

Improvements to Medicare Disproportionate Share Hospital (DSH) Payments

*Benchmarking S-10 Data Using IRS Form 990 Data:
An Update*

HHSM-500-2011-00014I; Task Order: HHSM-500-TO001

Dobson | DaVanzo



Improvements to Medicare Disproportionate Share Hospital (DSH) Payments

Benchmarking S-10 Data Using IRS Form 990 Data: An Update

HHSM-500-2011-00014I; Task Order: HHSM-500-TO001

Submitted to:
Centers for Medicare & Medicaid Services (CMS)

Submitted by:
Dobson | DaVanzo
Al Dobson, Ph.D.
Audrey El-Gamil
Joan E. DaVanzo, Ph.D., M.S.W.



Lane Koenig, Ph.D.
Chaoling Feng, Ph.D.
Asha Saavoss
Sheila Sankaran, M.A.

April 13, 2017 — *Final Report*

Table of Contents

Executive Summary.....	ES-1
Introduction	1
Data and Methods	3
Data and Measures.....	3
Sample Selection.....	4
Analytical Approach.....	4
Results.....	5
Characteristics of Sample Hospitals.....	5
Drivers of Variation.....	9
Comparison of Factor 3	10
Correlation Over Time	13
Conclusions	14
Appendix	15
Definitions.....	15

Executive Summary

Background

In this report, we compare uncompensated care data from Worksheet S-10 to data reported to the IRS on Form 990 by not-for-profit hospitals for the years 2011 through 2013. Not-for-profit hospitals are required to submit audited financial statements as an attachment to the IRS 990,¹ and these forms are reviewed by the IRS for inconsistencies between the hospital's financial statements and IRS 990.² Because the data submitted through Form 990 are reviewed and come from an external source, they may represent a suitable standard of comparison to assess the accuracy of the S-10 data. However, there are limitations to this approach. Some variation in the level of key variables is expected between the IRS 990 and S-10 data because of differences in how data elements are defined and reported. These differences may be mitigated in examining national shares of uncompensated care costs for each hospital (Factor 3s), because a consistent source is used for the numerator and denominator. Moreover, we can use correlation over time to assess whether the Factor 3s constructed using each of the data sources move in a consistent direction. Nevertheless, we cannot make definitive assessments as to the validity of the S-10 data due to definitional differences across the data sources.

Last year, we conducted an analysis of 2010-2012 Worksheet S-10 data and IRS 990 data. In that study, we found that the estimated Factor 3s derived using the IRS Form 990 and Worksheet S-10 data were highly correlated and that this correlation increased over time, from 0.71 in 2010 to 0.80 in 2012. However, uncompensated care, charity care, bad debt, and Factors 3s differed between the two data sources on a hospital-by-hospital basis. In 2012, the average (absolute) difference in Factor 3s was 58 percent. In this update, we again compare S-10 and 990 data and assess the correlation in Factor 3s derived from each of the data sources.

¹ U.S. Department of Treasury, Internal Review Service, Instructions for Schedule H (Form 990). (Washington D.C.: 2015). <https://www.irs.gov/pub/irs-pdf/i990sh.pdf>

² U.S. Department of Treasury, Internal Review Service, Charity and Nonprofit Audits: Selecting Organizations for Review. <https://www.irs.gov/Charities-&-Non-Profits/Exempt-Organizations-Audits-Selecting-Organizations-for-Review>

Executive Summary

Methods

The analysis was completed using data from DSH hospitals that had submitted full-year S-10 cost reports and were included in Form IRS 990 annual sample across all study years (2011, 2012, and 2013), yielding a sample of 1,061 not-for-profit hospitals (representing 918 unique Taxpayer Identification Numbers). For each hospital, we calculated a Factor 3 using charity care and bad debt. We compared uncompensated care costs and Factor 3s derived from the Worksheet S-10 and IRS Form 990 data to assess the consistency of S-10 data to the 990 data.

Key Findings

- Consistent with our prior study,³ we find that Factor 3s derived using the IRS Form 990 and Worksheet S-10 data are highly correlated. In addition, the correlation coefficient between Factor 3s calculated from the IRS 990 and S-10 has increased over time, from 0.7984 in 2011 to 0.8464 in 2013.
- Although the Factor 3s are highly correlated, large hospital-level differences in uncompensated care costs, charity care, bad debt, and Factors 3 exist between measures calculated using the S-10 and 990 data. The absolute difference between the key factors in the two data sources is comparable to differences observed in our prior report.
- For hospitals with the largest absolute differences in Factor 3s based on S-10 and 990 data (hospitals in the 90th and 99th percentile), the percent differences in Factor 3s appear to increase over time. While the Factor 3 correlations are higher between the S-10 and 990 data, the levels among key variables continue to differ.

There are limitations to our study that should be kept in mind when interpreting the study findings. First, our analysis is limited to those hospitals that have IRS 990 data (not-for-profit hospital) for 2011-2013. Our findings may not generalize to all IPPS hospitals. Second, we would expect differences between the IRS 990 and S-10 data because of differences in how some of the variables are defined and reported.

