# Health Care Spending and Projections, 2013

REPORT TO THE MINNESOTA LEGISLATURE MARCH 2016

MDH Minnesota Department *of* Health

HEALTH ECONOMICS PROGRAM

**Health Care Spending and Projections, 2013**

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As requested by Minnesota Statute 3.197: This report cost approximately $196,000 to prepare, including staff time, printing, mailing and contractual expenses.

Minnesota Department of Health

PROTECTING, MAINTAINING AND IMPROVING THE HEALTH OF ALL MINNESOTANS

March 10, 2016

The Honorable Kathy Sheran
Chair, Health, Human Services and Housing Committee
Minnesota Senate
75 Rev. Dr. Martin Luther King Jr. Blvd.
Saint Paul, MN 55155

The Honorable Tony Lourey
Chair, Finance - Health and Human Services Budget Division Committee
Minnesota Senate
75 Rev. Dr. Martin Luther King Jr. Blvd.
Saint Paul, MN 55155

The Honorable Tara Mack
Chair, Health and Human Services Reform Committee
Minnesota House of Representatives
545 State Office Building
100 Rev. Dr. Martin Luther King Jr. Blvd.
Saint Paul, MN 55155

The Honorable Matt Dean
Chair, Health and Human Services Finance Committee
Minnesota House of Representatives
401 State Office Building
100 Rev. Dr. Martin Luther King Jr. Blvd.
Saint Paul, MN 55155

Dear Senator Sheran, Senator Lourey, Representative Mack, and Representative Dean:

The 2008 Legislature required the Minnesota Department of Health (MDH) to annually estimate actual total health care spending for Minnesota residents and compare the results with Minnesota health spending projections.

This report includes data for 2013 health spending; it represents the fifth update. As in previous years, an actuary has certified the appropriateness of the data used, methodologies employed, and assumptions made in the completion of health spending estimates.

The major findings from this report include the following:

- Health care spending for Minnesota residents rose to $40.9 billion in 2013, representing an increase of 3.1 percent compared to 2012;
- Economic growth in Minnesota outpaced the rise in health care spending in 2013;
- Health care spending is projected to reach $85.0 billion by 2023, more than doubling the current volume of health care spending;
- Spending growth decelerated in 2013 by eight-tenths of a percentage point and represents lower-than-projected growth;

- A slowdown in rates of growth for Minnesota's Medicare population contributed to modest spending growth, as did continuing minimal rates of growth for private health insurance, the slow recovery from the economic recession, and increases in levels of cost sharing;
- The primary driver of commercial spending growth between 2011 and 2013 came from growth in prices in outpatient, professional services, and pharmacy spending – changes in service mix and volume of utilization played a smaller role;
- The average annual growth in projected spending from 2014 to 2023 is expected to be lower (7.8 percent) than the growth experienced for the ten-year period prior to the recession (8.5 percent);
- Gains in coverage for previously uninsured Minnesotans due to federal health reforms are expected to have a minimal effect on health care spending trends between 2014 and 2023, adding 0.8 percent to projected health care spending over the next ten years; and
- Estimated actual health care spending (less Medicare and long-term care) for Minnesota residents in 2013 was approximately $5.9 billion (21.2 percent) below projected levels of spending.

Questions or comments on the report may be directed to the Health Economics Program at (651) 201-3550.

Sincerely,

Edward P. Ehlinger, M.D., M.S.P.H.
Commissioner of Health
Minnesota Department of Health
PO Box 64975
Saint Paul, MN 55164

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# Executive Summary

Each year, the Minnesota Department of Health (MDH) conducts research to estimate how much Minnesotans collectively spend on health care. As part of this work, we develop projections of future health care spending in Minnesota based on the current policy environment, as well as a set of projections in which we compare projected spending to *actual* health care spending to assess the potential influence of Minnesota's 2008 health care reform law on spending trends.[1]

This report includes, for the first time, preliminary findings from analyses of what factors have been primarily driving health care spending growth. This work, which utilized Minnesota's All Payer Claims Database (APCD), was conducted to improve the precision of the spending projections, and to identify factors of spending growth that may differ from historical relationships between spending and macroeconomic factors, like unemployment and inflation. The report also contains an estimate of Minnesota health care spending growth that might be associated with implementing the Patient Protection and Affordable Care Act (ACA). The analysis, which is associated with considerable imprecisions, focuses primarily on the effect of increased health insurance coverage resulting from the ACA.

For this report, health care spending estimates represent the total amount expended by *all* payers on health care goods and services for Minnesota residents, including individuals, businesses, and state and federal entities. The estimate of total health spending in this report also captures spending on public health, the justice system, and workers compensation insurance; health plan profits are captured as well. The 2013 estimates are mainly constructed from aggregated data collected from payers of health care services - health plans, government sponsors of health coverage, public health agencies and individuals. The estimates principally follow the methods developed by the Centers for Medicare & Medicaid Services (CMS) to estimate and project health care spending nationally.[2,3]

The spending estimates in this report provide a broad metric to assess the volume of the economy allocated to health care delivery. Changes in this metric are driven by macroeconomic factors, policy developments, advances in medical science, patient and provider choices and, importantly, changes in prices. Monitoring trends in total spending is important because it provides both insights into long-term sustainability and transparency for potential tradeoffs in allocating resources to other policy priorities. It is not well suited to assess whether the resources spent on health care in Minnesota are being spent efficiently and in places and settings that best improve the health of Minnesotans. MDH continues to work on a series of reports, using more granular data, to identify opportunities for health care delivery system changes and financing of health care.

[1] Minnesota Statutes, chapter 62U.10.

[2] Methodology for MDH estimate is presented in Appendix C.

[3] Both MDH and CMS update historical data to reflect changes in the underlying health expenditure data and methodology. As a result, estimates presented in this report may differ slightly from earlier published estimates of historical health care spending.

# Key Findings

- Health care spending for Minnesota residents rose to $40.9 billion in 2013, representing an increase of 3.1 percent compared to 2012[4];
- Economic growth in Minnesota outpaced the rise in health care spending in 2013;
- Health care spending is projected to reach $85.0 billion by 2023, more than doubling the current volume of health care spending;
- Spending growth decelerated in 2013 by eight-tenths of a percentage point and represents lower-than-projected growth;
- A slowdown in rates of growth for Minnesota's Medicare population contributed to modest spending growth, as did continuing minimal rates of growth for private health insurance, the slow recovery from the economic recession, and increases in levels of cost sharing;
- The primary driver of commercial spending growth between 2011 and 2013 came from growth in prices in outpatient, professional services, and pharmacy spending – changes in service mix and volume of utilization played a smaller role;
- The average annual growth in projected spending from 2014 to 2023 is expected to be lower (7.8 percent) than the growth experienced for the ten-year period prior to the recession (8.5 percent); and
- Gains in coverage for previously uninsured Minnesotans due to federal health reforms are expected to have a minimal effect on health care spending trends between 2014 and 2023, adding 0.8 percent to projected health care spending over the next ten years.

[4] Actuarial certification is provided on an annual basis. Further discussion can be found in Appendix A.

# Health Care Spending in 2013

With an increase of just 3.1 percent relative to 2012, spending growth remained low in a historic context as the economy showed signs of improvement. The 2013 estimate represents the fourth lowest health care spending growth rate since 1994, when the Minnesota Department of Health (MDH) began tracking this trend. Despite restrained growth, health care spending for Minnesota residents continued to rise in 2013, reaching a total of $40.9 billion (actuarial certification is contained within Appendix A).

**Minnesota Health Care Spending in 2013**

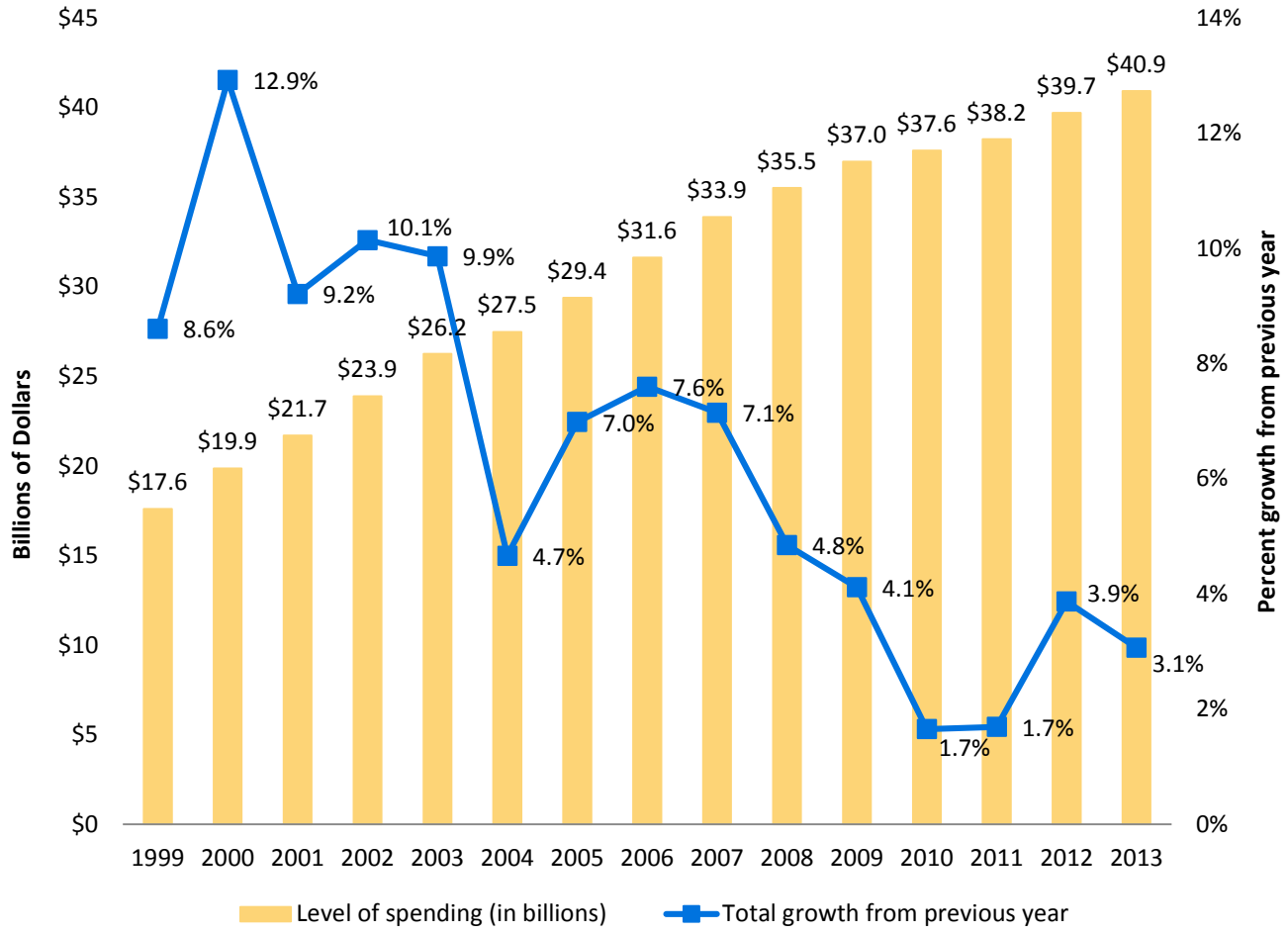
- Health care spending grew 3.1 percent, a moderate increase by historical standards.
- Total spending reached $40.9 billion.
- Health care spending accounted for 13.3 percent of the Minnesota economy, a modest decline relative to 2012.
- Compared to the United States, Minnesota had slower spending growth and a smaller share of the economy attributable to health care spending.
- Public spending grew more quickly than private spending, resulting in an increase in its share of total spending.
- Hospital spending accounted for more than one-third of all health care spending.

At the same time, as shown in Figure 1, the 2013 health care spending growth rate was nearly double the rate of growth in 2010 and 2011 (1.7 percent in each year), the two years with the lowest year-over-year increase since MDH began tracking annual health spending growth. Minnesota's 2013 increase in health care spending was well below the state's average annual rate of spending growth for the ten-year period prior to the recession (8.5 percent). National research ties the comparable slow growth in national health care spending to a gradual post-recession economic recovery.[5] Similarly, Minnesota's economy continued a gradual recovery in 2013, with the unemployment rate falling to near pre-2007 rates; however, per capita personal income growth remained flat.[6]

[5] Hartman M, Martin AB, Lassman D, Catlin A, National Health Expenditure Accounts Team. "National Health Spending in 2013: Growth Slows, Remains in Step with the Overall Economy." Health Affairs (2015), 34, no. 1.

[6] Bureau of Labor Statistics. Current Population Survey, Local Area Unemployment Statistics. Bureau of Labor Statistics website, accessed on April 27, 2015 and Bureau of Economic Analysis. Regional Data, SA1 Personal Income Summary: Personal Income, Population, Per Capita Personal Income. Bureau of Labor Statistics website, accessed on September 29, 2015.

## FIGURE 1: TRENDS IN MINNESOTA HEALTH CARE SPENDING AND RATE OF GROWTH




Source: MDH Health Economics Program

Researchers, economists, and policymakers are analyzing factors that may have contributed to the slow growth in health care spending following the end of the most recent recession.[7] As noted, many believe the economic recession may be the primary factor for the slowdown, with some national research showing the recession may be responsible for 70 to 75 percent of the slowdown.[8,9] Others point to evidence that health care reform and structural changes (e.g., adjustments to Medicare

[7] See for example: Sheiner L. "Perspectives on Health Care Spending Growth." The Future of U.S. Health Care Spending Conference. April 2014.

[8] Dranove D, Garthwaite C, and Ody C. "Health Spending Slowdown is Mostly due to Economic Factors, Not Structural Change in the Health Care Sector." Health Affairs, 33, no. 8 (August 2014): 1399-1406.

