

## MEMORANDUM

To: Research Committee Members, Colorado Commission on Affordable Health Care  
From: Michele Lueck and Amy Downs, Colorado Health Institute  
Re: Analysis of Health Care Spending by Services and Conditions  
Date: April 30, 2015

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During the April 13 meeting of the Research Committee, members of the committee asked the Colorado Health Institute (CHI) to provide an analysis of spending on personal health care by type of service and by disease in Colorado. This memo summarizes CHI's analysis.

### Spending on Personal Health Care by Type of Service<sup>1</sup>

CHI, in order to inform the committee about spending on personal health care, used data from the National Health Expenditure Accounts (NHEA). These data, which are the official estimates of health care spending in the United States, are published by the Centers for Medicare & Medicaid Services.

Unlike total health care expenditures, personal health care expenditures do not include items such as research, structures, equipment, government public health activities, program administration and net cost of private health insurance.<sup>2</sup>

Table 1 summarizes actual and estimated personal health care expenditures and growth from 1991 through 2013 in Colorado using the categories from the NHEA.

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<sup>1</sup> For details on methods, see methods section at end of memo.

<sup>2</sup> Total health care expenditures are not regularly available at a state level, but could be extrapolated from national data in further iterations of this analysis.

**Table 1. Total Spending on Personal Health Care, Colorado, 1991 – 2013.**

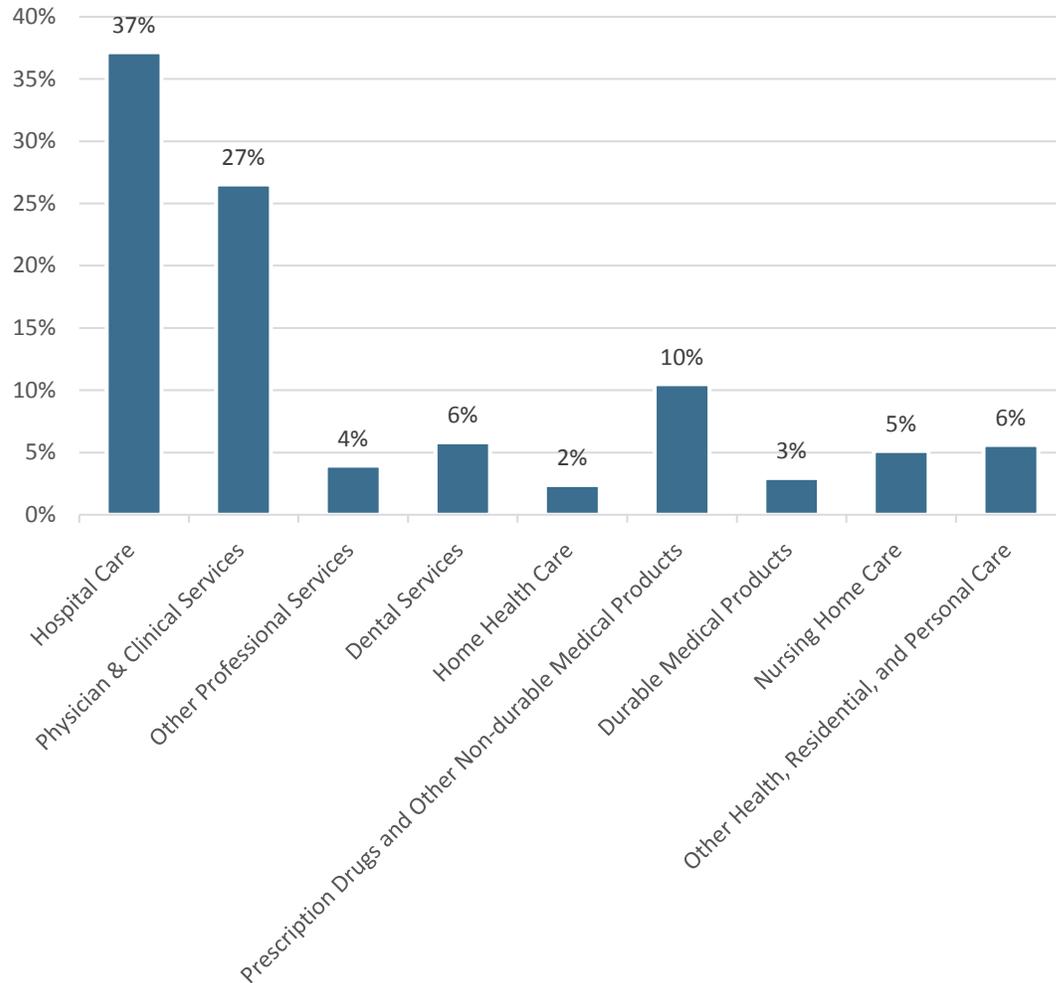
	1991	2000	2005	2010 (estimated)	2013 (estimated)	1991 – 2013 % Growth
<b>Total Spending (in millions \$)</b>						
Hospital Care	3,264	5,365	7,978	11,351	13,478	313%
Physician & Clinical Services	2,289	4,579	6,369	8,407	9,630	321%
Other Professional Services	303	731	933	1,235	1,431	372%
Dental Services	513	1,133	1,567	1,916	2,111	312%
Home Health Care	127	341	437	724	866	584%
Prescription Drugs and Other Non-durable Medical Products	838	1,865	2,617	3,488	3,805	354%
Durable Medical Products	255	503	593	755	1,070	319%
Nursing Home Care	519	913	1,288	1,679	1,856	258%
Other Health, Residential, and Personal Care	397	836	1,350	1,739	2,040	414%
<b>Total Personal Health Care Spending, Colorado</b>	<b>8,504</b>	<b>16,264</b>	<b>23,132</b>	<b>31,294</b>	<b>36,288</b>	<b>327%</b>

