



January 2020

Colorado Hospital Cost Shift Analysis



COLORADO
Department of Health Care
Policy & Financing

Table of Contents

| | |
|---|----|
| Executive Summary | 3 |
| Introduction | 5 |
| Purpose | 5 |
| Background | 6 |
| Methodology | 11 |
| Limitations | 13 |
| Independent Consultant Review | 14 |
| Financial Review | 15 |
| Cost Shifting in Colorado | 16 |
| Regional Differences | 25 |
| Cost, Payment and Margin | 28 |
| Section Conclusion | 35 |
| Drivers of Cost Shifting | 36 |
| External Factors | 36 |
| Internal Factors | 47 |
| Modeling Scenario Analysis | 55 |
| Evaluation of Margins | 56 |
| Evaluation of Costs | 57 |
| Evaluation of Collective Impact of Costs and Margins | 59 |
| Effect on Insurance Premiums to Self-Funded Employers and Union Trusts | 60 |
| Section Conclusion | 61 |
| State & Department Health Care Cost Control Efforts | 62 |
| Conclusion | 65 |
| Appendix A: Financial Review Accompaniment | 67 |
| Appendix B: Division of Insurance (DOI) Regions and Regional Data Colorado DOI Region | 68 |
| Appendix C: Adjusted Discharges Per Payer Type | 75 |
| Appendix D: Modeling Scenarios | 77 |
| Appendix E: Example Consultant Feedback | 82 |
| Appendix F: Colorado Hospital Association 2009 Press Release | 84 |



Colorado Hospital Cost Shift Analysis

Executive Summary

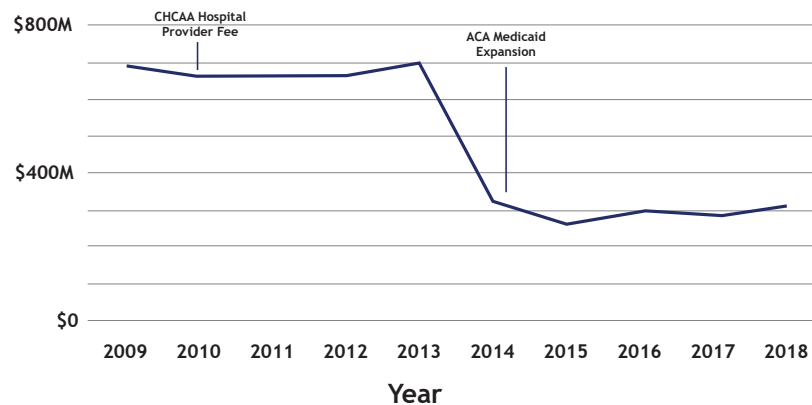
Achieving universal access to health care in Colorado is vital and a goal shared by policymakers, hospitals, providers, advocates, insurance carriers, business groups and, most importantly, Coloradans. While Colorado has made significant progress increasing coverage and access, one of the biggest remaining barriers is the high, and increasing, cost of health care. Currently, one in five Coloradans goes without necessary care because of cost, and one in three Coloradans can't afford their medicine.

Historically, one driver of high costs was that health care providers had to recoup losses from uncompensated care and underpayment by public programs, like Medicaid, by charging other people higher prices. They did that by cost shifting: increasing costs for people who were insured in the private marketplace to cover shortfalls from public payers.

This practice was blamed for raising rates in the private market, which led to the Colorado General Assembly, with the support of hospitals, passing the 2009 Colorado Health Care Affordability Act (CHCAA) to establish the Hospital Provider Fee (later replaced by the 2017 Colorado Healthcare Affordability and Sustainability Enterprise, or CHASE, Act). In addition to Medicaid expansion, Colorado's adoption of the Patient Protection and Affordable Care Act (ACA) led to increased Medicaid payments to hospitals, a reduction in the number of Colorado's uninsured, and less bad debt and less charity-care provided by hospitals.

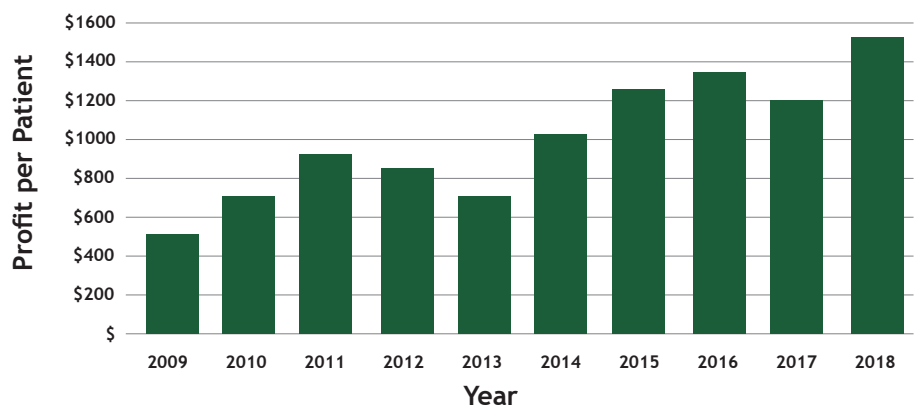
The mechanisms put in place in 2009 to course correct rising health care costs surpassed initial hospital projected savings. Yet, since these changes have been implemented, we have not seen cost-shifting decrease. On the contrary, the CHASE Annual Report showed that, despite significant reductions in uncompensated care and significant increases in Medicaid and Medicare rates, hospitals are persistently increasing the price of care. The CHASE Board identified this as an area in need of further research, and in 2018 the Department of Health Care Policy & Financing (HCPF) analyzed the same dataset and supplemented it with additional research and modeling to help understand the drivers of these increasing costs.

Colorado Hospital Bad Debt and Charity Care



Source: Colorado Hospital Association DATABANK

Hospital Profit per Patient



Source: Colorado Hospital Association DATABANK

Hospital profits have increased 280% since 2009

The CHCAA resulted in a windfall of funding for hospitals, and with the adoption of the ACA of 2010, much more than it was originally anticipated they would receive. The first two legislative mandates associated with the Hospital Provider Fee – reducing the number of uninsured Coloradans and increasing hospital reimbursement – were in HCPF’s purview. After the 2014 Medicaid expansion, half a million additional Coloradans were enrolled in Medicaid and positive patient outcomes continued to grow. While hospitals were responsible for passing savings along to commercial patients, they failed to fulfill that commitment. This is true for both for-profit and non-profit hospitals, especially those located along the front range. Future analysis of individual hospital data will shed light on the differences between urban and rural hospitals.

This so-called need to shift costs to cover payment shortfalls is no longer a plausible or justifiable rationale for price increases. Other states have managed health care costs more judiciously, and their reductions in uncompensated care, as well as other strategic cost-control policies, have resulted in lower costs for everyone, especially employers. They have accomplished this while not just preserving — but expanding — access to quality care. In contrast, health insurance rates in the individual market in Colorado went up by a staggering 80% between 2015 and 2019, and Colorado earned the distinction of having some of the highest hospital prices and profits in the nation.

Colorado is proud to be one of the healthiest states in the country, but despite this achievement, Coloradans face some of the highest health care costs. This report sheds light on the drivers of cost shifting so that policymakers and stakeholders can work together to ensure that all Coloradans have access to affordable health care.

This report offers five key findings:

- 1 The cost of health care has gone up much more sharply in Colorado than nationally. These increases are driven primarily by high hospital prices. In fact, on average, Colorado hospitals charge some of the highest prices in the country.** In 2009, Colorado hospitals’ operating expenses were 3.2% higher than the national average. By 2018, Colorado hospitals’ operating expenses were 14.0% higher than the national average.
- 2 Hospital profits have increased by more than 280% between 2009 and 2018, from \$538 to \$1,518 per adjusted discharge.** Overall, payment-to-cost ratios (calculated as payment divided by cost; for every dollar in cost, how much is received in payment) across all payers increased from 1.05 to 1.09 between 2009 and 2018*.
- 3 Colorado hospitals’ prices went up far more sharply than the growth in patient volume.** Colorado hospitals’ prices grew 71.3% between 2009 and 2018 (7.8% per year) while adjusted discharges* only grew 16.6% (1.8% per year).
- 4 Uncompensated care levels in Colorado are at historic lows.** The Hospital Provider Fee and the ACA decreased the number of uninsured Coloradans by more than half. As a result, the amount of money hospitals lose annually due to bad debt and charity care has decreased by more than \$385 million annually since the Medicaid expansion.
- 5 Cost shifts are driven by strategic hospital decisions, not by shortfalls from public insurance.** The increased funding generated by public, taxpayer funded programs — which are intended to reduce private insurance premiums and out-of-pocket costs — are not being passed along to health care consumers and employers. Health First Colorado (Colorado’s Medicaid program) has steadily increased payments year-over-year since 2009. Hospitals could have been passing on significant savings- from the reduction in charity care and the increases in Medicaid payments- to commercial insurance consumers and employers if they had matched national cost benchmarks. Instead, Colorado has far exceeded those cost benchmarks to the disadvantage of consumers and employers.

**Number of Uninsured
by 1/2**



Hospitals loss by \$385M



* includes both inpatient and outpatient hospital care

Introduction

According to research published in *Health Affairs* (1982), cost shifting “occurs when one hospital must increase prices charged to all payers to make up for shortfalls in reimbursement from some payers.”¹ In the legislative declaration of the Colorado Healthcare Affordability and Sustainability Enterprise (CHASE) Act, the Colorado General Assembly stated its intention to reduce the need for hospitals to shift uncompensated care costs to commercial insurance payers by collecting a healthcare affordability and sustainability fee from hospitals to obtain federal matching funds to increase reimbursement to hospitals for inpatient and outpatient care provided to Colorado Medicaid members and Colorado Indigent Care Program (CICP) members, and to reduce the number of uninsured Coloradans.²

In addition to consulting with hospitals to improve cost efficiency and patient safety, the CHASE Board is tasked with using publicly available data to report on the differences between the cost of care provided and the payment received for hospital patients covered by Medicaid, Medicare and other payers – which is attributed to causing the cost shift.

Analysis of cost shifting under the former Colorado Health Care Affordability Act (CHCAA), established in 2009 and repealed in 2017, showed that under-compensation for Medicaid-covered and uninsured patients decreased following the implementation of the CHCAA, but the prices charged to commercially-covered patients was did not decline.^{3,4} In light of this, the CHASE Board dedicated resources to more fully understand the impact of the CHASE Act on cost shifting to commercial insurance payers and to increase transparency about the impact of the fee on the health care market.

In February 2019, a draft report was presented to the CHASE Board providing an analysis of the cost shift in Colorado from available data, potential drivers of the cost shift and proposals for a better analysis. The CHASE Board narrowly voted against release of the analysis.

Now in 2020, HCPF is continuing this analysis with updated data to understand the impact of increasing Medicaid reimbursement rates on commercial payment rates and provide policymakers insights into drivers of rising health care costs to better inform effective policy.

¹ Aquilina, D., & Johnson, A.N. (1982). The Cost Shifting Issue. *Health Affairs*, Vol. 1 (4). Retrieved from doi.org/10.1377/hlthaff.1.4.101.

² Concerning the sustainability of rural Colorado, SB 17-267, General assembly of the State of Colorado. (2017). Available from www.leg.colorado.gov/sites/default/files/2017a_267_signed_0.pdf

³ Hospital Provider Fee Oversight and Advisory Board. (2009-17). Colorado Health Care Affordability Act Annual Reports, 2009-17.

⁴ Colorado Healthcare Affordability and Sustainability Enterprise Board. (2018-19). Colorado Healthcare Affordability and Sustainability Enterprise Annual Reports, 2018-19.

Purpose

This report examines the cost shift, including both external influences and hospital strategic business decisions contributing to the cost shift. Since its draft presentation to the CHASE Board in February 2019, this Department report aims to finalize findings and make the topic easier for all consumers to understand. The purposes of this updated report are to:

1. Provide background to help readers better understand the intersection of health care services, health care insurance markets and health care premiums.
2. Provide background on why hospital costs are so important to all consumers, even if hospital services are not utilized.
3. Review the available data to examine the cost shift, potential drivers of the cost shift and how the cost shift impacts Coloradans.

Background

In 2009, when the Colorado Health Care Affordability Act (CHCAA) enacted into law with the passage of House Bill (HB) 09-1293, one of the priority goals was to “reduc[e] the need of health care providers to shift the cost of providing uncompensated care to other payers.”⁵ To accomplish this, the CHCAA included funding for a state share revenue source with a 50% Federal Medical Assistance Percentage (FMAP) to raise Medicaid payments to hospitals, as well as to fund Medicaid expansion for “parents and adults without dependent children” to 100% of the federal poverty level (FPL), and increase Child Health Plan Plus (CHP+) coverage to 250% of the FPL. In addition, the CHCAA created a Medicaid buy-in for disabled adults and children, and ensured 12-months of continuous eligibility for children enrolled in Medicaid. Created under CHCAA, the hospital provider fee served as a funding source for the state’s portion of these additional payments to hospitals while funding the Medicaid expansions, which are matched by at least 50% federal funds.

The Patient Protection and Affordable Care Act (ACA) of 2010 presented hospitals with considerable gains. The ACA expanded Medicaid beyond CHCAA Medicaid expansions, increasing the income threshold for Medicaid “parents and adults without dependent children” to 138% of the FPL.⁶ Also, when CHCAA was signed into law in 2009, this bill did not anticipate enhanced federal matching rates from the ACA. With the ACA, the federal match for Medicaid adults was 100% FMAP for four years before tapering to 90% in 2020, rather than the 50% originally anticipated when the CHCAA was signed. Simply put, a Medicaid claim for \$1,000 with a 100% FMAP receives a \$1,000 payment of federal funds, while a Medicaid claim for \$1,000 with a 50% FMAP receives only a \$500 payment of federal funds, with the remaining \$500 financed by the hospital provider fee. CHP+ also received an enhanced matching rate of 88% under the ACA versus 65% prior. With the ACA, Medicaid expansion states saw a significant benefit to insurance rates relative to the associated cost of coverage because of the enhanced matching rate.⁷ **The enhanced matching rate from the ACA**

⁵ Colorado Health Care Affordability Act, HB09-1293. 2009 Regular Session. (2009). Page 2. Available from [www.leg.state.co.us/clics/clics2009a/csl.nsf/billcontainers/D71C48DD229F80CD872575540079F3A0/\\$FILE/1293_enr.pdf](http://www.leg.state.co.us/clics/clics2009a/csl.nsf/billcontainers/D71C48DD229F80CD872575540079F3A0/$FILE/1293_enr.pdf)

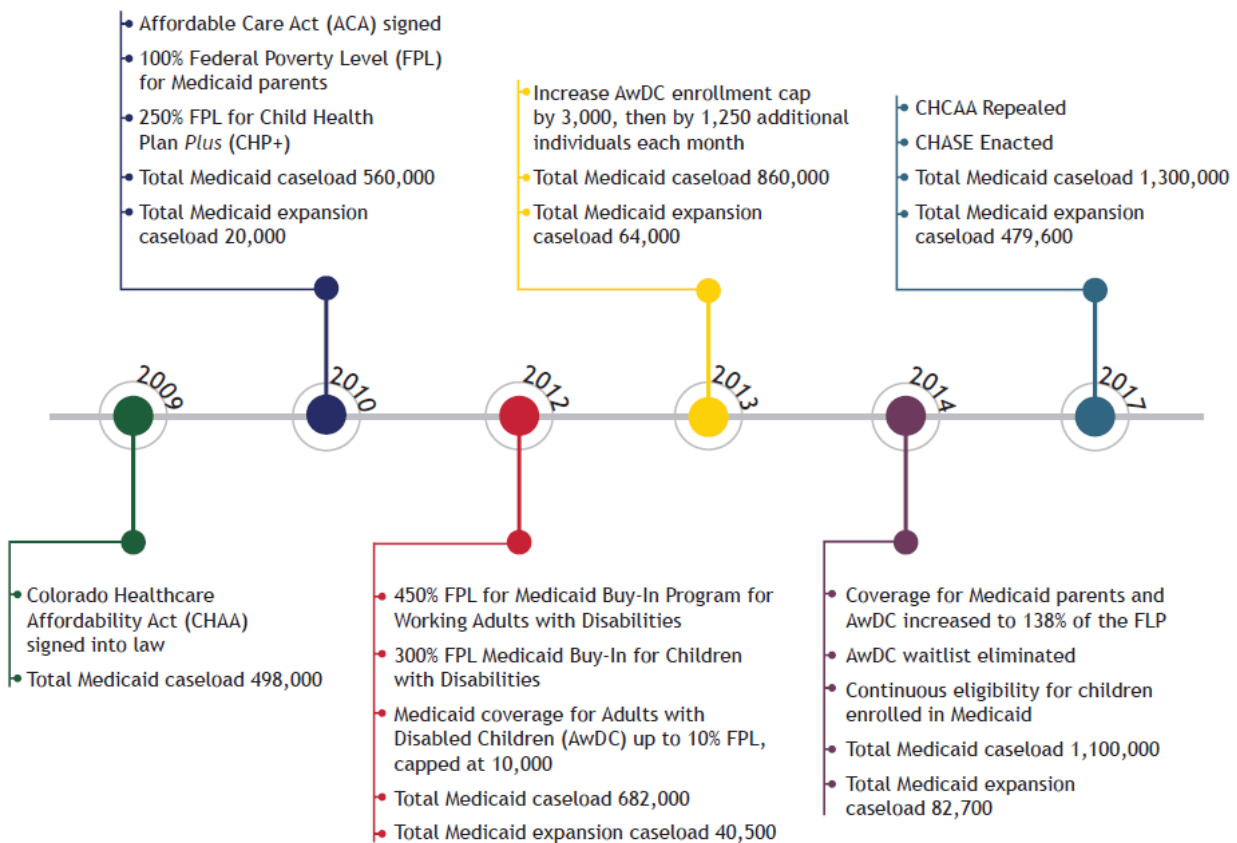
⁶ The increase in the FPL may be presented as 133% in other federal and state publications; 138% includes a federally required income adjustment.

⁷ Cohen, R.A., Zammitti, E.P., & Martinez, M.E. (2018). Health Insurance Coverage: Early Release of Estimates from the National Health Interview Survey, 2017. CDC. Retrieved from www.cdc.gov/nchs/data/nhis/earlyrelease/insur201805.pdf.

reflected a significant financial benefit to hospitals because the hospital provider fee was originally expected to contribute 50% of the cost of the Medicaid expansion, instead of no cost of the Medicaid expansion from 2014 to 2017 and only 10% of the cost of the Medicaid expansion as it stands today.

Medicaid expansions and the ACA substantially impacted the number of Coloradans eligible for Medicaid. The Medicaid population increased from roughly 500,000 members in 2009 to 1.3 million in 2017, after Colorado expanded Medicaid in 2014. As of November 2019, Health First Colorado (Colorado’s Medicaid program) had 1.21 million members.⁸ See **Figure 1** for a timeline of major events concerning the ACA, CHCAA, CHASE and Medicaid enrollment, and for the portion of Medicaid enrollment that is from the expansion of Medicaid.

Figure 1: ACA, CHCAA, CHASE and Medicaid Expansion Timeline⁹



Reducing the cost shift to commercial insurance payers was a priority in 2009 and remained so in 2017 when the CHASE was created. The Colorado General Assembly declared its priorities for the CHASE pursuant to Senate Bill (SB) 17-267, including (emphasis added):

⁸ Department of Health Care Policy & Financing. (2019). October 2019 Premiums, Expenditures and Caseload Reports. Retrieved from <https://www.colorado.gov/pacific/hcpf/premiums-expenditures-and-caseload-reports>

⁹ Hospital Provider Fee Oversight and Advisory Board. (2009-17). Colorado Health Care Affordability Act Annual Reports, 2009-17.

- Providing a payer source for some low-income and uninsured populations who may otherwise be cared for in emergency departments and other settings where uncompensated care is provided;
- Reducing the underpayment to Colorado hospitals participating in publicly-funded health insurance programs;
- **Reducing the number of persons in Colorado without health care benefits;**
- **Reducing the need of hospitals and other health care providers to shift the cost of providing uncompensated care to other payers;**
- Expanding access to high-quality, affordable health care for low-income and uninsured populations; and
- Providing additional business services specified to hospitals that pay the health care affordability and sustainability fee.¹⁰

Why is the cost shift important to Coloradans?

The importance of the Colorado General Assembly’s intent to reduce cost shifting may not be readily apparent to Colorado consumers. The consumer is often unaware of the underlying costs in their purchase price. When under-compensated costs are shifted to commercial insurance payers (and self-funded employers), commercial insurance and self-funded employer premiums rise, causing consumers and employers to pay more for their health care benefits. Colorado’s health care costs continue to be some of the highest in the nation. A recent review of state health care found that Colorado is one of the costliest states for health care, ranking the state as the fifth most costly in the nation.¹¹ The report also says that “higher costs don’t necessarily translate to better results.” Many states with similar health outcome rankings were ranked as less costly than Colorado.¹² Recent trends show Colorado’s commercial insurance spending has grown at a faster rate than other states. On average, Colorado’s commercial insurance spending has grown 6.6% per year, ranking Colorado as fifth highest in the nation for average annual percent growth of commercial insurance.¹³ Similarly, Colorado’s commercial insurance per capita spending grew at an average annual rate of 6.1% between 2001 and 2014. This ranks Colorado as the eighth highest state in the nation in average annual percent growth.¹⁴ Rural Coloradans saw some of the highest increases in insurance premiums on the individual marketplace.¹⁵ Not only are premiums on the rise, but commercial insurance plans are moving a greater burden of those costs to individual

¹⁰ See footnote 2.

¹¹ McCann, A. (2019). 2019’s Best & Worst States for Health Care Retrieved from www.wallethub.com/edu/states-with-best-health-care/23457/#main-findings.

¹² See footnote 11.

¹³ The Kaiser Family Foundation State Health Facts. Data Source: Centers for Medicare & Medicaid Services, Office of the Actuary, National Health Statistics Group (2017). *National Health Expenditure Data: Health Expenditures by State of Residence*. Retrieved from www.kff.org/private-insurance/state-indicator/average-annual-percent-growth-in-private-health-insurance-spending-by-state/

¹⁴ The Kaiser Family Foundation State Health Facts. Data Source: Centers for Medicare & Medicaid Services, Office of the Actuary, National Health Statistics Group. (2017). *National Health Expenditure Data: Health Expenditures by State of Residence* and U.S. Bureau of the Census. (2017). *U.S. Population by State, 2001-2014*. Retrieved from www.kff.org/private-insurance/state-indicator/average-annual-percent-growth-in-private-health-insurance-spending-per-capita-by-state/

¹⁵ Colorado Health Institute. (2018). Federal Uncertainty Drives Another Year of Insurance Price Increases. Retrieved from www.coloradohealthinstitute.org/research/insurance-prices/2018-preliminary

consumers. Nationally, deductibles rose from 2.7% of median income in 2008 to 4.8% in 2017.¹⁶ Coloradans are particularly burdened by commercial insurance plan out-of-pocket costs with 9.3% of individuals paying 5%, 10% or more of their annual incomes toward out-of-pocket medical costs.¹⁷ This ranks Colorado as ninth in the nation for the percent of the population with high out-of-pocket costs relative to income.¹⁸ Concurrent with the rising costs of both commercial insurance premiums and out-of-pocket costs, the Commonwealth Fund found that more than a quarter of working-age adults in the United States are underinsured (see Figure 2), which contributes to problems paying medical bills.¹⁹ With rising consumer costs, 18.1% of Coloradans report having trouble paying medical bills.²⁰ Further, more than 40 million Americans live in families with medical debt problems, with the “poor” and “near poor” at the highest risk of being impacted by medical debt, and twice as likely to report having problems paying medical bills.²¹ The more Colorado families pay for insurance premiums and medical services, the less those families have to spend on food, housing, childcare, education and other budget items. The 2019 Colorado Health Access Survey from Colorado Health Institute found that 9.6% of Coloradans reported that they chose to eat less because of financial struggles.²²

- Health care consumer costs are a growing part of a national health care agenda. Health care is now a higher priority issue for voters than the economy.²³

As indicated by the above factors, cost shifting has a powerful financial impact on Coloradans.

Coloradans feel the brunt of rising commercial insurance payments to hospitals through rising insurance premiums and out-of-pocket responsibility. There is an opportunity to better control rising hospital prices – and therefore improve health care affordability – to the betterment of Coloradans and their employers.

¹⁶ Collins, S & Radley, D. (2018). The Cost of Employer Insurance Is a Growing Burden for Middle-Income Families. The Commonwealth Fund. Retrieved from www.commonwealthfund.org/publications/issue-briefs/2018/dec/cost-employer-insurance-growing-burden-middle-income-families

¹⁷ Haynes, S., Collins, S., & Radley, D. (2019). How Much U.S. Households with Employer Insurance Spend on Premiums and Out-of-Pocket Costs: A State-by-State Look. The Commonwealth Fund. Retrieved from www.commonwealthfund.org/publications/issue-briefs/2019/may/how-much-us-households-employer-insurance-spend-premiums-out-of-pocket

¹⁸ See footnote 17.

¹⁹ Collins, S., Bhupal, H., & Doty, M. (2019). Health Insurance Coverage Eight Years After the ACA. The Commonwealth Fund. Retrieve from www.commonwealthfund.org/publications/issue-briefs/2019/feb/health-insurance-coverage-eight-years-after-aca.

²⁰ Colorado Health Institute. (2019). Colorado Health Access Survey: The New Normal, September 2019. Retrieved from www.coloradohealthinstitute.org/research/CHAS.

²¹ Cohen, R. & Zammitti, E. (2017). Problems Paying Medical Bills Among Persons Under Age 65: Early Release of Estimates From the National Health Interview Survey, 2011-June 2017. National Center for Health Statistics. Retrieved from www.cdc.gov/nchs/data/nhis/earlyrelease/probs_paying_medical_bills_jan_2011_jun_2017.pdf

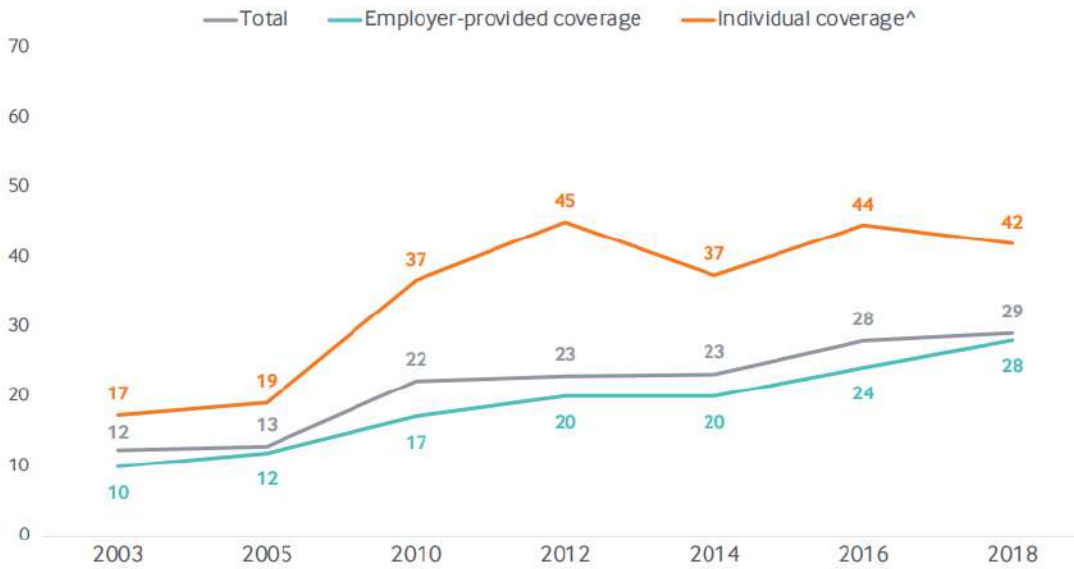
²² See footnote 20.

²³ Rooney, K. (2018). Health care topped the economy as the biggest issue for voters now, here's why. CNBC. Retrieved from www.cnbc.com/2018/11/07/healthcare-topped-the-economy-as-the-biggest-issue-for-voters-now-heres-why.html

Figure 2: Percent of Underinsured U.S. Adults²⁴

More Adults Are Underinsured, with the Greatest Growth Occurring Among Those with Employer Coverage

Percent of adults ages 19–64 insured all year who were underinsured



Notes: "Underinsured" refers to adults who were insured all year but experienced one of the following: out-of-pocket costs, excluding premiums, equaled 10% or more of income; out-of-pocket costs, excluding premiums, equaled 5% or more of income if low-income (<200% of poverty); or deductibles equaled 5% or more of income. Total includes adults with coverage through Medicaid and Medicare. Respondents may have had another type of coverage at some point during the year, but had coverage for the entire previous 12 months. ^ For 2014 and 2016, includes those who get their individual coverage through the marketplace and outside of the marketplace.

Data: Commonwealth Fund Biennial Health Insurance Surveys (2003, 2005, 2010, 2012, 2014, 2016, 2018).



Source: Sara R. Collins, Herman K. Bhupal, and Michelle M. Doty, *Health Insurance Coverage Eight Years After the ACA: Fewer Uninsured Americans and Shorter Coverage Gaps, But More Underinsured* — Findings from the Commonwealth Fund Biennial Health Insurance Survey, 2018 (Commonwealth Fund, Feb. 2019).

²⁴ See footnote 19.

Methodology

Findings in this report are derived using a variety of resources, including research finding from:

- Colorado Health Institute,
- The Commonwealth Fund,
- The Network for Regional Healthcare Improvement,
- Health Care Cost Institute,
- Kaiser Family Foundation,
- Department analysis of hospital-reported Medicare Cost Report data (state and national Medicare Cost Report data is compiled by cost center to compare Colorado’s hospital costs to the nation and other states),
- feedback from seven subject matter experts, and
- the majority of internal analyses rely on information the Colorado Hospital Association (CHA) shares with the Department; specifically, the data from DATABANK,²⁵ which is reported to the Department on an aggregated basis.

The cost shift is evaluated by reviewing the difference between hospital payments and costs for each of four major insurance payer groups – Medicare, Medicaid, commercial and Colorado Indigent Care Program (CICP)/Self Pay/Other. The analysis starts in 2009, showing data prior to the implementation of the CHCAA, while changes after the CHCAA are captured with data from 2010 and years that follow. 2014 is the first year of data that includes the expansion of Medicaid under the Affordable Care Act (ACA).

The report provides:

1. A financial review of the aggregate data to assess cost shifting across Colorado, including a regional review.
2. Identification of factors affecting the cost shift including external influences, and hospital strategic business decisions.
3. A what-if modeling scenario analysis exploring the relationship between hospital cost, margins and commercial insurance payments.
4. **A discussion of opportunities to study cost shifting, lower costs and collaborative work to improve Colorado’s health care system.**

²⁵ CHA DATABANK is an online program available to Colorado Hospital Association members and serves as a centralized location for the collection of hospital utilization and financial data.