[9] See for example: Kaiser Family Foundation. "Assessing the Effects of the Economy on the Recent Slowdown in Health Spending." April 2013. Accessed May 4, 2015, Kaiser Family Foundation Issue Brief.

payments and a beginning shift in how we pay providers for health care services), have played a larger role in the slowdown.[10,11]

There are also specific initiatives in Minnesota and the United States that may have contributed to the slowdown experienced over the last several years or show promise for future impact.

**Privately insured Minnesotans have experienced increases in cost sharing over the last decade.** As consumers have become responsible for a greater share of health care spending, health care services use likely declined, resulting in reduced health care spending.[12] Privately insured Minnesotans were responsible for an estimated 17.5 percent of their health care spending in 2013, up from 12.8 percent ten years earlier.[13]

**Technology continues to be cited as a possible driver of health care spending, along with increased health insurance coverage and rising incomes.** Historical estimates suggest technological changes (e.g., new medical devices and robotic surgery) in health care may be responsible for between 27 to 48 percent of health care spending growth.[14] More recent analyses suggest slower trends in development and diffusion of new technologies (such as telemedicine) may be contributing to the recent spending growth slowdown.[15]

**Minnesota is working to lower health care costs and to improve access to care and the health of Minnesotans, in part through initiatives stimulated by Minnesota's 2008 health care reform law and the Patient Protection and Affordable Care Act (ACA).** Efforts include:

- Piloting health care payment and delivery reforms (through the State Innovation Model Initiative grant and Accountable Care Organizations (ACOs));
- Supporting greater care coordination (e.g., Health Care Homes);
- Making ongoing investments in Health Information Technology and effective use; and

[10] See for example: Furman J and Fiedler M. "Historically Slow Growth in Health Spending Continued in 2013, and Data Show Underlying Slow Cost Growth Is Continuing." Council of Economic Advisors. December 3, 2014. Accessed May 5, 2015, Council of Economic Advisors news article; Roehrig C. "What is Behind the Post-Recession Bend in the Health Care Cost Curve?" Health Affairs Blog, March 23, 2015.

[11] Research by David Cutler and Nikhil Sahni completed in 2013 found the recession contributed to 37 percent of the slowdown, and an additional 8 percent due to shifts away from private insurance coverage and Medicare payment rate cuts, leaving 55 percent unexplained. Cutler D. and Sahni N. "If Slow Rate of Health Care Spending Growth Persists, Projections May Be Off by $770 Billion." Health Affairs, 32, no. 5 (2013): 841-850.

[12] Cost sharing has been shown to be associated with reduced care that is considered necessary, as well as unnecessary. See for example: Lohr K. et al. Use of Medical Care in the RAND Health Insurance Experiment: Diagnosis- and Service-Specific Analyses in a Randomized Controlled Trial. Santa Monica, Calif.: RAND Corporation, R-3469-HHS, December 1986.

[13] Based on unpublished MDH analysis of health plan data.

[14] See for example: Smith S. et al., "Income, Insurance, and Technology: Why Does Health Spending Outpace Economic Growth?" Health Affairs, 28, no. 5 (September/October 2009): 1276-1284. A prior analysis estimated technology was responsible for 38-65 percent of spending growth: Robert Wood Johnson Foundation. "High and Rising Health Care Costs: Demystifying U.S. Health Care Spending." Research Synthesis Report, No. 16. October 2008.

[15] Chandra A, Holmes J, and Skinner J. "Is This Time Different? The Slowdown in Healthcare Spending." Fall 2013 Brookings Panel on Economic Activity. September 2013; Kvedar J, Coye MJ, Everett W. "Connected Health: A Review of Technologies and Strategies to Improve Patient Care with Telemedicine and Telehealth." Health Affairs, 33, no. 2 (February 2014): 194-199.; Cutler D and Sahni N. "If Slow Rate of Health Care Spending Growth Persists, Projections May Be Off By $770 Billion." Health Affairs, 32, no. 5 (2013): 841-850.

- Pursuing value-based purchasing strategies by combining performance payment with network design and patient incentives. While it is too early to assess the broader impact of these efforts, early findings have demonstrated potential, with additional evaluations underway.[16, 17]

**Another key element of Minnesota's 2008 health care reform law with promise for more long-term effects on disease prevalence and, hopefully, spending, is the Statewide Health Improvement Program (SHIP).** Implemented in 2009, SHIP has been working with communities statewide through grants to promote policy, systems, and environmental changes that support healthy eating, physical activity, and reduced tobacco use.[18] These changes are designed to stimulate greater opportunities for health and, over the long-term, reduce chronic disease burden and dramatically higher costs associated with the presence of multiple chronic conditions.[19]

The slow growth may have also influenced other trends, such as per capita spending and spending growth compared to the economy. In contrast to the United States, health care spending in Minnesota accounted for a smaller portion of the economy (13.3 percent and 16.5 percent, respectively, Table 1). As a share of the economy, Minnesota health care spending has been declining over the past five years, falling by nine-tenths of a percentage point, while nationally the rate has remained relatively unchanged, as shown in Table 1. This moderate decline in 2013 is the result of Minnesota's overall economic growth outpacing the rise in health care spending. The trend in Minnesota is a departure from the earlier 2000s when health care spending as a percentage of the economy generally grew each year.

Per capita spending in Minnesota in 2013 also grew slower than nationally (2.3 percent and 3.1 percent, respectively). In aggregate, the gap in per capita spending measured in previous years remained, with Minnesota per capita spending reaching $7,552, compared to $8,713 nationally (Table 1).[20]

[16] See for example: Medicaid Reform Initiative Press Release; Wholey D. et al. Evaluation of the State of Minnesota's Health Care Homes Initiative. January 2014. Accessed April 30, 2015, MDH Evaluation of Health Care Homes Report.

[17] Recently, the Minnesota Department of Human Services reported savings from the implementation of its Medicaid ACO model: Medicaid Reform Initiative news article.

[18] See for example: the SHIP 2012-2013 report website.

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

[20] Per capita spending comparisons between Minnesota and the United States are made somewhat difficult because of differences in data and methodologies. For this analysis, MDH used national estimates categorized as "health consumption expenditures," which are most directly comparable to Minnesota's analytic focus in this report. The estimate includes some costs not considered in Minnesota's analysis, e.g., government costs associated with the administration of public health programs, and payments made by philanthropy. In the national context, these expenditures make up approximately 5 percent of health consumption expenditures. When taken into account, national per capita spending remains almost 10 percent higher than Minnesota per capita spending (instead of 15 percent).

## TABLE 1: MINNESOTA AND U.S. HEALTH CARE SPENDING, PER CAPITA AND AS SHARE OF ECONOMY

| | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| **Per Capita Spending:** | | | | | |
| Minnesota | $7,029 | $7,081 | $7,151 | $7,383 | $7,552 |
| U.S. | $7,694 | $7,935 | $8,178 | $8,454 | $8,713 |
| **Health Care Spending as a Share of the Economy:** | | | | | |
| Minnesota | 14.2% | 13.8% | 13.4% | 13.4% | 13.3% |
| U.S. | 16.4% | 16.4% | 16.4% | 16.4% | 16.5% |

Source: MDH Health Economics Program, Centers for Medicare & Medicaid Services, U.S. Department of Commerce: Bureau of Economic Analysis. Gross Domestic Product, updated through September 29, 2015

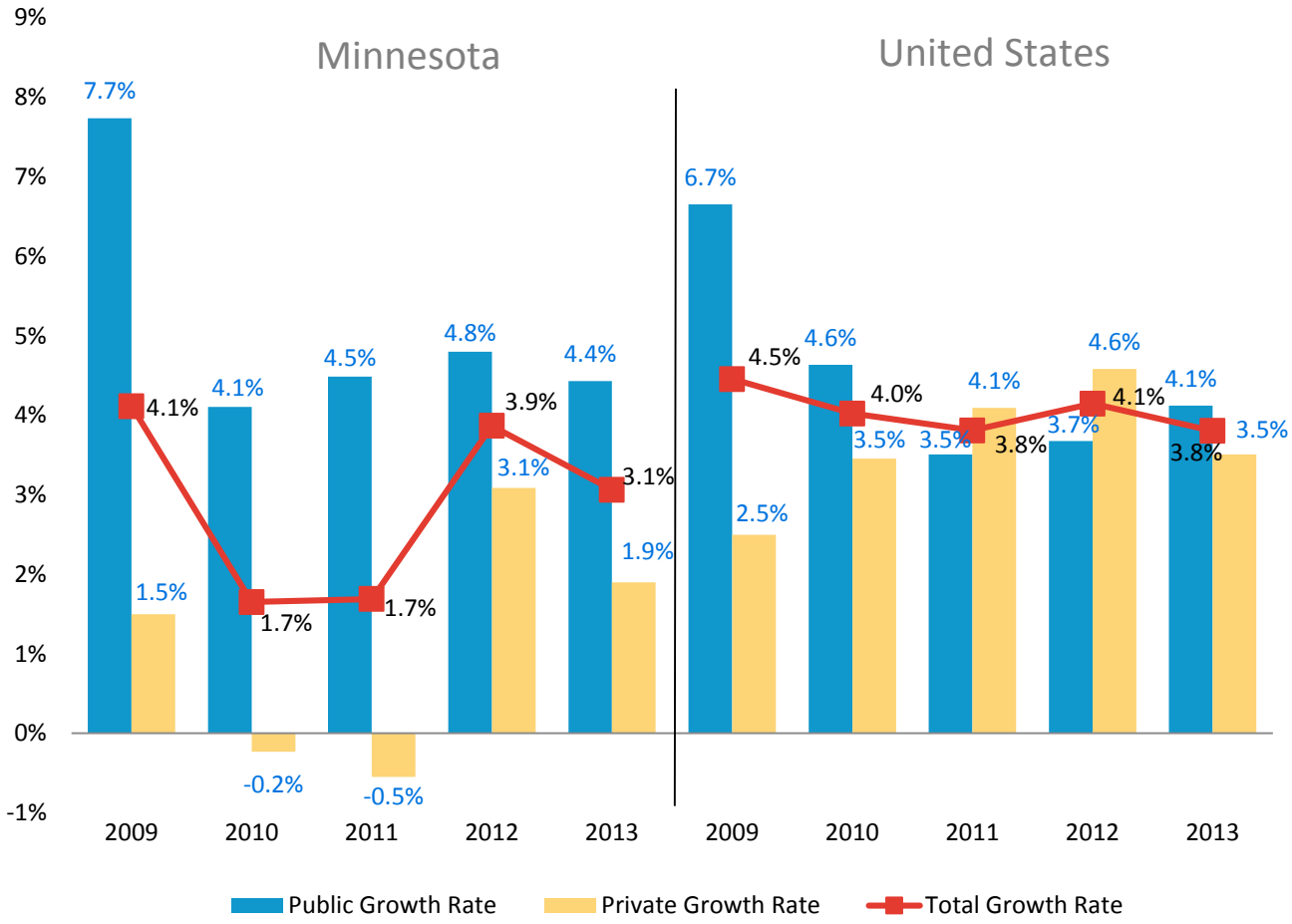
As noted, slower health care spending growth is likely in part an outcome of economic pressure on Minnesotans coming out of a deep recession with flat per capita income growth compared to 2012. Thus, while modest spending growth is in many ways good news in the context of concerns over sustainability, it may also be an indicator of underuse of health care services for patients with financial strain or high cost sharing. This analysis of total health care spending is not able to shed light on the appropriateness of health care services use and spending, but other MDH reports will continue to study this issue.

# Sources of Funds

The source of funding for health care is an important factor to consider when analyzing trends in health care spending. Shifts in health care financing over time highlight potential budgetary pressures to both public and private payers. Growth rates between public and private payers in both Minnesota and the United States have varied over the past five years.

While Minnesota has experienced slower private health care spending growth in comparison to the United States in total, public spending growth has generally been more comparable. As in previous years, the majority of spending in Minnesota has been from private spending due to the high rate of private coverage; however, public spending as a share of total spending has been increasing. The majority of private spending came from private health insurance, while the majority of public spending was split between Medical Assistance and Medicare (45.4 percent and 41.4 percent of total public spending, respectively).

## FIGURE 2: MINNESOTA AND U.S. HEALTH CARE SPENDING GROWTH




Source: MDH Health Economics Program, Centers for Medicare & Medicaid Services

As shown above in Figure 2, spending growth from public payers, which primarily includes the public health insurance programs – Medicare, Medical Assistance, and MinnesotaCare – continues to exceed growth in spending by private payers.[21, 22] Total public spending growth has been influenced by coverage increases in Medical Assistance spending due to Minnesota's early Medicaid expansion in 2011 and additional Medical Assistance spending on primary care under the ACA in 2013.[23] However, slower Medicare spending growth in 2013, due to a slowdown in per capita spending, moderated the overall public spending growth rate. Further trends in Medical Assistance and MinnesotaCare are discussed below.

In comparison, Minnesota's private spending has been at historically low rates of growth, averaging 1.0 percent annually over the past five years. Private spending includes non-public contributors to health

[21] Hartman M. et al., 2015.

