COLORADO
Department of Health Care Policy & Financing

Breakeven Analysis

Methodology

This brief write-up details the methodology for the Breakeven Analysis. This knowledge is necessary for others to recreate the analysis presented in the Department of Health Care Policy & Financing's (the Department's) Breakeven Analysis.

The Breakeven Analysis answers the question: What would hospitals have to charge commercial insurance in order to break even? In addition: What **did** hospitals charge commercial insurance, and how excessive was it?

Features of this dataset are that it:

- Compares national data
- Analyzes ratios for greater comparability
- Compares payments and costs by payer type

Features of the Department's analysis are that it:

- Compares Colorado and the nation
- Compares Colorado costs by hospital, system and region
- Compares Colorado hospitals to a national peer group

I. Data Source

Data presented in the tool and described in this methodology document are sourced from the Medicare Cost Reports.[1] Hospitals submit self-reported Medicare Cost Report data annually to the Centers for Medicare & Medicaid Services (CMS). Data is extracted consistently from the reports and reflects exactly what was reported by the hospitals. The data extracted for this analysis is as reported to the Healthcare Cost Report Information System (HCRIS). The public use files[2] for this information are managed by CMS.

For information on the limitations of the data source please see the Department's Preface on the use of the Medicare Cost Report Information.

[1] Centers for Medicare & Medicaid Services. Cost Reports. (2019). Available at: https://www.cms.gov/Research-Statistics-Data-and-Systems/Downloadable-Public-Use-Files/Cost-Reports/index.html.

[2] CMS makes a reasonable effort to provide up-to-date, accurate, complete and comprehensive data files of the HCRIS data for the public and are described as the public use files. Available at: https://www.cms.gov/Research-Statistics-Data-and-Systems/Downloadable-Public-Use-Files/Cost-Reports/Cost-Reports-by-Fiscal-Year.html.

II. Hospitals Included

The calculations detailed in this document were made for every hospital in the HCRIS database and then summarized as desired: by hospital, nationally, by state (Colorado), by hospital system, by region.

The dataset is for acute care hospitals. Acute care is for medical services that are brief and for serious conditions, like trauma, disease or surgery. Specialty hospitals, which include psychiatric, rehabilitation and long-term care services, are excluded from the dataset.

Because Medicare Cost Reports are self-reported there is risk of reporting errors. The Department has identified data that has logic errors as a means to filter that data. Hospital data is filtered under the following conditions:

- If payments are greater than charges for any payer, or
- If payments for any payer is less than zero, or
- If total charges or net patient revenue is less than zero.

III. Payer Types

For each hospital, the dataset compiles total charges, total payments, and total costs. The dataset also calculates charges, payments and costs by available payer types within Medicare cost reports, which includes:

- Medicare
- Medicaid
- SCHIP (known as Child Health Plan *Plus* (CHP+) in Colorado) and Other State/Local Programs
- Uninsured
- Charity Care Program

Summing these payer types results in a non-commercial amount and when subtracted from total amounts, results in an estimate of commercial/other charges, payments, and costs.

Row	Payer Type	Source or Calculation
A	Medicare	MCR
B	Medicaid	MCR
C	SCHIP and Other State/Local Programs	MCR
D	Uninsured & Charity Care	MCR
E	Non-Commercial	Sum of Row A through D
F	Total	MCR
G	Commercial/ Other	Row F minus Row E

The Department devoted a great deal of attention to appropriately representing non-commercial financial line items so that commercial/other financial line items were appropriate estimations.

- Because of the features of the Medicare Cost Report, the Department composes the Medicare information on charges, payments and costs from various sheets of the cost report. The following reflects some of the Medicare specific calculations:
  - Medicare financial line items sum inpatient and outpatient services.

- Medicare sequestration payments are deducted from payments.
- Medicare line items are composed of various provider lines and forms of charges, costs, or payment: hospital, inpatient psychiatric facility (IPF), inpatient rehabilitation facility (IRF), skilled nursing facility (SNF), swing bed SNF, rehabilitee health center (RHC), federally qualified health center (FQHC), hospital based FQHC, and Tax Equity and Fiscal Responsibility Act (TEFRA) payments.
- Medicare is adjusted for the proportion of Medicare Advantage patients the hospital sees using a Medicare Advantage reclassification ratio.