Given public concerns regarding the Worksheet S-10 data, the Centers for Medicare & Medicaid Services (CMS) had delayed using the S-10 data, although it has recently proposed to do so beginning in FY 2018. Our study findings suggest increases in the correlation between the S-10 and 990 data, but continuing differences in levels of key variables. Changes to the Worksheet S-10 reporting instructions could help better align these data with data reported on IRS Form 990. If so, the Form 990 data could better facilitate future validation of the S-10 data.

³ *Improvements to Medicare Disproportionate Share Hospital (DSH) Payments: Benchmarking S-10 Data Using IRS Form 990 Data and Worksheet S-10 Trend Analyses*, Final Report, April 2016.

Introduction

Section 3133 of the Affordable Care Act prescribed that Medicare disproportionate share hospital (DSH) payments be allocated to each qualifying hospital based, in part, on its share of uncompensated care costs relative to the aggregate pool of uncompensated care costs for all subsection (d) hospitals receiving payments under subsection (d)(5)(F). The most comprehensive, publicly available, national source for hospital uncompensated care costs is Worksheet S-10 from the Medicare hospital cost report. The Worksheet S-10 is relatively new and hospitals have limited experience in completing the form. Furthermore, public comments have been received questioning the accuracy of the S-10 data, forms, and instructions. Additionally, there have been no audits of the data submitted within the Worksheet S-10.

Through public comments and discussion groups, many stakeholders expressed concern about the quality and consistency of the data submitted by hospitals through Worksheet S-10. Given these concerns, the Centers for Medicare & Medicaid Services (CMS) had delayed using the S-10 data, although it has recently proposed to do so beginning in FY 2018.

CMS commissioned the Dobson | DaVanzo team—Dobson DaVanzo & Associates, LLC and KNG Health Consulting, LLC—to assess the accuracy of the S-10 data against existing and validated data on uncompensated care costs reported to the IRS on Form 990 by not-for-profit hospitals. Last year, the project team conducted this analysis using 2011 to 2012 IRS 990 data. This analysis has been updated to include 2011 to 2013 data.

Because the data submitted through Form 990 are reviewed by hospital auditors and come from an external source, they may be a suitable standard for comparison. However, there are limitations to this approach. Some variation in the level of key variables is expected between the IRS 990 and S-10 data because of differences in how data elements are defined and reported. These differences may be mitigated in examining national shares of uncompensated care costs for each hospital (Factor 3s), because a consistent source is used for the numerator and denominator. Moreover, we can use correlation over

Introduction

time to assess whether the Factor 3s constructed using each of the data move in a consistent direction. Nevertheless, we cannot make definitive assessments as to the validity of the S-10 data differences across the data sources.

The benchmarking of S-10 data against the Form 990 data over time could be used to provide a baseline to assess changes in the precision of S-10 data submitted by hospitals, and this assessment could be improved with the implementation of modifications to the Worksheet S-10 instructions. In this report, we present results from the comparison of uncompensated care estimates derived from data from Worksheet S-10 to data from IRS Form 990s. Furthermore, Factor 3s were calculated for each source and compared across datasets to determine the extent to which the data differences would produce a different distribution of Medicare DSH payments.

Data and Methods

This chapter presents a comparison analysis of Worksheet S-10 of the Cost Report by comparing it to the IRS Form 990. A crosswalk was used to match hospitals' CMS provider number (CCN) and IRS tax ID number (TIN), which allowed hospitals' S-10 and IRS 990 data to be directly compared. As described in Exhibit 1 below, specific variables and measures constructed from the variables in the S-10 and IRS 990 data were compared for 2011, 2012, and 2013. Analyses are conducted with only hospitals expected to be DSH-eligible for FY 2017.⁴

Data and Measures

Three key analytic variables, and the resulting Factor 3s, were constructed from the IRS 990 and Worksheet S-10 data. The description of each key variable is provided below, followed by a summary in Exhibit 1.

Exhibit 1. Data Elements in the IRS 990 and S-10 forms

Category	IRS 990	Worksheet S-10
Charity care	Cost of financial assistance (Line 7a Part I)	Cost of charity care (Line 23)
Bad debt	Bad debt expense at cost (Line 2 Part III)	Cost of total bad debt expense= Total bad debt charge for the entire facility (Line 26) * Cost to charge ratio (Line 1)
Uncompensated care costs (UCC)	Cost of financial assistance (Line 7a Part 1) + Bad debt expense at cost (Line 2 Part III)	Cost of charity care (Line 23) + Cost of total bad debt expense (Line 26 * Line 1)
Factor 3	UCC (Line 7a Part 1 + Line 2 Part III) / Total UCC in sample	UCC (Line 23 + Line 26*Line 1) / Total UCC in sample

A crosswalk was used to identify hospitals based on their CCNs and TINs. It should be noted that there is not always a 1:1 correspondence between CCNs and TINs. Some hospital organizations contain multiple hospitals with different CCNs, but share one

⁴ Note that DSH eligibility is based on list of hospitals identified as DSH eligible as of March 16, 2016. This list of hospitals may differ from the final list of DSH eligible hospitals as identified in the FY 2017 Notice of Proposed Rule Making.