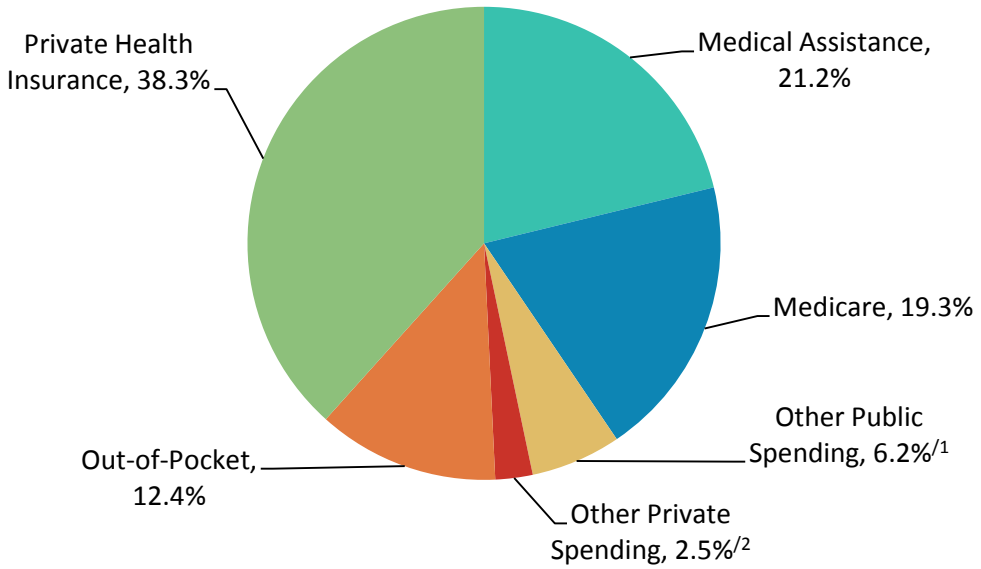
[22] Public spending in this report also includes spending by the Veterans Administration, workers' compensation, correctional facilities, and public health.

[23] The ACA temporarily increased Medicaid primary care payments for primary care services to equal Medicare Part B payments. For calendar years 2013 and 2014, states will receive 100 percent federal matching funds for the payment increase. For additional information, visit: Medicaid Provider Payments website.

care financing such as private health insurance, out-of-pocket expenses, automobile medical insurance, and private workers' compensation. Several factors may have contributed to the slower growth: low enrollment growth, benefit design changes (e.g., shifts to plans with higher deductibles), consumers delaying seeking or reducing demand for care, and the moderating influences of provisions of the ACA (e.g., Minimum Loss Ratio provision).

Health care financing can also be analyzed by categories based on the *payer* or *program* responsible for purchasing a health care good or service, as illustrated in Figure 3.[24] In 2013, the majority of Minnesota's health care spending (53.3 percent) came from private sources (Table 2). Private health insurance accounted for the largest share of total spending (38.3 percent). Patient out-of-pocket spending contributed to 12.4 percent of total spending. The remaining 2.5 percent of private spending came from other sources, such as workers' compensation and auto medical insurance. Public sources comprised the remaining 46.7 percent of total spending in 2013 (Table 2). Medical Assistance, Minnesota's Medicaid program, accounted for the second largest share of total spending (21.2 percent). Medicare contributed to 19.3 percent of total spending.[25] Other sources of public funding, including MinnesotaCare, made up the remaining 6.2 percent of total spending.[26]

## FIGURE 3: SOURCES OF MINNESOTA HEALTH CARE SPENDING, 2013




/1 Includes, among others, MinnesotaCare, government workers' compensation, and Veterans Affairs
/2 Other major private payers include private workers' compensation and auto medical insurance

Source: MDH Health Economics Program. Numbers may not sum to total due to rounding.

[24] Medicare Advantage is a public program administered by private payers. As a result, spending for this program is divided between public and private spending categories, based on the relative proportions of capitation payments and enrollee premiums to total revenue. Further discussion can be found in Appendix C.

[25] This does not include the portion of Medicare Advantage expenses funded through enrollee premiums.

[26] MDH's definition of "Other Public Spending" slightly differs than that of national estimates categorized as "health consumption expenditures," which are most directly comparable to Minnesota's analytic focus in this report. Minnesota's analysis of "Other Public Spending" excludes school-based health care.

As shown in Table 2, the share of spending by private and public payers continued to move closer to parity in 2013. Public spending on health care in Minnesota as a share of the total has been increasing steadily since 2003, but because of the high rate of private coverage in the state, spending by private payers continues to account for the larger share of spending.[27] The gradual increase in the percent of spending by public payers may be related to enrollment in private health insurance growing more slowly than that of public program enrollment (less than one percent, compared to 2.3 percent between 2012 and 2013) and the share of out-of-pocket spending and other private spending remaining fairly consistent over the past three years. In comparison to the United States, Minnesota public payers continue to account for a smaller share of total spending (46.7 percent vs. 48.2 percent).

## TABLE 2: MINNESOTA AND U.S. SHARES OF HEALTH CARE SPENDING BY PAYER

**Shares of Minnesota Health Care Spending by Payer**

| | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| **Public Spending, Total** | 43.4% | 44.5% | 45.7% | 46.1% | 46.7% |
| Medicare | 17.7% | 18.3% | 18.7% | 19.2% | 19.3% |
| Medical Assistance | 18.9% | 19.3% | 20.7% | 20.7% | 21.2% |
| Other Public Spending /1 | 6.7% | 6.9% | 6.3% | 6.2% | 6.2% |
| **Private Spending, Total** | 56.6% | 55.5% | 54.3% | 53.9% | 53.3% |
| Private Health Insurance | 41.0% | 40.4% | 39.4% | 39.1% | 38.3% |
| Out-of-Pocket | 12.9% | 12.6% | 12.4% | 12.3% | 12.4% |
| Other Private /2 | 2.6% | 2.6% | 2.5% | 2.5% | 2.5% |

**Shares of U.S. Health Care Spending by Payer/3**

| | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| **Public Spending, Total** | 48.1% | 48.4% | 48.2% | 48.0% | 48.2% |
| Medicare | 21.2% | 21.2% | 21.4% | 21.4% | 21.3% |
| Medicaid | 16.7% | 17.0% | 16.7% | 16.7% | 17.0% |
| Other Public Spending /1 | 10.3% | 10.2% | 10.1% | 10.0% | 9.9% |
| **Private Spending, Total** | 51.9% | 51.6% | 51.8% | 52.0% | 51.8% |
| Private Health Insurance | 35.3% | 35.1% | 35.3% | 35.3% | 34.9% |
| Out-of-Pocket | 12.8% | 12.5% | 12.5% | 12.4% | 12.3% |
| Other Private /2 | 3.8% | 4.0% | 4.0% | 4.3% | 4.6% |

/1 Major components of other public spending are MinnesotaCare, government workers' compensation and Veterans Administration.

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

/3 U.S. comparison - CMS National Health Expenditure Accounts, Health Consumption Expenditures. This does not include research and investment.

Source: MDH Health Economics Program, Centers for Medicare & Medicaid Services. Numbers may not sum to total due to rounding.

[27] Minnesota's 2013 rate of private coverage was more than eight percentage points higher than national results, 60.6 percent based on the 2013 Minnesota Health Access Survey. Using a comparable measure from the U.S. Census Bureau's American Community Survey, the national rate of private coverage is 52.5 percent.

As mentioned previously, the increase in the share of spending attributable to public payers has been primarily due to Medicare and MHCP.[28] In 2013, Minnesota's Medicare enrollment grew 3.6 percent, compared to 3.1 percent annually over the preceding five years. At the same time, per enrollee Medicare spending grew very slowly, at a rate of less than one percent. The increase in Medicare spending remains modest, despite the increase in the number of Minnesotans "aging" into eligibility for Medicare benefits. This is due in part to the current slow year-over-year changes.[29]

In 2013, Medical Assistance enrollment growth slowed to 1.2 percent, following growth of 2.9 percent in 2012 and 13.7 percent growth in 2011.[30] MinnesotaCare enrollment grew by 4.3 percent in 2013 after declining by 12.7 percent in 2012 and growing more modestly by 3.7 percent in 2011.[31] Per enrollee spending for Medical Assistance beneficiaries grew by 4.3 percent from the previous year, while per enrollee spending for MinnesotaCare grew more slowly at 1.6 percent from the previous year. Medical Assistance per enrollee spending growth has been historically low over the last ten years (2004-2013) at 1.0 percent annually, whereas MinnesotaCare growth was 4.7 percent on average annually (not shown). For the ten years prior to 2004, both Medical Assistance and MinnesotaCare per enrollee spending grew more quickly (7.0 percent annually and 19.0 percent annually, respectively; not shown).[32]

## Spending by Type of Service

In our analysis of health care spending trends, we also monitor spending by type of service (inpatient hospital, long-term care, prescription drugs, etc.) to identify potential structural changes in health care service use and cost that may be driving increases or decreases in spending. Over the past five years, spending has generally increased year-over-year for each type of service, and more than half of total spending has been attributable to hospital and physician services.

As shown in Figure 4, more than half (53.5 percent) of total spending is attributable to hospital and physician services, delivered in inpatient and outpatient settings. Roughly 15 percent of total spending is attributable to long-term care; prescription drug spending in 2013 accounted for nearly nine percent of total health care spending.[33]

[28] Medicare is a federal health insurance program covering individuals who are age 65 or older, certain individuals with disabilities, and individuals with End-Stage Renal Disease (ESRD). Minnesota Health Care Programs refers to Medical Assistance, MinnesotaCare, and GAMC (terminated in 2011).

[29] Based on December 2014 projections by the Minnesota State Demographic Center, by 2023 the Minnesota population age 65 and older is expected to reach over 1 million, averaging a growth of 3.2 percent annually between 2015 and 2023. In comparison, the population aged 20 and older (including those over 65) is only expected to increase 0.5 percent over the same time period.

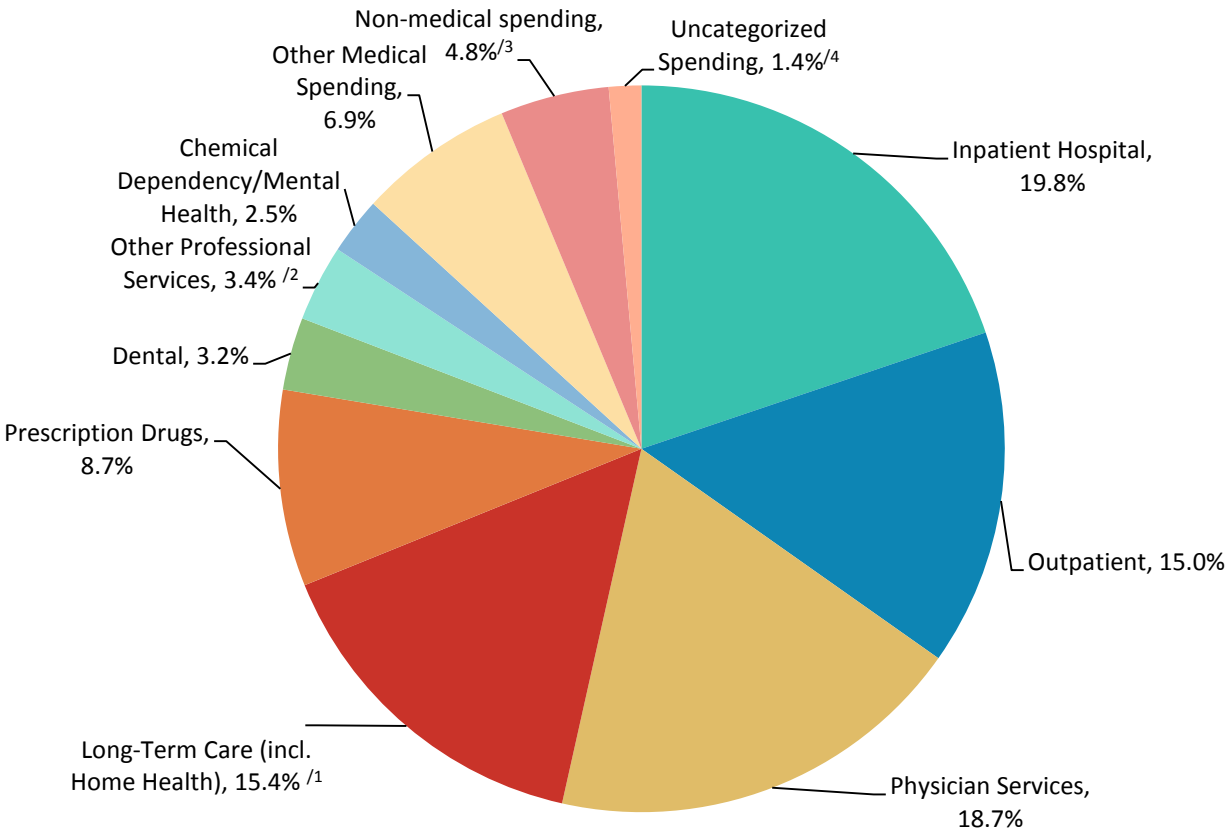
[30] In 2010, the Minnesota Legislature gave the Governor the authority to pursue Medicaid expansion. In March 2011, the Governor expanded eligibility for Medical Assistance to childless adults with incomes at or below 75% of the Federal Poverty Guidelines (FPG). This is often referred to as "early Medicaid expansion." Enrollment is based on gross enrollment and does not exclude dual-eligible enrollees.

[31] For further enrollment information, see Section 2 of the Minnesota Health Care Markets Chartbook.

[32] Additional information about per capita spending is available in Section 1 of the Minnesota Health Care Markets Chartbook.

[33] Prescription drug spending includes retail prescription spending and excludes spending for prescriptions dispensed in a hospital setting. MDH will study the separate trends of prescription drug spending in the medical and retail delivery space in a forthcoming study.

## FIGURE 4: MINNESOTA HEALTH CARE SPENDING BY TYPE OF SERVICE, 2013




/1 Includes home health care services.
/2 Includes services provided by health practitioners who are not physicians or dentists.
/3 Includes health plan administrative expenses and revenues in excess of expenses.
/4 Includes public health spending, correctional facility health spending, Indian Health Services, and not itemized spending.

Source: MDH Health Economics Program. Numbers may not sum to total due to rounding.

