

**How Prepared are US Hospitals for the Affordable Care Act?**

**A Financial Condition Analysis of US Hospitals in 2011**

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## Abstract

**Study Purpose:** As we move toward the greater implementation of health reforms, it is important to assess the financial condition of US hospitals. The purpose of this paper is to provide an update assessment of the financial conditions of US hospitals. This purpose is important given the timing of health reforms in the next fiscal year with greater volumes of lower reimbursement.

**Methods:** Data are obtained from the CMS Hospital Cost Report Information System (“HCRIS”) data set published as of July 1, 2013. This analysis used only those cost reports with a 365 day fiscal year ending during 2011. This is the latest fiscal year for which data was available for all hospitals at this writing. For purposes of this analysis, hospitals were stratified by bed size and ownership type. There were 7 financial ratios selected on the basis of prior studies to measure profitability, capital structure, and liquidity.

**Results:** *In terms of profitability*, acute-care hospitals showed a median total margin of 3.2% in 2011; investor owned organizations performed better, almost twice as good, with a median of 6.3% for multi-hospital system facilities and 5.6% for non-system facilities. Cash flow margins show similar patterns with a nationwide median of 7.2%. *In terms of capital structure*, hospitals exhibited a median debt to capitalization of 27.5% and a median cash flow to total debt of 14.3%. *In terms of liquidity*, days in receivables appear to show more subtle differences among the categories with a national median of 48.9 days.

**Discussion:** System affiliation and size were the big drivers of financial performance in 2011. Investor owned system hospitals appeared to excel on the financial performance indicators here.

**Conclusions:** System hospitals and economies of scale drove much of the relatively stronger profitability results in 2011. Stand-alone general service hospitals may seek out affiliations because of weaker margins during the upcoming period of greater volume with lower reimbursements during health reforms in 2014 and beyond.

**Keywords:** Affordable Care Act, financial ratio analysis, profitability analysis, capital structure analysis, liquidity analysis

## How Prepared are US Hospitals for the Affordable Care Act?

### A Financial Condition Analysis of US Hospitals in 2011

As we move toward the greater implementation of health reforms, it is important to assess the financial condition of US hospitals. A comprehensive financial analysis does not have to be exhaustive but needs to address the critical areas that predict an organization's financial condition. In so doing, we can prepare for the increased volume from Medicaid expansion and the lower reimbursement that accompanies these government sponsored patients. Further, we can set our targets on areas needing improvement in order to weather these future uncertain scenarios.

This article provides an updated assessment of the financial conditions of US hospitals as of the latest complete year of data, 2011. The results presented here can be useful to *hfm* readers in benchmarking performance on key financial ratios to identify areas of potential strength or weakness.

#### **Background**

Zeller, Stanko, and Cleverley<sup>1</sup> in a study of 2,189 nonprofit hospitals' audited financial statements between the years of 1989 and 1992, found that 70-80% of variability in 28 financial ratios is explained by 6 common financial ratios include profitability, fixed-asset efficiency, capital structure, fixed-asset age, working capital efficiency, and liquidity. Further, Das<sup>2</sup> identifies 5 factors that explain most of the variation in performance in nonprofit hospitals including capital structure, profitability, activity, liquidity, and an operational factor.

Griffith<sup>3</sup> examined cash flow, asset turnover, mortality, complications, length of inpatient stay, cost per case, occupancy, change in occupancy, and percent of revenue from outpatient care. When considering the content validity, reliability, sensitivity, and independence of all nine variables, the authors found that all measures except the two occupancy measures are good gauges of hospital performance. Pink and colleagues,<sup>4</sup> created a financial indicators report specifically for critical access hospitals (CAHs) that included 20 ratios found to be useful by the chief financial officers of CAHs for measuring profitability, liquidity, revenue, cost, and utilization. Griffith and colleagues<sup>5</sup> analyzed Medicare data from more than 2,500 hospitals for a five-year period ending in 2003 that showed only a few of their nine measures exhibited signs of improvement, with most indicating volatility or only modest improvements.

