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The Two Medicare ACO Programs: Medicare Shared Savings and Pioneer – Risk/Actuarial Differences

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EXECUTIVE SUMMARY

Accountable Care Organizations (ACOs) are provider groups (typically hospitals and physicians) that agree to be accountable for improving quality and cost outcomes. While these groups are similar to structures popular for a few years in the 1990s (Physician Hospital Organizations, Integrated Delivery Systems, capitation, etc.), today's environment seems different. The weak economy will not support the medical inflation that comes with the current fee-for-service reimbursement—or its lack of care coordination and quality problems. Payers, including states (Medicaid), Medicare, and insurers as well as provider systems have put enormous resources to creating a better way. Many of these efforts are centered as ACOs.

On March 31, 2011, Health and Human Services (HHS) released the proposed ACO regulations for the Medicare Shared Savings Program (MSSP). Among the 400+ pages of discussion, policy, and alternatives, the proposal outlines procedures for ACOs to share risk with Medicare and the data that HHS will provide to ACOs. On May 17, 2011, the Centers for Medicare and Medicaid Services (CMS) announced the Pioneer ACO Model, which is intended for a limited number of larger organizations with proven risk sharing experience. Pioneer "sweetens" the MSSP deal in a number of ways, although much of the MSSP structure applies to Pioneer.

This report outlines key financial and risk differences between MSSP (which has two alternatives – Track 1 and Track 2) and Pioneer with financial illustrations. Neither MSSP nor Pioneer make sense for organizations that assume that Medicare's current reimbursement levels, trends, or structures will persist into the future. Hospitals or physicians that become more efficient only hurt themselves with the current fee-for-service reimbursement. However, if the future brings reduced spending, then shared savings or rewards based on improving quality and reducing cost make more sense—for providers serving commercial and Medicaid patients as well as those serving Medicare beneficiaries. Both MSSP and Pioneer are stepping stones to that future.

Key findings are,

- If Medicare payments become restricted, a population-based approach, which is part of year three of Pioneer, will provide some protection for ACOs. We illustrate the dynamics by exploring the interaction of reimbursement, margin and fixed and variable costs.

- Much has been written comparing MSSP's and Pioneer's trend methodology. However, the instability in Medicare trend by region makes it difficult to predict what the alternative trend to MSSP or Pioneer, which is the fee-for-service trend, will be in any region. MSSP's trend methodology produces advantageous changes in benchmarks for lower cost areas. In MSSP, an ACO's 2012 benchmark will be the ACO's historical experience PMPM plus a fixed amount which corresponds to the national increase in PMPM. This increase in the benchmark from historical experience will be relatively higher for a low-cost area and lower for a high-

cost area. Pioneer's methodology dampens the advantages and the disadvantages by averaging the fixed amount and the national trend applied to the ACO's historical experience.

- In our model, if Medicare expenditures increase by 10%, operating margin for an ACO with fee-for-service (FFS) payments could double, but if Medicare expenditures decrease by 10%, operating margin could become zero. Pioneer ACOs would yield results in the opposite direction—lower Medicare expenditures would produce higher operating margin if the ACO can reduce its costs. Under these Medicare expenditure scenarios, MSSP Track 1 would produce relatively constant operating margin. MSSP Track 2 would fall between MSSP Track 1 and Pioneer.

- The prospective patient attribution allowed under Pioneer creates a "regression to the mean" dynamic. If an ACO's providers attract relatively high-cost patients, the prospective model may result in patient attribution (and the associated experience used to calculate the benchmark) occurring during the patients' high-cost periods. This seems likely to happen if specialists, not just primary care physicians, are considered for attribution, which is allowed under Pioneer. After the program starts for such an ACO, regression to the mean (including patient recovery) will result in lower costs in future years for individual high-cost patients, which will translate into lower overall costs. The opposite may occur for ACOs with more low-cost beneficiaries. However, advocates of retrospective assignment hope that active management during the year of attribution will reduce costs, because providers know the people they are actively treating will be attributed to the ACO. We note that active management programs such as the High Cost Beneficiary Demonstration Project were not successful in reducing costs.

- Assuming risk for a population's healthcare cost is normally associated with significant capital requirements. The capital requirements for organizations doing insurance business are set by the states, although structures such as Risk Based Capital are widely used and supported by the National Association of Insurance Commissioners. We discuss ACO risk but note that the risk an ACO may pass to individual providers (e.g., capitating individual physicians) raises additional concerns for both the ACO and the individual provider.

Organizations considering the choice of MSSP and Pioneer may want to create a "decision matrix" with the following elements as a tool.

- Scenarios for future reimbursement structures and levels
- The organization's risk appetite and the risk appetite of its affiliated providers
- Access to capital given the ACO's regulatory environment
- Administrative capability
- Opportunity to reduce cost through utilization reduction, relative to current utilization levels
- The risk level of patients likely to be attributed to the ACO
- Potential synergies with other payers

This paper focuses on financial differences between MSSP and Pioneer, not on structural and organizational differences. We use illustrations to demonstrate important differences and dynamics. However, actual financial results will depend heavily on an organization's circumstances, which we cannot capture in this paper.