Data and Methods

single IRS TIN. For this reason, charity care, bad debt, and uncompensated care costs from the S-10 Worksheet were summed for each TIN. Factor 3s for both IRS 990 and S-10 were also constructed at the TIN level. The IRS 990 data were then matched with the S-10 data by TIN.

Sample Selection

In order to be included in the sample, hospitals needed to have both S-10 and IRS 990 data for each of the years in our analysis and the hospitals' S-10 had to cover the same full-year reporting period. In addition, the hospitals had to be expected to receive DSH payments in FY 2017.⁵ In order to maintain consistency between S-10 and IRS 990 data, DSH eligibility was defined at the TIN level. A TIN was considered "DSH eligible" if any of the CCNs belonging to the TIN were expected to receive DSH payments in FY 2017. Finally, we matched S-10 data to the IRS 990 financial report using the hospital TIN within a given year. Between 1,396 (2011) and 1,109 (2013) hospitals meet all these criteria for our study period (Exhibit 2). To understand the convergence of S-10 and IRS 990 reports, we limited our final hospital sample to those who appeared in all the three years of reporting—a total of 1,061 hospital providers (with 918 unique tax IDs).

Exhibit 2. Sample Selection Chart

Attrition Chart: Number of Hospitals in Sample			
	2011	2012	2013
Full Year Cost Report	5,279	5,090	5,056
Eligible for Medicare DSH	2,667	2,635	2,638
Accounting Period match with IRS	1,396	1,376	1,109
Consistent Panel*	1,061	1,061	1,061

*These 1,061 hospitals are represented by 918 unique Tax IDs.

Analytical Approach

After selecting the sample, we took three steps to understand the consistency of DSH payments between Worksheet S-10 and IRS 990 data. First, to examine if the sampled hospitals are representative of all the providers under the Medicare DSH hospitals, we compared major hospital characteristics including: geographic location, region, bed size, teaching status, and distribution by state. Second, we calculated the correlation of Factor 3 between S-10 and IRS 990 data. We then compared their absolute differences in Factor 3 by percentile and quartiles. We also further compared percentile differences in the components of Factor 3 formula, i.e., uncompensated care cost, comprised of bad debt, and charity care, in order to understand whether and to what extent the differences in these variables contribute to the differences in Factor 3 calculated with S-10 and IRS 990 data.

⁵ Based on list of hospitals expected to receive DSH payments in FY 2017 as of March 16, 2016.

Results

Corresponding to our analytical approach, we first conducted descriptive statistical analysis to determine the representativeness of our sampled hospitals (n=1,061), by comparing the sample hospital characteristics with that of the DSH-eligible hospitals in the 2017 impact file. We then calculated correlation coefficients for the calculated Factor 3 between the S-10 and 990 data over time. We paid special attention to differences in Factor 3 across the two datasets, presenting the absolute percent differences in Factor 3 between these two datasets by quartile as well as graphing S-10 and IRS 990 Factor 3s for each year. Furthermore, we presented additional summary statistics to understand which factors are driving the variation between S-10 and IRS 990 by presenting ratios of the individual variables of interest (charity care, bad debt, UCC, and Factor 3) in 2011, 2012, and 2013.

Characteristics of Sample Hospitals

Exhibits 3 through 8 below present the distribution of hospitals (unique CCNs) in the sample and for all hospitals in the FY 2017 Impact File expected to receive DSH payments in FY 2017, in order to show the representativeness of the sample selected.

In total, we identified 1,061 not-for-profit DSH hospitals, representing approximately 38% of all DSH hospitals in FY2017 impact file (Exhibit 3). Our sample included slightly more urban hospitals (77%) than those in the impact file (Exhibit 4). Hospital capacity in terms of bed sizes and teaching status of our sampled hospitals is comparable to those in the impact file, with a maximum difference around 20% (Exhibit 5, Exhibit 7).

The geographic distributions of our sampled hospitals are presented in Exhibits 4, 6, and 8. Our samples are overly representative in East North Central, Middle Atlantic on the region level, and in New York and Ohio. Given the small number of hospitals in Connecticut, our analysis did not include any hospitals from Connecticut after applying the cohort selection algorithm.

Exhibit 3: Hospital Characteristics in the Sample and in the FY 2017 CMS Impact File

	DSH Hospitals in the Sample	DSH Hospitals in the FY 2017 Impact File
All Hospitals	1,061	2,813

Source: KNG and Dobson | DaVanzo Team analysis of FY 2017 IPPS Final Rule Correction Notice impact file.

Exhibit 4: Hospital Characteristics by Geographic Location

Geographic Location	DSH Hospitals in the Sample (Percentage)	DSH Hospitals in the FY 2017 Impact File (Percentage)
Urban Hospitals	77.14%	72.69%
Large Urban Areas	41.02%	39.10%
Other Urban Areas	36.12%	33.59%
Rural Hospitals	22.86%	27.30%

Source: KNG and Dobson | DaVanzo Team analysis of FY 2017 IPPS Final Rule Correction Notice impact file.