Table 3 displays spending from 2009 to 2013 by type of service in aggregate dollars (in millions) and as spending distributions. In 2013, spending rose across all service categories (including prescription drugs), continuing a trend from earlier years. One exception to this five-year growth pattern is spending for prescription drugs, which saw a contraction in 2010 and 2011, and experienced growth in 2012 and 2013. Several factors likely contributed to this aggregate spending contraction in 2010 and 2011, resulting in the fact that prescription drugs now account for a smaller share of total health care spending: (1) as patents expired, lower cost generics entered the pharmacy market; (2) the availability of Medicaid pharmacy rebates to managed care plans resulting from the ACA, considering the large majority of Medical Assistance beneficiaries in Minnesota are enrolled in managed care plans; and (3) a shift of the prescription drug budget from retail medications towards drugs dispensed in medical settings (e.g., injectable cancer treatments).

Although the spending distribution by type of service was relatively homogeneous in 2013 compared to 2012, inpatient and outpatient hospital services spending continued to grow as a share of the total over the past five years. Hospital services spending represented nearly 35 percent of total spending in

2013, compared to nearly 33 percent in 2009, with the growth occurring in outpatient services. The observed changes in the relationship between inpatient and outpatient hospital spending were consistent with declining trends in acute care admissions from 2009 to 2013 and with increases in outpatient visits and surgeries from 2011 to 2013.[34]

## TABLE 3: MINNESOTA HEALTH CARE SPENDING BY TYPE OF SERVICE

**Millions of Dollars**

| | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| Inpatient Hospital | $7,592 | $7,579 | $7,561 | $7,877 | $8,111 |
| Outpatient Hospital | $4,589 | $5,043 | $5,398 | $5,953 | $6,124 |
| Physician Services | $7,230 | $7,327 | $7,338 | $7,599 | $7,667 |
| Long-Term Care/1 | $5,653 | $5,734 | $5,913 | $6,045 | $6,290 |
| Prescription Drugs | $3,691 | $3,453 | $3,265 | $3,444 | $3,577 |
| Dental | $1,292 | $1,263 | $1,266 | $1,278 | $1,322 |
| Other Professional Services/2 | $1,219 | $1,112 | $1,246 | $1,347 | $1,393 |
| Chemical and Mental Health | $918 | $945 | $959 | $996 | $1,038 |
| Other Medical Spending | $2,899 | $3,104 | $3,201 | $3,231 | $3,429 |
| Other Non-Medical Spending | $1,907 | $2,042 | $2,089 | $1,945 | $1,981 |
| **Total** | $36,990 | $37,601 | $38,236 | $39,715 | $40,933 |

**Distribution of Spending**

| | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| Inpatient Hospital | 20.5% | 20.2% | 19.8% | 19.8% | 19.8% |
| Outpatient Hospital | 12.4% | 13.4% | 14.1% | 15.0% | 15.0% |
| Physician Services | 19.5% | 19.5% | 19.2% | 19.1% | 18.7% |
| Long-Term Care/1 | 15.3% | 15.2% | 15.5% | 15.2% | 15.4% |
| Prescription Drugs | 10.0% | 9.2% | 8.5% | 8.7% | 8.7% |
| Dental | 3.5% | 3.4% | 3.3% | 3.2% | 3.2% |
| Other Professional Services/2 | 3.3% | 3.0% | 3.3% | 3.4% | 3.4% |
| Chemical and Mental Health | 2.5% | 2.5% | 2.5% | 2.5% | 2.5% |
| Other Medical Spending | 7.8% | 8.3% | 8.4% | 8.1% | 8.4% |
| Other Non-Medical Spending | 5.2% | 5.4% | 5.5% | 4.9% | 4.8% |
| **Total** | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

/1 Includes home health care services.

/2 Includes services provided by health practitioners who are not physicians or dentists.

Source: MDH Health Economics Program

[34] MDH Health Economics Program, Trends at Minnesota's Community Hospitals, 2009 to 2012. January 2014; MDH Health Economics Program, Trends at Minnesota Community Hospitals in 2013. May 2015.

## Special Analysis: Inpatient and Outpatient Hospital Spending Trends

To better understand the dynamics between inpatient and outpatient hospital spending trends over the past several years and refine the long-term health care projections presented in the next section of this report, MDH analyzed hospital discharge data. The following trends for the period of 2009 through 2013 were identified:

- At the same time that the number of hospital inpatient days per capita declined in Minnesota hospitals (by 9.1 percent), the unadjusted average length of stay (in days) rose (4.6 percent).
- The increase in patients with higher severity levels led to longer hospital stays. The share of admissions with the highest severity levels (major or extreme) increased 6.7 percent during the five-year span..[35]
- While emergency department visits by Minnesota residents were steady per-capita, they rose steadily in aggregate since 2009 (6.3 percent), a period in which Medical Assistance eligibility expanded. Based on this data, it does not appear that increased coverage has lowered emergency department visits, which may be a result of access to or quality of care.

The analysis itself cannot conclusively identify factors responsible for the observed changes, but there are a number of trends that likely contribute: (1) Greater technical capability of outpatient care has resulted in some replacement of outpatient services for inpatient care (e.g., laparoscopic surgery). The level of complexity of patients admitted to hospitals would rise, as lower-complexity patients are treated in outpatient settings. (2) A number of analyses have demonstrated a shift in the conditions that result formally in a hospital admission..[36] For a variety of reasons, but including in response to Medicare payment changes, hospitals increasingly hold patients in an "observation stay" status. Observation stays are short periods of treatment and assessment, generally to determine whether a patient requires further services in an inpatient setting. Again, as lower-acuity patients in observation stays are not counted as patients admitted to hospitals, those patients admitted appear to be of a higher acuity. (3) Lastly, severity increased in part, because providers were able to and have submitted on average, a greater number of diagnostic codes to payers due to changes in federal hospital billing standards..[37]

[35] Severity codes were generated using the 2013 version of the 3M APR-DRG grouper software, which is used to adjust data for severity of illness.

[36] Currently analyses have not focused on care in Minnesota.

[37] In 2007, the National Uniform Billing Committee changed its uniform hospital billing form to UB-04, allowing additional secondary diagnosis codes to be submitted.

# Drivers of Health Care Spending

As policymakers evaluate the sustainability of spending in the state and the budgets of individuals, businesses, and governments, they are interested in understanding what drives health care spending growth. This information can be used to develop effective, targeted policy interventions. This section considers these drivers from two perspectives:

(1) How have types of service contributed to spending growth? and

(2) To what extent do changes in prices, service use, or the type of service drive spending growth?

**Drivers of Health Care Spending 2011-2013**

- Changes in prices were the primary driver of spending increases in the private insurance market.
- The degree to which prices drove spending growth in the private insurance market differed across categories.
- Outpatient and inpatient care contributed to over half of total health care cost growth.

With faster growth rates than per capita spending between 2011 and 2013, inpatient and outpatient hospital services were the largest contributors of spending growth, accounting for over half of the total spending growth. Changes in prices were the primary factor driving spending growth in the private insurance market from between 2011 and 2013.

To evaluate the drivers in health care spending, the Minnesota Department of Health (MDH) reviewed average annual per capita spending growth rates by types of health care services and conducted a new analysis on private market spending drivers for the years 2011 to 2013. This new analysis utilized Minnesota's All Payer Claims Database (APCD) to review private commercial claims, identifying factors of spending growth that differed from historical relationships between spending and macroeconomic factors. The APCD is valuable for this type of analysis, as it is the only dataset that includes *both* utilization and spending data on private payers, and in the future, may help to improve the precision of the spending projections.

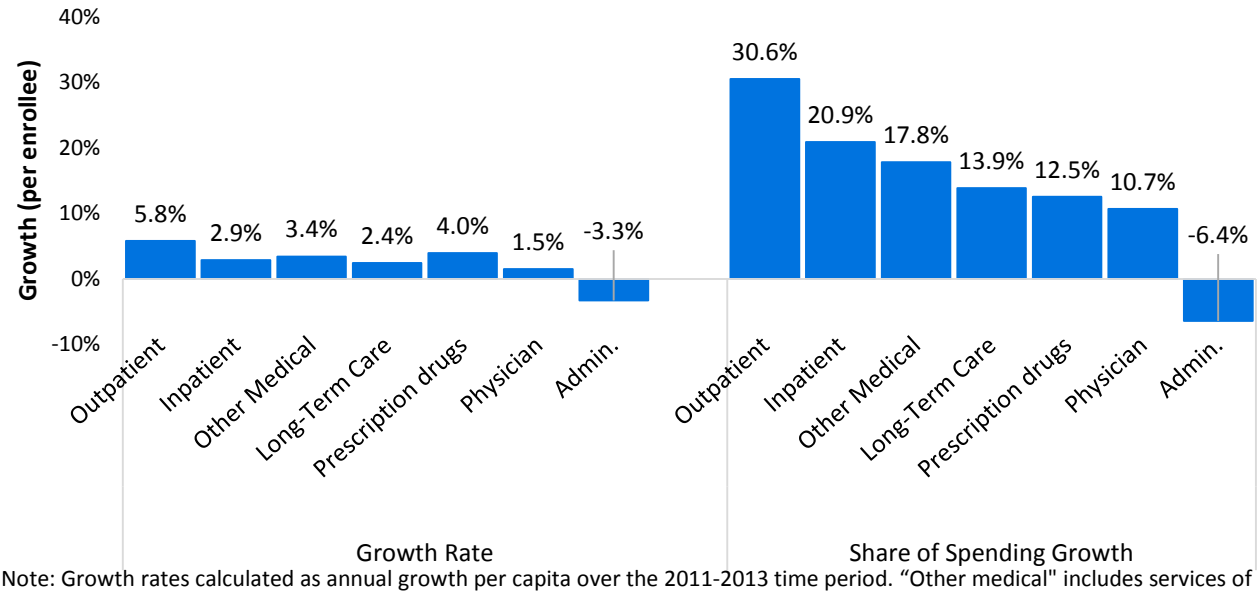
## Spending Growth by Types of Health Care Services

As discussed earlier, types of health care services contribute differently to rates of spending growth. This is attributable to individual service categories accounting for a different share of total spending and growing at different rates.

Figure 5 illustrates the average annual per capita spending growth from 2011 to 2013 by service category, as well as the share of spending growth. Over the most recent three-year period, per capita spending grew 2.8 percent annually (not shown). Per capita spending for inpatient and outpatient hospital services experienced higher growth than total per capita spending; these categories were the most significant drivers of spending growth, contributing 20.9 percent and 30.6 percent, respectively. Prescription drug per capita spending also grew more quickly than total spending between 2011 and 2013, contributing 12.5 percent of total growth. Analysis of national data suggests this increase was likely driven by increased prices for brand (and specialty) medications, even though substitution by

generic drugs increased over this period.[38,39] Long-term care, despite slower per capita growth than total spending, contributed 13.9 percent of total growth. Lastly, a reduction in per capita administration expenses assisted in deflating price growth from 2011 to 2013.

## FIGURE 5: HEALTH CARE COST DRIVERS: GROWTH RATES AND SHARES OF TOTAL GROWTH BY TYPE OF SERVICE, 2011 TO 2013




Note: Growth rates calculated as annual growth per capita over the 2011-2013 time period. “Other medical" includes services of health professionals other than physicians and dentists, chemical dependency/mental health, durable goods, uncategorized spending, and not itemized expenses. "Outpatient" includes emergency department. "Administration" includes net cost of insurance. Dental is excluded.

Source: MDH Health Economics Program

# Spending Drivers in the Private Insurance Market

For this report, MDH and its contractor studied, for the first time, drivers of spending growth in the private market at a granular level. The purpose was to identify potential changes from historical spending trends so that they may be incorporated into a more refined projection methodology.

This analysis looked to distinguish changes in spending attributable to the following components: price, service mix (e.g., distribution of spending between categories of services), and volume of health care. We focused on trends in private health insurance spending for two reasons: (1) it represents the

[38] Health Care Cost Institute, Inc. 2013 Health Care Cost and Utilization Report. October 2014.

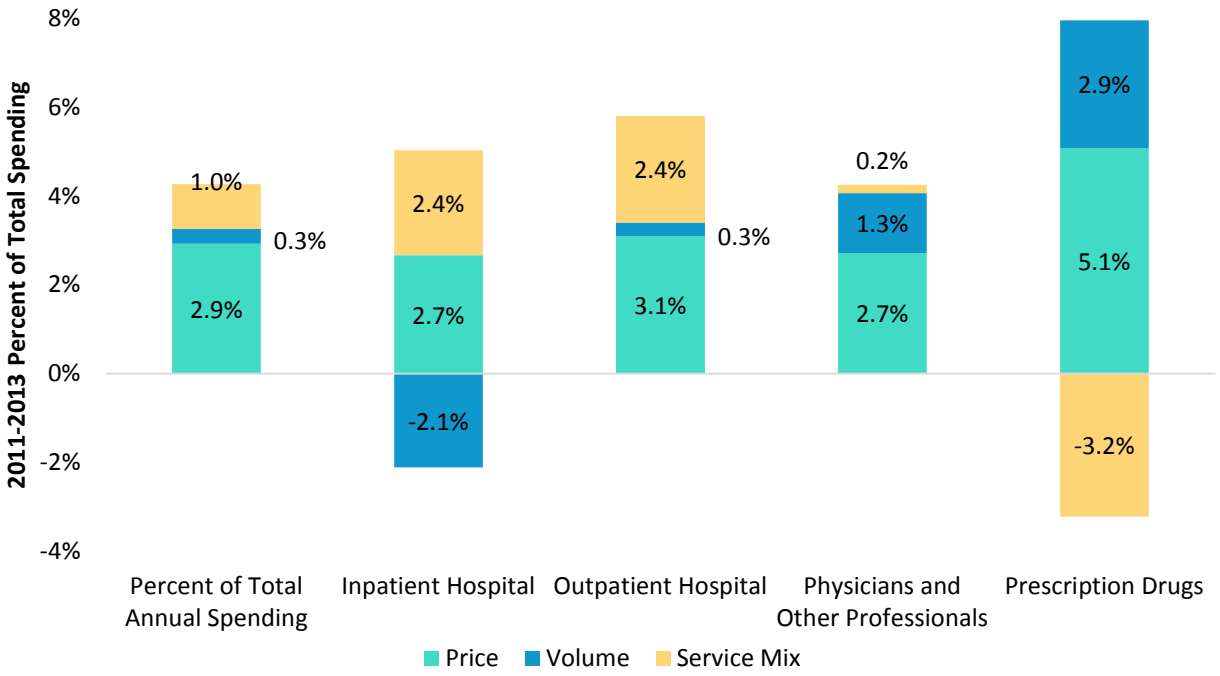
[39] As mentioned previously, aggregate prescription drug spending contracted in 2010 and 2011 and experienced spending growth in 2012 and 2013. As a result of only looking at the time period of 2011 to 2013, prescription drug per capita spending increased.

majority of spending, and (2) it is more independent of regulatory influences compared with public program spending, and therefore more closely reflects underlying trends.[40]

As shown in Figure 6, the analysis found:

- Growth in health care prices accounted for the largest portion of total spending growth change (approximately 69.0 percent), compared to service mix and volume;
- Although price had the greatest impact on spending in nearly all service categories, the specific impact of price, volume, and service mix on annual spending varied by year and by place of service (e.g., between outpatient hospital services and professional services);
- Changes in drug composition (i.e., service mix), influenced by patent expirations, accounted for some downward pressure on pharmacy spending. Similarly, a decline in inpatient hospital volume reduced overall spending and somewhat compensated for growth in hospital service mix and prices.

