DEPARTMENT OF HEALTH

Minnesota Health Care Spending: 2017 Estimates and Ten-Year Projections

REPORT TO THE MINNESOTA LEGISLATURE

September 2020

Minnesota Health Care Spending: 2017 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

Additional Content on Health Care Spending Estimates is also available:

- Key Findings Infographic (www.health.state.mn.us/data/economics)
- The Health Care Spending Dilemma (video, www.health.state.mn.us/data/economics)
- Health Care Markets Chartbook Section 1: Health Care Spending and Cost Drivers (www.health.state.mn.us/data/economics/chartbook)
- Policy Short Take: State Policies that Establish Health Care Spending Targets (www.health.state.mn.us/data/economics)

As requested by Minnesota Statute 3.197: This report cost approximately $158,075 to prepare, including contracts, staff time, printing and mailing expenses.

DEPARTMENT OF HEALTH
HEALTH ECONOMICS PROGRAM

DEPARTMENT OF HEALTH

Protecting, Maintaining and Improving the Health of All Minnesotans

September 8, 2020

The Honorable Michelle Benson, Chair
HHS Finance & Policy Committee,
Minnesota Senate
3109 Minnesota Senate Building

The Honorable Jim Abeler, Chair
Human Services Reform Finance & Policy
Committee, Minnesota Senate
3215 Minnesota Senate Building

The Honorable Tina Liebling, Chair
HHS Finance Committee
Minnesota House of Representatives
477 State Office Building

The Honorable Rena Moran, Chair
HHS Policy Committee
Minnesota House of Representatives
575 State Office Building

The Honorable John Marty, Ranking Member
HHS Finance & Policy Committee,
Minnesota Senate
2401 Minnesota Senate Building

The Honorable Jeff Hayden, Ranking Member
Human Services Reform Finance & Policy
Committee, Minnesota Senate
2209 Minnesota Senate Building

The Honorable Joe Schomacker, Ranking Member
HHS Finance Committee
209 State Office Building

The Honorable Debra Kiel, Ranking Member
HHS Policy Committee
Minnesota House of Representatives
255 State Office Building

To the Honorable Chairs and Ranking Members:

The Minnesota Department of Health (MDH) has estimated total health care spending for Minnesota residents dating back to 1993. Since 2010, we have also developed projections of health care spending in the state, which we use as benchmarks for actual trends.

This report summarizes the latest trends in Minnesota resident health care spending from calendar year 2017, released belatedly due in part to MDH's COVID-19 response. As in previous years, an actuary has certified the appropriateness of the data used, methodologies employed, and assumptions made in constructing our estimates and projections. This latest report does not consider any potential impacts of the COVID-19 pandemic on projected health care spending. Those will be addressed as part of the 2018/2019 legislative report, which we expect to release in spring 2021. The major findings from this annual, legislatively mandated analysis for 2017 are as follows:

- For the first time, health care spending in Minnesota crossed $50 billion.
- Growth in Minnesota health care spending accelerated, rising 5.3 percent compared to the previous year.

- With Medicare spending growing 7.3 percent and Minnesota Health Care Programs (MHCP) outlays rising 8.3 percent, public spending was a significant driver of Minnesota spending growth.
- Health care spending grew more quickly than the Minnesota economy (5.3 percent and 3.5 percent, respectively), raising the portion of the state's economy devoted to health to 14.4 percent.
- Private spending continued to account for more than half of all Minnesota health care spending (50.5 percent).
- Two categories of service – hospitals (inpatient and outpatient) and long-term care (including waiver services, nursing homes, and home health care) – drove most of the spending growth in 2017 (61 percent).
- Health care spending, rising at an accelerated rate of growth, is expected to nearly double over the next decade – by 2027, it is expected to by just below $100 billion.

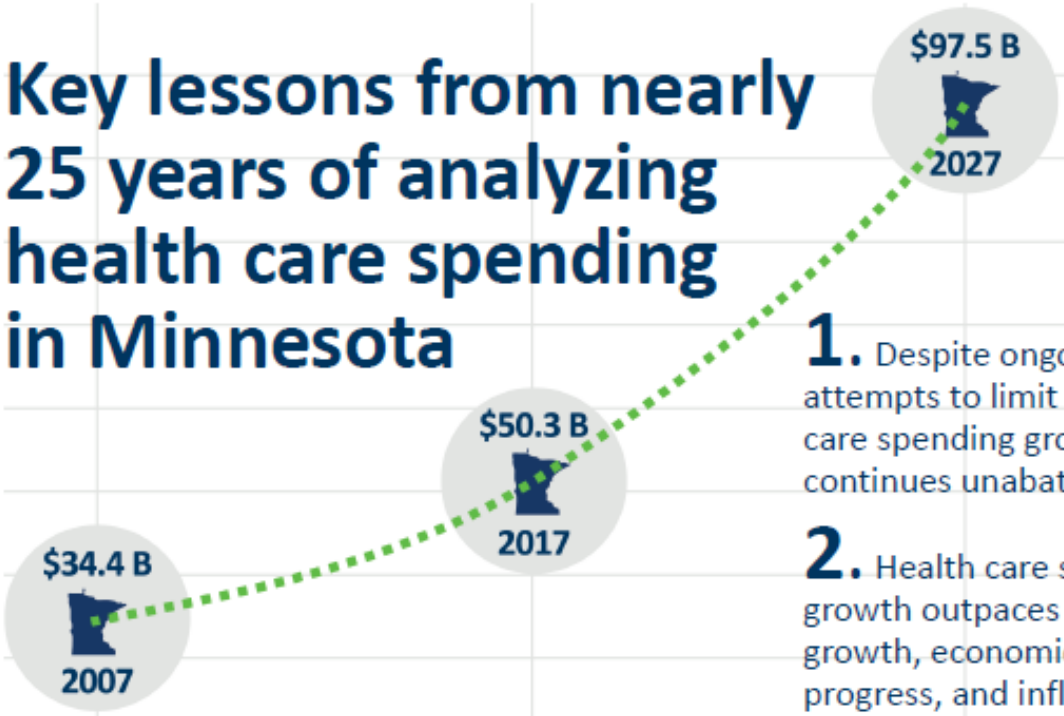
This, and previous reports, are available on the Health Economics Program website, www.health.state.mn.us/healtheconomics. Questions or comments on the report may be directed to Stefan Gildemeister, the State Health Economist at (651) 201-3550 or health.hep@state.mn.us.

Sincerely,

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

Table of Contents

Key lessons from nearly 25 years of analyzing health care spending in Minnesota



1. Despite ongoing attempts to limit health care spending growth, it continues unabated.

2. Health care spending growth outpaces income growth, economic progress, and inflation.

$9,028 WAS SPENT PER PERSON IN 2017

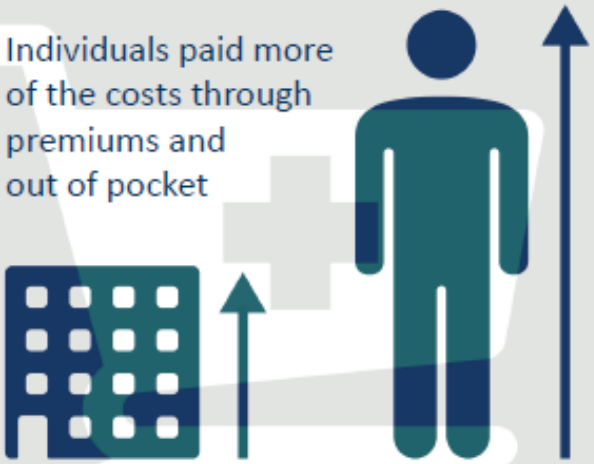
HOSPITAL SPENDING WAS RESPONSIBLE FOR 2/5 OF 2017 SPENDING GROWTH

LONG-TERM CARE COSTS ARE MAINLY ATTRIBUTABLE TO MEDICAID AND OUT OF POCKET

For additional information and the complete report, please visit the Minnesota Department of Health, Health Economics website at www.health.mn.gov/data/economics

OVER THE PAST 20 YEARS

Individuals paid more of the costs through premiums and out of pocket



2X INCREASE IN PRIVATE HEALTH INSURANCE SPENDING

4.5X INCREASE IN INDIVIDUAL COSTS

Source: MDH Health Economics Program.
Individuals' estimated costs, including cost-sharing and enrollee premiums, are based on health plan reports for the Minnesota fully-insured commercial market between 1998 and 2017. All other data reported in this infographic is based on total health care spending for Minnesota residents.

DEPARTMENT OF HEALTH

Executive Summary

The Minnesota Department of Health (MDH) has been estimating total health care spending for state residents for 25 years, with historical detail going back to 1993.[1] In 2008, pursuant to major state health reforms, MDH began to produce ten-year health care spending projections.[2] These estimates are used by a variety of stakeholders (e.g., policymakers, employers and other purchasers of health care services, providers, and researchers) for budget planning, considering health reforms or policy proposals, strategy work and workforce planning, and benefits considerations, among others.

Total Minnesota Health Care Spending

Following several years of modest health care spending growth, spending by Minnesota residents increased 5.3 percent from 2016, reaching $50.3 billion. Minnesota has seen periods of even higher spending growth in the past; the growth in 2017 was influenced by public payer spending growth.

Health Care Spending by Payers

All payers of health care services continued to experience growth in 2017, albeit at different rates. For example, public payer spending grew at over double the rate of private spending in 2017, 7.9 percent compared to 2.9 percent, and was caused by accelerated growth in Minnesota Health Care Programs (8.3 percent) and Medicare (7.3 percent). Nevertheless, private payer spending continued to account for more than half of all Minnesota health care spending (50.5 percent).

Health Care Spending by Categories of Service

The distribution of health care spending across categories of service (e.g., inpatient hospital, long-term care, etc.) between 2016 and 2017 was relatively unchanged. Hospital spending continued to be the largest category of health care spending in 2017 and represented more than one-third of total spending. In contrast, spending by other categories of service represented lower percentages of spending, ranging from 18.5 percent of total spending (physician services) to 2.4 percent of total spending (other professional services). Increased spending for hospital services, other spending (including chemical dependency and mental health, durable medical equipment, and the net cost of insurance) and long-term care services contributed to more than three-quarters of the 2017 health care spending growth (42.8 percent, 18.8 percent, and 17.9 percent, respectively).

Future Ten-Year Health Care Spending Projections

Our most recent health care spending projections estimate that spending will nearly double over the next ten years, reaching $97.5 billion by 2027. Growth over the next ten years is projected to average 6.9 percent each year, with public payer spending growth expected to be faster than that of private

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

payers (7.6 percent on average compared to 6.3 percent on average between 2018 and 2027), leading public payer spending to represent more than half of all health care spending in the state by 2027. These patterns of spending growth are expected to place increased pressure on government budgets, leading to challenging conversations on which government programs have the highest priority.

Based on health care spending being an increasing concern by businesses, policymakers, and Minnesota residents, last year's report included a synopsis of policy tools that could be leveraged to bend the cost curve. This year, as follow-up, a separate policy short take (State Policies that Establish Health Care Spending Targets), can be reviewed to understand policy levers other states are using to moderate health care spending growth, and levers Minnesota used historically.

Introduction

Establishing and maintaining good physical and mental health for Minnesotans is a complex puzzle with many pieces: from the types of health care services we use and have available to where we live, work, and play. Obtaining access to and using health care services represents a substantial amount of resources for individuals, businesses and governments. The cost of health care is "baked" into countless economic decisions and it affects policy options in Minnesota in both small and substantial ways.

Over the past 25 years, the Minnesota Legislature has been interested in monitoring health care spending across the state and understanding factors that influence these trends over time and across the spectrum of care delivery.[3] To help the Legislature track total current and future health care spending in the state, the Minnesota Department of Health (MDH) was tasked with establishing and reporting trends in actual health care spending, and then developing projections of future health care spending, which has been undertaken by the Health Economics Program.[4]

This is the ninth report the Health Economics Program (HEP) has submitted to the Legislature. In it, we break down Minnesota health care spending by presenting:

- Estimates of the total dollars spent by Minnesota residents or on their behalf in 2017;
- Trends by payers of health coverage and categories of service; and
- Projections of future health care spending in Minnesota.

Health care spending estimates provided in this report are developed using *summary* data from a variety of health care payers, rolled up to the state level, as shown in Figure 1. Due to the fractured health care system in the United States, there is no single source of data available to develop these estimates. Instead, the analysis pulls together dozens of data sources that are carefully curated to eliminate double-counting, address gaps and other data limitations, and align reporting timeframes and units of analysis. MDH's final estimates are organized by the *sponsor* of health coverage, which we refer to as *payers*, and by different *types* of health care services, which we refer to as categories of service.

[3] Minnesota Laws of 2008: Chapter 358 S.F. 3780, Minnesota Statutes 62J.04, Minnesota Statutes, Section 144.70.

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

Figure 1: Data Sources Used to Estimate Total Minnesota Health Care Spending

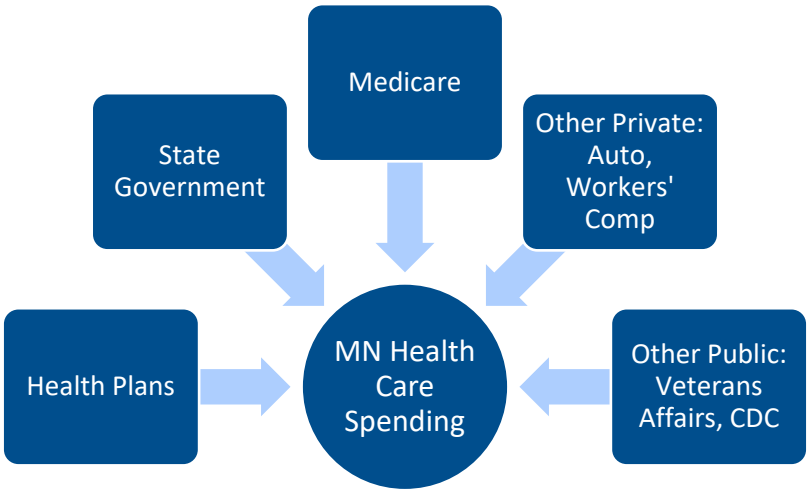


Figure is for illustration purposes only and does not include all data sources used to create annual health care spending estimates for Minnesota residents. See Appendix C for more detail.