Exhibit 5: Hospital Characteristics by Bed Size

Bed Size	DSH Hospitals in the Sample (Percentage)	DSH Hospitals in the FY 2017 Impact File (Percentage)
0 to 99 Beds	25.87%	33.31%
100 to 249 Beds	40.26%	38.04%
250 to 499 Beds	24.65%	21.22%
500 to 749 Beds	6.22%	5.30%
750 or More Beds	3.02%	2.13%

Source: KNG and Dobson | DaVanzo Team analysis of FY 2017 IPPS Final Rule Correction Notice impact file.

Exhibit 6: Hospital Characteristics by Region

Region	DSH Hospitals in the Sample (Percentage)	DSH Hospitals in the FY 2017 Impact File (Percentage)
East North Central	21.83%	15.39%
East South Central	6.59%	10.13%
Middle Atlantic	19.57%	10.17%
Mountain	6.96%	7.00%
New England	0.85%	3.98%
Pacific	12.04%	12.62%
Puerto Rico	0.19%	1.49%
South Atlantic	13.83%	17.60%
West North Central	10.07%	7.04%
West South Central	8.09%	14.58%

Source: KNG and Dobson | DaVanzo Team analysis of FY 2017 IPPS Final Rule Correction Notice impact file.

Exhibit 7: Hospital Characteristics by Teaching Status

Teaching Status	DSH Hospitals in the Sample	DSH Hospitals in the FY 2017 Impact File
Nonteaching	56.63%	65.59%
Fewer than 100 residents	32.74%	25.60%
100 or more residents	10.63%	8.82%

Source: KNG and Dobson | DaVanzo Team analysis of FY 2017 IPPS Final Rule Correction Notice impact file.

Exhibit 8: State Distribution of Hospitals

State	DSH Hospitals in the Sample	DSH Hospitals in the FY 2017 Impact File
All Hospitals	1,061	2,813
Alabama	1.03%	2.77%
Alaska	0.09%	0.32%
Arizona	1.13%	1.78%
Arkansas	1.60%	1.42%
California	9.41%	9.10%
Colorado	2.35%	1.42%
Connecticut	0.00%	0.85%
Delaware	0.47%	0.21%
District of Columbia	0.28%	0.21%
Florida	1.98%	4.80%
Georgia	3.29%	3.27%
Hawaii	0.47%	0.39%
Idaho	0.28%	0.39%
Illinois	6.21%	3.98%
Indiana	2.73%	2.56%
Iowa	1.88%	1.03%
Kansas	0.94%	1.10%
Kentucky	3.10%	2.28%
Louisiana	1.13%	2.67%
Maine	0.47%	0.57%
Maryland	3.29%	1.46%
Massachusetts	0.09%	1.74%
Michigan	3.95%	3.09%
Minnesota	3.20%	1.64%
Mississippi	0.47%	2.20%
Missouri	1.98%	1.96%
Montana	0.66%	0.32%
Nebraska	1.13%	0.57%
Nevada	0.38%	0.64%
New Hampshire	0.28%	0.28%
New Jersey	2.92%	1.53%
New Mexico	0.85%	1.14%
New York	10.25%	4.80%

Results

State	DSH Hospitals in the Sample	DSH Hospitals in the FY 2017 Impact File
North Carolina	1.13%	2.77%
North Dakota	0.28%	0.28%
Ohio	6.21%	3.95%
Oklahoma	1.22%	2.56%
Oregon	1.22%	1.14%
Pennsylvania	6.40%	3.84%
Puerto Rico	0.19%	1.49%
Rhode Island	0.00%	0.32%
South Carolina	0.19%	1.67%
South Dakota	0.66%	0.46%
Tennessee	1.98%	2.88%
Texas	4.14%	7.93%
Utah	1.22%	1.03%
Vermont	0.00%	0.21%
Virginia	2.26%	2.20%
Washington	0.85%	1.67%
West Virginia	0.94%	1.00%
Wisconsin	2.73%	1.81%
Wyoming	0.09%	0.28%

Source: KNG and Dobson | DaVanzo Team analysis of FY 2017 IPPS Final Rule Correction Notice impact file.

Drivers of Variation

Exhibit 9 demonstrates the absolute differences of key variables between results reported in IRS 990 and S-10. The final discrepancies of Factor 3 are determined by both the difference of individual variable values and the leverage of these variables on Factor 3. From Exhibit 9, we found that charity care cost differences between the two could predict Factor 3 difference well, implying that charity care cost differences could possibly be principal driving factors of Factor 3 differences over time. In addition, we also found that the top 50 percentile hospitals (in terms of uncompensated care, charity care, and charity care), particularly the top 90-99% could explain the major discrepancies between IRS-990 and S-10 report.