**SOURCE:** National Health Expenditure Accounts, Centers for Medicare and Medicaid Services, Office of the Actuary, 2011 and 2014.

Throughout the time period analyzed, the largest growth occurred in home health care, followed by other health, residential and personal care.

Between 1991 and 2013, hospital care accounted for the largest proportion of personal health care services, comprising 37 percent in 2013. (See Chart 1.) Physician/clinical services came in second at 27 percent, followed by prescription drugs at 10 percent.

**Chart 1. Estimated Proportion of Spending by Type of Service, Personal Health Care, Colorado, 2013.**



**SOURCE:** CHI estimates using data from the National Health Expenditure Accounts, Centers for Medicare & Medicaid Services, 2011 and 2014.

While spending on personal health care services increased significantly between 1991 and 2013, it is important to note that the state experienced population growth of 56 percent during this time frame. Thus, health care expenditures would be expected to increase regardless of changes in health care prices.

Analyzing expenditures on a per capita basis, as summarized in Table 2, controls for population

growth and demonstrates the extent that spending on a per resident basis has changed.

**Table 2. Per Capita Spending, Personal Health Care Services, Colorado, 1991 – 2013**

	1991	2000	2005	2010	2013
Hospital Care	\$964	\$1,240	\$1,714	\$2,248	\$2,560
Physician & Clinical Services	\$676	\$1,058	\$1,368	\$1,665	\$1,829
Other Professional Services	\$89	\$169	\$200	\$245	\$272
Dental Services	\$151	\$262	\$337	\$380	\$401
Home Health Care	\$37	\$79	\$94	\$143	\$165
Prescription Drugs and Other Non-durable Medical Products	\$247	\$431	\$562	\$691	\$723
Durable Medical Products	\$75	\$116	\$127	\$149	\$203
Nursing Home Care	\$153	\$211	\$277	\$332	\$353
Other Health, Residential, and Personal Care	\$117	\$193	\$290	\$344	\$387
<b>Total Per Capita Personal Health Care Services, Colorado</b>	<b>\$2,511</b>	<b>\$3,758</b>	<b>\$4,968</b>	<b>\$6,197</b>	<b>\$6,893</b>

**SOURCE:** CHI estimates using data from the National Health Expenditure Accounts, Centers for Medicare and Medicaid Services, 2011 and 2014.