Premier, Inc., a Group Purchasing Organization that provides purchasing services for healthcare organizations, commissioned this study. While we have attempted to use realistic numbers for averages, the illustrations are not suitable for use by particular ACOs. The results reflect the findings of the authors and do not represent a position by Milliman, Inc.

BACKGROUND

On May 17, 2011, CMS released its Pioneer ACO program, which "sweetens" the Medicare Shared Savings Program (MSSP), whose details were released on March 31, 2011. Pioneer is intended for more sophisticated organizations—those with risk contracting experience, while the experience requirements for MSSP are not as rigorous. For Pioneer, CMS intends to contract with up to 30 organizations, while there is no specified limit for the number of ACOs in MSSP. We note that CMS has additional ACO programs and demonstrations that may appeal to some organizations, such as those through the Center for Medicare and Medicaid Innovation.

The attached financial illustrations explain how the Pioneer program differs from MSSP and how results might vary by key parameters such as regional cost levels, importance of specialists/primary care and other factors. We make several simplifying assumptions in our models, including,

- We assume that ACOs fully meet the quality performance measurements. This is likely to be difficult for many ACOs, and the shared savings we present could be reduced as a result.
- We do not consider terms for certain special cases, such as rural ACOs.
- We do not address the portion of ACO services that are delivered by non-ACO providers, in effect, considering that 100% of services are rendered by ACO providers.

We note that the published regulations for both MSSP and Pioneer are proposals and subject to change.

KEY FINANCIAL DIFFERENCES

Trending Historical Experience to Produce ACO Benchmarks

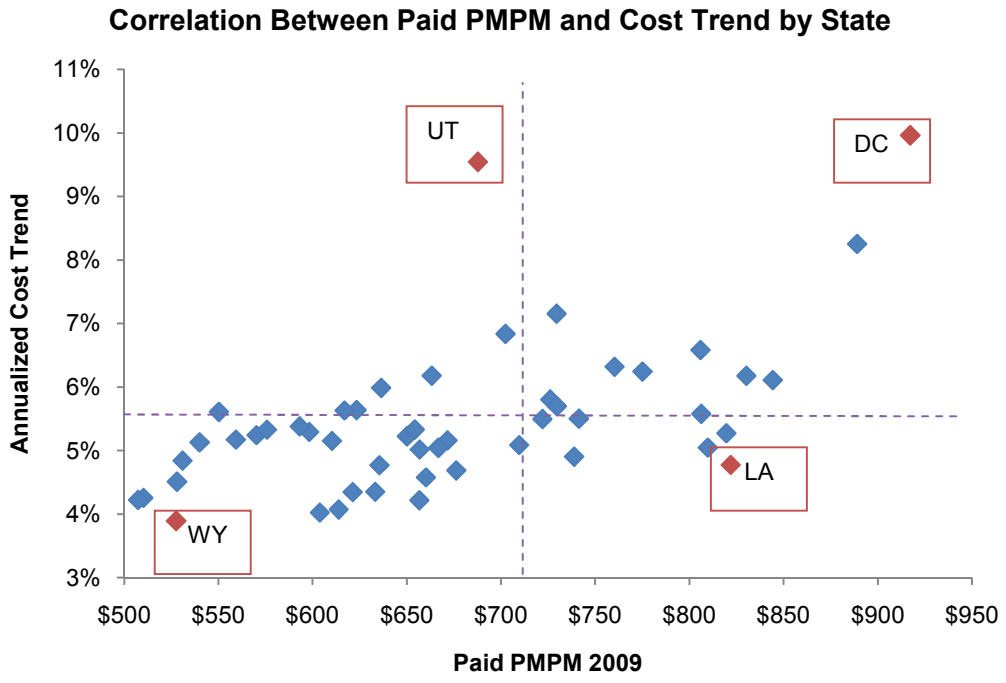
In Pioneer, the ACO's historical experience will be trended forward using a hybrid inflationary adjustment: 50% of national average growth rate applied to the local cost plus 50% of the absolute dollar per capita growth. For MSSP, the ACO's benchmark will be increased by the national per capita dollar growth.

MSSP's methodology produces a lower than national trend in trended benchmark for high-cost areas and higher than national trend for trended benchmark for low-cost areas. Pioneer's methodology dampens the advantages and the disadvantages. ACOs expecting lower than national average growth in Medicare expenditures are likely to be pleased with the MSSP or Pioneer approach, and vice-versa. We simplify the illustration below in two ways. First, we use 2011 as the baseline period, while the proposed rules would use a weighted average of up to three years experience as the baseline. Second, we use the trend from 2010 to 2011 to calculate the 2012 benchmark. We also assume that Pioneer begins in 2012, while the proposed regulations suggest Pioneer will begin in late 2011.