Limitations

The data provided by the Colorado Hospital Association (CHA) and used in this report has limitations:

- DATABANK submissions are voluntary and, therefore, do not include all Colorado hospitals. In 2018, 69 hospitals reported to DATABANK, representing 69% of CHA membership; however, these 69 hospitals represent approximately 92% of licensed beds.
- The Department has access only to aggregated data (combined data for all Colorado hospitals, and for groupings of DOI regions) because of non-disclosure agreements between CHA and hospital providers. As a result, it is not possible to break out the data by peer group.
- The data combines three distinct payer type groups: CICP, self-pay and other. Upon review, the CICP/Self Pay/Other payer type may include payments not truly attributable to the category. While the category is meant to represent the uninsured, self-pay and other payers, the data is aggregated. Therefore, data elements cannot be confirmed or statistically validated.
- Data is self-reported by hospitals. The data is not independently reviewed and, therefore, could contain errors and inconsistencies.
- There is uncertainty about the inclusion of the CHCAA provider fee in hospital costs, and the supplemental payment in payer type margins. Hospitals may not be consistent in accounting for these items.
- The data is strictly financial and does not account for patient severity, which is a significant driver of revenues and costs.

There are also limitations to the analysis because of the structure of the data:

- Only 10 years of data are available for analysis. While the period covers major milestones in public policy, such as before and after the passage of the CHCAA and the ACA, there is no extended period of “business as usual” where relationships can be determined.
- Cost allocation
 - The available method for cost allocation only approximately accounts for overhead costs. Because hospital fixed and variable costs are not separated in the dataset, *all* costs are allocated proportionately to payer type charges.²⁶
 - The methodology for determining hospital cost is to multiply the same cost-to-charge ratio to charges, regardless of payer type. For example, the cost-to-

²⁶ Kalman, N S, Hammill B G, Schulman, K, Shah, B. (2015). Hospital Overhead Costs: The Neglected Driver of Health Care Spending? Retrieved from www.healthfinancejournal.com/index.php/johcf/article/view/27/29.

charge ratio in 2018 was 0.22, meaning for every \$1.00 in charges there are \$0.22 in hospital costs. This is appropriate when applied to charges overall but is inexact when applied to charges by payer type. In 2018, this methodology assumes the cost-to-charge ratio for Medicare, Medicaid, commercial and the CACP/Self Pay/Other group were all 0.22. An exact calculation would depend on differences in case mix index (average illness severity).

- This analysis uses *adjusted discharges* as an indicator of patient volume. The adjustment uses both inpatient and outpatient hospital care, combining them to provide a more complete picture of care volume. Adjusted discharges is calculated from inpatient discharges and the ratio of outpatient charges to inpatient charges. The Department has heard from hospitals (particularly low-volume hospitals) and consultants that adjusted discharges are not a perfect indicator of volume. The main limitation for adjusted discharges comes from incorporating outpatient volume as a financial ratio and not a true volume metric. However, without another volume metric incorporating both inpatient and outpatient volume, the Department is limited to using adjusted discharges as a proxy for volume of care.

Analysts worked within these limitations. The Department believes the analytical findings and discussions are directionally accurate and credible. This report represents the beginning of Department analysis on the topic. With the passage of HB19-1001, Hospital Transparency Measures to Analyze Efficacy, more robust data will be provided to the Department for analysis and future reporting.

Independent Consultant Review

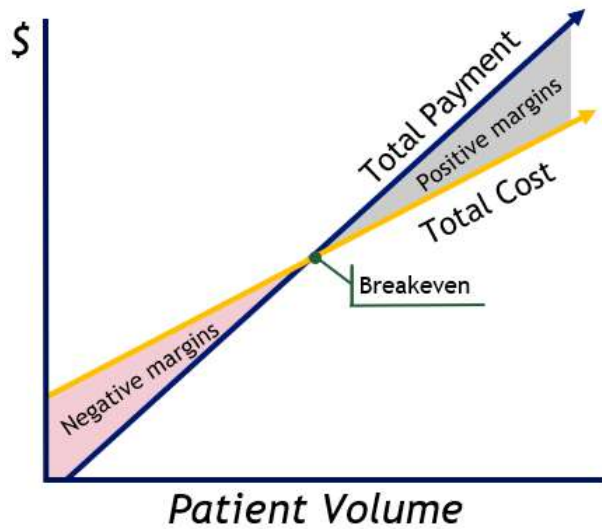
Based on feedback from the CHASE Board at its Feb. 26, 2019 meeting, the Department determined that additional independent review was needed of the draft version of the report from experts outside the Department. The Department reached out to seven independent consultants for objective feedback and analysis. Consultants consisted of public policy experts and business researchers from think tanks, academic institutions and health care delivery systems from across the country. Consultants had a range of feedback, but there was a general consensus that, while the data set has limitations and there are opportunities for improving the report, (a) the conclusions of the draft report are valid; (b) the draft report does not lack objectivity; (c) the draft Cost Shift Report's discussion and findings are sound. Please see **Appendix E** for a sample of consultant review.

Financial Review

Hospital financials are complex. There is an extra layer of transactions taking place beyond the price and cost of services (for example, contractual allowances and discounts). As a result, allocating costs can be calculated in multiple ways.

For hospitals, there are the fixed costs to keep the doors open and costs that increase with patient volume. When payments equal costs, the breakeven point is achieved. When payments exceed costs, a hospital has positive margins. When costs exceed payments, a hospital has negative margins. Figure 3 is a simplified visualization of the relationship between costs, payments and resulting margins.

Figure 3 Relationship Between Cost, Payment, and Margins



The calculation of payments, costs, margin and the payment-to-cost ratio are displayed in **Tables 1 through 4**, along with simplified definitions. **Tables 5 through 8** examine aggregate DATABANK financial data.

Table 1: $Payment\ to\ cost\ ratio = Payment \div Cost$

| Calculation | Variables (by payer type) | Definition |
|-------------|------------------------------|--|
| | <i>Payment</i> | Insurance type payment for hospital services |
| \div | <i>Cost</i> | Allocated cost to provide hospital services |
| $=$ | <i>Payment-to-cost ratio</i> | For every dollar of costs, what is received in payment |

Table 2: $Payment = Charges - Contractual\ allowances - Charity\ care\ write\ offs - Bad\ debt$

| Calculation | Variable (by payer type) | Definition |
|-------------|-------------------------------|--|
| | <i>Charges</i> | Contracted rates with different insurance payer types |
| $-$ | <i>Contractual allowances</i> | <ul style="list-style-type: none"> For any specific procedure, charges would be the same despite payer type Contractual allowances would vary between insurance payer type |

| Calculation | Variable (by payer type) | Definition |
|-------------|--------------------------------|---|
| – | <i>Charity care write offs</i> | Uncollected revenue from patients who are uninsured or underinsured |
| – | <i>Bad debt</i> | Uncollected revenue from patients unable or unwilling to pay bill |
| = | <i>Payment</i> | Resulting payment from an insurance payer type |

Table 3: *Cost = Charges x Colorado aggregate cost to charge ratio*

| Calculation | Variable (by payer type) | Definition |
|-------------|--|---|
| | <i>Charges</i> | For any specific procedure, charges would be the same despite payer type |
| × | <i>Colorado aggregate cost-to-charge ratio</i> | The sum of all Colorado hospitals' costs and divided by the sum of all Colorado's charges. This ratio is used to allocate costs amongst payer types |
| = | <i>Cost</i> | Allocated cost to provide hospital services |

Table 4: *Margin = Payment - Cost*

| Calculation | Variable (by payer type) | Definition |
|-------------|--------------------------|--|
| | <i>Payment</i> | Insurance type payment for hospital services |
| – | <i>Cost</i> | Allocated cost to provide hospital services |
| = | <i>Margin</i> | What remains after costs are accounted for. If less than zero, then under-compensation |

The Department receives only aggregated data from DATABANK. Therefore, it is not possible to break out the data by peer group (urban, rural, resort and mountain regions). It is likely the largest hospitals and regions (i.e., the Front Range, mountain resort) dominate the results. **As a result of these limitations, the analysis in this section is meant to be an assessment of the Colorado hospital industry and not an assessment of any particular hospital.**

Cost Shifting in Colorado

Tables 5 through 8 show 2009 to 2018 trends in payment-to-cost ratio, payments, costs and margins by payer type.

Table 5 exhibits the payment-to-cost ratio by payer type and was reported in the January 2019 CHASE Annual Report.²⁷ This data prompted questions about hospital cost shifting, namely: **why has the commercial insurance payment-to-cost ratio increased since 2009 while margins have also increased?**

Over the period 2009 to 2018, Medicare and Medicaid payment-to-cost ratios are essentially flat, varying within a small range (with the exception of Medicaid in calendar year 2009), while commercial insurance payment-to-cost rates trended upward. The data implies a financial benefit to hospitals. **Over the lifespan of the hospital provider fee, the commercial insurance payment-to-cost ratio increased from 1.55 to 1.70, and the overall payment-to-cost ratio increased from 1.05 to 1.09.**

The highest year-over-year changes in margin (dollar compensation that exceeds cost) were from 2013 to 2014 (pre- and post-ACA) and 2017 to 2018, which saw hospital margins increase by \$256.1 million and \$302.2 million, respectively. Margins increase when payments increase more than costs. Between 2013 and 2014, there was growth in Medicaid's portion of hospital revenue and cost as a result of Medicaid expansions. This resulted in Medicaid under-compensation increasing from \$327.9 million to \$682.8 million, a \$354.9 million increase. The increase to Medicaid payments of \$422.9 million did not cover the increase in Medicaid's portion of costs. This is also reflected in the Medicaid payment-to-cost ratio decrease from 0.80 to 0.72. It should be noted, however, that this 0.72 payment-to-cost ratio was higher than before the hospital provider fee, reflecting a financial benefit to hospitals. The ACA also had an impact to the C/CP/Self Pay/Other payer type compensation, which saw under-compensation decrease from \$248.4 million to \$82.7 million between 2013 and 2014, an improvement of \$165.7 million. Between 2017 and 2018, Medicaid under-compensation decreased from \$898.2 million to \$769.2 million, a \$129.0 million improvement. The Medicaid payment-to-cost ratio in 2018 was 0.77, the highest it has ever been, post-ACA.

The greatest increase to overall payments occurred from 2017 to 2018, with around half (52.5%) of the \$1,302.2 million increase in payments coming from non-commercial insurance. **Commercial insurance's 2017 to 2018 change was responsible for 47.5% of the total payment increase. During that same year, hospital patient service costs grew by a lesser amount than the payment increase (\$999.9 million), netting a year-over-year increase in patient service margins of \$302.2 million.**

²⁷ See footnote 4. Since updated in the January 2020 CHASE Annual Report. Colorado Healthcare Affordability and Sustainability Enterprise Board. (2019-20). Colorado Healthcare Affordability and Sustainability Enterprise Annual Reports, 2019-20.

Table 5: Payment-to-Cost Ratio^{28,29}

| | Year | Medicare | Medicaid | Commercial | CICP/Self Pay/Other ³⁰ | Overall |
|----------|---------|----------|----------|------------|-----------------------------------|---------|
| Pre-ACA | CY 2009 | 0.78 | 0.54 | 1.55 | 0.52 | 1.05 |
| | CY 2010 | 0.76 | 0.74 | 1.49 | 0.72 | 1.06 |
| | CY 2011 | 0.77 | 0.76 | 1.54 | 0.65 | 1.07 |
| | CY 2012 | 0.74 | 0.79 | 1.54 | 0.67 | 1.07 |
| | CY 2013 | 0.66 | 0.80 | 1.52 | 0.84 | 1.05 |
| Post-ACA | CY 2014 | 0.71 | 0.72 | 1.59 | 0.93 | 1.07 |
| | CY 2015 | 0.72 | 0.75 | 1.58 | 1.11 | 1.08 |
| | CY 2016 | 0.71 | 0.71 | 1.64 | 1.08 | 1.09 |
| | CY 2017 | 0.72 | 0.72 | 1.66 | 0.85 | 1.07 |
| | CY 2018 | 0.70 | 0.77 | 1.70 | 0.88 | 1.09 |

Table 5 exhibits the payment-to-cost ratio by payer type. The commercial insurance payment-to-cost ratio increased by 4.6% between 2013 and 2014, or, said another way, commercial insurance payment exceeding cost grew from 0.52 to 0.59, or a 13.5% increase.

Table 6: Payment³¹

| | Year | Medicare (\$) | Medicaid (\$) | Commercial (\$) | CICP/Self Pay/Other (\$) | Overall (\$) | YOY Difference (\$) |
|----------|---------|---------------|---------------|-----------------|--------------------------|--------------|---------------------|
| Pre-ACA | CY 2009 | 2,214.2M | 557.5M | 6,043.5M | 654.1M | 9,469.3M | - |
| | CY 2010 | 2,359.3M | 877.8M | 6,082.9M | 1,025.6M | 10,345.6M | 876.3M |
| | CY 2011 | 2,511.2M | 979.3M | 6,538.3M | 965.6M | 10,994.5M | 648.8M |
| | CY 2012 | 2,581.5M | 1,147.4M | 6,963.0M | 1,014.1M | 11,706.0M | 711.5M |
| | CY 2013 | 2,455.2M | 1,295.1M | 7,081.5M | 1,287.9M | 12,119.7M | 413.7M |
| Post-ACA | CY 2014 | 2,756.6M | 1,718.0M | 7,373.5M | 1,072.4M | 12,920.5M | 800.8M |
| | CY 2015 | 2,862.4M | 1,992.3M | 7,396.1M | 1,173.8M | 13,424.7M | 504.1M |
| | CY 2016 | 3,153.6M | 2,069.7M | 8,270.7M | 1,157.5M | 14,651.5M | 1,226.8M |
| | CY 2017 | 3,525.2M | 2,270.6M | 8,815.0M | 965.9M | 15,576.7M | 925.3M |
| | CY 2018 | 3,761.0M | 2,536.6M | 9,433.9M | 1,147.4M | 16,878.9M | 1,302.2M |

Table 6 shows that between 2015 and 2018, overall payments increased 25.7%, with commercial insurance making up 59% of the overall payment increase. The greatest increase to payments occurred in 2018, with commercial insurance accounting for nearly half (47.5%)

²⁸ See footnote 25.

²⁹ See footnote 4.

³⁰ The data indicated that the CICP/Self Pay/Other payer type has paid above cost in 2015 and 2016. This may be a misrepresentation of the self-reported data for those years. CHA discovered a reporting issue that was corrected for 2017 data and that data was updated in the most recent CHASE Annual Report.

³¹ See footnote 25. 'Overall' does not include 'Other Operating Payments' as reported to DATABANK.

of the overall payment increase. Other than rising hospital costs, it is unclear why there was such a large increase to commercial insurance reimbursements.

Table 7: Cost³²

| | Year | Medicare (\$) | Medicaid (\$) | Commercial (\$) | CICP/Self Pay/Other (\$) | Overall (\$) | YOY Change (\$) |
|----------|---------|---------------|---------------|-----------------|--------------------------|--------------|-----------------|
| Pre-ACA | CY 2009 | 2,839.3M | 1,040.6M | 3,903.3M | 1,269.0M | 9,052.3M | - |
| | CY 2010 | 3,115.9M | 1,182.9M | 4,085.0M | 1,416.1M | 9,800.0M | 747.7M |
| | CY 2011 | 3,243.5M | 1,284.9M | 4,251.0M | 1,483.2M | 10,262.6M | 462.6M |
| | CY 2012 | 3,499.5M | 1,455.9M | 4,512.9M | 1,516.7M | 10,984.9M | 722.3M |
| | CY 2013 | 3,695.9M | 1,623.0M | 4,670.1M | 1,536.3M | 11,525.2M | 540.3M |
| Post-ACA | CY 2014 | 3,878.3M | 2,400.8M | 4,635.7M | 1,155.1M | 12,069.9M | 544.7M |
| | CY 2015 | 3,974.7M | 2,669.0M | 4,678.7M | 1,062.1M | 12,384.5M | 314.5M |
| | CY 2016 | 4,443.3M | 2,924.2M | 5,044.5M | 1,086.8M | 13,498.8M | 1,114.3M |
| | CY 2017 | 4,903.7M | 3,168.8M | 5,301.5M | 1,132.1M | 14,506.2M | 1,007.4M |
| | CY 2018 | 5,343.3M | 3,305.8M | 5,553.0M | 1,304.0M | 15,506.1M | 999.9M |

Table 7 shows that, in 2016, hospital costs increased by \$1,114.3 million; in 2017, by \$1,007.8 million; and, in 2018, by \$999.9 million. Medicaid expansion does not explain why hospital costs increased by 9% between 2015 to 2016, 7.5% between 2016 and 2017, and 6.9% between 2017 and 2018.

Overall, the data shows payments to hospitals have grown more than \$7.4 billion between 2009 and 2018, with annual growth ranging between 3.5% and 9.3%, depending upon the year examined (see Table 6). Hospital costs have grown along with payments, with patient service costs increasing by \$6.5 billion between 2009 and 2018, and annual patient service cost growth between 2.6% and 9.0% (see Table 7).

³² See footnote 25. Overall does not include Other Operating Costs.

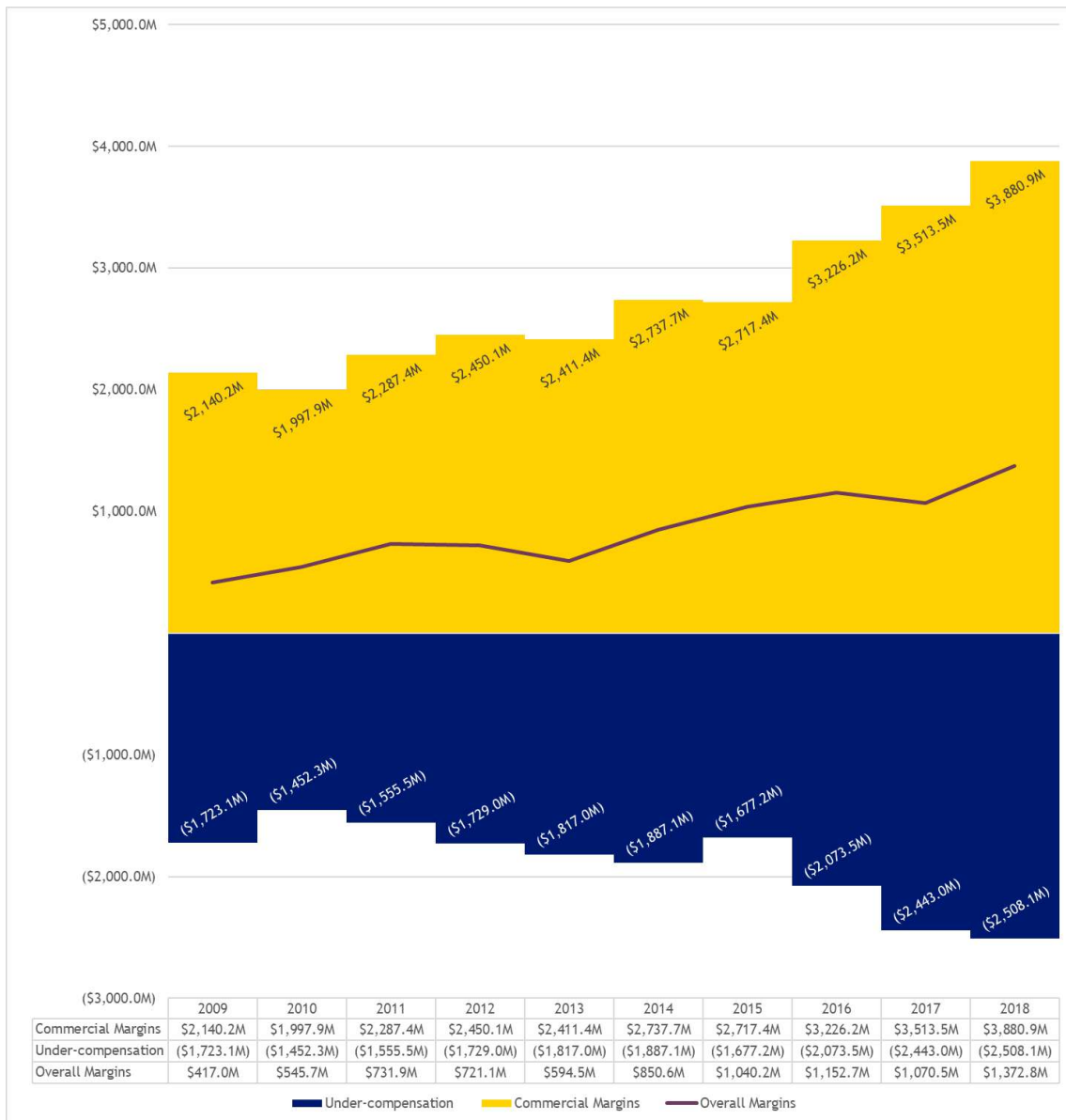
Table 8: Margin³³

| | Year | Medicare (\$) | Medicaid (\$) | Commercial (\$) | CICP/Self Pay/Other (\$) | Overall (\$) | YOY Change (\$) |
|----------|---------|---------------|---------------|-----------------|--------------------------|--------------|-----------------|
| Pre-ACA | CY 2009 | (625.1M) | (483.1M) | 2,140.2M | (614.9M) | 417.0M | - |
| | CY 2010 | (756.7M) | (305.1M) | 1,997.9M | (390.5M) | 545.7M | 128.6M |
| | CY 2011 | (732.2M) | (305.6M) | 2,287.4M | (517.6M) | 731.9M | 186.2M |
| | CY 2012 | (918.0M) | (308.5M) | 2,450.1M | (502.5M) | 721.1M | (10.8M) |
| | CY 2013 | (1,240.6M) | (327.9M) | 2,411.4M | (248.4M) | 594.5M | (126.6M) |
| Post-ACA | CY 2014 | (1,121.7M) | (682.8M) | 2,737.7M | (82.7M) | 850.6M | 256.1M |
| | CY 2015 | (1,112.3M) | (676.6M) | 2,717.4M | 111.7M | 1,040.2M | 189.6M |
| | CY 2016 | (1,289.7M) | (854.5M) | 3,226.2M | 70.7M | 1,152.7M | 112.5M |
| | CY 2017 | (1,378.5M) | (898.2M) | 3,513.5M | (166.2M) | 1,070.5M | (82.2M) |
| | CY 2018 | (1,582.3M) | (769.2M) | 3,880.9M | (156.6M) | 1,372.8M | 302.2M |

Table 8 combines payments by payer type and costs allocated proportionally to charges to show margins. When margins are positive, payments exceeded the payer type’s proportion of allocated costs. When margins are negative, payments fell short of the payer type’s proportion of allocated costs. Between 2009 and 2018, Medicare saw the greatest percentage decline in margins, at 153.1%, followed by Medicaid which declined 59.2%. There is some question about the CICP/Self Pay/Other category’s data, but it displays an increase in margins of 74.5% between 2009 and 2018. Commercial insurance margins have the largest increase, 81.3% over the same period. **To measure the impact of under-compensation on commercial insurance margins, non-commercial insurance payer type margins are combined. Growth of under-compensation by non-commercial insurance payer types is \$785.0 million between 2009 and 2018, while commercial insurance margins grew \$1,740.7 million over the same period (see Figure 4 and Table 12).**

³³ See footnote 25. Overall does not include Other Operating Margins.

Figure 4: Cost Shift³⁴



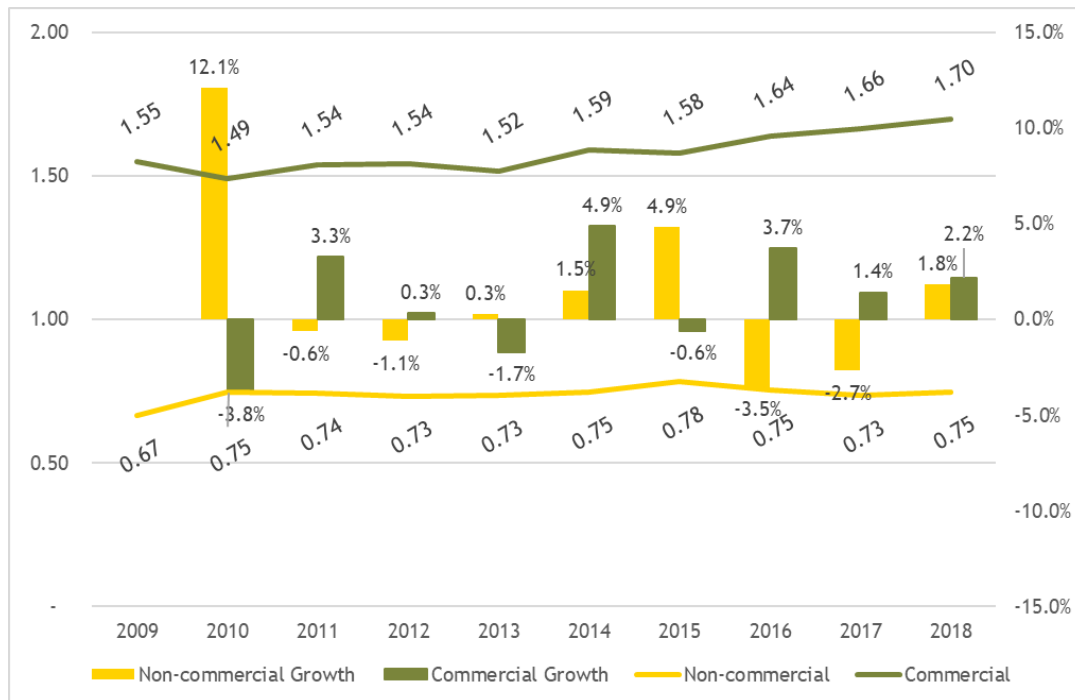
Another way to assess the cost shift is to compare payment-to-cost ratios in these same groupings. In Table 9 and Figure 5, the payer type data is combined to compare commercial insurance with the sum of all other categories. The cost shift can be summarized to show that from 2009 to 2018 the non-commercial insurance payer payment-to-cost ratio increased from 0.67 to 0.75, reducing the under-compensation suffered by hospitals from this payer group. Over the same period, the commercial payment-to-cost ratio *increased* from 1.55 to 1.70. Since CHCAA, hospitals have received more reimbursement from non-commercial insurance coverage, but the cost shift has not improved to benefit commercially-covered consumers and employers.

³⁴ See footnote 25.

Table 9: Non-Commercial and Commercial Payment-to-Cost Ratios³⁵

| | Non-Commercial Payment (\$) | Non-Commercial Cost (\$) | Non-Commercial Payment-to-cost Ratio | Commercial Payment (\$) | Commercial Cost (\$) | Commercial Payment-to-cost Ratio |
|---------|-----------------------------|--------------------------|--------------------------------------|-------------------------|----------------------|----------------------------------|
| CY 2009 | 3,425.9M | 5,149.0M | 0.67 | 6,043.5M | 3,903.3M | 1.55 |
| CY 2010 | 4,262.7M | 5,715.0M | 0.75 | 6,082.9M | 4,085.0M | 1.49 |
| CY 2011 | 4,456.1M | 6,011.6M | 0.74 | 6,538.3M | 4,251.0M | 1.54 |
| CY 2012 | 4,743.0M | 6,472.0M | 0.73 | 6,963.0M | 4,512.9M | 1.54 |
| CY 2013 | 5,038.2M | 6,855.2M | 0.73 | 7,081.5M | 4,670.1M | 1.52 |
| CY 2014 | 5,547.1M | 7,434.2M | 0.75 | 7,373.5M | 4,635.7M | 1.59 |
| CY 2015 | 6,028.5M | 7,705.7M | 0.78 | 7,396.1M | 4,678.7M | 1.58 |
| CY 2016 | 6,380.8M | 8,454.3M | 0.75 | 8,270.7M | 5,044.5M | 1.64 |
| CY 2017 | 6,761.7M | 9,204.7M | 0.73 | 8,815.0M | 5,301.5M | 1.66 |
| CY 2018 | 7,445.0M | 9,953.2M | 0.75 | 9,433.9M | 5,553.0M | 1.70 |

Figure 5: Non-Commercial and Commercial Payment-to-Cost Ratios and Payment-to-Cost Ratio Percent Growth³⁶



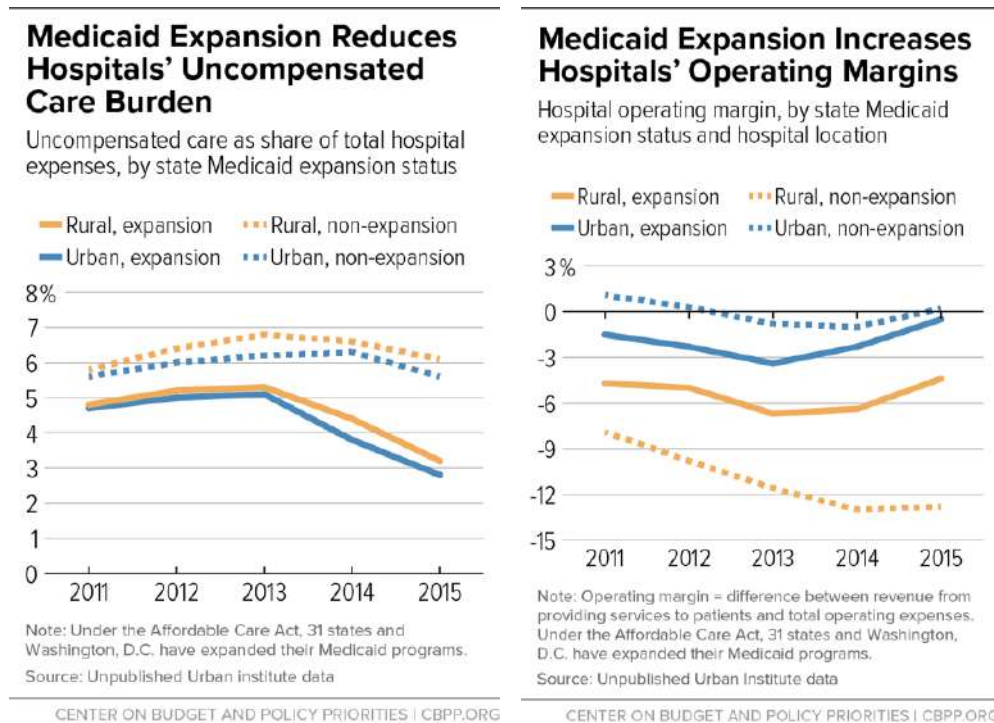
The Center on Budget and Policy Priorities, a national research and policy nonprofit, graphically demonstrates this theme and shows the benefit to expansion states' hospital

³⁵ See footnote 25.

³⁶ See footnote 25.

operating margins in Figure 6.^{37, 38} Moreover, findings from multiple studies attribute the reduced uncompensated care costs to Medicaid expansions.^{39, 40, 41} Improved financial performance and a lower likelihood of hospital closures nationally, particularly in rural areas where uninsured rates were previously high, have also been associated with Medicaid expansions.⁴²

Figure 6: Changes in Hospitals' Operating Margins⁴³



As shown in Figure 6, uncompensated care costs declined in expansion states. This is also apparent through the DATABANK financial data (see Table 10 and Figure 27 of Appendix A). Charity care write-offs (translated to costs in Table 10) cover medical treatments for patients who are uninsured or underinsured and who qualify for financial relief under the hospital's charity policy. The hospital does not receive payment or reimbursement for the charity care.

³⁷ Center on Budget and Policy Priorities. (n.d.). Mission & History. Retrieved from www.cbpp.org/about/mission-history

³⁸ Center on Budget and Policy Priorities. (2017). Affordable Care Act's Medicaid Expansion Benefits Hospitals, Particularly in Rural America. Retrieved from www.cbpp.org/research/health/affordable-care-acts-medicaid-expansion-benefits-hospitals-particularly-in-rural.