## FIGURE 6: PRIVATE MARKET SPENDING DRIVERS: COMPONENTS OF TOTAL ANNUAL SPENDING, 2011 TO 2013:




Note: Prescription drugs includes retail prescriptions and excludes those dispensed in a hospital setting.

Source: MDH Health Economics Program and Mathematica Policy Research, Cost Drivers Analysis for Privately Insured Health Care Services in Minnesota from 2011 to 2013.

[40] Spending analysis completed by MDH and Mathematica Policy Research utilized the Minnesota All Payer Claims Database (APCD) and included five major service categories: (1) inpatient hospital; (2) outpatient hospital; (3) freestanding outpatient facilities; (4) physician and other professional services; and (5) prescription drugs. Claims falling into other categories were excluded.

# Health Care Spending Projections

This section presents results from two separate projections of health care spending in Minnesota built by relying on historical trends in spending; methodologies developed by the Centers for Medicare & Medicaid Services (CMS), aligned to Minnesota; and statistical modeling at the payer and provider-type level. Similar to CMS, these two projection models focus on a relatively short projection period – ten years – and may, therefore, not fully capture the longer-term effects of initiatives aimed at policy, systems, and environmental changes on health care spending.

1. **The first set of projections uses all available historical information, including 2013 estimates of spending presented in this report, to forecast future health care spending in Minnesota.**

   Despite the recent slowdown in health care spending growth, future spending growth remains of interest to Minnesota consumers, businesses, and government policymakers. This set of projections forecasts health care spending growth through 2023. It incorporates changes to historical trends from a variety of factors, including those resulting from Minnesota's 2008 health care reforms and the implementation of the Patient Protection and Affordable Care Act (ACA). In other words, the first set of projections reflects health care spending under the current policy environment.

**Minnesota Health Care Spending Projections (2014-2023)**

- Health care spending is expected to double over the next ten years, reaching $85.0 billion by 2023.
- The average annual spending growth from 2014 to 2023 is expected to be lower than the growth experienced for the ten-year period prior to the recession.
- The share of Minnesota's economy devoted to health care spending is expected to steadily increase.
- The projected increase in spending for newly covered individuals due to the ACA is expected to diminish over time.

2. **The second set of projections, as required by statute, represents a refined baseline of health care spending in Minnesota absent health reforms enacted in 2008.**

   The Minnesota 2008 health care reform law contained several initiatives to reduce growth in health care spending in the state. These initiatives included provisions such as investments in population health, increased transparency in provider cost and quality, and strengthened care coordination for the chronically ill.[41] This second set of projections estimates the impact of Minnesota 2008 health care reforms on spending growth by comparing updated baseline projections beginning in 2009, developed on the basis of pre-reform trends, with *actual* spending estimates in 2013. In other words, the second set of projections reflects what health care spending might look like if the 2008 health care reforms were not enacted. The value and accuracy of this part of the analysis wanes with passing time, as other external factors interact with spending and these reform initiatives.

[41] Visit the Minnesota Health Reform website for more information on these initiatives.

The Minnesota Department of Health (MDH) contracted with Mathematica Policy Research to develop the projection models used in both sets of projections. Earlier models were updated to incorporate methodological improvements and changes in the policy environment that could influence health care spending in Minnesota.[42] The methods used in the projections were derived from those used by CMS to project national health care expenditures; where appropriate, they were customized to Minnesota's health care and data environment.[43] For the purpose of this report, the projection models include updates that refresh macroeconomic inputs and historic spending data.

## Future Health Care Spending Under the Current Policy Environment

The first model aims to provide a robust outlook of future health care spending trends by using complete, updated historical data (i.e., through 2013) as inputs into the analysis. By design, this model captures any longer-term impact of Minnesota's 2008 health care reforms, changes to drivers of cost since the onset of the Great Recession, and some structural changes stimulated by the ACA. As with all projections, the model developed for this effort relies on capturing the statistical relationships between macroeconomic factors and spending growth that were present historically. Unexpected future changes in the structural relationship between variables or the emergence of external factors, such as economic shocks or changes in federal and state policies, cannot be captured in projections (more detail is in Appendix C).

Similar to national projections developed by the CMS, there is uncertainty of the indirect effects of the ACA on market behaviors and spending projections. MDH anticipates that future reports that include spending associated with coverage expansions will help to strengthen estimates by eliminating one-time effects, such as the potential presence of pent-up demand.[44]

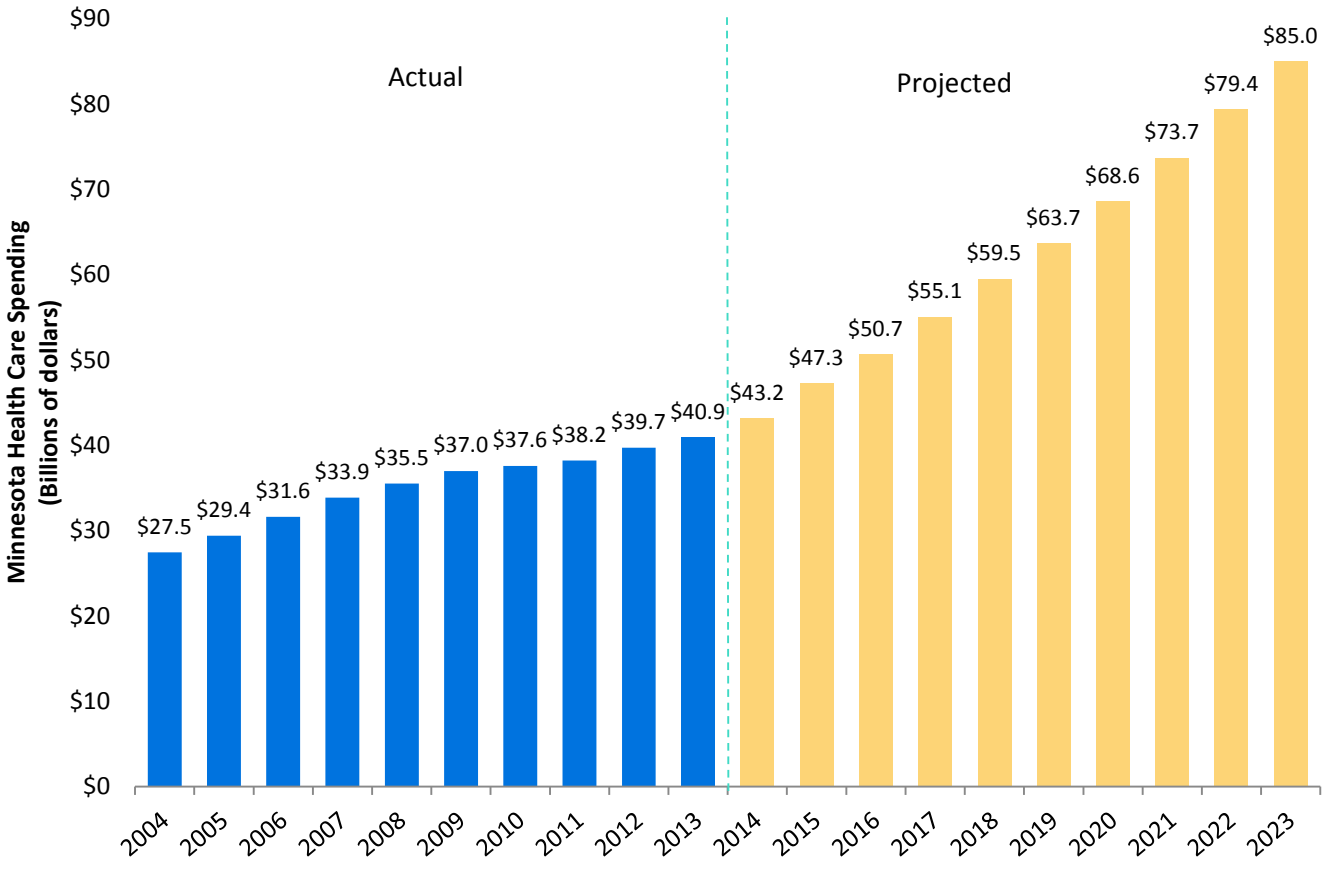
Despite the recent slowdown in spending growth, we project that health care spending in Minnesota will more than double by 2023 and reach $85.0 billion (Figure 7). Average annual health care spending growth is expected to amount to 7.8 percent for the period of 2014 to 2023. By 2023, health care spending is projected to account for a larger portion of the Minnesota economy, representing nearly 20 percent of the state gross product. These trends reflect a change from the period of 2009 to 2013, in which health care spending as a share of the overall Minnesota economy declined.

[42] Methodological detail is presented in Appendix C.

[43] Greater detail of the CMS projection methodology is available from the CMS projection methodology website.

[44] Fertig A, Carlin C, and Long S. "Research Brief: The First Insurance Claim of New ACA Enrollees". Medica Research Institute (August 2015) No. 1. Ongoing research by the Medica Research Institute is looking at "pent-up demand" with the start of the 2014 coverage expansions. Although data is preliminary at this point, the recently released issue brief has found that there may be pent-up demand for new Medicaid enrollees and mixed evidence for new individual plan enrollees, when comparing to a comparison group.

## FIGURE 7: MINNESOTA HEALTH CARE SPENDING, 2004 TO 2023




Source: historical spending estimates from MDH Health Economics Program, projections from Mathematica Policy Research

There are a number of factors contributing to the expectation of higher spending growth:

- As in the past, the main drivers of spending are expected to be increases in prices for medical services and growth in utilization. Of particular concern has been the projected growth associated with the introduction of new, expensive pharmaceutical products that are indicated for a large number of people with certain chronic diseases.
- Private spending is projected to grow at a faster rate than in the recent past, resulting in part from stronger health care services utilization and higher prices. Private spending growth is expected to average 8.9 percent annually between 2014 and 2023.
- Increases in state public program eligibility, which will contribute to public spending growth, may be somewhat offset by improved economic circumstances, allowing more Minnesotans to transition into private coverage.
- Demographic shifts will also contribute to public spending growth. In the coming years, a greater share of Minnesotans will be older and live with complex chronic diseases. Both Medicare and state budgets are expected to be affected by this trend. Overall public spending is projected to average 6.6 percent annually between 2014 and 2023..[45]

[45] Hartman M. et al., 2015.

## TABLE 4: PUBLIC AND PRIVATE HEALTH CARE SPENDING, 2004 TO 2023 (BILLIONS OF DOLLARS)

| | Total Health Care Spending | | |
|---|---|---|---|
| | Private | Public | Total |
| **Actual** | | | |
| 2004 | $16.6 | $10.9 | $27.5 |
| 2005 | $17.7 | $11.7 | $29.4 |
| 2006 | $18.8 | $12.8 | $31.6 |
| 2007 | $20.0 | $13.9 | $33.9 |
| 2008 | $20.6 | $14.9 | $35.5 |
| 2009 | $20.9 | $16.1 | $37.0 |
| 2010 | $20.9 | $16.7 | $37.6 |
| 2011 | $20.8 | $17.5 | $38.2 |
| 2012 | $21.4 | $18.3 | $39.7 |
| 2013 | $21.8 | $19.1 | $40.9 |
| **Projected** | | | |
| 2014 | $22.1 | $21.0 | $43.2 |
| 2015 | $24.9 | $22.4 | $47.3 |
| 2016 | $27.0 | $23.7 | $50.7 |
| 2017 | $29.7 | $25.4 | $55.1 |
| 2018 | $32.3 | $27.2 | $59.5 |
| 2019 | $34.7 | $29.0 | $63.7 |
| 2020 | $37.7 | $30.9 | $68.6 |
| 2021 | $40.7 | $33.0 | $73.7 |
| 2022 | $44.2 | $35.2 | $79.4 |
| 2023 | $47.6 | $37.4 | $85.0 |

Source: historical spending estimates from MDH Health Economics Program, projections from Mathematica Policy Research

The ACA is expected to have a range of effects on aggregate health care spending:

- Major expansions in access to insurance coverage during the early years of the ACA are expected to increase aggregate health care spending, resulting from new health care use by people who have newly gained coverage.
- A number of federal initiatives aimed at improving incentives to produce higher quality of care at lower costs will contribute to lower spending in the near term and have the potential for long-term effects as well.

