

MEMORANDUM

To: Colorado Commission on Affordable Health Care
 From: Michele Lueck, Amy Downs and Emily Johnson, Colorado Health Institute
 Re: Analysis of Personal Health Care Spending by Age
 Date: August 13, 2015

The Colorado Commission on Affordable Health Care asked the Colorado Health Institute (CHI) to estimate personal health care spending in Colorado based on several demographic characteristics. This memo summarizes CHI's analysis of personal health spending by age in Colorado.

Spending on Personal Health Care by Age¹

Personal health spending includes hospital care, physician and clinical services, other professional services, dental care, home health, prescriptions, durable medical products, nursing home care, and other health care. Personal health care spending does include expenditures from all sources including public and private payers and out of pocket spending by individuals.

Because data on personal health care spending by age are not reported at the state level, CHI created a model to estimate these expenditures. CHI overlaid Colorado-specific data on age and distribution of services with national trends according to age cohort. Table 1 summarizes the results of this analysis.

Table 1. Total Spending on Personal Health Care by Age Group, Colorado, 2002-2013.

Age Group	Total Spending on Personal Health Care, Colorado, 2002-2013 (in millions)					
	2002	2004	2006	2008	2010	2013
0-18	\$2,669	\$3,181	\$3,561	\$3,961	\$4,376	\$4,862
19-44	\$5,173	\$5,822	\$6,289	\$6,979	\$7,530	\$8,455
45-64	\$5,409	\$6,546	\$7,795	\$8,989	\$10,164	\$11,465
65-84	\$3,871	\$4,535	\$5,063	\$5,906	\$6,744	\$8,736
85+	\$1,041	\$1,239	\$1,435	\$1,710	\$2,023	\$2,531
Total	\$18,162	\$21,323	\$24,143	\$27,544	\$30,837	\$36,049

Spending by age is largely influenced by the number of Coloradans in each age group. To control for this, CHI analyzed per capita personal health spending for each age group. Table 2 summarizes these results.

¹ For details on methods, see methods section at end of memo.

As expected, per capita spending increases substantially with age. Expenditures by adults 85 and older, the highest expenditure age group, were almost nine times higher than those of the lowest expenditure group, children 18 and younger, in 2013.

When analyzing the rate at which per capita spending increases, the largest percentage increase between age cohorts occurs between the 65-84 and the 85+ age groups. In 2013, the difference between these two cohorts was 107 percent.

Table 2. Per Capita Personal Health Care Spending, by Age Group, Colorado, 2002-2013.

Age Group	Per Capita Personal Health Care Spending, Colorado, 2002-2013					
	2002	2004	2006	2008	2010	2013
0-18	\$2,213	\$2,606	\$2,860	\$3,103	\$3,375	\$3,679
19-44	\$2,856	\$3,230	\$3,476	\$3,808	\$4,066	\$4,441
45-64	\$5,134	\$5,786	\$6,430	\$7,021	\$7,547	\$8,261
65-84	\$10,122	\$11,338	\$12,027	\$13,144	\$13,918	\$15,291
85+	\$20,285	\$22,696	\$24,551	\$26,914	\$28,730	\$31,619
All Ages	\$4,032	\$4,627	\$5,087	\$5,619	\$6,106	\$6,847

Methods and Notes

Colorado-specific data on personal health care spending by age are not available. However, the Centers for Medicare & Medicaid Services (CMS) publishes national data on per capita spending by age and personal service type. (Types of personal health expenditures include hospital care, physician and clinical services, other professional services, dental care, home health, prescriptions, durable medical products, nursing home care, and other health care). CMS also publishes aggregated Colorado-specific spending by service type. In order to arrive at state-level estimates of spending by age group, CHI applied the distribution of spending by age within each service type at the national level to Colorado age cohorts.

For example, per capita spending in Colorado in 2002 was \$1,440 for hospital care and in the U.S. it was \$1,691. We used these numbers to derive a ratio (.85) of Colorado spending to national spending for hospital care in 2002.

We also know that U.S. per capita spending on hospital care for children 18 and younger was \$906 in 2002. We applied the Colorado-to-U.S. spending ratio of .85 to this value and determined that Colorado spent \$771 per capita on hospital care for children in 2002. The same process was repeated for each service type and age cohort. The values by age group for each service type were then summed to generate an estimate of per capita spending by age (Table 2).





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Because the overall age distribution of Colorado does not match the overall age distribution of the United States, we multiplied the per capita calculations by the number of Coloradans in each age group (found on the Colorado Department of Local Affairs website) to derive total spending by age group (Table 1).

It is important to note that Colorado-specific data for spending on personal health care by type of service are available only through 2008, while national data are available for 2013. In order to estimate Colorado spending for 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 2006 and 2008. CHI then applied that difference to the national growth rate for each year between 2010 and 2013 to arrive at a Colorado growth rate. Those methods are explained in CHI's memo to the Research Committee dated April 30, 2015.

Finally, national data by age and service type were available only through 2010. In order to develop calculations for 2013, CHI applied the additional assumption that the national age distribution within each spending category in 2013 matched the national distributions in 2010.

The original estimates of spending by payer type and associated methodology can be found in CHI's July 9, 2015 memo to the Research Committee. Please let us know if you have any questions. You can reach Amy Downs at downsa@coloradohealthinstitute.org

