

CENTER FOR HEALTH INFORMATION AND ANALYSIS

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**MASSACHUSETTS  
ACUTE HOSPITAL  
AND HEALTH  
SYSTEM FINANCIAL  
PERFORMANCE: FY 2018**

**TECHNICAL APPENDIX**

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## I. Description of Financial Metrics

Financial ratio analysis is one critical component of assessing an entity's financial condition. The Center for Health Information and Analysis (CHIA) reports on profitability, liquidity, and solvency metrics. Below are the descriptions and calculations for each.

Measures are used for hospitals, health systems, physician organizations and health plans.

Note: The line numbers referenced below correspond to the lines in the submissions filed.

### Profitability

This category evaluates the ability of an entity to generate a surplus. A negative surplus, or loss, is usually a sign of financial difficulty.

#### Operating Margin

Definition: Operating Income/Total Revenue

Operating income is income from normal operations of an entity, including patient care and other activities, such as research, gift shops, parking, and cafeteria, minus the expenses associated with such activities. Operating Margin is a critical ratio that measures how profitable the entity is when looking at the performance of its primary activities.

Operating Margin = (Line 57.2-Line 73) / Line 65

#### Non-Operating Margin

Definition: Non-Operating Income/Total Revenue

Non-operating income includes items that are not related to operations, such as investment income, contributions, gains from the sale of assets and other unrelated business activities.

Non-Operating Margin = Line 64.1/Line 65

#### Total Margin

Definition: Total Income/Total Revenue

This ratio evaluates the overall profitability of the entity using both operating surplus (or loss) and non-operating surplus (or loss).

Total Margin = Line 74/Line 65

### Liquidity

This category evaluates the ability of the entity to generate cash for normal business operations. A worsening liquidity position is usually a strong indication that an entity is experiencing financial distress.

#### Current Ratio

Definition: Total Current Assets/Total Current Liabilities

This ratio measures the entity's ability to meet its current liabilities with its current assets (assets expected to be realized in cash during the fiscal year). A ratio of 1.0 or higher indicates that all current liabilities could be adequately covered by the entity's existing current assets.

Current Ratio = Line 16 / Line 37

#### **Average Days in Accounts Receivable**

Definition: Net Patient Accounts Receivable/ (Net Patient Service Revenue/365)

This ratio measures the average number of days in the collection period. A larger number of days represents cash that is unavailable for use in operations.

Average Days in Accounts Receivable = Line 10 / (Line 55 / # Days in period)\*

#### **Average Payment Period**

Definition: (Total Current Liabilities - Estimated 3rd Party Settlements) / [(Total Expenses - (Depreciation Expense + Amortization Expense)) / 365]

This ratio measures the average number of days it takes an entity to pay its bills.

Average Payment Period = (Line 37 – Line 34) / [(Line 73 – Line 68) / # Days in period]\*

\*Note: Number of days in period: Quarter 1 = 91.25, Quarter 2 = 182.5, Quarter 3 = 273.75, or Annual = 365 days.

### **Solvency**

This category evaluates the health of an entity's capital structure, measuring an entity's ability to meet its financing commitments and the entity's ability to take on more debt. Both measures are critical to the entity's long-term solvency.

#### **Debt Service Coverage**

Definition: (Total Income + Interest Expense + Depreciation Expense + Amortization Expense)/ (Interest Expense + Current Portion of Long Term Debt)

This ratio measures the ability of an entity to cover current debt obligations with funds derived from both operating and non-operating activity. Higher ratios indicate an entity is better able to meet its financing commitments. A ratio of 1.0 indicates that average income would just cover current interest and principal payments on long-term debt.

Debt Service Coverage Ratio = (Line 74 + Line 68 + Line 69) / (Line 69 + Line 32)

#### **Cash Flow to Total Debt**

Definition: (Total Income + Depreciation Expense + Amortization Expense) / (Current Liabilities + Long Term Debt)

This ratio reflects the amount of cash flow being applied to total outstanding debt (all current liabilities in addition to long-term debt) and reflects how much cash can be applied to debt repayment. The lower the

ratio, the more likely an entity will be unable to meet debt payments of interest and principal, and the higher the likelihood of violating any debt covenants.

Cash Flow to Total Debt = (Line 74 + Line 68) / (Line 37 + Line 39)

### **Equity Financing**

Definition: Total Net Assets/Total Assets

This ratio reflects the ability of an entity to take on more debt and is measured by the proportion of total assets financed by equity. Low values indicate an entity used substantial debt financing to fund asset acquisition and therefore may have difficulty taking on more debt to finance further asset acquisition.

Equity Financing = (Line 51/Line 29)

## **Other Measures**

The following are individual line items from the Quarterly Hospital Standardized Financial Filing.

- **Operating Surplus (Loss)**: Total dollar amount of surplus or loss derived from operating activities.
- **Total Surplus (Loss)**: Total dollar amount of surplus or loss derived from all operating and non-operating activities.
- **Total Net Assets**: For not-for-profit entities, this represents the difference between the assets and liabilities of an entity, comprised of retained earnings from operations and contributions from donors. Changes from year to year are attributable to two major categories: (1) increases and/or decreases in Unrestricted Net Assets, which are affected by operations, and (2) changes in Restricted Net Assets (restricted contributions). The for-profit equivalent of Total Net Assets is Owner's Equity.
- **Assets Whose Use is Limited**: The current and non-current funds set aside for specific purposes, such as debt repayment, funded depreciation and other board designated purposes. Board-designated funds are most readily available to the organization as the board has the ability to make these funds available if needed. This is a valuable measure because it reveals potential resources that the entity may have available for cash flow if necessary.
- **Net Patient Service Revenue (NPSR)**: Revenue an entity would expect to collect for services provided, including premium revenue, less contractual allowances. NPSR is the primary source of revenue for an entity.