The findings of the driving factors are consistent with our analysis in last years' report, which report similar trends in the top percentiles.

Results

Exhibit 9: Percentile and Means of Ratios of Key Variables

Key Variables	Percentile based on Absolute Percent Difference* Between IRS 990 and Worksheet S-10								
	1%	10%	25%	50%	75%	90%	99%	Mean	#
2011									
Charity Care	0	0.22	0.53	0.80	0.96	1.23	3.49	0.87	912
Bad Debt	0	0.16	0.26	0.43	0.86	0.96	1.98	0.57	913
Uncompensated Care Cost	0	0.28	0.39	0.57	0.83	0.99	1.90	0.63	917
Factor 3 (UCC/Total UCC)	0	0.50	0.71	1.04	1.50	1.78	3.44	1.15	917
2012									
Charity Care	0	0.27	0.54	0.80	0.97	1.28	3.90	0.89	913
Bad Debt	0	0.15	0.23	0.37	0.84	0.97	1.62	0.54	917
Uncompensated Care Cost	0	0.25	0.37	0.53	0.81	0.99	1.74	0.62	918
Factor 3 (UCC/Total UCC)	0	0.50	0.71	1.01	1.54	1.89	3.32	1.17	918
2013									
Charity Care	0	0.33	0.67	0.81	0.97	1.23	4.08	0.9	915
Bad Debt	0	0.15	0.23	0.36	0.8	0.96	1.53	0.50	912
Uncompensated Care Cost	0	0.25	0.36	0.52	0.8	1.00	1.81	0.61	918
Factor 3 (UCC/Total UCC)	0	0.50	0.71	1.03	1.58	1.95	3.56	1.20	918

Source: KNG & Dobson | DaVanzo Team analysis of FY 2011-2013 S-10 Worksheet and IRS Form 990.

Comparison of Factor 3

We then compared the differences in Factor 3 between S-10 and IRS 990 for 2011 to 2013. Because percent differences tend to be higher with lower Factor 3 values (i.e., Factor 3 of 0.001 compared to 0.002 is a 100% increase), we present the results by quartile of S-10 Factor 3s. Exhibit 10 presents the distribution of the percent differences in the Factor 3s. In 2012 for example, among hospitals in the fourth quartile (hospitals with the highest Factor 3s based on S-10 data – i.e., 75th to 100th percentile), the differences between IRS 990 Factor 3 and S-10 Factor 3 range from 1 percent (1st percentile) to 596 percent (99th percentile). For over 50 percent of the hospitals in 2011-2013, the differences between the S-10 and IRS 990 Factor 3s center around 40%.

Exhibits 11 through 13 present the S-10 and IRS 990 Factor 3 values for each hospital in 2011, 2012, and 2013. Hospitals are arranged along the x-axis by their S-10 Factor 3, with hospitals with the highest S-10 Factor 3s at the right end of the axis. The S-10 and IRS 990 Factor 3 values are shown along the y-axis. The smooth red line represents the S-10 Factor 3, and the navy dotted line is the hospital’s IRS 990 Factor 3. The closer the navy dotted line is to the red line, the closer the S-10 Factor 3 is to the IRS 990 Factor 3.

Results

Compared to our last report, we did not identify major outliers among hospitals with low S-10 Factor 3. Rather most outliers are on the top 50 percentile hospitals (in terms of Factor 3). And over time, there are fewer outliers in the medium range, which may imply that familiarity with S-10 cost reporting do help increase consistency in S-10 and IRS 990 reporting.

Exhibit 10: Distribution of Absolute Percent Change of Factor 3 in IRS 990 and S-10 Data by Quartile (2011-2013)

Quartile**	Percentile based on Absolute Percent Difference* Between IRS 990 and Worksheet S-10								
	1%	10%	25%	50%	75%	90%	99%	Mean	#
2011									
First Quartile	1%	10%	23%	40%	66%	100%	100%	47%	229
Second Quartile	1%	7%	21%	39%	61%	83%	209%	48%	230
Third Quartile	0%	8%	17%	37%	58%	84%	349%	49%	229
Fourth Quartile	1%	7%	7%	35%	65%	89%	298%	47%	229
2012									
First Quartile	1%	9%	23%	43%	75%	97%	152%	50%	229
Second Quartile	2%	9%	17%	35%	61%	90%	163%	44%	230
Third Quartile	0%	5%	16%	38%	65%	99%	447%	50%	229
Fourth Quartile	0%	7%	20%	39%	63%	91%	435%	58%	230
2013									
First Quartile	1%	8%	18%	40%	67%	100%	221%	50%	229
Second Quartile	1%	6%	19%	37%	60%	98%	217%	50%	230
Third Quartile	1%	7%	20%	40%	66%	98%	182%	50%	229
Fourth Quartile	1%	7%	19%	38%	66%	98%	596%	55%	230

