Accountable Care Organisations and New Models of Care*

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*This document was made up of an extensive review of documents relating to the question of application of the ‘Accountable Care’ concept to England. Some documents have been summarised, some direct extracts have been taken to lead the reader to the most pertinent points. References are clearly given to the source document.
What does the evidence that is available ACTUALLY tell us

Overview

The evidence question – a bit like eating a moving mammoth with chopsticks
Comparing and transferring is difficult and requires care
Comparing what with what – history, other model, current trends
The control population – counterfactuals are important.
Nuances – planned care, unplanned care, impact of increased coverage.
All three elements of triple aim are important
Understanding the financial model for ACO is fundamental to interpreting the evidence.
Contextualisation of the evidence on finance.
Critique of the below collection of evidence
Methodological issues in the evidence
Learning and key points (GF)

The evidence

CMS

CMS 2014 release
CMS official data release 2015. Year 2
CMS actuary – 2015. Certification of savings

Evidence Overviews

Shortell, Kings Fund 2014
ACO Results: What We Know So Far (Health Affairs - March 14)

Individual Studies

Key references
McWilliams / Blue Cross Blue Shield Mass. Alternative Quality Contract JAMA 2013
2014 Evaluation of the Medicare ACOs. NEJM, McWilliams et al- 2014
Song et al – 2014. BCBS 4 Year Alt Quality Contract.
Pham et al – 2014. second year of Pioneer ACOs.

Case studies of individual ACOs

Heartland
CalPERS
Overview

Up to mid 2014 - a recent Right Care reading list, based on a professional literature review, narrowed 1955 citations on ACO found in the available literature to 17 that were considered worth reading. Most of those focused on descriptive rather than evaluation of impact. Remarkably little was known. Thus it was hard to definitively state there is a compelling case (evidentially) to support the development of ACO (or alternatives). In mid to late 2014 there has been a substantial increase in the available empirical evidence, in the form of evaluation papers. The evidence is complex and often (to an outsider) difficult to interpret.

Here focused particularly on ACO model
The evidence question – a bit like eating a moving mammoth with chopsticks

Interpretation of evidence is difficult and nuanced – the evidential question is akin to “what is the evidence for a hospital please”.

Comparing and transferring is difficult and requires care
Comparing US to UK (or Spain, NZ or elsewhere to UK) requires care. The payment mechanisms are fundamentally different (a far greater proportion of FFS), the system infrastructure is different, and the structure of incentives in the ACO contracts must be taken into account. Furthermore churn of patients through ACO is not insignificant – this affects the ability to do the research, it also affects the operational delivery of care and may impinge on a provider’s ability and willingness to make long term investments.

Comparing what with what – history, other model, current trends
Much of the evidence draws attention to the parallels between ACO and previous attempts at macro reform – most notably Integrated Delivery Systems and HMOs – highlighting the need to not learn the lessons from those. The key difference is focus on all THREE of the goals of the Triple Aim whereas it is easy to argue that HMO movement and managed care was overtly focused on cost. Authors also draw attention to the need to be realistic about what ACOs can and can’t achieve.

Counterfactuals are a key problem (compared to what) – as is increasingly picked up by the economists. If the counterfactual is compared to FFS or the general trend, this has an important bearing on interpretation, as does comparing NHS (very efficient) to US (very inefficient).

The control population – counterfactuals are important
The comparison group for many of the published studies was comprised of medical organizations not selected as “Pioneer ACOs” with a different reward system (Fee for service)

Reference population is similarly attributed – age, sex and similar disease burden. There is an algorithm for this.
Nuances – planned care, unplanned care, impact of increased coverage
Miller et al\(^2\) cautioned that whilst there may be emerging evidence that integrated care delivery systems (such as ACO) may deliver some benefits in terms of ambulatory unscheduled care, there may be some increases in inpatient planned surgery. Whether such increases are as a result of patients receiving better “coverage” (ie unmet need) or accounted by other factors is not known.

All three elements of triple aim are important
A great deal of the available research (for eg Noble\(^3\) and Calman\(^4\)) emphasise that whilst there is an undeniable need to focus on all three elements of the Triple Aim (cost, quality and population health) there is a strong tendency to focus on the first two and neglect the aim of improving population health. Obviously this is a short sighted strategy out to the medium and long term. All three components of the Triple Aim should be a focus of the ACO.

Understanding the financial model for ACO is fundamental to interpreting the evidence
Within this it is critical to understand the shared savings rule CMS = 50:50 shared savings.

This is a mixed model of downside risk management – depends on size, level of risk the org is prepared to take.

Speed of movement towards downside risk is key.

Min Savings rate – you have to save x% before you can participate in the shared savings model. In CMS, x = 2.5%. And then your 50% share is everything above that 2.5%.

This effectively cuts out many of the large Pioneer ACOs.

And the Medicare (MSSP). Most – 2/3 to 3/4 don’t qualify for this as they can’t get to the 2.5% saving.

This discourages providers as they have to put in a lot of infrastructure and thus they wont take this up front risk.

The BSBS ACO offer is 1% minimum savings rate (relative to the reference population) – and above this it’s a 50:50 shared savings model.

For providers not hitting the 2.5% (Medicare and Medicaid) - having made the investment - are not eligible (on account they haven’t got to the 2.5% threshold thus they are moving away and leaving the ACO market.
Contextualisation of the evidence on finance
A recent conversation with a BCBS executive led to his summary on the evidence coming out of ACO experiment in the States (payer side).

Not so great news on CMS evaluations – financially, quality is a different picture – more positive, though not universally.

Confounded and made more complex by CMS payment system. CMS need to change the model.

It's important to set the CMS ACO findings into context of what's happening elsewhere in the US HC system.

Last few years – trend in US is 5-6% annual increase.

The ACO has got to beat the market trend. Thus hospital has got to keep the increase below 3%.

In the commercial population that BCBS have some products this HAS happened – seems to have reduced the trend.