						2012 Benchmark (PMPM)		Increase in 2012 Benchmark Over 2011 Experience	
	State	2010 Paid PMPM[1]	2011 Paid PMPM[1,2]	PMPM Growth	Trend[3]	MSSP[4]	Pioneer[5]	MSSP	Pioneer
	US	$757	$796	$39	5.1%				
High Cost High Trend	DC	$919	$1,010	$92	10.0%	$1,049	$1,056	3.8%	4.5%
High Cost Low Trend	LA	$864	$905	$41	4.8%	$944	$948	4.3%	4.7%
Low Cost High Trend	UT	$692	$758	$66	9.5%	$796	$796	5.1%	5.1%
Low Cost Low Trend	WY	$559	$581	$22	3.9%	$620	$615	6.7%	5.9%

1. 2010 and 2011 Paid PMPMs are based on 2009 Medicare 5% Sample data trended to 2011 using forecasted national trends derived from Milliman's Health Cost Guidelines. The trend assumes the physician fee schedule "fix" will continue to be made in future years.
2. 2011 Paid PMPMs represent the illustrative baseline period
3. Trends are based on an exponential regression model of annual paid PMPMs by state in Medicare 5% Sample Data 2005-2009
4. MSSP's 2012 Benchmark = 2011 Paid PMPM + $39
5. Pioneer's 2012 Benchmark = 2011 Paid PMPM + $39 / 2 + 2011 Paid PMPM * 5.1% / 2

High or low-cost states do not necessarily have higher or lower trends. The following graph plots the 2011 estimated PMPM cost by the annualized cost trend from the past five years for each of the 50 states versus the 2009 estimated paid PMPM. We identify four states to highlight the lack of correlation between trend and cost. Please see Methodology section for details.



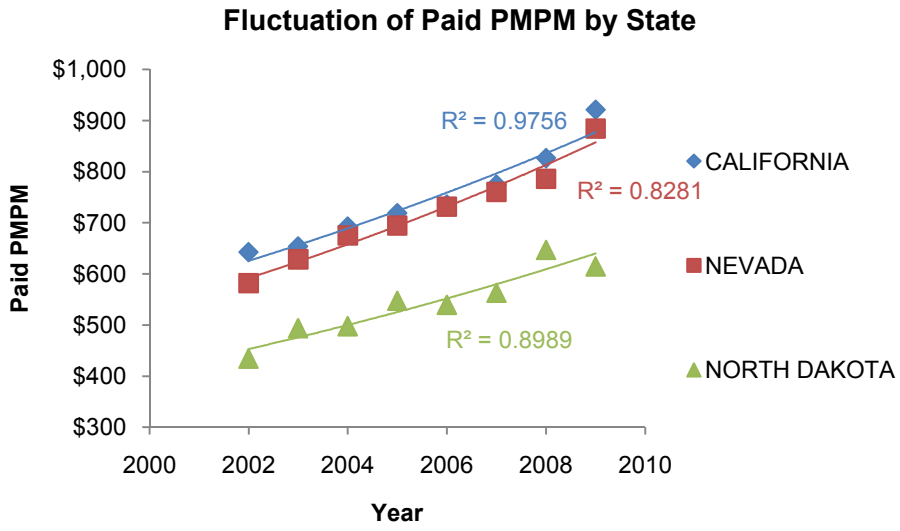
Source: Milliman analysis of Medicare 5% Sample Data 2005-2009

The dashed horizontal and vertical lines show the national average trend and Paid PMPM, respectively.

In the fee-for-service world, we expect more year-to-year fluctuation in PMPM revenue from a smaller population than from a larger population. From a statistical standpoint, the benchmark increase, which is based on the national population, is more predictable than the increase for a local population.

If we could predict the future local trend, it would be meaningful to compare the MSSP or Pioneer trend (based on national averages) to what the local trend would be. However, the historical data suggests it is difficult to know whether the CMS fee-for-service cost trend will be high or low in a particular area for a particular future year.

To illustrate the trend fluctuation, we examined paid PMPMs in CMS' Medicare 5% Sample Data from 2002 to 2009 for a large, medium and small state. We chose California (sample size is about 240,000 beneficiaries—the largest state), Nebraska (sample size is about 15,000 beneficiaries—the minimum number of beneficiaries for Pioneer), and North Dakota (sample size is about 5,000 beneficiaries—the minimum number of beneficiaries for MSSP). In California, the year-to-year PMPM is the smoothest (R^2=0.98), while in Nebraska and North Dakota, the PMPM is relatively variable (R^2=0.83 and 0.78, respectively).



Source: Milliman analysis of Medicare 5% Sample Data 2002-2009

The North Dakota data shows a decrease in PMPM from 2008 to 2009 despite the overall increasing trend. This serves to illustrate the potential fluctuation risk in the fee-for-service environment.

We calculated paid PMPMs for 2011 and cost trends as follows,

- Paid PMPMs for 2005 to 2009 for each state were based on CMS Medicare 5% Sample data and represent total paid claims divided by total member months, after excluding Medicare Advantage beneficiaries.
- Paid PMPMs for 2011 were estimated by applying national trends to the paid PMPMs for 2009 for each state.
- The cost trend for each state was calculated as the trend of an exponential regression model fit to the 2005 through 2009 paid PMPMs for each state.