Worksheet S-10 is the primary source for charges, payments, and costs for Medicaid, SCHIP and Other State/Local Programs, Uninsured and Charity Care payer types.

IV. Measures

This analysis compiles charges, payments and costs by payer type to calculate breakeven and cost recovery. For detailed source information see the section below titled Modeling.

A. Line items used in Measures[3]

1. Charges by Payer Type

Every hospital has a menu of charges for services called a chargemaster. Charges are the topmost financial layer in a hospital's billing cycle and make varying payments by payer type possible. Charges are negotiated down by payers to reach actual payments by payer type.

A patient who receives the same care would have the same charges despite payer type; this makes charges a good measure of the mix of patients by payer type, as well as a good foundation for adjustments by payer type.

2. Payments by Payer Type

The amount of money made from providing patient services. Although a hospital charges the same amount for services, they are paid different amounts depending on the payer type and what the payer has negotiated with the hospital.

3. Costs by Payer Type

The cost associated with providing services allocated to payer types. Cost to charge ratios are used for some payer types.

4. Payments to Breakeven

This measures what costs remain before commercial and other payments and represents what must be covered to break even. This can be understood as what payments cover the cost shift from non-commercial payers.

[3] The example tables reflect actual amounts from the analysis.

Table 1. Colorado Payments to Break Even,Calculation by Year

Row	Field	2018	2019	2020	Calculation
A	Total Costs	$11,837,998,191	$12,209,254,745	$11,943,164,246	
B	Non-commercial Payments	$6,061,136,228	$5,998,261,161	$5,702,792,331	
C	Payments to Breakeven	$5,776,861,963	$6,210,993,584	$6,240,371,915	Row A – Row B

B. Measures and their Calculations

1. Commercial Payment to Breakeven

A measurement of what percentage of commercial/other costs are in the form of commercial/other payments to break even. This measure can be thought of as what percent costs must be shifted to commercial/other payments.

A value of 141% means that commercial/other payers must pay 141% of commercial/other costs for the hospital to break even.

Table 2. Colorado Commercial Payments to Break Even, Calculation by Year

Row	Field	2018	2019	2020	Calculation
A	Payments to Break Even	$7,317,711,935	$7,989,461,470	$7,259,799,222	Table 1, Row C
B	Commercial Costs	$5,238,568,631	$5,642,691,311	$5,145,296,733	
C	Commercial Payment to Break Even	140%	142%	141%	Row A / Row B

2. Commercial Payment beyond Breakeven

This is a different profit measure composed of the breakeven analysis components instead of totals. This measures how excessive commercial payments are in relationship to payments to break even. A positive value means that there is a recorded profit, while a negative value means that the hospital did not break even and did not make a profit.

A value of 19% means that 19% of commercial/other payments go to profits, rather than offsetting costs.

Table 3. Colorado Commercial Payments beyond Breakeven Calculation by Year

Row	Field	2018	2019	2020	Calculation
A	Commercial Payments	$9,403,184,336	$10,071,782,841	$8,985,846,744	
B	Payments to Breakeven	$7,317,711,935	$7,989,461,470	$7,259,799,222	
C	Commercial Excess/ Total Profit	$2,085,472,404	$2,082,321,363	$1,726,047,526	Row A – Row B
D	Commercial Payment beyond Breakeven	22%	21%	19%	Row C / Row A

3. Estimated Actual Commercial Payment (as a percent of Cost)

A measurement of what percentage of commercial/other payments are in relationship to commercial/other payments. This measure can be thought of as what percent of commercial payments exceed commercial costs. This is the same as the commercial payment to cost ratio displayed as a percentage.

A value of 175% means that commercial/other payments are 1.75 times commercial/other costs.

Table 4. Colorado Est. Actual Commercial Payment (as a % of Cost) Calculation by Year

Row	Field	2018	2019	2020	Calculation
A	Commercial Payments	$9,403,184,336	$10,071,782,841	$8,985,846,744	
B	Commercial Costs	$5,238,568,631	$5,642,691,311	$5,145,296,733	
C	Estimated Actual Commercial . Payment (as a % of Cost)	179%	178%	175%	Row A / Row B

4. Payment to Cost Ratio as a Percentage

The tool also provides payment to cost ratios by payer type. This is a ratio measurement of what costs are covered by the payments received by the payer.

