Minnesota Health Care Spending and Projections, 2011

Minnesota Department of Health

December 2013

MINNESOTA MDH DEPARTMENT OF HEALTH

Health Economics Program
Division of Health Policy
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Protecting, maintaining and improving the health of all Minnesotans

December 12, 2013

The Honorable Kathy Sheran
Chair, Health, Human Services and Housing Committee
Minnesota Senate
Room 120, State Capitol
75 Rev. Dr. Martin Luther King Jr. Blvd.
Saint Paul, MN 55155-1606

The Honorable Tony Lourey
Chair, Finance Committee-Health Care and Human Services Division
Minnesota Senate
Room 120, State Capitol
75 Rev. Dr. Martin Luther King Jr. Blvd.
Saint Paul, MN 55155

The Honorable Tina Liebling
Chair, Health and Human Services Policy Committee
Minnesota House of Representatives
Room 367, State Office Building
100 Rev. Dr. Martin Luther King Jr. Blvd.
Saint Paul, MN 55155-1606

The Honorable Thomas Huntley
Chair, Health and Human Services Finance Committee
Minnesota House of Representatives
Room 585, State Office Building
100 Rev. Dr. Martin Luther King Jr. Blvd.
Saint Paul, MN 55155

Dear Senator Sheran, Senator Lourey, Representative Liebling and Representative Huntley:

The 2008 Legislature required the Minnesota Department of Health (MDH) to annually estimate actual total health care spending for Minnesota residents (less Medicare and long-term care), calculate a baseline of projected health care spending, and determine the difference between actual and projected health care spending. If actual spending is less than projected spending, MDH must calculate the portion of this difference attributable to state-administered programs and certify to the Commissioner of Minnesota Management and Budget (MMB) whether or not the amount meets or exceeds $50 million (2008 Minn. Laws, Chapter 363, Article 17, Section 1).

As required, MDH has performed this analysis for health care spending in 2011. The results from this analysis, which are contained in the enclosed report and have been actuarially certified, show that estimated actual total health care spending (less Medicare and long-term care) for Minnesota residents in 2011 was $26.0 billion. This is $1.9 billion (7.2%) below the projected health care spending level for 2011 ($27.8 billion).

I have certified to the Commissioner of MMB that the conditions for a transfer of funds from the General to the Health Care Access Fund, as set forth by subdivision 4 of the authorizing legislation, have been met for the 2015 fiscal year.

Questions or comments on the report may be directed to the Health Economics Program at (651) 201-3560.

Sincerely,

Edward P. Ehlinger, MD, MSPH
Commissioner
P.O. Box 64975
St. Paul, MN 55164-0975

Enclosure

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Introduction

Each year, the Minnesota Department of Health (MDH) produces an estimate of *actual* health care spending in Minnesota along with projections of future health care spending to evaluate the potential influence of Minnesota's 2008 health reform law on health care spending and meet the requirements of Minnesota Statutes Chapter 62U.10.[1] The health care spending estimate represents the total amount expended by *all* payers on health care goods and services for Minnesota residents, including individuals, businesses and state and federal payers. The estimate is constructed from aggregated data collected from payers and largely follows the methods developed by the Centers for Medicare & Medicaid Services (CMS) to estimate and project health care spending nationally.[2,3]

This report presents detailed estimates of health care spending in Minnesota in 2011, projections of future health care spending through 2021, and a comparison of actual and projected spending for calendar year 2011.

Key findings in 2011:

- Health care spending in Minnesota grew to $38.2 billion, accounting for 13.6 percent of the state's economy.
- Health care spending rose just 2.0 percent from 2010, marking the second lowest annual growth for Minnesota since MDH began conducting analysis in the mid-1990s.
- Private spending remained nearly constant, declining by 0.3 percent, and public spending grew at a slow pace of 4.7 percent relative to historical trends.
- Per capita spending in Minnesota reached $7,145, remaining well below the national per capita spending estimate.
- Prescription drug spending declined for the second consecutive year, reflecting changes in insurance benefits and the increasing availability of generics.
- Without a change in the drivers of health care spending or reforms to curb spending growth, Minnesota spending for health care could have grown by more than double over the next decade.
- Estimated actual spending excluding Medicare and long-term care in 2011 was $1.9 billion below projected values.

Health Care Spending in 2011

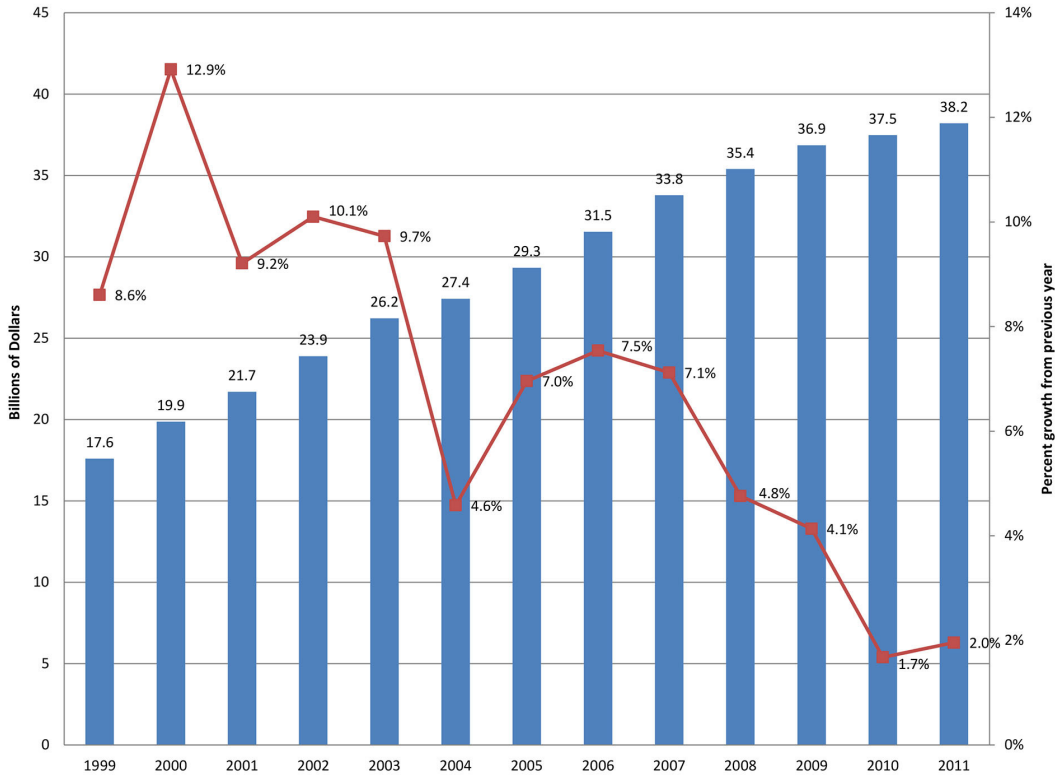
The 2011 estimate of health care spending indicates a second consecutive year of slow growth. In 2011, total health care spending for Minnesota residents reached $38.2 billion. This represents a two percent increase over 2010 total spending of $37.5 billion. The rate of growth is virtually unchanged from the 2010 rate of growth of 1.7 percent. Together these rates mark the lowest year-over-year change in health care spending since the Department of Health began tracking this trend for Minnesota in the mid-1990s.

[1]Minnesota's 2008 health reform law was designed to slow health care spending growth in the state through a variety of initiatives including the use of health care homes, payment and quality reforms, and efforts to reduce obesity and tobacco use among residents. For more information on these initiatives, visit: http://www.health.state.mn.us/healthreform/index.html
[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 differ slightly from earlier published estimates of historical health care spending.

As shown in Figure 1, spending growth has experienced a downward trend since 2007, the year in which the economic recession began.[4] Factors that contribute to slow growth during the recession – greater unemployment and the resulting lower rates of coverage, lower wealth among the employed, and generally tempered economic confidence – likely continued to affect health care utilization and prices in what remained a slow economic recovery in Minnesota and the U.S.[5] Minnesota employment continued to recover in 2011, yet unemployment remained above pre-recession levels;[6] household wealth also remained below 2005 levels.[7]

Figure 1

Trends in Minnesota Health Care Spending and Rate of Growth



Source: MDH Health Economics Program

The fact that the decline in spending growth began somewhat prior to the recession and continues in periods of economic recovery suggests that other factors might also be at work. Privately insured Minnesotans experienced continuous increases in cost sharing, which has been demonstrated to constrain health spending growth for some.[8] Notably, 2011 marks the year in which enrollee cost-sharing in the private market rose at the highest single-year rate of change (3.8 percentage points) over the past 10 years.