Risk Sharing

Medicare has proposed two risk sharing methods for MSSP and one for Pioneer ACOs. MSSP Track 1 has lower risk and lower return if experience is favorable than Track 2. Pioneer ACO's risk sharing model has more risk and more upside across the first two years than MSSP's Track 2, but a Pioneer ACO must transition to some form of population based payments in the third year. The table below summarizes the risk sharing methods.

	MSSP		Pioneer
	Track 1	Track 2	
One-sided or two-sided shared savings	one-sided model (shared savings only) for 2 years, then two-sided model (shared savings and losses)	two-sided model for all 3 years	two-sided model (population based in year 3)
% of shared savings/losses for ACO	52.5% first 2 years and 60% in year 3	60% for all 3 years	60% in year 1 and 70% in year 2. Possibly 100% in year 3.
Cap on shared savings	7.5% of benchmark in first 2 years and 10% in year 3	10% of benchmark for all 3 years	10% of benchmark in year 1 and 15% in years 2 and 3

We show the results of the three ACO risk sharing methods under five different FFS expenditure scenarios. We show two scenarios where FFS expenditures fall below the benchmark, two with FFS expenditures above the benchmark, and one with FFS expenditures equal to the benchmark.

Million $						Shared Savings/Losses		
						MSSP		
Scenario	Year	ACO Benchmark[1]	Medicare Expenditure	Medicare Savings[2]	Savings ÷ Benchmark	Track 1[3]	Track 2	Pioneer[4]
A FFS= 90% of Benchmark	2012	$141	$127	$14	11%	$6	$8	$8
	2013	$149	$134	$15	11%	$6	$9	$10
	2014	$156	$141	$16	11%	$7	$9	$8
	2012-14			$45		$20	$27	$27
B FFS= 95% of Benchmark	2012	$141	$134	$7	5%	$2	$4	$4
	2013	$149	$141	$7	5%	$2	$4	$5
	2014	$156	$148	$8	5%	$3	$5	$0
	2012-14			$22		$7	$13	$9
C FFS= 100% of Benchmark	2012	$141	$141	$0	0%	$0	$0	$0
	2013	$149	$149	$0	0%	$0	$0	$0
	2014	$156	$156	$0	0%	$0	$0	-$8
	2012-14			$0		$0	$0	-$8
D FFS= 105% of Benchmark	2012	$141	$148	-$7	-5%	$0	-$4	-$4
	2013	$149	$156	-$7	-5%	$0	-$4	-$5
	2014	$156	$164	-$8	-5%	-$3	-$5	-$16
	2012-14			-$22		-$3	-$13	-$25
E FFS= 110% of Benchmark	2012	$141	$156	-$14	-9%	$0	-$8	-$8
	2013	$149	$163	-$15	-9%	$0	-$9	-$10
	2014	$156	$172	-$16	-9%	-$7	-$9	-$23
	2012-14			-$45		-$7	-$27	-$42

1. Assumes 15,000 beneficiaries (minimum size of Pioneer ACO), average member months of 11.3 per year, and average paid PMPM in 2012 = $836 (based on Milliman's 2011 Age 65+ HCGs trended and adjusted for institutionalized, age <65, and dual populations)
2. Medicare Savings = ACO Benchmark – Medicare Expenditure
3. Minimum Saving Rate of MSSR Track 1 = 2%
4. For Pioneer 2014, we assume a capitation budget of benchmark * .95

Appendix I shows the development of operating margin for the five scenarios and three ACO options. The results are summarized in the table below.

Comparison of Operating Margin in 2012-2014

Scenario	No ACO	MSSP		Pioneer
		Track 1	Track 2	
A	0%	4%	6%	6%
B	2%	4%	5%	4%
C	4%	4%	4%	2%
D	6%	5%	3%	0%
E	7%	6%	2%	-1%

Prospective Beneficiary Attribution and Regression to the Mean

Pioneer ACOs may select prospective or retrospective beneficiary assignment, while MSSP ACOs accept beneficiary attribution. Prospective attribution assigns to the ACO those beneficiaries who received significant primary care from ACO providers in the three years before the ACO operational period (as defined in the ACO rules). Retrospective attribution assigns beneficiaries based on their primary care providers in the operational year.

Prospective attribution may be advantageous to ACOs with high-cost beneficiaries. This is because beneficiaries with high cost in one year generally have much lower costs in subsequent years because of regression to the mean. Regression to the mean for medical cost is a phenomenon where many patients who are at a high-cost medical crisis point will experience significantly lower costs in future years.

To illustrate this dynamic we simulated five ACOs, each with a different percent of high-cost beneficiaries. In our simulation, we assume that the Medicare population as a whole has 20% of beneficiaries in the high-cost group. In the simulation of five ACOs, one of the ACOs has 20% of its members in the high-cost group, one ACO has fewer than 20% of members in the high-cost group, and three ACOs have more than 20% of members in the high-cost group. The simulation demonstrates that the ACOs with more high-cost patients could benefit from regression to the mean through prospective attribution. ACOs with fewer than average high-cost beneficiaries, such as groups of primary care providers, could have more difficulty reducing Medicare cost.