The analysis specifically presents the Medicare payment to cost ratio as a means to compare hospitals for a measure that has a similar population and similar reimbursement.

A value of 100% means that payments equal costs. A value greater than 100% means that payments are more than costs at that percentage. A value less than 100% means that payments are less than costs at that percentage.

Payment by Payer Type divided by Cost by Payer Type

5. Payer Mix

The proportion of charges a payer type represents. This measure represents the proportion of hospital patients by payer type.

Charges by Payer Type divided by Total Charges

A. Analyses and Comparisons

This analysis assesses aggregate measures on multiple levels: hospital, state, system, and regional. In addition to these levels of comparison the analysis compares hospitals by peer group, and makes comparisons between payer types and between measures.[4]

[4] The Department's Hospital Cost Reporting Tool Methodology has data sources for regional, adjusted discharge, and other measures used for comparisons. This document is available at https://hcpf.colorado.gov/sites/hcpf/files/Hospital Cost Reporting Tool Methodology.pdf

1. Peer Group Analysis

It is useful to compare hospitals against similar size peers to further identify irregularities or trends.[5] Hospitals are compared to a peer group measured by adjusted discharges or licensed beds.

2. Relative to Medicare

Two measures (Estimated Actual Comm. Payment and Commercial Payment to Breakeven) can be displayed as relative to the hospital's Medicare payment to cost ratios instead of the hospital's commercial costs. This is a valuable comparison because Medicare payments start with the same fee schedule and adjustments made address geographic, hospital, and patient specific characteristics.

For example, a hospital with a 221% value for Estimated Actual Comm. Payment (relative to Medicare) means that from commercial payers the hospital receives 2.2 times what Medicare reimburses.

3. Difference between Estimated Actual and Breakeven

To gauge the relationship between actual commercial/other payments and payments to break even, the difference is calculated. Because of the common denominator of the measures, the math is the same as Commercial Excess/Total Profits divided by Commercial Costs.

A value of 34% means that the hospital exceeded their breakeven percentage by 34%. This means that the hospital profited and for every dollar of commercial costs, that the hospital recorded $0.34 of profit.

Table 5. Colorado Difference between Estimated Actual and Breakeven Calculation by Year

Row	Field	2018	2019	2020	Calculation
A	Estimated Actual Comm. Payment (as a % of Cost)	179%	178%	175%	
B	Commercial Payment to Breakeven	140%	142%	141%	
C	Difference between Estimated Actual and Breakeven	40%	37%	34%	Row A – Row B

II. Modeling

In the development of this analysis, analysts reviewed including and excluding different adjustments. After extensive review of Medicare Cost Reports, including assessing multiple combinations of adjustments, the Department focused on three important components to composing payer type estimates for charges, payments, and costs:

- Hospital

[5] Using ratio measures inherently adjusts for size. For example, a larger hospital will have more costs and more payments than a small hospital, but the ratio of payments divided by costs balances the growth of both costs and payments, unlike a metric such as discharges.

- Includes an adjustment for other reimbursable cost centers
- Includes a Graduate Medical Education (GME) cost adjustment

- An adjustment for non-hospital
  - Includes a professional component adjustment
  - Includes a non-hospital reallocation adjustment
- An adjustment for Medicare Advantage

The current tool uses a model that excludes Other Income (Expense) adjustments from allocations to payer types. In the future an alternate model may be added to include these factors and this methodology document would be subsequently updated. Figure 1 is a visual display of how the models are comprised of these components.

Figure 1.

Although only one model is presented in the Department's deliverable, extensive review was performed on several models and adjustments, including review from outside consultants.

A. Model A

This model estimates charges, costs and payments for each payer type but excludes other income and other expenses (as defined in Medicare cost report worksheet G-3) and related organization transactions (as defined in Medicare cost report worksheet A-8-1).