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<sup>1</sup> Zeller TL, Stanko B, Cleverley WO. A new perspective on hospital financial ratio analysis. *Healthcare Financial Management*. (1997); 51(11): 62-66

<sup>2</sup> Das D. Factor Analysis of Financial and Operational Performance Measures of Non-Profit Hospitals. *Journal of Health Care Finance*. 2009; 36(2): 13-23

<sup>3</sup> Griffith JR, Alexander JA, Jelinek RC. Measuring Comparative Hospital Performance. *Journal of Healthcare Management*. 2002; 47 (1): 41-57

<sup>4</sup> Pink GH, Holmes GM, Alpe CD, Strunk LA, McGee P, Slifkin RT. Financial Indicators for Critical Access Hospitals. *Journal of Rural Health*. 2006; 22 (3): 229-236.

<sup>5</sup> Griffith JR, Pattullo A, Alexander JA, Jelinek RC, Foster DA. Is Anybody Managing the Store? National Trends in Hospital Performance. *Journal of Healthcare Management*. 2006; 51 (6): 392-406.

In his earlier comparative financial analysis of multi-institutional organizations by ownership type, Coyne<sup>6,7,8,9</sup> examined performance differences between system and independent hospitals and found significant higher results for system hospitals using two cost measures (cost per case and payroll per patient day) and two efficiency measures (admissions per bed and full-time equivalents [FTEs] per occupied bed). Coyne<sup>10</sup> advocates the use of the Du Pont model, breaking it down into operational performance (Return on Investment) and leverage (Total Assets to Equity) components. Rivenson and Smith<sup>11</sup> examine the motives for holding too much cash in reserves or not enough cash in reserves. Kim and McCue<sup>12</sup> find that there is a positive relationship among cash flow, hospital financial solvency, and capital investments; increases in cash flow allow for increased capital investments and enhanced solvency.

A common element among these various analyses is the use of measures of profitability, capital structure/leverage, age of plant, and cash flow. Based on this, the seven indicators used in the study were:

- Total margin - net income/total revenues;
- Cash flow margin – [(net income - (contributions, investment and appropriations)) + depreciation expense + interest expense + amortization]/[net patient revenue + other income - (contributions, investments, and appropriations)];
- Long-term debt to capitalization - long-term debt/(long term debt + owners equity);
- Cash flow to total debt - (net income + depreciation expense)/(current liabilities + long-term debt);
- Average age of plant -accumulated depreciation/depreciation expense;
- Days in accounts receivable - net patient accounts receivable/(net patient service revenue/365)
- Days cash on hand - (cash + short-term investments)/((total expenses-depreciation)/365)

## **Methods**

Data for this study was obtained from the CMS Hospital Cost Report Information System (“HCRIS”) data set published as of July 1, 2013. The hospital cost report consists of several worksheets containing the various elements used in this analysis. The worksheets used and data gathered from each sheet in this article were:

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<sup>6</sup> Coyne JS. Hospital Performance in Multihospital Systems: A Comparative Study of System and Independent Hospitals. *Health Services Research*. 1982; 17 (4): 11–30.

<sup>7</sup> Coyne JS .A comparative financial analysis of multi-institutional organizations by ownership type. *Hospital & Health Services Administration*. (1985); 30(6): 48-63.

<sup>8</sup> Coyne JS. Assessing the financial characteristics of multi-institutional organizations. *Health Services Research*. (1985); 19(6): 701-715.

<sup>9</sup> Coyne JS. Measuring hospital performance in multiinstitutional organizations using financial ratios. *Health Care Management Review*. (1985); 10(4): 35-42.

<sup>10</sup> Coyne JS. A financial model for assessing hospital performance: An application to multi-institutional organizations. *Hospital & Health Services Administration*. 1986; 31(2): 28-37

<sup>11</sup> Rivenson H, Smith D .Finance Theory and Hospital Cash Balances. *Journal of Healthcare Finance*. 2013; 3(39):23-31.