ACOs can assign beneficiaries who newly enroll in Medicare through an affirmative attestation showing that their primary providers are in the ACOs. ACOs can include those new beneficiaries in the financial calculation after they have experienced 12 months in Medicare. A Pioneer ACO that actively enrolls patients through specialists will not likely benefit from regression to the mean in a prospective model.

Pioneer ACOs can have patients attributed through specialists, and such patients could include a concentration of high-cost patients in medical crisis. In subsequent years, such patients would likely have much lower costs—with or without active management.

The following table demonstrates the regression to the mean dynamic, assuming prospective attribution and no affirmative attestation of high-cost beneficiaries.

% High-Cost Beneficiaries[1]	2011 Paid PMPM [2]	2012 Estimated PMPM	Estimated Trend	2012 Benchmark (million)[3]	2012 Estimated Expenditure (million)	Savings (million)
18%	$736	$806	9%	$131	$136	-$5
20%	$796	$836	5%	$141	$141	$0
22%	$855	$867	1%	$152	$147	$5
24%	$915	$897	-2%	$163	$152	$11
26%	$974	$928	-5%	$173	$157	$16

1. High-Cost Beneficiaries = beneficiaries whose monthly cost in 2011 > $930
   High-Cost Beneficiaries' average monthly cost in 2011 = $3,176
   Low-Cost Beneficiaries = beneficiaries whose monthly cost in 2011 < $930
   Low-Cost Beneficiaries' average monthly cost in 2011 = $200
2. 2011 Paid PMPMs are based on 2009 Medicare 5% Sample data trended to 2011 using forecasted national trends derived from Milliman's Health Cost Guidelines
3. 2012 Benchmark = 2011 Paid PMPM * 1.51

We note that after benchmarks are established, an ACO's benchmark is not updated. This is to avoid "coding creep" where efforts to improve claim coding would increase the average CMS-HCC score.

The table below illustrates how high-cost beneficiaries have lower (negative) trend, while low-cost beneficiaries have higher trend, because of the regression to the mean. The cost levels and population splits were developed using Medicare claims data.

	% of Beneficiaries	PMPM 2011	PMPM 2012	Trend
High-Cost Beneficiaries	20%	$3,176	$2,054	-35%
Low-Cost Beneficiaries	80%	$200	$532	165%
Total Beneficiaries	100%	$796	$836	5.1%

Population Based Payment Capability

Pioneer ACOs must have or develop the capability to distribute population based payments; this is not required of MSSP ACOs. For ACOs, population based payments, such as capitation, may bring higher risk and higher return than fee-for-service (FFS) payments, and Pioneer does bring higher risk and return than MSSP. To demonstrate this issue, we present three scenarios of aggregate cost—where costs come in as expected, costs are higher than expected, and costs are lower than expected—and compared the population based payments with FFS in each scenario. In this example, "expected" means the adjusted benchmark for a year.

Population based payments will generate higher operating margin in the scenario where costs come in below the benchmark (lower than expected), but negative operating margin in the scenario where costs are higher than expected. FFS payments will generate more operating margin in the higher cost scenario.

Million $	2012 Costs as Expected		2012 Costs 5% Higher than Expected		2012 Costs 5% Lower than Expected	
	FFS	Population-based	FFS	Population-based	FFS	Population-based
Revenue	$141	$141	$148	$141	$134	$141
Operating Expense:	$139	$139	$143	$143	$134	$134
Variable	$83	$83	$87	$87	$79	$79
Fixed	$55	$55	$55	$55	$55	$55
Operating Income	$3	$3	$6	-$1	$0	$7
Operating Margin	2%	2%	4%	-1%	0%	5%

* Population-based revenue is as expected
* Number of beneficiaries (minimum size of Pioneer ACO) = 15,000
* Average paid PMPM in 2012 = $836
(based on Milliman's 2011 Age 65+ HCGs trended by 5% and adjusted for institutionalized, age <65, and dual populations)
* Average member months per year = 11.3
* Operating margin in FFS = 2%
* % variable costs in expected cost scenario = 60%

By year three, a Pioneer must have at least 50% of all business (all payers) associated with outcomes-based payments. While the definition of such arrangements seems broad in the proposed regulations, ACOs will need to consider the contractual and administrative changes required.

Minimum Savings Rate

MSSP and Pioneer specify a Minimum Savings Rate (MSR), which defines a corridor of gains/losses relative to the benchmark. Savings or losses must exceed the (MSR) for the ACO to incur cash losses or gains. For MSSP Track 1, the gains are applied to the excess over the MSR, while for Track 2 and Pioneer the gains/losses are applied to the full gain/loss if the MSR is exceeded. The goal of MSR is avoid attributing ACO gains or losses due to small fluctuations in actual expenditures. The following table defines the MSSP and Pioneer MSRs.

Entity	Minimum Saving Rate
Pioneer ACOs	±1%
Track 1 MSSP ACOs	+2% to +3.9% (depends on ACO size)*
Track 2 MSSP ACOs	±2%

* The + signs for Track 1 are because Track 1 is upside only for the first two years.

