Follow the Money

How Much is Spent on Health in Denver?

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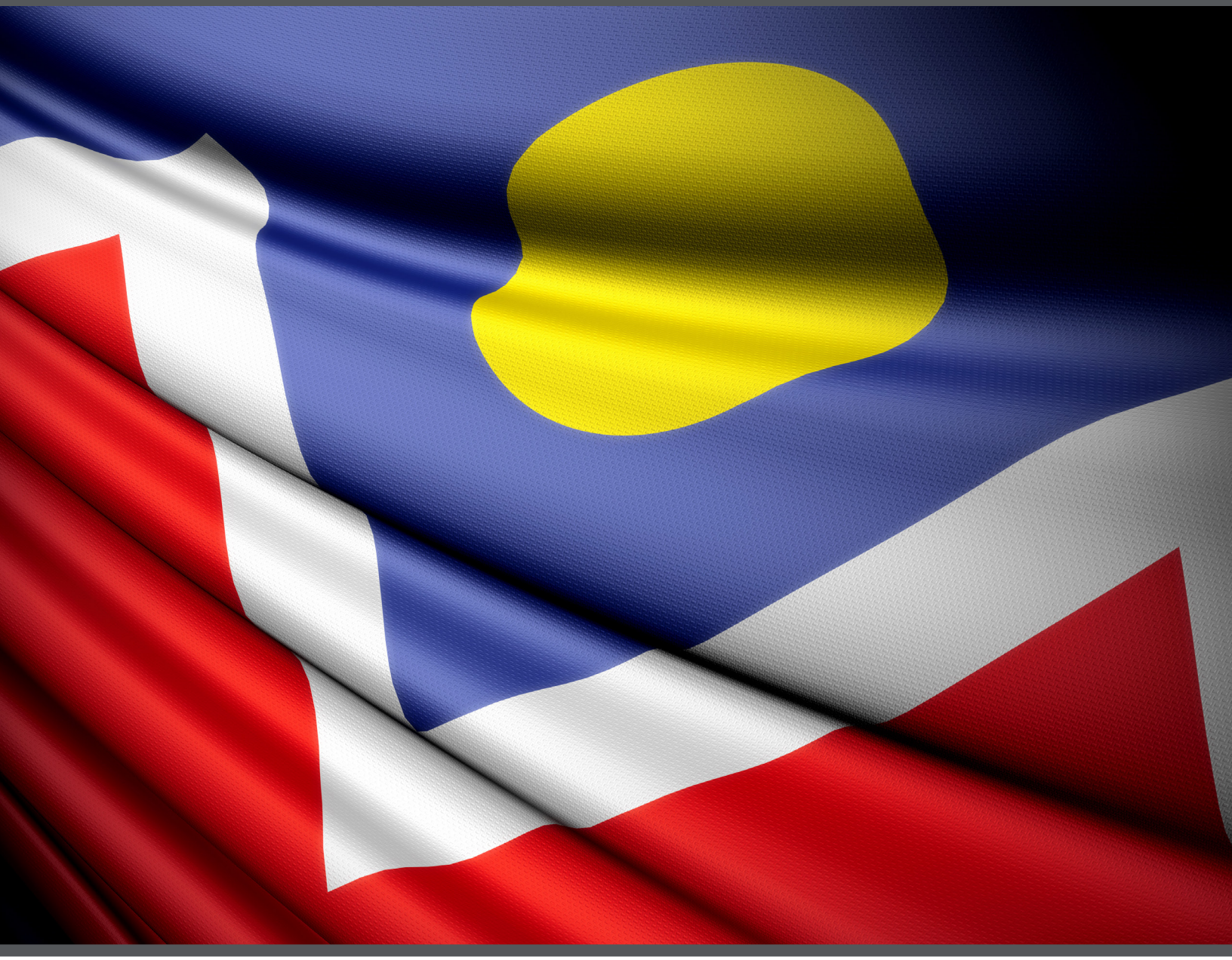

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Mile High Health Alliance

The Mile High Health Alliance brings together diverse stakeholders from medical care, behavioral health, public health, local government agencies, public schools, and social and community base organizations to collaboratively address Denver's most difficult health challenges and "Achieve Better Health Through Collaboration." The Alliance was formally established in January 2015 to fulfill an important recommendation in the Access to Care section of Denver's 2014 – 2018 Community Health Improvement Plan, namely to create a multi-sector coalition of diverse stakeholders committed to increasing access to care, better coordinating health care services, and decreasing health care costs. The Alliance focuses its efforts on the almost 50% of Denver's population who are uninsured, underinsured, or publicly insured through Health First Colorado (Medicaid).