Source: Minnesota Department of Health, Health Economics Program.

The nature of the data available for estimating total Minnesota spending prevents us from being able to break down health care spending by sociodemographic factors, including race and ethnicity, geography, incomes, or education levels. Furthermore, within this project, we are not able to directly assess whether the amount of care and health care services used by Minnesotans were sufficient, efficient, quality-based or potentially wasteful. We have pursued some of these questions in a more targeted manner with data and research through separate analyses, most often conducted using the Minnesota All Payer Claims Database (MN APCD) and data from the Minnesota Statewide Quality Reporting and Measurement System.[5]

This report begins by presenting health care spending in 2017. We then examine trends over time and the distribution (percentages) of spending in terms of who pays for it and the types of health care providers and facilities (categories of service) resources are spent on. We conclude with health care spending projections covering the next decade. Throughout the report we provide more in-depth information in areas titled "A Closer Look." In addition, we have prepared the following accompanying information:

- Health Care Market online chartbook series, which provides a visual summary of many key points: www.health.state.mn.us/data/economics/chartbook;
- A "policy short take" or white paper summarizing initiatives undertaken by other states to establish health care spending targets: www.health.state.mn.us/data/economics; and
- A short video aimed at summarizing findings from our report for a lay audience: www.health.state.mn.us/data/economics.

[5] Additional information on the Minnesota All Payer Claims Database and Minnesota Health Care Quality Measures are available online: www.health.state.mn.us/healthreform/allpayer/ ; https://www.health.state.mn.us/data/hcquality/index.html

Health Care Spending in 2017

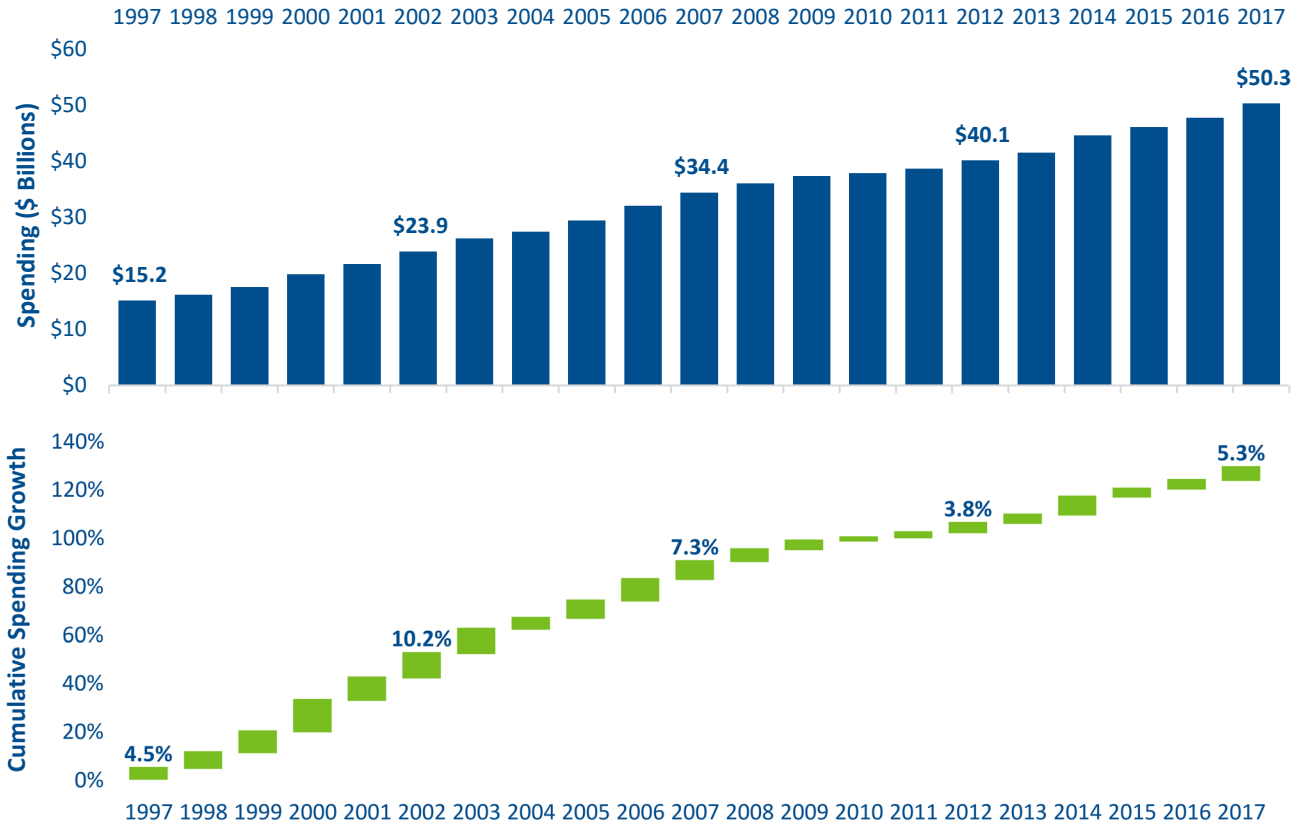
The Minnesota Department of Health has been monitoring health care spending for 25 years. During that time, health care spending has *always* increased from the previous year. Trends in health care spending have fluctuated between periods of modest and accelerated spending growth, directly influenced by changes in macroeconomic conditions and health care policy – such as through expansions in managed care, as well as federal health reforms, such as the implementation of the Medicare Part D prescription drug benefit and the Affordable Care Act (ACA).

Key Findings:

- Health care spending in Minnesota grew 5.3 percent between 2016 and 2017.
- Total spending reached $50 billion for the first time.
- Spending grew faster than the state economy in 2017; it represented 14.4 percent of Minnesota's economy.

Following several years of modest health care spending growth, Minnesota health care spending by and on behalf of *all* Minnesota residents increased more rapidly in 2017. In total, health care spending by all payers of health care goods and services reached $50.3 billion dollars, an increase of 5.3 percent from 2016 (see Figure 2).

Figure 2: Historical Spending and Annual Growth



Source: Minnesota Department of Health, Health Economics Program.

After a decade of growth averaging 8.3 percent per year (1999 to 2008), the past decade has seen the growth rate cut in half, to 3.8 percent. Over the past four years, spending has started to pick up pace again, driven by trends for both public and private payers. In 2017, spending growth in Minnesota was mostly attributable to increased spending in the Medicare and Medical Assistance programs, as discussed later in this report.

Minnesota Health Care Spending in the National Context

Comparing Minnesota spending trends to national trends can provide insight into how geographic, policy or health care market differences might influence patterns in spending and utilization. Moreover, as implementation of recent federal health reform activities has differed substantially between states, comparing state-specific spending trends against national spending trends can help to explore how different implementation strategies played out.

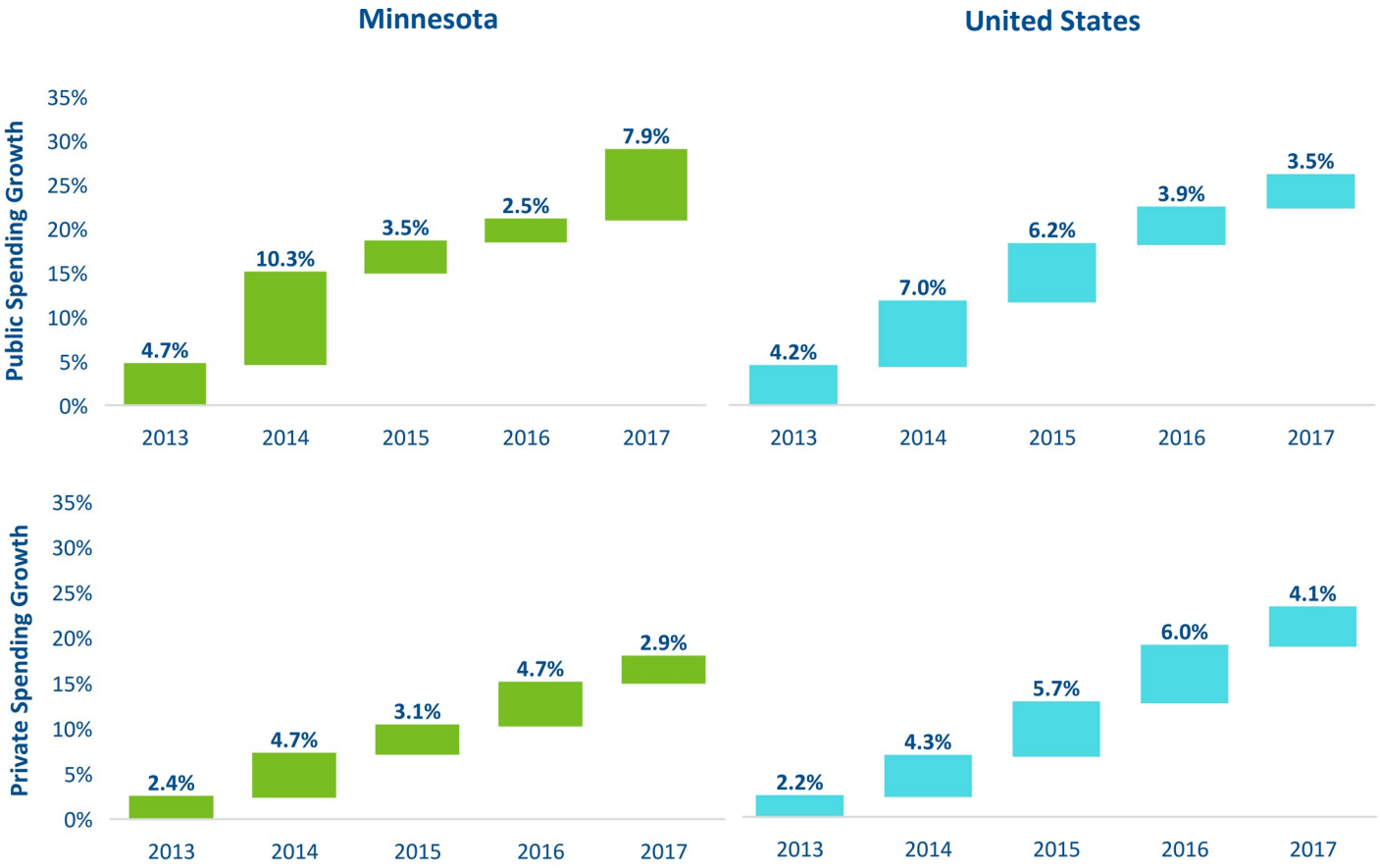
Directionally, we have found patterns of health care spending growth in Minnesota and the United States to be generally consistent over time, though there are differences in the magnitude of growth and drivers of spending. For example, in 2017, spending in Minnesota grew faster than nationally (5.3 percent and 3.8 percent, respectively), due to faster growth in health care spending by public payers.

As shown in Figure 3, over the past five years Minnesota had greater cumulative spending growth in public health insurance programs (which includes spending through Medicare) than nationally and exhibited greater variability. One contributing factor to this pattern is that Minnesota expanded Medical Assistance, Minnesota's Medicaid program, under the ACA. At a national level, several states with large populations, such as Florida and Texas, still have not expanded the program, contributing to comparatively slower growth.[6]

On the other hand, private spending growth in Minnesota was slower than national spending over the past three years, driven to a large extent by a decline in private insurance coverage over the past four years. By comparison, national enrollment in private insurance has been steady or grown slightly over the same period.

[6] As of August 2019, there are 14 states that have not adopted Medicaid Expansion. Status of State Action on the Medicaid Expansion Decision. Kaiser Family Foundation. August 1, 2019 (https://www.kff.org/health-reform/state-indicator/state-activity-around-expanding-medicaid-under-the-affordable-care-act/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D)

Figure 3: Cumulative Growth Attributable to Public and Private Spending in Minnesota and the United States



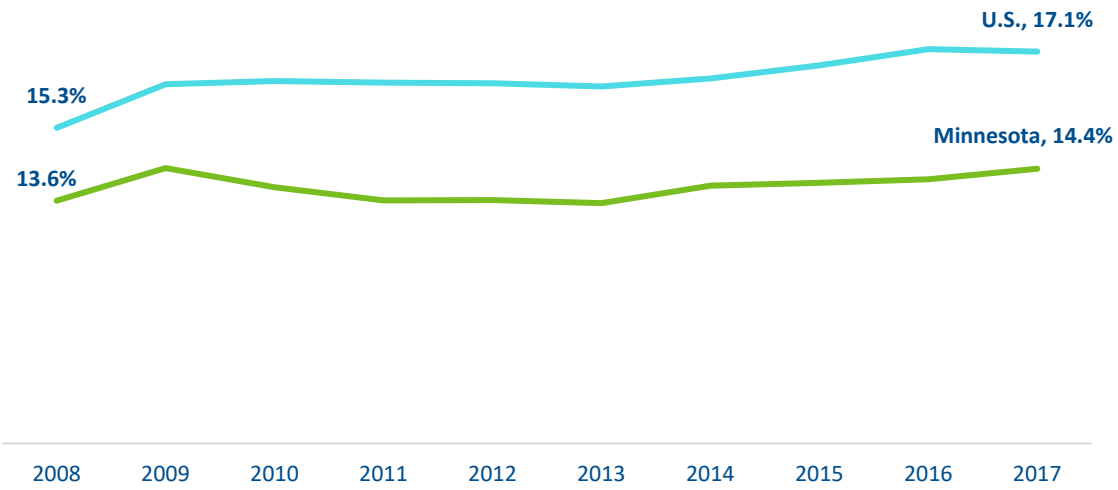
Source: Minnesota Department of Health (MDH), Health Economics Program. MDH analysis of the Centers for Medicare & Medicaid Services: 2017 National Health Expenditure Accounts, NHE tables (Health Consumption Expenditures). Health care spending includes medical and prescription drug spending.