[4]The National Bureau of Economic Research (NBER) marked December 2007 as the month when the U.S. recession began. According to the NBER, it lasted through June 2009. The National Bureau of Economic Research, The US Business Cycle Expansions and Contractions, www.nber.org/cycles/US_Business_Cycle_Expansions_and_Contractions_20120423.pdf, accessed November 22, 2013.
[5]Hartman, M. et al. Spending in 2011: Overall Growth Remains low, But Some Payers and Services Show Signs of Acceleration. Health Affairs, 32, no. 1 (2013):87-99.
[6]Bureau of Labor Statistics. Current Population Survey, Local Area Unemployment Statistics. http://data.bls.gov, accessed on November 20, 2013.
[7]United State Census Bureau. Household Wealth in the U.S.:2000 to 2011. http://www.census.gov/people/wealth/files/Wealth%20Highlights%202011.pdf
[8]Baicker, K. and D. Goldman. "Patient Cost-Sharing and Healthcare Spending Growth". Journal of Economic Perspectives, 25, no.2 2 (2011): 47- 68. Cost sharing in general has been shown to be associated with reduction in care that is considered necessary as well as unnecessary. See for example: Kathleen N. Lohr, Robert H. Brook, Caren J. Kamberg, George A. Goldberg, Arleen Leibowitz, Joan Keesey, David Reboussin, and Joseph P. Newhouse. 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.

Cost sharing in Minnesota's commercial market in aggregate reached 17.5 percent in 2011, up from 9.2 percent in 2001.[9]

Technology is a major cost driver in the U.S. and in Minnesota, accounting by some estimates of between 38 and 65 percent of spending growth.[10] Recent evidence suggests that slower trends in development and diffusion of new technologies in health care might be contributing as well to the observed slowdown in spending growth.[11]

It is too early to say to what extent Minnesota health reform initiatives aiming at greater care coordination (e.g., Health Care Homes), payment reform (e.g., shared savings arrangements between providers and payers), investments in Health Information Technology, and value-based purchasing (e.g. payment for quality performance instead of business transactions), are contributing to the modest cost growth of the past two years, and whether those impacts can drive structural, rather than one-time change. What appears to be clear is that Minnesota is leading in many of these efforts and that diffusion of them through private sector initiatives and public sector investments, such as State Innovation Model activities and initiatives focusing on transparency and value in health care, increases the potential to reach critical mass and realize health sector efficiencies.[12]

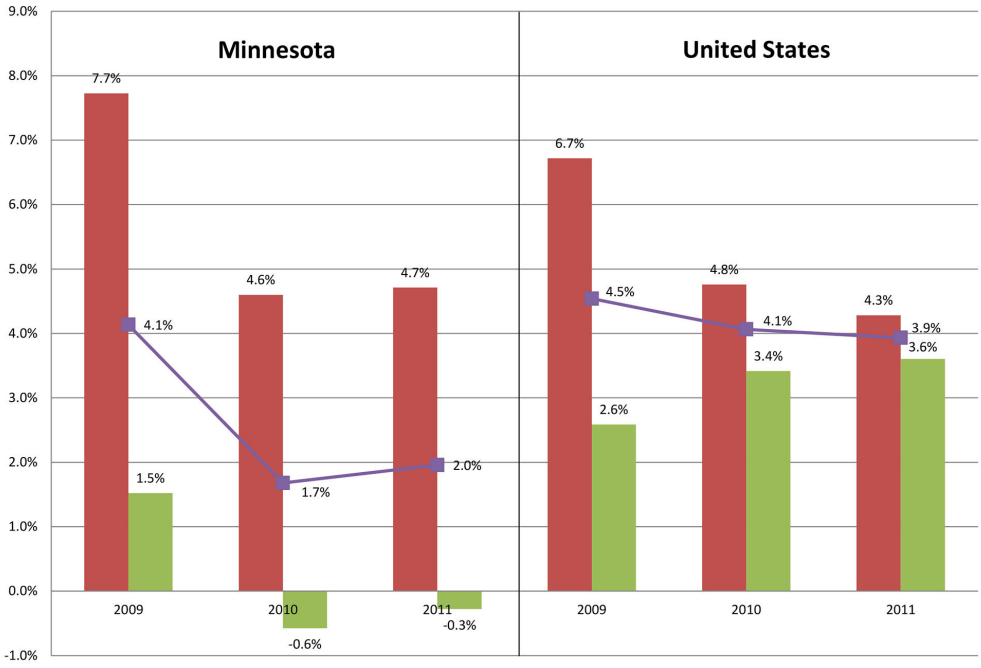
In 2011, slowed growth was visible in both private and public spending, as shown in Figure 2.[13] Private spending actually fell for a second consecutive year, a trend that to a significant extent was driven by lower enrollment in private insurance coverage. At a per capita level, spending remained unchanged for those enrolled in private insurance programs.[14]

The rate of growth in public spending remained virtually unchanged over 2010. At 4.7 percent, it was a remarkable three percentage points below the average annual growth for the past decade. Public spending grew largely as a result of expanded enrollment, rather than increased per enrollee costs. Notably, per enrollee costs actually fell for Minnesota's public programs in 2011, resulting from a change in the mix of enrolled populations. As permitted under the Affordable Care Act, Minnesota policymakers expanded coverage for Medical Assistance, Minnesota's Medicaid program, to adults without children with incomes at or below 75 percent of the federal poverty level. This group utilizes less medical care than some others enrolled in Medical Assistance, such as the elderly and disabled, thus decreasing average per enrollee costs.

[9]Based on unpublished MDH analysis of health plan data.
[10]Robert Wood Johnson Foundation. High and Rising Health Care Costs: Demystifying U.S. Health Care Spending. Research Synthesis Report No. 16. October 2008.
[11]Chandra, A. J. Holmes, and J. Skinner. Is This Time Different? The Slowdown in Healthcare Spending. Fall 2013 Brookings Panel on Economic Activity. September 2013.
[12]For more information on Minnesota's State Innovation Model initiative, visit http://mn.gov/health-reform/health-reform-in-Minnesota/index.jsp.
[13]See Appendix C for explanation of payers grouped as public and private.
[14]MDH analysis shows that per enrollee costs paid by private insurers were unchanged from 2010 to 2011. Out-of-pocket spending, however, increased over the same time frame.

Figure 2

Minnesota and U.S. Total Health Care Expenditure Growth



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

National health spending growth has also slowed in recent years. The decline nationally, however, has been less pronounced, particularly in the private sector. Like in Minnesota, public spending continues to grow more quickly than private spending, with the pace of growth between the sectors being much closer at the national level.[15]

2011 was the second consecutive year that total economic growth outpaced health spending growth in Minnesota. As shown in Table 1, health spending thus consumed a smaller portion of the economy in 2011 (13.6 percent) than 2010 (14.0 percent).

Table 1

Minnesota and U.S. Per Capita Health Care Spending and Share of Economy

	2007	2008	2009	2010	2011
Per Capita Spending:					
Minnesota	$6,508	$6,766	$7,003	$7,056	$7,145
U.S.	$7,149	$7,406	$7,680	$7,930	$8,175
Health Care Spending as a Share of the Economy:					
Minnesota	13.3%	13.5%	14.3%	14.0%	13.6%
U.S.	15.4%	15.8%	16.9%	16.9%	16.9%

Source: MDH Health Economics Program, Centers for Medicare & Medicaid Services, U.S. Department of Commerce

[15]Martin, A. et al. "Growth in US Health Spending Remained Slow In 2010; Health Share Of Gross Domestic Product Was Unchanged From 2009". Health Affairs, 31, no.1 (2012):208-219

Minnesota continues to see a smaller portion of its economy devoted to health spending and lower per capita spending than the nation overall. In 2011, Minnesota per capita spending was $7,145, a 1.3 percent increase from 2010. National health spending grew 3.1 percent to $8,175 per capita, more than 14 percent higher than in Minnesota.[16]

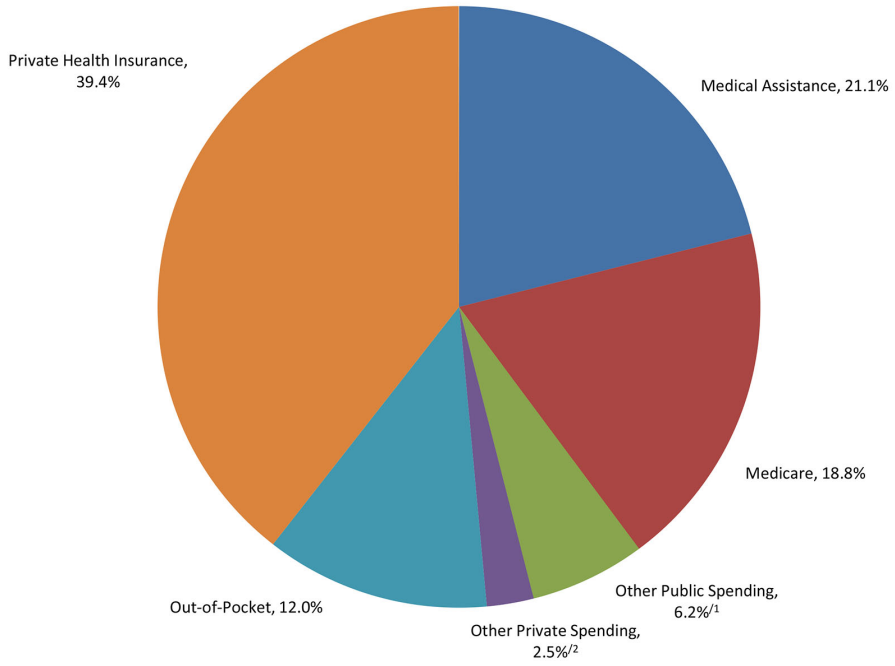
Sources of Funds

The source of funding is an important factor to consider when analyzing trends in health care spending. The following analysis divides spending into categories based on the *payer* or *program* responsible for purchasing a health care good or service. It also provides a breakout of public and private payers.[17]

In 2011, the majority of health care spending (54.0 percent) came from private funds. Private health insurance provided the largest share (39.4 percent of total spending). Patients contributed 12.0 percent of total spending out of pocket. The remaining 2.5 percent of private spending came from other sources, such as workers' compensation.