Critique of the below collection of evidence
- Many claims made by all parties
- Issue of counterfactual – what are we comparing to
- Large volume of political capital is bound up in demonstrating the success (or otherwise) of this model of care
- CMS may be argued like DH in England to talk up results
- Some lack of clarity re programme costs and up front investments, and whether these are factored into the savings estimates in the published data or not. Up front infrastructure, staffing and other costs are not insubstantial and necessary
- Obviously unknown whether long term the positive impacts will be sustained – early efficiencies will be found readily and future efficiencies harder won (reverse law of diminishing returns), but programme / staff costs are constant

Methodological issues in the evidence
- Some methodological issues to consider in study design. For eg the McWilliams paper – states CMS Pioneer ACOs saved 1.2% in spend compared to FFS organisations. Potential selection bias in those sites that ARE Pioneer ACOs (bigger, “blue chip” – thus hypothesis that better baseline organisation and it may not be the ACO status per se)
- Data not mature enough to draw any conclusions definitively. Similar caveats to drawing overly optimistic conclusions from early clinical trials of new drugs
- Issues around potential regression to mean – “what does down also goes up later”
- All the normal potentials for T1 and T2 errors are inherent in these studies
**Key points (GF)**

A great deal of the empirical evidence can be read in multiple ways – depending on what you want to believe.

**Most seem to be improving quality, many seem to be holding cost, some improving cost. Few consistently meeting benchmarks to qualify for shared savings – are the targets too stringent? Is there too much risk and is this why providers are dropping out.**

Early learning has highlighted the importance for a robust model for shared savings. Most have demonstrably improved quality.

**It seems to be consistently cited that ACOs willing to assume greater financial risk seem to be consistently reporting better reductions in spending for beneficiaries without compromising quality of care.**

The performance of ACOs to date has been promising but not overwhelming. Although some ACOs have gained a substantial return on their investment in improving the health of their patients, many have not.

The ACO movement is unlikely to succeed unless health insurance plans dramatically increase their number of ACO contracts and unless CMS modifies specifications for its ACO programs — a course that the agency is considering (Frakt).

Some encouraging findings about ACOs in the literature – especially in recent research, it is still too early whether initial finding can be be generalized. Even sceptical hard nosed economist are optimistic about this model, but not that there is much that can yet go wrong. In addition the success (or failure) of the ACO movement will be subject to powerful external forces.

Two sided global budget model featuring shared savings and shared risk is consistently suggested as the best method to slow cost growth and improve quality (for example most recently in the Song NEJM evaluation of the BCBS Alt Q Contract). Thus it becomes important to define this in contractual terms – with thresholds for realising shared gain and risk.

The performance of ACOs to date has been promising but not overwhelming. Although some ACOs have gained a substantial return on their investment in improving the health of their patients, many have not.

European experience is beginning to focus towards a whole population approach with all conditions covered, with clear and simple financial incentives for example the Kinzigtal evaluation is beginning to show that whole population approaches beginning to deliver savings. However a focus on triple aim is needed, a singular focus on “high risk” populations may yield more limited results. A focus on medium and rising risk groups is considerably more important (in terms of financial ROI) than a focus on high risk, especially with a medium term horizon.
Overall the data suggest that Accountable Care Organizations (ACOs) are improving important aspects of care and some are achieving early cost savings.

My read (GF) of the eval is that the majority of the financial benefit seems to be found in a few of the ACO programmes

These big saving programmes obviously need careful consideration. As do the characteristics of those ACOs that were not as successful in quality, population health or financial terms.

Roughly half of the ACOs saved money for Medicare, but only 29 percent saved enough to qualify for a bonus

That two of the four MSSP sites electing to take upside and downside risk (exposing them to penalties if they failed to meet savings targets in the first year) did better in the first year.

The sides that took FULL risk sharing took a more aggressive approach to cost containment and quality improvement - If a system is taking downside risk, they are usually much more aggressive in their approach to population health initiatives. This seems a consistent theme in much of the blog commentary from those running ACO contracts.

That any organisation that is working in a new environment and with a new contract form is able to hold cost growth (relative to FFS) never mind make savings – is news. The starting point of US health care (ie lots of inefficiency, low hanging fruit) is important context.
The evidence
CMS Medicare publications
Pioneer evaluation 2013. Year 1
The evaluation of the Medicare Pioneer ACO initiatives\(^6\) is the best evaluation description. This presents early findings from an evaluation of the 32 Pioneer Accountable Care Organizations’ (ACO) effects on Medicare spending between 2011 and 2012, the first year of the demonstration program.

Key points
some reduced net costs, most improved quality, many slowed rate of cost growth compared to the comparator.

Costs for the more than 669,000 beneficiaries aligned to Pioneer ACOs grew by only 0.3 percent in 2012 where as costs for similar beneficiaries grew by 0.8 percent in the same period.

13 out of 32 pioneer ACOs produced shared savings with CMS, generating a gross savings of $87.6 million in 2012 and saving nearly $33 million to the Medicare Trust Funds.

Pioneer ACOs earned over $76 million by providing coordinated, quality care.

Only 2 Pioneer ACOs had shared losses totalling approximately $4.0 million.

Program savings were driven, in part, by reductions that Pioneer ACOs generated in hospital admissions and readmissions.

Quality measures focused on readmit, BP control and chol control (both high impact targets with substantial h gain). Good evidence in quality gain across most sites in relation to comparator.

Method
As part of a multi-method data collection and analytic approach, the evaluation estimates the ACO treatment effect using an approach akin to a difference-in-differences framework to compare the growth rate in per beneficiary per month Medicare spending for Pioneer ACO-aligned beneficiaries to two comparison groups: 1) fee-for-service (FFS) Medicare beneficiaries who are not aligned or assigned to a Medicare ACO in the Pioneer ACO’s local market and, 2) FFS Medicare beneficiaries in a geographically distinct, but similar market where Medicare ACOs are not present.