The Mile High Health Alliance contracted with the Colorado Health Institute (CHI) to conduct this research and write the report.

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Medical care is only one aspect of keeping a person healthy, but it is often the first thing people think of when talking about improving health.

A new analysis by the Colorado Health Institute (CHI) and the Mile High Health Alliance (MHHA) took a wide look at health-related expenditures in the city and county of Denver and found that 98.3 percent of health-related spending is for medical care, while approximately two percent is spent on public health and other health programming outside of the traditional medical care setting.

Medical care paid by Medicaid, Medicare, Veterans Affairs (VA) and private payers totaled $4.5 billion in Denver in 2015, far surpassing other sources of health-related expenditures (HRE) such as public health or health programs in other settings such as education or housing.

The public health programming made up $41 million, or 0.9 percent of overall HRE in Denver. This includes spending on services such as health promotion, epidemiology and laboratory expenses and public health administration.

For HRE in less traditional settings, such as housing, transportation and education, items that could be tied directly to health were included in this analysis. The totals for these programs combined make up only 0.8 percent of HRE in Denver.

Why Do This Analysis?

MHHA asked CHI to inventory and analyze HRE in the City and County of Denver. Such an analysis can help engage a range of stakeholders—including those from medical care, behavioral health, public health and social and community services—to better understand the relationship between spending and the variety of factors that influence health.

This analysis lays the groundwork for a deeper dive into less traditional sources of funding that may directly impact health and the initial findings enable stakeholders to develop additional funding strategies to improve the health of Denver residents. This project is consistent with Denver's 2013 – 2018 Community Health Improvement Plan,[1] in that it acknowledges the many economic, educational, and environmental factors that affect health. However, its quantitative scope is limited to programming that can be tied directly to health.

This analysis also provides a baseline measurement that can be tracked over time, and it provides a framework for identifying gaps in financing and leveraging opportunities to advance the health of Denver's residents.

This information can be an important component of a strategy to improve the coordination of the many efforts and programs that affect health. For example, it enables stakeholders to identify gaps where spending and investment are lagging and to consider alternative spending decisions that could maximize health outcomes given limited budgets.[2]

Defining Health-Related Expenditures (HRE)

A long-term goal of this project is to broaden the concept of what constitutes HRE. HRE includes spending on medical services provided by physicians and other health care professionals in settings like hospitals and clinics.

However, HRE can also include spending related to social services that have a demonstrated link to health, such as education, transportation, housing, food and others. These social services are generally not viewed explicitly as targeted at improving health, but they can be considered part of the complex system of factors beyond the direct provision of health care services that influence health, frequently called social determinants of health. Scholars and practitioners recognize that social services spending has an impact on population health.[3,4]

There is no single "right" way to define HRE, and this analysis took a more conservative approach

after examining several options. On one end of the spectrum, it could consider only spending on traditional medical care. On the other end, for example, it could calculate HRE by including all spending associated with housing, transportation and education spending to health. (See Figure 1.)

Figure 1. Spectrum of Possible HRE Definitions

In collaboration with MHHA, CHI selected a definition of HRE that includes expenditures associated with medical care provided by hospitals, physicians, other health care providers and correctional facilities. The definition of HRE also extends to public health activities directly related to health and HRE that occur in settings outside of traditional health care settings, including schools, housing and transportation. The collection of HRE did not depend on the source of financing.

While literature indicates that many social services have an impact on health, the scope of social services is broad. For example, it is known that people without steady housing generally have poorer health. However, it would be problematic to characterize all housing expenditures as health-related since housing serves multiple purposes or roles. As an initial methodological approach, CHI and MHHA chose to include only programs that could be directly targeted at health.

For the purposes of this analysis, CHI and MHHA chose not to examine philanthropic or in-kind spending on HRE, and thus assumes the final estimate is an undercount of HRE in Denver.