Figure 3

Minnesota Health Care Spending in 2011: Where It Came From



Source: MDH Health Economics Program
/1 Includes, among others, MinnesotaCare, government workers' compensation, and Veterans Affairs
/2 Other major private payers include private workers' compensation and auto medical insurance

[16]Per capita spending comparisons between Minnesota and the nation overall are made somewhat difficult because of differences in data and methodologies. For this analysis, MDH used national estimates of health consumption expenditures, which are most directly comparable to Minnesota's data. 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 taking them into account, national per capita spending remains almost 9 percent higher than Minnesota per capita spending (instead of 14 percent).

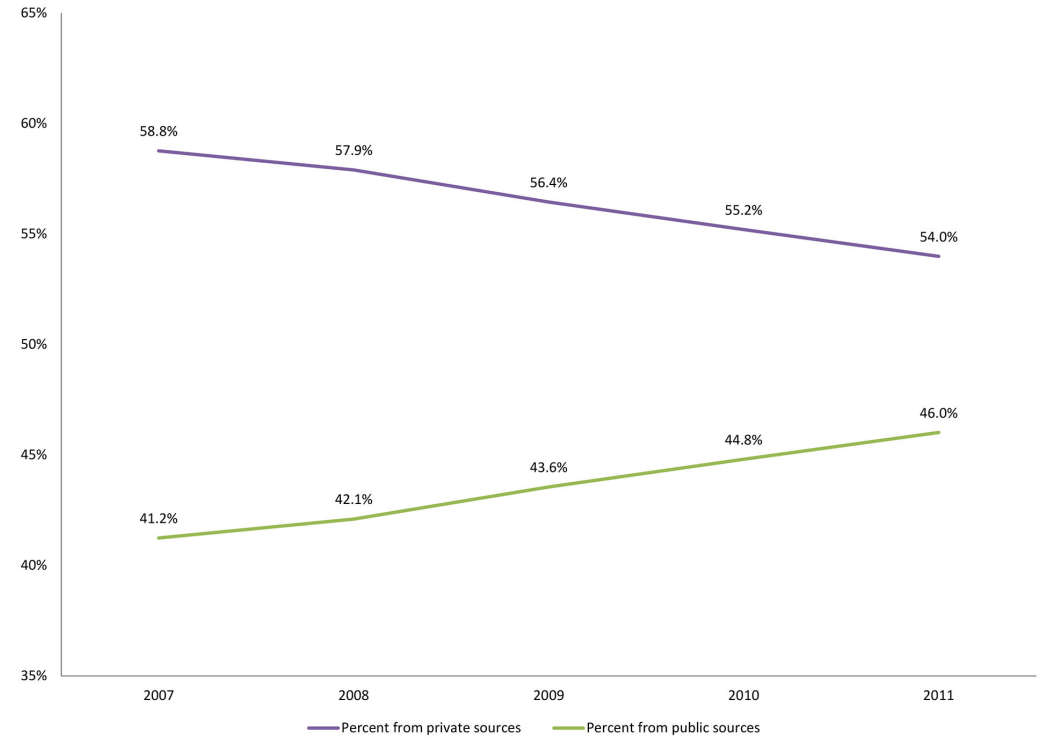
[17]Medicare Advantage is a public program administered by private payers. As a result, spending for this program is divided between public and private spending categories based on the relative proportions of capitation payments and enrollee premiums to total revenue. Further discussion can be found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

Public sources comprised the remaining 46.0 percent of total spending in 2011. Medical Assistance accounted for 21.1 percent of total spending. Medicare accounted for 18.8 percent,[18] and other sources of public funding, including MinnesotaCare, made up the remaining 6.2 percent.

As shown in Figure 4, Minnesota's share of public spending for health care has been increasing in relation to private spending for a number of years. In 2011, the proportion of spending contributed by public sources gained 1.2 percentage points due to growth in Medicare and Medical Assistance. Conversely, the proportion of total spending contributed by private spending fell as the proportions of private health insurance and out-of-pocket spending continued to decline.

Figure 4

Minnesota Health Care Spending: Changing Payer Distribution



Source: MDH Health Economics Program

At the national level, the split between private and public sources of spending is almost equal, as shown in Table 2. In Minnesota, however, private sources continue to contribute eight percentage points more than public payers. This is due in part to the significant share of Minnesota's population that continues to be covered through private insurance.[19]

[18]This does not include portion of Medicare Advantage expenses funded through enrollee premiums.
[19]Using one set of estimates, developed by the U.S. Census Bureau based on the Current Population Survey Annual Social and Economic Supplement, Minnesota's rate of private coverage in 2011 (using a two-year average) was more than 10 percentage points higher than nationally, or about 75.8 percent. MDH estimates the rate of private coverage based on its own research at 61.6 percent.

Table 2

Minnesota and U.S. Shares of Health Care Spending by Payer

Shares of Minnesota Health Care Spending by Payer

	2007	2008	2009	2010
Public Spending, Total	41.2%	42.1%	43.6%	44.8%
Medicare	17.2%	17.4%	17.8%	18.4%
Medical Assistance	18.0%	18.5%	19.0%	19.5%
Other Public Spending /1	6.1%	6.2%	6.7%	6.9%
Private Spending, Total	58.8%	57.9%	56.4%	55.2%
Private Health Insurance	42.5%	42.1%	41.1%	40.4%
Out-of-Pocket	13.6%	13.2%	12.7%	12.2%
Other Private /2	2.7%	2.7%	2.6%	2.6%

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

	2007	2008	2009	2010
Public Spending, Total	46.4%	47.3%	48.3%	48.6%
Medicare	20.1%	20.8%	21.2%	21.3%
Medicaid	15.9%	16.1%	16.7%	17.0%
Other Public Spending /1	10.4%	10.4%	10.3%	10.3%
Private Spending, Total	53.6%	52.7%	51.7%	51.4%
Private Health Insurance	36.2%	35.9%	35.5%	35.2%
Out-of-Pocket	13.3%	13.0%	12.5%	12.2%
Other Private /2	4.2%	3.8%	3.8%	4.0%

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

Growth in public spending was driven in part by enrollment increases in Minnesota's public health care programs in response to the economic downturn. As mentioned earlier, the expansion of Medical Assistance, Minnesota's Medicaid program, also contributed to public program growth in 2011. Medicare enrollment continued to grow at a steady pace (2.4 percent average annually over 5 years) as a greater share of the population became age-eligible for Medicare benefits.

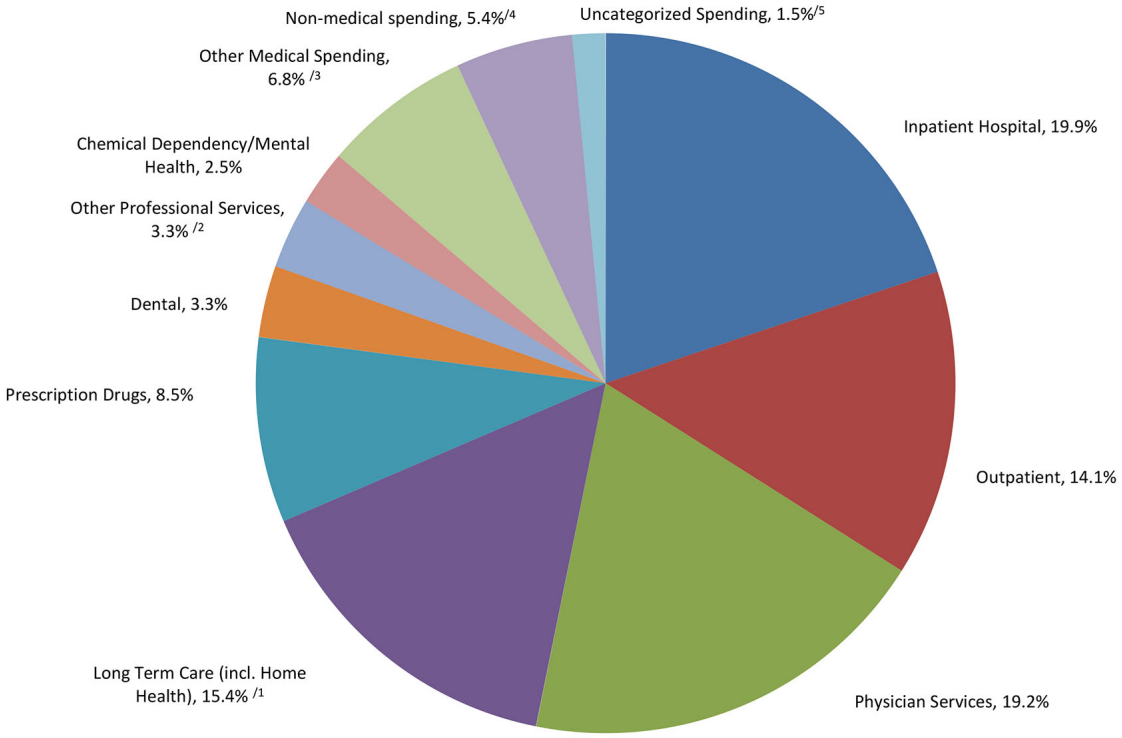
Although more Minnesotans in private plans are exposed to higher deductibles and copays, the amount spent out of pocket as a share of total spending has been declining. This seeming paradox is driven by decreasing enrollment in private coverage, and shifts to coverage with lower cost sharing, such as Medical Assistance. This pattern is consistent with trends at the national level.