Analyses were conducted primarily at the individual Pioneer ACO level, but we also report results averaged over all Pioneer ACOs, with each Pioneer ACO weighted by the number of aligned beneficiaries.

The difference in the spending growth between the Pioneer ACO beneficiaries and their local market FFS counterparts shows the estimated effect of being aligned with the Pioneer ACO on per beneficiary spending growth — lower growth can be equated with savings to the Medicare program and higher growth equated with excess spending that would not have occurred absent the Pioneer ACO alignment, all else equal.
The analysis includes both a local geographically proximate market and a separate geographically distinct market comparison group because spillover of an ACO’s activities into the local market may bias comparisons towards showing no effect of the Pioneer ACO Model compared to local markets. This may be particularly true in cases where a dominant ACO or multiple ACOs are present in the same market. The separate market comparison allows us to examine spending differences between Pioneer ACO-aligned beneficiaries and a control group less likely to be affected by potential spillover effects of the treatment.

**Results**

Beneficiaries aligned with Pioneer ACOs had lower growth in total Medicare spending per person than their local market FFS comparison group in the first year of the demonstration. On average, spending was approximately $20 less per beneficiary per month than it would have been had those beneficiaries not been aligned with a Pioneer ACO.

The results differed across individual Pioneer ACOs: 23 of 32 did not differ significantly in total Medicare spending compared to their local FFS comparison markets.

Eight Pioneer ACOs had significantly lower growth in total Medicare spending per beneficiary than their local market comparison groups, ranging from $32.58 to $102.21 per beneficiary per month lower. The lower growth from these eight Pioneer ACOs translates to a preliminary estimated savings of $155.4 million to the Medicare program in the first year.

One Pioneer ACO had significantly higher spending growth rate, estimated to cost the Medicare program $8.5 million more than if the beneficiaries had received equivalent care in their local market. Combined, these results estimate an overall $146.9 million dollar savings to the Medicare program.

The eight Pioneer ACOs that reduced spending growth varied in geographic location, size, organizational structure, and average Medicare spending in their markets, suggesting that ACOs can achieve lower spending growth under a range of market conditions and organizational structures. Service-specific differences in spending growth, most notably in outpatient and physician spending, were significant for many Pioneer ACOs that did not show significant differences in total Medicare spending from their local markets.

In addition to claims-based quantitative analyses of expenditures, these results integrate findings from qualitative data analyses of quarterly telephone interviews with all Pioneer ACOs and environmental scans of their local and distant markets. Taken together, findings from the first year of the Pioneer Model reflect activities of systems in transition—organizations are adapting to modified payment incentives and those changes may not yet be reflected in total Medicare spending in the first year of the demonstration program. As revealed through the qualitative data collected in this evaluation, many Pioneer ACOs have not yet fully optimized their relationships with partners and providers, care management protocols, information management and IT systems, strategies for managing beneficiary leakage, or other core aspects of the accountable care model.
Results thus far suggest domains for continued exploration to discern the market features (such as Pioneer ACO baseline spending level, costliness of the overall market, and demand for ACOs from other payers) and specific ACO activities (such as care management, provider financial incentives, and electronic health record functionality) that affect Medicare spending and other outcomes for beneficiaries aligned with Pioneer ACOs.

The authors are careful to point out that the estimates presented in their evaluation are based on one year of program data, and thus the data is preliminary in nature, and intended as an early snapshot of the Pioneer ACO Model’s impact.

**CMS 2014 release**


ACOs have improved overall mean quality scores in their first two years of operation.

However, financial performance has been much more mixed.

Many ACOs have dropped out of the CMS programme – largely because of financial concerns.

Those that remain tend to be those with a longer history of collaboration, and a stronger infrastructure to support the partnership.

Performance of these care models on quality improvement and cost control is mixed.

**Overall savings have been concentrated in 9 of the 23 Pioneer ACO.**

Savings made ploughed back in to cover costs.
**Official**

Key point - Medicare ACOs saved $411M in 2014, but few earned bonuses.

Only 97 Pioneer and MSSP accountable care organizations qualified for shared savings payments.

Medicare ACOs generated $411 million in total savings in 2014.

Few of the Pioneer and Medicare Shared Savings Program (MSSP) ACOs qualified for bonuses in the second year of the program.

Only 97 of the 20 Pioneer ACOs and 333 MSSP ACOs qualified for shared savings payments of more than $422 million by meeting quality standards and their savings threshold. The results indicate that ACOs with more experience in the program tend to perform better over time, according to a CMS fact sheet.

The financial results came as a disappointment but were not a surprise to the National Association of ACOs (NAACOS). The total dollar savings increased due to the fact that more than 100 additional ACOs joined the program, but the data show that the average savings per ACO actually declined significantly, said Clif Gaus, chief executive officer of NAACOS, in a statement.


**key points**

353 ACO's: 333 that participate in the Medicare Shared Savings Program, and 20 that participate in the Pioneer program:

97 (27.5%) earned bonuses totaling $456 million out of $833 million in savings they produced for Medicare—compared to 2013 savings of $417 million:

**In the MSSP program,** 92 (27.6%) held spending $806 million below their targets and earned performance payments of $341 million as their share of program savings.

An additional 89 (26.7%) ACOs reduced health care costs compared to their benchmark, but did not qualify for shared savings.

**By implication – c75% didn't generate savings**

In the Pioneer program, 15 of the 20 generated savings totaling $120 million, a 24% increase over the prior year. 11 of these qualified for shared savings totaling $82 million and 5 Pioneers were penalized $9 million. Note: 12 Pioneer ACO have dropped out of the program opting to participate in the less risky MSSP program.

Among ACOs that achieved shared savings, total savings per ACO increased from $2.7 million per ACO in Performance Year 1 to $4.2 million per ACO in Performance Year 2 to $6.0 million per ACO in Performance Year 3.
Shared Savings Program ACOs achieved higher average performance rates on 18 of the 22 Group Practice Reporting evaluation measures reported by other Medicare FFS providers reporting through this system.