1. Charges

Total Charges

a. Total Charges Before Adjustment plus Non-Hospital Charges

Row	Line Item	Worksheet	Line	Column
A	Total Charges Before Adjustment	C. Part I	202	8

b. Non-Hospital Charges

Total Patient Revenues minus Total Charges Before Adjustment

Row	Line Item	Worksheet	Line	Column
A	Total Patient Revenues	G-3	1	1

Medicare Charges

The sum of Medicare charges before adjustment, the Medicare share of other reimbursable cost center charges, and the Medicare share of non-hospital charges.

Row	Line Item	Calculation
A	Medicare Charges before Medicare Advantage Reclassification	
B	Medicare Advantage Reclassification of Charges	

Row	Line Item	Calculation
C	Medicare Share of Non-Hospital Charges	
D	Medicare Advantage Reclassification	
E	Medicare Charges	Sum of Row A through D

a. Medicare Charges before Adjustments

Row	Line Item	Worksheet	Line	Column	Calculation
A	Medicare Inpatient Charges	D-3	30 through 43, 202	2	
B	Medicare Outpatient Charges	D, Part V	202	2 through 4	
C	Medicare Outpatient Charges	M-3	16.01	1 and 2	
D	Medicare Charges before Adjustment				Sum of Row A through Row C

b. Medicare Share of Other Reimbursable Cost Center Charges

Other Reimbursable Cost Center Charges multiplied by the Medicare Percentage of Total Charges Before Other Reimbursable Cost Center Charges.

1) Other Reimbursable Cost Center Charges

Row	Line Item	Worksheet	Line	Column
A	Other Reimbursable Cost Center Charges	C. Part I	95, 99 through 104, 115 thru 117	8

2) Medicare Percentage of Total Charges Before Other Reimbursable Cost Center Charges

Medicare Charges Before Adjustment divided by the difference of Total Charges Before Adjustment minus Other Reimbursable Cost Center Charges.

c. Medicare Share of Non-Hospital Charges

Non-Hospital Charges multiplied by the quotient of Medicare Charges Before Adjustment divided by Total Charges Before Adjustment.

d. Medicare Advantage Reclassification of Charges

Sum of Medicare Charges Before Adjustment and Medicare Share of Other Reimbursable Cost Center Charges multiplied by the Medicare Advantage Reclassification Ratio.

1) Medicare Advantage Reclassification Ratio

Row	Line Item	Worksheet	Line	Column	Calculation
A	Medicare Advantage Patient Days	S-3	2 thru 4	6	
B	Medicare FFS Patient Days	S-3	14, 16 thru 18	6	
C	Medicare Advantage Reclassification Ratio				Row A divided by Row B

Medicaid, Uninsured, and other Program Charges

Sum of [Payer Type] Charges Before Adjustment and [Payer Type] Share of Non-Hospital Charges.

a. Medicaid, Uninsured, and other Program Charges before Adjustment

Line Item	Worksheet	Line	Column
Medicaid Charges	S-10	6	1
SCHIP and Other State/Local Program Charges	S-10	10, 14	1
Uninsured & Charity Care Charges	S-10	20	3

b. Medicaid, Uninsured, and other Program Share of Non-Hospital Charges

Non-Hospital Charges multiplied by the quotient of [Payer Type] Charges Before Adjustment divided by Total Charges Before Adjustment.

Commercial Charges

Total hospital charges minus (Medicare charges + Medicaid charges + SCHIP and other state/local program charges + uninsured & charity care charges)

2. Costs

Total Costs

Row	Line Item	Worksheet	Line	Column	Calculation
A	Total Reimbursable Costs	C, Part I	202	3 and 4	
B	Professional Component	A-8-2	200	18	
C	GME Costs (times -1)[6]	B, Part 1	118	25	
D	Total Costs				Sum of Row A through C

Medicare Costs

The dataset sources unadjusted costs by payer type from the cost reports, then payer type costs are adjusted by including the payer type's estimated proportion of GME and professional component costs. A portion of other reimbursable costs are added to Medicare as well.