Spending by Type of Service

Inpatient and outpatient hospital care combined with physician services accounted for 53.2 percent of total spending in 2011, as shown in Figure 5. Long-term care and prescription drug spending, together, comprised nearly one-quarter of spending, 15.4 percent and 8.5 percent, respectively.

Figure 5

Minnesota Health Care Spending in 2011: Where It Went



Source: MDH Health Economics Program
/1 Includes home health care services
/2 Includes services provided by health practitioners who are not physicians or dentists
/3 Includes chemical/mental health and durable medical
/4 Includes health plan administrative expenses and revenues in excess of expenses
/5 Includes public health spending, correctional facility health spending, Indian Health Services, and not itemized spending

Table 3 displays spending within service categories from 2007 to 2011 at the expenditure level and as a percentage of total spending. The table shows that the portion of total spending attributed to hospitals continued to grow in 2011, from 32 percent in 2007 to 34 percent. As the proportion of inpatient spending has fallen over the last five years, consistent with declining trends in overnight hospital admissions,[20] outpatient hospital spending has grown as a portion of total spending, from 11.3 percent in 2007 to 14.1 percent in 2011. Outpatient spending growth has outpaced the overall increase in spending by a wide margin each year.

[20]MDH Health Economics Program, "Trends at Minnesota's Community Hospitals, 2009 to 2012", forthcoming.

The portions of total spending due to physician services and prescription drug spending have both declined somewhat over the same time period. The remaining categories of spending have been largely stable over time.

Table 3

Minnesota Health Care Spending by Type of Expense

Millions of Dollars

	2007	2008	2009	2010	2011
Inpatient Hospital	$7,012	$7,340	$7,587	$7,580	$7,584
Outpatient Hospital	$3,805	$4,274	$4,585	$5,035	$5,403
Physician Services	$7,097	$7,208	$7,224	$7,347	$7,334
Long Term Care/1	$5,087	$5,377	$5,626	$5,732	$5,877
Prescription Drugs	$3,569	$3,468	$3,690	$3,452	$3,265
Dental	$1,306	$1,385	$1,290	$1,242	$1,261
Other Professional Services/2	$1,045	$1,151	$1,217	$1,107	$1,253
Chemical and Mental Health	$744	$824	$918	$947	$966
Other Medical Spending	$2,564	$2,637	$2,810	$3,003	$3,192
Other non-Medical Spending	$1,554	$1,726	$1,906	$2,027	$2,071
Total	$33,782	$35,390	$36,854	$37,472	$38,206
	7.1%	4.8%	4.1%	1.7%	2.0%

Distribution of Spending

	2007	2008	2009	2010	2011
Inpatient Hospital	20.8%	20.7%	20.6%	20.2%	19.9%
Outpatient Hospital	11.3%	12.1%	12.4%	13.4%	14.1%
Physician Services	21.0%	20.4%	19.6%	19.6%	19.2%
Long Term Care/1	15.1%	15.2%	15.3%	15.3%	15.4%
Prescription Drugs	10.6%	9.8%	10.0%	9.2%	8.5%
Dental	3.9%	3.9%	3.5%	3.3%	3.3%
Other Professional Services/2	3.1%	3.3%	3.3%	3.0%	3.3%
Chemical and Mental Health	2.2%	2.3%	2.5%	2.5%	2.5%
Other Medical Spending	7.6%	7.5%	7.6%	8.0%	8.4%
Other non-Medical Spending	4.6%	4.9%	5.2%	5.4%	5.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source: MDH Health Economics Program
/1 Includes home health care services
/2 Includes services provided by health practitioners who are not physicians or dentists

Surprisingly, prescription drug spending declined in 2011 by 5.4 percent, following a 6.4 percent decline the previous year. This trend differs from that at the national level, where prescription drug spending actually rose 2.9 percent. Several factors contributed to this change in growth. In 2011, Minnesota experienced a 4.4 percent decline in per capita prescription utilization.[21] In addition, patents expired for several expensive, frequently used medications, allowing those drugs to be produced as significantly lower cost generic alternatives.[22] Changes in benefit design have also contributed to this trend, largely through the introduction of additional tiers of cost sharing to encourage use of lower cost drugs in recent years.[23] Furthermore, more employers are excluding entire classes of drugs, such as non-sedating antihistamines, from coverage, thereby reducing costs as consumers select lower cost drugs or forgo the purchase altogether.[24,25]

[21]IMS Institute for Healthcare Informatics. The Use of Medicines in the United States: Review of 2011. April 2012.
[22]Examples of frequently prescribed drugs for which generics became available in 2011 are Lipitor and Levoquin. For additional discussion see Hoffman, J. et al. "Projecting Future Drug Expenditures – 2012." *American Journal of Health-System Pharmacists* (69).
[23]Kaiser Family Foundation and Health Research and Educational Trust. Employer Health Benefits: 2013 Annual Survey.
[24]Pharmacy Benefit Management Institute. 2011-2012 Prescription Drug benefit Cost and Plan Design Report. 2011.
[25]Correspondence with MN health plans.

Health Care Spending Projections

Minnesota's 2008 health reform law contained a number of initiatives to reduce growth in health care spending. These included provisions such as investments in population health, increased transparency in provider cost and quality, and strengthened care coordination for the chronically ill.[26] To determine the impact of these reforms on spending growth, MDH is required to establish a set of baseline projections to predict spending in the absence of these reform. These projections are then compared with the estimate of actual spending to approximate any potential savings that might have resulted from Minnesota health reforms.

The projections presented in this section assume stability in the trends and relationships of underlying variables that drove health care spending growth prior to 2009. As discussed throughout this report, more recent data indicates that these trends may be changing for a number of reasons or that they could be expected to change in the future. As a result, these projections should not be interpreted as predictions of actual future spending; rather, they represent a counterfactual future scenario, absent any changes to the drivers of health care spending.

To better determine savings resulting from Minnesota health reforms, MDH is required conduct an analysis of spending excluding Medicare and long-term care, areas of spending less affected by state-level policy change. This narrower subset of health spending totaled $26.0 billion in Minnesota in 2011.[27] Projections of both total spending and spending excluding Medicare and long-term care are reported throughout this section.

Methodology

MDH contracted with Mathematica Policy Research to develop the baseline projection model and periodically update the model to incorporate methodological improvements and changes in the policy environment that may influence health care spending in Minnesota.[28] The methods used in the baseline projections are derived from those employed by the Centers for Medicare and Medicaid Services (CMS) to project national health care expenditures. In Minnesota, the projections of public and private health care spending are estimated separately initially, before being combined to form the total spending projection. The projection of health spending from public sources is based on forecasts from the Minnesota Department of Human Services and the CMS actuary. A series of econometric models produce the projection of private health care spending by payer and spending category. The private spending models are macroeconomic projection models which aim to extract the historical relationship between health care spending in Minnesota and relevant macroeconomic variables to forecast future health care spending in the state.[29]

The effort to develop health spending projection is made somewhat complex by the relatively short historical time series of Minnesota health care spending estimates (1994 to 2008) in that it makes the model sensitive to changes in the forecasts of the macroeconomic variables. This has been a particular challenge in the years following the economic recession, because it adds volatility to the relationship between key variables. To address this and other volatility in the projections, a family of models has been developed over the course of this work that remain close to the CMS specification, while accounting for characteristics of the Minnesota economy that fit the data well and are both reasonable and justifiable. The short historical time series also prevents the model from incorporating any structural changes occurring in the health care sector that may have taken place since 2008. As a result, in the absence of major economic disruptions, the model tends to predict similar trends to those seen prior to reform.

[26]Visit: http://www.health.state.mn.us/healthreform/index.html for more information on these initiatives.
[27]Medicare expenditures account for $7.2 billion and non-Medicare long-term care expenditures for the remaining $5 billion of the difference to total spending.
[28]Methodological detail is presented in Appendix C.
[29]The private spending model aligns with MDH's historical spending estimates. The methods and explanatory variables are presented in Appendix C.