Quality improvements were shown for 28 of the 33 quality measures including patients’ ratings of clinicians’ communication, beneficiaries’ rating of their doctor, screening for tobacco use and cessation, screening for high blood pressure, and Electronic Health Record use.

A blog on these results highlighted some key points:

- **Risk sharing begets results** - ACOs that are more experienced in risk sharing arrangements with payers tended to more effective than those that didn’t
- **Size** - ACOs with higher enrollments fare better: at least 10,000 seems a reasonable floor, and 20,000 enrollees a platform for scalable growth and innovation
- **Doctors are important** - ACOs sponsored by physician organizations slightly outperform physician-hospital sponsored ACOs but manage smaller enrollee populations
- **EHR Matters** - The Pioneer ACOs that are performing best are also the ACOs that qualify for the highest Electronic Health Record incentive payments: 86% qualified in 2014, and their use of medication reconciliation application improved from 70% in 2013 to 84% in 2014

2 year quality and cost measures were summarized neatly in Health Affairs key point

“The findings indicate the per-member benchmark is the strongest predictor of receiving savings and the amount of savings. But while success in savings to date is largely influenced by the established per-member benchmark, several quality measures are logically related to the magnitude of savings. Opportunities remain for improving patient outcomes. Additional time and experience in selecting quality metrics may be required to strengthen the relation measures of care quality and cost savings.”

http://healthaffairs.org/blog/2015/11/04/medicare-acos-continue-to-show-care-improvements-and-more-savings-are-possible/
Based on the evidence from the formal evaluation of the Pioneer Model and our analysis of the market-level trends, Pioneer ACOs have been shown to reduce Medicare spending relative to the fee-for-service program. The market trend impacts and the historical benchmark calculation indicate that, although MSSP ACOs were also shown to reduce spending, Pioneer ACOs were likely to have generated greater relative savings than MSSP ACOs in the first 3 years of the two programs.

The difference in performance is likely related to multiple factors. One key factor is the greater incentive represented by downside risk and greater potential sharing of savings in Pioneer risk tracks. Since both MSSP track 2 and the Pioneer Model put the ACO at risk, this factor would not be expected to have an effect on the expansion of the Pioneer Model. An additional factor is selective Pioneer participation from organizations with the experience and resources necessary to materially improve the efficiency of beneficiary care. This selection effect would not exist under the expansion, as all ACOs would be in the MSSP.

It is important to understand what is going on in the broader market when considering this CMS Actuary report.

Some (eg Marmor⁰) have been critical in that the actuarial report has underplayed programme costs in the consideration of savings. For example Marmor highlighted that bonus payments from CMS to MSSP ACOs raised Medicare spending by 0.7% in the program’s first year, while the ACOs saved Medicare 0.5%, for a net increase in spending of 0.2%. This underscores the issue of counterfactual – what is happening in control populations – in the USA this is Fee for Service Medicare patients (as was highlighted in the response to the Marmor letter).
Evidence overviews

Shortell, Kings Fund 2014.11

Describe some of the early evidence on cost and quality improvement.

**Key points**

Early evidence on the performance of ACOs is mixed.

**Quality** - The first public performance report of the original 32 Pioneer ACOs reveals that all are successfully meeting the quality measures, and 25 had lower risk-adjusted readmission rates compared with the benchmark rate for all Medicare fee-for-service beneficiaries.

**Financial** - Of the 32, 18 have generated savings for Medicare, and 13 generated enough savings for the practices to keep $76.1 million (£45.5 million). On the other hand, 14 of the 32 generated losses for Medicare and seven increased costs enough to owe Medicare $4.5 million (£2.7 million).

Perhaps the strongest evidence to date in support of the ACO approach comes from the Massachusetts Alternative Quality Contract (AQC). The AQC is a Blue Cross Blue Shield of Massachusetts-led initiative and pre-dates the Affordable Care Act. It is one of the longest running contract-based programmes in the US and has established a global budget combined with pay-for-performance incentives, linking quality and cost targets.

Over the first two years of the programme, there was a 2.8 per cent saving in comparison with the control group. This was primarily due to shifting procedures to lower cost settings, doing fewer imaging scans and tests, plus reducing overall utilisation of services. The quality of care improved by 3.7 per cent on selected chronic care management measures. Both savings and quality improvement were greater in the second year than the first year. These early results address a very important question, namely the extent to which cost containment and quality improvement in ACOs might be sustainable after the initial years in which the ‘low-hanging fruit’ opportunities are taken (Song et al 2012).
ACO results: What we know so far (March 14)

This Health Affairs blog is an excellent summary of the state of the available evidence, and the history that preceded the development of the ACO concept (eg HMO, IDN).

Information was gleaned from primary and secondary research, including the Leavitt Partners ACO Database of over 620 ACOs. Information about Pioneer and MSSP ACO results was gathered from CMS, and includes press releases, announcements, and data sets.

This provides an important snapshot of the ACO network from a variety of sources including large health care systems, smaller physician groups, private payers, government contracts, etc. This makes them applicable to a wide variety of providers cautiously considering accountable care.

The key points are replicated in full below.

While results are preliminary and incomplete, both CMS and commercial ACO results warrant a cautious but optimistic outlook on ACOs and their ability to accomplish the triple aim.

A breakdown of how many ACOs were represented in our study can be found in Table 1.

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<th>Table 1. Available ACO Results</th>
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<td>Financial Results</td>
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<td>Quality Data</td>
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*In some cases program-wide results are available but individual results are not.

Findings

Although ACOs share common goals, they vary widely in terms of organization and level of development. Results will be discussed separately for Pioneer, MSSP, Medicaid and Commercial ACOs. Where available, both financial and quality results will be discussed and analyzed.

Pioneer ACOs

Thirty-two organizations began the Pioneer ACO program in 2012.

Of these organizations, 23 remain in the ACO Pioneer program. Nine ACOs left the pioneer program, with seven of those transitioning to the MSSP ACO program and two leaving completely.