³⁹ Blavin, F. (2017). How Has the ACA Changed Finances for Different Types of Hospitals? Updated Insights from 2015 Cost Report Data. *The Urban Institute*. Retrieved from www.rwjf.org/content/dam/farm/reports/issue_briefs/2017/rwjf436310.

⁴⁰ Gillis, K. (2017). Physicians' Patient Mix - A Snapshot from the 2016 Benchmark Survey and Changes Associated with the ACA. *American Medical Association*. Retrieved from www.ama-assn.org/sites/default/files/media-browser/public/health-policy/PRP-2017-physician-benchmark-survey-patient-mix.pdf.

⁴¹ For additional study citations supporting these findings, see: Antonisse, L., Artiga, S., Garfield, R., & Rudowitz, R. (2018). The Effects of Medicaid Expansion under the ACA: Updated Findings from a Literature Review. Washington, DC: Kaiser Family Foundation. Retrieved from www.kff.org/medicaid/issue-brief/the-effects-of-medicaid-expansion-under-the-aca-updated-findings-from-a-literature-review-march-2018/.

⁴² Hardy, R., Lindrooth, R., Perrillon, M., & Tung, G. (2018). Understanding the Relationship Between Medicaid Expansions and Hospital Closures. *Health Affairs*. Retrieved from www.healthaffairs.org/doi/abs/10.1377/hlthaff.2017.0976.

⁴³ Center on Budget and Policy Priorities. (2017). Affordable Care Act's Medicaid Expansion Benefits Hospitals, Particularly in Rural America. Retrieved from www.cbpp.org/research/health/affordable-care-acts-medicaid-expansion-benefits-hospitals-particularly-in-rural.

Bad debt is when a hospital is unable to collect amounts due. Prior to the ACA, charity care and bad debt cost Colorado hospitals approximately \$700 million a year. **After the ACA was enacted, charity care and bad debt costs in Colorado hospitals decreased by more than 50% to just over \$300 million a year.** To be clear, changes to charity care and bad debt are reflected in the calculations of hospital payment-to-cost ratios, payments, costs and margins in Tables 5 through 8. Increases in hospitals' margins are concurrent with the reduction in hospital bad debt and charity care.

Table 10: Bad Debt and Charity Care Cost Compared^{44, 45}

| | Year | Charity Care Cost (\$) | Bad Debt Cost (\$) | Charity Care + Bad Debt Cost (\$) | YOY Difference (\$) | YOY Percent Difference |
|----------|---------|------------------------|--------------------|-----------------------------------|---------------------|------------------------|
| Pre-ACA | CY 2009 | (438.4M) | (255.2M) | (693.6M) | - | - |
| | CY 2010 | (430.9M) | (234.2M) | (665.1M) | 28.5M | -4.1% |
| | CY 2011 | (473.2M) | (194.8M) | (668.0M) | (2.9M) | 0.4% |
| | CY 2012 | (465.6M) | (206.3M) | (671.9M) | (3.9M) | 0.6% |
| | CY 2013 | (444.7M) | (255.2M) | (699.9M) | (28.0M) | 4.2% |
| Post-ACA | CY 2014 | (174.2M) | (146.0M) | (320.1M) | 379.8M | -54.3% |
| | CY 2015 | (118.5M) | (145.4M) | (263.9M) | 56.2M | -17.6% |
| | CY 2016 | (147.2M) | (145.4M) | (292.6M) | (28.7M) | 10.9% |
| | CY 2017 | (133.8M) | (153.2M) | (286.9M) | 5.6M | -1.9% |
| | CY 2018 | (152.6M) | (152.7M) | (305.3M) | (18.4M) | 6.4% |

This is also true for the Colorado Indigent Care Program (CICP), which is a sliding fee discount program for low income Coloradans who do not qualify for Medicaid. CICP saw significant reductions to the program's population and associated write-off costs pre- to post-ACA (see Table 11), which are likely reflected in the reduction of hospital charity care.

⁴⁴ Amounts represent the costs associated with Charity Care and Bad Debt. In previous years, these amounts were expressed as charges written off.

⁴⁵ See footnote 25.

Table 11: Colorado Indigent Care Program Data⁴⁶

| Fiscal Year | Clients | Write off Costs (\$) |
|-------------|---------|----------------------|
| 2012-13 | 208,449 | 579,357,905 |
| 2013-14 | 106,196 | 379,678,081 |
| 2014-15 | 58,224 | 144,043,878 |
| 2015-16 | 50,338 | 134,157,594 |
| 2016-17 | 49,135 | 124,162,968 |
| 2017-18 | 49,118 | 128,672,717 |
| 2018-19 | 52,074 | 143,226,712 |

Regarding Medicaid trends, by 2018, after the enactment of the ACA, Medicaid under-reimbursement to hospitals increased to \$769.2 million, more than two times that of 2013 (see Table 8). Medicare payments stayed reasonably consistent during that time, and it may seem that Medicaid expansion would increase commercial insurance reimbursement from 2013 to 2018 to offset under-compensation; however, the comparative commercial insurance cost shift has consistently been greater than required to offset both the Medicaid and Medicare under-compensated care. Also expressed in Figure 4, Table 12 displays a summary of cost shifting by comparing under-compensation and commercial insurance payments. Following ACA implementation in 2014, commercial insurance payments have been consistently near or more than \$1 billion greater than the combined under-compensation of other payer types, resulting in overall payment-to-cost ratios increasing from 1.05 to 1.09. As hospital bad debt and charity care declined, commercial insurance payments to hospitals increased more than the amount needed to offset them, resulting in higher hospital margins.

Table 12: Cost Shift⁴⁷

| Year | Medicare Margins (\$) | Medicaid + CICIP/Self Pay/Other Margins (\$) ⁴⁸ | Total Under-Compensation (\$) | Commercial Margins (\$) | Overall Margins (\$) |
|---------|-----------------------|--|-------------------------------|-------------------------|----------------------|
| CY 2009 | (625.1M) | (1,098.0M) | (1,723.1M) | 2,140.2M | 417.0M |
| CY 2010 | (756.7M) | (695.6M) | (1,452.3M) | 1,997.9M | 545.7M |
| CY 2011 | (732.2M) | (823.2M) | (1,555.5M) | 2,287.4M | 731.9M |
| CY 2012 | (918.0M) | (811.0M) | (1,729.0M) | 2,450.1M | 721.1M |
| CY 2013 | (1,240.6M) | (576.3M) | (1,817.0M) | 2,411.4M | 594.5M |
| CY 2014 | (1,121.7M) | (765.5M) | (1,887.1M) | 2,737.7M | 850.6M |
| CY 2015 | (1,112.3M) | (564.9M) | (1,677.2M) | 2,717.4M | 1,040.2M |
| CY 2016 | (1,289.7M) | (783.8M) | (2,073.5M) | 3,226.2M | 1,152.7M |
| CY 2017 | (1,378.5M) | (1,064.4M) | (2,443.0M) | 3,513.5M | 1,070.5M |
| CY 2018 | (1,582.3M) | (925.8M) | (2,508.1M) | 3,880.9M | 1,372.8M |

⁴⁶ This data is from legislative reports submitted to the Colorado legislature by the Department of Health Care Policy & Financing and internal CICIP analysis. CICIP Annual reports are available at www.leg.state.co.us/library/reports.nsf/ReportsDoc.xsp?documentId=668CC9603367A20E872576CD006FA098.

⁴⁷ See footnote 25.

⁴⁸ The two groups were combined to simplify under-compensation from Medicaid, the uninsured, and other insurance types.

Table 12 offers financial evidence of cost shifting between 2009 and 2018. From Table 6, commercial insurance payments have increased significantly (from \$6 billion to \$9.4 billion) and comprise more than 55% of total hospital payments. Table 12 shows that Medicare under-compensation has increased from \$625.1 million to \$1.6 billion; however, with the passage of the CHCAA and subsequently the ACA, Medicaid and CICP/Self Pay/Other under-compensation has decreased from \$1.1 billion to \$925.8 million, compensating hospitals for a larger portion of their costs. **Hospital under-compensation from the combination of the Medicaid and CICP/Self Pay/Other group has declined since the CHCAA.**

Further, the dollar amount of total under-compensation has grown at a slower rate than commercial margins. Since 2009, total under-compensation has grown \$785 million, while commercial margins have grown \$1.7 billion: 2.2 times that of total under-compensation. **Consequently, Colorado’s hospital industry saw overall margins grow. Margins are more than what they were in 2009, concurrent with increases in Medicaid reimbursement and decreases to charity care and bad debt.** One conclusion could be that the benefits of Medicaid expansions and the ACA have not been passed on to commercial insurance employers or commercial insurance consumers by reducing commercial insurance hospital reimbursement demands, as reflected in the reimbursement contracts executed between insurance carriers and hospitals.

Regional Differences

Colorado is regionally diverse, and health care needs are equally diverse. Communities of the eastern plains have unique needs compared with those of the western slope. For example, diabetes, which is both costly and associated with other chronic conditions, is more prevalent in communities on the eastern plains than other regions of the state.⁴⁹ This section of the report explores Colorado’s regional hospital care costs, payments and margins.

For a better understanding of how regional differences impact health care costs, the Colorado Division of Insurance (DOI) classifies the various regions with similar health care costs.⁵⁰ See **Figure 28 of Appendix B** for Colorado DOI regions and the hospitals in each region. CHA provided data aggregated by DOI region for 2009 through 2018. To preserve hospital anonymity, CHA combined DOI regions as follows:

- DOI regions 1, 4 and 6: Boulder, Fort Collins and Greeley
- DOI regions 2 and 7: Colorado Springs and Pueblo
- DOI region 3: Denver Metro
- DOI regions 5 and 9: Grand Junction and West
- DOI region 8: East

As seen in **Figure 7** and in **Table 13**, for most years, Colorado Springs and Pueblo (DOI regions 2 and 7) and East (DOI region 8) have exhibited

⁴⁹ Colorado Department of Public Health & Environment. (2015). Diabetes’ Impact in Colorado. Retrieved from www.colorado.gov/pacific/sites/default/files/DC_Factsheet_Facts_For_Action_Diabetes_In_Colorado_November_2015.pdf.

⁵⁰ Department of Regulatory Agencies. (2016). Division of Insurance completes geographical rating area study [Press release]. Retrieved from www.colorado.gov/pacific/dora/news/division-insurance-completes-geographic-rating-area-study.

lower *overall* payment-to-cost ratios, while Grand Junction and West (DOI regions 5 and 9) and Boulder, Fort Collins and Greeley (DOI regions 1, 4 and 6) have exhibited higher overall payment-to-cost ratios.

Figure 7: Overall Payment-to-Cost Ratio, 2009 compared to 20⁵¹

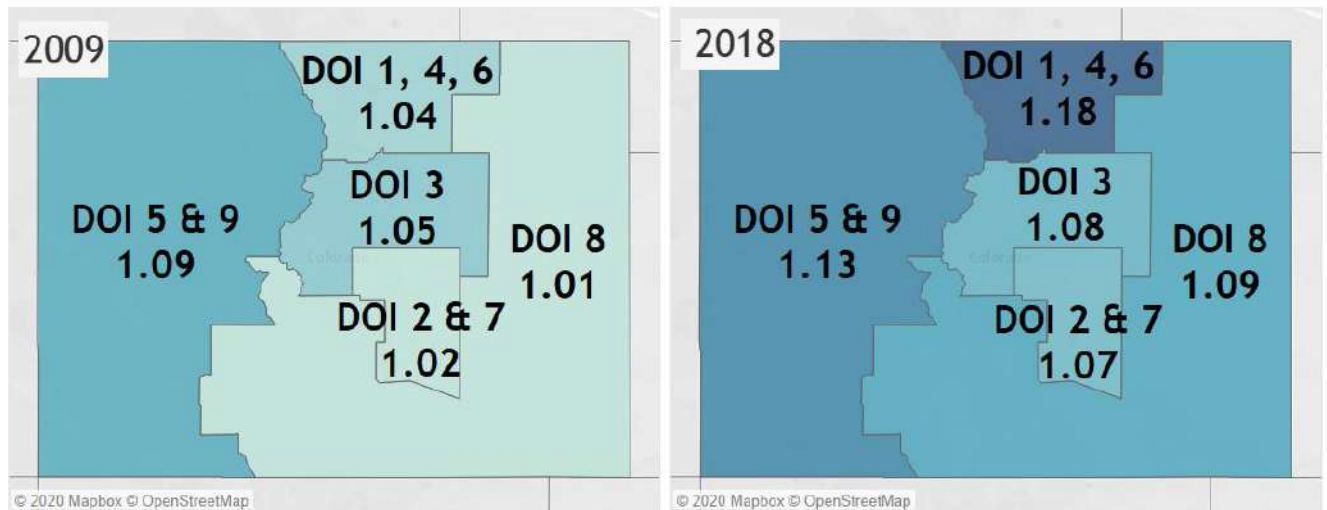


Table 13: Overall Payment-to-Cost Ratio Minimum and Maximum DOI Region⁵²

| Year | Overall Ratio | Regional Maximum | | Regional Minimum | | |
|---------|---------------|------------------|-------------|------------------|-----------|-----------------------------|
| | | Ratio | Region | Ratio | Region | |
| CY 2009 | 1.05 | 1.09 | DOI 5 & 9 | 1.01 | DOI 8 | East |
| CY 2010 | 1.06 | 1.10 | DOI 5 & 9 | 1.02 | DOI 8 | East |
| CY 2011 | 1.07 | 1.11 | DOI 5 & 9 | 1.00 | DOI 2 & 7 | Colorado Springs and Pueblo |
| CY 2012 | 1.07 | 1.11 | DOI 5 & 9 | 1.00 | DOI 2 & 7 | |
| CY 2013 | 1.05 | 1.11 | DOI 1, 4, 6 | 0.98 | DOI 2 & 7 | |
| CY 2014 | 1.07 | 1.11 | DOI 5 & 9 | 1.00 | DOI 2 & 7 | |
| CY 2015 | 1.08 | 1.13 | DOI 1, 4, 6 | 1.03 | DOI 2 & 7 | Grand Junction and West |
| CY 2016 | 1.09 | 1.16 | DOI 1, 4, 6 | 1.06 | DOI 2 & 7 | |
| CY 2017 | 1.07 | 1.15 | DOI 1, 4, 6 | 1.04 | DOI 5 & 9 | Grand Junction and West |
| CY 2018 | 1.09 | 1.18 | DOI 1, 4, 6 | 1.07 | DOI 2 & 7 | Colorado Springs and Pueblo |

⁵¹ See footnote 25.

⁵² See footnote 25.

To assess cost shifting practices, regional commercial insurance payment-to-cost ratios are displayed in Figure 8 and Table 14. To refresh, the payment-to-cost ratio equals payment divided by cost. If a region has a 1.16 payment-to-cost ratio, then, on aggregate, the region receives \$1.16 for every \$1.00 in hospital costs. A region is under-compensated for hospital costs when the payment-to-cost ratio is less than 1.00.

The Denver Metro region (DOI region 3) consistently has the lowest commercial insurance payment-to-cost ratio, but it has continued to rise over time. In 2018, the East region (DOI region 8) had the lowest payment-to-cost ratio. Boulder, Fort Collins and Greeley (DOI regions 1, 4 and 6) have higher commercial insurance payment-to-cost ratios for most years of data compared to all other regions. In fact, in 2016, commercial insurance payments for the Boulder, Fort Collins and Greeley regions (DOI regions 1, 4 and 6) were twice that of the commercial insurance portion of costs for the regions, resulting in the high overall payment-to-cost ratio seen in Table 14. The Grand Junction and West regions (DOI regions 5 and 9) have experienced growth in their commercial insurance payment-to-cost ratio, exceeding Boulder’s in 2018. Even though Colorado Springs and Pueblo commercial insurance payment-to-cost ratios have been the highest by region in early years, it has not resulted in high overall payment-to-cost ratios.

Figure 8: Commercial Insurance Payment-to-Cost Ratio ⁵³

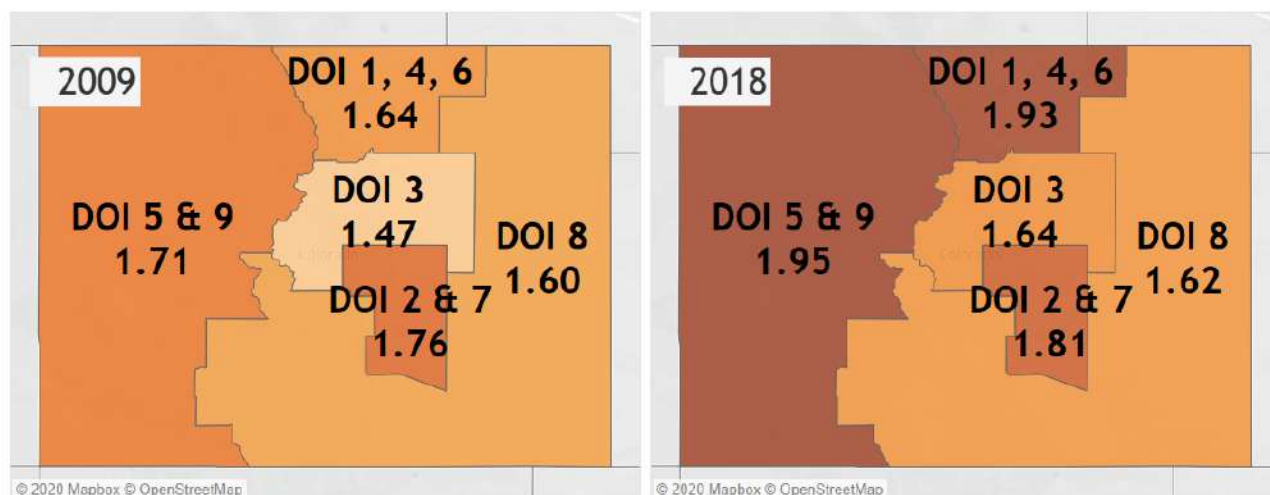


Table 14: Commercial Payment-to-Cost Ratio Minimum and Maximum DOI Region ⁵⁴

| Year | Overall Ratio | Regional Maximum | | Regional Minimum | |
|---------|---------------|------------------|-------------|------------------|--------|
| | | Ratio | Region | Ratio | Region |
| CY 2009 | 1.55 | 1.76 | DOI 2 & 7 | 1.47 | DOI 3 |
| CY 2010 | 1.49 | 1.66 | DOI 2 & 7 | 1.43 | DOI 3 |
| CY 2011 | 1.54 | 1.74 | DOI 2 & 7 | 1.48 | DOI 3 |
| CY 2012 | 1.54 | 1.80 | DOI 1, 4, 6 | 1.46 | DOI 3 |

⁵³ See footnote 25.

⁵⁴ See footnote 25.

| | Overall | Regional Maximum | | Regional Minimum | | | |
|---------|---------|------------------|-------------|-------------------------------------|-------|--------|------|
| Year | Ratio | Ratio | Region | | Ratio | Region | |
| CY 2013 | 1.52 | 1.83 | DOI 1, 4, 6 | Boulder, Ft. Collins, Greeley | 1.42 | DOI 3 | |
| CY 2014 | 1.59 | 1.89 | DOI 1, 4, 6 | | 1.50 | DOI 3 | |
| CY 2015 | 1.58 | 1.86 | DOI 1, 4, 6 | | 1.55 | DOI 3 | |
| CY 2016 | 1.64 | 2.05 | DOI 1, 4, 6 | | 1.59 | DOI 3 | |
| CY 2017 | 1.66 | 1.89 | DOI 1, 4, 6 | | 1.63 | DOI 3 | |
| CY 2018 | 1.70 | 1.95 | DOI 5 & 9 | Grand Junction and West | 1.62 | DOI 8 | East |

Regional disparities are important to this study because they reveal cost shifting trends across Colorado. This is especially evident in DOI regions with high payment-to-cost ratios. Such regions are concurrently experiencing growing infrastructure, with new hospitals entering already competitive markets (UCHealth Longs Peak and UCHealth Greeley) at the same time as existing hospitals rebuild and expand. For example, Saint Joseph’s built a new \$623 million dollar hospital in 2014, followed by the recent groundbreaking of the Saint Joseph’s hospital campus for a health care office space and commercial center.^{55,56} Conversely, one of two general hospitals in Pueblo County has closed its birthing center.⁵⁷ With the currently limited and aggregated financial data, analysis of specific hospital strategic business decisions and their impact is not possible. However, the data indicates **hospital cost shifting practices are regionally diverse.**

The compilation of DATABANK DOI data is presented in **Appendix B, including Figure 29 which shows the commercial payment-to-cost ratio and overall payment-to-cost ratio for each region over time.** The Department intends to continue investigating regional differences, as well as the effect that hospital cost control initiatives and lower margins have on Colorado’s DOI regions.

Cost, Payment and Margin

So far, this report has assessed the cost shift as an increase in the commercial insurance payment-to-cost ratio. To provide context for the drivers of cost shifting, another method to assess the cost shift is to assess its components: costs, payments and margins. It is important to analyze these variables in a per-unit variable to take into account patient volume, which is why adjusted discharges are used. As expressed in the Limitations section, this volume metric is what is available to the Department. As also discussed in the Limitations section, costs and payments are not adjusted for patient severity and the Medicaid and CICP/Self Pay/Other payer types are combined. See **Appendix C, Tables 42 through 44, as well as Figures 9 through 11** for payments per adjusted discharge, costs per adjusted discharge and margins

⁵⁵ Medical Construction & Design. (2015). Saint Joseph Hospital in Downtown Denver is Complete. Retrieved from <https://mcdmag.com/2015/01/saint-joseph-hospital-in-downtown-denver-is-complete/>.

⁵⁶ Medical Construction & Design. (2018). Fidelis to Develop 5-Story, 100,000-SF Facility for SCL/Saint Joseph. Retrieved from <https://mcdmag.com/2018/11/fidelis-to-develop-5-story-100000-sf-facility-for-scl-saint-joseph>.

⁵⁷ The Pueblo Chieftain. St. Mary-Corwin to close its birthing center, NICU. (2017, October 25). Retrieved from www.chieftain.com/223f3d18-f5ce-5ea0-8860-8cd8d0985be8.html.

per adjusted discharge. **Table 15** summarizes changes to overall hospital costs per adjusted discharge, overall payments per adjusted discharge and overall margins per adjusted discharge.

Table 15: Growth of Key Measures per Adjusted Discharge Between 2009 and 2018⁵⁸

| Measure per Adjusted Discharge | \$ Growth | % Growth | Average Annual % Growth |
|---------------------------------|-----------|----------|-------------------------|
| Overall patient service payment | \$6,452 | 52.8% | 5.9% |
| Overall patient service cost | \$5,472 | 46.9% | 5.2% |
| Overall patient service margin | \$980 | 182.2% | 20.2% |

Cost

Overall costs per adjusted discharge have grown from \$11,673 to \$17,145, growth of 46.9% over the period and 5.2% on average each year. Costs are allocated by payer type proportionally to charges, resulting in a range in costs per adjusted discharge amongst payer types. Medicare has the most charges per adjusted discharge and the highest costs per adjusted discharge. Medicaid/CICP/Self Pay/Other had the lowest cost per adjusted discharge.

Payment

Payment per adjusted discharge is a proxy for price per adjusted discharge. Analysis shows the payment per adjusted discharge is greatest for the commercial insurance payer type and lowest for the combination of Medicaid and CICP/Self Pay/Other payer type. Medicaid and CICP/Self Pay/Other had the highest payment per adjusted discharge growth rate, with 16.6% average annual growth over nine years. Commercial insurance payment per adjusted discharge saw a 5.4% average annual growth over nine years, with significant growth between 2015 and 2016 of 12.5%. Medicare saw "the lowest annual growth in payment per adjusted discharge over nine years at just 3.7%. These figures show that while under-compensation for Medicare has worsened per adjusted discharge, under-compensation for all other types has improved. Conversely, changes in commercial insurance more than cover the under-compensation from public and uninsured payer types and contribute to margins with the highest payment per adjusted discharge.

Margin

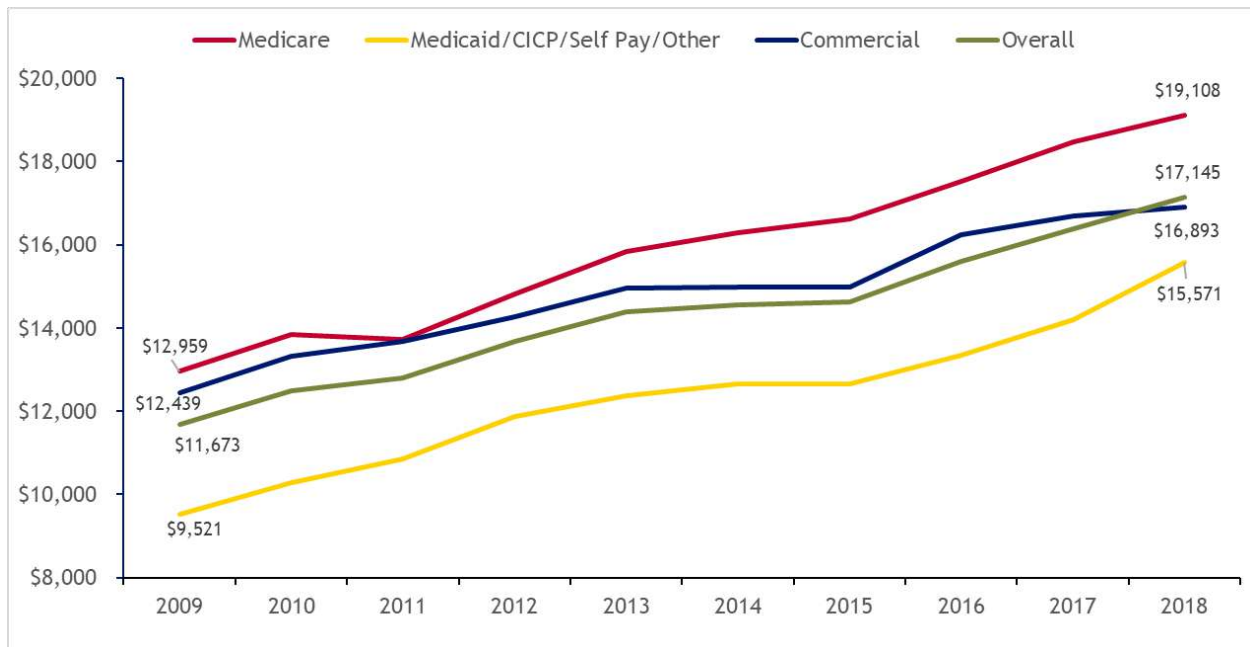
Overall, hospitals had relatively stable margins per adjusted discharge after the CHCAA was passed in 2009 (between \$696 and \$912 per adjusted discharge) until more recent years. **Following the ACA, margins per adjusted discharge increased to more than \$1,000 while there were nominal changes to volume (the number of commercial adjusted discharges**

⁵⁸ See footnote 25.

varied between 306,535 and 328,720 over the period). Also, compensation increased for Medicaid and Medicare patients, and hospitals experienced sizable decreases in bad debt and charity care. As of 2018, a hospital could expect \$1,518 in margins per adjusted discharge for all patients served: nearly three times the amount they received in 2009.

Growth in cost, payment and margins far exceeds that of inflation. Between 2009 and 2018, consumer price index growth was 17.4%.⁵⁹ Overall hospital payments per adjusted discharge grew 52.8%. Overall patient service costs per adjusted discharge grew 46.9%, and margins per adjusted discharge grew 182.2%.

Figure 9: Cost per Adjusted Discharge⁶⁰



⁵⁹ CPI Inflation Calculator. (n.d.). Retrieved from www.bls.gov/data/inflation_calculator.htm. Entry for January 2009 and January 2018.

⁶⁰ See footnote 25.

Figure 10: Payment per Adjusted Discharge⁶¹

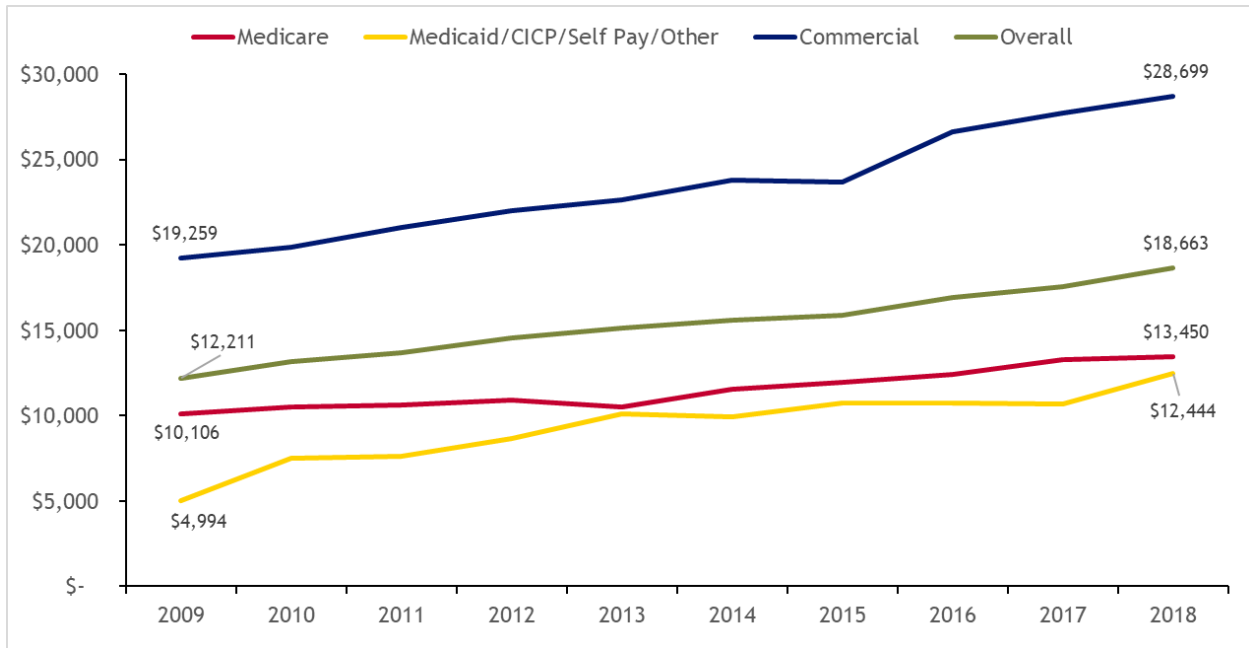
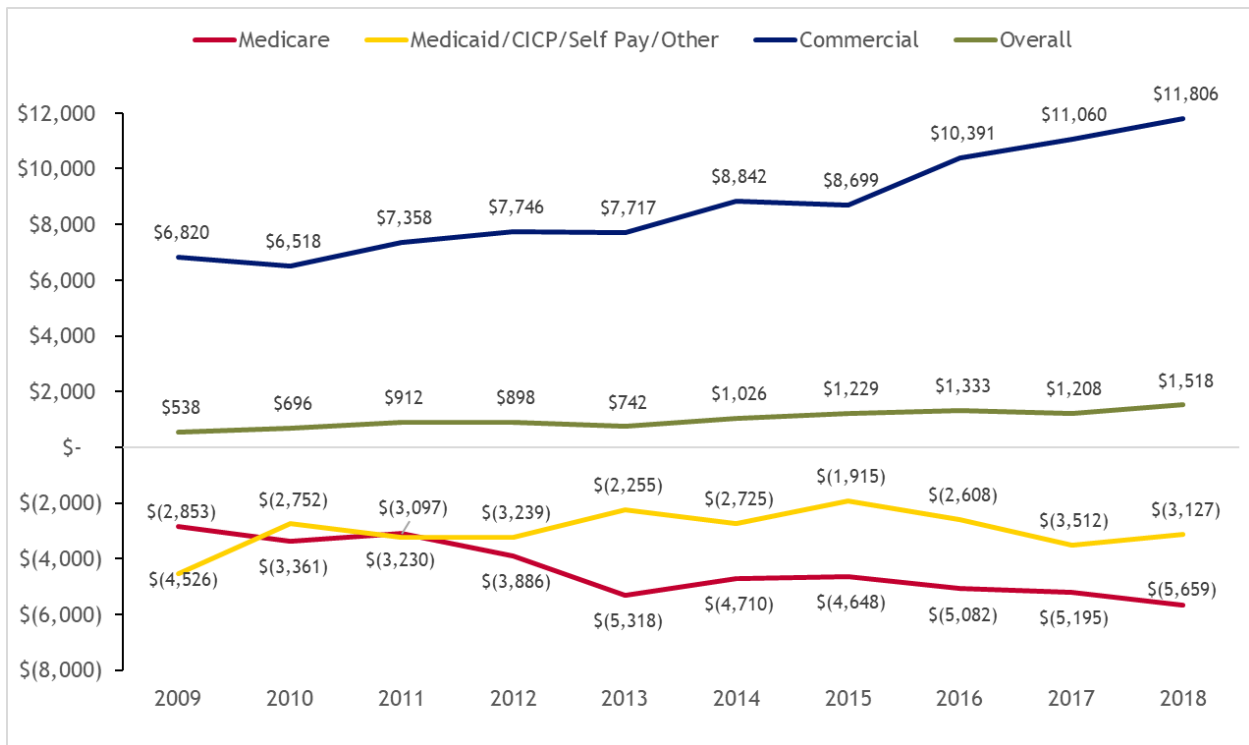


Figure 11: Margin per Adjusted Discharge⁶²



⁶¹ See footnote 25.