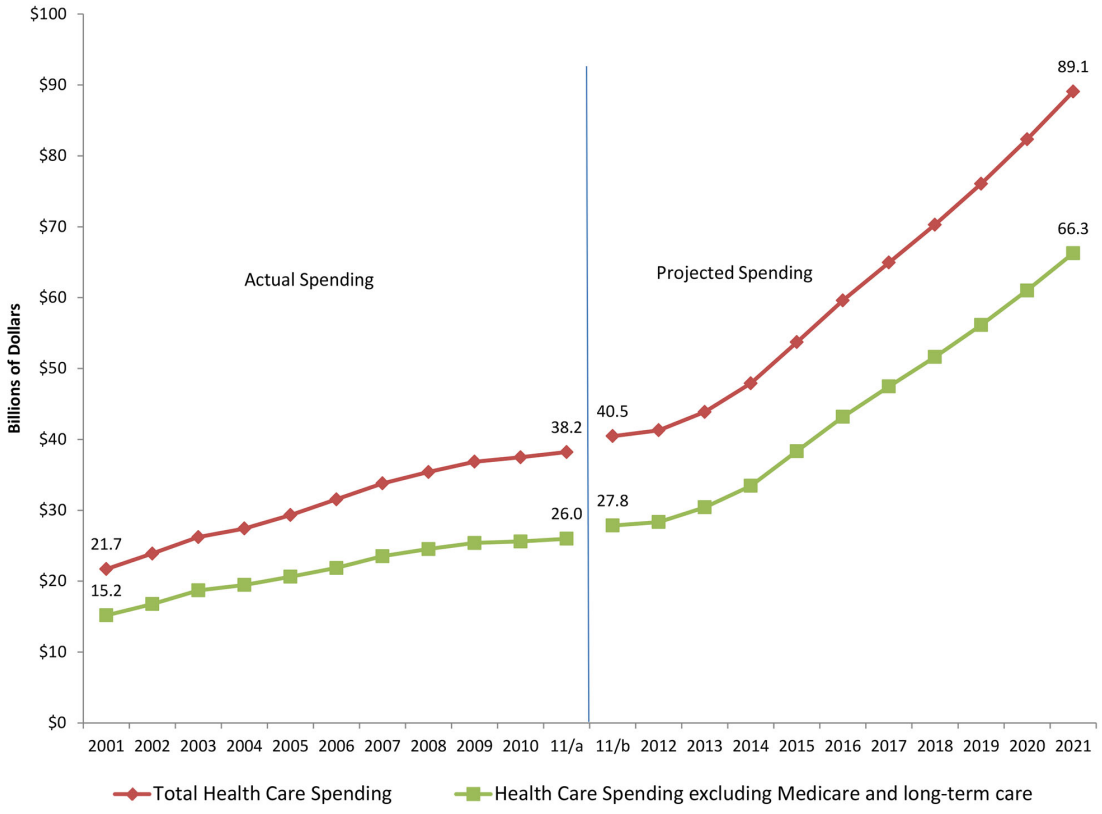
For the purpose of analyzing the 2011 estimates of actual spending, the baseline projection was updated with refreshed macroeconomic inputs. Additionally, the model specifications were revised to incorporate updates to CMS's approach to projecting health expenditures and approximate the impact of federal reform through the Affordable Care Act (ACA) on future health care spending. Because of the relative scarcity of reliable, early data on ACA implementation and the modeling framework for Minnesota's projections, estimates of how the ACA might affect spending in the state remain somewhat rudimentary. MDH anticipates building on actual empirical data and a refined methodological approach in its 2014 report to refine and strengthen these estimates.

Baseline Projections

In the hypothetical absence of Minnesota reforms or other changes to cost drivers,[30] health care spending is expected to grow 8.2 percent average annually between 2011 and 2021 (compared to 5.8 percent for the preceding 10 years). At this rate of growth, total health care spending would more than double over the next decade to reach $89.1 billion by 2021. Figure 6 displays actual and projected health care spending in Minnesota, both in total and excluding Medicare and long-term care.

Figure 6

Minnesota Health Care Spending in Minnesota Without the Impact of Reform, 2001 to 2021



Source: MDH historical spending estimates and projections from Mathematica Policy Research, Inc.

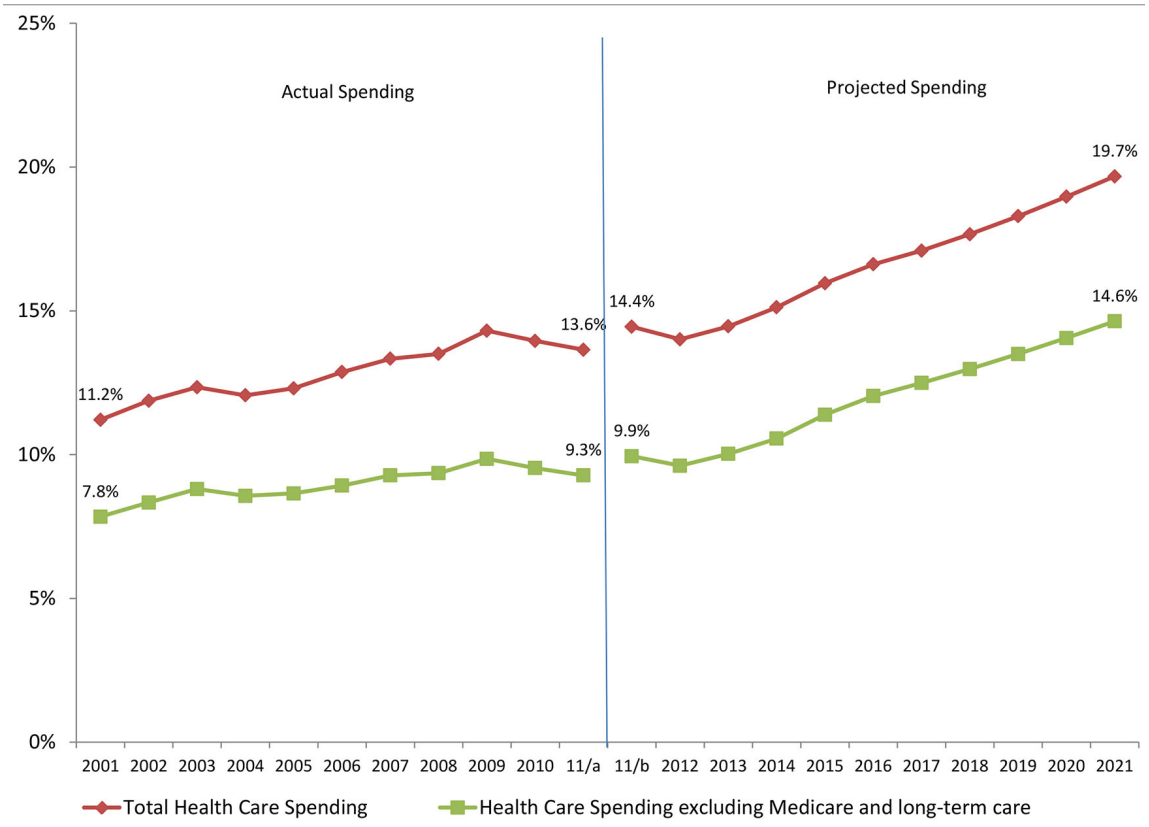
[30]The estimate approximates the absence of Minnesota reforms by holding constant the pre-reform relationship between the economy and health care spending and applying it to projected future macroeconomic conditions.

Under the alternative assumptions that health care reforms were not in place in future years and that other factors driving spending largely stayed consistent with historic patterns, health care spending is predicted to grow to 19.7 percent of the economy by 2021 from a projected rate of 14.4 percent in 2011. This change would mean that about one in five dollars of Minnesota's economic activity in 2021 would be spent on health care.

The share of the economy spent on health care excluding Medicare and long-term care is projected to follow a similar trajectory, increasing by about five percentage points between 2011 and 2021. Figure 7 displays actual and projected health care spending as a share of the economy.

Figure 7

Health Care Spending as a Share of the Economy, 2001 to 2021



Source: MDH historical spending estimates and projections from Mathematica Policy Research, Inc. Gross state product historical data from the U.S. Department of Commerce, Bureau of Economic Analysis; projections use nominal U.S. GDP projection

As discussed above, public spending has grown more quickly than private spending in recent years. The projection model predicts that, absent reforms, this trend would not continue.

As shown in Table 4, private spending growth is projected to return to historic rates of growth, exceeding public spending growth by nearly three percentage points and accounting for about 61 percent of total spending by 2021. After economic decline and modest spending growth, the projection model assumes that growth in private sector spending will return to pre-recession trends. Public spending, on the other hand, is expected to experience modest growth because of changing demographic factors and payment reforms.

Again, the expectation is that Minnesota reforms and ongoing delivery system dynamics will result in moderation of these trends in the upcoming years.