- Increased access to health care services through new coverage may lead to long-term improvements in health and help reduce the presence of costly multi-morbidity of chronic disease.[46, 47, 48, 49]
- On an individual level, access to health insurance through Medicaid is expected to decrease financial strain and clinical depression for newly covered individuals, and increase self-reported health status.[50]

As part of the effort to project health care spending between 2014 and 2023, MDH worked with Mathematica Policy Research to primarily study one factor of health spending affected by federal health reform efforts: the impact of newly available coverage on spending growth in Minnesota over the period between 2014 and 2023.[51] The aim of this analysis was to refine baseline projections of health care spending by accounting for the remarkable change in coverage gain among Minnesota's population.[52] Because such dramatic improvements in the number of people with access to coverage and health care services have not been observed historically, unadjusted projections could under- or overestimate future spending.

Figure 8 depicts the estimated impact of coverage gains on projected health care spending for the period of 2014 to 2023. Consistent with actuarial science and national trends, we estimate the impact of the ACA coverage expansion on projected total spending to be modest and representing a declining share over time.[53, 54] In aggregate, increased coverage may account for approximately $4.7 billion (or 0.8 percent) of the $626.2 billion projected to be spent on health care over the next ten years. Primary drivers of these changes likely include:

- Growth in the use of health care services for people who previously lacked insurance coverage or shifted to more generous coverage; and

[46] See for example: Collins SR, Rasmussen PW, Doty MM. "Gaining Ground: American's Health Insurance Coverage and Access to Care After the Affordable Care Act's First Open Enrollment Period," The Commonwealth Fund, July 2014; Centers for Disease Control and Prevention/National Center for Health Statistics, Office of Planning, Budget, and Legislation. NCHS Fact Sheet: Health Insurance and Access to Care, November 2015, based on data from the NCHS' National Health Interview Survey (NHIS).

[47] Hogan DR, Danaei, G, Ezzati M, Clarke PM, Jha AK, Salomon JA. "Estimating the Potential Impact of Insurance Expansions on Undiagnosed and Uncontrolled Chronic Conditions." 2015. Health Affairs; 34(9):1554-1562.

[48] MDH Health Economics Program, Utilization of Health Care by Insurance Status. November 2013.

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

[50] Baicker K, Taubman SL, Allen HL, Bernstein M, Gruber JH, Newhouse JP, Schneider EC, Wright BJ, Zaslavsky AM, Finkelstein AN. "The Oregon Experiment – Effects of Medicaid on Clinical Outcomes." 2013. New England Journal of Medicine; 368(18):1713-1722.

[51] The primary focus on coverage expansion stems from the relative lack of firm empirical evidence on the net effect of complex policy changes like the ACA on aggregated health care spending. This analysis relies on evidence that is available on health care spending differences between people who have insurance coverage and those who lack it. Also considered in the analysis is the effect of Medicare policy changes from the ACA on Minnesota's Medicare population.

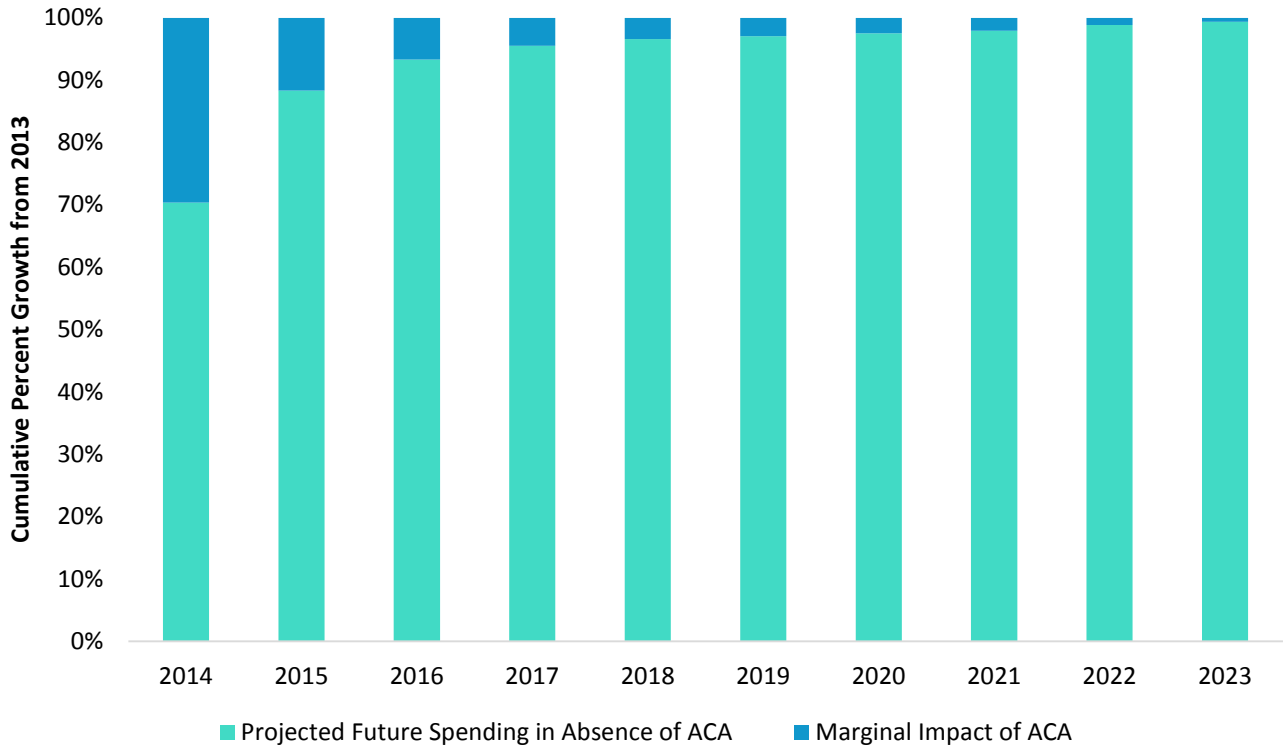
[52] The latest available estimates of uninsurance in Minnesota suggest that approximately 100,000 more Minnesotans had coverage in 2014 compared to a year before at an uninsurance rate of 5.9 percent (U.S. Census Bureau 2014 American Community Survey).

[53] Two factors account for this dynamic: (1) the population with new coverage in Minnesota is small relative to the population that already has coverage; and (2) other components of aggregate spending, such as federal spending in a number of areas including Medicare, are expected to grow faster through 2023. Thus, the amount of health care use for people with new insurance coverage adds to already-projected higher spending growth that is minimal.

[54] See for example: Furman J and Fiedler M. "Historically Slow Growth in Health Spending Continued in 2013, and Data Show Underlying Slow Cost Growth Is Continuing." Council of Economic Advisors. December 3, 2014. Accessed May 5, 2015, Council of Economic Advisors news article; Congress of the United States, Congressional Budget Office, Updated Budget Projections: 2015 to 2025, March 2015.

- An increase in the use of health care services for people with insurance coverage, resulting from changes in cost-sharing requirements (e.g., establishment of minimum benefits requirements, implementation of a set of preventive health services, and removal of annual limits).

## FIGURE 8: CUMULATIVE IMPACT OF THE ACA




Source: historical spending estimates from MDH Health Economics Program, projections from Mathematica Policy Research

As noted, the ACA has other factors in play that are likely to affect spending over the long-term:

- At the federal level there are strong indications that modest growth in Medicare is in part attributable to ACA-related policy changes.
- There are also indications that Medicare changes can have spillover effects on the private market, which could further reduce spending growth.

Not all of these elements are incorporated within the projection, as their dynamics are complex and not present in historical data, therefore making them difficult to predict. Also not incorporated in the projections are microeconomic changes in Minnesota's private market aimed at efficiency improvements that evolve, in part, in response to the change in the incentives resulting from the ACA. Some studies indicate that as much as 30 percent of health care spending may be associated with inefficiencies in care delivery, including overuse, underuse, misuse, or fragmentation of care. For example, a recent 2015 analysis by MDH found that in 2012 there were an estimated 1.3 million potentially preventable health care events, accounting for approximately 4.8 percent of all health care spending in Minnesota.[55] Thus, these estimates should not be viewed as full assessments of the direction or volume of the ACA's impact on spending in Minnesota.

[55] MDH Health Economics Program, An Introductory Analysis of Potentially Preventable Health Care Events in Minnesota, July 2015.

There are other important limitations associated with the accuracy and precision of projections, in general. In addition, estimating the impact of specific policy changes (e.g., the ACA) on health care spending in Minnesota is associated with separate, significant uncertainties. This analysis incorporates changes in coverage and estimates of induced spending related to changes in coverage and some efficiencies stimulated through Medicare policy changes. The impact of other health care provisions that further affect Medicare, private market regulation, and payment rates have not been captured by the model.[56]

# Health Care Spending in the Absence of Minnesota Reforms

MDH is also required to compare *actual* estimated health care spending in Minnesota with *projections of* health care spending that eliminate the effect of the state's 2008 health care reform activities. To exclude potential impacts of Minnesota's 2008 health care reforms, the projections assume that trends and relationships of variables that drove health care spending growth *prior* to 2009 have remained intact. In that sense, these projections *do not* represent predictions of future spending; instead, they assume a counterfactual scenario in which the 2008 Minnesota health care reform activities did not affect health care spending. These projections attempt to include the effect of other external factors on spending, *including* coverage changes due to the ACA. Unlike the first set of projections, this model projects health care spending forward from 2009 (e.g. first year of projected spending in 2009, not 2014).

We estimate that in the hypothetical absence of Minnesota's 2008 health care reforms and/or other changes to cost drivers, health care spending (including Medicare and long-term care) would have been expected to grow more quickly than what has actually occurred, resulting in higher spending for 2013 under this set of projections. As a result, future health care spending is higher under this second set of projections, reaching nearly $87 billion by 2023, with a lower average annual rate of growth than our first set of projections (7.4 percent between 2014 and 2023).[57] If Medicare and long-term care were excluded from total spending, projected health care spending would reach nearly $64.3 billion by 2023.[58]

As shown in Table 5, total 2013 health care spending absent 2008 reforms was projected to reach $43.3 billion, which is approximately 5.9 percent *above* estimated actual spending ($40.9 billion). For health care spending, excluding Medicare and long-term care, the gap between what was projected ($33.4 billion) and actually spent ($27.6 billion) was approximately 21.2 percent, a wider gap than the difference in total health spending.

[56] The analysis primarily focuses on insurance coverage transitions expected to occur in 2014 through 2016. In addition, the analysis incorporates changes in Medicare spending projections, assuming the same change as a percentage of total Medicare spending in Minnesota as CMS projects nationally.

[57] The projection estimate approximated the absence of Minnesota reforms by holding constant the pre-reform relationship between the economy and health care spending and applied it to projected future macroeconomic conditions.

[58] In comparison, this narrower subset of health care spending was nearly $27.6 billion in 2013. Medicare expenditures accounted for $7.9 billion and non-Medicare long-term care expenditures accounted for the remaining $5.4 billion of the difference to total spending.

## TABLE 5: ACTUAL HEALTH CARE SPENDING AND PROJECTED SPENDING ABSENT 2008 REFORMS, 2013 (IN MILLIONS)

| | Actual Spending | Projected Spending | Projected Less Actual | % Above Actual Spending |
|---|---|---|---|---|
| **Total Spending** | $40,932.6 | $43,336.9 | $2,404.32 | 5.9% |
| Public | $19,112.3 | $19,412.6 | $300.3 | 1.6% |
| Private | $21,820.3 | $23,924.3 | $2,104.0 | 9.6% |
| **Total Spending less Medicare & Long-Term Care** | $27,570.2 | $33,422.4 | $5,852.2 | 21.2% |
| Public | $7,340.7 | $7,792.9 | $452.2 | 6.2% |
| Private | $20,229.5 | $25,629.5 | $5,400.0 | 26.7% |

Source: historical spending estimates from MDH Health Economics Program, projections from Mathematica Policy Research

Since this analysis began in 2009, this is the third consecutive report in which actual spending was estimated to be less than expected, based on the refined baseline projection model. However, associating the difference between projected and actual spending with policy changes that were relatively modest and now date back six years is becoming increasingly problematic. Aside from the methodological challenges associated with projecting spending (discussed earlier) and uncertainties related to estimating the short-term and ongoing influence of certain policy changes on spending, isolating these effects from other substantial macroeconomic and policy changes underway, has become virtually impossible.[59]

Nevertheless, the Minnesota Legislature was interested in exploring to what extent the difference between projected and actual spending is related to state-administered programs (excluding Medicare and long-term care).[60] Based on a range of scenarios that consider an array of factors for estimating the counterfactual spending trend for state-administered programs, this analysis estimates the portion of the difference between actual and projected 2013 spending attributable to state-administered programs to be 15.9 percent, or $927.7 million. Additional information on the methodology for this estimate are outlined in Appendix B.

[59] For instance, while the 2008 health care reform legislation proposed the implementation of a Health Care Homes initiative, its implementation changed since passage of the law and adoption of the model differs across payers. Similarly, the Health Care Homes model has likely been influenced by further adoption of Health Information Technology and interactions with new payment models, such as private and public shared savings contracts.

[60] State-administered 2013 programs are Medical Assistance, MinnesotaCare, and the State Employee Group Insurance Program (SEGIP).

# Conclusions

Minnesota's health care spending continued to rise in 2013, but at a lower level of growth compared to historic trends. Total health care spending grew 3.1 percent to $40.9 billion, a rate of growth that is the fourth lowest since 1994 when the Minnesota Department of Health (MDH) began tracking health spending growth rates.