In addition to comparing rates of spending growth, we also compare the percent of the economy that is devoted to health care spending at a state and national level. Historically, Minnesota health care spending has accounted for a smaller share of its economy than the United States for two reasons: First, Minnesota's economy – the firms that operate here, the education of the workforce, the rate of labor force participation – has contributed to strong economic growth. Second, the level of health care spending in Minnesota has historically been below that of the nation, even though rates of growth have been comparable (Figure 3).

Following the 2007-2009 recession, faster economic growth meant that the share of the Minnesota economy devoted to health care spending grew more slowly. However, as shown in Figure 4, with the increase of health care spending for Minnesota residents in 2017 outpacing economic growth, a greater share of the economy was devoted to health care spending (an increase of 0.3 percentage

points to 14.4 percent). Nationally, health care spending as a share of the economy stayed flat at 17.1 percent in 2017, as health care spending growth was slightly lower than economic growth (3.8 percent and 4.2 percent, respectively).

Figure 4: Health Care Spending As a Share of the Economy



Source: Minnesota Department of Health (MDH), Health Economics Program. MDH analysis of the Centers for Medicare & Medicaid Services: 2017 National Health Expenditure Accounts, NHE tables (Health Consumption Expenditures). Health care spending includes medical and prescription drug spending.

Despite the 2017 increase in the share of the Minnesota economy devoted to health care spending (and its deviation from national developments that year), per-person spending in Minnesota continued to be below national levels (Appendix B). In other words, despite the substantial growth in Minnesota's per-person spending in 2017 (4.5 percent) compared to nationally (3.1 percent), Minnesota's lower starting point ensured that per-person spending remained solidly below national levels ($9,028 and $10,224, respectively).

Who Pays for Health Care in Minnesota?

When approaching a broad topic such as health care spending, we use different frameworks to help understand the trends we are seeing, and unpack what is driving them; identifying private and public payers is one of these frameworks.

Key Findings:

- Private spending accounted for slightly more than half of total Minnesota health care spending (50.5 percent).
- Public spending grew faster than private spending in 2017; 7.9 percent compared to 2.9 percent.
- Growth in both Minnesota Health Care Programs (8.3 percent) and Medicare (7.3 percent) accelerated in 2017.

In the research literature, there are different methods used to analyze and allocate health care spending between private and public payers. For purposes of our report, we attribute private and public spending by the entity that is ultimately the sponsor of health care coverage (paying the bills), and refer to them as *payers* (see A Closer Look: Classification by Payer of Health Insurance). This classification is useful for considering the impact of health policy changes, because this classification is similar to how laws and rules about health insurance coverage are organized.

Regardless of the classification method used to denote private and public payers, it belies the fact that ultimately, Minnesota residents directly finance health care spending, through:

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

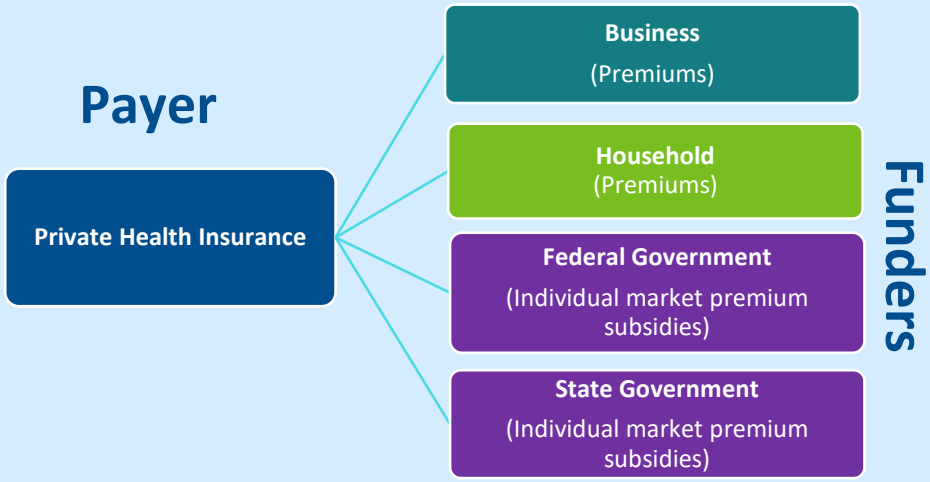
A CLOSER LOOK: CLASSIFICATION BY PAYER OF HEALTH INSURANCE

Health care spending can be classified either by who funds health care spending (where the dollars come from to pay for services), or by who pays for health care services (transfer of dollars to providers after services are received). Funders of health care spending include individuals, businesses, and governments. Payers, in contrast, include Medicare, Medicaid and MinnesotaCare (which we define as public payers), in addition to health plan companies offering coverage to employer groups or individuals, who purchase coverage on their own. Together with individuals who pay for care directly, we consider these as private payers.

Even when a payer is classified as a “private” payer, some portion of financing for that coverage is provided by “public” (government) funds, and vice versa. For example, this report considers private health insurance, either in the individual market or through an employer, to produce private payer spending. However, as shown in Figure 5, the financing for private health insurance varies. Private health insurance is *directly* funded by premiums from businesses and households (private), as well as

through the government via premium subsidies (public).[7] In addition to these direct contributions of public dollars to private payers of health insurance, private health insurance is also *indirectly* funded by the government through not taxing the amount spent on premiums paid for by individuals and businesses; this makes it more appealing for employers to provide health insurance to their employees.[8]

Figure 5: Spending Classification - Payer and Funder of Health Insurance



Source: Minnesota Department of Health, Health Economics Program. Illustration showing only the direct financers of health care.

By allocating health care spending between private and public payers, we also track how the share of payers' spending has changed over time. As shown in Figure 6, over the past ten years spending by private payers accounted for more than half of all Minnesota health care spending. However, over this same time, public spending as a share of total spending has been steadily increasing; it represented 49.5 percent (or nearly $24.9 billion) of total spending in 2017.

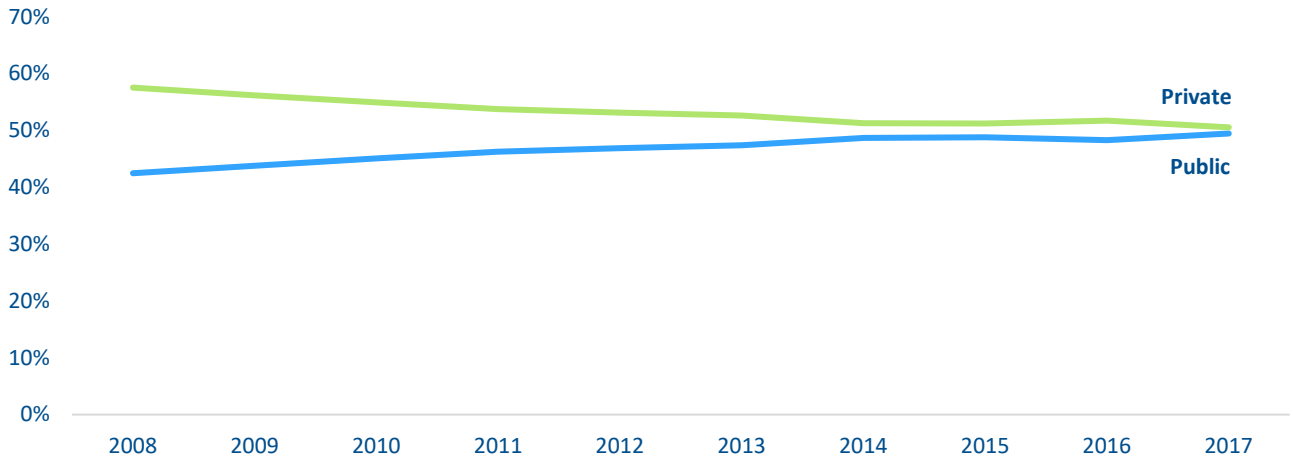
This is an outcome of three primary trends: First, with federal health reform starting in 2010, more individuals at a given point in time are eligible for subsidized Minnesota public health care programs. Second, because of the aging population, the number of Minnesota residents enrolled in Medicare has grown by an average of 22,000 people per year over the past decade. Finally, the share of Minnesotans accessing health insurance coverage through the private market (i.e., through an employer or through the individual market), has been declining, which led to an increase in the number of Minnesotans

[7] In January 2017, the Minnesota Legislature passed a bill that provided a 25 percent subsidy on individual market premiums for qualifying individuals; it was administered through health plan companies. Beginning in 2018, Minnesota began a reinsurance program for the individual market (Minnesota Premium Security Plan, Minnesota Statutes Section 62E.23), which partially reimbursed health plan companies for high-cost claims; the program reduced premiums by about 20 percent in 2018 (Minnesota Department of Commerce, Report of 2018 Loss Ratio Experience, June 2019).

[8] The method used to distinguish between what is "public" and "private" spending can have a substantial impact on results. An example, based upon the tax-financed share of health care spending is: Woolhandler S, Himmelstein D. Health Affairs. Health Care Costs: Paying For National Health Insurance—And Not Getting It. July/August 2002, v21 (4).

without health insurance in 2017 in addition to the growth in public program coverage. These three trends have hastened the move of public programs as an equal (or primary) source of health care spending in relative terms.

Figure 6: Share of Private and Public Spending



Source: Minnesota Department of Health, Health Economics Program.

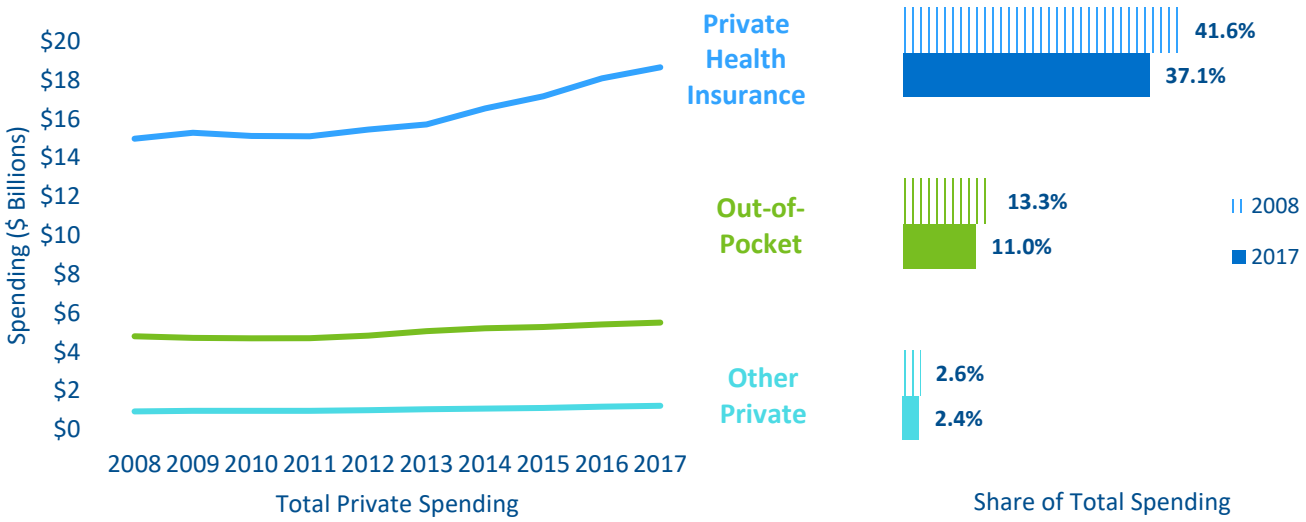
Private Spending

Private payers are an important part of the Minnesota health insurance landscape – they provided health insurance coverage to 58 percent of all Minnesotans and paid for more than half (50.5 percent) of all health care spending in 2017. The amount of health care paid for by private payers continued to increase at a moderate pace in 2017, growing 2.9 percent to reach $25.4 billion. In our report, spending by private payers encompasses spending for private health insurance, out-of-pocket expenses incurred by Minnesotans, and other private spending (such as spending through workers' compensation and medical care covered by auto insurance).

Private health insurance, which is insurance offered by employers or purchased by individuals, was the largest payer in 2017, at 37.1 percent of total (private and public) spending, and it accounted for two of every three dollars of private spending (Figure 7). Out-of-pocket spending – which is direct spending by individuals to providers, irrespective of the type or status of insurance coverage – and other private spending represented the remaining 13.4 percent of total spending by private payers in 2017 ($5.5 billion and $1.2 billion, respectively).[9]

[9] Out-of-pocket spending excludes premiums paid by individuals, over the counter medications and supplements. In an analysis of the total "outlays" by individuals for health care spending it would be included.

Figure 7: Trends in Private Spending and Share of Total Spending ($ in Billions)



Source: Minnesota Department of Health, Health Economics Program.
Private health insurance is insurance offered by employers or purchased directly by individuals. Other major private payers include private workers' compensation and auto medical insurance.

Over the past ten years, private health insurance spending has grown more slowly than statewide spending, averaging 2.3 percent per year while statewide spending averaged 3.8 percent per year. This trend continued in 2017, when private health insurance spending grew 3.1 percent, compared to 5.3 percent statewide. This slower growth, along with fewer Minnesotans enrolling in private coverage, contributed to private health insurance spending declining as a share of total spending (from 41.6 percent in 2008, to 37.1 percent in 2017, Figure 7).

A mix of public uncertainty over the status of the ACA and penalties for not having insurance coverage, and demographic changes contributed to declining enrollment in private coverage, as more Minnesotans moved into Medicare coverage or enrolled in Medicaid and MinnesotaCare.[10] As noted earlier, changes in the share of Minnesotans who have access to health insurance coverage through an employer also contributed to a decline in private health insurance enrollment during this period.[11]

Out-of-pocket spending (direct payments from individuals to providers) *increased* by $706 million between 2008 and 2017, though as a whole this category of spending climbed more slowly than overall spending. As a result, out-of-pocket spending decreased from 13.3 percent of total spending in 2008 to 11.0 percent in 2017. The slower growth in out-of-pocket spending may appear paradoxical, given the very real struggles of individuals with rising deductibles and other forms of cost sharing. The discussion

[10] 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.