Row	Line Item	Calculation
A	Medicare Costs Before Adjustment	
B	Medicare Share of Other Reimbursable Cost Center Costs	
C	Medicare Share of GME Costs and Professional Component Costs	
D	Medicare Advantage Reclassification	
E	Medicare Costs	Sum of Row

[6] The value at this reference should be multiplied by -1

Row	Line Item	Calculation
		A through D

a. Medicare Costs Before Adjustments

Row	Line Item	Worksheet	Line	Column	Calculation
A	Medicare Hospital, IPF, and IRF Inpatient Costs	D-1	49	1	
B	Medicare SNF Inpatient Costs	D-1	86	1	
C	Medicare Swing SNF Inpatient Costs	D-1	66	1	
D	Medicare Swing SNF Inpatient Costs	D-3	200	3	
E	Medicare Hospital, IPF, and IRF, SNF, Swing SNF Outpatient Costs	D, Part V	202	5 thru 7	
F	Medicare RHC Outpatient Costs	M-3	1	1	
G	Medicare FQHC Outpatient Costs	M-3	1	1	
H	Medicare Hospital FQHC Outpatient Costs	N-2	11	11	
I	Medicare Costs before Adjustment				Sum of Rows A through H

b. Medicare Share of Other Reimbursable Cost Center Costs

Other Reimbursable Cost Center Costs multiplied by the Medicare Percentage of Total Costs Before Other Reimbursable Cost Center Costs.

1) Other Reimbursable Cost Center Costs

Row	Line Item	Worksheet	Line	Column	Calculation
A	Other Reimbursable Cost Center Costs	C. Part I	95, 99 through 104, 115 thru 117	3 and 4	

2) Medicare Percentage of Total Costs Before Other Reimbursable Cost Center Costs

Medicare Costs Before Adjustment divided by the difference of Total Reimbursable Costs minus Other Reimbursable Cost Center Costs.

c. Medicare Share of GME Costs and Professional Component Costs

Sum of GME Costs and Professional Component Costs multiplied by the quotient of Medicare Costs Before Adjustment divided by Total Reimbursable Costs.

d. Medicare Advantage Reclassification

Medicare Advantage reclassification ratio (see above) multiplied by Medicare Costs before Medicare Advantage Reclassification

Medicaid, Uninsured, and other Program Costs

The sum of [Payer Type] Costs Before Adjustment and the [Payer Type] Share of GME Costs and Professional Component Costs.

e. Medicaid, Uninsured, and other Program Costs before Adjustment

Line Item	Worksheet	Line	Column
Medicaid Costs before Adjustment	S-10	7	1
SCHIP and Other State/Local Program Costs before Adjustment	S-10	11, 15	1
Uninsured & Charity Care Costs before Adjustment	S-10	21	3

f. Medicaid, Uninsured, and other Program Share of GME Costs and Professional Component Costs

Sum of GME Costs and Professional Component Costs multiplied by the quotient of [Payer Type] Costs Before Adjustment divided by Total Reimbursable Costs

Commercial/ Other Costs

Total Costs minus (Medicare Costs + Medicaid Costs + SCHIP and Other State/Local Program Costs + Uninsured & Charity Care Costs).

3. Payments

Total Payments

Line Item	Worksheet	Line	Column
Total Payments	G-3	3	1

Medicare Payment

Row	Line Item	Calculation
A	Medicare Inpatient and Outpatient Payments	
B	Medicare Inpatient and Outpatient Sequestration	
C	Net Medicare Payments Before Adjustments	Row A minus Row B
D	Medicare Share of Payments for Other Reimbursable Cost Centers	
E	Medicare Share of Non-Hospital Payments	
F	Medicare Advantage Reclassification of Payments	
G	Medicare Payments	Sum of row C through F

a. Medicare Inpatient and Outpatient Payments

Row	Line Item	Worksheet	Line	Column	Calculation
A	Medicare Hospital Inpatient Payments	E, Part A	60, 62, 63, 71	1	
B	Medicare TEFRA Inpatient Payments	E-3, Part I	5, 7, 9, 18	1	
C	Medicare IPF Inpatient Payments	E-3, Part II	17, 19, 21, 31	1	
D	Medicare IRF Inpatient Payments	E-3, Part III	18, 20, 22, 32	1	
E	Medicare LTCH Inpatient Payments	E-3, Part IV	8, 10, 12,22	1	
F	Medicare CAH Inpatient Payments	E-3, Part V	5, 20, 23, 30	1	
G	Medicare SNF Inpatient Payments	E-3, Part VI	6, 7, 13, 15	1	