In the proposed MSSP rules, CMS explains how they developed the proposed MSRs. The authors note that their relatively simple calculations of risk based on national fee-for-service claims data suggest random fluctuations could be a significant issue, as shown in the following table.

	MSSP		
	Track 1	Track 2	Pioneer
Number of Beneficiaries	5,000	5,000	15,000
Minimum Saving Rate (MSR)	3.9%	2%	1%
Probability that MSR is exceeded*	8%	48%	54%
Starting point for gain/loss if MSR exceeded	+3.9%	0%	0%

* For Track 1, this is the one-sided, upside only risk—the Probability (Expenditure < Benchmark * (1-MSR))
* For Track 2 and Pioneer, this is the two-sided risk—the Probability (|Expenditure - Benchmark| / Benchmark < MSR)
Source: Medicare 5% Sample Data, Milliman's 65+ Health Cost Guidelines 2010

The above table suggests that, for a Pioneer ACO with 15,000 members, there is a 54% probability that the gain/loss will be higher/lower than MSR, based on random fluctuations. These figures likely overstate the actual fluctuation because they do not consider year-to-year correlations in individual's costs. Nevertheless, the statistical risk points to the need for ACOs to consider margins for adverse fluctuation.

Capital Requirements

Insurance companies are required to hold capital to ensure they can meet their obligations. Because of their downside risk, ACOs may also need capital. While capital requirements for ACOs are not completely specified, we use the concept of required capital using a broadly accepted methodology for insurance companies, "Risk Based Capital (RBC)".[1] The RBC model is widely used by regulators to measure whether a risk bearing entity has enough capital held to cover the risks it has assumed. Under RBC, insurers with less risky portfolios need less capital. The same concept should apply to ACOs.

The downside risk of ACOs varies by program. MSSP ACOs that choose Track 1 have no downside risk for the first two years. Track 1 ACOs do have the downside risk in year three, and MSSP Track 2 and Pioneer ACOs have downside risk in all years.

Under the CMS proposed rules, CMS will withhold from MSSP ACOs 25% of any shared savings to offset future losses. This is, in effect, a form of required capital. Pioneer ACOs do not face this withhold, but CMS requires other forms of guarantees from them.

Capital requirements would differ between ACOs depending on their actual risk. For example, Pioneer ACOs with population-based payments will require more capital than the other ACOs, because, if the ACO's expenses are much higher than expected, an ACO could have insufficient funds to meet its obligations during a year.

While RBC does not explicitly apply to ACOs, and it was not designed with ACOs in mind, we calculated the RBC capital for a Pioneer ACO with 15,000 members at full risk. We used the National Association of Insurance Commissioners RBC model to develop two scenarios, both of which assume an annual benchmark "revenue" of about $150 million:

ACO Payment Methodology	Expected Cost Levels	Other assumed capital	2 x Company Action Level RBC (400% RBC)
100% of ACO services are paid fee-for-service	90% of Benchmark	None	$27 million
100% of ACO services are sub-capitated	95% of Benchmark	None	$11 million

Required capital is lower if all ACO services are capitated, because the capitated providers are assuming risk. However, if the capitated providers fail, the ACO will need capital to pay for promised services.

[1] Risk-Based Capital Forecasting & Instructions - Health. Kansas City, MO: National Association of Insurance Commissioners; 2010.

We show capital at twice the "company action level," which is a relatively low ratio for an insurance company. A health insurer with capital below company action level would need to submit a remedial plan to the state insurance department. In the RBC formula, we assumed only underwriting risk, no excessive growth risk or capital risk; had we considered these risks, our figures would be higher. While our calculation does not consider all factors that could reduce (or increase) an ACO's risk, the amounts shown above are significant for many organizations, and they point to the need for careful evaluation of risk and consideration for how ACOs can manage risk.

We note that arguments could be made for less ACO capital depending on the support of sponsoring organizations or the availability of in-kind capital (such as salaried physicians). However, the potential risk of required payments for services rendered by non-ACO providers could increase capital requirements.

DATA SOURCES AND METHODOLOGY

Data Sources

Milliman Health Cost Guidelines 2008-2011

The HCGs provide a flexible but consistent basis for determining health claim costs and premium rates for a wide variety of health plans. The HCGs are developed as a result of Milliman's continuing research on health care costs. First developed in 1954, the HCGs have been updated and expanded annually. They are continually monitored, as they are used in measuring the experience or evaluating the rates of health plans, and as they are compared with other data sources. The HCGs are a proprietary and cooperative effort of Milliman health actuaries and represent a combination of their experience, research, and judgment. Extensive data, both published and unpublished, are used in their development. The Standard Demographics in the HCGs were developed to be representative of the age and sex distribution for a typical large insured group. They were developed using data from large insurers combined with Bureau of Labor Statistics sources.