[11] Minnesota Department of Health, Health Economics Program. Minnesota Health Care Markets Chartbooks 3 and 6.

on the following page is intended to break this down further.

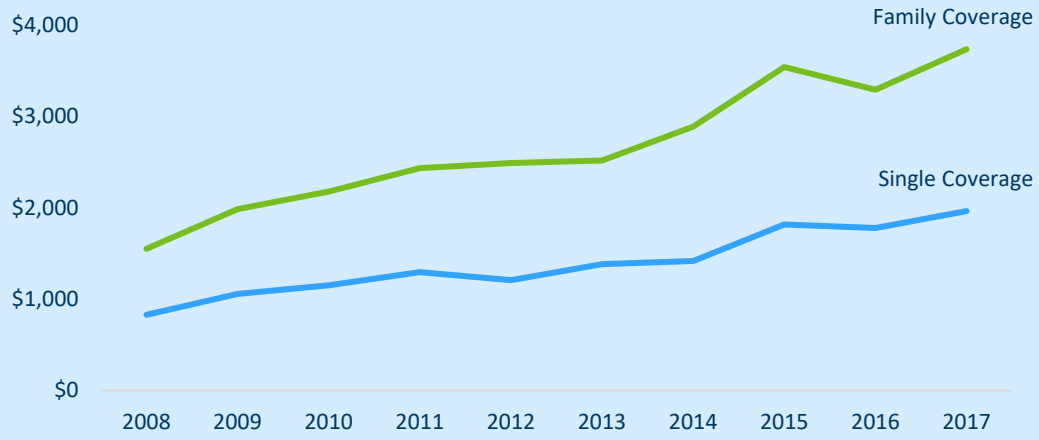
The share of other private spending, which includes health care spending related to workers' compensation and auto medical insurance, stayed consistent between 2008 and 2017, representing 2.6 percent and 2.4 percent of total spending, respectively.

A CLOSER LOOK: OUT-OF-POCKET SPENDING

Out-of-pocket spending in Minnesota increased 1.9 percent in 2017, a slower pace than overall private spending growth (2.9 percent). Out-of-pocket spending includes all spending for health care services made directly by individuals to pay providers for health care services. This excludes any premiums paid by individuals (premiums, including health plan administrative costs and profits, are included in other payer categories), over the counter medications and supplements. By considering trends in out-of-pocket costs statewide, across *all* payers, we combine trends for Minnesotans with substantial direct spending (the privately insured) and others with limited cost-sharing obligations, such as the approximately one-third of Minnesotans enrolled in Medical Assistance, MinnesotaCare, and certain Medicare plans.[12] This overall metric masks the trend for the privately insured, which we break out in the following paragraphs.

For privately insured Minnesotans (58 percent of the population), out-of-pocket costs have continued to grow due to increasing cost-sharing requirements from insurance plans, lack of access to health insurance, and rising prices for health care services. Over the past ten years, more Minnesotans are subject to deductibles and the average deductible for people with employer coverage (both those with single and those with family coverage), has doubled (Figure 8).

Figure 8: Average Deductible for Individuals with Employer Coverage



Source: Minnesota Department of Health, Health Economics Program. U.S. Department of Health & Human Services, Agency for Healthcare Research and Quality (AHRQ), Medical Expenditure Panel Survey (MEPS), Insurance Component.

[12] There is no current out-of-pocket limit for Medicare Part D, the outpatient prescription drug coverage for those on Medicare. As a result, Minnesotans with more complex medical needs, chronic conditions, or Minnesotans who take costly prescriptions may have substantial out-of-pocket prescription drug costs.

In addition to deductibles growing, certain groups of Minnesotans can experience especially high out-of-pocket costs for prescription drugs: For example, there are more than 80,000 elderly Minnesotans whose out-of-pocket prescription drug costs, which are paid in addition to cost sharing on medical benefits, exceed $1000.[13] Similar examples abound in the commercial market. In general, Minnesotans with chronic conditions had four times the annual out-of-pocket prescription drug spending than those without, and seniors spent more out-of-pocket for prescriptions than other age groups (e.g., children and working-age adults).[14]

These cost-sharing burdens lead Minnesotans with private insurance coverage to struggle paying their medical bills: 17.2 percent of Minnesotans reported problems paying medical bills in 2017, including 5.8 percent who had trouble paying for basic living expenses such as heat and rent due to their medical bills.[15] Others report not getting needed care: in 2017, approximately 550,000 Minnesotans with private insurance did not get health care they needed due to cost.

While the original intent of cost sharing was to serve as a way to engage patients in their use of care, including explicitly to reduce unnecessary health care use and associated spending, there is increasing evidence that higher cost sharing reduces the use of both necessary *and* unnecessary care, and thereby can negatively affect health outcomes, for example through rationing of life-sustaining medications.[16,17] In addition, cost sharing appears to increase inequities in access by income and race and ethnicity.[18]

Even people who are exposed to relatively low cost-sharing levels, such as Medicare enrollees, are encountering increased cost-sharing concerns. Out-of-pocket costs are a serious problem for traditional Medicare enrollees, as traditional Medicare (e.g., fee-for-service Medicare without any

[13] Minnesota Department of Health, Health Economics Program analysis of 2016 prescription drug claims in the Minnesota All Payer Claims Database (MN APCD).

[14] Minnesota Department of Health, Health Economics Program analysis of 2013 prescription drug claims in the Minnesota All Payer Claims Database (MN APCD).

[15] Minnesota Department of Health, Minnesota Health Access Survey, 2017.

[16] Collins SR, et al. "Too High a Price: Out-of-Pocket Health Care Costs in the United States." The Commonwealth Fund. November 2014. Eaddy MT, et al. "How Patient Cost-Sharing Trends Affect Adherence and Outcomes." Pharmacy and Therapeutics. January 2012; 37(1): 45–55. Fronstin P, Sepúlveda MJ, Roebuck MC. "Consumer-Directed Health Plans Reduce the Long-Term Use of Outpatient Physician Visits and Prescription Drugs." Health Affairs. 2013; 32(6):1126–34.

[17] A recent study reports that more than a quarter of insulin dependent diabetics ration lifesaving insulin. Herkert D, Vijayakuma P, Luo J, et al. "Cost-Related Insulin Underuse Among Patients with Diabetes," JAMA, 2019; 179(1)

[18] For example, see Chernew M, et al. "Effects of Increased Patient Cost Sharing on Socioeconomic Disparities in Health Care." Journal of General Internal Medicine. 2008: 23(1131); Hershman, DL et al. "Household Net Worth, Racial Disparities, and Hormonal Therapy Adherence Among Women With Early-Stage Breast Cancer." Journal of Clinical Oncology. 2015; 33(9):1053-1059; and Lewey, J et al. "Medication Adherence and Healthcare Disparities: Impact of Statin Co-Payment Reduction." American Journal of Managed Care. 2015; 21(10): 696-704.

supplemental coverage) does not have caps on out-of-pocket spending for Medicare Part B (outpatient services), and there are no out-of-pocket limits in Medicare Part D (prescription drugs). Furthermore, out-of-pocket costs for Medicare beneficiaries have generally grown faster than their Social Security benefits. [19] While having a private plan (e.g., Medicare Advantage or Medicare Cost), Medicare supplemental coverage, or Medicaid can protect from this problem, we estimate that up to 5.4 percent of Minnesotans are subject to full Medicare cost sharing.[20]

For Minnesotans without health insurance, all spending is out-of-pocket. While these Minnesotans use significantly less care than those who have coverage, 29.9 percent indicated they have problems with medical bills in 2017, and 43.4 percent, around 150,000 Minnesotans, forewent needed care in the past year.[21]

Public Spending

In our report, spending by public payers encompasses spending for Medical Assistance (Minnesota's Medicaid program), Medicare, and other public payers (including MinnesotaCare, Veterans Affairs, Indian Health Service, public health expenditures, and school-based health care spending).

Compared to private spending, which grew modestly in 2017, spending by public payers rose at a faster pace of 7.9 percent, reaching nearly $24.9 billion and 49.5 percent of total spending. While past trends also show faster growth in public payers (5.5 percent compared to 2.3 percent for private payers over the past decade), the gap in 2017 was more substantial (see also Figure 3). This was driven, in part, by increased enrollment and state policy changes, as we will discuss below.

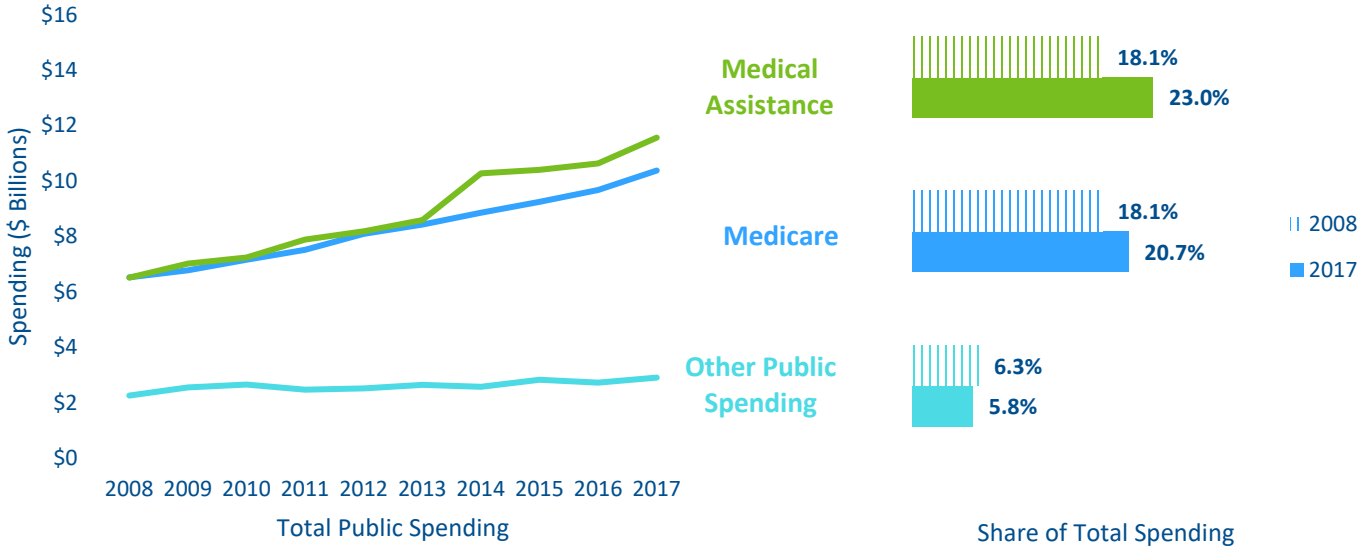
All major categories of spending by public payers saw growth above seven percent in 2017 (Appendix B). Medicare and Medical Assistance programs represented nearly nine of every 10 dollars of public spending in Minnesota, and 20.7 percent and 23.0 percent of total spending in the state, respectively (Figure 9). Total spending in 2017 for Medicare and Medicaid programs was nearly $22.0 billion, with other public spending accounting for an additional $2.9 billion (and 5.8 percent) of total spending. Medicare and Medicaid accounted for more than half of the total spending increase in 2017 (28 percent and 36 percent, respectively).

[19] Report to Congress: Medicare Payment Policy. Medicare Payment Advisory Commission (MEDPAC). March 2019.

[20] Minnesota Department of Health estimate (unpublished).

[21] Minnesota Department of Health, Minnesota Health Access Survey, 2017.

Figure 9: Trends in Public Spending and Share of Total Spending ($ in Billions)



Source: Minnesota Department of Health (MDH), Health Economics Program.
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).Other public spending includes government workers' compensation, Veterans Affairs, and public health spending.

While the category capturing other public spending represented a small proportion of all spending, it nevertheless experienced substantial increases in spending for Veterans Affairs and TRICARE health care (9.9 percent collectively). These increases were not due to increases in enrollment; Veterans Affairs saw increased spending for hospital and physician care, while TRICARE saw increases in non-institutional and pharmacy spending[22].

A CLOSER LOOK: MEDICARE[23]

Medicare is a federally-run health insurance program for people over 65, people with disabilities, and people with End Stage Renal Disease (ESRD); hospital care is covered through Part A, outpatient care is covered through Part B, and prescription drugs are covered by Part D. Individuals may choose to purchase supplemental insurance (often called Medigap) or get their benefits through a Medicare private plan (Medicare Advantage or Medicare Cost). Medicare spending for Minnesota residents grew 7.3 percent in 2017, which represents faster growth than the previous four years, reaching nearly $10.4 billion. Minnesota Medicare spending outpaced national Medicare spending by 3.1 percentage

[22] TRICARE medical spending is only available for four types of claims; non-institutional claims include items such as physician services, lab, and anesthesia.