CHI's Approach

CHI conducted several key informant interviews that helped guide the overall approach to the project as well as helped identify key resources and data. These key informants were identified in collaboration with MHHA. To further identify and obtain data, we reviewed the academic literature, online sources and identified additional sources by reaching out to members of the health policy community in Denver.

CHI used public budget documents where available for all state, federal, and local agency HRE. In addition, we met with staff of numerous departments and agencies to obtain additional details on relevant programs and expenditure levels.

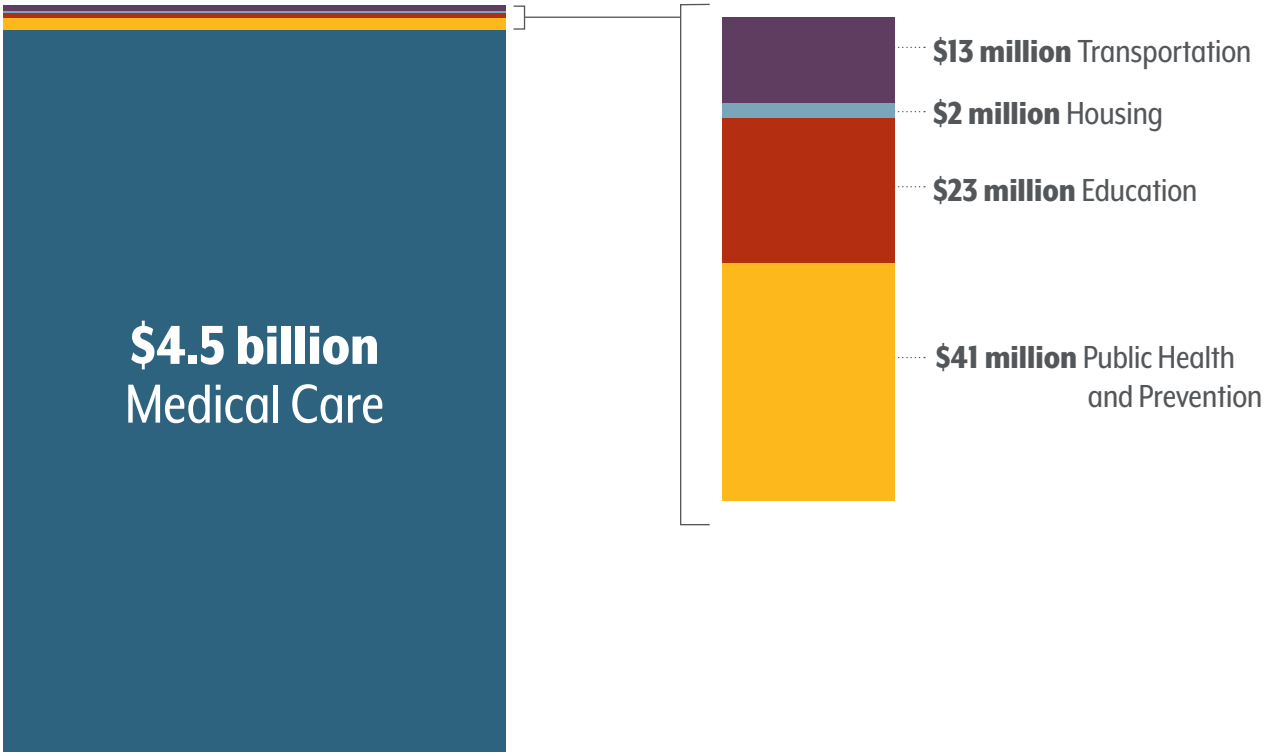
We used numerous data sources and analytic approaches to calculate the final estimates. For example, in some circumstances, we used a "top-down" approach to estimate HRE. This could include an agency that may report its spending on a statewide basis and only a portion of that spending is related to health and serves Denver residents. It was necessary to devise a method to estimate the portion of the aggregate spending that is directed toward Denver residents. For example, non-emergent medical transportation (NEMT) expenditures under Medicaid were reported at a state level. We used the percentage of Medicaid enrollees in Denver to estimate the NEMT dollars attributable to Denver.