“We really did learn a lot as a Pioneer ACO,” said the VP of one of the departing ACOs. “However, we’d be better off putting our energy into the health plan we already have... We didn’t have the confidence, based on historical trends, that we could beat the trend. We would have been in a loss position and writing a check to Medicare.”
The Pioneer program generated $147 million in total savings with approximately $76 million in savings returned to ACOs. Of the original 32 Pioneer ACOs, 12 shared in savings while 19 did not share in savings or losses. Only one ACO shared in losses.

Addressing these mixed results, the CEO of one Pioneer ACO that neither shared savings nor losses stated.

“Our objectives were not to do well in a particular financial cycle. We believe the payoff is going to be accumulated clinical transformation.”

Pioneer ACOs were held to a set of 33 ACO quality metrics, which are also common to the MSSP program. These metrics span four quality domains: patient experience, care coordination, patient safety, preventive health and at-risk populations. ACOs were held responsible only for the reporting of these metrics, not for any quality improvement.

**MSSP ACOs**

The MSSP ACO program is broader than the Pioneer program with less stringent rules for participation.

CMS has released preliminary results on the first two cohorts of MSSP ACOs, which include 114 ACOs that started in 2012.
Of the 114 MSSP ACOs, 54 kept costs below budget benchmarks and 29 of those saved more than 2 percent, thus qualifying for shared savings (see figure 2). These 29 ACOs received $126 million in savings and generated $128 million in total CMS trust fund savings. The other 60 MSSP ACOs experienced spending above their set benchmark.

One of the principle differences in the MSSP program is the ability to choose between an upside-risk-only contract (sharing in savings; no risk for losses) or an upside/downside-risk contract (sharing in savings while being at risk for losses). ACOs accepting both upside and downside risk would receive a larger share of any shared savings due to their willingness to risk shared losses. Only four ACOs elected to take downside risk and two of those shared in losses.

The CEO of one ACO that incurred shared losses remained positive when reporting to MedPAC stating, “I'm actually quite optimistic about ACOs as a real catalyst to change the paradigm of care delivery... I’d like to wait and give these ACOs a chance to perform. You know, we haven't gotten a lot of negative feedback from the marketplace or from our members.”

MSSP ACOs were held to the same aforementioned set of 33 ACO quality metrics. Again, MSSP ACOs were required only to report quality metrics. Failure to do so resulted in forfeiting a portion potential shared savings. All but five MSSP ACOs successfully reported their quality metrics.

**Medicaid ACOs**

Medicaid ACOs are still in their infancy and have only been adopted by a few states, including Oregon, Iowa, Vermont and Colorado. The maturity of these programs varies widely and little information is available in the way of results. Perhaps the best test case can be found in Oregon where Medicaid ACOs have been designed to cover the entire geography of the state. Detailed financial results released by the Oregon Health Authority (OHA) show that Medicaid ACOs were able to decrease cost of care for 19 out of the 21 financial measures tracked. Areas of cost increases were focused around outpatient primary care. While the overall savings were marginal, the OHA is, “encouraged by the first nine months of progress data.”
In their February 2014 report, OHA highlighted results of their 17 quality metrics. A focus on utilization resulted in a 13 percent decrease in emergency department visits and an 8 percent decrease in all-cause readmission while hospitalization for chronic conditions was cut by a third. Other areas of improvement include technology (EHR adoption has doubled in Oregon), primary care, and preventive care. Colorado’s Medicaid ACO program has also highlighted positive preliminary results including $44 million in gross savings in its second year. Few other state programs have publicly released their quality or financial metrics. It remains to be seen if shared savings will offset investment costs.

**Commercial ACOs**

Perhaps the most diverse group of ACOs are those with commercial contracts. Like Medicare ACOs, commercial payers with ACO contracts strive for the “triple aim” goals of improved patient experience, improved quality of care, and decreased cost of care. However, they are not necessarily held to the same financial requirements, quality metrics, or reporting timeline used by the Center for Medicare and Medicaid Services (CMS). Publicly available commercial results tend to highlight mostly positive aspects of a particular ACO.

Results are more difficult to compare than Medicaid ACOs due to their lack of uniformity in measurement and reporting. According to the Leavitt Partners ACO Database, there are 287 ACOs with commercial contracts, only 12 of which have reported financial results of some sort. Eleven of the 12 commercial ACOs report having saved money. Very few of these have reported a dollar figure for savings, but costs were reported to have decreased by between 2 and 12 percent.

Successes include one New England ACO that reported a medical cost trend 1.2 percentage points better than its market overall, as well as a large Northeast ACO which shared approximately $2 million in their contract with United Healthcare. Savings aside, the cost of ACO investment was made clear by one Northwestern ACO that reports spending about $1 million on infrastructure and only earning $125,000 in savings in the first year.