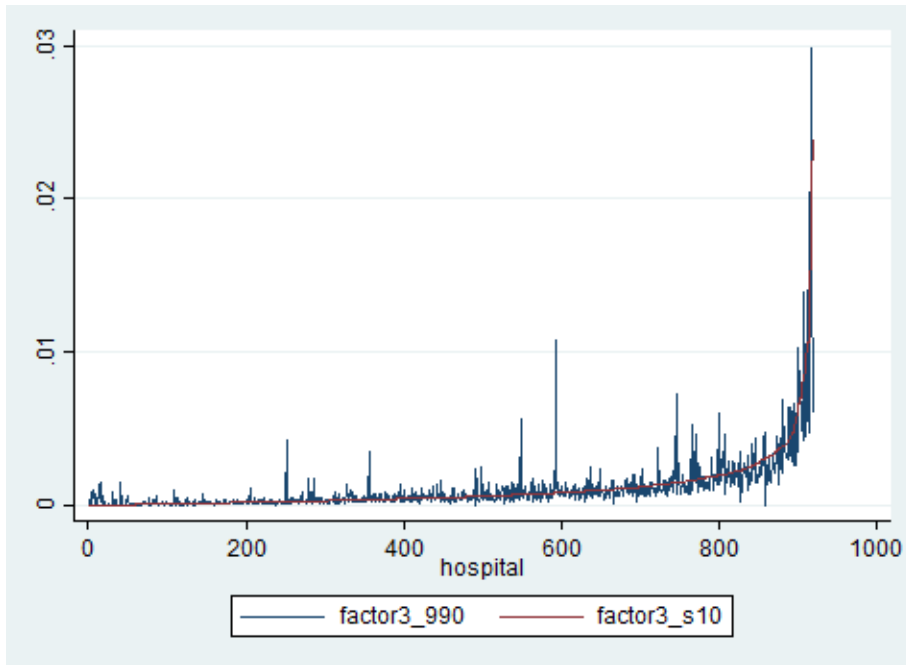
Source: KNG & Dobson | DaVanzo Team analysis of FY 2011-2013 S-10 Worksheet and 2011-2013 IRS Form 990.

*Absolute percent differences calculated as (IRS 990 Factor 3 – S-10 Factor 3) / IRS 990 Factor 3