⁶² See footnote 25.

With the decrease in uninsured patients and no significant change in the volume of the commercial insurance patients, it appears hospitals could have stable margins without increasing the cost shift. **Figure 4** displays that rising commercial insurance margins have more than covered the costs related to under-compensation. Yet, aggregated data shows that commercial insurance payments increased relative to costs (see **Table 5**) along with overall margins per adjusted discharge (see **Table 44**). This results in the overall payment-to-cost ratio growing from 1.05 in 2009 to 1.09 in 2018, and overall margins per adjusted discharge nearly tripling over the same period, from \$538 to \$1,518. **It would appear that overall margins were fed by the rise in commercial insurance payments, and commercial insurance payments did not simply grow with under-compensation.**

Cost Growth

The costs hospitals incur by providing services to patients require further examination. Table 16 shows patient service cost (see Table 7 for a breakdown by payer type) and overall costs, which includes costs not associated with patient services. **Colorado patient service hospital costs have grown 71.3% over the 9-year period.**⁶³ In the most recent three (3) years of DATABANK data, hospitals reported \$1 billion annual increases in overall hospital costs each year. Overall costs grew from \$12.5 billion in 2015 to \$15.7 billion in 2018, averaging 8.4% per year.⁶⁴

Table 16: Hospital Costs⁶⁵

| Year | Patient Services (\$) | YOY Change (\$) | Growth | Other (\$) | Overall (\$) | YOY Change (\$) | Growth |
|---------|-----------------------|-----------------|--------|------------|--------------|-----------------|--------|
| CY 2009 | 9,052.3M | - | - | 198.4M | 9,250.7M | - | - |
| CY 2010 | 9,800.0M | 747.7M | 8.3% | 227.7M | 10,027.7M | 777.0M | 8.4% |
| CY 2011 | 10,262.6M | 462.6M | 4.7% | 158.0M | 10,420.6M | 392.9M | 3.9% |
| CY 2012 | 10,984.9M | 722.3M | 7.0% | 160.5M | 11,145.4M | 724.8M | 7.0% |
| CY 2013 | 11,525.2M | 540.3M | 4.9% | 168.3M | 11,693.6M | 548.2M | 4.9% |
| CY 2014 | 12,069.9M | 544.7M | 4.7% | 161.1M | 12,231.1M | 537.5M | 4.6% |
| CY 2015 | 12,384.5M | 314.5M | 2.6% | 153.7M | 12,538.2M | 307.1M | 2.5% |
| CY 2016 | 13,498.8M | 1,114.3M | 9.0% | 172.2M | 13,670.9M | 1,132.8M | 9.0% |
| CY 2017 | 14,506.2M | 1,007.4M | 7.5% | 174.4M | 14,680.6M | 1,009.7M | 7.4% |
| CY 2018 | 15,506.1M | 999.9M | 6.9% | 182.4M | 15,688.5M | 1,007.9M | 6.9% |

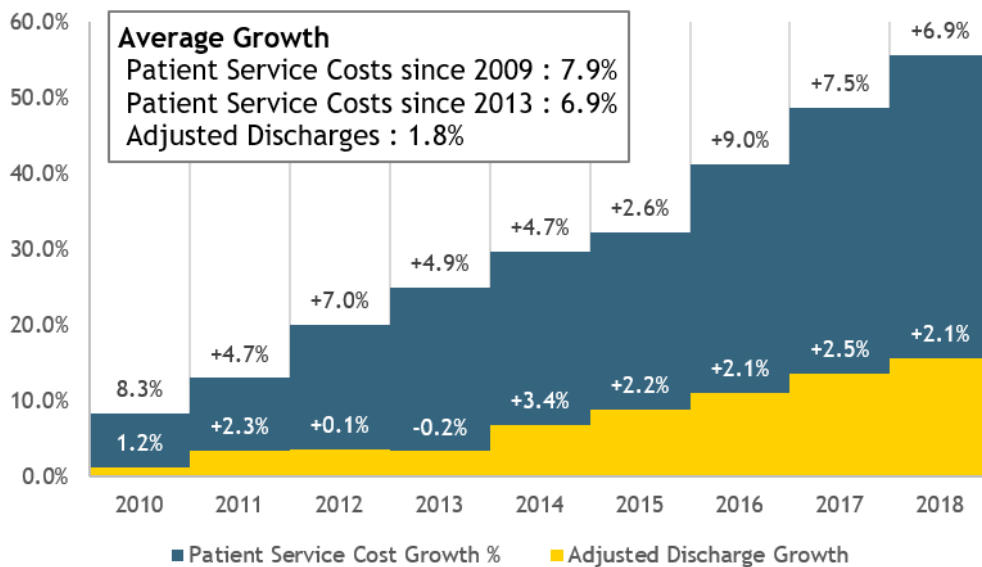
⁶³ Growth between 2009 and 2018 is calculated then divided by nine to find average annual growth between 2009 and 2018.

⁶⁴ See footnote 25.

⁶⁵ See footnote 25. Rounding may cause discrepancies.

To determine if the cost growth is driven by the increase in volume of services, cost growth is compared to patient volume (adjusted discharges) growth. This is illustrated in **Figure 12**, which shows that aggregate patient service costs (cost growth) have grown at a greater rate than adjusted discharges. **Colorado patient service hospital cost between 2009 and 2018 has grown 71.3% over the nine-year period, an average of 7.9% per year, while patient volume (adjusted discharges) only grew 16.6%, or an average of 1.8% per year.** Inflation over the nine-year period was 17.4%, or, on average, 1.9% per year, indicating that something beyond inflation and volume is driving costs.⁶⁶ **Hospital cost growth has significantly surpassed volume growth and inflation. This could indicate an opportunity for delivery system efficiency.**

Figure 12: Overall Cost Growth Comparison⁶⁷



From 2009 through 2018, the annual average patient services cost growth was 7.9% and average overall cost growth was 7.7%. This growth rate can be compared with other inflation factors, such as the Consumer Price Index and Producer Price Index for hospital services. Colorado cost growth can also be compared with the national average cost growth for hospital consumer services, which is more than twice that of the production index for hospital services.^{68,69} **Colorado hospital patient service costs have exceeded all of these indices (see Table 17).**

⁶⁶ See footnote 59.

⁶⁷ See footnote 25.

⁶⁸ National Bureau of Labor Statistics. (2018). Consumer Price Index: Hospital and related services in U.S. city average, all urban consumers, not seasonally adjusted, 2009 through 2017. Retrieved from www.bls.gov/.

⁶⁹ National Bureau of Labor Statistics. (2018). Producer Price Index: PPI industry group data for General medical and surgical hospitals, not seasonally adjusted, 2009 through 2017. Retrieved from www.bls.gov/.

Table 17: Average Growth of Key Indices^{70,71,72}

| Source | Average Growth Over Nine Years |
|--|--------------------------------|
| DATABANK - Patient Service Cost | 7.9% |
| Consumer Price Index for Hospital Services | 5.9% |
| Production Price Index for Hospital Services | 2.1% |
| Medicare Cost Report - National | 4.6% |

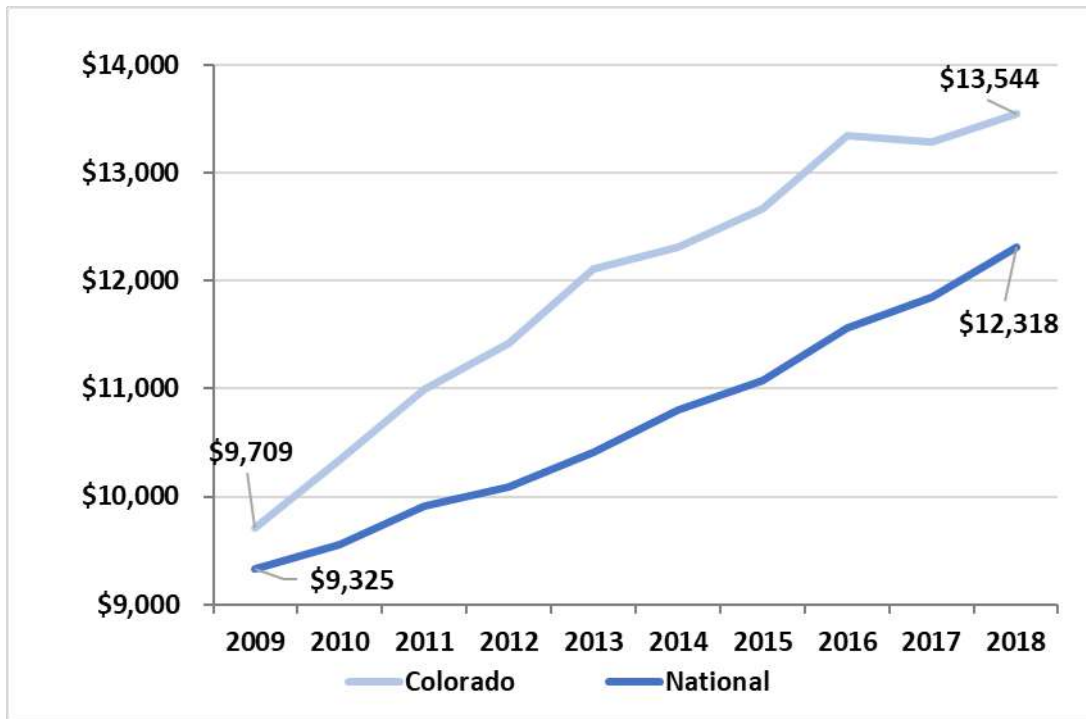
Analysis using an independent data source was performed to further test if the growth is normal when compared to the nation. **Figure 13** shows operating expenses from the Medicare Cost Report per adjusted discharge for Colorado and the nation. **Colorado’s hospital operating expense per adjusted discharge grew by 39.5% between 2009 and 2018, averaging 4.4% growth each year, while national hospital operating expense per adjusted discharge grew 32.1%, an average of 3.6% each year. The Medicare Cost Report data shows that Colorado hospitals’ operating expenses per adjusted discharge are now 9.9% higher than the national hospital operating expenses per adjusted discharge.**

⁷⁰ See footnote 25.

⁷¹ See footnote 68.

⁷² See footnote 69.

Figure 13: Hospital-Only Operating Expense per Adjusted Discharge⁷³



In addition to the Medicare Cost Report, other sources indicate Colorado hospitals' costs are higher than hospitals' costs nationally. The Kaiser Family Foundation's data for hospital adjusted expenses per inpatient day show that, per utilization of services, Colorado hospitals' costs are higher than hospital costs nationally.⁷⁴ Ranked the tenth highest in the nation (10 of 51 states plus Washington, D.C.) in hospital adjusted expenses per inpatient day. Colorado hospitals' service costs exceed the vast majority of hospital service costs in other states.⁷⁵ **Colorado has been one of the top 10 states for hospital service costs since 2013.**

Section Conclusion

The financial review of the DATABANK dataset displays that, since the CHCAA was implemented, hospitals have received more reimbursement from the insurance payer types that drive the cost shift, but the cost shift has not improved. Colorado hospitals incur some of the highest costs in nation, and those hospital costs grew beyond volume and inflation. Colorado hospital margins are now higher than they have ever been.

⁷³ Data generated from Medicaid cost reports specifically for the Department by consultants. Methodology: Data is sourced from the Medicare Cost Report. Medicare non-reimbursable costs and costs associated with interns and residents are excluded. Hospitals with values either hospital-only operating expense, hospital-only admin costs, hospital-only capital costs, net patient revenue, total operating expenses, total revenue, inpatient revenue or discharges less than or equal to 1 are excluded. Only hospitals with Medicare cost reports representing a full year are included. Only hospitals designated as short-stay hospitals are included. Hospitals determined as outliers are removed.

⁷⁴ The Kaiser Family Foundation State Health Facts. Data Source: Health Forum LLC. (2018). 1999 - 2017 AHA Annual Survey. Available at www.ahaonlinestore.com. Retrieved from <https://www.kff.org/health-costs/state-indicator/expenses-per-inpatient-day/>

⁷⁵ See footnote 74.

Drivers of Cost Shifting

This section covers external uncertainties affecting the cost shift – such as payer case mix changes, Medicaid expansion and uncertainties facing hospital providers – and how they may be influencing rising commercial payments. It also introduces potential drivers internal to the hospital care industry that may be driving hospital pricing.

External Factors

This section explores potential external factors that may be impacting cost shifting.

Payer Mix and Volume

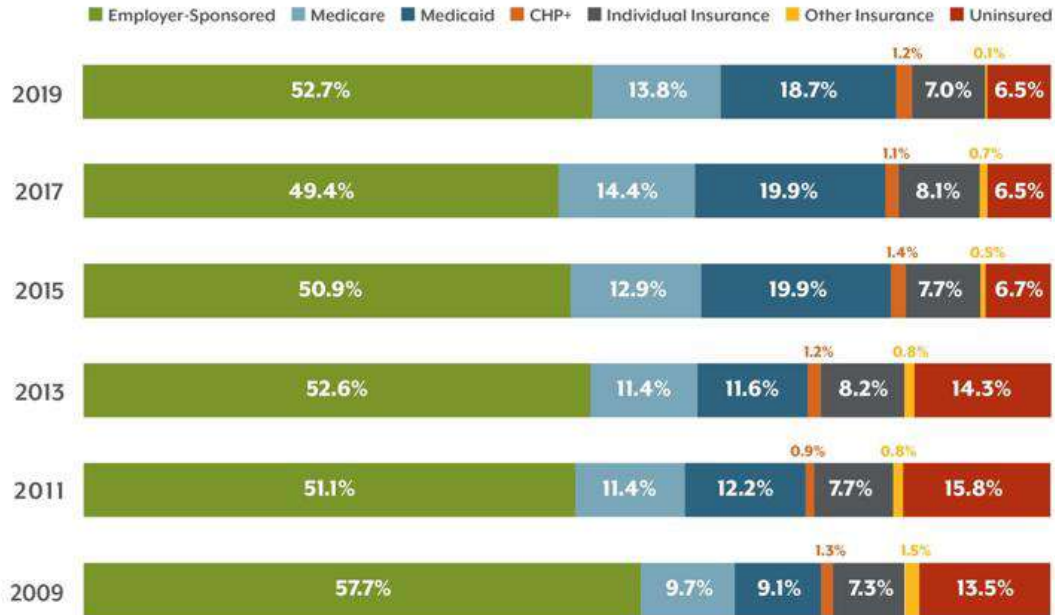
One aspect impacting a hospital's cost shift to commercial payers is the types of coverage a hospital's patients have – in the aggregate. Some hospitals have more patients covered by Medicare and Medicaid, while others have higher numbers of patients with commercial coverage, and still others have more patients with no health insurance at all. In the industry, this is called “payer mix.” Health insurance coverage in Colorado has improved significantly since 2009, according to the 2019 Colorado Health Access Survey from Colorado Health Institute (see **Figure 14**)⁷⁶. In fact, the proportion of uninsured Coloradans went from 13.5% in 2009 to as high as 15.8% in 2011 and down to 6.5% in 2019, decreasing more than 50% overall. Further, the data shows Medicare and Medicaid enrollment respectively increasing by 48.5% and 105.5%, while the proportion of employer-sponsored health insurance coverage decreased by 8.7% between 2009 to 2019.

⁷⁶ See footnote 20.

Figure 14: Statewide Health Care Coverage for Colorado⁷⁷

A Changing Health Coverage Landscape

Health Insurance Coverage, All Ages, 2009-2019



To better understand the impact of these changes on hospitals, this report reviews hospital payer mix. See **Table 18** for a percentage breakdown of the gross hospital charges according to each payer, which corroborates the 2019 Colorado Health Access Survey findings: commercial insurance now represents a smaller portion of services provided, the uninsured portion of services has declined, there has been a significant increase in Medicaid service and a slight increase in Medicare service.

Table 18: Colorado Hospital Payer Mix by Type⁷⁸

| Year | Medicare | Medicaid | Commercial and Self-Funded Coverage | CICP/Self Pay/Other | Total |
|---------|----------|----------|-------------------------------------|---------------------|-------|
| CY 2009 | 31.4% | 11.5% | 43.1% | 14.0% | 100% |
| CY 2010 | 31.8% | 12.1% | 41.7% | 14.5% | 100% |
| CY 2011 | 31.6% | 12.5% | 41.4% | 14.5% | 100% |
| CY 2012 | 31.9% | 13.3% | 41.1% | 13.8% | 100% |
| CY 2013 | 32.1% | 14.1% | 40.5% | 13.3% | 100% |
| CY 2014 | 32.1% | 19.9% | 38.4% | 9.6% | 100% |

⁷⁷ See footnote 76.

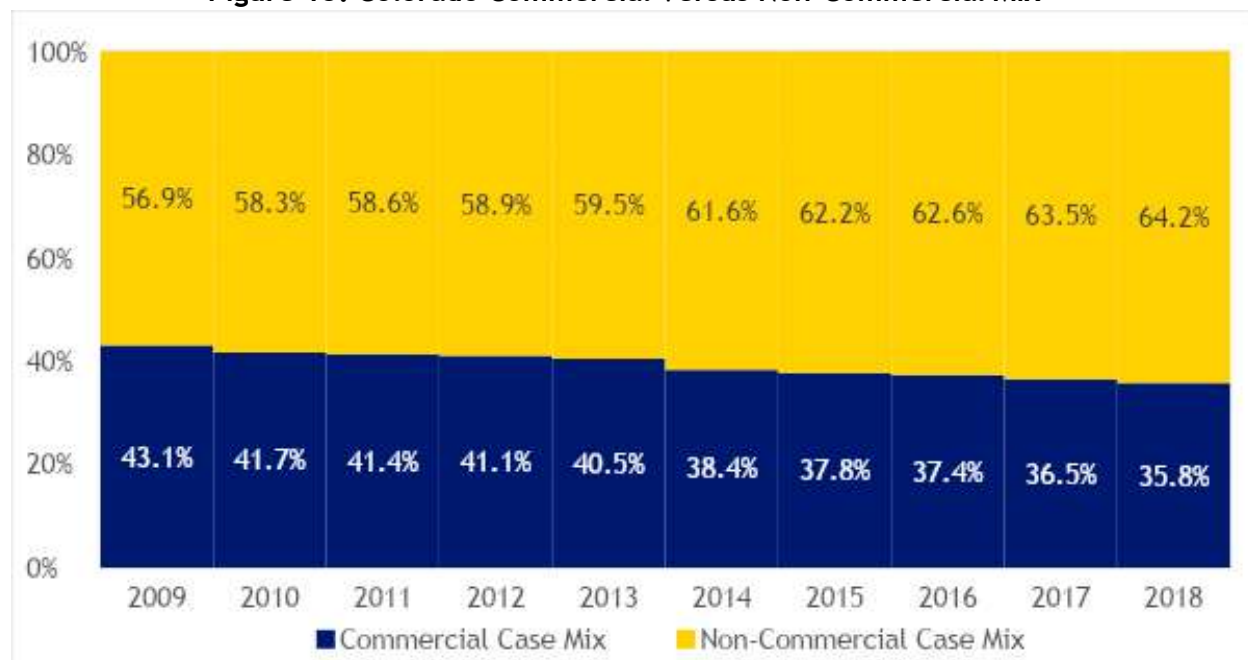
⁷⁸ See footnote 25.

| Year | Medicare | Medicaid | Commercial and Self-Funded Coverage | CICP/Self Pay/Other | Total |
|---------|----------|----------|-------------------------------------|---------------------|-------|
| CY 2015 | 32.1% | 21.6% | 37.8% | 8.6% | 100% |
| CY 2016 | 32.9% | 21.7% | 37.4% | 8.1% | 100% |
| CY 2017 | 33.8% | 21.8% | 36.5% | 7.8% | 100% |
| CY 2018 | 34.5% | 21.3% | 35.8% | 8.4% | 100% |

Changes to Colorado’s payer mix have several impacts. There is a social benefit as more people are financially supported by health insurance and fewer people are burdened with medical debt. Hospitals also have lower charity care and bad debt due to the decrease in uninsured patients. However, the commercial insurance payer mix has slightly declined because of an aging population, which increases the Medicare payer mix as well as shifts from Medicaid’s expansions. Between 2013 and 2014, the majority of Medicaid’s payer mix increase was from the uninsured, but some was also from the commercial insurance payer group.

To simplify the analysis of changes in payer mix, payer types are segregated by commercial insurance versus non-commercial insurance. **Figure 15** displays payer mix for the commercially insured compared to all others. From 2009 to 2018, the commercial insurance proportion of payer mix declined from 43.1% to 35.8%, a difference of 7.3% representing a 16.9% decline over the period.

Figure 15: Colorado Commercial Versus Non-Commercial Mix⁷⁹



⁷⁹ See footnote 25.

Payer mix proportions do not address an increase or decrease in payer type volume. To study payer mix volume changes, quantities are normalized by *adjusted discharges*. Adjusted discharges are a metric of hospital services that combine inpatient and outpatient services by applying the outpatient to inpatient revenue ratio to inpatient discharges. The impact of payer mix *and* patient volume is analyzed by comparing multiple years to 2009 levels normalized by adjusted discharges. **Table 19** shows adjusted discharges by payer type. Volume trends indicate that adjusted discharges increased from Medicaid and Medicare patient volume while decreases to the CICIP/Self Pay/Other category were offset by the large increases to Medicaid patient volume. **This resulted in patient volume increases of 16.6% between 2009 and 2018.** During that same period, there were minor fluctuations (up and down) in commercial insurance patient volume.

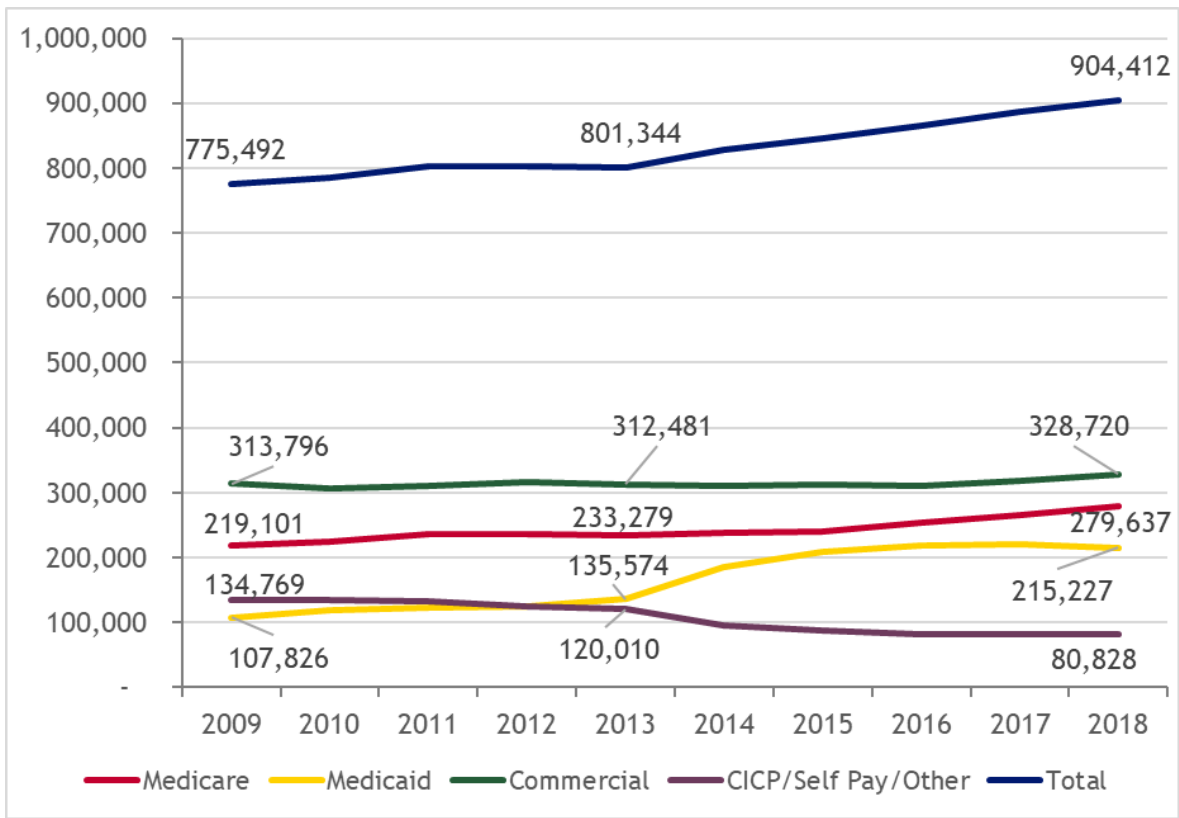
Table 19: Adjusted Discharges as a Percent of Overall Adjusted Discharges in 2009⁸⁰

| Year | Medicare | Medicaid | Commercial | CICIP/Self Pay/Other | Total |
|---------|----------|----------|------------|----------------------|--------|
| CY 2009 | 28.3% | 13.9% | 40.5% | 17.4% | 100.0% |
| CY 2010 | 29.0% | 15.2% | 39.5% | 17.4% | 101.2% |
| CY 2011 | 30.5% | 15.8% | 40.1% | 17.0% | 103.4% |
| CY 2012 | 30.5% | 16.1% | 40.8% | 16.1% | 103.5% |
| CY 2013 | 30.1% | 17.5% | 40.3% | 15.5% | 103.3% |
| CY 2014 | 30.7% | 24.0% | 39.9% | 12.2% | 106.9% |
| CY 2015 | 30.9% | 26.8% | 40.3% | 11.2% | 109.2% |
| CY 2016 | 32.7% | 28.2% | 40.0% | 10.6% | 111.5% |
| CY 2017 | 34.2% | 28.5% | 41.0% | 10.6% | 114.3% |
| CY 2018 | 36.1% | 27.8% | 42.4% | 10.4% | 116.6% |

Table 41 in **Appendix C** displays adjusted discharges for all payer types, and **Figure 16** visually shows this data. Overall adjusted discharges are not calculated from overall figures, but are summed. Analysis includes numbers through 2018, and does not reflect those of the *2020 CHASE Annual Report*.

⁸⁰ See footnote 25.

Figure 16: Adjusted Discharges⁸¹



Adjusted discharges reflect the patient mix shifts described above by showing a decrease in the CACP/Self Pay/Other payer type category that corresponds with the increase in the Medicaid payer type category. Commercial insurance patient volume remained relatively stable despite other patient mix changes, and government insurance patient volume increased.

Findings in this section suggest that there was a change in payer mix, including more than a 50% reduction in uninsured Coloradans. Availability of individual health insurance through the health care marketplace and Medicaid expansion is responsible for the reduction in uninsured. Medicaid membership doubled from 2009 to 2018. **The shift in patient payer mix did not reduce commercial insurance patient volume; Medicaid patient volume increased with an associated uninsured patient volume decrease, to the financial benefit of Colorado hospitals.**

Colorado's Health-Conscious Market

Another piece to examine in the hospital care market is the amount Colorado consumers are spending on health care. This section assesses Colorado health care medical claim spending and utilization, and per capita medical claim spending.

⁸¹ See footnote 25.

To understand Colorado’s health care consumer spending and quality in relation to the national average, the Commonwealth Fund recently published a study that assesses claims data and quality across Medicare and employer-sponsored insurance nationwide. Notably, the study shows that Medicare inpatient expenditures in Colorado are 15% less than the national average for inpatient services while offering 5% higher quality care (see Figure 17).

