

THE WORK AHEAD:

ACTIVITIES AND COSTS TO DEVELOP AN ACCOUNTABLE CARE ORGANIZATION

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EXECUTIVE SUMMARY

Most health care organizations see substantial work ahead in order to create the type of accountable care organizations (ACOs) that are envisioned to work with private insurers, Medicare, Medicaid, state health exchanges and/or employers. ACOs are intended to manage the health of a defined population and to be held accountable and reimbursed based on measurable improvements in quality and patient satisfaction, plus reductions in costs. In order to be effective, ACO organizers expect to:

- Develop right-sized networks that include physicians, other care providers, hospitals, and post-acute care organizations to address the full continuum of health care needs;
- Provide supporting infrastructure – including electronic health records (EHRs), electronic connectivity, data analyses, quality reporting and management, governance structures and credible management teams; and
- Develop an over-arching culture, reinforced with financial and other incentives, so that the ACO can function as a unified, coordinated organization.

In the majority of cases, this means developing an integrated organization out of health care business entities that have worked together for some time but have heretofore regarded themselves as separate decision-making units. Key activities – such as transitioning to EHRs, developing disease management strategies, improving care coordination, creating electronic connectivity, changing reimbursement structures and financial incentives, developing new governance and decision-making and evolving a common culture – need to be occurring at roughly the same time. In the majority of cases, this is not expected to be an easy or inexpensive task.

Some health care organizations have been working to develop “ACO-like” organizations for some time now.

These organizations are being formed, for example, to work with commercial insurers. This white paper reports case study research on four organizations – New West Physicians (Denver, CO), Metro Health (Grand Rapids, MI), Memorial Hermann Health (Houston, TX), and Catholic Medical Partners (Buffalo, NY) – representing different types of organizations operating under different market conditions. This research was performed by McManis Consulting, and was sponsored by the American Hospital Association.

This white paper examines the steps and associated costs of establishing an organization that is poised to be accountable for care. We have identified 23 activity areas that appear to be very important in the development of a workable ACO (or other organization seeking to manage the health of a defined population and accept performance-based reimbursement). We have estimated the costs of these activities for two prototype organizations (shown in the summary table that follows). Prototype A includes a single free-standing hospital, 80 primary care physicians and 250 specialists. Prototype B includes a five-hospital (1,200 bed) system, 250 primary care physicians and 500 specialists. Both prototype organizations are pursuing a coordinated, evidence-based, patient-centered approach to providing health care. Both are developing networks including post-acute care providers.

The activities reported here are believed to be relevant for most organizers of ACOs. However, depending on the organizing entity, some costs may have already been incurred, or a portion of the costs may be attributable to purposes other than ACO development. Also, although the case studies represent a wide range of circumstances, they represent a small sample size for drawing definitive conclusions. Finally, this work was completed before the Centers for Medicare and Medicaid Services’ proposed regulations were issued. For these reasons, these estimates should be viewed as “early indicators,” not as “definitive measures” for ACOs in the Medicare Shared Savings Program.

SUMMARY: ACTIVITIES AND COSTS TO ESTABLISH AN ACO-LIKE ORGANIZATION

	Prototype A: (200 bed, 1-hospital system 80 PCPs, 150 specialists)		Prototype B: (1,200 bed, 5-hospital system, 250 PCPs, 500 specialists)	
Activity	Start up Costs	Ongoing (Annual) Costs	Start up Costs	Ongoing (Annual) Costs
Group I. Network Development and Management				
1. Providing ACO management and staff	\$550,000	\$1,450,000	\$600,000	\$3,200,000
2. Leveraging the health system's management resources	\$250,000	\$200,000	\$300,000	\$250,000
3. Engaging legal and consulting support	\$350,000	\$125,000	\$500,000	\$125,000
4. Developing financial and management information support systems	\$500,000	\$80,000	\$500,000	\$160,000
5. Recruiting/acquiring primary care professionals, right-sizing practices	\$400,000	\$800,000	\$800,000	1,600,000
6. Developing and managing relationships with specialists	*	*	*	*
7. Developing and managing an effective post-acute care network	*	*	*	*
8. Developing contracting capabilities	\$150,000	\$150,000	\$150,000	\$150,000
9. Compensating physician leaders	\$75,000	\$75,000	\$190,000	\$190,000
Group II. Care Coordination, Quality Improvement and Utilization Management				
10. Disease registries	\$75,000	\$10,000	\$150,000	\$20,000
11. Care coordination and discharge follow-up	\$150,000	\$1,000,000	\$300,000	\$3,000,000
12. Specialty-specific disease management	—	\$150,000	—	\$300,000
13. Hospitalists	\$80,000	\$160,000	\$160,000	\$320,000
14. Integration of inpatient and ambulatory approaches in service lines	*	*	*	*
15. Patient education and support	—	\$100,000	—	\$100,000
16. Medication management	—	\$100,000	—	\$100,000
17. Achieving designation as a patient-centered medical home	\$100,000	\$15,000	\$150,000	\$25,000
Group III. Clinical Information Systems				
18. Electronic health record (EHR)	\$2,000,000	\$1,200,000	\$7,050,000	\$3,500,000
19. Intra-system EHR interoperability (hospitals, medical practices, other)	\$200,000	\$200,000	\$400,000	\$200,000
20. Linking to a health information exchange (HIE)	\$150,000	\$100,000	\$200,000	\$200,000
Group IV. Data Analytics				
21. Analysis of care patterns	\$210,000	\$210,000	\$450,000	\$450,000
22. Quality reporting costs	\$75,000	\$75,000	\$100,000	\$100,000
23. Other activities and costs	—	\$100,000	—	\$100,000
TOTAL	\$5,315,000	\$6,300,000	\$12,000,000	\$14,090,000

*Costs are primarily management and staff and are included in previous elements (1,2 and 3).

