

Assessing the Financial Implications of Alternative Reimbursement Policies for Nursing Facilities

Presented to: The American Health Care Association

December 2011

THE MORAN COMPANY

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Introduction

The American Health Care Association (AHCA) commissioned The Moran Company (TMC) to conduct an independent analysis of nursing facility financial results in 2009:

- To evaluate prior estimates of nursing facility operating margins; and
- To assess the impact, going forward from that year, of alternative reimbursement policies on nursing facility financial results.

The AHCA was interested in the effects of a number of reimbursement policies that were implemented after 2009 and others that have been proposed by various parties for future years.

Key Findings

- We estimate 2009 aggregate overall margins of 0.75%. This estimate is materially different from estimates developed by MedPAC.
- Because margin analyses can differ markedly due to specific assumptions and the exact methods used by different researchers to cope with imperfections in Medicare cost report data, there is significant uncertainty about the actual margins (positive or negative) that nursing facilities are earning.
- Subject to these caveats, our baseline suggests that going forward from 2009, nursing facility operating margins would be mildly positive—holding current payment policies constant.
- Through the projection period, net of the impact of an expected 2% sequestration, we estimate baseline overall margins ranging from 0.64% of revenue in 2012 to 2.11% in 2021.
- Reimbursement policy changes are, however, under active discussion by policymakers, including:
 - A "clawback" of 2011 revenues associated with reimbursement changes exceeding budget neutral expectations;
 - A two-year suspension of market basket adjustments;
 - Limiting bad debt payments to 25%;
 - Imposing 5% coinsurance on days 1-20 of SNF care; and
 - Capping Medicaid provider taxes at 3.5% of total payments.

- If reimbursement policy changes of the magnitude of those now under discussion are implemented, our point estimate of the outcome suggests that nursing facility overall margins would turn consistently negative.
- Margin projections of this type are, however, highly sensitive to assumptions about volume growth and productivity factors.
- While our analysis suggests that there is some prospect that nursing facilities could weather reimbursement reductions of the magnitude contemplated, it also suggests substantial uncertainty about whether they will be able to do so without material reductions in the level of services now provided in nursing facilities.

These findings are based on the creation of a ten year baseline built using TMC's 2009 margin analysis designed to estimate the impact of various policies. The balance of this report provides a discussion of the analyses we used to reach these findings.

The report includes our estimate of the impact of:

- Various policies that were implemented after 2009; and
- The policies that have been proposed by various policymakers shown above.

2009 Margin Analysis

Our analysis of nursing facility margins is based on Medicare cost reports for free-standing nursing facilities¹ submitted and included in the Health Care Cost Reporting Information System (HCRIS) for fiscal years ending in 2009. Nursing facilities may operate on any fiscal year, and cost reports may be submitted and updated throughout the year. As a result, analyses using these cost reports are somewhat sensitive to the volume of cost reports in the system at the time the analysis is performed. Cost reports for fiscal periods in 2009 should have been submitted during the second half of 2010. It is, however, not unusual for providers to submit revisions of cost reports after the initial submission. This study identified cost reports that were included in the October 25, 2011 release of the Health Care Cost Reporting Information System (HCRIS): 14,362 cost reports were identified and extracted for this analysis.

Data Cleaning

Nursing facility cost reports are not used in routine annual rate setting, and therefore are not closely scrutinized on a regular basis. They are subject to desk audit, but corrections to most erroneous and missing information are not required. Using these data to ground policy positions requires careful and systematic data cleaning.

¹ Hospital based nursing facilities are included in hospital cost reports and are excluded from this study.

TMC took two steps to clean the extracted data, during which 1,721 cost reports were removed and 12,641 were kept for the margin analysis² as shown in Table 1. The first phase in data cleaning excluded cost reports that have missing or obvious erroneous values. Cost reports were excluded using the following criteria:

- They have missing values for operating revenue, patient days, or net income;
- They have operating revenue or patient days less than zero;
- They have total patient days greater than 365 times the number of total beds;
- The duration of a cost report went beyond 360-370 days; or
- A facility had multiple cost reports – only the most recent updated cost report for each facility was kept.

Table 2 shows the detail of how many cost reports failed to meet cleaning criteria. Note that some cost reports fail multiple criteria.