Slow spending growth, combined with an improving economy in 2013, pushed the share of the economy attributable to health care spending down by one-tenth of one percentage point, to 13.3 percent. Still, health care spending continued to account for a substantial share of the economy: approximately one out of every seven dollars of economic activity in the state in 2013 was devoted to health care spending.

After several years of historically low spending growth, the 2013 level of spending is 5.9 percent below what projection models estimated on the basis of the historical relationships between macroeconomic trends and spending on health care in Minnesota. A substantial part of this gap is likely explained by changes to this relationship driven by an evolving economic and policy environment over the last several years. Because changes of this magnitude do not exist in historical data, even revised projections, such as those used for this report, fail to account for some of the expected changes in spending.

Still, several factors may have contributed in some ways to the modest growth of the past few years:

- The magnitude of the economic recession, its length and the slow recovery had a substantial and lasting effect on health care spending in Minnesota and nationally;
- An increase in cost sharing, only somewhat offset by a greater number of people with public coverage and lower cost sharing, affects health care use and spending;
- Slower diffusion of new medical technology, including pharmaceutical products has, until 2013, constrained spending growth;
- A host of changes in Medicare policy that focused on strengthening value-based health care delivery have been shown to constrain Medicare spending growth and had positive effects in some areas on private spending;
- The interest in Minnesota in moving more strongly towards performance based contracting for public beneficiaries and, to some extent, private market enrollees, contributed to changes in delivery of care aimed at affecting outcomes and health care spending; and[61]
- Policies aimed at strengthening efficient and effective health care through initiatives such as Health Care Homes and adoption of health information technology continue to show promise for bending the cost curve.

There are also several important initiatives evolving in Minnesota that are expected to have longer-term effects on the trend of disease prevalence, its acuity and the costs associated with multiple chronic conditions. The Statewide Health Improvement Program (SHIP), as a community-wide

[61] MDH/DHS - Minnesota Accountable Health Model, Baseline Assessment of ACO Payment and Performance Methodologies in Minnesota for the State Innovation Model (SIM), 2015.

approach, is working to improve health by strengthening policies, systems and environmental factors that help build healthier communities. SHIP activities have been focused on obesity and tobacco use as factors that contribute to complex chronic disease, which have starkly higher spending associated with the presence of multiple chronic conditions.[62] Similarly, the State Innovation Model (SIM) through its focus on greater provider accountability and clinical-community partnerships that incorporate population-based initiatives (Accountable Communities for Health), aims to reduce risk factors for chronic disease, thereby helping to reduce the prevalence and over-time costs associated with chronic diseases. While the ten-year projection window of this report does not allow for any potential impact on cost from these initiatives to be captured, future evaluations of these programs will explore their longer-term impact on both costs and outcomes.

MDH will also work to develop chronic disease-specific projections in the coming year that will shed new light on the impact of chronic conditions on spending. The 2015 Legislature directed MDH to develop annual reports showing actual spending on chronic disease and certain risk factors, compared to projections that hold historical trends constant.[63] This initiative, which will produce its first preliminary results in 2016, will serve as an empirical test over time of whether Minnesota is moving in the right direction concerning managing the prevalence and cost of chronic disease burden.

However, it is important to note that Minnesota still faces the same challenges experienced by many other states, which may be contributing to rising costs:

- An aging population;
- Some worsening of risk factors associated with chronic disease; and
- Stark and stubborn inequities between populations in disease prevalence and outcomes, and in the distribution of social determinants of health such as income, education, healthy and safe housing, and communities that promote health and wellness.

Without significant investments in ongoing reforms to the delivery and payment systems and improvements in factors underlying the substantial inequities in health, it is likely that the system of health care delivery in Minnesota and the nation will remain characterized by considerable inefficiencies, barriers to effective care and outright waste. Modelling for this report suggests that without systematically addressing these factors in Minnesota, health care spending over the next ten years will again double, reaching approximately $85.0 billion by 2023. At that point, spending on health care would consume nearly two out of every ten dollars of economic activity.[64]

This annual report also illustrates, for the first time, the key role prices play in driving spending growth. Rising health care prices were principally responsible for growth in Minnesota's private market (commercial) health care spending over the last several years, accounting for 69 percent of spending growth from 2011 to 2013. This means, growth in spending was not primarily driven by patients using more health care services or consuming more complex services or procedures. Instead, consistent with

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

[63] Minnesota Statutes, Section 62U.10, subd. 6

[64] The projected increase in spending over the next ten years includes increases in spending for newly covered individuals, as well as some Medicare policy changes due to the ACA. The magnitude of the increase is expected to diminish over the ten-year projection horizon.

national trends, it was the increase in the price for the same product, procedure and treatment that drove spending growth.[65] Particularly in light of expected price increases for new and existing pharmaceutical products, strategies that aim for affordable health care by containing spending growth, must address inflation of medical costs in health care.

As we have noted in previous reports, the current trend in spending growth, even if interrupted by a number of years of modest increases, is projected to double the volume of health care spending in another ten years. This level of growth will be difficult to sustain for Minnesota. It will place substantial, increased pressure on the opportunities of individuals, businesses, and governments, thereby constraining investments in priority areas outside of health care. This will likely require discussion and action by policymakers and other stakeholders to ensure that limited health care dollars can best be spent in the most efficient, effective way.

There is much promise in public and private sector initiatives aimed at addressing public and population health, as well as reforming how we pay for care and the design of its delivery. Nonetheless, issues such as demographic trends, preventable risk factors that drive chronic disease, and stark and stubborn disparities in opportunities to achieve good health, will continue to present important challenges. MDH's work in the area of disease prevention, public health investment, and evaluation will provide ongoing assessment of our progress.

[65] Health Care Cost Institute, Inc. 2013 Health Care Cost and Utilization Report. October 2014.

# Appendix A. Actuarial Certification

TOWERS WATSON

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May 29, 2015

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

Dear Stefan:

**Actuarial Certification**

Over the course of the past several weeks Towers Watson has provided actuarial review of the final estimates of state-wide health expenditures in Minnesota developed by the Minnesota Department of Health (MDH). Our review considered the extensive tables that MDH provided, presenting sources of funding and categories of state health care expenditures for 2013 and previous years. Our review also included examination of supporting documentation, discussion of data sources and methodologies, and requests for additional documentation and clarification.

Based on this review, we find that the data sources and methodologies that MDH has used are valid and reasonable. We further certify that the health spending estimates for 2013, including state-wide health care expenditures totaling $40.9 billion and total spending less Medicare and long-term care in the amount of $27.6 billion, are reasonable based on our review of the data used, the methodologies employed, and health care spending trends observed nationally. The tables on the following page summarize these estimates.

Best Regards,

Stuart H. Alden, FSA, MAAA, FCA
Towers Watson

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

Mr. Stefan Gildemeister
May 29, 2015
Page 2

**Table 1**
**Where Minnesota Health Care Spending Came From in 2013**

| Source of Funding | Total Spending (Millions) | % | Total Spending Less Medicare & LTC (Millions) | % |
|---|---|---|---|---|
| Medicare | $ 7,908 | 19.3% | | |
| Medical Assistance | $ 8,677 | 21.2% | $ 5,009 | 18.2% |
| Other Public | $ 2,527 | 6.2% | $ 2,332 | 8.5% |
| Private Health Insurance | $ 15,695 | 38.3% | $ 15,499 | 56.2% |
| Other Private | $ 1,043 | 2.5% | $ 1,043 | 3.8% |
| Out of Pocket | $ 5,082 | 12.4% | $ 3,687 | 13.4% |
| **All Sources of Funding** | **$ 40,933** | **100.0%** | **$ 27,570** | **100.0%** |

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

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

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

**Table 2**
**Where Minnesota Health Care Dollars Were Spent in 2013**

| Spending Category | Total Spending (Millions) | % | Total Spending Less Medicare & LTC (Millions) | % |
|---|---|---|---|---|
| Hospital | $ 14,235 | 34.8% | $ 10,052 | 36.5% |
| Physician Services | $ 7,667 | 18.7% | $ 6,211 | 22.5% |
| Long-Term Care (incl. Home Care) | $ 6,290 | 15.4% | | |
| Prescription Drugs | $ 3,577 | 8.7% | $ 3,111 | 11.3% |
| Dental | $ 1,322 | 3.2% | $ 1,306 | 4.7% |
| Other Professional Services | $ 1,393 | 3.4% | $ 1,195 | 4.3% |
| Chemical Dependency/Mental Health | $ 1,038 | 2.5% | $ 1,038 | 3.8% |
| Other Medical Spending | $ 3,429 | 8.4% | $ 2,749 | 10.0% |
| Other Non-Medical Spending | $ 1,981 | 4.8% | $ 1,907 | 6.9% |
| **Total Spending** | **$ 40,933** | **100.0%** | **$ 27,570** | **100.0%** |

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

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

# Appendix B. Estimates of Savings Attributable to State-Administered Programs

When actual spending is estimated to fall below projections, the Minnesota Department of Health (MDH) is required to estimate the portion of the difference attributable to state-administered programs. As shown in Table B1, state-administered health insurance programs in 2013 account for 22.8 percent of total spending, excluding Medicare and long-term care. Spending for Medical Assistance alone accounts for more than three-fourths of state-administered spending.

## TABLE B1: SPENDING FOR STATE-ADMINISTERED PROGRAMS AS A PERCENT OF TOTAL SPENDING, 2013

| | Actual Spending (Millions) | Percent |
|---|---|---|
| **Total Spending** [/1] | **$27,570.2** | |
| **Spending, Not State-Administered** | $21,291.4 | **77.2%** |
| **State-Administered Program Spending**[/2] | $6,278.7 | **22.8%** |
| Medical Assistance | $5,008.8 | 18.2% |
| MinnesotaCare | $608.1 | 2.2% |
| State Employee Group Insurance Program | $661.8 | 2.4% |

[/1] Excludes spending for Medicare and long-term care

[/2] Excludes spending for long-term care

Source: MDH Health Economics Program

As the data in the projection model cannot be used to estimate spending for each state-administered program, MDH uses two scenarios to assess the likely range in the share of the differences between actual and projected spending attributable to state-administered programs (see Table B2).

Scenario 1 applies the share of spending accounted for by state-administered programs from Table B1 to the difference between actual and projected spending estimates. Under this scenario, state-administered programs would account for $1.3 billion of the total 2013 difference.

Scenario 2 takes into consideration that actual spending growth for state-administered programs is composed of rates of growth in spending for the State Employee Group Insurance Program (SEGIP) and the Minnesota Health Care Programs (MHCP) that mirror private and public growth trends. Scenario 2 estimates the share of the difference between actual and projected spending attributable to state-administered programs to be $522.6 million in 2013.

The analysis in this section uses a mid-point between both scenario estimates to approximate how much state-administered program savings have contributed to slower actual growth relative to projections.

# TABLE B2: SAVINGS FROM 2008 HEALTH REFORM ATTRIBUTABLE TO STATE-ADMINISTERED PROGRAMS, 2013

| | Difference (in millions) | Percent of Difference |
|---|---|---|
| **Scenario 1: Estimates as a Percent of Aggregate** | | |
| Amount Attributable to State-Administered Programs | $1,332.8 | 22.8% |
| Amount Attributable to Non-State Programs | $4,519.4 | 77.2% |
| **Scenario 2: Estimates by Payer Growth Rates** | | |
| Amount Attributable to State-Administered Programs | $522.6 | 8.9% |
| Amount Attributable to Non-State Programs | $5,329.5 | 91.1% |

Source: MDH Health Economics Program and Mathematica Policy Research

# Appendix C. Health Spending Estimate and Projection Methodology

## Overview

The Health Economics Program (HEP) of the Minnesota Department of Health (MDH) prepares annual estimates of health care spending for Minnesota residents as part of its responsibility to monitor trends in Minnesota's health care market and in compliance with requirements to assess actual health care spending in the context of developed spending projections.[66] These estimates detail health care spending by broad expenditure categories and sources of funding. Generally, the data sources used for the development of Minnesota's health care spending estimates are provided in fairly aggregated form; no patient-level information on volume of utilization and location of health care services is available for the development of estimates. Health care spending data used in developing the estimates originate with payers of health care expenditures, such as health plans, government agencies, and consumers. Minnesota's approach to spending estimates therefore 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) on which, more generally, HEP's estimation approach is based. CMS uses data flow from providers or equivalent estimates to construct their national spending estimates.[67]

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, projections are computed annually to carry forward the projection window and maintain alignment with methods and data updates employed by CMS.

This document outlines the methodological approach used to generate the spending estimate and projections. It identifies data sources and key assumptions made when working to isolate annual trends in expenses resulting from health care consumption by Minnesota residents. Estimated and projected spending are divided into categories of payer and type of service.

## Estimating Historical Health Care Expenditures

### Data

Data on health care spending are available to the analysis in aggregated form, generally submitted to MDH by payers of health care services. This means detailed expenditure data that would allow for 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 factors, or unit prices of various products and services are not available.

[66] Minnesota Statutes, Section 62U.10

[67] A description of CMS' methodology is available online: CMS methodology website, accessed April 23, 2015.

The sources of funding are grouped by type of payer similar to the payer categories used in the National Health Expenditure Accounts (NHEA), a nationwide spending estimate conducted by CMS. The broad categories include private health insurance, out-of-pocket spending, spending by other private payers, and spending by public payers, including, Medicare, Minnesota Health Care Programs (MHCP), and other public sources. In addition to health care spending, data on type of coverage are used to estimate per capita spending and the size of the overall Minnesota market.[68] As shown in Table C1, a number of primary data sources are used to create health care spending estimates.[69] The first three data sources, covering private spending, spending for state public program enrollees, and Medicare fee-for-service program spending, consistently capture about 70 percent of total health care spending in the state.

