories, which was further summarized by MDH. DHS' forecast only projected spending through state fiscal year 2021, so projections for calendar year 2021 and forward were based on a three- or five-year average growth rate applied to each demographic category. Medical Assistance and MinnesotaCare are projected separately, as MinnesotaCare is ultimately included in the other public spending category. The MHCP projections are one area where projecting spending in absence of the 2008 Minnesota reforms or ACA was no longer feasible. Projections for public spending in the absence of the changes from the 2008 reforms or the ACA were no longer available; nor were continuations of previous projections possible.
- Other public spending, which includes spending for the Veterans Health Administration, Department of Defense (for TRICARE), and public workers' compensation, is calculated by applying a three- or five-year average growth rate to each category (depending on which average was the best approximation of recent growth and least likely to be influenced by any outliers) beginning with calendar year 2017.

Private Spending

Future private spending is projected by estimating a series of regression models using historic spending estimates and macroeconomic data for the years 1993 through 2016. The method utilized by MDH and its contractor is designed and updated to align with CMS methods as much as is appropriate. Again, this process determines the historic relationship between macroeconomic variables and health care spending, aiming to hold this pattern constant. After fitting the historic data, future spending is estimated using projected macroeconomic factors as explanatory variables. Spending is projected in total and also by private payer type and by categories of service.

Each individual model includes a subset of the following as explanatory variables:

- **Price Index:** Estimates of national price indices are generated by CMS for each expenditure category. The price indices were then adjusted to reflect Minnesota price levels (note, this is a change from previous years).
- **National Real Per Capita GDP and Nominal Personal Income:** Estimates are obtained from the U.S. Department of Commerce, Bureau of Economic Analysis.
- **Minnesota Real Per Capita Personal Income:** Estimates and projections are obtained from forecasts by Minnesota Management and Budget (MMB). When certain projection year data were not available from MMB, estimates were projected using prior year growth trends. In line with CMS methodology, public health care spending is subtracted to better approximate income of the population that accounts for private health care spending. This value is divided by population estimates for per capita values.
- **Minnesota Real Per Capita Public Spending:** Public health care spending projections were estimated outside the models, based on growth rates in past public spending.

- **Minnesota Employment:** Estimates and projections are obtained from non-farm employment forecasts by Minnesota Management and Budget.
- **Time Trend:** A time trend is included in line with the methods used by CMS. The variable is created by subtracting 1993 (the first year of historic data) from the observation year.

Using these variables, models are run in aggregate and by payer type and categories of service. Payer type and categories of service models are then constrained so that the sums of estimates from the individual models are equal to the projected aggregate spending.

Limitations of Projection Model

The macroeconomic projection model is successful at explaining past trends in health care spending (the R-squared value of the total spending model including Medicare and Long-Term Care Spending is 0.8997). However, similar to any exercise in projection, the results are subject to considerable uncertainties due to the range of necessary assumptions about future trends.

Because a number of macroeconomic factors predict private spending, the projection relies on the accuracy of the underlying explanatory variables. If the explanatory variables are predicted incorrectly, then the spending estimates will also be incorrect. For example, if GDP in Minnesota does not increase as projected in 2019 due to slow economic growth, health care spending estimates for 2019 may be inaccurate.

Even with accurately predicted explanatory variables, the accuracy of projections can be affected by external factors, such as changes in federal policy or economic shocks, like the Great Recession, that are not built into the historic relationship between explanatory variables and health care spending. Similar to limitations with national projections developed by CMS, MDH's approach aims to update model specifications to capture those trends; however, given that the model is macroeconomic in nature and the shifts might not carry through into the specific explanatory variables, the adjustment is only a best approximation. In addition, the soundness of the historical data, both about how much of the "signal" of underlying trends they carry and the length of the timeline from which to extract relationships between spending and explanatory factors, can be an important limitation. Minnesota's historical data, while strong because of its consistency and the method by which it is aggregated, still represents a relatively short time series.

Minnesota Department of Health
Health Economics Program
PO Box 64882
Saint Paul, MN 55164-0882
651-201-3550
health.HEP@state.mn.us