Figure 17: Inpatient Spending per Beneficiary Versus Hospital Quality Score⁸²

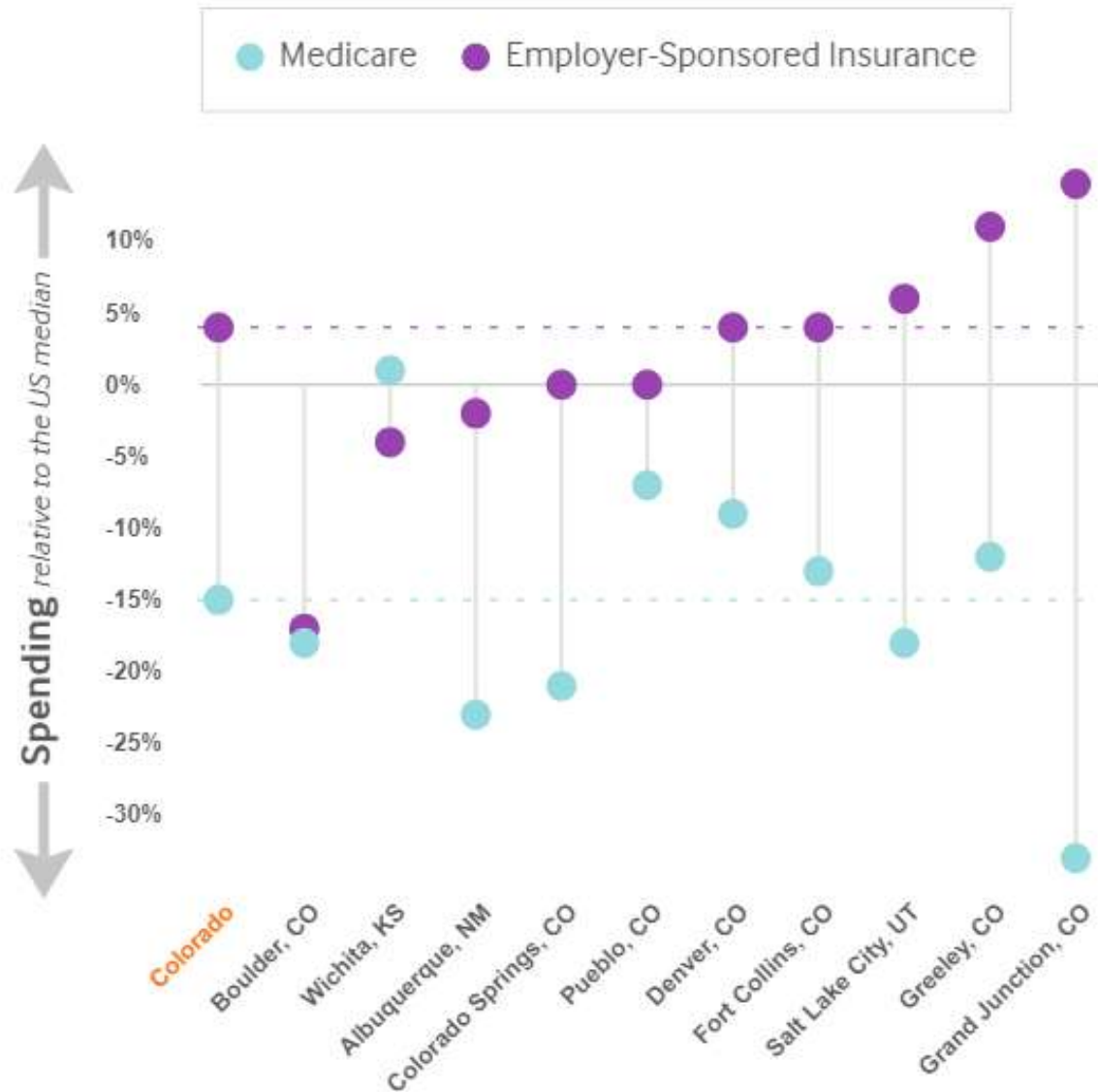


For a direct comparison of the Medicare and employer-sponsored medical claim spending data across Colorado and bordering states, see Figure 18. According to this data, Colorado employer-sponsored inpatient beneficiaries spend 4% more than the nation and there are regional differences across Colorado. Inpatient medical claim spending in Boulder is 17% lower for the employer-sponsored beneficiaries and 18% lower for Medicare beneficiaries than the national median. Conversely, inpatient medical claim spending in Grand Junction varies greatly between the two coverage plans. Grand Junction Medicare beneficiaries’ medical

⁸² The Commonwealth Fund. (2018). Health Care Quality-Spending Interactive. Retrieved from www.commonwealthfund.org/health-care-quality-spending-interactive . Original source cited for data year: 2016 - Geographic Variation Public Use File, May 2018 (CMS Office of Information Products and Analytics).

claim spending is 33% lower than the national median, and employer-sponsored enrollees' medical claim spending is 14% higher than the national median.

Figure 18: Inpatient Spending per Enrollee/Beneficiary⁸³



In line with the Commonwealth Fund findings, data compiled by the Kaiser Family Foundation (2018) shows that Colorado is on the lower end of the spectrum of health care expenditures per capita when compared to all other states.⁸⁴ In 2014, Colorado ranked 47 out of 51 in health care expenditures per capita, with a state average of \$6,804; indicating that we are on

⁸³ See footnote 82.

⁸⁴ The Kaiser Family Foundation State Health Facts. Data Source: Agency for Healthcare Research and Quality, Center for Financing, Access and Cost Trends. (2017). *Medical Expenditure Panel Survey (MEPS)- Insurance Component, 2013-2017; Tables II.C.1, II.C.2, II.C.3*. Available from www.ahrq.gov/ and Centers for Medicare and Medicaid Services. (2017). *National Health Expenditure Data: Health Expenditures by State of Residence*. Available from www.cms.gov/ and US Bureau of the Census. (2017). *US Population by State, 2001-2014*. Retrieved from www.kff.org/other/state-indicator/health-spending-per-capita/

the low end of spending per capita.⁸⁵ This is 15.4% below the national average of \$8,045. The study also breaks down the average health care expenditures according to service, with Colorado ranked 42 out of 51 for hospital care expenditures per capita (Table 20).⁸⁶ This is evidence that Colorado has low health care and hospital care spending, but is also a contradiction to how the market should react. If health care spending is low, then commercial insurance costs should be low as well, but they are not. Per capita health care and hospital care spending is lower than the nation, but commercial insurance spending is higher than the nation (Table 20). In addition, the values for commercial insurance expenditures and premiums do not reflect the regional extremes in Colorado. The Division of Insurance (DOI) reports that for the same 2020 Anthem Silver on-exchange plans, premiums can range from \$366.73 to \$521.83 depending on the DOI region, a range of \$214.93.⁸⁷ In 2019, Anthem Silver on-exchange plans had an even greater range between DOI regions of \$340.79.⁸⁸

Table 20: Expenditures per Capita⁸⁹

| | Colorado (\$) | National Average (\$) | Colorado Ranking ⁹⁰ |
|--|---------------|-----------------------|--------------------------------|
| Health Care (2014) | \$6,804 | \$8,045 | 47 |
| Hospital Care (2014) | \$2,379 | \$3,079 | 42 |
| Private [Commercial] Insurance (2014) | \$4,623 | \$4,551 | 19 |
| Average Annual Single Premium per Enrolled Employee for Employer-Based Health Insurance (2017) | \$6,456 | \$6,368 | 19 |

So, how can Colorado have lower health care spending per person than the nation, but higher commercial insurance costs than the nation? It is important to address this contradiction since health care and hospital care expenditures per capita analysis is presented as evidence that Colorado has low hospital care consumer costs, which other analyses have contradicted.

One explanation has to do with the base of the research itself and the use of per capita research in Colorado, as opposed to the use of a per utilization metric for research in Colorado. Per capita research does not address how much it costs to do something when it is required. The metric would only be meaningful if expenditures were evenly distributed across patients, families and employers, but they are not. In fact, data reporting low per capita expenditures may be a reflection of the denominator “per capita”; because there are more total people than utilizers, the numerator of the research is diluted. For instance, Colorado

⁸⁵ See footnote 84.

⁸⁶ See footnote 84.

⁸⁷ Colorado Department of Regulatory Agency. (2019). 2020 Individual Silver On-Exchange Plans vs. Off Exchange Substantially Similar Silver Plans Retrieved from www.colorado.gov/pacific/dora/health-insurance-plan-filings-and-approved-plans.

⁸⁸ Colorado Department of Regulatory Agency. (2018). 2019 Individual Silver On-Exchange Plans vs. Off Exchange Substantially Similar Silver Plans Retrieved from www.colorado.gov/pacific/dora/health-insurance-plan-filings-and-approved-plans.

⁸⁹ See footnote 84.

⁹⁰ Rank is descending from highest to lowest. The District of Columbia is included.

continues to rank as one of the healthiest states, with 86.6% of Coloradans reporting good, very good or excellent health according to Colorado Health Institute (2017).⁹¹ In addition to being one of the healthiest states, Coloradans are also well educated. According to a Wallethub (2018) analysis, Colorado ranks high in educational attainment (2 out of 51) and is a well-educated state (5 out of 51).⁹² Colorado also ranks healthier than most other states for dimensions of health that are related to chronic diseases, particularly obesity.⁹³ **These characteristics are attributed to the utilization of preventive care as opposed to the utilization of hospital services. In fact, supplemental data shows the use of hospital inpatient services is far less in Colorado than other states (see Table 21). Coloradans use inpatient services at a rate 30.6% lower than the national average.**

Table 21: Colorado Hospital Services per 1,000 People⁹⁴

| | Colorado | National Average | Colorado Ranking ⁹⁵ |
|--|----------|------------------|--------------------------------|
| Hospital Inpatient Days per 1,000 Population (2017) | 397 | 572 | 49 |
| Hospital Outpatient Visits per 1,000 Population (2017) | 1,665 | 2,352 | 44 |

Another report looking at health care and hospital care consumer spending was developed by the Network for Regional Healthcare Improvement along with contributing organizations. It includes a comparative analysis of states' health care costs using such metrics as the health of the population, utilization and the price of services to measure increasing health care costs.

⁹¹ See footnote 76.

⁹² Bernardo, R. (2018). 2018's Most & Least Educated States in America. Retrieved August 31, 2018, from www.wallethub.com/edu/most-educated-states/31075/.

⁹³ United Health Foundation. (2017). America's Health Rankings Annual Report. Retrieved from www.assets.americashealthrankings.org/app/uploads/ahrannual17_complete-121817.pdf.

⁹⁴ The Kaiser Family Foundation State Health Facts. Data Source: Health Forum, LLC. (2018). 1999 - 2017 AHA Annual Survey, Available from at www.ahaonlinestore.com and U.S. Census Bureau. Population data from Annual Population Estimates by State, Available from www.census.gov/popest/. Retrieved from www.kff.org/state-category/providers-service-use/

⁹⁵ Rank is descending from highest to lowest. The District of Columbia is included.

Figure 19 displays that, in 2016, inpatient service consumer costs in Colorado were 21% higher compared to other states within this study, and that inpatient services are driven by price: 31% above the average, not utilization (-8% below the average).⁹⁶ Colorado’s outpatient service consumer costs were 34% above the average of the group of states, driven by both higher utilization (17% above average) and price (15% above average).⁹⁷ **This study shows that comparably healthy states like Oregon and Utah⁹⁸ pay substantially less overall total cost of care than Coloradans.⁹⁹**

Figure 19: Relative Total Cost of Care by Service Category Among Six Regions¹⁰⁰

Total Cost of Care by Service Category
Commercial Population 2016
Combined Attributed and Unattributed

| Measure | Colorado | Maryland | Minnesota | Oregon | St. Louis, MO | Utah |
|---------------------|----------|----------|-----------|--------|---------------|------|
| Total Cost | | | | | | |
| Overall | 19% | -20% | 11% | 4% | -6% | -4% |
| Inpatient | 21% | -27% | 12% | 5% | -13% | 8% |
| Outpatient | 34% | -34% | 3% | 0% | 1% | 5% |
| Professional | 2% | -16% | 30% | 18% | -22% | -9% |
| Pharmacy | 28% | -3% | -10% | -16% | 15% | -14% |
| Resource Use | | | | | | |
| Overall | 5% | -7% | 7% | -10% | 10% | -5% |
| Inpatient | -8% | -10% | 9% | -16% | 13% | 13% |
| Outpatient | 17% | -26% | 6% | -24% | 29% | 3% |
| Professional | -4% | 2% | 17% | -3% | -5% | -8% |
| Pharmacy | 22% | -4% | -16% | -7% | 21% | -17% |
| Price | | | | | | |
| Overall | 13% | -14% | 4% | 16% | -15% | 1% |
| Inpatient | 31% | -19% | 3% | 25% | -23% | -4% |
| Outpatient | 15% | -11% | -3% | 32% | -22% | 3% |
| Professional | 7% | -18% | 11% | 22% | -17% | -1% |
| Pharmacy | 5% | 1% | 7% | -10% | -5% | 4% |

Note: This is the midpoint of the ranges created from the sensitivity analysis and represents the percent about or below the risk adjusted average across all regions.

Although Colorado’s health care and hospital cost per capita is lower than the national average, the Network for Regional Healthcare Improvement data suggests consumer health care cost for those who need it are higher than other comparative states. The Department believes that low per capita consumer costs are tied to Coloradans’ healthy population, who use preventive care and outpatient services, and this is validated by the Network for Regional Healthcare Improvement’s comparative analysis. Lower consumer health care costs per capita reflect a health-conscious population who invest in preventive care instead of letting health

⁹⁶ Network for Regional Healthcare Improvement. (2018). Healthcare Affordability: Data is the Spark, Collaboration is the Fuel. Retrieved from www.nrhi.org/uploads/rwj_tcoc_phaseiii_benchmark_2018_r7.pdf. CIVHC has also released an analysis of the 2015 findings of the Network for Regional Healthcare Improvement multi-state analysis that is available from www.civhc.org/wp-content/uploads/2018/02/Total-Cost-of-Care-Spot-Analysis.pdf

⁹⁷ See footnote 96.

⁹⁸ See footnote 93.

⁹⁹ See footnote 96.

¹⁰⁰ See footnote 96.

problems escalate into bigger, more expensive medical concerns. The Department is currently exploring an appropriate measure of Colorado’s consumer health care costs for future research and analysis.

External Uncertainties

Hospitals, like most businesses, must account for external factors that influence organizational decisions in forecasting revenue and budgeting. In line with other health care providers, hospitals consider state and/or federal health care policy, ongoing state budgetary pressures, economic downturns, an aging population, changing local community demographics, and the like.

External uncertainties that may influence hospital financial planning and strategic decisions include the following:

Uncertainty in Payments

- **2016 and 2017 TABOR Reductions to the Hospital Provider Fee**

In 2016 and 2017, the Colorado General Assembly reduced the amount of money collected for hospital provider fees to remain within the Taxpayers Bill Of Rights (TABOR) revenue limit.^{101,102} For 2016, the provider fee was reduced by approximately \$100 million, which resulted in an approximately \$200 million reduction in supplemental payments. For 2017, a similar proposal was scheduled to reduce the hospital fees collected by approximately \$250 million, or \$500 million in supplemental payments when including the federal match. However, with the passage of Senate Bill 17-267, which repealed the CHCAA and enacted CHASE, the reductions for 2017 did not occur.

Although TABOR reductions may have caused uncertainty for hospital providers, hospitals were not anticipating any revenue from the hospital provider fee for these years; specifically, in 2009, the legislative council predicted the impact of TABOR revenue limits on the hospital provider fee. Hospitals should be factoring in these types of risks when forecasting future revenues.

- **TABOR Lawsuit**

In 2015, the TABOR Foundation brought forth a lawsuit on the Department’s collection of hospital provider fees. On March 5, 2019, the Denver District Court found in the Department’s favor on all points. Subsequently, the TABOR Foundation appealed its case to the Colorado Court of Appeals. The lawsuit is a long-term forecasting uncertainty. An unfavorable outcome could mean an elimination or reduction of payments to hospitals going forward. However, this

¹⁰¹ Concerning the provision for payment of the expenses of the executive, legislative, and judicial departments of the state of Colorado, and of its agencies and institutions, for and during the fiscal year beginning July 1, 2016, except as otherwise noted, HB16-1405, General Assembly of the State of Colorado. (2016).

¹⁰² Concerning the provision for payment of the expenses of the executive, legislative, and judicial departments of the state of Colorado, and of its agencies and institutions, for and during the fiscal year beginning July 1, 2017, except as otherwise noted, SB17-254, General Assembly of the State of Colorado. (2017).

change would not occur until all appeals are settled and it will likely be years before an ultimate decision.

Challenges to Cash Flow Management

- **Medicaid Payment Delays**

In 2017, Medicaid payment delays were caused by the transition to a new Medicaid payment system, interChange. These delays were addressed, and the system has been operating within industry norms. While opportunities for improvement remain, and the Department is pursuing them in partnership with our vendor, DXC, interChange has optimized the claims processes and created efficiencies for both providers and the Department.

- **Hospital All Patient Refined Diagnosis Related Groups (APR-DRG)**

APR-DRGs are used in hospital reimbursement; however, hospitals cannot predict weights applied to APR-DRGs in advance because its calculation is based on data that varies over time and is received retroactively. Hospitals' forecasting should include this uncertainty since their payment structure is based on the APR-DRG weights. Further, the Department recalibrates APR-DRG weights less frequently than other mechanisms for payment, allowing for relatively reduced uncertainties for hospitals.

- **Delayed CHASE Fee Approval**

The CHASE fee calculation relies on data being collected from previous fiscal periods. The CHASE fee, the payment model completion, and the approval of their calculation do not happen until after the new model year has already started, making hospital budgeting for the provider fee and payment difficult. The Department is working with providers and subject matter experts to improve its processes by shifting the payment model development to earlier in the year.

Policy agendas and programmatic improvements are at the forefront of bipartisan discussion of health care. External uncertainties help inform the discussion of hospital cost growth and cost shifting; however, they cannot explain the growing evidence that health care costs in Colorado are outpacing the nation.¹⁰³

Section Conclusion

The growth in the overall margins per adjusted discharge, which in 2018 was nearly triple that of 2009, shows that hospitals receive more per adjusted discharge today than they ever have. In fact, since the implementation of the ACA in 2014, hospital margins per adjusted discharge are more than \$1,000 per adjusted discharge, and aggregate margins have been greater than \$1 billion for the last four years of data (see Table 8, Figure 11 and Table 44). While patient payer mix has shifted amongst payer types, patient volume from commercial insurance payers has remained steady, and hospital charity care and bad debt have declined to less than half their pre-ACA amounts. The increase of covered lives and growing consumer health-

¹⁰³ See Cost Growth section of this report.

consciousness are positive changes seen over the last decade. **Neither external factors, which all industries experience, nor the available aggregated data explain why the cost shift to Colorado’s commercial insurance payers has increased.**

Internal Factors

Several factors influence Colorado hospital costs and prices. The purpose of this section is to introduce *potential* drivers internal to the hospital care industry that might be influencing the price of hospital care. Potential drivers under review include:

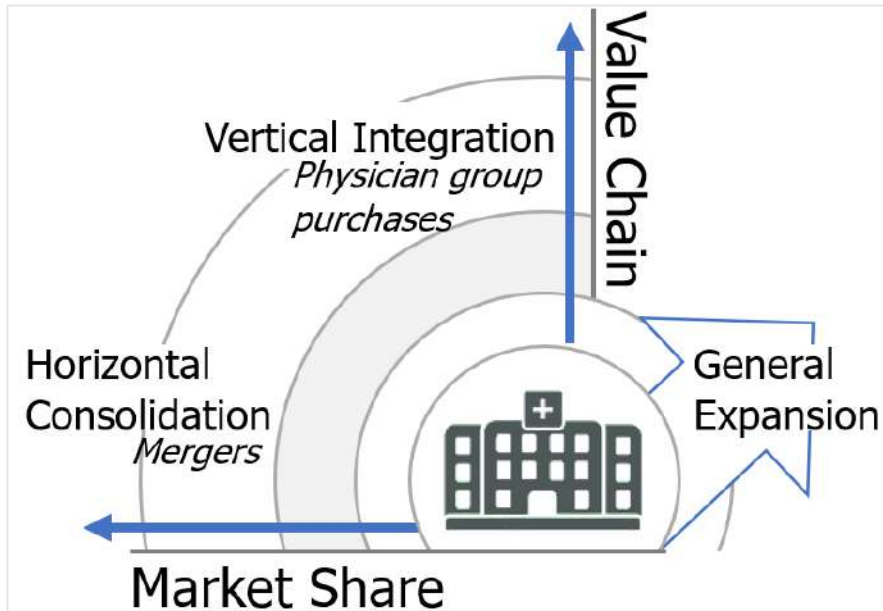
- Drivers of Cost
 - Capital improvements and infrastructure improvements, construction and equipment; and
 - Investments in new technology and new practice tools like electronic medical record software applications.
- Drivers of Price
 - Physician group practice acquisitions; and
 - Mergers and acquisitions of hospitals.

Drivers of Cost & Price

This report has shown that aggregated hospital costs have grown at a higher rate than the nation and growth indicators, such as changes in volume and inflation factors (see Cost, Payment, and Margin section of this report). It further shows that commercial insurance payments have grown to a greater extent than hospital costs, resulting in margin increases. As hospital systems merge, build new hospitals and expand hospital services, their power in commercial insurance company negotiations increases, enabling hospitals to capture greater commercial insurance reimbursement. This section discusses factors that might be driving the hospital industry’s high cost growth and might be contributing to the rise in commercial insurance payments.

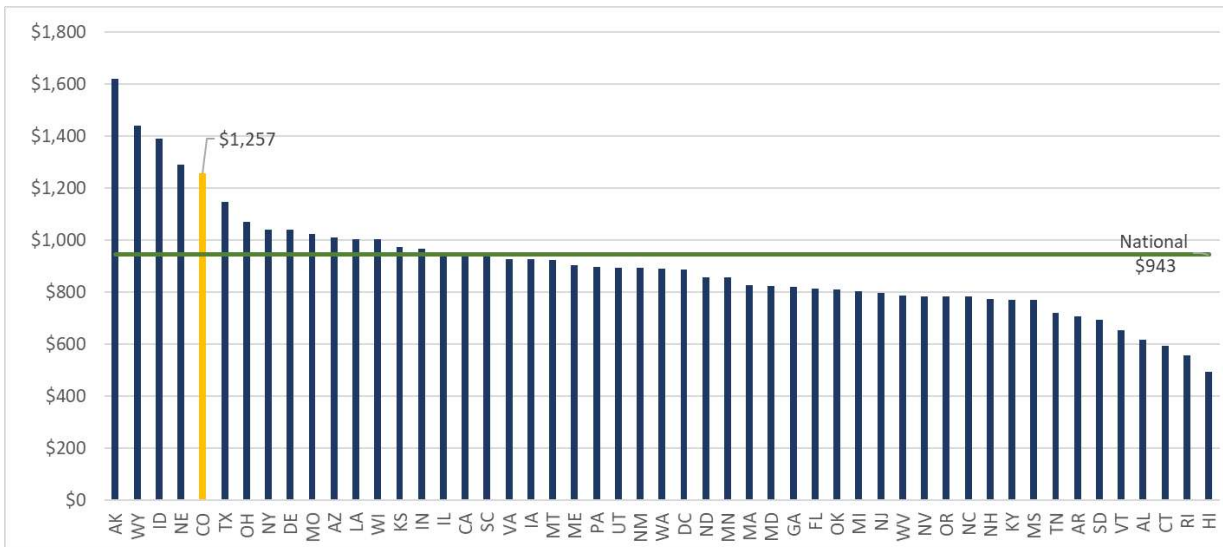
One factor is hospital integration. When hospital systems grow through vertical integration (physician acquisition) and horizontal integration (hospital acquisition), overhead costs grow. Research has shown that, in aggregate, Colorado’s hospitals have: (1) increased construction projects; (2) integrated physicians into their value chain, which controls admissions; and (3) consolidated. See Figure 20 for a visualization of how hospital business choices interact with business decisions.

Figure 20: Hospital Integration and Expansion



Another factor is Colorado’s capital costs per adjusted discharge, which are among the highest in the nation. This is shown in Figure 21¹⁰⁴, in which values have been adjusted for the higher cost of living in certain states. Even when adjusted for cost of living, Colorado has the fifth highest capital costs in the nation.

Figure 21: Hospital-Only Capital Costs per Adjusted Discharge, Adjusted for Cost of Living, All States and Washington, D.C., 2018¹⁰⁵



¹⁰⁴ Data generated from Medicaid cost reports specifically for the Department by consultants. These costs include depreciation of previously acquired assets and capital related leases, interest, tax and insurance costs. This data includes costs reported in the capital cost center in Medicare cost report, Worksheet B, Part 1. Medicare non-reimbursable costs and cost associated with interns and residents are excluded. Amounts are adjusted for cost of living using information from C2ER.

¹⁰⁵ See footnote 104.

Hospitals assert that new hospitals and additional beds are driven by population needs and hospitals are built to address epidemics.¹⁰⁶ To assess these needs, Table 22 exhibits beds per 1,000 people in each Colorado Division of Insurance (DOI) region, as well as for the state as a whole and the nation. These figures are a conservative estimate because they do not include services from freestanding emergency departments, which are predominately found in the Front Range. The data indicate that Colorado's beds per 1,000 people are lower than the nation, but Colorado also has a large rural population and it would be expected that rural areas would have low occupancy rates. There is no benchmark for an appropriate level of hospital capacity for a state.

It isn't necessarily "the needs of the local area" that are driving new hospital construction. **New construction appears to be taking place in regions that do not need new facilities nor new hospitals, with new hospital construction concentrated largely in the higher income areas of Colorado. One example is an 87-bed hospital in Highlands Ranch, Douglas County, a county which has Colorado's highest median household income.**^{107,108} Other than the Highlands Ranch hospital, most new hospitals have been small or micro-hospitals, and some have limited their services to adults or have a specific specialization. Further research is needed to evaluate the types of services provided by newly-constructed hospitals and how they address community medical, behavioral and related access needs across the state.

¹⁰⁶ Denver Post. (2018). Colorado hospitals charge insured patients significantly more than five other jurisdictions, survey finds. Retrieved from www.denverpost.com/2018/11/09/colorado-hospitals-charge-insured-patients-more-study/<https://www.denverpost.com/2018/11/09/colorado-hospitals-charge-insured-patients-more-study/>.

¹⁰⁷ UCHealth Highlands Ranch Hospital. (n.d.). Retrieved from www.uchealth.org/locations/uchealth-highlands-ranch-hospital/.

¹⁰⁸ Lerner, R. (2017, December 07). The 10 Richest Counties In America 2017. Retrieved from www.forbes.com/sites/rebeccalerner/2017/07/13/top-10-richest-counties-in-america-2017/.

Table 22: Regional Current Beds per 1,000 Coloradans¹⁰⁹

| DOI Regions | Population ^{110,111} | Beds ^{112,113} | Beds/1,000 |
|------------------|-------------------------------|-------------------------|------------|
| Boulder | 325,480 | 590 | 1.8 |
| Colorado Springs | 739,455 | 1,001 | 1.4 |
| Denver Metro | 2,932,934 | 4,980 | 1.7 |
| East | 274,474 | 489 | 1.8 |
| Fort Collins | 350,362 | 603 | 1.7 |
| Grand Junction | 153,629 | 359 | 2.3 |
| Greeley | 314,250 | 276 | 0.9 |
| Pueblo | 167,117 | 439 | 2.6 |
| West | 436,610 | 555 | 1.3 |
| Colorado | 5,694,311 | 9,292 | 1.6 |
| National | 325,147,121 | 798,921 | 2.5 |

Severity and higher utilization have been proposed as potential drivers of price growth. It is reasonable to expect more demanding and more costly service needs from patients who are more sick and/or undergo more procedures, which would drive higher commercial insurance payments. Unfortunately, the data available for this report cannot adjust for patient severity, but national studies have found prices do not reflect utilization and severity. Each year, the Health Care Cost Institute releases a Health Care Cost and Utilization Report which reviews claims data from commercial insurance payers and reports on a variety of per-person financial indicators, such as spending, price and utilization. The report shows price trends alongside utilization trends adjusted for the intensity/severity of services used (see Figure 22). It found that prices rose despite a decline in adjusted utilization.¹¹⁴

¹⁰⁹ Reflective of 2018 for Colorado values, and 2017 for national values.

¹¹⁰ Colorado Department of Local Affairs. (2019). Estimates, Counties, 2010-Current (2018). Retrieved from <https://demography.dola.colorado.gov/population/>.

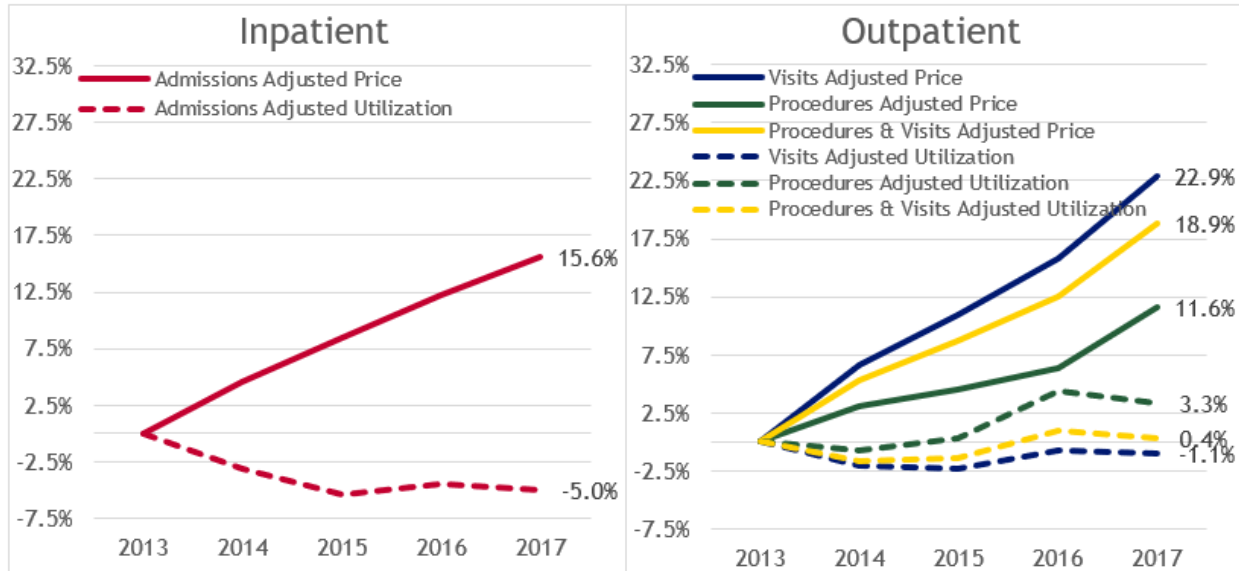
¹¹¹ U.S. Census Bureau, Population Division. (2019). Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2017. Retrieved from American FactFinder.

¹¹² Colorado hospital beds is reflective of data generated from Medicare cost reports for short-term, critical access, and Children’s hospitals specifically for the Department by consultants or, for hospitals without data for 2018 or hospitals that opened in 2018 and have not submitted a 2018 Medicare Cost Report, is reflective of beds licensed by the Colorado Department of Public Health and Environment. Colorado Department of Public Health & Environment. (2019). Hospitals. *Facility Directory*.

¹¹³ National hospital beds are staffed community hospital beds as reported by the American Hospital Association. American Hospital Association (2019). Fast Facts on U.S. Hospitals, 2019. Retrieved from <https://www.aha.org/statistics/fast-facts-us-hospitals>.

¹¹⁴ Health Care Cost Institute. (2019). 2017 Health Care Cost and Utilization Report. Retrieved from <https://www.healthcostinstitute.org/research/annual-reports/entry/2017-health-care-cost-and-utilization-report>. Adjusted price is sourced from Table 3 and adjusted utilization is sourced from Table 4. Values reflect the cumulative change in adjusted price and adjusted utilization by service type.

Figure 22: National Hospital Utilization and Price¹¹⁵



Colorado hospitals are also rapidly merging. As a result of consolidations, more than half of general and critical access hospitals – 43 of 83 hospitals – now belong to a hospital system. See Figure 23 for a map of hospital locations and ownership in 2018. **While there may be cost savings to hospital operations from being part of a system, there is no evidence that the economies of scale savings that should result from mergers are being passed along to commercial consumers, commercial insurance companies or self-funded employers.** In fact, the National Council on Compensation Insurance (NCCI) reports that “research to date shows that hospital mergers increase the average price of hospital services by 6% to 18%.”¹¹⁶ Another study found that hospital price increases due to consolidation could be more than 20% and result in a reduction of quality for some procedures.¹¹⁷ Interestingly, consolidation also results in lower patient satisfaction scores.¹¹⁸

Colorado’s largest hospital systems have dramatically expanded their control of the Colorado hospital landscape – and, therefore, the overall health care landscape. Using Medicare Cost Reports, in 2009, 26 Colorado hospitals reported being part of a chain organization; today, 43 Colorado hospitals are part of a chain organization. This has occurred through a combination of mergers, acquisitions and new construction. UHealth and Poudre Valley Health System merged, growing from two hospitals to 11, five of which were built by the UHealth hospital system. Centura Health has grown from 10 to 14 hospitals in Colorado. Banner Health has grown from three to five Colorado hospitals. As hospital mergers and consolidation continue, these numbers will also continue to change.