Table 1. Number of Cost Reports Removed/Kept in Data Trimming Steps

	Number of Cost Reports	% of Cost Report
Before Data Trimming	14,362	
Step One		
Cost Reports Removed	1,363	9%
Cost Reports Kept	12,999	91%
Step Two		
Facilities Removed	358	3%
Facilities Kept	12,641	97%

Table 2. Cost Reports Removed Based on Specific Criteria

Data Trimming Criteria	Number of Cost Reports Removed	% Cost Report Removed
Total Count of Cost Reports Before Data Trimming	14,362	
Cost Report Covered Days Outside (360-370) Range	993	6.91%
Missing Operating Revenue Variable	384	2.67%
Operating Revenue Less Than Zero	3	0.02%
Operating Revenue Equals Zero	0	0.00%
Operating Revenue Less Than \$100	3	0.02%
Missing Patient Days Variable	327	2.28%
Patient Days Less or Equals Zero	0	0.00%
Missing Total Beds Variable	339	2.36%
Total Beds Less or Equals Zero	0	0.00%
Total Patient Days Greater Than 365 * Total Beds	60	0.42%
Missing Net Income Variable	361	2.51%

Table 3 shows how many facilities had multiple cost reports.

² In MedPAC's March 2011 Report, it used 12,827 freestanding nursing facility cost reports for its calculations but does not account in any detail for its data cleaning or trimming procedures.

Table 3. Cost Reports per Facility

Cost Reports Per Facility	# of Skilled Nursing Facilities
1	13,638
2	347
3	10
Total Count of Facilities	13,995

The second step in the cleaning process was to remove cost reports with outlier values. TMC applied a common methodology used by the Centers for Medicare and Medicaid Services (CMS) in many of its analyses to trim data. Cost reports with values that were outside 3 standard deviations of the geometric mean were excluded. Table 4 shows the removal criteria, thresholds, and number of cost reports removed. Overall, 358 cost reports (3 percent) were removed in step two and 12,641 were kept for the margin analysis.

Table 4. Criteria to Remove Unreasonable Data and Number of Facilities Removed

Facility Removal Criteria	Thresholds	Number of Facilities Removed
Revenue outside the upper limit of 3 std	\$ 47,629,250	51
Revenue outside the lower limit of 3 std	\$ 991,269	10
Revenue per day outside the upper limit of 3 std	\$ 615	188
Revenue per day outside the lower limit of 3 std	\$ 76	16
Expense per day outside the upper limit of 3 std	\$ 703	260
Expense per day outside the lower limit of 3 std	\$ 68	3
Adjusted net income per day outside the upper limit of 3 std	\$ 404	5
Adjusted net income per day outside the lower limit of 3 std	\$ 0	14

Imputing values from facilities meeting cleaning criteria to missing data

Once data cleaning was completed, facilities remaining in the analysis were grouped by state. MedPAC reported 15,068 SNFs in 2009³ based on CMS' survey and certification data. Using the Online Survey Certification and Reporting (OSCAR) system for the 4th quarter of 2009, TMC compared the facilities for which 2009 cost reports meeting all cleaning criteria were available to the total number of facilities reported in OSCAR.

To calculate a national industry margin, using the data for the facilities meeting all trimming criteria, it is necessary to extrapolate to the facilities that were excluded or never submitted cost reports but appear to be operating according to the OSCAR data. To do this⁴, volume adjustment ratios were developed at the state level and applied to

³ MedPAC Report to the Congress: Medicare Payment Policy, March 2011. Page 149, Table 7-1.

⁴ No standardized information exists on which to make assumptions about the characteristics of the facilities with missing cost reports or most of those rejected from the study due to erroneous information. Therefore, the extrapolation methodology cannot account for any trend that might exist in these facilities

estimate national SNF operating revenues, operating expenses, related party adjustments, and Medicare allowable bad debts using the following steps.

1. Total patient days and Medicare patient days obtained from cost reports were aggregated to the state level.
2. Total patient count and Medicare patient count at the state level from OSCAR were multiplied by 365 as estimates of expected patient days.
3. State level volume adjustment ratios (all patients or Medicare) were calculated by dividing expected patient days from OSCAR in step 2 by patient days from cost reports in step 1.
4. Total operating revenues, total operating expenses, related party adjustments, and Medicare allowable bad debts are summed at the state level and then multiplied (all patients or Medicare) by state level volume adjustment ratios. The volume adjusted state amounts then total to the national level.

A review by state of missing cost reports shows the highest adjustment ratios are for small states with a small number of facilities (e.g., Alaska, DC, Hawaii, Idaho). The overall volume weighted adjustment ratio for Medicare patient days was 1.21. The Medicare percentage of total nursing facility revenues was 25.4 percent.