<sup>12</sup> Kim T, McCue M. Association of market, operational, and financial factors with nonprofit hospitals' capital investment. *Inquiry*. 2008; 45:215-231

- Balance sheet values from Worksheet G.
- Income statement values from worksheet G-3;
- Depreciation expense from worksheet A-7, part two, row three, column 9;
- Hospital demographic characteristics from worksheet S-2, part one; and
- Hospital bed size was defined as number of bed days available per worksheet sheet S-3 part one, line 14, column 3, divided by 365.

This analysis used only those cost reports with a 365 day fiscal year ending during 2011. This is the latest fiscal year for which data was available for all hospitals at this writing. For purposes of this analysis, hospitals were stratified by bed size into four categories:

- 0 to 25 staffed beds;
- 26 to 100 staffed beds;
- 101 to 300 staffed beds; and
- Over 300 staffed beds.

Hospitals were further stratified into three categories of ownership – nonprofit, investor owned, and government categories. Ownership was determined by the type of control code indicated on worksheet S-2, part one, row 21. Federal government and state psychiatric hospitals were omitted from the analysis. These categories were then subdivided based on belonging to a multihospital system. This system affiliation attribute was taken from worksheet S-2, part one, line 41. Using this combination of ownership and system affiliation, the following six categories were created to classify hospitals in this study:

- For-profit, multihospital system (“MHS”);
- For-profit, non-MHS (“stand-alone” hospitals);
- Government, MHS;
- Government, non-MHS;
- Non-profit, MHS; and
- Non-profit, non-MHS.

There were a total of 2,549 general, acute care hospital cost reports included in this study.

Each ratio was calculated individually for each hospital and then sorted high to low. Any calculations more than three standard deviations from the mean were deemed outliers and removed from the analysis. Also, any values that were clearly inappropriate (e.g., negative average age of plant) were omitted. Medians – defined as the middle value in a population - were determined and reported in this analysis for each bed size grouping, within each ownership/system classification.

## **Results**

The results are reported here from this 2011 analysis by category. Within each category, a summary take away message is added for financial leaders to consider in viewing these results and applying them to their individual organizations.

In terms of profitability, acute-care hospitals showed a median total margin of 3.2% in 2011. Investor owned organizations performed better, almost twice as good, with a median of 6.3% for multi-hospital system facilities and 5.6% for non-system facilities. Nonprofit organizations demonstrated significantly lower margins at 4.7% for system affiliated and 1.9% for non-system affiliated organizations. Cash flow margin shows similar patterns with a nationwide median of 7.2%. Investor owned organizations again had higher results and multihospital system affiliation showed some benefit in this area with a 12.1% cash flow margin compared to 11.7% margin for non-system affiliated investor owned facilities. These details are shown graphically in Exhibits 1 and 2.