Table 4

Public and Private Health Care Spending, 2001 to 2021 (billions of dollars)

	Total Health Care Spending			Spending Excluding Medicare and Long-term Care		
	Private	Public	Total	Private	Public	Total
Actual						
2001	$13.2	$8.5	$21.7	$12.1	$3.1	$15.2
2002	$14.4	$9.5	$23.9	$13.2	$3.6	$16.8
2003	$15.9	$10.3	$26.2	$14.7	$4.0	$18.7
2004	$16.5	$10.9	$27.4	$15.3	$4.2	$19.5
2005	$17.6	$11.7	$29.3	$16.3	$4.3	$20.6
2006	$18.7	$12.8	$31.5	$17.4	$4.4	$21.9
2007	$19.9	$13.9	$33.8	$18.5	$5.0	$23.5
2008	$20.5	$14.9	$35.4	$19.1	$5.4	$24.5
2009	$20.8	$16.1	$36.9	$19.4	$6.0	$25.4
2010	$20.7	$16.8	$37.5	$19.3	$6.3	$25.6
2011	$20.6	$17.6	$38.2	$19.2	$6.7	$26.0
Projected						
2011	$22.6	$17.9	$40.5	$21.1	$6.8	$27.8
2012	$23.2	$18.1	$41.3	$21.6	$6.7	$28.3
2013	$24.5	$19.3	$43.9	$22.9	$7.5	$30.4
2014	$26.5	$21.4	$47.9	$24.7	$8.7	$33.5
2015	$30.2	$23.5	$53.7	$28.3	$10.1	$38.3
2016	$34.2	$25.4	$59.6	$32.2	$11.0	$43.2
2017	$38.0	$27.0	$64.9	$35.7	$11.7	$47.5
2018	$41.5	$28.8	$70.3	$39.1	$12.5	$51.6
2019	$45.4	$30.7	$76.1	$42.8	$13.4	$56.1
2020	$49.5	$32.8	$82.3	$46.7	$14.3	$61.0
2021	$54.0	$35.1	$89.1	$51.0	$15.2	$66.3

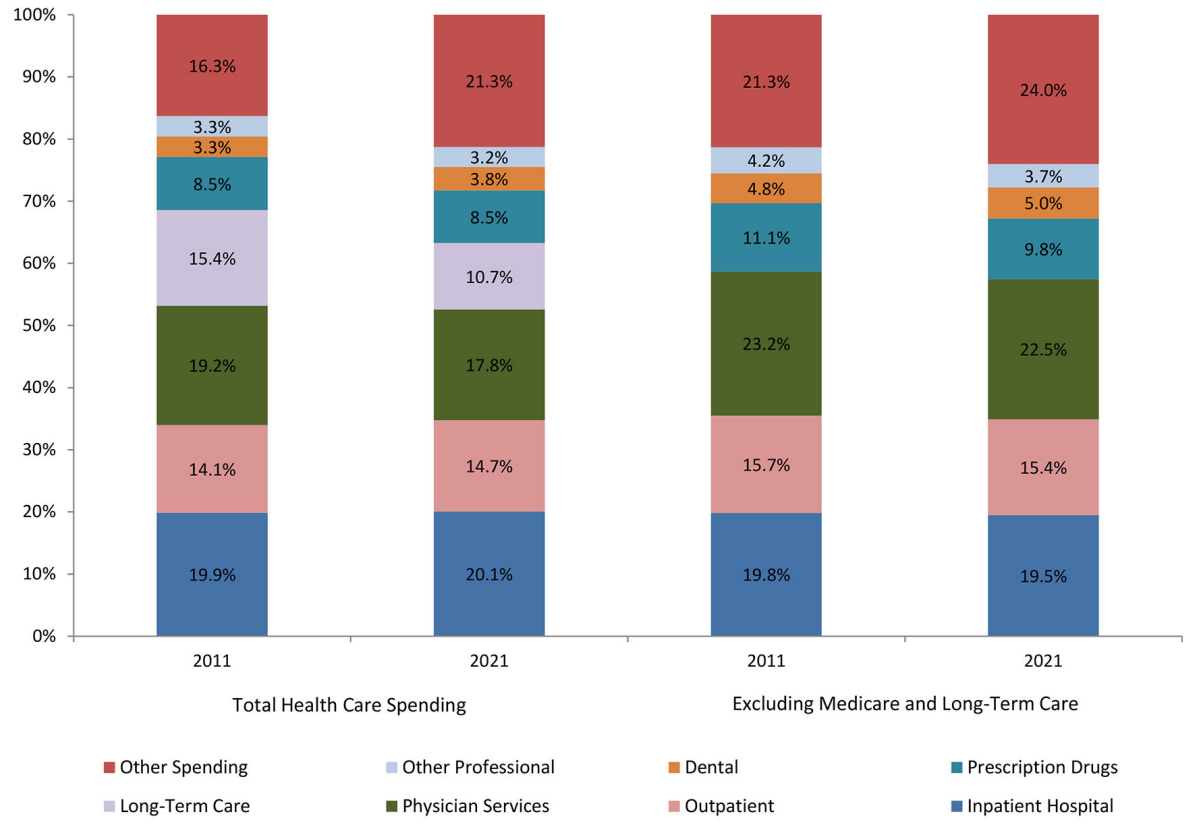
Source: MDH historical spending estimates and projections from Mathematica Policy Research, Inc.

In addition to changes by payer type, the analysis projects there to be some changes in the distribution of spending by type of health care service. Figure 8 displays these anticipated changes, both in total spending and excluding Medicare and long-term care. As shown, the largest shift is the growth in other spending, a category that includes spending for chemical dependency and mental health, durable medical equipment and non-medical spending. The largest form of non-medical spending is the net cost of insurance. It includes, among other spending categories administrative cost and net underwriting gains and losses, or profits. The change in distribution is offset by declines in the *share* of spending for prescription drugs and long-term care; both categories will nevertheless grow in absolute, at an estimated 99 percent and 68 percent, respectively.

Changes in the distribution of spending are more apparent when excluding long-term care and Medicare. In this case, other spending grows in proportion, while the share of spending accounted for by prescription drugs declines. Again, although this category declines as a share of spending, it is projected to grow 82 percent in absolute.

Figure 8

Distribution of Health Care Spending by Type of Service



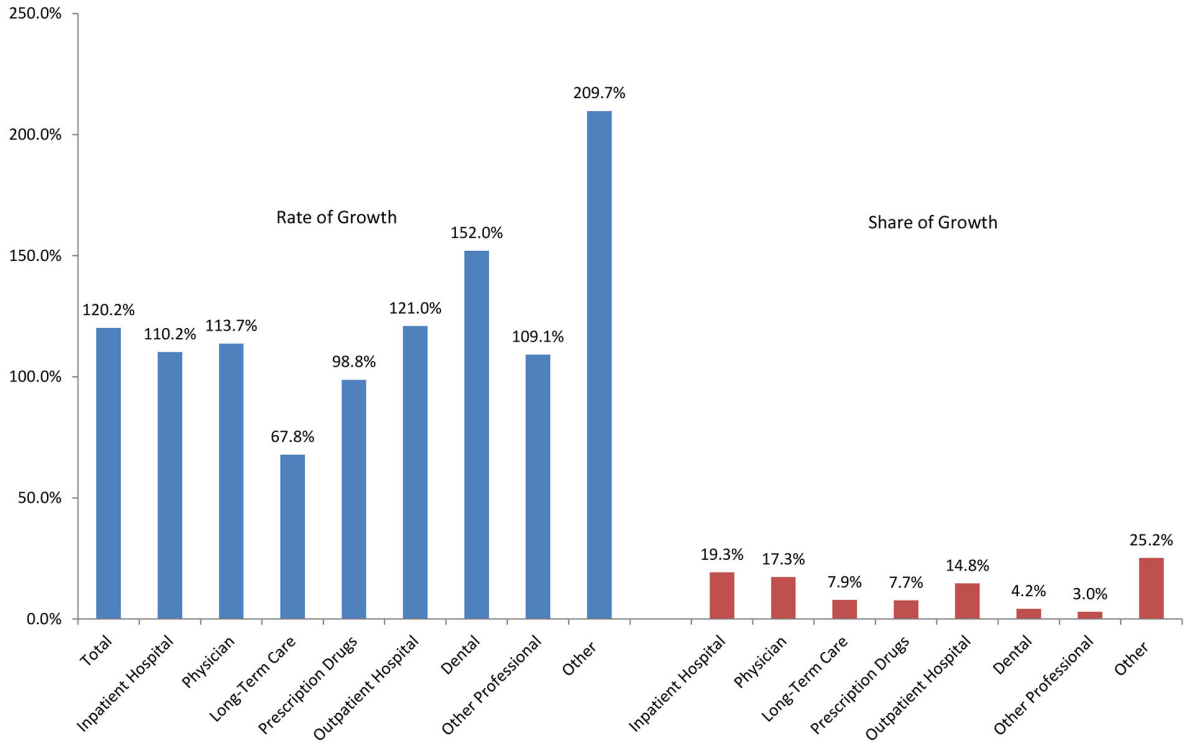
Source: MDH historical spending estimates and projections from Mathematica Policy Research, Inc.

The changes in distribution of spending are a result of differential rates of growth, as shown in Figure 9. While total health care spending is expected to increase 120 percent over 2011 levels by 2021, the increase is not anticipated to be uniform among the categories of service.

Other spending is predicted to increase much faster than total spending (209.7 percent) from 2011 to 2021 and contribute 25.2 percent of total health spending growth. Despite growing at a slower rate than total spending, inpatient hospital services will be the second greatest contributor to growth – making up 19 percent of growth.

Figure 9

Projected Health Spending Growth, 2011 to 2021



Source: MDH Health Economics Program and Mathematica Policy Research, Inc.