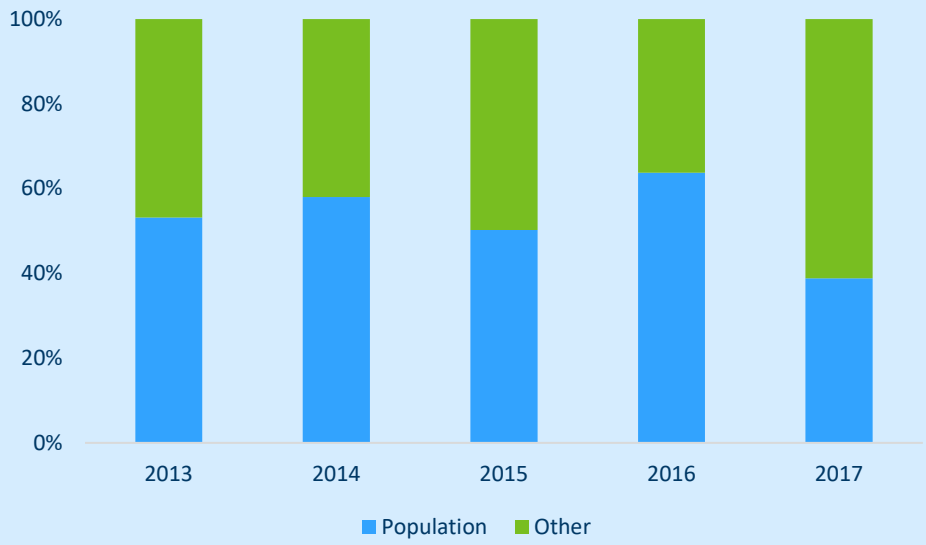
[23] Medicare is a federal health insurance program for people age 65 or older and people with certain disabilities and End Stage Renal Disease (ESRD).

points; growth in per-person spending for Medicare was also substantially higher than national trends (4.3 percent compared to 1.7 percent).[24,25]

Medicare enrollment has been accelerating, with more than 100,000 new Minnesotans becoming beneficiaries over the past five years. Nevertheless, the growth in the Medicare population accounted for just one-third of the change in spending; factors such as price inflation and changes in the use of health care services accounted for the remaining two-thirds of increased Medicare spending, with a substantial increase in hospital spending (Figure 10).

Over half of the increase in Medicare spending came from growth in hospital services spending. Physician services, other spending (largely in the form of increased health insurance profits for private Medicare programs), and retail prescription drugs drove another one-third of spending growth, distributed evenly between the three categories.

Figure 10: Drivers of Growth in Minnesota Medicare, 2013-2017



Source: Minnesota Department of Health, Health Economics Program.

"Population" is defined as Medicare enrollment. "Other" is defined as inflation and other factors (such as prices and use of health care services).

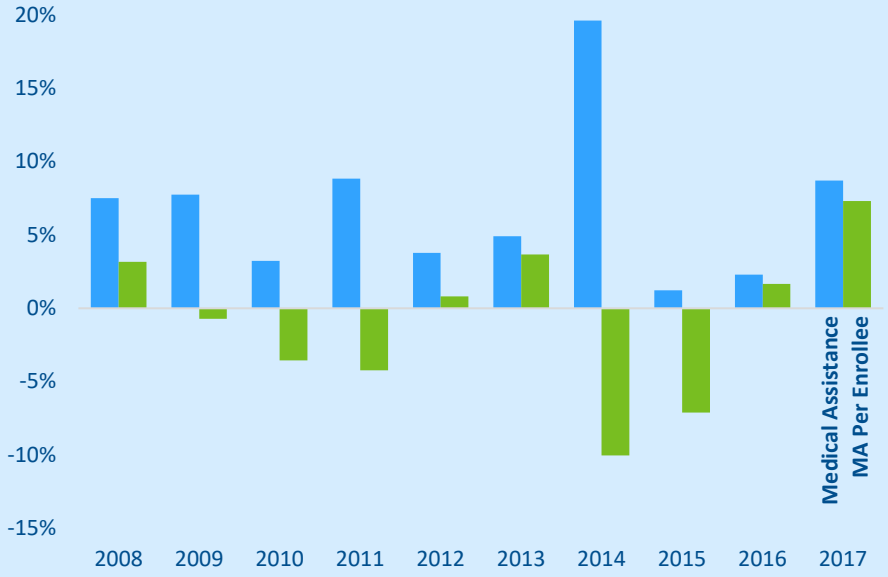
[24] For purposes of this report, our definition of Medicare does not include spending for Medicare Supplement policies, additional services covered by private Medicare plans, or Medicare Part D premiums, which are considered to be private spending.

[25] MDH analysis of the Centers for Medicare & Medicaid Services: 2017 National Health Expenditure Accounts, NHE tables (Health Consumption Expenditures). Health care spending includes medical and prescription drug spending.

A CLOSER LOOK: MEDICAL ASSISTANCE[26]

Medicaid is a health insurance program for people with low incomes and people with disabilities; it is jointly funded by federal and state governments, and is called Medical Assistance in Minnesota. Spending for Medical Assistance, increased 8.7 percent in 2017, reaching nearly $11.6 billion; and per person spending grew 7.3 percent in 2017. While Medical Assistance spending has increased in all of the past ten years, per-enrollee spending growth has at times actually declined. A shift in the mix of enrollees toward people with fewer health care needs and changes in payment rates have largely driven modest growth in per-person spending (Figure 11).[27,28]

Figure 11: Medical Assistance Total and Per-Enrollee Spending Growth



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

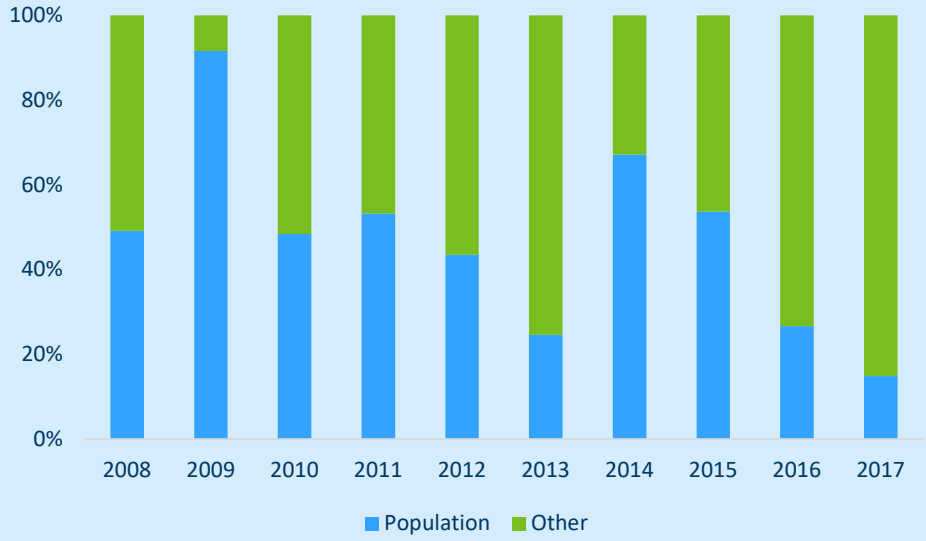
Growth in Medical Assistance spending per enrollee was several percentage points higher in 2017 than over the past ten years (Figure 11). With enrollment remaining relatively flat, the increase in Medical Assistance spending was largely a result of factors such as increases in payments and changes in service utilization (Figure 12).

[26] Minnesota's Medicaid program – financed by the state and the federal government with contribution by counties – provides health insurance to people with low incomes and people with disabilities. In 2014, under the Affordable Care Act (ACA), Medical Assistance eligibility was extended to childless adults, parents and caretakers, and children (aged 19 to 20) with incomes at or below 133 percent of Federal Poverty Guidelines (FPG), and children (aged 2 to 18) with incomes at or below 275 percent of FPG.

[27] The Minnesota Department of Human Services (DHS) began using a competitive bid process for managed care contracts in the 2012 plan year, extending to all managed care contracts beginning with the 2016 plan year. The decline of spending in 2016 was a result of how the DHS negotiated payments to health plans for Minnesota Health Care Programs' (MHCP) managed care enrollees. Other periods of declining per-person spending were attributable to an increase in the number of enrollees (e.g., 2011 and 2014).

[28] Minnesota Department of Health, Health Economics Program "Minnesota Health Care Spending: 2015 and 2016 Estimates and Ten-Year Projections." Legislative Report, February 2019.

Figure 12: Drivers of Growth in Medical Assistance, 2008 to 2017



Source: Minnesota Department of Health, Health Economics Program.

"Population" is defined as Medical Assistance enrollment. "Other" is defined as inflation and other factors (such as prices and use of health care services).

While all service categories experienced growth, changes in spending for hospital, long-term care, and "other spending," including medical spending on chemical dependency and mental health, non-medical services (including health plan administrative costs and profits), and uncategorized services, drove nearly all of the increase in total Medical Assistance spending (87.0 percent).[29]

Long-term care spending alone, which we discuss in more detail later in this report, represented 42.2 percent of all Medical Assistance spending and drove almost one-third (30.5 percent) of spending growth.

[29] Other spending includes spending on care for chemical dependency and mental health, not itemized and durable medical equipment, and health plan administrative expenses and revenues in excess of expenses.

What Do Minnesota Health Care Dollars Pay For?

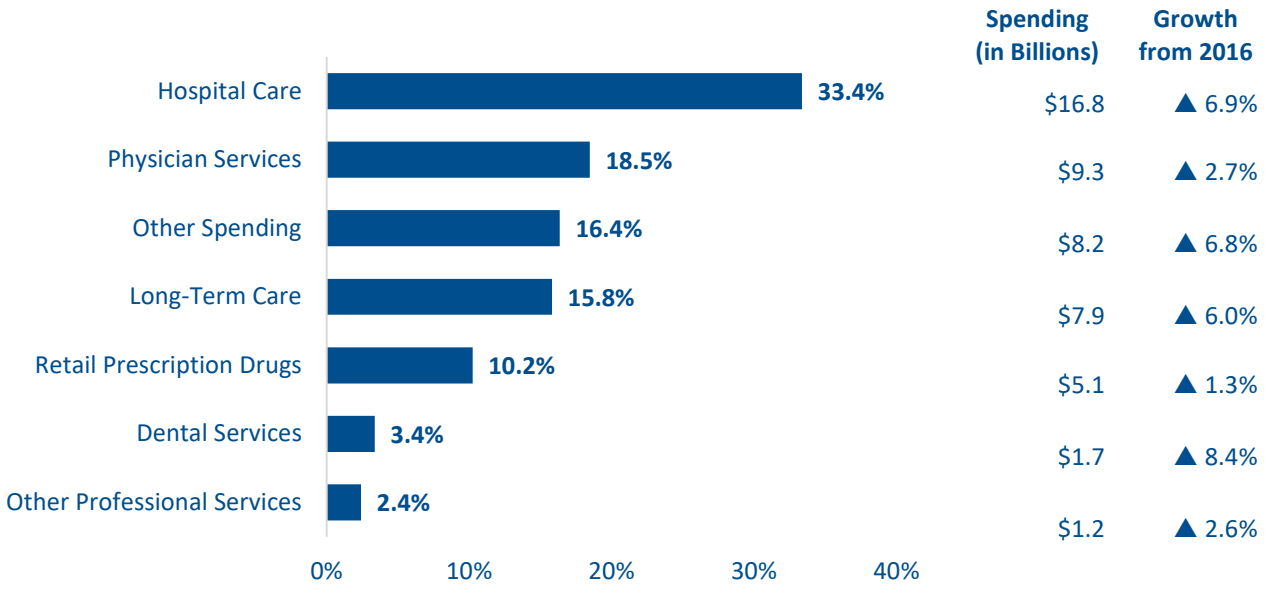
Another framework to approach health care spending is through the lens of where health care spending takes place – the variety of the health care facilities, types of health care providers and suppliers from which Minnesota residents obtain health care goods and services. We identify and report on seven broad *categories of service*, with some categories further disaggregated for certain analyses.

Key Findings:

- Increased spending at hospitals was responsible for over 40 percent of spending growth.
- Long-term care spending grew at 5.7 percent, driven by increases from Medicaid and out-of-pocket spending.
- All categories of service saw greater spending than in 2016.

Analyzing how health care spending is distributed across service categories, and monitoring changes in growth rates, can help us understand – at a high level – what kind of health care services drive health care spending. Over time, the distribution in spending across service categories has remained fairly static. This is aided by the fact that these categories represent established structures in health care delivery with billions of dollars in economic arrangements – these structures are not designed to be nimble – and that there is some overlap between them, with certain services (e.g., surgery and imaging) delivered across the spectrum. With some exceptions, the status quo remained in place in 2017 (Figure 13).

Figure 13: Distribution of Health Care Spending by Categories of Service in Minnesota



Source: Minnesota Department of Health, Health Economics Program.
Long-term care includes home health care services. Other spending includes chemical dependency and mental health, other medical spending (includes not itemized and durable medical equipment), health plan administrative expenses and revenues in excess of expenses, and uncategorized spending (for spending such as public health spending, correctional facility health spending, Indian Health Services, school-based spending). Other professional services includes services provided by health practitioners who are not physicians or dentists.

As shown in Figure 13, at $16.8 billion, hospital spending, encompassing both inpatient services and outpatient care delivered by hospitals, continued to be the largest category of health care spending in Minnesota (one-third of total spending). In 2017, it was also among the fastest growing spending categories (6.9 percent). In comparison, physician services spending, representing nearly one of every five dollars spent on health care, grew more slowly at 2.7 percent, reaching $9.3 billion.

A CLOSER LOOK: HOSPITAL SPENDING

Hospital spending in Minnesota grew 6.9 percent in 2017, reaching $16.8 billion and accounting for over 40 percent of health care spending growth. Even though only a small percentage of people use inpatient hospital services in any given year[30], hospitals continue to play a significant role in providing health care services. Care provided is often complex, requiring a higher number of health care providers and staff, with expertise to use increasingly advanced medical technology. Hospitals generally also operate around the clock, with some delivering essential emergency services and many acting as a critical part of the state's safety net; most also offer clinical services on an outpatient basis in owned clinics (outpatient departments), affiliated nursing homes and through other health services companies.