Exhibit 1

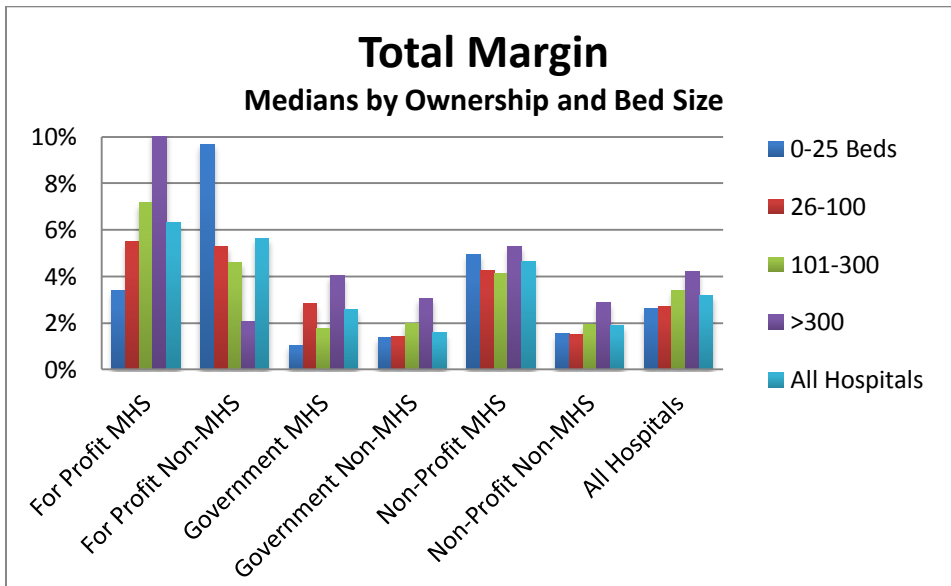
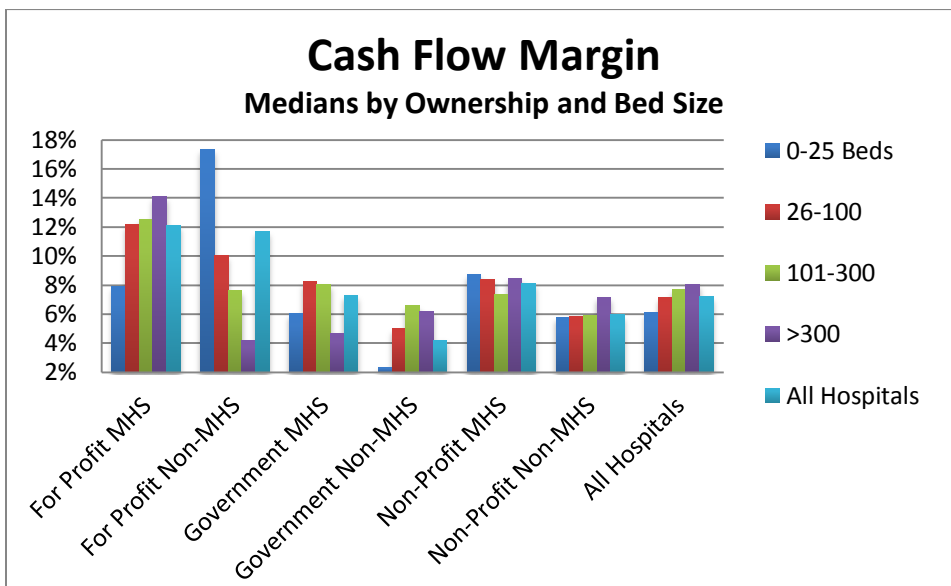


Exhibit 2



The 78 for profit, non-MHS facilities shown in Exhibits 1 and 2 do not fit the general finding that great size and integration lead to bigger profitability results. This group showed fairly high total margin and cash flow margin medians when compared to other groups at 9.7% and 17.4% respectively for the two profit margin ratios. This observation was significantly influenced by a group of 28 specialty surgical facilities licensed as general acute care hospitals. Omitting the results of these facilities from the analysis brought the medians for this group to 3.1% total margin and 10.6% cash flow margin.

The take away message from this review of profitability is that the evidence here suggests hospitals can obtain good financial results from the economies of scale achieved through system affiliation. This may be a desirable strategy for organizations still in a stand-alone mode. In the absence of a viable system affiliation, the specialty hospital results noted here suggest that hospitals may want to evaluate their service line offerings for opportunities to specialize and perhaps reap efficiencies of scope through focusing on things they can do well.

*In terms of capital structure*, hospitals exhibited a median debt to capitalization of 27.5% and a median cash flow to total debt of 14.3%, as shown in Exhibits 3 and 4, respectively. System affiliation appeared of high importance here as stand-alone hospitals had a higher proportion of capitalization from debt across all three ownership categories. Nonprofit, non-system hospitals were the most highly leveraged with a median debt to capitalization of 35.8%, followed closely by investor owned, non-system hospitals at 33.9% and stand-alone government hospitals at 20.9%. Investor owned and government system affiliated hospitals had significantly less debt with 8.6% and 8.9% debt to capitalization respectively. System affiliation is associated with lower debt in nonprofit facilities as well, though not as much, showing a median debt to capitalization of 23.7%.