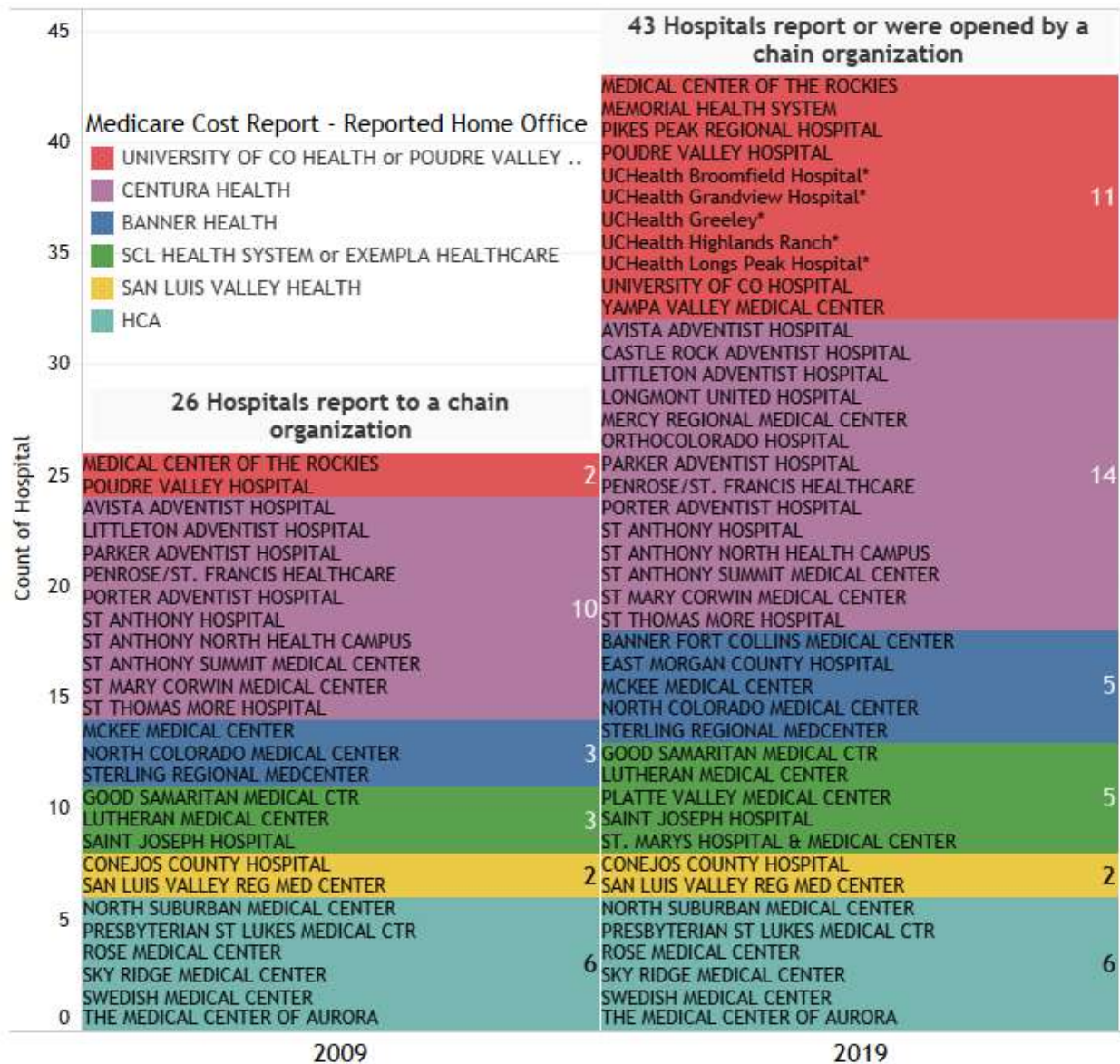
¹¹⁵ See footnote 114.

¹¹⁶ National Council on Compensation Insurance. (2018). The Impact of Hospital Consolidation on Medical Costs. Retrieved from www.ncci.com/Articles/Pages/II_Insights_QEB_Impact-of-Hospital-Consolidation-on-Medical-Costs.aspx.

¹¹⁷ Robert Wood Johnson Foundation. (2012). The Impact of hospital consolidation - Update. Retrieved from www.rwjf.org/content/dam/farm/reports/issue_briefs/2012/rwjf73261.

¹¹⁸ Short, M. N., & Ho, V. (2019). Weighing the Effects of Vertical Integration Versus Market Concentration on Hospital Quality. Medical Care Research and Review. doi.org/10.1177/1077558719828938.

Figure 23: Rapid Hospital Consolidation¹¹⁹



According to the most recent Medicare Cost Report. Recently opened hospitals* added to dataset.

Mergers and acquisitions result in greater power for hospitals to negotiate with commercial insurance companies. The negotiating power of Colorado hospitals can be seen in recent findings from the RAND Corporation, which found that Colorado hospitals were paid on average 269% of what Medicare would pay for the same inpatient and outpatient hospital care, an upward trend from 2015.¹²⁰

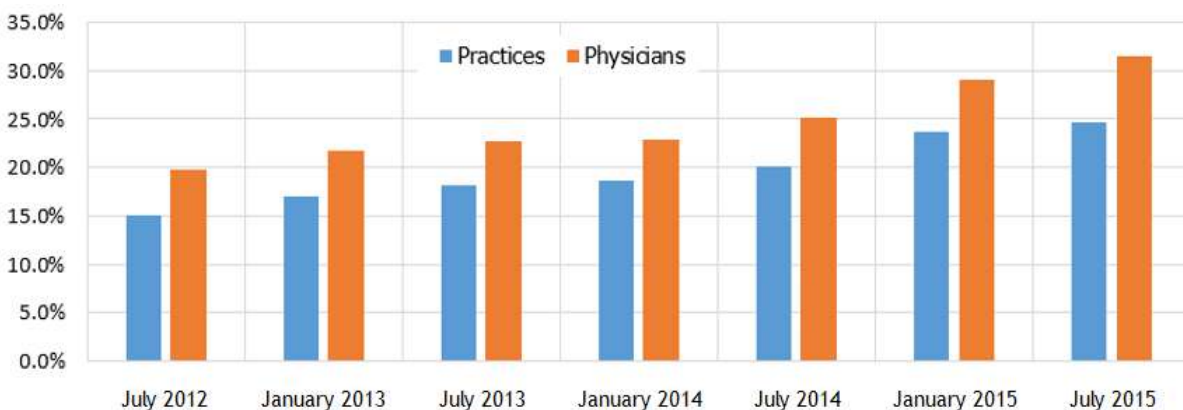
Figure 24 illustrates the significant increase in hospital-owned physicians and physician groups in Colorado. This trend is not equally spread across the state. Some metropolitan areas are

¹¹⁹ Generated specifically for the Department.

¹²⁰ Data generated from Medicare cost reports specifically for the Department by consultants. Methodology: Data is sourced from the Medicare Cost Report. Only hospitals that reported data for specific field (Worksheet S-2 Part 1, line 141, Column 1) are included. Provider IDs are used to limit data to short-term, critical access, and Children’s hospitals.

experiencing more physician group acquisition, including greater Denver, Boulder, Fort Collins and Grand Junction. The impact on hospital costs for those communities – to employers, consumers, commercial insurance payers and Medicaid – is more pronounced.

Figure 24: Percentage of Colorado Practices Owned by Hospitals and Physicians in Hospital-Owned Practices¹²¹



The impact of this trend – hospitals buying physicians and physician groups – is described by the Physician Advocacy Institute (PAI), which says:

“When physicians are employed by hospitals or health systems, they perform more services in a hospital outpatient department setting (HOPD) than independent physicians,” and “the higher proportion of services performed in a HOPD setting increases both costs to the Medicare program and financial responsibility for patients.”¹²²

Ultimately, care is more expensive in hospital-owned facilities and practices. Figure 25 shows, for example, that outpatient departments charge 80% more for cardiac imaging, 35% more for a colonoscopy, and 29% more for evaluation and management. Hospitals not only internalize costs with the purchase of physician groups, increasing overall hospital costs, but patients who utilize their services are charged more than if they had gone to an independent physician’s office.

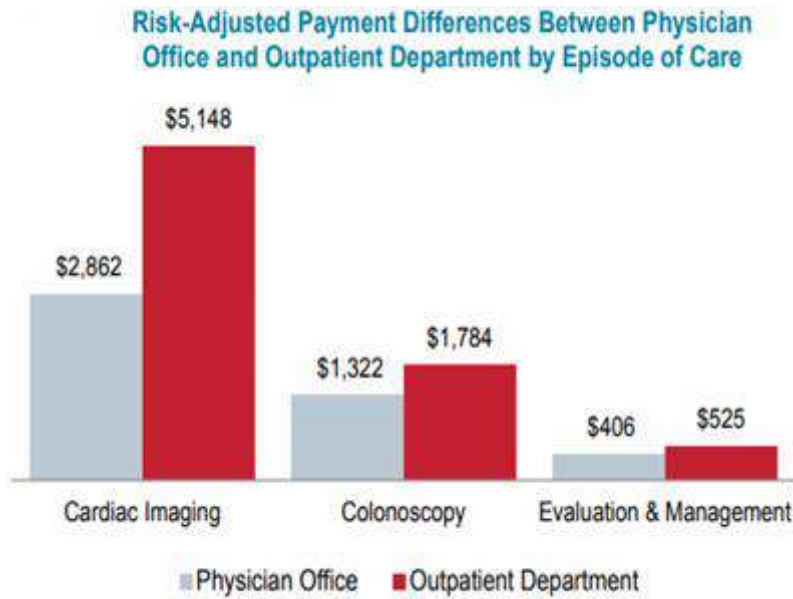
The purchase of physician groups captures market share because hospital-owned physicians are advised to keep patients within the parent system for procedures. More research is needed to understand the impact on quality when higher quality care is available outside the system.¹²³

¹²¹ Data generated specifically for the Department.

¹²² Physicians Advocacy Institute. (2018). Updated Physician Practice Acquisition Study: National and Regional Changes in Physician Employment 2012-2016. Page 15. Retrieved from www.physiciansadvocacyinstitute.org/Portals/0/assets/docs/2016-PAI-Physician-Employment-Study-Final.pdf.

¹²³ HealthCare Dive. (2018). More doctors become hospital employees, facing noncompetes. Retrieved from www.healthcaredive.com/news/more-doctors-become-hospital-employees-facing-noncompetes/522859/.

Figure 25: Hospital Owned Care Versus Non-Hospital Owned Care¹²⁴



Section Conclusion

As discussed previously in this report, available data suggests hospitals may have chosen to cost shift to the commercially insured above what is needed to compensate for public program underfunding (i.e., Medicaid and Medicare) but the rise in commercial payments are also being consumed by hospital costs that are growing beyond national trends. Had Colorado's hospital costs grown in line with national trends, hospitals could have accepted lower commercial insurance reimbursement rates and shifted fewer costs to the commercial market.

¹²⁴ Physicians Advocacy Institute. (2018). Updated Physician Practice Acquisition Study: National and Regional Changes in Physician Employment 2012-2016. Retrieved from www.physiciansadvocacyinstitute.org/Portals/0/assets/docs/2016-PAI-Physician-Employment-Study-Final.pdf.

Modeling Scenario Analysis

The Department used modeling scenarios to explore the potential impact of hospital costs and margins on commercial insurance payments, and subsequent commercial insurance premiums. As previously discussed, hospital charges to commercial insurance payers directly impact premium rates paid by insured employers and consumers, as well as self-funded employers, union trust plans and the like. The modeling scenarios analyze the hospital payment-to-cost ratio data under different circumstances. By holding key financial factors steady, while adjusting other variables, these modeling scenarios estimate the impact on commercial insurance payments.

The scenarios model what may have occurred by changing key financial factors, such as:

- Evaluation of margins
 - Maintain margin rates to pre-hospital provider fee/ACA levels.
- Evaluation of costs
 - Maintain or manage costs at reasonable trends.
- Evaluation of collective impact of costs and margins
 - Maintain margin rates to pre-hospital provider fee/ACA levels and
 - Maintain or manage costs at reasonable trends.

In these scenarios, modeled margins and/or costs are less than the actual margins and hospital cost of care that occurred, with savings passed on to commercial insurers. Models are not guarantees of what would have taken place; they provide insights into what may have occurred given changes in key financial factors and drivers. Modeling scenario analyses show the relationship between margins, costs and commercial insurance payments.

Evaluation of Margins

To explore the financial impact of hospital margins (profits) on cost shifting, commercial insurance payments were modeled using three criteria:

1. cover the proportion of actual costs (Table 7) reported for commercial insurance payer services from DATABANK;
2. cover all under-compensated costs to ensure positive margins; and
3. hold the overall payment-to-cost ratio at the 2009 level (1.05).

Tables 23 and 24 display the scenario result two different ways. Table 23 compares commercial hospital payment amounts while Table 24 compares the commercial insurance payment-to-cost ratios. **The results of this scenario suggest that the underpayments associated with Medicare and Medicaid public programs are not the reason for the increasing cost shift to commercial insurance companies.**

Table 23: Evaluation of Margins Modeling Scenario – Payment Compared¹²⁵

| | Commercial (\$) | Scenario Commercial (\$) | Potential Reduction (\$) |
|---------|-----------------|--------------------------|--------------------------|
| CY 2009 | 6,043.5M | 6,043.5M | - |
| CY 2010 | 6,082.9M | 5,988.7M | 94.2M |
| CY 2011 | 6,538.3M | 6,279.2M | 259.1M |
| CY 2012 | 6,963.0M | 6,747.9M | 215.0M |
| CY 2013 | 7,081.5M | 7,018.0M | 63.5M |
| CY 2014 | 7,373.5M | 7,078.9M | 294.5M |
| CY 2015 | 7,396.1M | 6,926.5M | 469.7M |
| CY 2016 | 8,270.7M | 7,739.9M | 530.8M |
| CY 2017 | 8,815.0M | 8,412.8M | 402.2M |
| CY 2018 | 9,433.9M | 8,775.5M | 658.4M |

Table 24: Evaluation of Margins Modeling Scenario – Payment-to-Cost Ratio Compared¹²⁶

| | Commercial | Scenario Commercial | Potential Reduction |
|---------|------------|---------------------|---------------------|
| CY 2009 | 1.55 | 1.55 | - |
| CY 2010 | 1.49 | 1.47 | 0.02 |
| CY 2011 | 1.54 | 1.48 | 0.06 |
| CY 2012 | 1.54 | 1.50 | 0.04 |
| CY 2013 | 1.52 | 1.50 | 0.02 |
| CY 2014 | 1.59 | 1.53 | 0.06 |
| CY 2015 | 1.58 | 1.48 | 0.10 |
| CY 2016 | 1.64 | 1.53 | 0.11 |
| CY 2017 | 1.66 | 1.59 | 0.08 |
| CY 2018 | 1.70 | 1.58 | 0.12 |

The modeling suggests that – had commercial insurance payments been reflective of the benefits from CHCAA, CHASE and the ACA – commercial insurance payments and the commercial insurance payment-to-cost ratio would be significantly less, even with 5% margins for hospitals, or an overall payment-to-cost ratio of 1.05. This scenario further indicates that commercial insurance payments and profits would have been between \$63.5 million and \$658.4 million less each year had margins remained at 2009 levels, while the commercial insurance payment-to-cost ratio would have remained relatively flat from the 2009 level of 1.55. **This suggests that increased cost shifting to commercial insurance payers resulted in rising margins and exceeded the financial requirement to cover underpayments by public programs.** See Appendix D and Tables 45 through 56 for additional information related to payment-to-cost modeling.

Evaluation of Costs

To explore the impact of hospital costs and hospital cost growth on patient service costs, a second scenario was applied to DATABANK data. The scenario adjusts 2009 patient service costs based on inflation and volume factors using the Medicare Market Basket for Inpatient

¹²⁵ See footnote 25.

¹²⁶ See footnote 25.

Prospective Payment Systems and adjusted discharge growth.¹²⁷ Other operational costs are held at actual figures. The result is in Table 25. The difference between the modeled scenario and actual cost indicates that there are additional elements influencing hospital cost growth beyond price and volume. **The modeling suggests that if costs had grown with inflation and volume, they would be significantly less than the actual costs reported: an average cost savings of nearly \$1.3 billion each year from 2010 to 2018.**

Table 25: Evaluation of Costs Modeling Scenario – Overall Costs Versus Actual Overall Costs¹²⁸

| | Actual (\$) | Scenario (\$) | Potential Savings (\$) |
|---------|-------------|---------------|------------------------|
| CY 2009 | 9,052.3M | 9,052.3M | - |
| CY 2010 | 9,800.0M | 9,328.2M | 471.8M |
| CY 2011 | 10,262.6M | 9,796.9M | 465.6M |
| CY 2012 | 10,984.9M | 10,115.0M | 869.9M |
| CY 2013 | 11,525.2M | 10,340.4M | 1,184.8M |
| CY 2014 | 12,069.9M | 10,903.6M | 1,166.4M |
| CY 2015 | 12,384.5M | 11,426.8M | 957.6M |
| CY 2016 | 13,498.8M | 11,953.9M | 1,544.8M |
| CY 2017 | 14,506.2M | 12,591.6M | 1,914.6M |
| CY 2018 | 15,506.1M | 13,244.4M | 2,261.7M |

Additional analysis was performed by adjusting scenario costs by other inflation factors to test sensitivity to the selected growth factor (the Medicare Market Basket for Inpatient Prospective Payment Systems). Other inflation factors examined include the Social Security Administration’s Cost of Living Adjustment and the Chained Consumer Price Index. All these measures resulted in lower cost estimates, so the selected growth factor was determined to be the most reasonable and conservative estimate. A comparison of costs based on these different inflation factors and adjusted discharge growth are displayed in Table 26.

¹²⁷ For more information on a comparison of actual cost growth with the Medicare Market Basket for Inpatient Prospective Payment Systems and other comparators see the Cost Growth section of this report.

¹²⁸ See footnote 25.

Table 26: Evaluation of Patient Service Costs – Cost Growth Compared^{129, 130, 131}

| Growth Factor Used (values adjusted for each year of the model) | 2018 Total Patient Services Cost (\$) | Average Annual Growth of Patient Services Cost | Average Annual Growth of Patient Services Cost Per Adjusted Discharge |
|---|---------------------------------------|--|---|
| DATABANK Patient Service Costs | 15,506.1M | 7.9% | 5.2% |
| Scenario (Medicare Market Basket for Inpatient Prospective Payment Systems) | 13,244.4M | 5.1% | 2.8% |
| Cost of Living Adjustment | 12,032.5M | 3.7% | 1.6% |
| Chained Consumer Price Index | 11,959.3M | 3.6% | 1.5% |

This analysis suggests that, had hospital costs grown according to any of the non-DATABANK growth rates in Table 26, hospitals would have seen greater margins, which could have been retained in the form of profits or used to reduce prices to consumers, employers and commercial insurance payers.

Using the modeled hospital costs, the impact on cost shifting is also modeled to see the potential for commercial insurance payment savings. For this assessment, costs are replaced with scenario model costs from Table 25, payments from non-commercial insurance payer types are held at current levels and commercial insurance payments are adjusted so that margins are equivalent to what was reported. Table 27 exhibits the formula that calculates commercial insurance payments from costs.

Table 27: Evaluation of Costs – Scenario Calculation

| | |
|---|--------------------------------------|
| | <i>Overall Payment to Cost Ratio</i> |
| × | <i>Cost</i> |
| – | <i>Noncommercial Payments</i> |
| = | <i>Commercial Payments</i> |

The results of the scenario are displayed in Table 28.

¹²⁹ See footnote 25.

¹³⁰ Social Security Administration. (2018). Cost-Of-Living Adjustments. Retrieved from www.ssa.gov/oact/cola/colaseries.html.

¹³¹ National Bureau of Labor Statistics. (2018). Table 24C. Historical Chained Consumer Price Index for All Urban Consumers (C-CPI-U): U. S. city average, all items. Retrieved from www.bls.gov/cpi/additional-resources/chained-cpi-table24C.pdf.

Table 28: Evaluation of Costs Modeling Scenario – Payment-to-Cost Ratio¹³²

| | Scenario Medicare | Scenario Medicaid | Scenario Commercial | Scenario CICP/Self Pay/Other | Scenario Overall |
|---------|-------------------|-------------------|---------------------|------------------------------|------------------|
| CY 2009 | 0.78 | 0.54 | 1.55 | 0.52 | 1.05 |
| CY 2010 | 0.79 | 0.76 | 1.43 | 0.79 | 1.06 |
| CY 2011 | 0.78 | 0.79 | 1.49 | 0.74 | 1.07 |
| CY 2012 | 0.78 | 0.88 | 1.42 | 0.80 | 1.07 |
| CY 2013 | 0.73 | 0.90 | 1.36 | 1.03 | 1.05 |
| CY 2014 | 0.79 | 0.85 | 1.40 | 1.05 | 1.07 |
| CY 2015 | 0.79 | 0.86 | 1.40 | 1.21 | 1.08 |
| CY 2016 | 0.80 | 0.83 | 1.43 | 1.24 | 1.09 |
| CY 2017 | 0.84 | 0.88 | 1.39 | 1.00 | 1.07 |
| CY 2018 | 0.83 | 0.98 | 1.35 | 1.18 | 1.09 |

The result suggests that if hospital costs had grown at the modeled levels, then cost shifting could have been reduced over time between 7.6% and 26.1% per year. The opportunity for price reduction amounts to an average commercial insurance payment savings of \$1.3 billion each year, resulting in commercial insurance prices declining between \$1,605 and \$7,489 per adjusted discharge. **One conclusion is that hospitals could have maintained their margins and passed on significant savings to commercial consumers had their costs grown at or near a national benchmark.**

Evaluation of Collective Impact of Costs and Margins

Building on the two previous scenarios, a scenario was performed to assess the effect of controlling both hospital costs *and* margins on cost shifting. Commercial insurance payments were reduced to a level where hospital margins were held at the 2009 level of 1.05. Table 29 expresses this calculation.

Table 29: Evaluation of Collective Impact of Costs and Margins – Scenario Calculation

| | |
|---|------------------------------------|
| | <i>2009 Payment to Cost Ratio</i> |
| × | <i>2009 Cost</i> |
| – | <i>2009 Noncommercial Payments</i> |
| = | <i>2009 Commercial Payments</i> |

Results are displayed in Table 30.

¹³² See footnote 25.

**Table 30: Evaluation of Collective Impact of Costs and Margins Modeling Scenario –
1.05 Overall Payment-to-Cost Ratio¹³³**

| | Medicare | Medicaid | Commercial | CICP/Self Pay/Other | Overall |
|---------|----------|----------|------------|---------------------|---------|
| CY 2009 | 0.78 | 0.54 | 1.55 | 0.52 | 1.05 |
| CY 2010 | 0.79 | 0.76 | 1.41 | 0.79 | 1.05 |
| CY 2011 | 0.78 | 0.79 | 1.43 | 0.74 | 1.05 |
| CY 2012 | 0.78 | 0.88 | 1.38 | 0.80 | 1.05 |
| CY 2013 | 0.73 | 0.90 | 1.34 | 1.03 | 1.05 |
| CY 2014 | 0.79 | 0.85 | 1.34 | 1.05 | 1.05 |
| CY 2015 | 0.79 | 0.86 | 1.31 | 1.21 | 1.05 |
| CY 2016 | 0.80 | 0.83 | 1.33 | 1.24 | 1.05 |
| CY 2017 | 0.84 | 0.88 | 1.32 | 1.00 | 1.05 |
| CY 2018 | 0.83 | 0.98 | 1.24 | 1.18 | 1.05 |

This modeling scenario suggests the commercial insurance payment-to-cost ratio (price paid by commercial insurance companies) would have declined if margins and hospital costs did not continue to rise. The value of the excess cost shift caused by actual margins and actual costs averages to \$1.6 billion each year. This would provide a decline in commercial insurance payment per adjusted discharge of between \$1,917 and \$9,200. **This result suggests that actual cost growth and actual margins contribute to the commercial cost shift.** For additional analysis, see **Appendix D**.

Effect on Insurance Premiums to Self-Funded Employers and Union Trusts

Taking these scenarios one step further, an analysis was performed to determine their potential impact on health insurance premiums for one Colorado employer and its employees. The chosen employer was the State of Colorado because the needed information is publicly available, and because the impact has implications for state expenditures. It is also assumed that the State of Colorado is comparable to other Colorado employers in that it uses a Medical Loss Ratio and is not self-funded.¹³⁴ Using one month of data from the state and allowing for a few assumptions, hospital expenditures are estimated and their effect on insurance premiums is calculated.

To calculate hospital expenditures, the \$34.1 million that the State of Colorado and state employees paid in insurance premiums for November 2019 is used.¹³⁵ Given that at least 80% of premiums must be spent on medical care due to the maximum medical loss ratio established in the ACA and that 39% of medical care is spent on hospital services, it follows

¹³³ See footnote 25.

¹³⁴ Depending on the funding source of an insurance plan, the Medical Loss Ratio may not apply, but for this analysis it is assumed that it is not self-funded.

¹³⁵ Division of Human Resources. (2017). Medical and Dental Enrollment Summary. Retrieved from www.colorado.gov/pacific/dhr/workforce-data.

that \$10.6 million of that month's health insurance premiums are expected to be spent at hospitals for Colorado's state employees.^{136,137}

Health care insurance premiums depend on hospital pricing, so a reduction in hospital pricing could result in a reduction in insurance premiums and/or reduction in out-of-pocket costs. Considering that the scenarios where costs are controlled result in a 26% to 32% drop in commercial insurance payments in 2018, a 26% reduction of the \$10.6 million spent in November 2019 results in \$7.9 million spent. However, the savings are more than the difference between these figures because insurance administration would decrease to comply with the MLR. Because of this, **the State of Colorado and its employees would realize an overall savings of \$3.5 million for November 2019.** Considering the State of Colorado pays 84% of employee insurance premiums, this would translate to an additional \$2.9 million in State of Colorado savings and \$542,000 in employee savings for the month. This suggests that **annual savings would be \$35.0 million for the State of Colorado and \$6.5 million for state employees.**

Using the Colorado Department of Personnel and Administration's Benefits Enrollment Dashboard for November 2019, the reduction in monthly premium costs can be calculated¹³⁸. Potential monthly savings to the state and state employees are displayed in **Table 57** and **Table 58** of **Appendix D**. **In this scenario, a Colorado family could save up to \$64.78 per month in member premium contributions if hospital commercial insurance payments declined by 26%, or \$777.36 annually.** Significant savings could be passed on to both employees and employers from a reduction in hospital pricing if hospitals focused on controlling their costs while maintaining margins at 2009 levels.

Section Conclusion

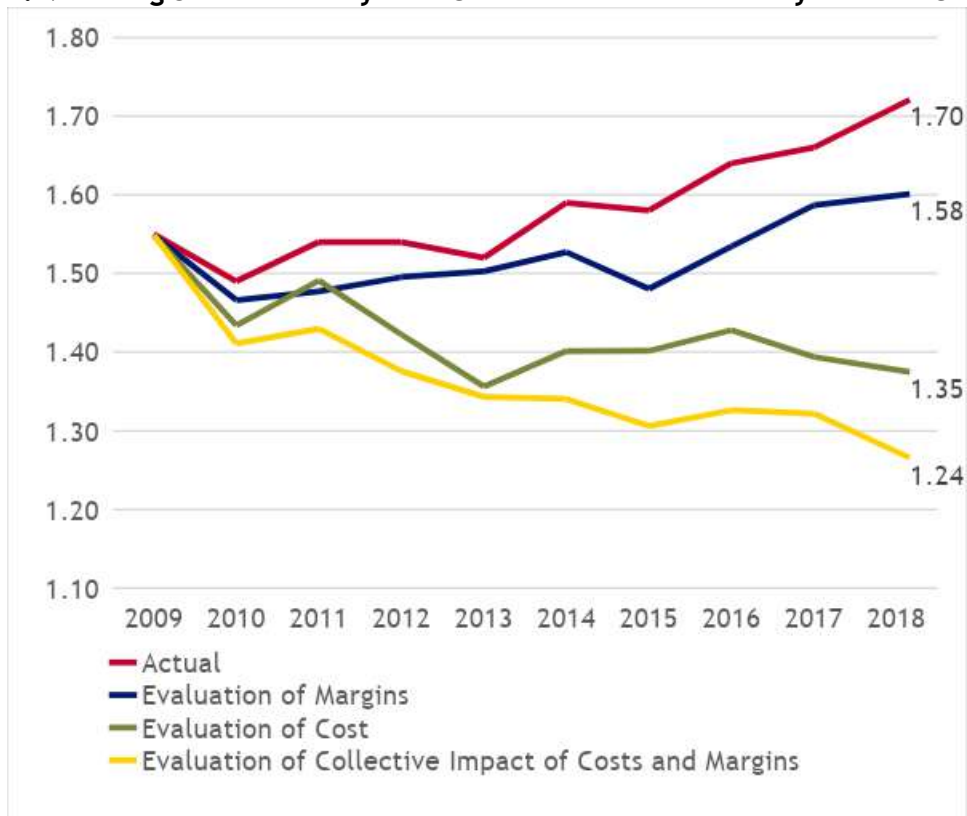
This section models potential health care consumer savings in the form of commercial insurance payment reductions and insurance premium savings. **Figure 26** displays commercial insurance payment-to-cost ratios for each modeling scenario. While there is no certainty that these would be the resulting decreases in commercial insurance payments in relation to commercial payer type costs, these modeling scenarios express how hospital costs and margins fit in the picture of hospital finances. These modeling scenarios express that a contributing factor to rising insurance premiums and out-of-pocket costs could be the growth in hospital costs and margins.

¹³⁶ 39% was used to reflect expenditures to hospitals reflecting Centers for Medicare and Medicaid Services as of the original publishing of this report (2/26/2019). (2017). *National Health Expenditure Data: Health Expenditures*. Available from <https://www.cms.gov/files/zip/nhe-tables.zip>.

¹³⁷ National Association of Insurance Consumers (2018). Medical Loss Ratio. Retrieved from www.naic.org/cipr_topics/topic_med_loss_ratio.htm.

¹³⁸ Colorado Department of Personnel and Administration. (2017). Medical and Dental Enrollment Summary. Retrieved from www.colorado.gov/pacific/dhr/workforce-data.

Figure 26: Modeling Scenario Analysis – Commercial Insurance Payment-to-Cost Ratios



State & Department Health Care Cost Control Efforts

This report was initially developed in response to efforts by the Colorado Healthcare Affordability and Sustainability Enterprise (CHASE) Board, legislators, the Department and Colorado Health Association to understand why the cost shift is not improving. Since the draft release of this report was presented to the CHASE Board in February 2019, there have been a range of health care cost control efforts by the State of Colorado and the Department.