## TABLE C1: MAJOR DATA SOURCES USED IN MINNESOTA HEALTH CARE SPENDING ESTIMATES

| 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 and Medicaid Services (CMS) | Medicare 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.

[68] The analysis attempts to develop estimates of the distribution of primary coverage by correcting for double-coverage and changes in coverage across a calendar year.

[69] In total, the spending estimates rely on data from about 20 data systems.

## Private Expenditures

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

### Private Insurance

For the fully-insured market, estimates of private health insurance spending are computed using data reported to MDH by health insurance carriers licensed to provide health insurance coverage in Minnesota. The vehicle of data collection is the annual Health Plan Financial and Statistical Report (HPFSR). Data are reported by 13 expenditure categories and type of product, which means the data system includes information beyond private insurance spending, for instance including spending for people with Medicare Supplement coverage. Spending under Medicare Supplement policies is calculated consistently with commercial spending.

A significant share of privately insured Minnesotans (approximately 60 percent) receive coverage through self-insured employers. Total self-insured spending is estimated by creating a product of a calculated per capita ratio of fully-insured to self-insured spending and an estimate of the number of self-insured Minnesotans. The estimate of the *number* of self-insured residents in Minnesota is derived as a population residual using information on the distribution of health insurance coverage for Minnesota residents.

### High-Risk Pools

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

### Medicare Advantage Private Expenses

Medicare Advantage expenditures are reported via the HPFSR to MDH by insurance carriers offering these policies in the state. These expenditures are divided between public and private payer categories by subtracting CMS capitation payments from total expenditures.

### Out-of-Pocket Costs

MDH estimates out-of-pocket spending from a ratio of national estimates of out-of-pocket spending to covered-spending (the share of spending paid by an insurance carrier). This analysis is conducted at the

expenditure category level and is based on aggregated health expenditure data drawn from the household component of Medical Expenditure Panel Survey (MEPS) (Midwest) and the NHEA. MDH weights this ratio to the distribution of coverage in Minnesota, to account for the difference in coverage distribution between Minnesota and the Midwest region overall. The results are multiplied by an estimate of Minnesota covered-spending.

### Other Private Spending

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

## Public Expenditures

Public expenditures include public spending for health insurance, such as Medicare and Medical Assistance, and other spending such as by the Veterans Administration, 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 calculated separately, as 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. Data related to prescription drug coverage for Minnesota residents through a stand-alone Medicare Part D plan is also collected through the HPFSR. These data are benchmarked against monthly reports from CMS.

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 plan companies. These companies report revenue and expenditures as part of their annual financial reporting on the Minnesota Supplement Report, number 1. To avoid double counting of expenses and ensure accurate allocation of payer type data, DHS administrative records are used to subtract Medicaid contributions to MSHO, leaving the Medicare capitations. The distribution of these payments across service categories is calculated based on the distribution observed for Medicare Advantage enrollees. The remaining payment stream (the DHS capitation

amounts) is captured in Medical Assistance managed care spending within Minnesota Health Care Programs.

## Minnesota Health Care Programs

Spending estimates for Medical Assistance (MA), Minnesota's Medicaid program, are computed separately for the managed care and FFS portions of the program. MA FFS data are reported by DHS directly. The managed care component of health care spending for MA are distributed across type of service using historical estimates provided by DHS. 2013 spending included estimates on the additional federal funding related to the temporary (2013-2014) ACA provision that increased payments for primary care services to be equal to Medicare Part B payments.[70] Total MA spending is distributed into federal and state funding sources using evidence from the DHS Forecast.

Aggregated MinnesotaCare spending by calendar year is obtained from the DHS Reports and Forecasts division. Spending is allocated across type of service using historical expenditure distributions provided, again, by DHS. 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 are no longer carried on the DHS Forecast. This reconfigured program ended in 2011, and enrollees were converted to Medical Assistance.

## Other Public Spending

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

Veterans 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. In limited circumstances when the most recent fiscal year is not available, a five-year annual growth rate trend is applied. Future spending reports are updated with complete data once data is available. The Department of Defense (DOD) reports TRICARE spending. The data are reported 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

[70] Additional provision information is available online: Medicaid Provider Payments website.

Minnesota residents are based on total federal workers' compensation expenses in the state from the U.S. Department of Labor.

MDH's estimation approach includes spending estimates for the medical care of individuals incarcerated in federal prisons located within the state and in state correctional facilities. The federal data are obtained directly from the Federal Bureau of Prisons. Data on medical spending at state correctional facilities is obtained directly from the Minnesota Department of Corrections. To calculate state spending, MDH multiplies per diem costs for "health services" and "behavioral health" times the average annual population utilizing health services in state correctional facilities.

The estimate of public health care 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.

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

# 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. Minnesota's health care spending estimation method is comparable in structure to the NHEA published by CMS. While the data used for Minnesota's estimates differ from those at the national level – Minnesota uses data from payers, while CMS largely relies on data from providers – the framework and expenditure categories generally overlap.

To make the data directly comparable, Minnesota analyzes its results relative to a subset of CMS expenditure data, namely spending in 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.

More systemic differences 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. The most recent SHEA results available are through 2009 and CMS has not indicated if future SHEA results will be published. CMS used data sources on business transactions to disaggregate patterns of national spending to the state level. This decidedly top-down approach differs from

Minnesota's bottom up approach, in which actual health care transactions are traced to generate aggregate-level total spending. Analysis by an independent contractor to MDH about the CMS SHEA approach did not reveal any factors that suggest CMS' approach is characterized by methodological strengths relative to Minnesota's approach. Rather, it appears to be a tool that uses statistical methods to compensate for a lack of available data that is comparable for all (or most) states.

# Cost Drivers Analysis

MDH contracted with Mathematica Policy Research to analyze the drivers in spending growth in the private insurance market. The analysis was performed at a microeconomic level, for years 2011 to 2013 by service type, to distinguish changes in spending attributable to the following components: price, service mix (e.g., distribution of spending between categories of services), and volume of health care.

Data was obtained for private insurance claims from the Minnesota All Payer Claims Database and reviewed five types of service: (1) inpatient hospital; (2) outpatient hospital; (3) freestanding outpatient facilities; (4) physician and other professional services; and (5) prescription drugs.[71] Claims falling into other service categories were excluded. The analysis also excluded spending associated with (1) non-Minnesota residents; (2) payers who did not report in each analysis year; (3) service codes not reported in each analysis year; (4) non-standard service codes; (5) service codes that had a low threshold of claims, and (6) payments considered to be outliers. The contractor used a conventional Laspeyres index to analyze cost drivers, and estimated spending changes within types of services due to changes in price and volume. Changes in service mix were calculated as a residual. This approach did not directly account for changes in volume, mix of service use, or price growth.

# Health Care Expenditure Projections

Minnesota develops projections for the primary purposes of projecting future health care spending, as well as to estimate what future spending would have been without the impact of the 2008 Minnesota health care reforms, as required by Minnesota Statutes Chapter 62U.10. The projection techniques combine a macroeconomic forecast model to project future spending in the absence of the ACA, in addition to microsimulations to project future spending inclusive of the current policy landscape. For all spending projections, a growth rate specific to each year is projected, and applied to actual spending from the preceding year.

## Macroeconomic Forecast

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

[71] For more information, see the Minnesota All Payer Claims Database website.

## Public Spending

Three types of public spending are included in MDH's contractors' projections: Medicare, MHCP, and other public spending.[72] Projected values for each are determined separately.

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

MHCP projections, which include Medical Assistance, MinnesotaCare, and GAMC, are derived from the Minnesota Department of Human Services (DHS). Historical data is provided by DHS by program type and demographic category. To account for changes absent the ACA, a three- or five-year average growth rate is applied to each demographic category, along with a price index to project future spending beginning in 2011, as Minnesota was an early Medicaid expansion state.

Other public spending, which includes spending for the Veterans Administration and public workers' compensation, is calculated by applying a three- or five-year average growth rate to each category (dependent upon which average was the best approximation of recent growth and least likely to be influenced by any outliers).

## Private Spending

Future private spending is projected by estimating a series of regression models using historic spending estimates and macroeconomic data for the years 1993 through 2008, and again for years 1993 through 2013. The method utilized by MDH and its contractor is designed and updated to be aligned 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 so that potential changes in the underlying relationship prompted by health care reform (and other difficult-to-isolate factors) can be identified. After fitting the historic data, future spending is projected using projected macroeconomic factors as explanatory variables. Spending is projected in total and also by private payer type and by service category.

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

- **Price Index:** Estimates of national price indices are generated by CMS for each expenditure category.
- **National Real Per Capita GDP and Personal Income:** Estimates are obtained from the Bureau of Economic Analysis.
- **Minnesota Real Per Capita Personal Income:** Estimates and projections are obtained from forecasts by Minnesota Management and Budget. In line with CMS methodology, public health care spending is subtracted to better approximate income of the population that accounts for private health care spending. This value is divided by population estimates for per capita values.
- **Minnesota Real Per Capita Public Spending:** Public health care spending projections were estimated outside the models, based on growth rates in past public spending.
- **Minnesota Employment:** Estimates and projections are obtained from non-farm employment forecasts by Minnesota Management and Budget.

[72] MDH currently contracts with Mathematica Policy Research to perform projections.

- **Time Trend:** A time trend is included in line with the methods used by CMS. The variable is created by subtracting 1993 (the first year of historic data) from the observation year.

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

## Projecting the Impact of the Affordable Care Act

The ACA contained a number of provisions designed to increase the number of individuals with insurance coverage. Many individuals will transition to different types of health insurance. These expansions and transitions will have a significant impact of the care that Minnesotans receive and as a result, how much is spent. However, the baseline macroeconomic model is unable to incorporate changes of this nature. As a result, the spending report includes a projection model that incorporates the results of a microsimulation to better project how ACA-related coverage changes will impact future spending.

This microsimulation relies on a database that is created by pairing of two national surveys – the American Community Survey (ACS) and the Medical Expenditure Panel Survey (MEPS). The ACS contains information on income, health insurance status, and health care utilization, which allows for microsimulation. The MEPS contains unique information on health care spending by insurance coverage type. By pairing these two data sets, the process can simulate how changes in policy impact a person's insurance coverage and thus their health care spending.

The microsimulation begins by creating a baseline database. The Minnesota sample of the ACS is weighted to demographic and insurance coverage characteristics. Then each record is statistically matched based on demographic factors and health care utilization to MEPS records in multiple coverage types (private, Medicaid, uninsured). By matching a single person from the ACS with multiple similar people in the MEPS, we can estimate an individual's spending when his or her coverage changes.

From 2013 to 2016, the model simulates coverage changes based on the estimated likelihood of insurance take-up. For those records that "experience" a coverage change in one or more months, their per capita spending in those months changes from their previous coverage type to that associated with their new coverage type. (Baseline 2013 was adjusted to remove Minnesota's early Medicaid expansion, as well as coverage for young adults under a parent's policy – both implemented prior to 2014; measurement of ACA effects in 2013 re-includes individuals that gained coverage under those provisions). Post-ACA enrollment numbers are based on 2014 and 2015 private coverage estimates and 2014-2023 MHCP enrollment estimates. To reflect general spending growth, per capita spending is benchmarked to per capita spending projected by the re-estimated macroeconomic model based on data through 2013. The model accounts for induced demand due to a coverage change, but assumes no measurable pent-up demand among the uninsured who gain coverage under the ACA. This assumption is consistent with early commercial claims experience in 2014 in the Midwest.[73] Following 2016, the analysis maintains differences between ACA and non-ACA growth rates, but assumes that

[73] For example, see: Gray J. "ACAView: Measuring the Impact of Patient Acuity (May 19, 2014)." Available at Athena Health ACA website, accessed June 18, 2015.

the magnitude of these differences will diminish slowly over the projection horizon as the impact of coverage expansions decreases.

In addition to the microsimulation, this study relies on CMS projections of per capita Medicare spending growth with and without the ACA to contribute to the estimate of total ACA impact.

## Limitations of Projection Model

The macroeconomic projection model is successful at explaining past trends in health care spending (the R-squared value of the total spending model is 0.970). However, similar to any exercise in projections, the results are subject to considerable uncertainties because of the range of necessary assumptions about future trends.

Because private spending is predicted by a number of macroeconomic factors, the projection relies on the accuracy of the underlying explanatory variables. If the explanatory variables are predicted incorrectly, then the spending estimates will also be incorrect. For example, if GDP in Minnesota doesn't increase as projected in 2015 due to slow economic growth, health care spending estimates for 2015 have the potential to be inaccurate.

Even with accurately predicted explanatory variables, the accuracy of projections can be affected by external factors, such as changes in federal policy or economic shocks, like the Great Recession, that are not built into the historic relationship between explanatory variables and health care spending. Like CMS, MDH's approach aims to update model specifications to capture those trends; however, given that the model is macroeconomic in nature and the shifts might not carry through into the specific explanatory variables, the adjustment is only a best approximation.

In addition, the soundness of the historical data, both about how much of the "signal" of underlying trends they carry and the length of the timeline from which to extract relationships between spending and explanatory factors, can be an important limitation. Minnesota's historical data, while strong because of its consistency and the method by which it is aggregated, represents a relatively short time series.

The microsimulation is subject to a number of limitations. The model focuses exclusively on coverage changes, but due to the uncertainty of effects, it does not reflect the ACA's many provisions that do not directly affect coverage but may affect the cost and quality of care. Also, because the model necessarily relies on MHCP per capita spending prior to 2014 to project spending under the ACA, it does not project spending pattern changes that might result from the ACA's provisions affecting benefits and care delivery, nor does it account for changes to coverage or benefits that the legislature might make in the future. Due to limited experience with ACA coverage expansions, projections contain a degree of uncertainty and will evolve in the future.


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