Exhibit 3

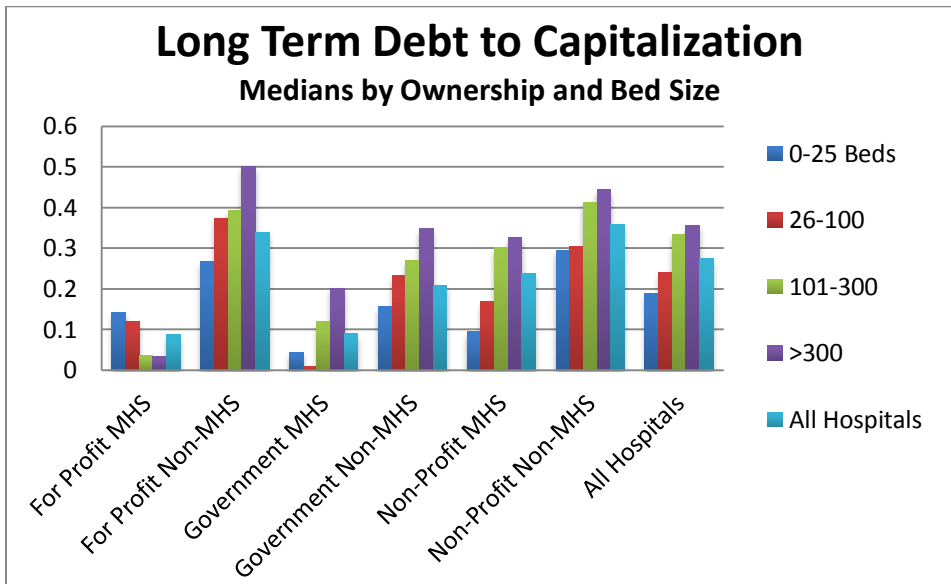
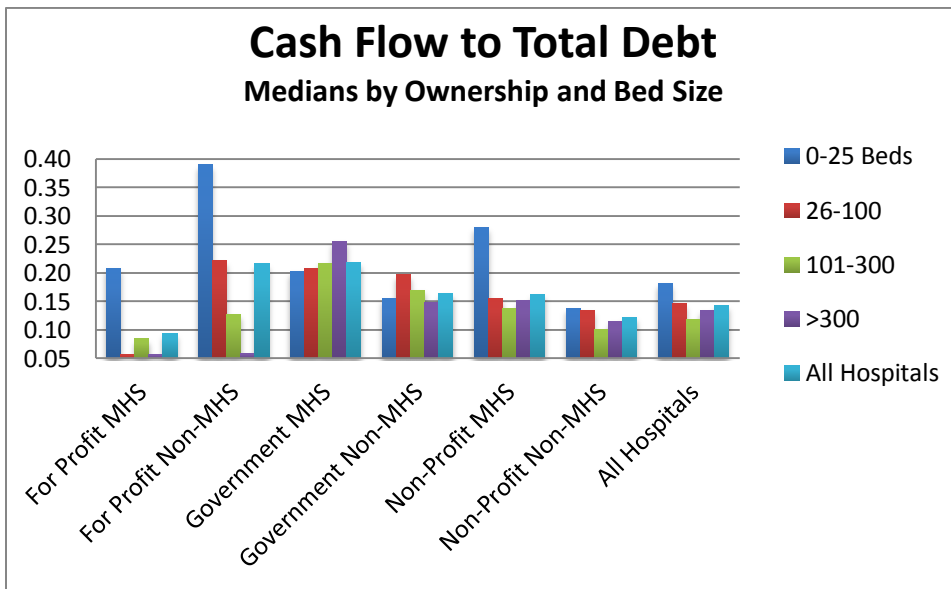