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<th>Table 2. Examples of Commercial Quality Measures</th>
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<td>Category</td>
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<td>Access to Care</td>
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<tr>
<td>Increased access to primary care physicians</td>
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<td>Gaps in care closed</td>
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<td>Child access to primary care doctors</td>
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<tr>
<td>Chronic Disease Management</td>
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<td>Multiple metrics surrounding management of patients with diabetes and heart failure</td>
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<td>Multiple metrics surrounding management of patients with chronic asthma</td>
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<td>Diabetes care measures</td>
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<td>Metrics surrounding diabetes care compliance</td>
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<td>Routine diabetes screenings and control of blood sugar</td>
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<td>Decreased Utilization</td>
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<td>Decreased hospital readmission rates</td>
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<td>Avoidable emergency room visits by improved primary care access hours</td>
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<td>Decrease in unnecessary emergency room visits</td>
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<td>Decreased hospital readmission rates</td>
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<td>Decreased Emergency room visits</td>
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<td>Patient Satisfaction</td>
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<td>Increased patient satisfaction</td>
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<td>Preventative Care</td>
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<td>Percentage of beneficiaries receiving recommended screenings</td>
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<td>Cervical and breast cancer screenings conducted</td>
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<td>Adolescent well care check-ups conducted</td>
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<th>Metric</th>
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<td>Access to Care</td>
<td>Aetna</td>
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<tr>
<td>Gaps in care</td>
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<tr>
<td>Child access to primary care doctors</td>
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<td>Chronic Disease Management</td>
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<td>Diabetes care measures</td>
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<td>Metrics surrounding diabetes care compliance</td>
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<tr>
<td>Routine diabetes screenings and control of blood sugar</td>
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<tr>
<td>Decreased Utilization</td>
<td>Aetna</td>
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<td>Avoidable emergency room visits by improved primary care access hours</td>
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<tr>
<td>Decrease in unnecessary emergency room visits</td>
<td>Cigna</td>
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<tr>
<td>Decreased hospital readmission rates</td>
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<tr>
<td>Decreased Emergency room visits</td>
<td>United</td>
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<tr>
<td>Patient Satisfaction</td>
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<td>Preventative Care</td>
<td>Aetna</td>
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<tr>
<td>Percentage of beneficiaries receiving recommended screenings</td>
<td>Cigna</td>
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<tr>
<td>Cervical and breast cancer screenings conducted</td>
<td>Cigna</td>
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<tr>
<td>Adolescent well care check-ups conducted</td>
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In addition to negotiating their own financial arrangements with providers, commercial payers with ACO contracts also determine their own quality metrics. Some metrics are similar to those set by CMS while others are unique to a specific payer.

Table 2 provides insight into the quality metrics of some of the leading players in ACO commercial contracts. Commercial ACOs have been tight lipped about their quality metrics; quality metrics found in table 2 were garnered from publically available sources and are not a comprehensive list. Commercial contracts focus on preventive care management of chronic illnesses and access to care. Fifteen commercial ACOs reported quality results, although only about 50 percent of those provided quantifiable data.

McLellan June 14. Brookings Inst overview

McLellan" reports that the first year financial results are now available for both the Medicare Shared Savings Programmes (MSSP) and Pioneer ACOs.

Financial

Of the 114 MSSP ACOs that joined the program in 2012, 54 were able to keep costs below their budget benchmark, but only 29 were able to hold down costs enough to qualify for shared savings.

These successful ACOs received $126 million in savings, while the CMS trust fund realized savings of $128 million, around 1 percent of costs. The other 60 MSSP ACOs experienced spending above their set benchmark, two of which had losses because they chose to assume two-sided risk upon entering the program. Meanwhile, the Pioneer program generated $147 million in total savings, with approximately $76 million in savings returned to ACOs and $69 million returned to Medicare, around 2% of costs. Of the original 32 Pioneer ACOs, 12 qualified for shared savings, one shared in losses, and 19 did not share in savings or losses.

Quality

Almost all MSSP participants and Pioneer ACOs successfully reported on quality metrics, a majority of which performed better than comparable organizations where data was available.

These results suggest that ACOs are improving important aspects of care and some are achieving early cost savings, but there is a long way to go.
**Individual studies**

**Key references**


Pham et al. JAMA 2014. Summary of results for Pioneer model at 2 years.


Pham et al. The Pioneer Accountable Care Organization Model Improving Quality and Lowering Costs. JAMA Sept 14

McWilliams / Blue Cross Blue Shield Mass. Alternative quality Contract JAMA 2013

McWilliams – JAMA 2013\textsuperscript{15} considered changes in spending and quality in a Medicare population associated with a commercial ACO contract – ie considered the spillover when there are multiple forms of contract where some are covered by one form of contract and some another.

Specifically they examined whether the Blue Cross Blue Shield (BCBS) of Massachusetts’ Alternative Quality Contract (AQC).

This is an early commercial ACO initiative.

This is arguably a key study given the length of running, longer than the CMS ACO studies.

The study found that the ACO model was associated with reduced spending and improved quality for BCBS enrollees, was also associated with changes in spending and quality for Medicare beneficiaries, who were not covered by the AQC.

This was a quasi-experimental comparison from 2007-2010 of for elderly fee-for-service Medicare beneficiaries in Massachusetts (1 761 325 person-years) served by 11 provider organizations entering the AQC in 2009 or 2010 (intervention group) vs beneficiaries served by other providers (control group). The authors estimated changes in spending and quality for the intervention group in the first and second years of exposure to the AQC relative to concurrent changes for the control group. Regression was used to adjust for differences in sociodemographic and clinical characteristics.

**Findings on cost**

Before entering the AQC, total quarterly spending per beneficiary for the intervention group was $150 (95%CI, $25-$274) higher than for the control group and increased at a similar rate.

In year 2 of the intervention group’s exposure to the AQC, this difference was reduced to $51 (95%CI, $109 to $210; P = .53), constituting a significant differential change of $99 (95%CI, $183 to $16; P = .02) or a 3.4% savings relative to an expected quarterly mean of $2895. Savings in year 1 were not significant (differential change, $34; 95%CI, $83 to $16; P = .18).

Year 2 savings derived largely from lower spending on outpatient care (differential change, $73; 95%CI, $97 to $50; P < .001), particularly for beneficiaries with 5 or more conditions, and included significant differential changes in spending on procedures, imaging, and tests.

**Quality**

Annual rates of low-density lipoprotein cholesterol testing differentially improved for beneficiaries with diabetes in the intervention group by 3.1 percentage points (95%CI, 1.4-4.8 percentage points; P < .001) and for those with cardiovascular disease by 2.5 percentage points (95%CI, 1.1-4.0 percentage points; P < .001), but performance on other quality measures did not differentially change.
The authors conclude that the ACO was associated with lower spending for Medicare beneficiaries but not with consistently improved quality. Savings among Medicare beneficiaries and previously demonstrated savings among BCBS (ACO commercial) enrollees varied similarly across settings, services, and time, suggesting that organizational responses were associated with broad changes in patient care.

The authors suggest that organizations willing to assume greater financial risk were capable of achieving modest reductions in spending for Medicare beneficiaries without compromising quality of care.