Medicare 5% Beneficiary Sample 2006-2009

This Limited Data Set contains all Medicare paid claims generated by a statistically-balanced sample of Medicare beneficiaries. Information includes county of residence, diagnosis codes, procedure codes, and diagnosis-related group (DRG) codes, along with site of service information as well as beneficiary age, eligibility status and an indicator for HMO enrollment. We used Medicare 5% beneficiary sample data in 2008-2009.

References

- Centers for Medicare & Medicaid Service, Medicare Program; Medicare Shared Savings Program: Accountable Care Organizations, Federal Register / Vol. 76, No. 67 / Thursday, April 7, 2011 / Proposed Rules

- Center for Medicare and Medicaid Innovation, Pioneer Accountable Care Organization (ACO) Model Request for Application (downloaded on June 28, 2011 from http://innovations.cms.gov/wp-content/uploads/2011/05/Pioneer-ACO-RFA.pdf)

APPENDIX I: OPERATING INCOME SIMULATION

This Appendix contains details from Scenarios A-E described in the "Risk Sharing" section above. We assume that the ACO meets all quality performance measurements.

No ACO (Million $)

Scenario	Year	Revenue[1]	Operating Expense			Operating Income	Operating Margin[3]
			Total	Variable[2]	Fixed		
A FFS= 90% of Benchmark	2012	$127	$130	$75	$55	-$3	-2%
	2013	$134	$134	$79	$55	$0	0%
	2014	$141	$138	$83	$55	$3	2%
	2012-14	$402	$402	$236	$166	-$1	0%
B FFS= 95% of Benchmark	2012	$134	$134	$79	$55	$0	0%
	2013	$141	$138	$83	$55	$3	2%
	2014	$148	$143	$87	$55	$6	4%
	2012-14	$424	$416	$249	$166	$8	2%
C FFS= 100% of Benchmark	2012	$141	$139	$83	$55	$3	2%
	2013	$149	$143	$87	$55	$6	4%
	2014	$156	$147	$92	$55	$9	6%
	2012-14	$446	$429	$262	$166	$18	4%
D FFS= 105% of Benchmark	2012	$148	$143	$87	$55	$6	4%
	2013	$156	$147	$92	$55	$9	6%
	2014	$164	$152	$96	$55	$12	7%
	2012-14	$469	$442	$276	$166	$27	6%
E FFS= 110% of Benchmark	2012	$156	$147	$91	$55	$9	6%
	2013	$163	$152	$96	$55	$12	7%
	2014	$172	$156	$101	$55	$15	9%
	2012-14	$491	$455	$289	$166	$36	7%

1. Assumes 15,000 beneficiaries (minimum size of Pioneer ACO), average member months of 11.3 per year, and average paid PMPM in 2012 = $836 (based on Milliman's 2011 Age 65+ HCGs trended and adjusted for institutionalized, age <65, and dual populations)
2. Variable Operating Expense is 60% of Total Operating Expense (Scenario C for 2012)
3. Operating Margin = 2% (Scenario C for 2012)

MSSP Track 1 ACO (Million $)

Scenario	Year	Revenue[1]	Operating Expense			Shared Savings/ Losses	Operating Income	Operating Margin[3]
			Total	Variable[2]	Fixed			
A FFS= 90% of Benchmark	2012	$127	$130	$75	$55	$6	$3	2%
	2013	$134	$134	$79	$55	$6	$6	4%
	2014	$141	$138	$83	$55	$7	$10	7%
	2012-14	$402	$402	$236	$166	$20	$19	4%
B FFS= 95% of Benchmark	2012	$134	$134	$79	$55	$2	$2	2%
	2013	$141	$138	$83	$55	$2	$5	4%
	2014	$148	$143	$87	$55	$3	$9	6%
	2012-14	$424	$416	$249	$166	$7	$16	4%
C FFS= 100% of Benchmark	2012	$141	$139	$83	$55	$0	$3	2%
	2013	$149	$143	$87	$55	$0	$6	4%
	2014	$156	$147	$92	$55	$0	$9	6%
	2012-14	$446	$429	$262	$166	$0	$18	4%
D FFS= 105% of Benchmark	2012	$148	$143	$87	$55	$0	$6	4%
	2013	$156	$147	$92	$55	$0	$9	6%
	2014	$164	$152	$96	$55	-$3	$9	6%
	2012-14	$469	$442	$276	$166	-$3	$24	5%
E FFS= 110% of Benchmark	2012	$156	$147	$91	$55	$0	$9	6%
	2013	$163	$152	$96	$55	$0	$12	7%
	2014	$172	$156	$101	$55	-$7	$8	5%
	2012-14	$491	$455	$289	$166	-$7	$28	6%

1. Assumes 15,000 beneficiaries (minimum size of Pioneer ACO), average member months of 11.3 per year, and average paid PMPM in 2012 = $836 (based on Milliman's 2011 Age 65+ HCGs trended and adjusted for institutionalized, age <65, and dual populations)
2. Variable Operating Expense is 60% of Total Operating Expense (Scenario C for 2012)
3. Operating Margin = 2% (Scenario C for 2012)

MSSP Track 2 ACO (Million $)