Exhibit 4

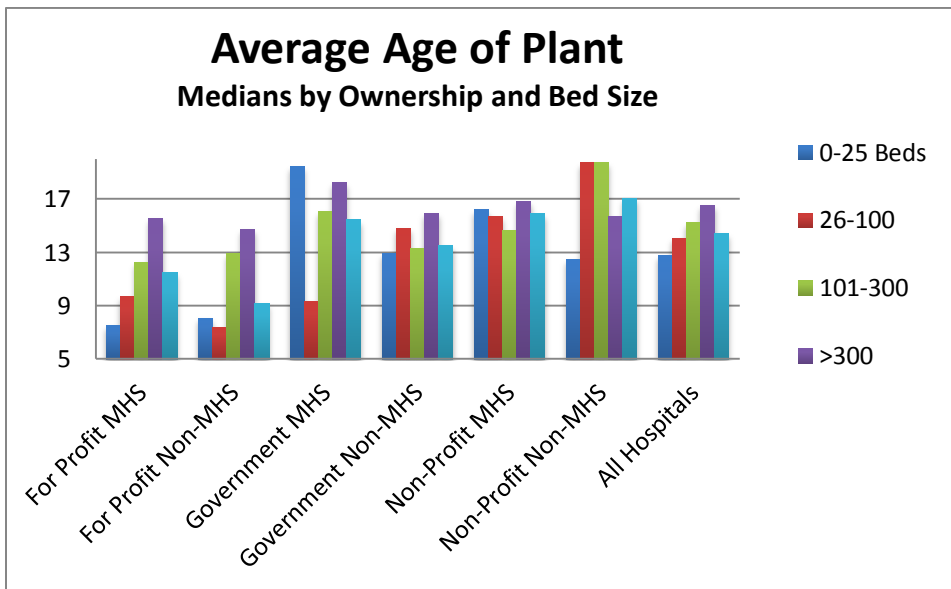


Hospitals appear to have differing approaches to capital investment priorities as evidenced by the average age of plant observations detailed in Exhibit 5. While the national median in 2011 was 14.4 years, investor owned facilities appeared newer with medians in system affiliated and stand-alone facilities of 11.4 and 9.2 years, respectively. Nonprofit hospitals appeared to delay or defer capital investments, as average age of plant was 15.9 years for system facilities and 17.1 for stand-alone hospitals. Government owned entities were closer to the national median, showing medians of 15.4 years for system hospitals and 13.5 years in stand-alone organizations.

Thus, the takeaway message from this analysis is that stand-alone organizations appear more highly leveraged than their system counterparts, lending some further credence to the value of system affiliations. However the observation of aging physical plant in non-profit hospitals suggests that the savvy CFO consider a strategy of reserving adequate funds at least equal to a market adjusted depreciation amounts that will permit adequate and more timely plant, property and equipment replacement.



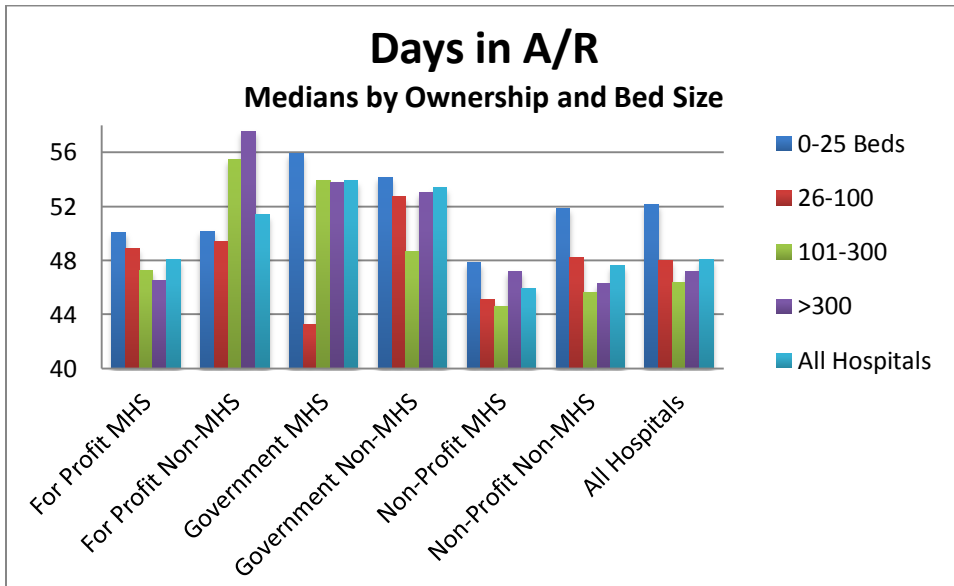
Exhibit 5



*In terms of liquidity*, days in receivables appear to show more subtle differences among the categories in this study as seen in Exhibit 6. While the national median was 48.9 days, nonprofit organizations were collecting cash slightly faster – at 45.9 days in system affiliates and 47.6 days in stand-alone entities. Investor owned facilities were slightly slower than nonprofit hospitals as system affiliates were at 48.0 days and stand-alone hospitals were slower still at 51.4 days. Government hospitals (having predominantly safety-net missions) showed even longer median collection cycles at about 53.5 days.