Calculation of Margins

Margins were calculated using the reference cells in the cost reports and calculations shown below.

- Operating revenue – Worksheet G-3, Line 3
- Operating expense – operating revenue less net income/(loss)
- Net income – Worksheet G-3, Line 1
- Related party adjustment – Worksheet A-8, Column 2, Line 12, Applied to remove related party profit or cost
- Total patient days, Worksheet S-3, Part I, Column 7, Line 9

The analysis for the cost reports meeting the cleaning criteria is shown in the top half of Table 5 below. The analysis imputing the cleaned data to national volume not represented due to missing or excluded cost reports is shown in the bottom half of the table. The margin for nursing facilities with clean cost reports is 0.83 percent. When extrapolating to national volume this adjusts to a margin of 0.75 percent. Labor costs as a proportion of all costs are also shown.

These results are lower than those published by MedPAC for freestanding nursing facilities during the same year. Margin analysis results may differ due to extraction of cost reports at different times in the year, differing criteria applied to remove cost reports

that, if known, might show that the resulting margins are biased in some way. So, for example, if all of the missing facilities had little or no Medicare, commercial or private pay days, the industry margins may be slightly overstated.

due to extreme or erroneous data, treatment of related party costs, and treatment of missing data.

Table 5. Margin Analysis

# Facilities Meeting Cleaning Criteria	12,641
From HCRIS	
Net Income	\$ 181,573,855
Adj_net_Income	\$ 853,528,522
Operating Revenue	\$ 103,203,714,855
Operating Expense	\$ 103,022,141,000
Labor Cost	\$ 55,211,692,305
Adjust net income percentage:	0.83%
% Labor Cost of Operating Expense	54%
OSCAR Adjusted	
Net Income	\$ 118,157,424
Adj_net_Income	\$ 865,728,230
Operating Revenue	\$ 114,796,551,687
Operating Expense	\$ 114,678,394,263
Labor Cost	\$ 61,546,490,681
Adjust net income percentage:	0.75%
% Labor Cost of Operating Expense	54%

Multi-Year Baseline Projections

The data on industry margins in 2009 described in the preceding section were employed to produce a multi-year projection of industry financial results under current law and administrative policy.

Revenue Projections

We began with the 2009 revenue estimate described in the preceding section. Employing historical data for 2009 from the 2011 National Health Expenditures for Nursing Facilities and Continuing Care Communities projections, we decomposed nursing facility patient revenues into three categories: Medicare, Medicaid and Other. We then used the year-over-year changes in revenues observed in the 2011 NHE projections to separately trend each of these three revenue categories forward over time; the trend in 2020/2019 was extended, *pro forma*, to 2021/2020.

Expenditure Projections

To project expenses, we began with the observed level of total expenditures from the cost report analysis in 2009. Using data from our cost report analysis, we decomposed that total into labor (54%) and non-labor (46%) proportions.

The labor proportion was projected forward using two growth factors:

- The annual growth rate projected in the Congressional Budget Office’s (CBO’s) March 2011 baseline for the market basket used to adjust Part A payment systems; and
- The anticipated year-over-year growth in patient volume. In developing a point estimate of industry financial results, we employed a growth rate based on the trend growth presented in the CBO March 2011 baseline projections for Part A enrollment, blended with the rate of growth in the population of the elderly that is eligible for both Medicare and Medicaid. As we will discuss in the concluding section of this report, our projections of industry financial results, holding official revenue forecast constant, are extremely sensitive to this assumption.

In addition to adjusting for market basket increases and volume growth, we adjusted the non-labor portion of expenditures downward to reflect assumed productivity increases. Based on historical data from the Bureau of Labor Statistics, we used the time series for all factor non-farm productivity for business (excluding government) to project a ten year moving average of productivity gains over 2010-2021. We did not assume productivity adjustments to the labor portion of expenditures because nursing facility labor is dictated by regulations and quality measures that make it difficult, and in many cases, undesirable for operators to provide less direct care.

Finally, we employed data regarding related party transactions from our 2009 cost report analysis to adjust the level of expenditures downward to reflect expenses that would be offset by related party revenues. The 2009 value of this adjustment was trended forward based on the market basket index used to estimate growth in overall expenditures.