Comparison of Actual and Projected Spending

As noted above, MDH is required to estimate actual health care spending in Minnesota and compare results to projections of health care spending to isolate potential effects of the state's 2008 health reform activities.

This marks the first year since this analysis began in 2009 that estimated actual spending fell short of the levels of spending predicted by the baseline projection model. That is, health care spending in Minnesota appears to have grown less in 2011 than what is expected based on the historical relationship between macroeconomic factors and health care spending.

As shown in Table 5, total spending was projected to reach $40.5 million in 2011; actual spending instead totaled $38.2 million, about 5.9 percent below projections. As mentioned above, MDH repeats the analysis on a subset of spending excluding Medicare and long-term care spending, which are less likely to be affected by state policy decisions. Table 5 shows that for this portion of spending, the gap between what was projected ($27.8 million) and actually spent in 2011 ($26 million) was about 7.2 percent, proportionally wider than the difference in total spending.[31]

Recognizing the methodological difficulty associated with attributing changes in health care spending growth to individual state-level policy interventions, such as Minnesota's 2008 health reforms, the Legislature chose to define actual spending trends *below* projections as health reform savings. But what can this analysis say about the extent to which Minnesota reforms have been driving lower spending growth?

Unfortunately, because data available for this analysis are highly aggregated, MDH cannot definitively identify or decompose the factors responsible for underlying trends. As such, our analysis remains limited to considering the theoretical factors at play:

- As suggested earlier, it remains likely that in 2011 the slow economic recovery had a weakening effect on health care spending because of lower rates of coverage and stagnant trends in income and wealth. The projection model attempts to capture the effect of the economic shock. However, it may have not been entirely possible, given the lack of comparable historical trends in the source data.
- Similarly, ongoing changes in health care benefits that transfer a greater financial responsibility for spending from payers to individuals likely constrain spending growth.
- National trends in overall spending,[32] and spending for the Medicare program in particular,[33] mirror Minnesota's moderate growth. This indicates that more general factors such as labor market and price trends are at play, instead of factors that are specific to Minnesota and its reform activities.

[31]This analysis is based on the use of the projected point estimate of 2011 spending in the absence of health reform. It does not take into account the variance present within the model. MDH's 2011 estimate is within the margin of error produced by the projection model.
[32]Hartman, M. et al, 2013.
[33]Levine, M and M. Buntin. Why Has Growth in Spending for Fee-for-Service Medicare Slowed? Congressional Budget Office Working Paper Series. August 2013.

Even if Minnesota policies have not yet structurally changed the health care delivery system, the state is well positioned to capture the benefits from these reforms in the coming years.

- There are numerous initiatives evolving in Minnesota that may increase transparency in health care provider costs and quality, giving employers, consumers and purchasers additional tools to identify value in health care.
- The Health Care Homes initiative, which aims to reform care and improve care coordination for individuals with chronic conditions and disabilities, continues to mature. With recent certification of the 300th clinic, Health Care Homes now cover nearly all Minnesota counties. Formal evaluation of the initiative is currently being conducted.
- Investments in population health through the State Health Improvement Program will continue into fiscal years 2014 and 2015 and beyond, targeting those risk factors that most greatly contribute to chronic disease.
- As a leader in e-health adoption, Minnesota continues on its path to implement meaningful use of information technology to improve the quality and cost of care.
- Payment reform continues to transition Minnesota's health care system from transaction-based models to models of accountability by all actors, with accountable care models expanding in both the public and commercial sectors. An assessment of the reach and impact of these initiatives is underway as part of Minnesota's State Innovation Model grant.

Table 5

Difference between Actual and Projected Health Care Spending in 2011 (in millions)

	Actual Spending	Projected Spending	Actual Less Projected	%
Total Spending	**$38,205.6**	**$40,455.3**	**-$2,249.7**	**-5.9%**
Public	$17,580.0	$17,862.4	-$282.4	-1.6%
Private	$20,625.6	$22,592.8	-$1,967.3	-9.5%
Total Spending less Medicare & Long Term Care	**$25,981.1**	**$27,845.5**	**-$1,864.4**	**-7.2%**
Public	$6,731.6	$6,784.5	-$52.9	-0.8%
Private	$19,249.5	$21,061.0	-$1,811.5	-9.4%

Source: MDH historical spending estimates and projections from Mathematica Policy Research, Inc.

Because of the difference in projected and actual spending, MDH is required to determine the portion of that difference related to state-administered programs (Medical Assistance, MinnesotaCare, General Assistance Medical Care and the State Employee Group Insurance Program). As shown in Table 6, state-administered health insurance programs in 2011 accounted for 22.2 percent of total spending excluding Medicare and long-term care. Spending for Medical Assistance alone accounts for three-fourths of state-administered spending.

Table 6

Spending for State Administered Programs as a Percent of Total Spending, 2011

	Actual Spending (Millions)	Percent
Total Spending /1	**$25,981.1**	
Spending Not State Administered	**$20,212.4**	**77.8%**
Total State Administered Programs /2	**$5,768.8**	**22.2%**
Medical Assistance	$4,541.8	17.5%
MinnesotaCare	$602.1	2.3%
State Employee Group Insurance Program	$624.8	2.4%

Source: MDH Health Economics Program
/1 Excludes spending for Medicare and long term care
/2 Excludes spending for long term care

In Table 7, MDH estimates the portion of the difference between projected and actual spending that is attributable to state-administered programs. Because the underlying projection model cannot be estimated with confidence separately for each state-administered program, MDH uses two scenarios to estimate the range in the share of the spending difference likely attributable to state-administered programs. Scenario 1 applies the portion of spending accounted for by state-administered programs from Table 6 to the difference between actual and projected spending. Under that scenario, the share of the difference in actual and projected spending attributable to state-administered programs in 2011 amounted to $414 million.

The calculation in Scenario 2 takes into consideration that the slower than projected growth in actual spending is composed of differential rates of growth in private spending, applicable to the State Employee Group Insurance Program, and public spending, applicable to the Minnesota Health Care Programs. Under Scenario 2, the share of the difference in actual and projected spending attributable to state-administered programs in 2011 amounted to $99.2 million.[34]

Regardless of the method applied, savings attributable to state-administered programs exceeds $50 million, the condition defined in statute that would trigger a transfer of $50 million from the General Fund to the Health Care Access Fund.[35] The Commissioner of Health has certified that the condition was met and notified the Commissioner of Management and Budget.[36]

[34]It is important to reiterate that the difference between actual and projected spending in aggregate cannot be attributed with any confidence to the implementation of health reform in Minnesota, and that so far other factors remain more likely drivers of that difference. Therefore, we discourage extrapolating from these findings that they indicate measurable savings experienced by Minnesota Health Care Programs due to Minnesota health reforms.
[35]Minnesota Statute, Chapter 62U.10, subd. 4.
[36]See Appendix B for copy of Letter of Certification

Table 7

Savings from 2008 Health Reform Attributable to State-Administered Programs, 2011

	Difference (in millions)	Percent of Difference
Scenario 1: Estimates as a Percentage of Aggregate		
Amount Attributable to State Administered Programs	414.0	22.2%
Amount Attributable to Non-State Programs	1,450.4	77.8%
Scenario 2: Estimates by Payer Growth Rates		
Amount Attributable to State Administered Programs	99.2	5.3%
Amount Attributable to Non-State Programs	1,765.1	94.7%

Source: MDH Health Economics Program and Mathematica Policy Research, Inc.
Excludes spending for Medicare and long term care

Summary

Health care spending continued to grow slowly, at a rate of 2.0 percent, in Minnesota in 2011, reaching $38.2 billion. As a portion of the state's economy, health care spending declined from 14.0 percent in 2010 to 13.6 percent in 2011.

While Minnesota has experienced slow health care spending growth over the past few years, MDH's projection model predicts health spending would more than double in the next decade without health reform or other changes in the relationships that determine health care spending. In this scenario, expenditures could reach $89.1 billion by 2021, consuming almost 20 percent of Minnesota's gross state product.

This was the fourth year MDH has compared actual health care spending to projected spending to determine whether underlying trends in health care spending growth are changing. The comparison shows that projected spending exceeded actual spending by $1.9 billion. It indicates that there has been some disruption in the drivers of health spending growth and the variables that historically have affected trends in health spending.

By not limiting the historic analysis to the period before implementation of Minnesota health reform and considering the changes that have taken place over last several years (2009-2011), an alternative model is able to produce a more moderate forecast of future spending. This alternative analysis predicts that excluding Medicare and long-term care, 2021 spending will be more than ten percent lower than projected by original projection model, reaching approximately $59 billion.

Because of a number of factors seemingly in transition across sectors, MDH cannot determine definitively the weight of the factors that drove change in 2011. To the extent that the economic downturn remains a significant factor in lower growth, a mature economic recovery with a longer period of empirical evidence will help determine whether the deceleration in spending was due to the economic disruption of the recession or structural changes in the Minnesota health care market. Until then, economists on both sides of the argument continue to debate whether the health care delivery system has experienced desired structural changes that promise longer-term moderation in spending growth.