## **II. General Data Caveats**

### **Data Sources**

Health system, acute hospital, and affiliated physician organization data is drawn from the CHIA Annual Standardized Financial Filings submitted by the health system. Standardized Financial Filings may not reflect all of the financial resources available to the entity, such as resources available through associations with foundations or parents/affiliates. Health plan information was derived from the consolidated audited financial statements and was

standardized by using the same method as the health systems, hospitals, and physician organizations. Financial information must be interpreted within the context of other factors, including, but not limited to, management plans, payment changes, market behavior and other factors affecting performance.

Profitability percentages may not add due to rounding.

## Hospital Type Definitions

**Academic medical centers (AMCs)** are a subset of teaching hospitals. AMCs are characterized by (1) extensive research and teaching programs; (2) extensive resources for tertiary and quaternary care; (3) are principal teaching hospitals for their respective medical schools; and (4) are full service hospitals with case mix intensity greater than 5% above the statewide average.

**Teaching hospitals** are those hospitals that report at least 25 full-time equivalent medical school residents per one hundred inpatient beds in accordance with Medicare Payment Advisory Commission (MedPAC) and do not meet the criteria to be classified as AMCs.

**Community hospitals** are hospitals that do not meet the 25 full-time equivalent medical school residents per one hundred beds criteria to be classified as teaching hospitals and have a public payer mix of less than 63%.

**Community-High Public Payer (HPP) hospitals** are community hospitals that are disproportionately reliant upon public revenues by virtue of a public payer mix of 63% or greater. Public payers include Medicare, MassHealth and other government payers including the Health Safety Net.

**Specialty hospitals** are not included in any cohort comparison analysis due to the unique patient populations they serve and/or the unique sets of services they provide. However, specialty hospitals are included in all statewide median calculations.

Note: Some AMCs and teaching hospitals have HPP status.

## Annual Reporting

Annual financial performance reports display twelve months of financial data for each health system, acute hospital, affiliated physician organization, and health plan regardless of an entity's fiscal year end date.

## Quarterly Reporting

Health systems submit three quarterly reports of cumulative year-to-date financial data for the first three quarters of the entity's fiscal year on behalf of the health system, acute hospital, and affiliated physician organization. Reports are due forty-five days after the end of each quarter. Refer to Fiscal Year End Information section for more information about individual entity's months of data reported quarterly.

## Databook

Databooks containing hospitals' balance sheets, statement of operations, cash flow statements, and financial ratios are published quarterly and annually on CHIA's website.

## Five Year Trends (Factsheets)

Acute Hospital Financial Performance Trends factsheets are published annually on CHIA's website. Five years of financial trend data are displayed.

Northeast US 2017 Median data included in FY 2018 Factsheets come from *Optum's 2018 Almanac of Hospital Financial Operating Indicators*. Northeast US medians published in this report are based on 2016 Medicare cost report data.

A blank Debt Service Coverage Ratio indicates a facility with no current long-term debt or interest in the period covered.

## III. Fiscal Year-End Information

Each period in which data is reported represents different cumulative quarters of information depending on an entity's fiscal year-end. Below is a chart indicating the reporting period and the number of months of data represented for an entity in that reporting period based on the given hospital's fiscal year-end.

Note that annual data for each hospital is due 110 days after the entity's fiscal year end. As a result, a full twelve months of data for each hospital is included in the Annual Financial Performance report.

### Quarterly Hospital Reporting Schedule

<u>Hospitals</u>	<u>Data as of 3/31</u>	<u>Data as of 6/30</u>	<u>Data as of 9/30</u>	<u>Data as of 12/31</u>
<b>Steward Health Care (8 hospitals) MetroWest Medical Center Saint Vincent Hospital Shriners (2 hospitals) Fiscal Year End: 12/31</b>	Three Months of Data	Six Months of Data	Nine Months of Data	Not included as data is not yet due
	January through March	January through June	January through September	January through December



<u>Hospitals</u>	<u>Data as of 3/31</u>	<u>Data as of 6/30</u>	<u>Data as of 9/30</u>	<u>Data as of 12/31</u>
<b>Cambridge Health Alliance Mercy Medical Center</b>	Nine Months of Data	Not included as data is not yet due	Three Months of Data	Six Months of Data
<b>Fiscal Year End: 6/30</b>	July through March	July through June	July through September	July through December
<u>Hospitals</u>	<u>Data as of 3/31</u>	<u>Data as of 6/30</u>	<u>Data as of 9/30</u>	<u>Data as of 12/31</u>
<b>Other Acute Hospitals (49 hospitals)</b>	Six Months of Data	Nine Months of Data	Not included as data is not yet due	Three Months of Data
<b>Fiscal Year End: 9/30</b>	October through March	October through June	October through September	October through December

### Annual Hospital Reporting Schedule

<u>Hospitals</u>	Twelve months of data for the same fiscal year end regardless of year-end date.
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### IV. Cohort Designation

For FY 2018, Hospitals are assigned to cohorts based on the data reported in the FY 2018 Massachusetts Hospital Cost Report.

☒ Indicates hospital meets the HPP criteria.