Scenario	Year	Revenue[1]	Operating Expense			Shared Savings/ Losses	Operating Income	Operating Margin[3]
			Total	Variable[2]	Fixed			
A FFS= 90% of Benchmark	2012	$127	$130	$75	$55	$8	$5	4%
	2013	$134	$134	$79	$55	$9	$9	6%
	2014	$141	$138	$83	$55	$9	$12	8%
	2012-14	$402	$402	$236	$166	$27	$26	6%
B FFS= 95% of Benchmark	2012	$134	$134	$79	$55	$4	$4	3%
	2013	$141	$138	$83	$55	$4	$7	5%
	2014	$148	$143	$87	$55	$5	$10	7%
	2012-14	$424	$416	$249	$166	$13	$22	5%
C FFS= 100% of Benchmark	2012	$141	$139	$83	$55	$0	$3	2%
	2013	$149	$143	$87	$55	$0	$6	4%
	2014	$156	$147	$92	$55	$0	$9	6%
	2012-14	$446	$429	$262	$166	$0	$18	4%
D FFS= 105% of Benchmark	2012	$148	$143	$87	$55	-$4	$1	1%
	2013	$156	$147	$92	$55	-$4	$4	3%
	2014	$164	$152	$96	$55	-$5	$7	5%
	2012-14	$469	$442	$276	$166	-$13	$13	3%
E FFS= 110% of Benchmark	2012	$156	$147	$91	$55	-$8	$0	0%
	2013	$163	$152	$96	$55	-$9	$3	2%
	2014	$172	$156	$101	$55	-$9	$6	4%
	2012-14	$491	$455	$289	$166	-$27	$9	2%

1. Assumes 15,000 beneficiaries (minimum size of Pioneer ACO), average member months of 11.3 per year, and average paid PMPM in 2012 = $836 (based on Milliman's 2011 Age 65+ HCGs trended and adjusted for institutionalized, age <65, and dual populations)
2. Variable Operating Expense is 60% of Total Operating Expense (Scenario C for 2012)
3. Operating Margin = 2% (Scenario C for 2012)

Pioneer ACO (Million $)

Scenario	Year	Revenue[1]	Operating Expense			Shared Savings/ Losses[3]	Operating Income	Operating Margin[4]
			Total	Variable[2]	Fixed			
A FFS= 90% of Benchmark	2012	$127	$130	$75	$55	$8	$5	4%
	2013	$134	$134	$79	$55	$10	$10	7%
	2014	$141	$138	$83	$55	$8	$10	7%
	2012-14	$402	$402	$236	$166	$27	$26	6%
B FFS= 95% of Benchmark	2012	$134	$134	$79	$55	$4	$4	3%
	2013	$141	$138	$83	$55	$5	$8	5%
	2014	$148	$143	$87	$55	$0	$6	4%
	2012-14	$424	$416	$249	$166	$9	$18	4%
C FFS= 100% of Benchmark	2012	$141	$139	$83	$55	$0	$3	2%
	2013	$149	$143	$87	$55	$0	$6	4%
	2014	$156	$147	$92	$55	-$8	$1	1%
	2012-14	$446	$429	$262	$166	-$8	$10	2%
D FFS= 105% of Benchmark	2012	$148	$143	$87	$55	-$4	$1	1%
	2013	$156	$147	$92	$55	-$5	$4	2%
	2014	$164	$152	$96	$55	-$16	-$3	-2%
	2012-14	$469	$442	$276	$166	-$25	$2	0%
E FFS= 110% of Benchmark	2012	$156	$147	$91	$55	-$8	$0	0%
	2013	$163	$152	$96	$55	-$10	$2	1%
	2014	$172	$156	$101	$55	-$23	-$8	-5%
	2012-14	$491	$455	$289	$166	-$42	-$6	-1%

1. Assumes 15,000 beneficiaries (minimum size of Pioneer ACO), average member months of 11.3 per year, and average paid PMPM in 2012 = $836 (based on Milliman's 2011 Age 65+ HCGs trended and adjusted for institutionalized, age <65, and dual populations)
2. Variable Operating Expense is 60% of Total Operating Expense (Scenario C for 2012)
3. For Pioneer 2014, we assume a capitation budget of benchmark * .95
4. Operating Margin = 2% (Scenario C for 2012)

APPENDIX II: DECISION MATRIX

We offer the following matrix as a starting point for ACOs to create a decision tool. This tool focuses on risk and actuarial issues. The user can use this structure for qualitative notes, to indicate relative advantages / disadvantages for the options, or as a basis to develop a quantitative scoring system.

Risk Characteristics and Capabilities	Options for Organization				
	Status Quo	MSSP Track 1	MSSP Track 2	Pioneer	Other
Future Reimbursement Environment (describe structures and levels)					
The organization's risk appetite and the risk appetite of its affiliated providers					
Access to capital given the ACO's regulatory environment					
Experience in population health management, accountability for outcomes, risk sharing					
Administrative capability					
Opportunity to reduce cost through utilization reduction, relative to current utilization levels					
The risk level of patients likely to be attributed to the ACO					
Other					