Appendix A. Actuarial Certification by Towers Watson

TOWERS WATSON

Stuart H. Alden
Suite 270
1205 Westlakes Drive
Berwyn, PA 19312-2410

T 610-232-0403
F 610-232-2410

stuart.alden@towerswatson.com

December 6, 2013

Mr. Stefan Gildemeister
Director, Health Economics Program
Minnesota Department of Health
85 E 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 2011 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 2011, including state-wide health care expenditures totaling $38.2 billion and total spending less Medicare and long-term care in the amount of $26.0 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: Ahna Minge – MDH
David Jones, Deborah Chollet – Mathematica Policy Research
Ryan Lore – Towers Watson

Table 1
Where Minnesota Health Care Spending Came From in 2011

Source of Funding	Total Spending (Millions)	%	Total Spending Less Medicare & LTC (Millions)	%
Medicare	$ 7,165	18.8%		
Medical Assistance	$ 8,047	21.1%	$ 4,536	17.5%
Other Public	$ 2,367	6.2%	$ 2,195	8.4%
Private Health Insurance	$ 15,066	39.4%	$ 14,885	57.3%
Other Private	$ 964	2.5%	$ 964	3.7%
Out of Pocket	$ 4,595	12.0%	$ 3,400	13.1%
All Sources of Funding	**$ 38,206**	**100.0%**	**$ 25,981**	**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 2011

Spending Category	Total Spending (Millions)	%	Total Spending Less Medicare & LTC (Millions)	%
Hospital	$ 12,987	34.0%	$ 9,225	35.5%
Physician Services	$ 7,334	19.2%	$ 6,014	23.2%
Long-Term Care (incl. Home Care)	$ 5,877	15.4%		
Prescription Drugs	$ 3,265	8.5%	$ 2,871	11.1%
Dental	$ 1,261	3.3%	$ 1,245	4.8%
Other Professional Services	$ 1,253	3.3%	$ 1,086	4.2%
Chemical Dependency/Mental Health	$ 966	2.5%	$ 966	3.7%
Other Medical Spending	$ 3,192	8.4%	$ 2,554	9.8%
Other Non-Medical Spending	$ 2,071	5.4%	$ 2,020	7.8%
Total Spending	**$ 38,206**	**100.0%**	**$ 25,981**	**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. Letter of Certification

Protecting, maintaining and improving the health of all Minnesotans

December 11, 2013

James Schowalter
Commissioner, Minnesota Management & Budget
400 Centennial Building
658 Cedar Street
St. Paul, MN 55155

Dear Commissioner Schowalter:

The 2008 Legislature required the Minnesota Department of Health (MDH) to estimate the actual total health care spending for residents of the state and obtain actuarial certification of these estimates, calculate the annual projected total health care spending for Minnesota residents, and determine the difference between actual and projected health care spending. If actual spending is less than projected spending, MDH must calculate the portion of this difference attributable to state-administered programs (Minnesota Statutes, Section 62U.10).

Our analysis of health care spending in calendar year 2011 showed that *actual* spending (less Medicare and long-term care) for Minnesota residents in 2011 was $26.0 billion. This is $1.9 billion (7.2%) below the projected health care spending level for 2011 ($27.8 billion); the portion of this difference attributable to state-administered programs is estimated to be between $99.2 million and $414 million. This exceeds the $50 million threshold established in statute, which by my read triggers the provision in subdivision 4 that requires a transfer of $50 million from the General Fund to the Health Care Access Fund.

Should you have any questions about the analysis or the result of it, please contact Stefan Gildemeister, Director of the Health Economics Program, at 651.201.3554 or stefan.gildemeister@state.mn.us.

Sincerely,

Edward P. Ehlinger, MD, MSPH
Commissioner
P.O. Box 64975
St. Paul, MN 55164-0975

Enclosure

cc: Lynn Anderson, Deputy Commissioner, MMB
Margaret Kelly, Assistant Commissioner/State Budget Director, MMB

Appendix C. Health Spending Estimate 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.[37] 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 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 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 and 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.[38]

In addition to estimates of historic spending, MDH develops projections of future health care spending, generally focusing on health care spending trends absent the potential impact of Minnesota's 2008 health care reforms. The projections are conducted with the input of an analytic contractor to MDH. Similarly 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 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 spending type.

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 unavailable to this work.

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),[39] and other public sources. In addition to health care spending, data on coverage are used to estimate per capita

[37]Minnesota Statutes, Section 62U.10
[38]A description of CMS' methodology is available online: http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/dsm-11.pdf; accessed Dec. 2, 2013.
[39]Minnesota Health Care Programs refers to Medical Assistance, MinnesotaCare and General Assistance Medical Care.

spending and the size of the overall Minnesota market.[40] As shown in Table 1, a number of primary data sources are used to create the health spending estimate.[41] The first three data sources, covering private spending, spending for state public program enrollees and Medicare fee-for-service program spending, fairly consistently capture about 80 percent of total spending in the state.

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

Table 1: Major Data Sources Used in Minnesota Health Spending Estimate

Data Source Name	Types of Data	Sources of Data	Data Used for
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 and 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 estimates	CMS	Estimating out-of-pocket costs
Various administrative reports and data	Aggregate expenditures, enrollment	Federal and state agencies	Other public and private spending

[40]The analysis attempts to develop estimates of the distribution of primary coverage tby correcting for double-coverage and changes in coverage across a calendar year. Results from this analysis are forthcoming.
[41]In total, the spending estimates relies 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, including for instance spending for people with supplemental Medicare coverage. Spending under Medicare Supplemental policies is calculated consistently with commercial spending.

A significant share of privately insured Minnesotans (60 percent) receives 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 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).

Medicare Advantage Private Expenses

Medicare Advantage expenditures are reported via the HPFSR to MDH by plans 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 the 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 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 on the property and casualty industry, is applied to an estimate for 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, prisons 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 spending for MA are distributed across spending categories using estimates provided by DHS. Total MA spending is distributed into federal and state funding sources using evidence from the DHS Forecast.

Aggregated MinnesotaCare spending is obtained by calendar year from the DHS Reports and Forecasts division. This volume of spending is allocated across spending categories using 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 correction systems.

Veterans Administration health 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. Tricare spending is reported by the Department of Defense (DOD). 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 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 corrections facilities is obtained directly from the Minnesota Department of Corrections. To calculate state spending, MDH multiplies per diem costs times the average annual population in state correctional facilities.

The estimate of public health spending for the state of Minnesota draws on data from a range of sources to estimate spending at the federal, state, and local public health-level. The federal public health spending estimate relies on data from USASpending.gov, 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 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 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.

Where there are more systemic differences in estimates is between Minnesota's state spending analysis and CMS' effort to estimate the state portion of their national health expenditure account initiative. CMS develops these State Health Expenditure Account (SHEA) estimates on an irregular basis and uses 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 has not revealed 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.

Projecting Health Care Expenditures

Minnesota develops projections for the primary purpose of holding static historical factors that drive health care spending in order to estimate what future spending would have been without the impact of health reforms introduced in 2008. Again, similarly to CMS, Minnesota's approach aims to project an overall model of health care spending and models by payer and spending categories that are benchmarked to results from the more predictive total spending model.

Public Spending

Three types of public spending are included in Mathematica's projections, Medicare, MHCP, and other public spending. Projected values for each are determined separately.

- Values for future Medicare spending are projected based on growth rates published by the CMS Office of the Actuary.
- Projections for Medical Assistance and MinnesotaCare are derived from the Department of Human Services' (DHS) forecast. The DHS forecast includes projected values for five fiscal years by program type and eligibility category. For years within the forecast period, fiscal years are converted to calendar years using a weighted average. For years beyond the forecast period, per enrollee costs are calculated for each eligibility category and for long term care separately. Using data from the MN Demographic Center and the Department of Human services, these per enrollee costs are applied to the projected enrollment change for each eligibility category to determine total projected spending.
- Other public spending, which includes spending for the Veterans Administration and public workers' compensation payment, is calculated by applying a three year moving average rate of growth to each payer category.

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. The method utilized by MDH and its vendor 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 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 spending category.

Each individual model includes six variables 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 the 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 for per capita values.
- **Minnesota Percentage Uninsured:** Uninsurance information is based on the Minnesota Health Access Survey. For years between surveys, the uninsurance rate is estimated by smoothing the growth rate between the two years. For years after 2011, the uninsurance rate is projected to decline in a pattern proportional to the declines in uninsured status seen in Massachusetts following health reform implementation in that state.
- **Minnesota Nominal Per Capita GDP:** Nominal GDP is estimated by the Bureau of Labor Statistics. Future values are projected using national growth rates projected by the Congressional Budget Office. Values are converted to per capita basis.
- **Minnesota Per Capita Public Spending:** Real per capita public spending is estimated as outlined above and converted to per capita values. Public spending by spending category is a component of individual models.
- **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.

Limitations of Projection Model

This projection model is very successful at explaining past trends in health spending (the R-squared value of the total spending model is 0.98). However, similarly to any exercise in projection, the results are subject to considerable uncertainties because of the range of necessary assumption 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 wrong. For example, if GDP in Minnesota doesn't increase as projected in 2014 due to slow economic growth, health spending estimates for 2014 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 the specific explanatory variables, the adjustment is only a best approximation.

Lastly, 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 relationship 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.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