The baseline point estimate projected using this methodology and these assumptions is presented in the first two rows of the summary output table (Table 6) in the final section of this report. In this “blended growth rate” scenario, industry margins, assuming no further policy changes, are projected to be mildly positive through the forecast period. As noted, however, this projection is exceedingly sensitive to the assumed rate of increase in expenses as volume rises.

Analyzing the Impact of Alternative Payment Policies

While the foregoing analysis projects that nursing facilities will earn positive Medicare margins during the forecast period, that projection is based on the presumption that there will be no payment policy changes during the decade. Given the magnitude of current Federal budget problems and the type of options policymakers are evaluating to address

these problems, this presumption is unlikely to hold. The second part of our assignment is to evaluate the potential impact of Medicare and Medicaid payment policy changes on nursing facility margins, in order to develop a clearer picture of the financial prospects for nursing facilities if the policies under consideration are adopted.

Our analysis proceeds in three steps. First, we adjust the current policy baseline presented above to provide a basis for an accurate measure of the incremental impact of Medicare payment policy changes on nursing facility finances. Second, we analyze the impact of recent policy changes that have already been implemented under current law and final regulations. Finally, we analyze the impact of incremental statutory and regulatory changes presently under discussion in Washington.

Adjustments to the 2009 Baseline

The baseline projection in the preceding section was based on the February 2011 National Health Expenditures forecast, which embeds all policies implemented via final regulations as of that date. Relative to that baseline, assessing the magnitude of the financial impact of policy changes requires us to make three specific adjustments:

- First, we reversed out the effect of the \$1.1 billion “parity adjustment” that CMS implemented for FFY 2010.
- Second, we added in CMS’s estimate of the \$4.47 billion revenue impact of case mix growth in 2011—which compounds into later years.
- Finally, we reversed out the effect of the productivity adjustments implemented, for 2011 and later years, under the Affordable Care Act.

As might be expected, this policy baseline adjusted for policy changes made between 2009 and 2011 shows nursing facility operating margins that are more positive than our baseline forecast. The revised ten-year projection is shown below.

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Adjusted Baseline													
Margins (M)	\$1,691	\$964	\$6,401	\$6,920	\$6,491	\$7,979	\$8,208	\$8,466	\$8,760	\$9,113	\$10,163	\$11,611	\$12,342
As a Percentage of													
Total Revenue	1.5%	0.8%	5.2%	5.5%	4.9%	5.8%	5.7%	5.6%	5.6%	5.5%	5.8%	6.3%	6.4%

As these data indicate, with our adjustments, nursing facility margins would be approximately four percentage points higher in 2021 (compared to Table 6) if no changes in reimbursement policies would have been or will be made after 2009. The vast majority of this increase would result from revenue increases resulting from case mix increases that CMS has sought to recoup through “parity adjustments.”

Projected 2012 Baseline

Having restated our 2009 baseline, accounting for the effects of policy changes already implemented between 2009 and 2011 involves “reversing in” the policy changes that were “reversed out” in the prior step. This sort of accounting for the impact of policy changes may seem *pro forma*, but we have done it to isolate important timing effects. The baseline adjustments we made in the prior step show a significant increase in industry margins in 2011. The parity adjustment CMS made in the 2012 Medicare SNF PPS final rule reverses out the impact of the case mix change in 2012 and later years, but does not recoup the revenue increase in 2011. Hence our projection of industry margins in 2011 is materially greater than that projected in the baseline forecast, offset by lower spending in later years.

In addition, we have included in our projected 2012 baseline the impact of the expected sequestration to Medicare payments as a result of the Budget Control Act. This statutory requirement, which affects Medicare payments beginning in 2013, is slated to implement a cut of 2% to payments under Medicare.

Our projected margin baseline for 2012, net of the policy changes already implemented, is as follows:

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Projected 2012 Baseline	\$808	-\$256	\$1,113	\$1,218	\$1,313	\$1,298	\$1,218	\$2,153	\$3,492	\$4,069
As a % of Total Revenue:	0.64%	-0.19%	0.81%	0.85%	0.87%	0.82%	0.73%	1.24%	1.91%	2.11%

Potential Impact of Additional Policy Options

As policymakers contemplate the need for major deficit reduction initiatives, it would be prudent for nursing facility operators to assume that Medicare payments for nursing facility services may see further legislative and regulatory action over the next few years. Policymakers are, in fact, evaluating a long list of options that reportedly includes Medicare SNF and Medicaid nursing facility payment policies.