CHI calculated the annual compound growth rate of per capita spending for each type of service. Table 3 summarizes the results of this analysis. For each time period analyzed, CHI identified the three categories of services which had the highest growth rates. These are identified in rank order.

**Table 3. Average Annual Compound Growth Rate, Personal Health Care Services, Colorado.**

	2000-2005	2005-2010	2010-2013
Hospital Care	6.7% <sup>2</sup>	5.6% <sup>2</sup>	4.4% <sup>3</sup>
Physician & Clinical Services	5.3%	4.0%	3.2%
Other Professional Services	3.5%	4.1%	3.6%
Dental Services	5.2%	2.4%	1.9%
Home Health Care	3.6%	8.9% <sup>1</sup>	4.7% <sup>2</sup>
Prescription Drugs and Other Non-durable Medical Products	5.5%	4.2% <sup>3</sup>	1.5%
Durable Medical Products	1.9%	3.3%	10.8% <sup>1</sup>
Nursing Home Care	5.6% <sup>3</sup>	3.7%	2.0%
Other Health, Residential, and Personal Care	8.5% <sup>1</sup>	3.5%	4.0%
<b>Total Personal Health Care Services, Colorado</b>	<b>5.7%</b>	<b>4.5%</b>	<b>3.6%</b>

**SOURCE:** CHI estimates using data from the National Health Expenditure Accounts, Centers for Medicare and Medicaid Services, 2011 and 2014

Over the time period analyzed, the lowest annual growth rate among personal health care services occurred between 2010 and 2013 when it was 3.6 percent. Because hospital care and physician and clinical services comprise such a large proportion of total personal health spending at 64 percent, declines in the growth of these categories mitigated growth in per capita spending.

National data presented to the Cost Commission earlier this month indicate that year on year growth in health care spending was 6.7 percent in February 2015.<sup>3</sup>

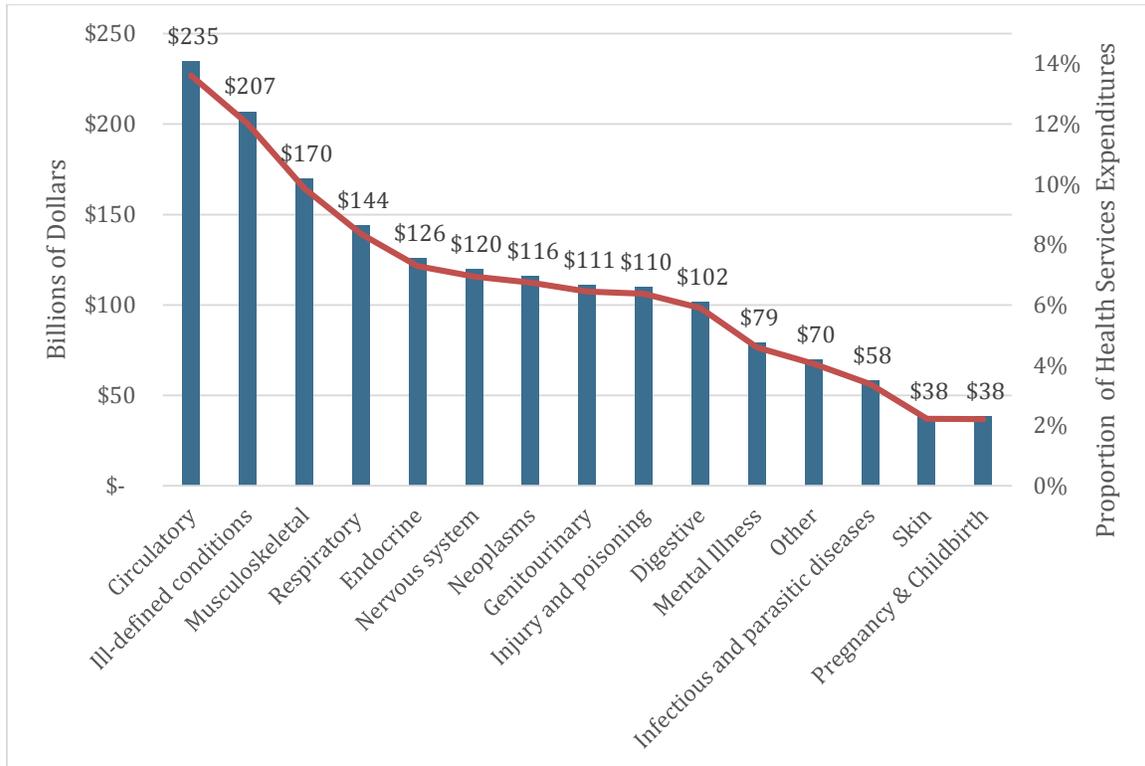
## Spending on Personal Health Care by Disease or Condition