**Quartiles refer to S-10 Factor 3 values. First quartile = hospitals with lowest 25% of S-10 Factor 3 values

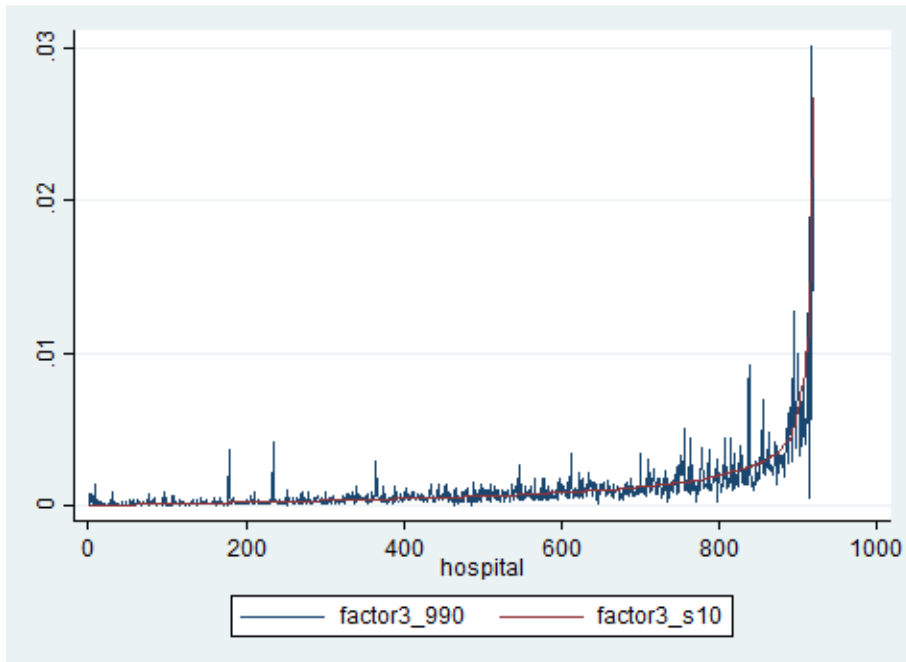
Results

Exhibit 11: S-10 and IRS 990 Factor 3 Values in 2011



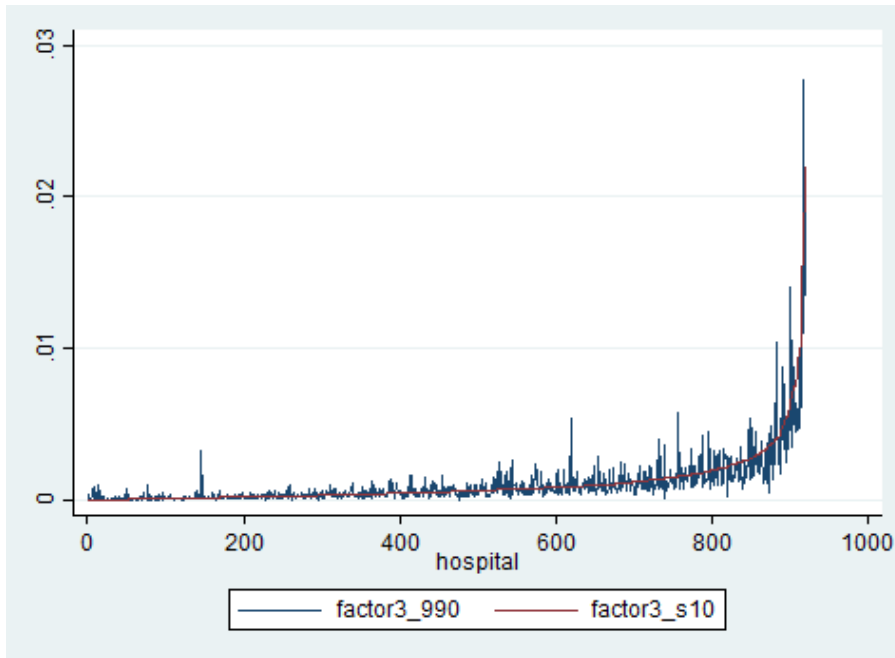
Source: KNG & Dobson | DaVanzo Team analysis of FY 2011-2012 S-10 Worksheet and 2011 IRS Form 990.

Exhibit 12: S-10 and IRS 990 Factor 3 Values in 2012



Source: KNG & Dobson | DaVanzo Team analysis of FY 2012-2013 S-10 Worksheet and 2012 IRS Form 990.

Exhibit 13: S-10 and IRS 990 Factor 3 Values in 2013



Source: KNG & Dobson | DaVanzo Team analysis of FY 2013 S-10 Worksheet and 2013 IRS Form 990.

Correlation Over Time

Last, we summarized hospital and reported the correlation coefficients for all hospitals by year. Exhibit 14 below demonstrates how the S-10 and IRS 990 Factor 3 values correlate with one another in 2011, 2012, 2013, and across all three years. The values do appear to exhibit increasing correlation over time.

Exhibit 14: Correlation Coefficients between IRS 990 and S-10 Factor 3

Year	Correlation Coefficient
2011	0.7984
2012	0.8091
2013	0.8464
Overall	0.8172

Source: KNG & Dobson | DaVanzo Team analysis of FY 2011-2013 S-10 Worksheet and 2011-2013 IRS Form 990.

We also did additional analysis to aggregate state-level Factor 3 and understand the consistency of reporting between IRS 990 and S-10 report. The results are presented in the Appendix Exhibits.

Conclusions

This report updates our previous analysis benchmarking uncompensated care data from cost report Worksheet S-10 and IRS Form 990. The findings from our analysis were generally consistent with that of prior year report. Specifically:

- Consistent with our prior study, we find that Factor 3s derived using the IRS Form 990 and Worksheet S-10 data are highly correlated. In addition, the correlation coefficient between Factor 3s calculated from the IRS 990 and S-10 has increased slightly over time, from 0.7984 in 2011 to 0.8464 in 2013.
- Although the Factor 3s are highly correlated, large hospital-level differences in uncompensated care costs, charity care, bad debt, and Factor 3 exists between measures calculated using the S-10 and 990 data. The absolute difference between the key factors in the two data sources is comparable to differences observed in our prior report.

There are limitations to our study that should be kept in mind when interpreting the study findings. First, our analysis is limited to those hospitals that have IRS 990 data (not-for-profit hospital) for 2011-2013. Our findings may not generalize to all IPPS hospital. Second, we would expect differences between the IRS 990 and S-10 data because of differences in how some of the variables are defined and reported.

Given public concerns regarding the Worksheet S-10 data, CMS had delayed using the S-10 data, although it has recently proposed to do so beginning in FY 2018. Our study findings suggest increases in the correlation between the S-10 and 990 data, but continuing differences in levels of key variables. Changes to the Worksheet S-10 reporting instructions could help better align these data with data reported on IRS Form 990. If so, the Form 990 data could better facilitate future validation of the S-10 data.

Appendix

Definitions

CHARITY CARE. IRS Form 990 defines “financial assistance” as free or discounted health services provided to persons who meet the organization's criteria for financial assistance and are unable to pay for all or a portion services received. Financial assistance does not include bad debt, shortfalls of Medicaid, Medicare, and other means-tested government programs, and other unreimbursed costs. IRS Form 990 uses “financial assistance” and “charity care” interchangeably. There are no notable differences found between the definitions of “charity care” in the S-10 data and “financial assistance” in IRS Form 990. Therefore, we assumed the cost of financial assistance in IRS Form 990 is comparable to the cost of charity care in the S-10 data. Negative values were recoded into zeroes to avoid the possibility of negative Factor 3s.