We were asked by AHCA to analyze the impact of the following payment policy changes:

- A “clawback” of 2011 revenues associated with RUG IV implementation exceeding budget neutral expectations
- A two-year suspension of market basket adjustments;
- Limiting bad debt payments to 25%;
- Imposing 5% coinsurance on days 1-20 of SNF care; and
- Capping Medicaid provider taxes at 3.5% of total payments.

In the sections that follow, we briefly describe each policy considered, and discuss how we projected the impact of Medicare payment policy changes on industry margins.

2011 Clawback

We understand that CMS has considered, but not explicitly proposed, making a series of payment adjustments to recoup the amount of increased revenue in 2011 that is attributable to case mix changes in response to changes in the Resource Utilization Groups (RUGs) payment categories. Since the prospective adjustment for 2012 and later years that CMS has already made was characterized as the full amount needed to neutralize the future impact, the only amount to be recouped would be the amount of the 2011 revenue increase. In our estimates, we assume that the total amount to be recouped equaled the \$4.47 adjustment made in the 2012 rates. Our estimates show the effects of spreading that as a one-time adjustment in each of the years 2013-2015.

Suspending Market Basket Adjustments

Under current law, annual payment updates under the Skilled Nursing Facility Prospective Payment System are comprised of two components:

- A percentage increase to reflect the projected increase in the market basket of goods and services nursing facilities must purchase to deliver care.
- A percentage change (commonly, a decrease) to reflect long run trends in productivity.

Under current law, if the productivity adjustment results in a negative value for the combined update, CMS is directed to implement that “negative update.” If the Congress elected to suspend the market basket update for two years beginning in 2013, such negative updates would result. Our estimates present the compound impact that that policy would have over the forecast period.

Limiting Bad Debt Payments to 25% of Medicare Bad Debt Costs

Under current law, CMS makes payments to providers to offset the cost of bad debt of Medicare patients. CMS is directed to pay 100% of the allowed bad debt for Medicare-Medicaid dual eligibles and 70% of the bad debt for other Medicare patients. We were asked to estimate the impact of a payment policy change that would reduce the payment percentage to a uniform 25%, phased in over a three-year period. In our 2009 cost report analysis, we extracted an estimate (\$1.11 B) of the amount of allowed Medicare bad debt, and the share (89.6%) attributable to dual eligibles. We trended these values forward to reflect baseline payment updates, and then analyzed the impact of reducing the payment rate from the current law blend to 25% by 2015.

Imposing 5% Coinsurance on Days 1-20

Under current law, Medicare imposes no cost sharing obligations for beneficiaries during the first 20 days of a SNF stay. We were asked to estimate the impact of imposing a copayment equal to 5% of the inpatient hospital deductible on each day before the 21st day. Under such a policy, Medicare would save the full amount of the deductible, net of a

small offset for increases in bad debt payments. From the nursing facility perspective, however, increased collections offset the reduction in Medicare payments except for the amount of bad debt associated with the cost sharing increase. Hence the financial impact is restricted to the amount of resulting bad debt that would not be compensated by Medicare under the 25% uniform payment policy evaluated above. Our estimates are based on the assumption that the historical ratio of bad debt to allowed cost sharing (17.1%) would hold under this policy.

3.5% Limit on Medicaid Provider Taxes

Since the late 1980s, States have conducted “match enhancement” programs under which payment increases to providers are funded, in part, by contributions made to the Medicaid program by providers, rather than via State general revenues. A 1991 law limited the extent to which such contributions could be made by non-governmental providers. States responded by creating provider tax programs to collect incremental amounts from such providers. Congress has capped the amount of such taxes a state can levy to a specified percentage of total payments to a contributing provider; most recently, that cap is at 6.0%. We were asked to evaluate a policy option under which the cap would be lowered to 4.5% in 2015, 4.0% in 2016 and 3.5% by 2017. If states reduced payments to providers under these programs to downsize their programs to the caps, payments to providers would be reduced by the amount of the excess reimbursement providers received, net of taxes paid, under the program in their states.