In other circumstances, we adopted a "bottom-up" approach. For example, HRE may be measured most accurately by obtaining site-specific data on health spending from individual agencies or facilities. For example, Denver Public Health categorizes its public health administration and clinical spending in a way that made it easy to include specific expenditures in our calculations.

Results

Based on definition of HRE that we have adopted for this analysis, medical care dominates every other category of spending. As expected, Figure 2 demonstrates the scale of medical care to public

Figure 2. Health-Related Spending, City and County of Denver



health, transportation, education and housing – medical care dwarfs the others. Figure 2 also zooms in on the remaining four categories and each of their totals.

Medical care in this analysis includes direct health care costs in health care settings such as hospitals or doctor offices, premiums, as well as certain clinical services delivered outside of a traditional health care setting, such as immunizations delivered by the public health department. However, for the purposes of this analysis, health care delivered in educational settings such as schools is included in the educational portion.

Public health spending comes in a distant second in HRE for Denver, with a total of $41 million – or 0.9 percent of the overall HRE total. These expenditures include public health administration, epidemiology and laboratory capacity, public health inspections and vital records for Denver.

Next is transportation spending, at $13 million, or 0.3 percent of the HRE total. This includes non-emergent medical transportation (NEMT), which is transportation to and from covered non-emergency medical visits for Medicaid enrollees without another means or transportation.[5] It also includes Access-a-Ride, which is administered by the Regional Transportation District (RTD) and provides local transportation in the Denver metro area for people with disabilities.

Education is next, at nearly $23 million, or 0.5 percent of the HRE total. This includes school-based health centers, the School Health Services program under Medicaid and health professionals on staff for Denver Public Schools (DPS). These professionals include school nurses, psychologists and social workers.

Staff who deliver case management and patient navigator services for residents in public housing come in at $462,000 – or 0.01 percent of the overall total.

Our working definition of HRE lends itself well to understanding HRE across Denver but is limited in scope to programs that are attributable directly to health. As such, many other social services that undoubtedly have an impact on a person's well-being are not captured here.

Conclusion and Lessons Learned

This analysis demonstrates that the bulk of HRE in Denver, at approximately 98 percent, is spent on traditional medical care. If we were to expand the definition to the far end of the spectrum, it would make the total pot bigger and the medical care proportion smaller, but a more refined approach is probably preferable as a starting point.

There are many challenges to doing this kind of analysis. Data are not always readily available or explicitly broken out in the way in which it was needed. It can take time for staff to pull together this type of work within their own programs and agencies if they are not already counting it in this way, and additional time and analysis to aggregate it all. This is particularly true for agencies whose mission is not explicitly health-focused, such as housing or transportation organizations.

Even within Denver, there are dozens of agencies that impact the health of its residents in one way or another. Targeting the right ones for this analysis took a fair amount of time and highlights the notion that it can be difficult to coordinate HRE in a truly streamlined fashion. An established network of health policy connections across the community can help in locating the right information, people and programs for an analysis of this sort, but any similar analysis will pull from a similar range of sources.

This type of analysis could be less straightforward for different cities or counties. Denver is both its own city and its own county and there is ample public data reported at that level. But that is not always the case for other localities and that could present different challenges if replicating this type of analysis in a county that crosses cities, for example.

Endnotes

[1] "Be Healthy Denver: Denver's Community Health Improvement Plan, 2013-2018," available at https://www.denvergov.org/content/dam/denvergov/Portals/746/documents/CHIP%20Full%20Report%20FINAL.pdf

[2] Hester JA and Stange PV. A Sustainable Financial Model for Community Health Systems. Discussion Paper, National Academy of Sciences, Institute of Medicine Roundtable on Population Health Improvement. March 6, 2014.

[3] Bradley EH, Canavan M, Rogan E, et al. Variation in Health Outcomes: The Role of Spending on Social Services, Public Health, and Health Care, 2000-09. Health Aff (Milwood) 2016;35(5):760-8.

[4] McCullough JM, Leider JP. Government Spending in Health and Nonhealth Sectors Associated with Improvement in County Health Rankings. Health Aff (Milwood) 2016;35(11):2037-43.