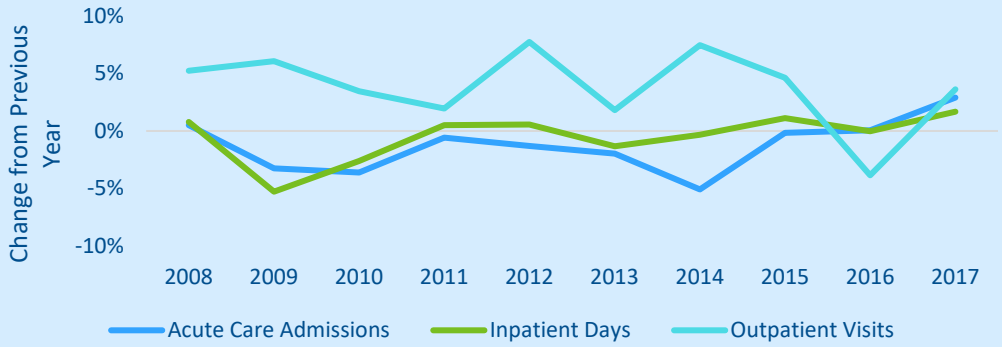
Over the past 15 years, fueled by available resources and perceived business need, Minnesota has seen increases in hospital mergers and affiliations, including the acquisition of outpatient clinics. This has turned most hospital markets in the state into concentrated markets;[31] it also continued to boost provider negotiating power, blunting competitive forces in the market.

As illustrated in Figure 14, in 2017, there was a slight uptick in acute care admissions, inpatient days, and outpatient visits. Prior to 2017, the number of admissions had been declining, with patient days holding relatively steady. An increase in Medicare admissions, responsible for much of the trend in hospital utilization that year, also contributed to growth in total hospital services spending in Minnesota. Nonetheless, about 38.1 percent of hospital spending growth that year was attributable to private insurance payments.

[30] Minnesota Department of Health, Minnesota Health Access Survey, 2017; 9.5 percent of Minnesotans reported staying overnight in a hospital in the past 12 months.

[31] Minnesota Department of Health, "Rural Health Care in Minnesota: Data Highlights" November, 2019, slide 46; (https://www.health.state.mn.us/facilities/ruralhealth/docs/ruralhealthcb2019.pdf).

Figure 14: Percent Change in Hospital Utilization at Minnesota Community Hospitals, 2008 to 2017



Source: Minnesota Department of Health, Health Economics Program. Analysis of hospital annual report data, accessed May 2019.

Aside from hospital spending, dental services and a number of services grouped as "other spending" (e.g., chemical dependency and mental health services, non-medical services, and uncategorized services) experienced the highest rates of growth from 2016. Growing 8.4 percent to reach $1.7 billion, dental spending represented 3.4 percent of total spending in 2017. Within this group of services spending on mental health and chemical dependency, and health plan administrative costs, had some of the highest rates of increase; as a group, "other spending" represented 16.4 percent of total spending, growing 6.8 percent to reach $8.2 billion.[32]

[32] Chemical dependency and mental health spending increased 8.6 percent and non-medical spending, which includes insurance company administrative spending and profits, increased 8.8 percent. For more information on health plan administrative spending, see Minnesota Department of Health, Health Economics Program. Administrative Costs at Minnesota Health Plans in 2017. June 2019 [PDF] (https://www.health.state.mn.us/data/economics/docs/2017admincosts.pdf).

A CLOSER LOOK: LONG-TERM CARE SPENDING

Long-term care "…provide(s) coverage for medical, personal, and social services related to prolonged illnesses and disabilities." [33] Its spending can encompass services for Activities of Daily Living (ADLs), such as bathing and dressing, but can also include assistance with Instrumental Activities of Daily Living (IADLs) such as taking medications and housework.[34] Long-term care is provided in a facility, such as a skilled nursing home, or in an individual's own home. Long-term care services, which are used to a greater extent by older people, are financed in part through insurance (e.g., Medicaid or private long-term care insurance[35]), but absent a national social insurance mechanism, these services are substantially financed by people out of pocket.[36]

In 2017, long-term care spending for Minnesota residents represented 15.8 percent of total health care spending, growing 6.0 percent to reach $7.9 billion; it was responsible for nearly 18 percent of the growth in total spending. Long-term care spending growth was concentrated in Medical Assistance and out-of-pocket spending (Figure 15), with Medical Assistance delivering most of these services in two categories:

- **Waivers and Home Care**: includes payments for Minnesotans to receive long-term care services and supports in an individual's own home or community. In 2017, we estimate that waivers and home health care accounted for three-fourths of Medical Assistance long-term care spending.
  - Long-Term Care Waivers: includes services for individuals with physical or mental disabilities as well as the screenings used to determine eligibility. The waivers are targeted at different populations and serve individuals with various disabilities. To be eligible for a waiver, an individual must be eligible for Medical Assistance and meet the level of care requirement for a nursing facility (brain injury (BI), disabled (CADI), and Elderly waivers), hospital (chronically ill (CAC waiver)), neuro-behavioral hospital (BI waiver), or Intermediate Care Facility for individuals with Developmental Disabilities (DD waiver).[37] In 2017, the greatest spending increase occurred for DD and CADI Waiver services, which are the largest waivers by expenditures (the CADI and Elderly waivers have the largest enrollment).
  - Home health agencies, home care nursing, and personal care assistance: medical and health-related services and assistance for Minnesotans needing support with daily activities in their homes.

[33] Office of Minnesota Attorney General Keith Ellison. Long-Term Care. Accessed September 6, 2019 (https://www.ag.state.mn.us/Consumer/Publications/LongTermCareIns.asp).

[34] US Department of Health & Human Services. What is Long-Term Care? Longtermcare.gov, accessed September 2019.

[35] Enrollment in private, stand-alone long-term care policies that provide more extensive long-term care benefits is low, and research has indicated the cost of premiums for these policies can deter potential enrollees due to their cost. Department of Health & Human Services. ASPE Issue Brief: Choosing Long-Term Care Insurance Policies: What do People Want? September 2016.

[36] Medical Assistance (Medicaid) covers the majority of all long-term care spending in Minnesota (61.4 percent). Department of Health & Human Services. ASPE Issue Brief: Choosing Long-Term Care Insurance Policies: What do People Want? September 2016.

[37] Waiver screenings include MNChoices, which may include some or all home care and personal care assistance screenings.

- **Facilities:** includes payments for Minnesotans who live in facilities that provide 24-hour care and supervision, such as nursing and intermediate care facilities. Facilities' spending accounted for one-fourth of Medical Assistance long-term care spending.
  - Nursing facilities: includes the cost of nursing services and room and board. Beginning in 2016, Medical Assistance implemented a value-based reimbursement model. This allowed the Department of Human Services (DHS) to pay nursing facilities based on the cost of providing care to residents, with limits on rate increases based on quality scores. [38] Nursing facilities costs are projected to continue increasing, despite a long-term trend of declines in the number of recipients receiving care.[39]
  - Intermediate care facilities for persons with developmental disabilities (ICF/DD): includes the cost of residing in an ICF/DD, as well as services provided to Minnesotans with developmental disabilities or related conditions, to develop and maintain life skills so they can participate in their communities (day training and habilitation services).

In 2017, Medical Assistance long-term care spending grew 6.2 percent, with growth expected to continue into the future, albeit at a slower rate. Increased spending for long-term care waivers was the primary driver of the growth in long-term care services, with some waivers growing due to population factors (CADI, CAC, DD), and others seeing spending increases due to changes in utilization or the services used (BI).

Out-of-pocket spending paid directly by individuals represents the second-largest source of long-term care financing, at 20.3 percent of all long-term care spending in Minnesota. Due to limited coverage for long-term care services through private health insurance and Medicare, as well as an aging population, we anticipate long-term care spending will continue to grow rapidly. With low enrollment in private, stand-alone long-term care policies that provide more extensive long-term care benefits, the burden on individuals to cover long-term care costs is also likely to increase.[40]

Certain categories of long-term care spending, such as family and community caregiving, and out-of-pocket costs for facilities that provide moderate assistance (e.g., assisted living) are not included in this report.[41] Care provided by unpaid family and community caregivers does not represent actual monetary transactions, which this report is structured to aggregate.[42] Intermediate facilities, such as assisted living facilities, may provide assistance with some activities of daily living; however a significant portion of costs are privately funded for non-medical care, such as rent and food.

---

[38] Nursing home rates increased due to Minnesota Statutes Chapter 256R.

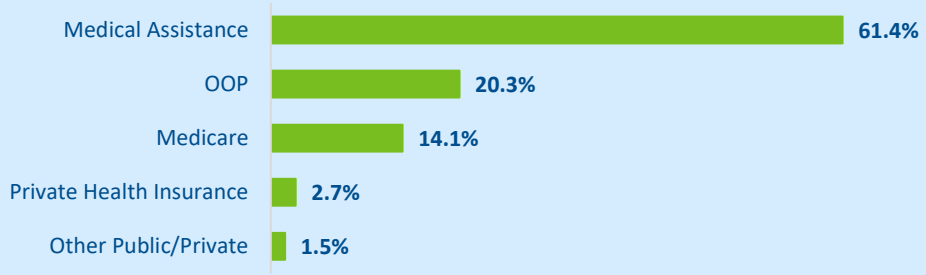
[39] Minnesota Department of Human Services. February 2019 Forecast and Executive Summary. We anticipate private nursing facility costs will also increase in the future, due to Minnesota's rate equalization law. This law requires private pay residents not be charged more than care paid for by Medical Assistance.

[40] Department of Health & Human Services. ASPE Issue Brief: Choosing Long-Term Care Insurance Policies: What do People Want? September 2016.

[41] Certain long-term care Medical Assistance waivers (e.g., BI, CADI, and EW) include spending on "customized living".

[42] Still, the volume of these services (and their economic value) is substantial and estimated at about $470 billion nationally in 2015. National Center on Caregiving - Family Caregiver Alliance. Caregiver Statistics: Demographics. Accessed September 6, 2019 (https://www.caregiver.org/caregiver-statistics-demographics).

Figure 15: Share of Long-Term Care Spending, by Payer, 2017



Source: Minnesota Department of Health, Health Economics Program.

Although there is great concern about the level and growth of prescription drug spending among individuals, businesses and government, retail prescription drugs accounted for just over 10 percent of total spending in 2017. With a deceleration of the rate of dispensed prescriptions and greater displacement of brand drugs by generics in 2017, retail prescription drug spending grew at a slower pace (1.3 percent), reaching $5.1 billion.[43]

However, the real drivers of growth in prescription drug spending – by the price per prescription and the year-over-year growth – have been products administered in medical settings (such as hospitals, infusion centers, and nursing homes). Drugs that are used for chemotherapy treatment of cancer or to treat conditions such as autoimmune diseases and multiple sclerosis, often termed specialty drugs, are typically being reimbursed through medical claims because they are administered in outpatient or office settings. In our spending framework, these costs show up as hospital or physician spending.[44]

If all prescription drug spending was counted, that is if both retail prescriptions and drugs administered in medical settings were considered, we estimate total spending in Minnesota on prescription drugs reached about $8.7 billion in 2017 and accounted for 17.3 percent of total health care spending.[45]

[43] Nationally, retail prescription drug spending also grew more slowly (0.4 percent). Martin, A. et al. National Health Care Spending in 2017: Growth Slows to Post-Great Recession Rates; Share of GDP Stabilizes. Health Affairs. January 2019.

[44] Our report considers drugs administered in medical settings as either hospital or physician spending (reflected in medical claims). 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.

[45] Minnesota Department of Health, Health Economics Program analysis. This estimate is derived from a previous, more in-depth analysis of health care claims. It assumes that average annual spending for prescription costs in medical claims since 2013 grew at rates comparable to the period between 2009 and 2013. Given increasing use of new high cost specialty drugs, many of which are biologics without competition, this assumption likely understates overall prescription drug spending in Minnesota. On the other hand, this analysis is not able to consider any rebates or discounts that became available to health care providers who administered prescription drugs in medical settings.

Health Care Spending Projections

Key Findings:

- Health care spending is projected to nearly double over the next decade to $97.5 billion by 2027.
- Spending is projected to grow 6.9 percent, on average, per year through 2027, higher than the 3.8 percent average yearly growth experienced over the past decade.
- More than half of all spending will be paid for by public payers in the next ten years.

To evaluate how current health care spending patterns might look in the future, and how our expectations of health care spending over time are evolving, the Minnesota Department of Health (MDH) annually produces projections of health care spending covering a ten-year time period. We consider these projections useful for a wide variety of applications and a range of readers, including:

- **Policymakers:** for purposes of budget planning, considering future health reform or policy proposals;
- **Employers, other purchasers of health care services, and insurance providers:** to illustrate market trends occurring by payers and categories of service, as well as to inform future strategic decisions (e.g., annual renewal planning);
- **Providers of health care services:** for purposes of illustrating expected trends across the spectrum of care delivery, for resource planning, (e.g., to inform future workforce planning), as well as to anticipate policy actions; and
- **Researchers:** to highlight trends occurring in the Minnesota health insurance marketplace by payer and categories of service, and contribute to future policy and benefit considerations.

Minnesota's health care spending projections are based on historical patterns of health care spending in the state, trends in health insurance coverage, forecasts of macroeconomic variables (such as inflation, employment and wage growth), and expected growth in public program spending. Our most recent projections, for 2018 to 2027, consider spending in the context of current law (through 2017).

These projections do not capture planned (but not legislatively approved) policy changes affecting health care delivery, access to care, or coverage; economic or labor market shocks; or disruptions from diagnostic or therapeutic innovation (e.g., the introduction of a block-buster drug indicated for a large group of individuals). As such, these projections are associated with considerable uncertainties that grow over time, a characteristic they share with any forecast.