Because there is no administrative source of data on the details of these match enhancement programs, we relied on data obtained in a member survey conducted by AHCA. In that survey, nursing facility operators reported that net payments to providers would have been reduced by \$2.2 billion nationwide if a 3.5% cap had been imposed in 2011. We assumed that the Medicaid trend in payments subject to cap would be congruent with the Medicare per capita trend, and modeled the phasedown to the 3.5% limit over 2015-2017

Estimates of Policy Effects on Nursing Facility Margins

Our point estimates of the impact of implementing policy changes of this magnitude are presented in Table 6 below. As indicated in the table, this point estimate of financial outcomes shows that the policy changes evaluated would turn nursing facility net margins from mildly positive to consistently negative over the forecast period. In our model, the assumed rate of real productivity gains in non-labor expenses grows over time, providing some amount of margin relief in the second half of the forecast period. In evaluating this projection, however, policymakers will want to take cognizance of the fact that there is no way to guarantee that the spending reductions providers will make in an effort to restore profitability will result from productivity gains, rather than from real cuts in services.

Table 6. Summary Impact of Policy Changes on Nursing Facility Margins

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2012-2021
Current Law Baseline (February 2011)											
Margins	\$790	\$299	\$1,712	\$1,852	\$1,981	\$2,010	\$2,014	\$2,991	\$4,387	\$5,029	
As a % of Revenues	0.6%	0.2%	1.2%	1.3%	1.3%	1.3%	1.2%	1.7%	2.4%	2.6%	
Projected 2009 Baseline: Prior to SNF Parity Adjustment and Health Care Reform Policy Changes											
Margins	\$6,920	\$6,491	\$7,979	\$8,208	\$8,466	\$8,760	\$9,113	\$10,163	\$11,611	\$12,342	
As a % of Revenues	5.5%	4.9%	5.8%	5.7%	5.6%	5.6%	5.5%	5.8%	6.3%	6.4%	
Projected 2012 Baseline: Current Medicare Payment Policies											
Previously Implemented:											
2009 Parity Adjustment	-\$1,116	-\$1,129	-\$1,140	-\$1,152	-\$1,165	-\$1,179	-\$1,183	-\$1,189	-\$1,194	-\$1,196	-\$11,642
Statutory Productivity Adjustment	-\$525	-\$526	-\$547	-\$575	-\$636	-\$833	-\$1,163	-\$1,204	-\$1,233	-\$1,308	-\$8,551
2012 Parity Adjustment	-\$4,470	-\$4,488	-\$4,537	-\$4,580	-\$4,629	-\$4,684	-\$4,738	-\$4,754	-\$4,778	-\$4,798	-\$46,458
Sequester Capped at 2%		-\$604	-\$643	-\$683	-\$723	-\$766	-\$812	-\$862	-\$915	-\$970	-\$6,979
Projected 2012 Baseline	\$808	-\$256	\$1,113	\$1,218	\$1,313	\$1,298	\$1,218	\$2,153	\$3,492	\$4,069	\$16,425
As a % of Total Revenues	0.64%	-0.19%	0.81%	0.85%	0.87%	0.82%	0.73%	1.24%	1.91%	2.11%	
Prospective Policy Options Simulation											
Recoupment of 2011 Increase		-\$1,490	-\$1,490	-\$1,490							-\$4,470
Two Year Zero Market Basket	-\$713	-\$1,520	-\$1,508	-\$1,597	-\$1,725	-\$1,932	-\$1,969	-\$2,086	-\$2,090	-\$2,086	-\$17,224
Limit Bad Debt to 25%		-\$270	-\$546	-\$826	-\$835	-\$845	-\$855	-\$858	-\$862	-\$866	-\$6,764
5% Copay on SNF Days 1-20		-\$349	-\$350	-\$354	-\$358	-\$361	-\$364	-\$366	-\$367	-\$370	-\$3,240
Limit Provider Taxes to 3.5%			\$0	-\$1,367	-\$1,844	-\$2,332	-\$2,340	-\$2,352	-\$2,362	-\$2,367	-\$14,963
Total Estimated Policy Change	-\$6,017	-\$10,633	-\$9,648	-\$11,407	-\$10,604	-\$11,634	-\$12,206	-\$11,518	-\$10,308	-\$9,891	-\$103,865
Resultant Industry Margin											
Margins	\$95	-\$3,885	-\$2,781	-\$4,417	-\$3,450	-\$4,172	-\$4,310	-\$3,508	-\$2,189	-\$1,618	
As a % of Revenues	0.1%	-2.9%	-2.0%	-3.1%	-2.3%	-2.6%	-2.6%	-2.0%	-1.2%	-0.8%	

The Sensitivity of Our Results to Assumptions about Volume Driven Expenditure Growth