Row	Line Item	Worksheet	Line	Column	Calculation
H	Medicare Swing SNF Inpatient Payments	E-2	9, 11, 13, 19	1	
I	Medicare Hospital, IPF, IRF, SNF Outpatient Payments	E, Part B	25, 26, 31, 40	1	
J	Medicare Swing SNF Outpatient Payments	E-2	9, 11, 13, 19	2	
K	Medicare RHC, FQHC Outpatient Payments	M-3	17, 18, 19, 26	2	
L	Medicare Hospital Based FQHC Outpatient Payments	N-4	5, 7, 16	1	
M	Medicare Payment				Sum of Rows A through L

b. Medicare Inpatient and Outpatient Sequestrations (deducted)

Row	Line Item	Worksheet	Line	Column	Calculation
A	Medicare Hospital Inpatient Payments Sequestration	E, Part A	71.01	1	
B	Medicare TEFRA Inpatient Payments Sequestration	E-3, Part I	18.01	1	
C	Medicare IPF Inpatient Payments Sequestration	E-3, Part II	31.01	1	
D	Medicare IRF Inpatient Payments Sequestration	E-3, Part III	32.01	1	
E	Medicare LTCH Inpatient Payments Sequestration	E-3, Part IV	22.01	1	
F	Medicare CAH Inpatient Payments Sequestration	E-3, Part V	30.01	1	
G	Medicare SNF Inpatient Payments Sequestration	E-3, Part VI	15.01	1	
H	Medicare Swing SNF Inpatient Payments Sequestration	E-2	19.01	1	
I	Medicare Hospital, IPF, IRF, SNF Outpatient Payments Sequestration	E, Part B	40.01	1	
J	Medicare Swing SNF Outpatient Payments Sequestration	E-2	19.01	2	
K	Medicare RHC, FQHC Outpatient Payments Sequestration	M-3	26.01	2	
L	Medicare Inpatient and Outpatient Sequestrations (deducted)				Sum of Rows A through K

c. Medicare Payments for Other Reimbursable Cost Centers

Medicare Payment to Charge Ratio multiplied by Medicare Share of Other Reimbursable Cost Center Charges.

1) Medicare Payment to Charge Ratio

Net Medicare Payments Before Adjustment divided by Medicare Charges Before Adjustment.

d. Medicare Share of Non-hospital Payments

Medicare Payment to Charge Ratio multiplied by Medicare Share of Non-Hospital Charges.

e. Medicare Advantage Reclassification of Payments

Medicare Advantage reclassification ratio (see above) multiplied by Medicare Payments Before Medicare DSH and Uncompensated Care Payments

1) Medicare Payments Before Medicare DSH and Uncompensated Care Payments

Medicare Payments before Adjustments (see above) minus Medicare DSH and Uncompensated Cost Payments

(i) *Medicare DSH and Uncompensated Cost Payments*

Row	Line Item	Worksheet	Line	Column	Calculation
A	Medicare DSH Payments	E, Part I	34	1	
B	Medicare Uncompensated Care Payments	E, Part I	36	1	
C	Medicare DSH and Uncompensated Cost Payments				Row A plus Row B

Medicaid, Uninsured, and other Program Payment

Sum of [Payer Type] Payments Before Adjustment and [Payer Type] Share of Non-Hospital Payments

a. Medicaid, Uninsured, and other Program Payment before Adjustment

Line Item	Worksheet	Line	Column
Medicaid Payments	S-10	2, 5	1
SCHIP and Other State/Local Program Payments	S-10	9, 13	1
Charity Care Grants and Donations	S-10	17	1
Uninsured and Charity Payments	S-10	22	3

b. Medicaid, Uninsured, and other Program Share of Non-hospital Payments

[Payer Type] Share of Non-Hospital Charges multiplied by the [Payer Type] Payment to Charge Ratio.

1) [Payer Type] Payment to Charge Ratio

[Payer Type] Payments Before Adjustment divided by [Payer Type] Charges Before Adjustment.

Commercial/ Other Payments

Total Payments minus (Medicare Payments + Medicaid Payments + SCHIP and Other State/Local Program Payments + Uninsured & Charity Care Payments).