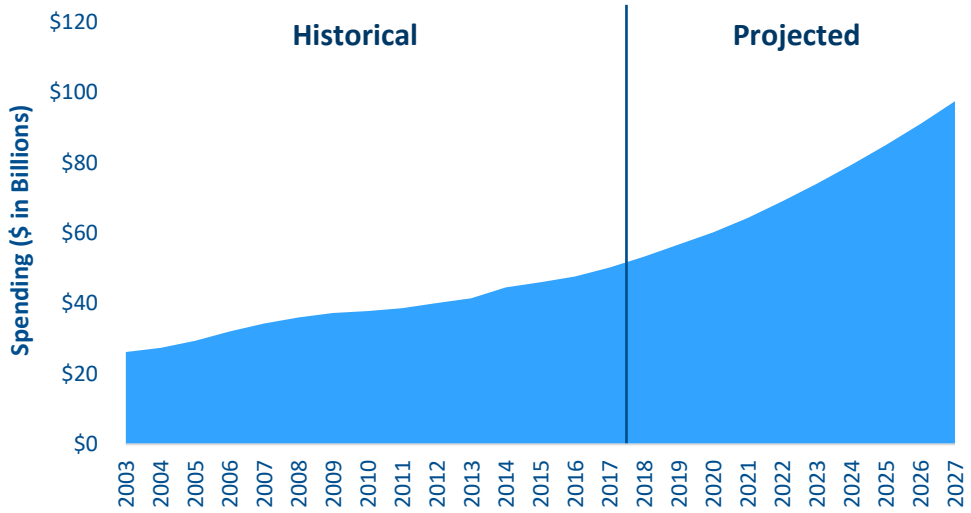
Consistent with past reports, the Minnesota health care spending projections rely on an adaption of methodologies developed by the Centers for Medicare & Medicaid Services (CMS) to Minnesota, and statistical modeling by both payer and provider type.[46] An independent actuary has certified the projections (Appendix A).

[46] We thank CMS staff for the feedback on our approach and insights into data and methodologies used in their annual projections.

Future Health Care Spending

Health care spending in Minnesota has grown persistently, most often faster than the economy as a whole, a fact that has contributed to concerns over long-term sustainability. Over the past 15 years, health care spending in Minnesota nearly doubled, from $26.2 billion in 2003 to $50.3 billion in 2017, growing 4.8 percent, on average, each year. Over a shorter time period, just the next ten years (2018 to 2027), we project that spending will again nearly double ($97.5 billion); the annual pace of growth underlying this trend will increase to about 6.9 percent (Figure 16).

Figure 16: Minnesota Health Care Spending, 2003 to 2027 (Billions of Dollars)



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

Cumulatively, the accelerated growth will contribute *an additional* $21 billion in health care spending beyond what would have occurred with average levels of growth from the previous decade. That growth will span both private and public payers:

- The rate of growth for private payers is expected to increase, from 2.3 percent, on average, between 2008 and 2017, to 6.3 percent, on average, between 2018 and 2027.
- Likewise, public spending is expected to increase, from 5.5 percent, on average, between 2008 and 2017, to 7.6 percent on average between 2018 and 2027.

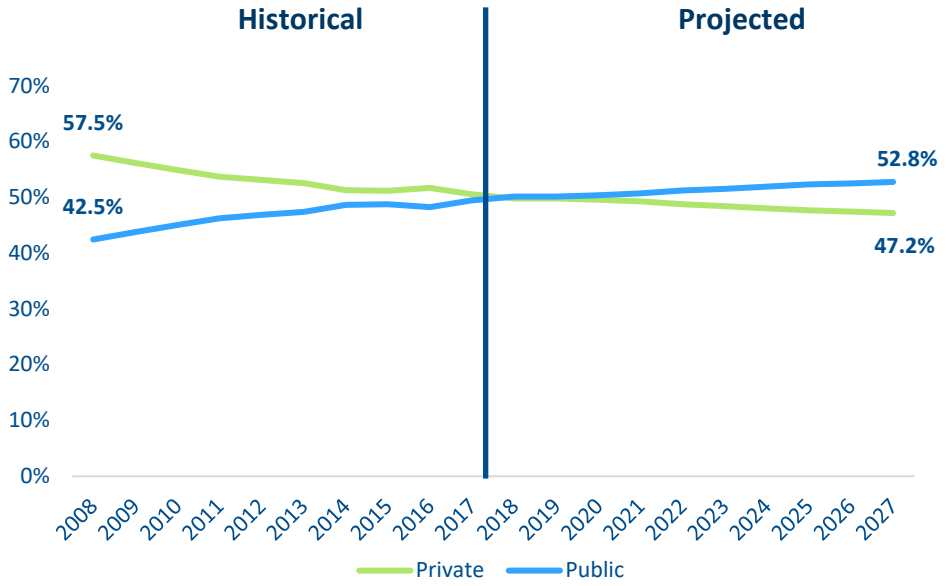
While all categories of service are expected to increase – consistent with past trends – retail prescription drugs, hospital-based, and long-term care spending in our projections are shown to be the most significant drivers of growth.

Despite longstanding concerns among the public and policymakers about the sustainability of health care spending increases, this acceleration suggests that existing modest efforts across commercial and public payers to constrain spending are not expected to impact the spending trajectory as hoped. Furthermore, we project that increased health care spending will not be offset by a faster growing

economy, meaning the share of Minnesota's economy devoted to health care spending is expected to grow further, from 14.4 percent in 2017 to 18.7 percent in 2027. Independent of whether that change may be considered affordable or desirable, it will require a reprioritization of spending across all other areas – for individuals, government programs, and businesses.

Early in the projection window, public spending growth is expected to outpace growth in private spending, driven by growth in Medicare and Minnesota Health Care Programs, as shown in Figure 17.

Figure 17: Public and Private Health Care Spending, 2008 to 2027 (Share of Spending)



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

Conclusion

Tracking health care spending in Minnesota – at whichever point in time – reveals a story of persistent growth. Our analysis of 2017 data is no exception to that; spending grew 5.3 percent, or about three percentage points above the rate of inflation. However, what does stand out about 2017 is that:

- Spending growth accelerated by about 1.5 percentage points above the average ten-year rate of change preceding it, and
- Public programs, after several years of modest growth, saw the highest percentage spending increase.

By itself, fast and accelerating growth in health care spending does not have to be a problem. If society can absorb these spending increases without too much of a downside, and stakeholders determine changes to current health care market and financing practices will be too disruptive and uncertain, then health care spending will continue on its upward path. At its current level; however, health care spending is already putting considerable pressure on households, employers and government budgets. We see this in the measurement of forgone care,[47] in the observation that some employers are no longer offering health insurance benefits,[48] in discussions over the long-term sustainability of health insurance programs like Medicare,[49] and in legislative deliberations over Medicaid benefits and program design. At the same time, it is not clear that our high and increasing levels of spending are leading to measurably improved outcomes or experiences for patients, or that they are sustainable within the current health care financing framework.

- It is against this backdrop that we see possible pathways emerging toward achieving access to affordable health care in Minnesota: Through recommendations emerging from Minnesota's legislatively-established Blue Ribbon Commission on Health and Human Services[50], which is charged with the dual goals of identifying strategies that will lead to substantial savings in the state's health and human services budget and transform the health and human services system.
- Reform discussions building on lessons that will materialize from Minnesota's COVID-19 response in health care, public health, and financing.

  By focusing on a range of strategies that would work both within and outside of the health care delivery and payment systems, a range of emerging initiative may offer an opportunity to build on lessons from past attempts in Minnesota and nationally to 'bend' the health care cost curve, while improving the effectiveness of health care and achieving greater equity for Minnesotans. This

[47] Minnesota Department of Health, Minnesota Health Access Survey, 2017

[48] Minnesota Department of Health, Health Economics Program Minnesota Health Care Markets Chartbook 3, pages 8-10, and 12.

[49] Congressional Budget Office. An Update to the Budget and Economic Outlook: 2019 to 2029. August 21, 2019.

[50] Minnesota Session Laws - 2019, 1st Special Session, Chapter 9--S.F.No. 12, Section 46.

approach also acknowledges that no single strategy is likely to provide a 'silver bullet' that will, alone, achieve substantial and sustainable savings.

As one component of a multi-faceted approach to controlling health care spending, more and more state governments have begun to employ health care spending benchmarks, caps or global budgets. A new policy short take, summarizing these efforts, provides details on the different approaches states are taking.[51] With no slow-down in sight, and accelerating public interest in – and personal stake in - the future health care spending trajectory, these state models may provide a baseline from which to design effective policies that may contribute to containing Minnesota's health care spending.

[51] Minnesota Department of Health, Health Economics Program "State Policies that Establish Health Care Spending Growth Targets." Policy Short Take, September 2020 (www.health.state.mn.us/healtheconomics)

Appendix A: Actuarial Certification

OLIVER WYMAN

Peter Kaczmarek
Senior Consultant
Oliver Wyman
411 East Wisconsin Avenue, Suite 1300
Milwaukee, WI 53202-4419
Office: 414-223-7960
peter.kaczmarek@oliverwyman.com

ACTUARIAL CERTIFICATION

TO:	Mr. Stefan Gildemeister Director, Health Economics Program Minnesota Department of Health 85 East Seventh Place, Suite 220 Saint Paul, MN 55101
DATE:	October 25, 2019
FROM:	Peter Kaczmarek, FSA, MAAA
SUBJECT:	**Actuarial Certification of Minnesota's Health Spending Estimates for 2017**

I, Peter Kaczmarek, am a Fellow in the Society of Actuaries, and a member of the American Academy of Actuaries, and am qualified to provide the following certification.

This actuarial certification applies to the Minnesota Department of Health (MDH) final estimate of statewide health spending expenditures in Minnesota for calendar year 2017.

Reliance
In performing the review of the MDH's final estimate of statewide health spending expenditures for calendar year 2017 and arriving at my opinion, I used and relied on information provided by the MDH staff, including tables of the underlying data supporting the estimates, methodology documentation and follow up clarification. The final estimate includes revisions for expenditures in the Medical Assistance program and Out-of-Pocket spending provided by MDH staff on October 21st, 2019.

I used and relied on this information without independent investigation or audit. If this information is inaccurate, incomplete, or out of date, final estimates of statewide health spending expenditures for calendar year 2017 and prior years and any resulting conclusions may need to be revised. While I have relied on the data provided without independent investigation or audit, I have reviewed the data for consistency and reasonableness. Where I found the data inconsistent or unreasonable, I requested clarification.

Actuarial Certification
In my opinion, the data sources and methodologies MDH has utilized are valid and reasonable. I certify that MDH's estimate of Minnesota's statewide health spending expenditures for calendar year 2017 total of $50.27 billion and Minnesota's statewide health spending expenditures less Medicare and long-term care for calendar year 2017 of $33.06 billion are reasonable. Tables 1 and 2 on page three summarize these estimates.

This certification conforms to the applicable Actuarial Standards of Practice promulgated by the Actuarial Standards Board.

Oliver Wyman Actuarial Consulting, Inc. (DE)

MARSH & McLENNAN COMPANIES

Peter Kaczmarek, FSA, MAAA

10/25/2019

Date

Table 1
Where Minnesota Health Care Spending Came From in 2017

Source of Funding	Total Spending (Millions)	%	Total Spending Less Medicare & LTC (Millions)	%
Medicare	$ 10,383	20.7%		
Medical Assistance	$ 11,570	23.0%	$ 6,691	20.2%
MNCare & Other Public[1]	$ 2,908	5.8%	$ 2,787	8.4%
Private Health Insurance	$ 18,663	37.1%	$ 18,450	55.8%
Other Private[2]	$ 1,229	2.4%	$ 1,229	3.7%
Out-of-Pocket	$ 5,515	11.0%	$ 3,906	11.8%
All Sources of Funding	**$ 50,268**	**100.0%**	**$ 33,063**	**100.0%**

[1]Major sources of "other public" includes public workers' compensation, public health spending, and Veterans Affairs.

[2]"Other Private" includes private workers' compensation and auto medical insurance.

Table 2
Where Minnesota Health Care Dollars Were Spent in 2017

Category of Service	Total Spending (Millions)	%	Total Spending Less Medicare & LTC (Millions)	%
Hospital	$ 16,769	33.4%	$ 11,601	35.1%
Physician Services	$ 9,281	18.5%	$ 7,288	22.0%
Long-Term Care (inc. Home Care)	$ 7,946	15.8%		0.0%
Retail Prescription Drugs	$ 5,146	10.2%	$ 4,098	12.4%
Dental	$ 1,694	3.4%	$ 1,672	5.1%
Other Professional Services[3]	$ 1,210	2.4%	$ 1,077	3.3%
Chemical Dependency/Mental Health	$ 1,586	3.2%	$ 1,586	4.8%
Other Medical Spending[4]	$ 4,462	8.9%	$ 3,709	11.2%
Other Non-Medical Spending[5]	$ 2,174	4.3%	$ 2,032	6.1%
Total Spending	**$ 50,268**	**100.0%**	**$ 33,063**	**100.0%**

[3]"Other professional services" includes spending for services by private-duty nurses, chiropractors, podiatrists, and other health practitioners who are not physicians or dentists.

[4]"Other medical spending" includes not itemized, durable medical equipment, and uncategorized spending, for spending such as public health spending, correctional facility

[5]"Other Non-Medical Spending" includes health plan administrative expenses and revenues in excess of expenses.

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: 2017 Estimates and Ten-Year Projections report.

Table B1: Annual Health Care Spending Growth, Per Capita Health Care Spending, Minnesota and the U.S., and Annual Per Capita Health Care Spending

	2013	2014	2015	2016	2017
Annual Health Care Spending Growth (from the prior year):					
Minnesota	3.5%	7.4%	3.3%	3.6%	5.3%
U.S.	3.2%	5.6%	5.9%	5.0%	3.8%
Per Capita Health Care Spending:					
Minnesota	$7,668	$8,178	$8,403	$8,643	$9,028
U.S.	$8,633	$9,049	$9,514	$9,914	$10,224
Annual Per Capita Health Care Spending Growth (from the prior year):					
Minnesota	2.8%	6.7%	2.7%	2.8%	4.5%
U.S.	2.5%	4.8%	5.1%	4.2%	3.1%

Source: Minnesota Department of Health, Health Economics Program. MDH analysis of the Centers for Medicare & Medicaid Services: 2017 National Health Expenditure Accounts, NHE tables (Health Consumption Expenditures). U.S. Department of Commerce, Bureau of Economic Analysis: Gross Domestic Product (nominal), updated through March 28, 2019. 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 annual per capita health care spending growth (from the prior year), for Minnesota and the United States. Annual health care spending has grown each year in Minnesota and the United States. In 2017, health care spending grew 5.3 percent in Minnesota and 3.8 percent in the United States. Over the same period (in 2017), per capita spending reached over $9,000 in Minnesota and over $10,000 nationally.