[5] Health First Colorado. What is Non-Emergent Medical Transportation? Available at https://www.colorado.gov/pacific/hcpf/non-emergent-medical-transportation.

[6] NEMT expenditures are included in the Health First Colorado total expenditures by county. Because of this, we deducted the portion of NEMT that we attributed to Denver County in the transportation section of the analysis from the medical care total for Health First Colorado.

Appendix. Overview of the Methodology

Our analysis synthesized multiple data sources to derive an estimate of total HRE for Denver. We used calendar year 2015 as the time frame, as it is the most recent year where all data would be available for a full year. Where expenditures are reported as state fiscal year totals, an average of the two years was calculated.

Medical Care

To determine private payer expenditures, the largest category of health spending in Denver, CHI used the National Health Expenditure (NHE) per capita expenses for private insurers in Colorado from 2014. We estimated the number of privately insured Denver residents by using survey and enrollment data to account for the uninsured and publicly insured populations, and multiplied the NHE per capita cost by the estimated number of privately insured Coloradans. We then used Bureau of Labor Statistics medical inflation data to raise the 2014 estimate to 2015 levels.

CHI used state budget documents for the Department of Health Care Policy and Financing, which reports out expenditures by fiscal year and

county for each of its main programs: Health First Colorado, Child Health Plan Plus (CHP+) and the Colorado Indigent Care Program. Supplemental payments to Denver hospitals were pulled from the publicly available Colorado Health Care Affordability Act Annual Reports. Averages of FY 2014-15 and FY 15-16 expenditures were calculated to arrive at a calendar year 2015 total.[6]

We downloaded public use files for 2015 by county for Medicare and Veterans Affairs spending. For Medicare, we used the number of all beneficiaries in Denver and the risk-adjusted per capita cost for Denver to account for both Medicare Advantage and fee-for-service (FFS) costs. For Veterans Affairs, we used the medical care category of spending that is reported as a portion of total VA spending in Denver.

CHI used public budget documents for the Department of Corrections (DOC) to estimate their medical care totals. The DOC budget documents provide cost per day per offender rates for clinical services and a monthly population total per facility. CHI used the Denver Reception & Diagnostic Center and the Denver Women's Correctional Facility populations and rates to arrive at an estimate of medical care for DOC.

The Mayor's budget includes Denver Environmental Health, Denver Human Services (DHS) and Parks and Recreation. Certain programs were clearly attributable to medical care, such as the Office of the Medical Examiner. Where it was not clear which programs included which types of expenditures, staff were contacted directly to help identify types of HRE for this analysis.

Public Health

Many programs in the city budget fell into the public health category of HRE, including community health, environmental quality work and public health inspections. For example, most of Denver Environmental Health's budget fell into the public health category. The only exceptions are the Office of the Medical Examiner (included in medical care) and the Office of Sustainability, which provides policy guidance on sustainability for Denver and was excluded for the purposes of this analysis.

Additionally, Denver Public Health provided an expert interview and staff contact with the breakdown of funds between public health programming and medical care. Financial staff broke out public health activities and more traditional medical care expenses for previous reporting purposes and shared those with CHI. Staff were also able to provide the expenditures under Denver Health for medical care for those in Denver County jails, included in the medical care portion of this analysis.

Transportation

We also used public budget documents to locate funding for transportation programs in Denver. These documents provided a broader level of funding than just Denver. For NEMT, we attributed the percentage of Medicaid enrollees in Denver to arrive at a Denver specific estimate. For Access-a-Ride, we used the percentage of Denver residents that make up the seven-country metro area to come up with a Denver specific estimate.

Education

For HRE in education settings, CHI extracted Denver specific amounts from public budget documents for both School Health Services and School Based Health Centers. We also requested data on health professionals employed by Denver Public Schools and used annual salary ranges and FTE totals provided by DPS to calculate this piece of the estimate.

Housing

We reached out to Denver Housing Authority (DHA) and used public budget documents to estimate HRE spending in settings focused on providing housing services to low-income Coloradans. DHA's Office of Community Initiatives employs patient navigators who help public housing recipients access health and human services for which they are eligible. Their Office of Resident and Community Services Resident and Community Services employs service coordinators who help with case management and aging in place services for public housing recipients. Both sets of these expenditures are included in the housing category.

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