In our work on this project, we employed a model whose long term revenue projections were anchored off the 2011 National Health Expenditures projections of revenues by source for nursing facilities and continuing care communities. By contrast, since neither CBO nor the CMS Office of the Actuary forecasts industry expense trends, we were required to base our expense projections on assumptions regarding the rate of industry

expenditure growth. We assumed throughout our analysis that the Part A market basket, as projected by CBO, reflected the best available information on likely rates of change in input prices. Hence our estimates of expenditures—and hence margins, holding the revenue path constant—are driven by two critical sets of assumptions:

- The rate of expenditure growth driven by increasing service volume resulting from either patient volume increases, or by changing service intensity of nursing facility patients over time; and
- The magnitude and timing of productivity gains likely to be achieved by nursing facility operators over time in response to cost pressures.

In our model, the likely impact of real productivity gains was treated very conservatively, in the sense that we consciously erred on the side of potentially overstating potential productivity gains in order to err on the side of not understating provider margins in either the baseline or policy scenarios. Hence the productivity gains assumed in our model are ambitious—and it is unclear whether spending reductions of this magnitude could be achieved through increased efficiencies alone. Consequently, the level of productivity gains we are assuming might, in the real world, need to be derived from reductions in the level of patient services.

On the volume side, we believe the most likely expenditure growth is bounded on the high end by the growth in Part A enrollment, and on the low end by the rate of growth in the “old elderly” population.

We characterize the rate of Part A enrollment growth as an upper bound because a very substantial part of that growth is derived from the uptake of “young elderly” Baby Boomers during the forecast period. Since this cohort is the least likely Medicare sub-population to need nursing facility services, use of this upper bound would amount to an assumption that there will be a sharp increase in the intensity of services rendered to nursing facility residents over the next decade.

The sub-population of those over 75 years of age will be most likely to be in nursing facilities over the next decade. Interpolations we made from Census projections, however, suggest that CBO’s projection of annual growth in aged dual eligibles can serve as a likely lower bound on volume growth. In contrast to the upper bound estimates, adoption of the lower bound estimate would imply that there will be no measurable increase in service intensity over the decade.

In evaluating our results, policymakers will need to take cognizance of the fact that the margin projections we produce in this report are, holding all other elements of the analysis constant, *extremely sensitive* to exactly where on the continuum between these bounds volume growth is projected to fall. The table below summarizes the findings of our sensitivity analysis:

2021		
Expenditure Growth % Due to Volume	2009 Baseline	Future Policies
1%	15.3%	11.8%
2%	5.2%	1.7%
3%	-6.0%	-9.5%
4%	-18.5%	-21.9%

This table shows what the estimated nursing facility margins might look like in 2021, the last year of our forecast horizon, under alternative assumptions about the growth in expenditures attributable to volume.⁵ We show the margins achieved under both the baseline scenario (policies implemented through 2011) and the policy scenarios discussed earlier as percentages of total revenues from all payers. In our model, the results for year 2021 are most favorable for nursing facility margins, because a full decade of growing productivity increases materially moderates cost growth by that time.

Notwithstanding that fact, our modeling work makes clear that if expenditure growth driven by volume moves toward the upper bound, the margin impact would be materially negative, even in the baseline case, since expenses will be rising rapidly relative to revenues. Conversely, if volume-driven expenditure growth falls toward the lower bound, the margin implications would be positive even in the policy case (implementation of all of the potential policy scenarios modeled in the previous section).

In the CBO baseline, the lower bound aged dual eligible trend runs in the range of 1.3 +/- percent over the decade, while the upper bound Part A enrollment trend runs north of 3 percent. As this analysis makes clear, using either bound to produce a point estimate would amount to staking out a strong position regarding where actual expense growth is likely to fall along this continuum.

For this reason, in developing the point estimate used to project the course of nursing facility margins under current law and alternative policies presented in this report, we have used a 50:50 blend of our upper and lower bound assumptions to approximate a more neutral position on likely expenditure growth. Policymakers should be aware, however, that even small real world variations from this trend assumption could have very large effects on the financial prospects of nursing facilities under current law, which would be amplified in the event that policymakers imposed further reductions of the magnitude evaluated in this analysis. Thus, while our analysis demonstrates the possibility that the industry might be able to weather reductions of this magnitude, it

⁵ In this analysis, expenditure increases attributable to changes in case mix intensity would be subsumed in volume growth.

makes clear the substantial degree of uncertainty surrounding the industry's ability to actually do so.