- Governor Jared Polis released the “Polis-Primavera Roadmap to Saving Coloradans Money on Health Care” in April 2019.¹³⁹ The roadmap outlines how the Polis administration plans to lower health care costs.
- The 2019 legislative session resulted in landmark legislative mandates to lower health care costs, to shed light on health care and hospital care, and to protect health care consumers:
 - House Bill (HB) 19-1001: Hospital Transparency Measures to Analyze Efficacy¹⁴⁰
 - Mandates that hospitals provide data to the Department of Health Care Policy & Financing, leading to a published report on hospital finances and utilization from the Department.
 - HB19-1004: Proposal For Affordable Health Coverage Option¹⁴¹
 - Mandates the Department of Health Care Policy & Financing and the Division of Insurance to develop and submit a proposal to the Colorado General Assembly by Nov. 15, 2019, concerning the design, costs, benefits and implementation of a state option for health care coverage. It also requests authorization to use existing federal money for the proposed state option and taking other actions toward the implementation of the state option and making an appropriation.¹⁴²
 - HB19-1320: Hospital Care Providers’ Accountability to Communities¹⁴³
 - Requires greater community benefit accountability reporting from non-profit tax-exempt hospitals.

¹³⁹ (n.d.). Gov. Polis Unveils Roadmap to Lowering Health Care Costs: Colorado Governor Jared Polis. Retrieved from www.colorado.gov/governor/news/gov-polis-unveils-roadmap-lowering-health-care-costs.

¹⁴⁰ Hospital Transparency Measures to Analyze Efficacy, HB19-1001. 2019 Regular Session. (2019). Available from www.leg.colorado.gov/bills/hb19-1001

¹⁴¹ Proposal For Affordable Health Coverage Option, HB19-1004. 2019 Regular Session. (2019).

¹⁴² A copy of the Summary of the Public Option Proposal can be found at <https://www.colorado.gov/pacific/sites/default/files/Summary%20of%20the%20Public%20Option%20Proposal.pdf>.

¹⁴³ Hospital Care Providers’ Accountability to Communities, HB19-1320. 2019 Regular Session. (2019). Available from www.leg.colorado.gov/bills/hb19-1320

- HB19-1174: Out-of-Network Health Care Services¹⁴⁴
 - Gives consumers more protections when seeking out-of-network services.
- Senate Bill (SB) 19-004: Address High-cost Health Insurance Pilot Program¹⁴⁵
 - Allows regional cooperatives the ability to pilot a group medical plan.
- HB19-1168: State Innovation Waiver Reinsurance Program¹⁴⁶
 - This bill creates a Colorado reinsurance program for commercial insurance companies to pay high-cost claims and is estimated to reduce commercial insurance premium costs by more than 20% statewide.¹⁴⁷
- HB19-1233: Investments In Primary Care To Reduce Health Costs¹⁴⁸
 - Establishes a primary care payment reform collaborative requiring the establishment of affordability standards for premiums, including adding targets for carrier investments in primary care.
- In the Department’s FY 2018-19 budget request R-15, “Colorado Health Affordability and Sustainability Enterprise (CHASE) Administrative Costs,” the Department was directed through legislative mandate to study hospital costs and the cost shift. Beginning in FY 2018-19, the Department has devoted resources outlined in the directive provided by the Joint Budget Committee toward improving the CHASE fee calculation; improving the efficiency and effectiveness of hospital care, including hospital accountability to the community; reducing inappropriate hospital utilization; and increasing research and analysis of the cost shift from Medicaid to commercial insurance. The resulting reports should also increase policymakers’ understanding of cost shifting and how new policies and payment methodologies may better address rising health care costs.
- In addition to the R-15 budget request, the passage of SB 18-266 gives the Department authority to begin a substantial effort to control cost growth in the state’s Medicaid program. Effective 2018, SB 18-266 authorizes the Department to “pursue cost-control

¹⁴⁴ Out-of-network Health Care Services, HB19-1174. 2019 Regular Session. (2019). Available from www.leg.colorado.gov/bills/hb19-1174

¹⁴⁵ Address High-cost Health Insurance Pilot Program, SB19-004. 2019 Regular Session. (2019). Available from www.leg.colorado.gov/bills/sb19-004

¹⁴⁶ State Innovation Waiver Reinsurance Program, HB19-1168. 2019 Regular Session. (2019). Available from www.leg.colorado.gov/bills/hb19-1168

¹⁴⁷ Staver, A., & Seaman, J. (2019). Colorado’s health exchange premiums expected to drop 18% - if feds approve reinsurance. Retrieved from www.denverpost.com/2019/07/16/health-care-exchange-costs-colorado-reinsurance/.

¹⁴⁸ Investments In Primary Care To Reduce Health Costs, HB19-1233. 2019 Regular Session. (2019). Available from <https://leg.colorado.gov/bills/hb19-1233>

strategies, value-based payments and other approaches to reduce the rate of expenditure growth in the Medicaid program.”¹⁴⁹

- Another opportunity is the Colorado Hospital Association’s (CHA) commitment to transparent reporting practices. Specifically, in 2017, CHA released *The Financial Health of Colorado Hospitals Report (2017)*, which includes data and trends from 2011-2015.¹⁵⁰, and provides an analysis of hospital quality and pricing in Colorado.

To further create and encourage efficiencies and help curb hospital costs, the Department has or is in the process of implementing innovative and transformative tools and programs such as:

- **Prometheus Analytics:** This tool allows hospitals to readily identify when and where they are incurring potentially avoidable costs for many common hospital-based procedures in order to help identify cost shifts and consumer saving opportunities.
- **Prescriber Tool:** designed to help prescribers choose the most clinically efficient and cost-effective prescription alternatives, identify patient risk for addiction before prescribing opioids, and in phase II - enable physicians to prescribe programs offered by the patient’s carrier or payer that get at the root of disease and well-being; this will put Colorado on the forefront of treating disease through health improvement programs, not just pills.
- **Hospital Transformation Program:** The Hospital Transformation Program (HTP) builds upon the existing hospital supplemental payment program to incorporate value-based purchasing strategies into existing hospital quality and payment improvement initiatives. Under the HTP, hospitals will implement quality-based initiatives to receive supplemental payments and demonstrate meaningful community engagement and improvements in health outcomes over time.
- **Hospital Review Program, specific to Medicaid:** Through this program, a third party verifies that the inpatient setting is the most appropriate site for care. In addition, Regional Accountable Entities (RAEs) will receive information during and prior to discharge to improve their ability to reduce re-admissions and improve patient health. The Hospital Review Program will better control Medicaid hospital costs while also providing the systems, supports and care coordination provided to our most vulnerable patients: those in acute hospital settings.
- **Health Care Affordability Roadmap:** This tool invites communities across the state to work with the Department to customize more than 30 initiatives that reduce health care costs to respond to the evolving affordability challenges in their community. The Roadmap is intended to help all communities control costs, which will benefit Coloradans, employers, union trusts and Medicaid.

¹⁴⁹ Controlling Medicaid Costs, SB 18-266, 2019 Regular Session. (2018). Available from www.leg.colorado.gov/bills/sb18-266

¹⁵⁰ Colorado Hospital Association (CHA). (2017). *The Financial Health of Colorado Hospitals: Trends 2011-2015*. Retrieved from www.cha.com/data-reporting/financial-health-of-colorado-hospitals-report/.

- **Pharmacy Report:** The Department released a Prescription Drug report in December 2019 to identify the drivers of rising costs and potential solutions to address them.
- Specific to Medicaid, the Department has more than 100 initiatives in progress to improve quality and improve cost efficiencies.

Cumulatively, these resources will contribute to ongoing research and enhance the engagement between the Department, legislators, CHA, hospital providers and Coloradans.

Conclusion

This report reviews the health care cost landscape in Colorado and introduces research and analysis on reasons behind rising hospital costs, which comprise the largest portion of health care spending.¹⁵¹ The Department concludes that while CHCAA, CHASE and the ACA led to increased Medicaid payments to hospitals, fewer uninsured, less bad debt and less charity-care write-off for hospitals, they did not result in a reduction of the hospital cost shift to other payers to cover the cost of uncompensated care as was expected.

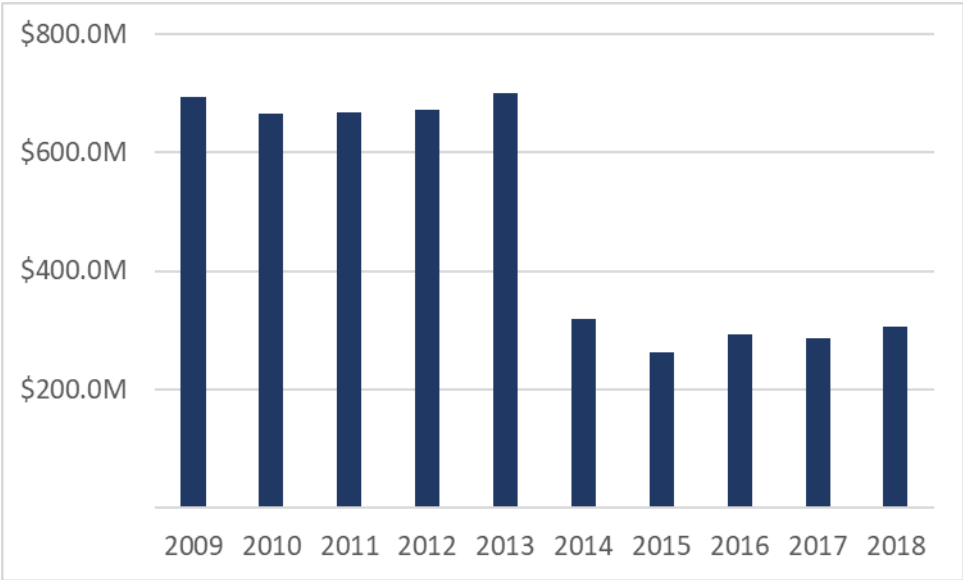
In a 2009 press release from the Colorado Hospital Association (see **Appendix F**), the association pledged that “by increasing hospital reimbursement rates [with a provider fee program] and covering the uninsured, we will reduce the rate of rising health care costs.”¹⁵² Colorado hospital under-compensation has decreased, but the savings were not passed on to commercial consumers, employers and union trusts. Instead, commercial insurance payments rose with hospital costs and margins. Said another way, the increase in hospital margins and operating costs is concurrent with the increase in the cost shift to commercial consumers, employers and union trusts.

¹⁵¹ Centers for Medicare and Medicaid Services. (2017). *National Health Expenditure Data: Health Expenditures by State of Residence*. Available from www.cms.gov

¹⁵² Colorado Hospital Association. (2009). *Statement from the Colorado Hospital Association on provider fee announced in State of the State speech*.

Appendix A: Financial Review Accompaniment

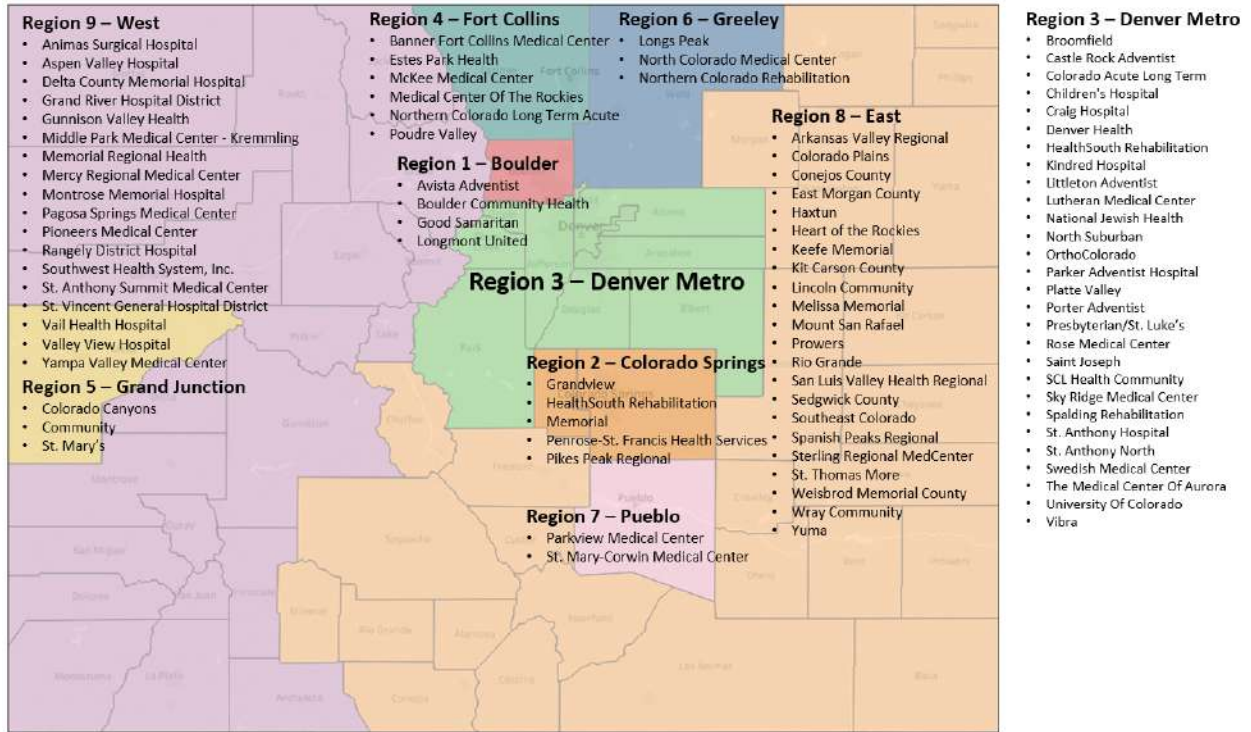
Figure 27: Colorado Hospital Bad Debt and Charity Care Cost¹⁵³



¹⁵³ Colorado Healthcare Affordability and Sustainability Enterprise (CHASE). (2017) CHASE Annual Report. Also see footnote 4 for data citation.

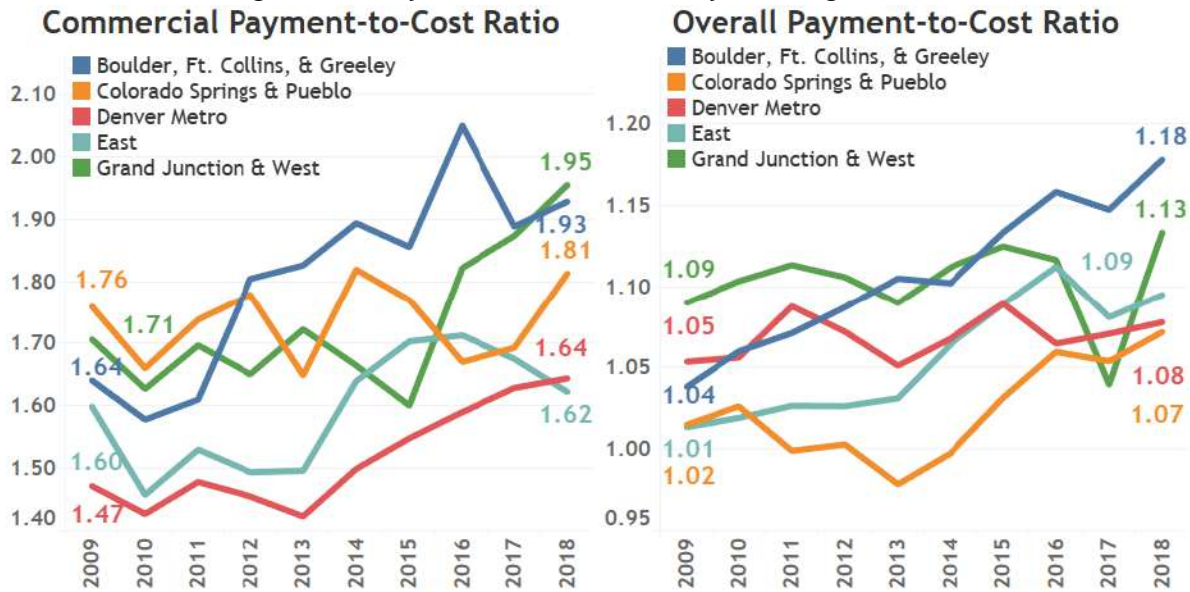
Appendix B: Division of Insurance (DOI) Regions and Regional Data Colorado DOI Region

Figure 28: Colorado DOI Regions and the Hospitals in Each Region¹⁵⁴



¹⁵⁴ See footnote 50.

Figure 29: Payment-to-Cost Ratio by DOI Region Over Time



Tables 31 through 40 offer supplemental data to the Regional Differences section of this report.

Table 31: Payment-to-Cost Ratio (Boulder, Fort Collins and Greeley)¹⁵⁵

| | Medicare | Medicaid | Commercial | CICP/Self Pay/Other | Totals |
|---------|----------|----------|------------|---------------------|--------|
| CY 2009 | 0.66 | 0.40 | 1.64 | 0.59 | 1.04 |
| CY 2010 | 0.70 | 0.41 | 1.58 | 0.99 | 1.06 |
| CY 2011 | 0.70 | 0.49 | 1.61 | 0.89 | 1.07 |
| CY 2012 | 0.56 | 0.63 | 1.80 | 0.95 | 1.09 |
| CY 2013 | 0.53 | 0.80 | 1.83 | 1.11 | 1.11 |
| CY 2014 | 0.61 | 0.55 | 1.89 | 1.15 | 1.10 |
| CY 2015 | 0.63 | 0.61 | 1.86 | 1.83 | 1.13 |
| CY 2016 | 0.69 | 0.44 | 2.05 | 1.48 | 1.16 |
| CY 2017 | 0.73 | 0.61 | 1.89 | 1.51 | 1.15 |
| CY 2018 | 0.69 | 0.76 | 1.93 | 1.69 | 1.18 |

Table 31 shows the ratio of total payments to total costs for all hospitals in the Division of Insurance regions 1, 4 and 6, which correspond to the Boulder, Fort Collins and Greeley areas (see Figure 28). Refer to Table 1 for the payment-to-cost ratio formula. When the ratio is at a value of one or more, the payments (numerator) were enough to cover the costs (denominator). The 2018 statewide payment-to-cost ratio was 1.09 for comparison.

¹⁵⁵ See footnote 25.

Table 32: Margins (Boulder, Fort Collins and Greeley)¹⁵⁶

| | Medicare (\$) | Medicaid (\$) | Commercial (\$) | CICP/Self Pay/Other (\$) | Totals (\$) |
|---------|---------------|---------------|-----------------|--------------------------|-------------|
| CY 2009 | (212.3M) | (58.5M) | 405.4M | (75.9M) | 58.6M |
| CY 2010 | (199.9M) | (68.4M) | 367.5M | (2.5M) | 96.7M |
| CY 2011 | (203.7M) | (66.2M) | 412.6M | (21.9M) | 120.8M |
| CY 2012 | (309.2M) | (50.3M) | 524.7M | (12.4M) | 152.7M |
| CY 2013 | (354.2M) | (30.8M) | 550.8M | 21.3M | 187.0M |
| CY 2014 | (310.4M) | (113.8M) | 594.0M | 20.7M | 190.4M |
| CY 2015 | (311.3M) | (114.9M) | 576.5M | 106.5M | 256.8M |
| CY 2016 | (259.6M) | (160.1M) | 589.9M | 141.2M | 311.4M |
| CY 2017 | (247.8M) | (128.4M) | 620.8M | 60.4M | 305.1M |
| CY 2018 | (298.0M) | (79.7M) | 668.1M | 90.6M | 381.1M |

Table 32 shows the difference between payments and costs for all hospitals in the Division of Insurance regions 1, 4 and 6, which correspond to the Boulder, Fort Collins and Greeley areas (see Figure 28). Refer to Table 4 for the formula calculating the margins. When the margin is positive, the payments were enough to cover the costs. The 2018 statewide margin was \$1,372.8 million for comparison.

¹⁵⁶ See footnote 25.

Table 33: Payment-to-Cost Ratio (Denver Metro)¹⁵⁷

| | Medicare | Medicaid | Commercial | CICP/Self Pay/Other | Totals |
|---------|----------|----------|------------|---------------------|--------|
| CY 2009 | 0.77 | 0.59 | 1.47 | 0.68 | 1.05 |
| CY 2010 | 0.73 | 0.84 | 1.43 | 0.74 | 1.06 |
| CY 2011 | 0.76 | 0.90 | 1.48 | 0.69 | 1.09 |
| CY 2012 | 0.75 | 0.88 | 1.46 | 0.67 | 1.07 |
| CY 2013 | 0.65 | 0.86 | 1.42 | 0.91 | 1.05 |
| CY 2014 | 0.68 | 0.78 | 1.50 | 1.01 | 1.07 |
| CY 2015 | 0.69 | 0.79 | 1.55 | 1.08 | 1.09 |
| CY 2016 | 0.68 | 0.72 | 1.59 | 0.90 | 1.06 |
| CY 2017 | 0.67 | 0.75 | 1.63 | 0.82 | 1.07 |
| CY 2018 | 0.66 | 0.78 | 1.64 | 0.83 | 1.08 |

Table 33 shows the ratio of total payments to total costs for all hospitals in the Division of Insurance region 3, which corresponds to the Denver Metro area (see Figure 28). Refer to Table 1 for the payment-to-cost ratio formula. When the ratio is at a value of one or more, the payments (numerator) were enough to cover the costs (denominator). The 2018 statewide payment-to-cost ratio was 1.09 for comparison.

Table 34: Margin (Denver Metro)¹⁵⁸

| | Medicare (\$) | Medicaid (\$) | Commercial (\$) | CICP/Self Pay/Other (\$) | Totals (\$) |
|---------|---------------|---------------|-----------------|--------------------------|-------------|
| CY 2009 | (311.7M) | (250.1M) | 1,042.0M | (217.9M) | 262.4M |
| CY 2010 | (419.5M) | (111.6M) | 1,002.7M | (201.7M) | 269.8M |
| CY 2011 | (389.2M) | (73.9M) | 1,182.5M | (256.2M) | 463.2M |
| CY 2012 | (444.7M) | (104.4M) | 1,239.8M | (269.8M) | 420.9M |
| CY 2013 | (673.0M) | (137.8M) | 1,210.6M | (81.7M) | 318.1M |
| CY 2014 | (651.9M) | (336.6M) | 1,439.9M | 7.5M | 458.8M |
| CY 2015 | (679.0M) | (340.3M) | 1,611.8M | 46.6M | 639.1M |
| CY 2016 | (754.0M) | (492.1M) | 1,782.5M | (59.4M) | 477.0M |
| CY 2017 | (874.0M) | (480.0M) | 2,071.7M | (116.1M) | 601.5M |
| CY 2018 | (983.2M) | (434.7M) | 2,248.0M | (122.0M) | 708.0M |

Table 34 shows the difference between payments and costs for all hospitals in the Division of Insurance region 3, which corresponds to the Denver Metro area (see Figure 28). Refer to Table 4 for the formula calculating the margins. When the margin is positive, the payments were enough to cover the costs. The 2018 statewide margin was \$1,372.8 million for comparison.

¹⁵⁷ See footnote 25.

¹⁵⁸ See footnote 25.

Table 35: Payment-to-Cost Ratio (Colorado Springs and Pueblo)¹⁵⁹

| | Medicare | Medicaid | Commercial | CICP/Self Pay/Other | Totals |
|---------|----------|----------|------------|---------------------|--------|
| CY 2009 | 0.81 | 0.47 | 1.76 | 0.14 | 1.02 |
| CY 2010 | 0.78 | 0.67 | 1.66 | 0.44 | 1.03 |
| CY 2011 | 0.77 | 0.46 | 1.74 | 0.35 | 1.00 |
| CY 2012 | 0.76 | 0.53 | 1.78 | 0.26 | 1.00 |
| CY 2013 | 0.74 | 0.53 | 1.65 | 0.42 | 0.98 |
| CY 2014 | 0.76 | 0.49 | 1.82 | 0.35 | 1.00 |
| CY 2015 | 0.77 | 0.52 | 1.77 | 0.75 | 1.03 |
| CY 2016 | 0.76 | 0.51 | 1.67 | 1.42 | 1.06 |
| CY 2017 | 0.78 | 0.77 | 1.69 | .70 | 1.05 |
| CY 2018 | 0.76 | 0.85 | 1.81 | .72 | 1.07 |

Table 35 shows the ratio of total payments to total costs for all hospitals in the Division of Insurance regions 2 and 7, which correspond to the Colorado Springs and Pueblo areas (see Figure 28). Refer to Table 1 for the payment-to-cost ratio formula. When the ratio is at a value of one or more, the payments (numerator) were enough to cover the costs (denominator). The 2018 statewide payment-to-cost ratio was 1.09 for comparison.

Table 36: Margins (Colorado Springs and Pueblo)¹⁶⁰

| | Medicare (\$) | Medicaid (\$) | Commercial (\$) | CICP/Self Pay/Other (\$) | Totals (\$) |
|---------|---------------|---------------|-----------------|--------------------------|-------------|
| CY 2009 | (77.6M) | (77.3M) | 338.8M | (168.4M) | 15.5M |
| CY 2010 | (93.9M) | (55.4M) | 309.8M | (126.4M) | 34.2M |
| CY 2011 | (106.1M) | (97.9M) | 349.2M | (149.8M) | (4.6M) |
| CY 2012 | (114.6M) | (95.7M) | 385.7M | (173.9M) | 1.5M |
| CY 2013 | (131.3M) | (98.3M) | 329.2M | (132.7M) | (33.2M) |
| CY 2014 | (118.5M) | (155.9M) | 391.4M | (122.7M) | (5.7M) |
| CY 2015 | (120.3M) | (174.9M) | 387.6M | (43.4M) | 49.0M |
| CY 2016 | (134.3M) | (201.3M) | 359.5M | 76.5M | 100.4M |
| CY 2017 | (132.8M) | (150.8M) | 394.5M | (57.2M) | 98.7M |
| CY 2018 | (170.5M) | (72.5M) | 449.8M | (66.0M) | 140.8M |

Table 36 shows the difference between payments and costs for all hospitals in the Division of Insurance regions 2 and 7, which correspond to the Colorado Springs and Pueblo areas (see Figure 28). Refer to Table 4 for the formula calculating the margins. When the margin is positive, the payments were enough to cover the costs. The 2018 statewide margin was \$1,372.8 million for comparison.

¹⁵⁹ See footnote 25.

¹⁶⁰ See footnote 25.

Table 37: Payment-to-Cost Ratio (East)¹⁶¹

| | Medicare | Medicaid | Commercial | CICP/Self Pay/Other | Totals |
|---------|----------|----------|------------|---------------------|--------|
| CY 2009 | 0.90 | 0.55 | 1.60 | 0.10 | 1.01 |
| CY 2010 | 0.85 | 0.71 | 1.46 | 0.65 | 1.02 |
| CY 2011 | 0.87 | 0.79 | 1.53 | 0.53 | 1.03 |
| CY 2012 | 0.90 | 0.89 | 1.49 | 0.47 | 1.03 |
| CY 2013 | 0.84 | 0.93 | 1.50 | 0.74 | 1.03 |
| CY 2014 | 0.85 | 0.76 | 1.64 | 0.96 | 1.06 |
| CY 2015 | 0.87 | 0.82 | 1.70 | 0.77 | 1.09 |
| CY 2016 | 0.87 | 0.80 | 1.71 | 1.08 | 1.11 |
| CY 2017 | 0.84 | 0.75 | 1.68 | 1.36 | 1.08 |
| CY 2018 | 0.82 | 0.90 | 1.62 | 1.28 | 1.09 |

Table 37 shows the ratio of total payments to total costs for all hospitals in the Division of Insurance region 8, which is widespread, including multiple counties spanning Logan County, Baca County and Chaffee County (see **Figure 28**). Refer to **Table 1** for the payment-to-cost ratio formula. When the ratio is at a value of one or more, the payments (numerator) were enough to cover the costs (denominator). The 2018 statewide payment-to-cost ratio was 1.09 for comparison.

Table 38: Margins (East)¹⁶²

| | Medicare (\$) | Medicaid (\$) | Commercial (\$) | CICP/Self Pay/Other (\$) | Totals (\$) |
|---------|---------------|---------------|-----------------|--------------------------|-------------|
| CY 2009 | (12.2M) | (18.3M) | 56.6M | (33.4M) | (7.4M) |
| CY 2010 | (20.0M) | (14.1M) | 46.6M | (14.7M) | (2.2M) |
| CY 2011 | (17.8M) | (10.9M) | 54.4M | (21.4M) | 4.3M |
| CY 2012 | (14.7M) | (6.2M) | 48.8M | (24.3M) | 3.7M |
| CY 2013 | (22.9M) | (4.2M) | 47.7M | (12.2M) | 8.5M |
| CY 2014 | (21.4M) | (19.8M) | 63.7M | (1.6M) | 20.9M |
| CY 2015 | (19.3M) | (17.5M) | 73.9M | (6.4M) | 30.7M |
| CY 2016 | (20.0M) | (20.4M) | 77.7M | 2.3M | 39.7M |
| CY 2017 | (26.4M) | (26.3M) | 75.1M | 11.3M | 33.7M |
| CY 2018 | (30.3M) | (9.9M) | 70.6M | 9.6M | 40.0M |

Table 38 shows the difference between payments and costs for all hospitals in the Division of Insurance Region 8, which is widespread, including multiple counties spanning Logan County, Baca County and Chaffee County (see **Figure 28**). Refer to **Table 4** for the formula calculating the margins. When the margin is positive, the payments were enough to cover the costs. The 2018 statewide Margin was \$1,372.8 million for comparison.

¹⁶¹ See footnote 25.

¹⁶² See footnote 25.

Table 39: Payment-to-Cost Ratio (Grand Junction and West)¹⁶³

| | Medicare | Medicaid | Commercial | CICP/Self Pay/Other | Totals |
|---------|----------|----------|------------|---------------------|--------|
| CY 2009 | 0.74 | 0.51 | 1.71 | (0.06) | 1.09 |
| CY 2010 | 0.73 | 0.74 | 1.63 | 0.33 | 1.10 |
| CY 2011 | 0.76 | 0.78 | 1.70 | 0.17 | 1.11 |
| CY 2012 | 0.72 | 0.81 | 1.65 | 0.52 | 1.11 |
| CY 2013 | 0.66 | 0.85 | 1.72 | 0.47 | 1.09 |
| CY 2014 | 0.76 | 0.94 | 1.66 | 0.73 | 1.11 |
| CY 2015 | 0.79 | 0.96 | 1.60 | 0.98 | 1.12 |
| CY 2016 | 0.71 | 0.81 | 1.82 | 0.72 | 1.12 |
| CY 2017 | 0.67 | 0.62 | 1.87 | 0.51 | 1.04 |
| CY 2018 | 0.74 | 0.83 | 1.95 | 0.65 | 1.13 |

Table 39 shows the ratio of total payments to total costs for all hospitals in the Division of Insurance regions 5 and 9, which are widespread, including multiple counties spanning Moffat County and Archuleta County (see **Figure 28**). Refer to **Table 1** for the payment-to-cost ratio formula. When the ratio is at a value of one or more, the payments (numerator) were enough to cover the costs (denominator). The 2018 statewide Payment-to-cost Ratio was 1.09 for comparison.