Table B2: Health Care Spending and Distribution by Categories of Service (2013-2017)

Millions of Dollars	2013	2014	2015	2016	2017	Change from 2016	Avg. Annual Growth (2013-2017)
Inpatient Hospital	$8,004	$8,286	$8,567	$8,615	$9,160	6.3%	3.4%
Outpatient Hospital	$5,910	$6,478	$6,818	$7,071	$7,609	7.6%	6.5%
Physician Services	$7,694	$7,963	$8,254	$9,037	$9,281	2.7%	4.8%
Long-Term Care[1]	$6,146	$6,612	$6,962	$7,494	$7,946	6.0%	6.6%
Retail Prescription Drugs	$4,150	$4,689	$5,044	$5,078	$5,146	1.3%	5.5%
Dental	$1,378	$1,409	$1,633	$1,563	$1,694	8.4%	5.3%
Other Professional Services[2]	$1,237	$1,365	$1,387	$1,179	$1,210	2.6%	-0.5%
Other Spending[3]	$6,992	$7,783	$7,405	$7,699	$8,221	6.8%	4.1%
Total	**$41,512**	**$44,584**	**$46,071**	**$47,736**	**$50,268**	**5.3%**	**4.9%**

Distribution of Spending	2013	2014	2015	2016	2017
Inpatient Hospital	19.3%	18.6%	18.6%	18.0%	18.2%
Outpatient Hospital	14.2%	14.5%	14.8%	14.8%	15.1%
Physician Services	18.5%	17.9%	17.9%	18.9%	18.5%
Long-Term Care[1]	14.8%	14.8%	15.1%	15.7%	15.8%
Retail Prescription Drugs	10.0%	10.5%	10.9%	10.6%	10.2%
Dental	3.3%	3.2%	3.5%	3.3%	3.4%
Other Professional Services[2]	3.0%	3.1%	3.0%	2.5%	2.4%
Other Spending[3]	16.8%	17.5%	16.1%	16.1%	16.4%
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 and mental health (3.2 percent), other medical spending (includes not itemized and durable medical equipment; 7.2 percent), health plan administrative expenses and revenues in excess of expenses (4.3 percent), and uncategorized spending (for spending such as public health spending, correctional facility health spending, Indian Health Services, school-based spending; 1.7 percent).

Appendix Table B2 shows the change in dollars and the share of spending by categories of service between 2013 and 2017. 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 2013 and 2017 for some categories of service.

Table B3: Health Care Spending and Distribution by Payer (2013-2017)

Millions of Dollars	2013	2014	2015	2016	2017	Change from 2016	Avg. Annual Growth (2013-2017)
Public Spending, Total	**$19,678**	**$21,714**	**$22,482**	**$23,041**	**$24,861**	**7.9%**	**6.0%**
Medicare	$8,438	$8,864	$9,247	$9,675	$10,383	7.3%	5.3%
Medical Assistance	$8,591	$10,278	$10,405	$10,643	$11,570	8.7%	7.7%
Other Public Spending[1]	$2,649	$2,573	$2,831	$2,723	$2,908	6.8%	2.4%
Private Spending, Total	**$21,834**	**$22,871**	**$23,588**	**$24,695**	**$25,407**	**2.9%**	**3.9%**
Private Health Insurance	$15,720	$16,552	$17,173	$18,098	$18,663	3.1%	4.4%
Out-of-Pocket	$5,068	$5,228	$5,294	$5,413	$5,515	1.9%	2.1%
Other Private[2]	$1,047	$1,091	$1,121	$1,184	$1,229	3.8%	4.1%
Total	**$41,512**	**$44,584**	**$46,071**	**$47,736**	**$50,268**	**5.3%**	**4.9%**

Distribution of Spending	2013	2014	2015	2016	2017
Public Spending, Total	**47.4%**	**48.7%**	**48.8%**	**48.3%**	**49.5%**
Medicare	20.3%	19.9%	20.1%	20.3%	20.7%
Medical Assistance	20.7%	23.1%	22.6%	22.3%	23.0%
Other Public Spending[1]	6.4%	5.8%	6.1%	5.7%	5.8%
Private Spending, Total	**52.6%**	**51.3%**	**51.2%**	**51.7%**	**50.5%**
Private Health Insurance	37.9%	37.1%	37.3%	37.9%	37.1%
Out-of-Pocket	12.2%	11.7%	11.5%	11.3%	11.0%
Other Private[2]	2.5%	2.4%	2.4%	2.5%	2.4%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: MDH, Health Economics Program.

[1] Other public spending includes government workers' compensation, Veterans Affairs, and public health spending.

[2] Other major private payers include private workers' compensation and auto medical insurance.

Appendix Table B3 shows the change in dollars and the share of spending by payer between 2013 and 2017. While all payers increased in terms of total dollars spent, the proportion of total dollars (or shares of spending) is approaching a balance between public and private payers.

Table B4: Minnesota Private and Public Health Care Spending, Actual and Projected (2008-2027)

	Year	Private	Public	Total
Actual Spending	2008	$20.7	$15.3	$36.0
	2009	$21.0	$16.4	$37.4
	2010	$20.8	$17.1	$37.9
	2011	$20.8	$17.9	$38.7
	2012	$21.3	$18.8	$40.1
	2013	$21.8	$19.7	$41.5
	2014	$22.9	$21.7	$44.6
	2015	$23.6	$22.5	$46.1
	2016	$24.7	$23.0	$47.7
	2017	$25.4	$24.9	$50.3
Projected Spending	2018	$26.6	$26.7	$53.3
	2019	$28.3	$28.5	$56.8
	2020	$29.9	$30.4	$60.3
	2021	$31.7	$32.6	$64.4
	2022	$33.7	$35.4	$69.0
	2023	$35.9	$38.2	$74.1
	2024	$38.2	$41.3	$79.4
	2025	$40.6	$44.5	$85.1
	2026	$43.2	$47.9	$91.1
	2027	$46.0	$51.5	$97.5

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

Appendix Table B4 shows the historical and projected spending for private and public payers from 2008 to 2027. By 2027, total spending is expected to double to $97.5 billion.

Appendix C: 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 25 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) 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 plan company 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 2017 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 CMS National Health Expenditure Accounts (NHEA).

On an annual basis, we routinely consider and review details[52] 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 become 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 NHEA, a nationwide spending estimate conducted by CMS. The broad categories include private health insurance, out-of-

[52] 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.

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 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 plan companies licensed to provide health insurance coverage in Minnesota. The vehicle of data collection is the annual Health Plan Financial and Statistical Report (HPFSR). Health plan companies 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 plan company, through MNsure, or through a broker).

A significant share of privately insured Minnesotans (approximately 66 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.

Beginning with the 2017 spending report, MDH specifically designated several Affordable Care Act (ACA) and state-based premium subsidy programs as private health insurance. This is due to the way we define our payer categories, which is different from that of CMS, which has two different ways of allocating health care spending, by payer and by financer of health care services. Historical spending estimates were updated based on this designation; however for 2016 and prior spending reports, MDH did not include the aforementioned ACA and state-based premium subsidy programs as private health insurance. Information on where these programs are accounted for within our spending estimates is below:

- ACA Cost-sharing reductions (CSR): CSR is included within private health insurance spending.
- ACA Advance Premium Tax Credit (APTC): APTC is included within our revenue calculations, affecting the Net Cost of Insurance calculations.

- State-based Minnesota Premium Subsidy Program: This program is included within our revenue calculations, affecting the Net Cost of Insurance calculations.[53]

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 ACA provisions. MCHA ended December 31, 2014 and PCIP ended April 30, 2014.

Medicare Advantage Private Expenses

Health plan companies 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 a health plan company). 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

[53] In January 2017, the Minnesota Legislature passed Laws of Minnesota 2017, chapter 2, art. 1, which provided a 25 percent subsidy on individual market premiums for qualifying individuals; it was administered through health plan companies.

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 Veterans Health Administration (for Veterans Affairs), 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 are 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).[54] 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

[54] 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.

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.

For both Medical Assistance and MinnesotaCare spending estimates, managed care performance payments and gross adjustments are assigned to the calendar year they are associated with rather than the year these amounts were paid (e.g. managed care performance payments for calendar year 2016 are paid in July 2017; in our spending estimates, these amounts are included as health care spending in 2016.

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

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 are available. The Department of Defense (DOD) reports TRICARE spending.[55] They report 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 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 are obtained directly from the Minnesota Department of Corrections. To calculate 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 were 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

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

Minnesota 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.

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 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.[56]

In 2009, CMS restructured the NHEA and moved away from having a separation between private and public payers, likely due to the line between private and public "payers" becoming increasingly difficult to ascertain. MDH continues to see value in reporting spending by private and public payers; therefore has kept this distinction in our health care spending estimates and projections. CMS publishes two-types of health care spending estimates, one by who finances the health care and one who pays for health care services.

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.[57] A historical independent analysis by an MDH contractor of the CMS SHEA approach did not reveal any factors that suggest CMS' approach is

[56] Although MDH does attempt to follow CMS' categories of service data aggregation methods, it is not always possible due to the nature of the data MDH is able to access. For example, data MDH utilizes for chemical dependency and mental health are often reported as a separate category of service. As a result, we are not able to proportion chemical dependency and mental health services to other categories of service, where these services were ultimately received (e.g., residential, inpatient, outpatient). In comparison, NHEA methodology does attempt to proportion their data further. Information pertaining to the health care services spending crosswalk to NHEA spending is found within the CMS NHEA Methodology Paper https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsHistorical.html

[57] Further information on the methodology used by CMS to generate state-level spending estimates through 2014 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

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 are 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. In 2017, MDH contracted with Oliver Wyman to develop the macroeconomic model used to project health care spending for this report (2018 through 2027). 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.[58]

In previous years, projections to estimate what future spending would have been without the impact of 2008 Minnesota health care reforms, or the 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. The last report that published that estimate was in March 2016.

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 per-enrollee growth rates published by the CMS NHEA for Medicare Health Consumption Expenditures, and are adjusted to account for historical variations of growth between Minnesota and the NHEA estimates. The Minnesota Medicare spending projection was then calculated by taking the projected Medicare population and the newly estimated Medicare per-enrollee spending figure.
- 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

[58] 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 attempts to align its projections with the CMS methodology framework; however, is limited in its ability to match all variables and calculations. For example, MDH is limited in the use of lagged values of variables due to the short historical timeframe of Minnesota's data (beginning in 1993), compared with CMS' data which began in 1960.

their forecast based on program type and demographic categories, which were further summarized by MDH. DHS' forecast only projected spending through state fiscal year 2023, so projections for calendar year 2023 and forward were based on a four-year average per-enrollee growth rate. The Medical Assistance and MinnesotaCare spending projections were then calculated by taking the respective, projected Medical Assistance and MinnesotaCare populations and the newly estimated Medical Assistance and MinnesotaCare per-enrollee spending figure. 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, were calculated by applying a five- or ten-year average growth rate, adjusting it, as able, to account for historical variations of growth between Minnesota the NHEA estimates. The projections were then calculated by taking each respective "other public" program, 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 2018.

Private Spending

Future private spending is projected by estimating a series of Autoregressive Integrated Moving Average (ARIMA) models using historic spending estimates and macroeconomic data for the years 1993 through 2017. These models allow for flexibility and ease of model interpretation, and allow us to use time series data and address concerns that may be present in statistical models, such as lack of variability and statistical errors being related to each other.

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 (e.g., private health insurance, out-of-pocket, and other private) and by categories of service (with the exception of uncategorized spending which is projected as part of other public spending).

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

- **Relative Medical Price Inflation (lagged basis for years one to three):** Estimates of national personal health care (PHC) deflator divided by the national Gross Domestic Product (GDP) deflator. Only explanatory variables were created on a lagged basis for years one to three. The current period variable was ignored due to endogeneity concerns.
- **Minnesota Personal Health Care to GDP Growth Rate (Lagged):** This variable is calculated as the annual growth rate of nominal private and public health care spending (from historical estimates

and projections) divided by the annual state GDP. Only explanatory variables were created on a lagged basis for years one to three. The current period variable was ignored due to endogeneity concerns.

- **Minnesota Real Per Capita Disposable Personal Income Growth Rate:** 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. Additional explanatory variables were created on a lagged basis for years one to three.
- **Minnesota Real Per Capita Public Personal Health Care Spending Growth Rate:** This variable is calculated as public spending from MDH estimates divided by the total state population and the aggregate PHC deflator. Additional explanatory variables were created on a lagged basis for years one to three.
- **Recession Indicator:** variable is based on years 2007-2010 to account for the one-time effect of the Great Recession (2007-2009) on private health care spending, as well as to the implicit impact of the Great Recession already accounted for in the MN Real Per Capita Disposable Personal Income Growth Rate.
- **Additional explanatory variables used in the payer and categories of service growth models:** In order to create models for specific payers and categories of service, additional explanatory variables were created, including:
  - Relative Out-of-Pocket Spending Price Index (lagged) for out-of-pocket projections;
  - Relative Medical Price Inflation by service categories (lagged) for inpatient, physician and outpatient, dental, professional services, long-term care, and other services;
  - Shortened Recession Indicator, used in the dental model only;
  - Medicare Part D Expansion Indicator, used in the Retail Prescription Drug model only; and
  - Share of 85-Year-Old Population, used in the Long-Term Care model only.

Using these variables, separate and distinctive 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

Users of these health care spending estimates should recognize that projections involve estimates of future events and are subject to economic and statistical variations from expected values. The results are subject to considerable uncertainties due to the range of necessary assumptions about future trends.

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 when they have happened historically; 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 (1993 through 2017), while strong because of its consistency and the method by which it is aggregated, still represents a relatively short time series. National historical data are based on a much longer time series (1960 through 2017).

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