Although effects of commercial and Medicare ACO initiatives similar to the AQC may differ in other markets, these findings suggest potential for these payment models to foster systemic change in care delivery. Finally, the authors underscore the point about spillover – the impact of changes in one population covered by one form of contract into another population with different arrangements.

**Conclusion**

“The AQC was associated with lower spending for Medicare beneficiaries but not with consistently improved quality. Savings among Medicare beneficiaries and previously demonstrated savings among BCBS enrollees varied similarly across settings, services, and time, suggesting that organizational responses were associated with broad changes in patient care.”
**Song et al - 2014 16. Changes in health care spending and quality 4 years into global payment**

**Key findings**

**Results**

In the 2009 AQC cohort, medical spending on claims grew an average of $62.21 per enrollee per quarter less than it did in the control cohort over the 4-year period (P<0.001). This amount is equivalent to a 6.8% savings when calculated as a proportion of the average post-AQC spending level in the 2009 AQC cohort. Analogously, the 2010, 2011, and 2012 cohorts had average savings of 8.8% (P<0.001), 9.1% (P<0.001), and 5.8% (P = 0.04), respectively, by the end of 2012. Claims savings were concentrated in the outpatient-facility setting and in procedures, imaging, and tests, explained by both reduced prices and reduced utilization. Claims savings were exceeded by incentive payments to providers during the period from 2009 through 2011 but exceeded incentive payments in 2012, generating net savings. Improvements in quality among AQC cohorts generally exceeded those seen elsewhere in New England and nationally.

**Conclusions**

As compared with similar populations in other states, Massachusetts AQC enrollees had lower spending growth and generally greater quality improvements after 4 years. Although other factors in Massachusetts may have contributed, particularly in the later part of the study period, global budget contracts with quality incentives may encourage changes in practice patterns that help reduce spending and improve quality.

This study considered changes in spending and quality four years into global payment in the BCBS Alternative Quality Contract - this is a private sector ACO, focusing on a commercial population.

The study concluded that in the 2009 AQC cohort, medical spending on claims grew an average of $62.21 per enrollee per quarter less than it did in the control cohort (similar populations in other states) over the 4-year period (P<0.001). This amount is equivalent to a 6.8% savings when calculated as a proportion of the average post-AQC spending level in the 2009 AQC cohort. Analogously, the 2010, 2011, and 2012 cohorts had average savings of 8.8% (P<0.001), 9.1% (P<0.001), and 5.8% (P = 0.04), respectively, by the end of 2012.

Incentive payments to the ACOs exceeded savings to the health plan during the first 3 years, but by the fourth year savings exceeded incentive payments.

Savings were concentrated in the outpatient care and in procedures, imaging, and tests, and was explained by both reduced prices and reduced utilization.

The study cautions that in the latter part of the study – factors beyond the global budget contracts may have played a role in continued success.

The ACOs also performed better on multiple quality measures as compared with national and New England averages. Finding an appropriate comparison group of providers was problematic, and the results could be confounded by other quality-improvement and cost-control efforts in Massachusetts during the past 4 years.
2014 evaluation of the Medicare ACOs. NEJM, McWilliams et al- 2014 17

This was a study considering changes in patient experience.

Considered the Medicare ACO beneficiaries (n=32,334 attributed to an ACO) against a control group of (n=251,593) for 3 years prior to the existence of an ACO contract and one year after.

The study concluded that in the first year there were meaningful improvements in some measures of patients’ experience and with unchanged performance in others.

Among patients with multiple chronic conditions and high predicted Medicare spending, overall ratings of care differentially improved in the ACO group as compared with the control group – p=0.02.

There were also significant improvements in timely access to care and overall ratings of care.

McWilliams et al 201518 pioneer ACO at one year.

Results
Adjusted Medicare spending and spending trends were similar in the ACO group and the control group during the precontract period. In 2012, the total adjusted per-beneficiary spending differentially changed in the ACO group as compared with the control group (~$29.2 per quarter, P = 0.007), consistent with a 1.2% savings.
Savings were significantly greater for ACOs with baseline spending above the local average, as compared with those with baseline spending below the local average (P = 0.05 for interaction), and for those serving high-spending areas, as compared with those serving low-spending areas (P = 0.04). Savings were similar in ACOs with financial integration between hospitals and physician groups and those without, as well as in ACOs that withdrew from the program and those that did not.

**Conclusions**

Year 1 of the Pioneer ACO program was associated with modest reductions in Medicare spending. Savings were greater for ACOs with higher baseline spending than for those with lower baseline spending and were unrelated to withdrawal from the program.

The pioneer accountable care organization model. Improving quality and lowering costs. Pham et al. JAMA Sept 14 19

Short summary article on Pioneer ACO model.

<table>
<thead>
<tr>
<th>Year</th>
<th>2012#</th>
<th>2013#</th>
<th>2012*</th>
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<td>96</td>
<td>128</td>
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<tr>
<td>Mean clinical quality score, %</td>
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<td>84.0</td>
<td>73.0</td>
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<tr>
<td>Mean patient experience score, %</td>
<td>86.3</td>
<td>88.0</td>
<td>86.7</td>
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"Performance is on an upward trajectory in a manner aligned with original expectations, as ACOs become more strategic and effective in implementing care strategies and as CMS becomes more effective at facilitating their work. Looking forward, CMS will apply lessons learned about the clinical and technical sophistication, and the persistent and sustained approach that ACOs need to maintain care transformation, to the development of new models such as those that engage ACOs in global payment arrangements that offer ACOs more tools for directly engaging patients in care improvement."

This was a commentary paper following the results by CMS of the second year of the Pioneer ACO initiative (n=32 ACOs and 608,945 lives)

In aggregate, Pioneer ACOs improved their performance in all dimensions of the triple aim.

Pioneer ACOs had a mean overall quality score of 84.0% in 2013 compared with 70.8% in 2012.