Table 40: Margins (Grand Junction and West)¹⁶⁴

| | Medicare (\$) | Medicaid (\$) | Commercial (\$) | CICP/Self Pay/Other (\$) | Totals (\$) |
|---------|---------------|---------------|-----------------|--------------------------|-------------|
| CY 2009 | (74.9M) | (39.7M) | 275.1M | (111.8M) | 48.7M |
| CY 2010 | (88.5M) | (25.5M) | 258.2M | (74.8M) | 69.4M |
| CY 2011 | (80.6M) | (21.9M) | 281.0M | (100.1M) | 78.5M |
| CY 2012 | (101.5M) | (22.2M) | 260.3M | (61.3M) | 75.3M |
| CY 2013 | (127.8M) | (18.9M) | 287.3M | (78.4M) | 62.3M |
| CY 2014 | (99.4M) | (11.5M) | 264.7M | (31.7M) | 122.1M |
| CY 2015 | (95.0M) | (9.3M) | 259.0M | (2.4M) | 152.4M |
| CY 2016 | (139.5M) | (45.2M) | 362.0M | (29.9M) | 147.3M |
| CY 2017 | (172.3M) | (95.5) | 383.5M | (62.4M) | 53.4M |
| CY 2018 | (151.8M) | (42.0M) | 432.8M | (50.1) | 188.9M |

Table 40 shows the difference between payments and costs for all hospitals in the Division of Insurance regions 5 and 9, which are widespread, including multiple counties spanning Moffat County and Archuleta County (see **Figure 28**). Refer to **Table 4** for the formula calculating the margins. When the margin is positive, the payments were enough to cover the costs. The 2018 statewide margin was \$1,372.8 million for comparison.

¹⁶³ See footnote 25.

¹⁶⁴ See footnote 25.

Appendix C: Adjusted Discharges Per Payer Type

Table 41: Adjusted Discharges per Payer Type¹⁶⁵

| | Medicare | Medicaid | Commercial | CICP/Self Pay/Other | Overall ¹⁶⁶ |
|---------|----------|----------|------------|---------------------|------------------------|
| CY 2009 | 219,101 | 107,826 | 313,796 | 134,769 | 775,492 |
| CY 2010 | 225,113 | 117,967 | 306,535 | 134,806 | 784,420 |
| CY 2011 | 236,466 | 122,811 | 310,859 | 132,051 | 802,188 |
| CY 2012 | 236,249 | 125,163 | 316,297 | 125,213 | 802,922 |
| CY 2013 | 233,279 | 135,574 | 312,481 | 120,010 | 801,344 |
| CY 2014 | 238,163 | 186,200 | 309,633 | 94,750 | 828,746 |
| CY 2015 | 239,302 | 208,066 | 312,377 | 86,870 | 846,615 |
| CY 2016 | 253,755 | 218,547 | 310,497 | 81,980 | 864,779 |
| CY 2017 | 265,335 | 220,683 | 317,672 | 82,429 | 886,119 |
| CY 2018 | 279,637 | 215,227 | 328,720 | 80,828 | 904,412 |

Table 42: Payment per Adjusted Discharge¹⁶⁷

| | Medicare (\$) | Medicaid/ CICP/Self Pay/Other (\$) | Commercial (\$) | Overall (\$) ¹⁶⁸ |
|---------|---------------|--|-----------------|-----------------------------|
| CY 2009 | 10,106 | 4,994 | 19,259 | 12,211 |
| CY 2010 | 10,480 | 7,530 | 19,844 | 13,189 |
| CY 2011 | 10,620 | 7,631 | 21,033 | 13,706 |
| CY 2012 | 10,927 | 8,633 | 22,014 | 14,579 |
| CY 2013 | 10,525 | 10,106 | 22,662 | 15,124 |
| CY 2014 | 11,575 | 9,932 | 23,814 | 15,590 |
| CY 2015 | 11,961 | 10,735 | 23,677 | 15,857 |
| CY 2016 | 12,428 | 10,738 | 26,637 | 16,942 |
| CY 2017 | 13,286 | 10,678 | 27,749 | 17,579 |
| CY 2018 | 13,450 | 12,444 | 28,699 | 18,663 |

¹⁶⁵ See footnote 25.

¹⁶⁶ Payer type Adjusted Discharges are calculated and summed to find Overall Adjusted Discharges. An alternative to this method is a calculation of Overall Adjusted Discharges from Overall IP Discharges and an Overall Adjustment Factor. This calculation was used in the CHASE 2018 Annual Report to analyze payment per adjusted discharges/per adjusted discharge. Using the sum of payer type adjusted discharges result in a slightly greater figure than when Overall Adjusted Discharges is calculated from Overall data, resulting in a more conservative figure.

¹⁶⁷ See footnote 25.

¹⁶⁸ See footnote 166.

Table 43: Cost Per Adjusted Discharge¹⁶⁹

| | Medicare (\$) | Medicaid/ CICP/Self Pay/Other (\$) | Commercial (\$) | Overall (\$) ¹⁷⁰ |
|---------|---------------|--|-----------------|-----------------------------|
| CY 2009 | 12,959 | 9,521 | 12,439 | 11,673 |
| CY 2010 | 13,842 | 10,282 | 13,326 | 12,493 |
| CY 2011 | 13,716 | 10,861 | 13,675 | 12,793 |
| CY 2012 | 14,813 | 11,872 | 14,268 | 13,681 |
| CY 2013 | 15,843 | 12,361 | 14,945 | 14,382 |
| CY 2014 | 16,284 | 12,657 | 14,972 | 14,564 |
| CY 2015 | 16,609 | 12,650 | 14,978 | 14,628 |
| CY 2016 | 17,510 | 13,347 | 16,246 | 15,609 |
| CY 2017 | 18,481 | 14,189 | 16,689 | 16,370 |
| CY 2018 | 19,108 | 15,571 | 16,893 | 17,145 |

Table 44: Margins per Adjusted Discharge¹⁷¹

| | Medicare (\$) | Medicaid/ CICP/Self Pay/Other (\$) | Commercial (\$) | Overall (\$) ¹⁷² | YOY Difference (\$) | Growth |
|---------|---------------|--|-----------------|-----------------------------|---------------------|--------|
| CY 2009 | (2,853) | (4,526) | 6,820 | 538 | - | - |
| CY 2010 | (3,361) | (2,752) | 6,518 | 696 | 158 | 29.4% |
| CY 2011 | (3,097) | (3,230) | 7,358 | 912 | 217 | 31.2% |
| CY 2012 | (3,886) | (3,239) | 7,746 | 898 | (14) | -1.6% |
| CY 2013 | (5,318) | (2,255) | 7,717 | 742 | (156) | -17.4% |
| CY 2014 | (4,710) | (2,725) | 8,842 | 1,026 | 284 | 38.3% |
| CY 2015 | (4,648) | (1,915) | 8,699 | 1,229 | 202 | 19.7% |
| CY 2016 | (5,082) | (2,608) | 10,391 | 1,333 | 104 | 8.5% |
| CY 2017 | (5,195) | (3,512) | 11,060 | 1,208 | (125) | -9.4% |
| CY 2018 | (5,659) | (3,127) | 11,806 | 1,518 | 310 | 25.6% |

¹⁶⁹ See footnote 25.

¹⁷⁰ See footnote 164.

¹⁷¹ See footnote 25.

¹⁷² See footnote 164.

Appendix D: Modeling Scenarios

Evaluation of Margins

**Table 45: Modeling Scenario Payment-to-Cost Ratio –
Overall Margins Held to 2009 Ratio 1.05, Commercial Declines¹⁷³**

| | Medicare | Medicaid | Scenario Commercial | CICP/Self Pay/Other | Scenario Overall |
|---------|----------|----------|---------------------|---------------------|------------------|
| CY 2009 | 0.78 | 0.54 | 1.55 | 0.52 | 1.05 |
| CY 2010 | 0.76 | 0.74 | 1.47 | 0.72 | 1.05 |
| CY 2011 | 0.77 | 0.76 | 1.48 | 0.65 | 1.05 |
| CY 2012 | 0.74 | 0.79 | 1.50 | 0.67 | 1.05 |
| CY 2013 | 0.66 | 0.80 | 1.50 | 0.84 | 1.05 |
| CY 2014 | 0.71 | 0.72 | 1.53 | 0.93 | 1.05 |
| CY 2015 | 0.72 | 0.75 | 1.48 | 1.11 | 1.05 |
| CY 2016 | 0.71 | 0.71 | 1.53 | 1.07 | 1.05 |
| CY 2017 | 0.72 | 0.72 | 1.59 | 0.85 | 1.05 |
| CY 2018 | 0.70 | 0.77 | 1.58 | 0.88 | 1.05 |

**Table 46: Modeling Scenario Payment –
Overall Margins Held to 2009 Ratio 1.05, Commercial Declines¹⁷⁴**

| | Medicare (\$) | Medicaid (\$) | Scenario Commercial (\$) | CICP/Self Pay/Other (\$) | Scenario Overall (\$) |
|---------|---------------|---------------|--------------------------|--------------------------|-----------------------|
| CY 2009 | 2,214.2M | 557.5M | 6,043.5M | 654.1M | 9,469.3M |
| CY 2010 | 2,359.3M | 877.8M | 5,988.7M | 1,025.6M | 10,251.4M |
| CY 2011 | 2,511.2M | 979.3M | 6,279.2M | 965.6M | 10,735.4M |
| CY 2012 | 2,581.5M | 1,147.4M | 6,747.9M | 1,014.1M | 11,491.0M |
| CY 2013 | 2,455.2M | 1,295.1M | 7,018.0M | 1,287.9M | 12,056.2M |
| CY 2014 | 2,756.6M | 1,718.0M | 7,078.9M | 1,072.4M | 12,626.0M |
| CY 2015 | 2,862.4M | 1,992.3M | 6,926.5M | 1,173.8M | 12,955.0M |
| CY 2016 | 3,153.6M | 2,069.7M | 7,739.9M | 1,157.5M | 14,120.7M |
| CY 2017 | 3,525.2M | 2,270.6M | 8,412.8M | 965.9M | 15,174.5M |
| CY 2018 | 3,761.0M | 2,536.6M | 8,775.5M | 1,147.4M | 16,220.5M |

¹⁷³ See footnote 25.

¹⁷⁴ See footnote 25.

Table 47: Actual Cost¹⁷⁵

| | Medicare (\$) | Medicaid (\$) | Commercial (\$) | CICP/Self Pay/Other (\$) | Overall (\$) |
|---------|---------------|---------------|-----------------|--------------------------|--------------|
| CY 2009 | 2,839.3M | 1,040.6M | 3,903.3M | 1,269.0M | 9,052.3M |
| CY 2010 | 3,115.9M | 1,182.9M | 4,085.0M | 1,416.1M | 9,800.0M |
| CY 2011 | 3,243.5M | 1,284.9M | 4,251.0M | 1,483.2M | 10,262.6M |
| CY 2012 | 3,499.5M | 1,455.9M | 4,512.9M | 1,516.7M | 10,984.9M |
| CY 2013 | 3,695.9M | 1,623.0M | 4,670.1M | 1,536.3M | 11,525.2M |
| CY 2014 | 3,878.3M | 2,400.8M | 4,635.7M | 1,155.1M | 12,069.9M |
| CY 2015 | 3,974.7M | 2,669.0M | 4,678.7M | 1,062.1M | 12,384.5M |
| CY 2016 | 4,443.3M | 2,924.2M | 5,044.5M | 1,086.8M | 13,498.8M |
| CY 2017 | 4,903.7M | 3,168.8M | 5,301.5M | 1,132.1M | 14,506.2M |
| CY 2018 | 5,343.3M | 3,305.8M | 5,553.0M | 1,304.0M | 15,506.1M |

**Table 48: Modeling Scenario Margins –
Overall Margins Held to 2009 Ratio 1.05, Commercial Declines¹⁷⁶**

| | Medicare (\$) | Medicaid (\$) | Scenario Commercial (\$) | CICP/ Self Pay/ Other (\$) | Scenario Overall (\$) |
|---------|---------------|---------------|--------------------------|----------------------------|-----------------------|
| CY 2009 | (625.1M) | (483.1M) | 2,140.2M | (614.9M) | 417.0M |
| CY 2010 | (756.7M) | (305.1M) | 1,903.8M | (390.5M) | 451.5M |
| CY 2011 | (732.2M) | (305.6M) | 2,028.3M | (517.6M) | 472.8M |
| CY 2012 | (918.0M) | (308.5M) | 2,235.1M | (502.5M) | 506.1M |
| CY 2013 | (1,240.6M) | (327.9M) | 2,347.9M | (248.4M) | 531.0M |
| CY 2014 | (1,121.7M) | (682.8M) | 2,443.2M | (82.7M) | 556.1M |
| CY 2015 | (1,112.3M) | (676.6M) | 2,247.8M | 111.7M | 570.6M |
| CY 2016 | (1,289.7M) | (854.5M) | 2,695.4M | 70.7M | 621.9M |
| CY 2017 | (1,378.5M) | (898.2M) | 3,111.3M | (166.2M) | 668.3M |
| CY 2018 | (1,582.3M) | (769.2M) | 3,222.5M | (156.6M) | 714.4M |

¹⁷⁵ See footnote 25.

¹⁷⁶ See footnote 25.

Evaluation of Costs

Table 49: Modeling Scenario Payment-to-Cost Ratio – with Modeling Scenario Costs, Commercial Declines to Reach Overall Margins¹⁷⁷

| | Scenario Medicare | Scenario Medicaid | Scenario Commercial | Scenario CICP/Self Pay/Other | Scenario Overall |
|---------|-------------------|-------------------|---------------------|------------------------------|------------------|
| CY 2009 | 0.78 | 0.54 | 1.55 | 0.52 | 1.05 |
| CY 2010 | 0.79 | 0.76 | 1.43 | 0.79 | 1.06 |
| CY 2011 | 0.78 | 0.79 | 1.49 | 0.74 | 1.07 |
| CY 2012 | 0.78 | 0.88 | 1.42 | 0.80 | 1.07 |
| CY 2013 | 0.73 | 0.90 | 1.36 | 1.03 | 1.05 |
| CY 2014 | 0.79 | 0.85 | 1.40 | 1.05 | 1.07 |
| CY 2015 | 0.79 | 0.86 | 1.40 | 1.21 | 1.08 |
| CY 2016 | 0.80 | 0.83 | 1.43 | 1.24 | 1.09 |
| CY 2017 | 0.84 | 0.88 | 1.39 | 1.00 | 1.07 |
| CY 2018 | 0.83 | 0.98 | 1.35 | 1.18 | 1.09 |

Table 50: Modeling Scenario Payment – with Modeling Scenario Costs, Commercial Declines to Reach Actual Overall Margins¹⁷⁸

| | Medicare (\$) | Medicaid (\$) | Scenario Commercial (\$) | CICP/Self Pay/Other (\$) | Scenario Overall (\$) |
|---------|---------------|---------------|--------------------------|--------------------------|-----------------------|
| CY 2009 | 2,214.2M | 557.5M | 6,043.5M | 654.1M | 9,469.3M |
| CY 2010 | 2,359.3M | 877.8M | 5,584.9M | 1,025.6M | 9,847.6M |
| CY 2011 | 2,511.2M | 979.3M | 6,039.5M | 965.6M | 10,495.6M |
| CY 2012 | 2,581.5M | 1,147.4M | 6,035.9M | 1,014.1M | 10,779.0M |
| CY 2013 | 2,455.2M | 1,295.1M | 5,835.6M | 1,287.9M | 10,873.8M |
| CY 2014 | 2,756.6M | 1,718.0M | 6,124.9M | 1,072.4M | 11,672.0M |
| CY 2015 | 2,862.4M | 1,992.3M | 6,358.1M | 1,173.8M | 12,386.6M |
| CY 2016 | 3,153.6M | 2,069.7M | 6,594.0M | 1,157.5M | 12,974.7M |
| CY 2017 | 3,525.2M | 2,270.6M | 6,759.2M | 965.9M | 13,520.9M |
| CY 2018 | 3,761.0M | 2,536.6M | 6,971.9M | 1,147.4M | 14,416.9M |

¹⁷⁷ See footnote 25.

¹⁷⁸ See footnote 25.

Table 51: Modeling Scenario Cost¹⁷⁹

| | Scenario Medicare (\$) | Scenario Medicaid (\$) | Scenario Commercial (\$) | Scenario CICP/Self Pay/Other (\$) | Scenario Overall (\$) |
|---------|------------------------|------------------------|--------------------------|-----------------------------------|-----------------------|
| CY 2009 | 2,839.3M | 1,040.6M | 3,903.3M | 1,269.0M | 9,052.3M |
| CY 2010 | 2,976.9M | 1,160.4M | 3,894.9M | 1,296.0M | 9,328.2M |
| CY 2011 | 3,204.4M | 1,238.2M | 4,051.1M | 1,303.2M | 9,796.9M |
| CY 2012 | 3,297.6M | 1,299.0M | 4,243.5M | 1,274.8M | 10,115.0M |
| CY 2013 | 3,341.9M | 1,440.9M | 4,302.7M | 1,255.0M | 10,340.4M |
| CY 2014 | 3,495.4M | 2,014.9M | 4,371.0M | 1,022.2M | 10,903.6M |
| CY 2015 | 3,613.5M | 2,310.0M | 4,536.5M | 966.9M | 11,426.8M |
| CY 2016 | 3,918.4M | 2,481.8M | 4,618.1M | 935.6M | 11,953.9M |
| CY 2017 | 4,203.1M | 2,573.0M | 4,849.5M | 966.0M | 12,591.6M |
| CY 2018 | 4,543.1M | 2,578.9M | 5,149.1M | 973.3M | 13,244.4M |

Table 52: Modeling Scenario Margins – with Modeling Scenario Costs, Commercial Declines to Reach Actual Overall Margins¹⁸⁰

| | Scenario Medicare (\$) | Scenario Medicaid (\$) | Scenario Commercial (\$) | Scenario CICP/Self Pay/Other (\$) | Scenario Overall (\$) |
|---------|------------------------|------------------------|--------------------------|-----------------------------------|-----------------------|
| CY 2009 | (625.1M) | (483.1M) | 2,140.2M | (614.9M) | 417.0M |
| CY 2010 | (617.6M) | (282.5M) | 1,690.0M | (270.4M) | 519.4M |
| CY 2011 | (693.2M) | (258.9M) | 1,988.3M | (337.6M) | 698.7M |
| CY 2012 | (716.1M) | (151.6M) | 1,792.4M | (260.7M) | 664.0M |
| CY 2013 | (886.6M) | (145.7M) | 1,532.9M | 32.9M | 533.4M |
| CY 2014 | (738.7M) | (296.9M) | 1,753.8M | 50.2M | 768.4M |
| CY 2015 | (751.1M) | (317.6M) | 1,821.6M | 207.0M | 959.8M |
| CY 2016 | (764.8M) | (412.1M) | 1,975.9M | 221.8M | 1,020.8M |
| CY 2017 | (677.9M) | (302.5M) | 1,909.7M | (0.1M) | 929.3M |
| CY 2018 | (782.1M) | (42.3M) | 1,822.8M | 174.1M | 1,172.5M |

¹⁷⁹ See footnote 25.

¹⁸⁰ See footnote 25.

Evaluation of Costs and Margins

Table 53: Modeling Scenario Payment-to-Cost Ratio – with Modeling Scenario Costs, Commercial Declines to Reach 2009 Ratio of 1.05¹⁸¹

| | Scenario Medicare | Scenario Medicaid | Scenario Commercial | Scenario CICP/Self Pay/Other | Scenario Overall |
|---------|-------------------|-------------------|---------------------|------------------------------|------------------|
| CY 2009 | 0.78 | 0.54 | 1.55 | 0.52 | 1.05 |
| CY 2010 | 0.79 | 0.76 | 1.41 | 0.79 | 1.05 |
| CY 2011 | 0.78 | 0.79 | 1.43 | 0.74 | 1.05 |
| CY 2012 | 0.78 | 0.88 | 1.38 | 0.80 | 1.05 |
| CY 2013 | 0.73 | 0.90 | 1.34 | 1.03 | 1.05 |
| CY 2014 | 0.79 | 0.85 | 1.34 | 1.05 | 1.05 |
| CY 2015 | 0.79 | 0.86 | 1.31 | 1.21 | 1.05 |
| CY 2016 | 0.80 | 0.83 | 1.33 | 1.24 | 1.05 |
| CY 2017 | 0.84 | 0.88 | 1.32 | 1.00 | 1.05 |
| CY 2018 | 0.83 | 0.98 | 1.24 | 1.18 | 1.05 |

Table 54: Modeling Scenario Payment – with Modeling Scenario Costs, Commercial Declines to Reach 2009 Ratio of 1.05¹⁸²

| | Medicare (\$) | Medicaid (\$) | Scenario Commercial (\$) | CICP/Self Pay/Other (\$) | Scenario Overall (\$) |
|---------|---------------|---------------|--------------------------|--------------------------|-----------------------|
| CY 2009 | 2,214.2M | 557.5M | 6,043.5M | 654.1M | 9,469.3M |
| CY 2010 | 2,359.3M | 877.8M | 5,495.2M | 1,025.6M | 9,757.9M |
| CY 2011 | 2,511.2M | 979.3M | 5,792.1M | 965.6M | 10,248.3M |
| CY 2012 | 2,581.5M | 1,147.4M | 5,837.9M | 1,014.1M | 10,581.0M |
| CY 2013 | 2,455.2M | 1,295.1M | 5,778.6M | 1,287.9M | 10,816.8M |
| CY 2014 | 2,756.6M | 1,718.0M | 5,858.8M | 1,072.4M | 11,405.9M |
| CY 2015 | 2,862.4M | 1,992.3M | 5,924.7M | 1,173.8M | 11,953.3M |
| CY 2016 | 3,153.6M | 2,069.7M | 6,123.9M | 1,157.5M | 12,504.7M |
| CY 2017 | 3,525.2M | 2,270.6M | 6,410.0M | 965.9M | 13,171.7M |
| CY 2018 | 3,761.0M | 2,536.6M | 6,409.6M | 1,147.4M | 13,854.6M |

¹⁸¹ See footnote 25.

¹⁸² See footnote 25.

Table 55: Modeling Scenario Cost¹⁸³ Modeling Scenario Cost

| | Medicare (\$) | Medicaid (\$) | Scenario Commercial (\$) | CICP/Self Pay/Other (\$) | Overall (\$) |
|---------|---------------|---------------|--------------------------|--------------------------|--------------|
| CY 2009 | 2,839.3M | 1,040.6M | 3,903.3M | 1,269.0M | 9,052.3M |
| CY 2010 | 2,976.9M | 1,160.4M | 3,894.9M | 1,296.0M | 9,328.2M |
| CY 2011 | 3,204.4M | 1,238.2M | 4,051.1M | 1,303.2M | 9,796.9M |
| CY 2012 | 3,297.6M | 1,299.0M | 4,243.5M | 1,274.8M | 10,115.0M |
| CY 2013 | 3,341.9M | 1,440.9M | 4,302.7M | 1,255.0M | 10,340.4M |
| CY 2014 | 3,495.4M | 2,014.9M | 4,371.0M | 1,022.2M | 10,903.6M |
| CY 2015 | 3,613.5M | 2,310.0M | 4,536.5M | 966.9M | 11,426.8M |
| CY 2016 | 3,918.4M | 2,481.8M | 4,618.1M | 935.6M | 11,953.9M |
| CY 2017 | 4,203.1M | 2,573.0M | 4,849.5M | 966.0M | 12,591.6M |
| CY 2018 | 4,543.1M | 2,578.9M | 5,149.1M | 973.3M | 13,244.4M |

Table 56: Modeling Scenario Margins – with Modeling Scenario Costs, Commercial Declines to Reach 2009 Ratio of 1.05¹⁸⁴

| | Scenario Medicare (\$) | Scenario Medicaid (\$) | Scenario Commercial (\$) | Scenario CICP/Self Pay/Other (\$) | Scenario Overall (\$) |
|---------|------------------------|------------------------|--------------------------|-----------------------------------|-----------------------|
| CY 2009 | (625.1M) | (483.1M) | 2,140.2M | (614.9M) | 417.0M |
| CY 2010 | (617.6M) | (282.5M) | 1,600.3M | (270.4M) | 429.8M |
| CY 2011 | (693.2M) | (258.9M) | 1,741.0M | (337.6M) | 451.3M |
| CY 2012 | (716.1M) | (151.6M) | 1,594.4M | (260.7M) | 466.0M |
| CY 2013 | (886.6M) | (145.7M) | 1,475.9M | 32.9M | 476.4M |
| CY 2014 | (738.7M) | (296.9M) | 1,487.8M | 50.2M | 502.3M |
| CY 2015 | (751.1M) | (317.6M) | 1,388.2M | 207.0M | 526.4M |
| CY 2016 | (764.8M) | (412.1M) | 1,505.8M | 221.8M | 550.7M |
| CY 2017 | (677.9M) | (302.5M) | 1,560.5M | (0.1M) | 580.1M |
| CY 2018 | (782.1M) | (42.3M) | 1,260.5M | 174.1M | 610.2M |

¹⁸³ See footnote 25.

¹⁸⁴ See footnote 25.

Effect on Insurance Premiums

**Table 57: November 2019 Health Care Employee Insurance Premiums
Modeling Scenario Compared**

| | Employee Only | | | Employee Plus Family | | |
|--------------|---------------|------------|------------|----------------------|------------|------------|
| | Actual | Scenario 1 | Difference | Actual | Scenario 1 | Difference |
| Kaiser HDHP | \$36.78 | \$33.05 | \$3.73 | \$268.46 | \$241.24 | \$27.22 |
| Kaiser COPAY | \$93.72 | \$84.22 | \$9.50 | \$440.48 | \$395.82 | \$44.66 |
| UHC HDHP | \$25.18 | \$22.63 | \$2.55 | \$237.02 | \$212.99 | \$24.03 |
| UHC COPAY | \$159.14 | \$143.00 | \$16.14 | \$638.86 | \$574.08 | \$64.78 |

**Table 58: November 2019 Health Care Employer Insurance Premiums
Modeling Scenario Compared**

| | Employee Only | | | Employee Plus Family | | |
|--------------|---------------|------------|------------|----------------------|------------|------------|
| | Actual | Scenario 1 | Difference | Actual | Scenario 1 | Difference |
| Kaiser HDHP | \$512.08 | \$460.16 | \$51.92 | \$1,328.88 | \$1,194.13 | \$134.75 |
| Kaiser COPAY | \$577.80 | \$519.21 | \$58.59 | \$1,522.44 | \$1,368.06 | \$154.38 |
| UHC HDHP | \$593.76 | \$533.55 | \$60.21 | \$1,550.18 | \$1,392.99 | \$157.19 |
| UHC COPAY | \$598.40 | \$537.72 | \$60.68 | \$1,564.12 | \$1,405.52 | \$158.60 |

Appendix E: Example Consultant Feedback¹⁸⁵

Bai, Eisenberg and Anderson from Johns Hopkins

“In our opinion, the Cost Shift Analysis, in all material aspects, used appropriate methodology for their analyses and drew reasonable conclusions. The findings about hospital behavior, specifically that hospitals generally do not lower their private costs in response to increased public reimbursement, are in line with the existing empirical evidence documented in the academic literature.”

“All empirical studies are limited by data availability and must carefully balance this with the appropriateness of their conclusions. Using 2009-2017 as the study period in the report is appropriate, which includes the impacts of major policy changes both in the state (the 2009 Colorado Health Care Affordability Act) and the nation as a whole (the 2010 Affordable Care Act). We do not have reasons to expect that the conclusions would qualitatively change if the study period were to be expanded to an earlier period.”

“The purpose of the report is to understand the hospital cost landscape in Colorado, especially the hospital cost’s implications for commercial payers. Considering this narrow focus, we do not believe that the scope of conclusions, as listed in the Executive Summary, lacks objectivity.”

Chapin White

“In general, the core assertions in the report are sound. The report’s overarching conclusion is that hospitals in Colorado have exerted market leverage to achieve higher-than-necessary growth in prices paid by commercial health plans, and those price and revenue increases have allowed hospitals’ costs and profits to increase. That conclusion is justified, based on the evidence presented in the report, as well as corroborating evidence presented in this Memorandum and other recent research findings (e.g., https://www.rand.org/pubs/research_reports/RR3033.html).”

“The remainder of this Memorandum describes suggested improvements to the report’s methodology and framing. These suggestions, if adopted, would, I believe, further strengthen the report, but would not alter the overarching conclusion.”

Health Management Associates (HMA)

“The Report effectively describes the cumulative change in expenses and the effect of changes in patient volume and inflation. The comparison of Colorado’s growth in cost per adjusted discharge to the national average (Figure 14 [Figure 13 of this report]) makes the case for potential opportunity in a convincing way.”

“discuss market consolidation in Colorado including hospital-to-hospital mergers and acquisitions and hospital acquisitions of physician practices. Much of this information is relevant to the cost shift topic and presented in a reasonably objective way.”

¹⁸⁵ For a comprehensive collection of consultant feedback and suggestions, see the accompanying document Cost Shift Report Consultant Review. Available at www.colorado.gov/pacific/hcpf/colorado-cost-shift-analysis

“The ‘what-if’ modeling of different scenarios provides helpful context; by expressing recent cost growth and margin increases in terms of the impact on commercial insurance payments (and therefore, the impact on employer/consumer cost), the Report appropriately establishes the importance of these issues.”

Appendix F: Colorado Hospital Association 2009 Press Release



FOR IMMEDIATE RELEASE

January 8, 2009

Contact: Tiffany Radel, Vice President of Communications
720.330.6019 (direct)
303.881.9523 (cell)

Statement from the Colorado Hospital Association on provider fee announced in State of the State speech

GREENWOOD VILLAGE—In response to Governor Bill Ritter’s State of the State speech, the Colorado Hospital Association (CHA) issued the following statement about the governor’s proposed strategy to attract more federal Medicaid funding to the state. Under the provider fee program, hospitals would pay a fee to the state, which could then be leveraged to draw down additional federal Medicaid matching dollars. The statement from CHA President and CEO Steven J. Summer is as follows:

“For months, the Colorado Hospital Association has been working with the Governor’s office to explore the possibility of implementing a provider fee in Colorado. The additional dollars brought into Colorado through the provider fee would not only help to improve hospital reimbursement rates for care provided to Medicaid and Colorado Indigent Care Program (CICP) patients, it would also serve to expand access to healthcare services for some of the state’s 800,000 uninsured individuals.

“Today, uninsured patients and Medicaid under-payment to hospitals are two of the major drivers of cost-shifting in health care. Annually, Colorado hospitals incur more than \$375 million in uncompensated costs by serving Medicaid patients. By increasing hospital reimbursement rates and covering the uninsured, we will reduce the rate of rising healthcare costs.

“If we do nothing, the cost-shift will continue to grow, particularly in today’s economic environment when reimbursement rates are likely to be cut and more and more Coloradans are losing health coverage. The provider fee is our best hope to increase coverage to the uninsured and slow the cost- shift.

“Hospitals are working with the Governor’s office and legislative sponsors on drafting the legislation and have agreed to a number of provisions to ensure the hospital provider fee is a win for hospitals, a win for Colorado residents, and a win for the state. Those provisions include: (1) statutory language prohibiting line item billing to patients and (2) an oversight committee to monitor the implementation of the provider fee and the impact of the provider fee on healthcare reform.”

More information will be available as legislation is introduced. In the meantime, the Colorado Hospital Association is available for comment.

###