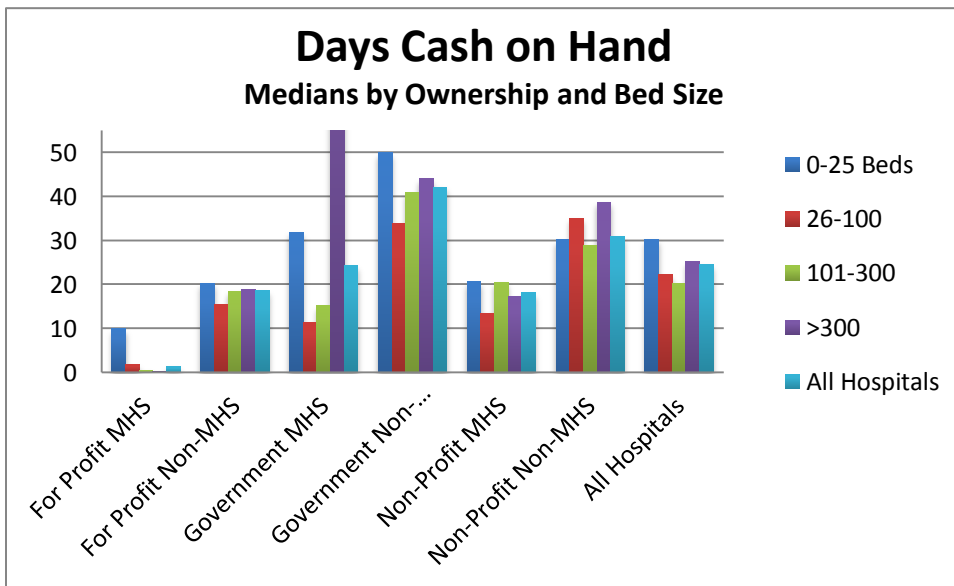
The takeaway message in this analysis appears one primarily for the larger for-profit stand-alone facility where implementing a revenue cycle management program (RCM) appears indicated. Secondly it may be necessary for these organizations to critically assess lines of business for the potential of attracting non-contract (and therefore slow paying) business or payer contract relationships for chronic slow payment.

Exhibit 6



Days cash on hand (see Exhibit 7) had some wide variations likely attributable to system affiliation, where system affiliation yielded much lower cash balances. System affiliated, investor owned facilities had median days cash on hand of 1.3 days, government system facilities held 24.3 days, and nonprofit system affiliates, 18.1 days, in contrast to stand-alone investor owned, government, and nonprofit entities holding 18.7, 42.2, and 30.9 days respectively.

Exhibit 7



## Discussion

The discussion that follows here is based on the 2011 results by category. **In addition, CFOs have four specific action items to consider.**

*Profitability* has a strong association with the economies of scale generated from multihospital system affiliation as well as from bed size. A review of Exhibits 1 and 2 shows that hospitals in general appeared to do better as staffed bed size increased and if affiliated with a multi-hospital system. As shown in Exhibit 1, there is some value in multi-facility affiliations where system affiliation appears to contribute to greater total margin across all three ownership and control categories. System affiliation appeared to benefit local government facilities as well, where those facilities showed one percentage point higher margin than did stand-alone organizations. As shown in Exhibit 2, system hospitals performed better in generating cash profits than nonprofit hospitals, with an 8% cash flow margin for system affiliated facilities versus a 5.9% cash flow margin for non-system facilities. Government operated facilities lagged in this ratio. **So, for the #1 item on the “to-do list”, if you are a CFO of an independent hospital, ask why are you not part of a system and when you can merge or integrate with a hospital system. Item #2 should be a critical look at lines of business for potential efficiencies in service specialization.**