BAD DEBT. We note that the Worksheet S-10 definition of uncompensated care costs (UCC) excludes the cost of Medicare bad debt expenses. However, the IRS Form 990 does not break out information regarding a hospital’s Medicare and non-Medicare bad debt expenses. In order to increase comparability between the S-10 and IRS 990, the analysis includes both Medicare and non-Medicare bad debt. We compared the cost of total bad debt expense (Line 2 Part III) in IRS Form 990 and the “cost of bad debt expense for the entire facility” from S-10 (calculated as bad debt charges (Line 26) times cost to charge ratio (Line 1)). Negative values were recoded into zeroes to avoid the possibility of negative Factor 3s.

UNCOMPENSATED CARE COSTS. By summing charity care and bad debt, we generated an estimate of UCC for each data source.

FACTOR 3. Each hospital’s UCC divided by the total amount of UCC of all hospitals in the sample equals the hospital’s Factor 3, the proportion of all UCC covered by the hospital.

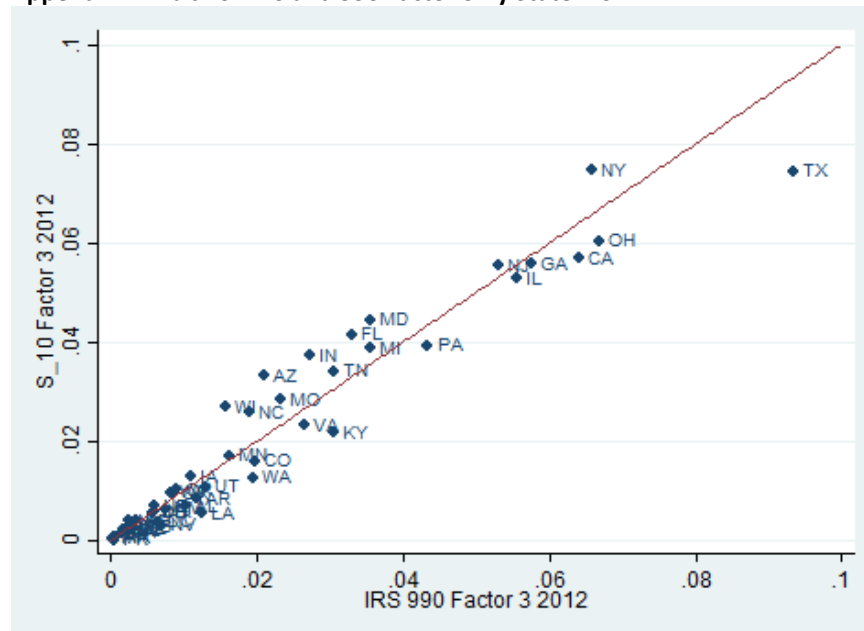
Appendix

Appendix Exhibit 9: IRS and 990 Factor 3 By State: 2011



Source: KNG & Dobson | DaVanzo Team analysis of FY 2011-2012 S-10 Worksheet and 2011 IRS Form 990.

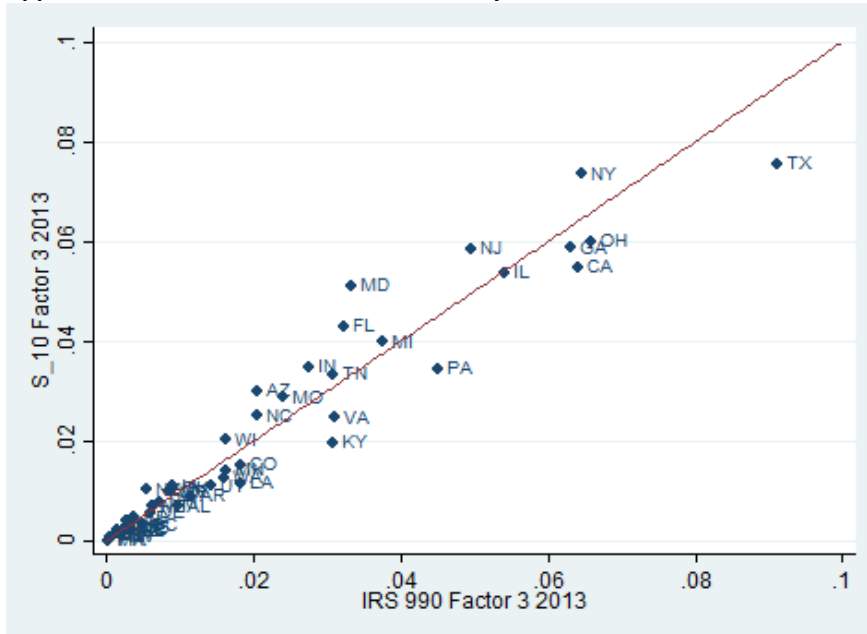
Appendix Exhibit 10: IRS and 990 Factor 3 By State: 2012



Source: KNG & Dobson | DaVanzo Team analysis of FY 2012-2013 S-10 Worksheet and 2012 IRS Form 990.

Appendix

Appendix Exhibit 11: IRS and 990 Factor 3 By State: 2013



Source: KNG & Dobson | DaVanzo Team analysis of FY 2013 S-10 Worksheet and 2013 IRS Form 990.