The mean performance score of all Pioneer ACOs improved in 28 of 33 quality measures.

The mean improvement across all quality measures was 14.8%.
In addition, their mean performance score improved in 6 of 7 patient/caregiver experience ratings.

Pioneer ACOs generated more total program savings in the second performance year than the first ($96 million vs $87 million).

Seventeen of 23 ACOs (75%) had positive or neutral financial performance, with 11 earning shared savings above their minimum savings rate, 6 generating savings but not exceeding their minimum savings rate, and 6 generating any losses.

The average amount of shared savings per ACO increased from $2.7 million to $4.2 million, with a range of shared savings for each organization from $1.2 million to $13.0 million in 2013.
Spending, utilisation and patient experience – out to 2 years

Results
Total spending for beneficiaries aligned with Pioneer ACOs in 2012 or 2013 increased from baseline to a lesser degree relative to comparison populations. Differential changes in spending were approximately -$35.62 (95%CI, -$40.12 to -$31.12) per-beneficiary-per-month (PBPM) in 2012 and -$11.18 (95%CI, -$15.84 to -$6.51) PBPM in 2013, which amounted to aggregate reductions in increases of approximately -$280 (95%CI, -$315 to -$244) million in 2012 and -$105 (95%CI, -$148 to -$61) million in 2013. Inpatient spending showed the largest differential change of any spending category (-$14.40 [95%CI, -17.31 to -11.49] PBPM in 2012; -6.46 [95%CI, -9.26 to -3.66] PBPM in 2013).

Changes in utilization of physician services, emergency department, and postacute care followed a similar pattern. Compared with other Medicare beneficiaries, ACO-aligned beneficiaries reported higher mean scores for timely care (77.2 [ACO] vs 71.2 [FFS] vs 72.7 [MA]) and for clinician communication (91.9 [ACO] vs 88.3 [FFS] vs 88.7 [MA]).

Conclusions
In the first 2 years of the Pioneer ACO Model, beneficiaries aligned with Pioneer ACOs, as compared with general Medicare FFS beneficiaries, exhibited smaller increases in total Medicare expenditures and differential reductions in utilization of different health services, with little difference in patient experience.
New Models of Care & Accountable Care Organisations – Evidence what they conclude
Key points from BMJ commentary (BMJ 2015;350:h2432)

The study considered spending, utilization, and the level of care satisfaction among patients who had been assigned to 32 Pioneer ACOs (675, 712 in 2012 and 806,258 in 2013) and compared these with similar patients in the same markets who received fee-for-service care (13,203,694 in 2012 and 121,341,154 in 2013).

Spending on patients enrolled in ACOs was about $35.62 less per patient per month in 2012 and $11.18 less per patient per month in 2013 when compared with those in fee-for-service programs.

This translated to estimated total savings of $280m in 2012 and $105m in 2013.

“These results are encouraging, given how historically challenging it has been for physicians to achieve spending reductions in Medicare demonstration projects.”

A decrease in the use of inpatient services accounted for the largest proportion of the fall in spending seen among ACO patients, but smaller increases were also seen in spending on office visits for primary care and for tests, procedures, and imaging services. Follow-up visits after hospital discharge increased more among ACO patients, but no difference was found between the two groups in all cause readmissions within 30 days of discharge.

In an accompanying editorial Lawrence P Casalino, of Weill Cornell Medical College in New York City, noted that the $280m (4%) in savings seen in the first year of the project could have a substantial effect if the ACO approach was more widely implemented. He wrote, “This amount may seem small, but if this rate of savings could be sustained, and achieved throughout a large part of the US health care system, it would be more than enough to ‘bend the cost curve’ so that health care expenditures do not continue to increase as a percentage of the gross domestic product and the federal budget.”
Case studies of individual ACOs
There are many examples of published case studies on think tank websites. These will be self-selected, inherently biased and thus caution should be exercised.

Heartland
The Heartland ACO\(^1\) reduced per-beneficiary, per-month Medicare spending from a roughly 15 percent decline.

Once the financial results are confirmed, the ACO will receive a $2.9 million bonus, a 60 percent share of the savings.

Of this, $2 million will be returned to the ACO to reimburse it for new hires, purchases of predictive modeling software, and other investments. The remainder will be used to recoup the first-year bonuses it advanced to providers in recognition that the shift to a population health-based approach to primary care would require them to invest significant time and effort.

The ACO did see improved quality performance between 2012 and 2013 on some of the quality and outcomes measures—among them, the percentage of patients whose hypertension was under control (63.75% vs. 70.36%) as well as the percentage with ischemic vascular disease whose lipid profile was tested (70.32% vs. 76.14%) and received aspirin or another antithrombotic (86.86% vs. 89.40%). Pneumococcal vaccinations also increased (84.60% vs. 89.40%) as did rates of BMI screening and follow-up (92.42% vs. 93.41%).

CalPERS\(^2\)
Report extensively on their financial savings and quality improvements – and deep insight in the successful attributes.

From 2010 to 2013, this ACO generated over $105 million in gross savings—which is something I’m not sure any of us thought was possible when we started.

The providers earned $10.36 million in incentive payments during this time, so net savings to CalPERS has been just shy of $95 million for the first four years.

This translates into COHC of just under 3 percent for this population, as compared to a non-ACO annualized trend of 7.6 percent.

Over time, reduction in total inpatient days per 1000 driven by length of stay reduction and repatriation of patients into ACO-network hospitals have provided the most savings and touched members the most.

Over the four years, has been able to achieve and sustain reductions in LOS (-15.4% and -.6 days) and in total inpatient days (-16.2% and -38.6 days), even as the risk score of our inpatient population has increased (+13%). After adjusting for rising case mix, our total days per thousand have fallen quite substantially (-25%). We continue to work on the overall inpatient admission rate, which remains unchanged (-0.9% and -0.6 days per 1000) and ED visits per thousand, which increased by 17 percent (+22.7 visits per 1000) since the ACO started in 2010.
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