*Capital structure*, when measured by cash flow to total debt within our groupings of hospitals, showed that investor owned, stand-alone and government system affiliated organizations were much better able to cover long-term debt, showing medians of 21.6% and 21.9% respectively. The other hospital categories showed a range from 9.5% in investor owned, system affiliated entities up to 16.5% in stand-alone government facilities. **So, the #3 item on the “to-do list” is, if you are a CFO of an investor owned, system affiliated hospital, conduct a review of your debt covenants and cash management policies to know if adjustments could help.**

*Liquidity*, when measured by days of cash on hand, is greatly determined by system affiliation, where cash is concentrated in a system entity and effective cash balances reflected in intercompany accounts between the hospitals and the systems. We view this greater liquidity in system hospitals as attributable to centralized cash management processes used by hospital systems.<sup>13</sup> **So, for the #4 item on the “to-do list”, if you are a CFO in an independent facility, conduct an assessment of the potential liquidity gains through system affiliations and make your plans accordingly.**

## Conclusions

System affiliation and economies of scale drive much of the relatively stronger profitability results in 2011. There may be some additional profits yielded from limited scale, specialized organizations where such operations make strategic sense. Hospitals and health systems today have an incentive to take on less than the ‘optimal’ amount of debt, particularly in system hospitals that have a greater number of options, with greater reliance on their internal cash

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<sup>13</sup> Coyne JS. Corporate Cash Management in Health Care: Can We Do Better? Healthcare Financial Management. 1987; 41 (9): 76–79.

reserves.<sup>14</sup> Finally, liquidity is much determined by system affiliation, which affords greater use of lines of credit as needed.<sup>15</sup> During the upcoming periods of volatility in volume and revenue levels, lines of credit could be vital.

These findings deserve further study on a regional or national level. Given the current economic environment, further study is critical about the predictors of success and failure in both the large health system hospitals and smaller stand-alone facilities particularly with the advent of bundled payments and the accountable care organization.<sup>16</sup> Ultimately, the key question for the future is not about the short term profitability but it is about long term sustainability.<sup>17,18</sup>

As noted by Langabeer, DelliFraine and Helton, the job of the CFO is becoming more strategic, combining finance and clinical considerations.<sup>19</sup> No longer is the CFO's job just finance but a critical combination of finance, operations, and quality of care. Conducted on a national level, such studies would provide healthcare financial managers with the empirical data they need to make strategic decisions about "best practices" in the future period of reforms.

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<sup>14</sup> Kim T, McCue M. Association of market, operational, and financial factors with nonprofit hospitals' capital investment. *Inquiry*. 2008; 45: 215-231

<sup>15</sup> Coyne JS. Corporate Cash Management in Health Care: Can We Do Better? *Healthcare Financial Management*. 1987; 41 (9): 76-79

<sup>16</sup> Coyne JS, Singh SG. The Early Indicators of Financial Failure: A Study of Bankrupt and Solvent Health Systems. *Journal of Healthcare Management*. 2008; 53 (5): 333-346

<sup>17</sup> Rodak S. 5 Key Financial Ratios Healthcare Providers Should Track. *Becker's Hospital Review*. 2012;

<http://www.beckershospitalreview.com/finance/5-key-financial-ratios-healthcare-providers-should-track.html>.

<sup>18</sup> Scott B, Lindsey D. 7 Factors to Assess the Sustainability of a Hospital: Assessing a Hospital's Viability, Its Financial Situation and the Severity of the Threats it faces. *Becker's Hospital Review*. 2010; <http://www.beckershospitalreview.com/hospital-management-administration/7-factors-to-assess-the-sustainability-of-a-hospital-assessing-a-hospitals-viability-its-financial-situation-and-the-severity-of-the-threats-it-faces.html>

<sup>19</sup> Langabeer J, DelliFraine J, Helton J. Mixing Finance and Medicine: The Evolution of Financial Practices in Healthcare. *Strategic Finance*. 2010; 1:27-34

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