The Research Committee asked CHI to analyze personal health care spending by the most prevalent diseases within the population. Because analysis is not currently available at the state level, CHI used national level data to prepare the following summary. CHI could explore Colorado-specific modeling if there are particular conditions or diseases that generate interest among committee members.

Chart 2 summarizes total medical services expenditures by disease and condition in the United States. The left hand Y axis and blue bars depict expenditures by disease and condition, the right hand Y axis and red line summarize the proportion of medical spending associated with each disease and condition.

<sup>3</sup> Altarum Institute, *Insights from Monthly Price Indices through February 2015*, April 2015.

**Chart 2. Medical Services Expenditures and Proportion of Medical Services Expenditures by Disease and Condition, in \$ Billions, U.S., 2010**



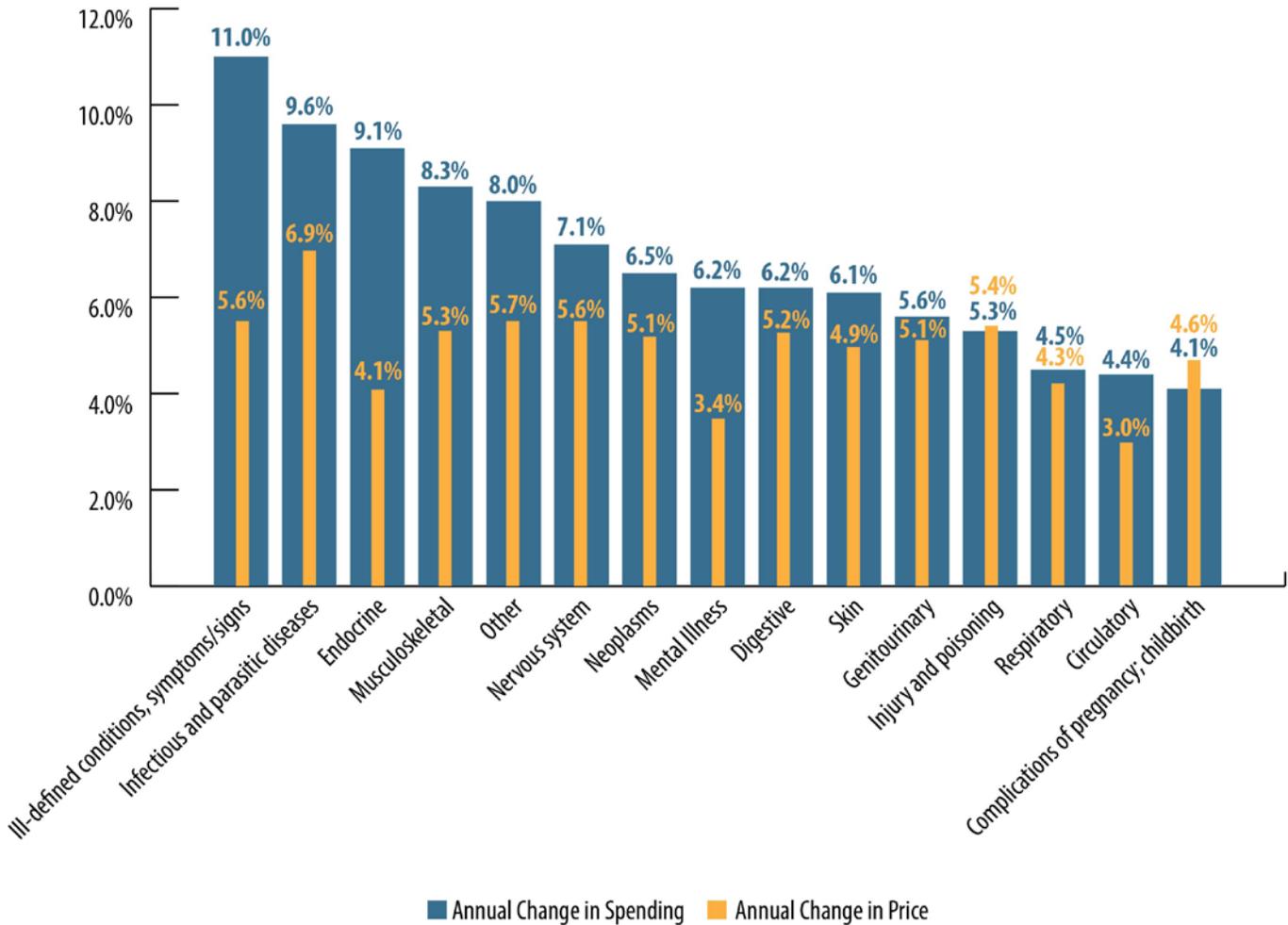
**SOURCE:** U.S. Department of Commerce, Bureau of Economic Analysis, January 2015.

The highest spending was for circulatory conditions followed by ill-defined conditions. Ill-defined conditions includes primary care as well as visits not associated with a specific condition. Pregnancy and childbirth comprised the lowest spending.

CHI calculated that average annual compound growth rate for each disease and condition. The Bureau of Economic Analysis (BEA) also calculates the average annual compound growth rate in the price for each disease and condition. Chart 3 overlays the annual change in **spending** with the annual change in **price** of treatment per case. For example, while spending for circulatory diseases increased by 11.0 percent annually, the average annual price increased by 5.6 percent.

Overall, the BEA estimates that 73 percent of the increase in spending is due to increases in the price of treatment per case, while 27 percent of the increase in spending is due to the number of cases treated.

**Chart 3. Average Annual Compound Growth Rates in Medical Spending and Prices, By Disease and Condition, U.S., 2000 – 2010.**





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## **METHODS:**

Colorado-specific data for spending on personal health care by type of service are available only through 2009, while national data are available through 2013. In order to estimate Colorado spending between 2010 and 2013, CHI compared the extent to which Colorado per capita spending for each type of service exceeded or was below national per capita spending for the same service lines between 2007 and 2009. CHI then applied that difference to the national growth rate for each year between 2010 and 2013 to arrive at a Colorado growth rate.

For example, between 2007 and 2009, per capita spending in Colorado for physician and clinical services was 90.9 percent relative to the growth in national per capita spending. Therefore, in estimating 2010 Colorado expenditures we applied 90.9 percent to the national growth rate of 2.5 percent to give us a Colorado growth rate of 2.2 percent. After estimating per capita growth rates for each service line for each year, CHI multiplied by the Colorado population to arrive at total state spending.