The funds to offset these costs may come from multiple sources. For example, some costs may have already been incurred, or may be allocable to other budgets. Some costs may be offset by grants or contributions from federal sources (e.g. funds from the Medicare/Medicaid EHR incentive program), states, commercial health plans, or employers.

A high proportion of the start-up funds will need to be recaptured through net revenues from ACO contracts and/or other pay-for-performance contracts. ACO

organizers will need to develop their own situation-specific approach to the revenue and investment side of this equation and make their own investment decisions.

A substantial body of work is ahead. This white paper seeks to make a contribution in identifying the activities required and estimating the costs.

INTRODUCTION

How much will it cost to develop and sustain an accountable care organization (ACO)? The answer, of course, is “it depends.”

ACOs – provider organizations that accept responsibility for managing the health of a defined population of patients and are accountable for quality of care, patient service and the cost of care – are likely to vary on multiple dimensions. For example, some are expected to be established by physician groups, others by hospitals or health systems, others by integrated delivery networks, others by health plans, still others could be formed by other types of organizations. Now is the time of initiation and experimentation.

Start-up costs and ongoing costs depend on a number of factors, including:

- The size and composition of the patient population served;
- The geographic area being served;
- The characteristics of the organization that is undertaking ACO development (e.g., large multi-hospital health system, small stand-alone hospital, independent primary care medical group, independent specialty medical group, integrated system); and
- The extent to which some of the needed infrastructure (such as an EHR) is already in place.

This working paper provides initial estimates of the costs of establishing and sustaining an ACO. Costs for two prototype ACOs are described.

RESEARCH APPROACH

Working under the sponsorship of the American Hospital Association, McManis Consulting has prepared case studies of four organizations that are relatively far along in establishing the relationships and competencies required to accept accountability for the care of defined populations, although not necessarily in the Medicare ACO context. Taken together, the four case studies represent a variety of start-up approaches and conditions. The experiences of these organizations form the primary basis for the cost estimates that follow.¹

- **New West Physicians** – a 68-provider primary care physician practice in the western part of the Denver area. New West has demonstrated it can provide high-quality care and achieve high patient satisfaction scores while reducing costs substantially.
- **Metro Health** – a single hospital health system (200+ beds) in Grand Rapids, MI, with 200+ physicians in its physician-hospital organization (PHO). Metro has implemented a single, integrated EHR for its inpatient and ambulatory services and for its physician offices and has used strategic alliances to offset its lack of scale economies.
- **Memorial Hermann Health System** – the market share leader among health systems in the greater Houston area. Memorial Hermann, which has 129 care locations, has developed a companion 3,600+ physician organization (MHMD) and is beginning to contract directly with employers.
- **Catholic Medical Partners** – a 900+ physician, four hospital physician-hospital organization in Buffalo, NY. Catholic Medical Partners has invested heavily in the infrastructure needed to manage care and has received active financial support from local health plans.

Additional information on the case studies is provided in a companion white paper, *From Volume to Value: The Transition to Accountable Care Organizations*, and from the four individual case studies.²

Once an ACO is operating, has contracts to provide care and is receiving revenues from its contracts, it is reasonable to expect that the ongoing costs will be offset by operating revenues. However, many of the initial costs can be expected to be incurred over a period of three or more years as the organization builds the structures and competencies to begin contracting on a shared savings or risk basis and offsetting revenues begin to arrive.

¹Data from other organizations have been used to fill in gaps in available information. Where data from other organizations are used, the source is cited.

²The companion white paper and case study summaries are available at www.aha.org/ACOCasestudies.

Three notes of caution are appropriate for the reader of this white paper. First, depending on what entities are involved in organizing an ACO and their circumstances, some of these costs may have already been incurred, or a portion of the costs may be attributable to purposes other than ACO development. The reader will need to adjust these cost estimates to reflect the allocation/attribution of costs that is appropriate for his/her organization's specific circumstances.

Second, although the four case studies represent a range of circumstances, this is not a large sample size from which to estimate costs.

Third, this research was completed before the proposed rules for the Medicare Shared Savings Program were released. At the time of the research, neither the nature of ACOs nor the process of developing them had been standardized. Also, the reporting requirements of ACOs had not yet been identified. Therefore, these estimates should be used as "early indicators," and certainly not as "definitive measures."

ACO DEVELOPMENT ACTIVITIES AND COSTS

In comparing the case study experiences, we have identified 23 categories of costs. Some are one-time start-up costs, whereas others continue on an ongoing basis. Based on the case studies, our checklist of costs is shown in Exhibit 1 on the following page.

These activities and cost categories are discussed in more detail below.

Group I. Network development and management.

The first grouping of activities and costs deals with developing the required management capabilities and care delivery components.

1. Providing ACO management and staff. Every case study organization has incurred a front-end investment to staff an organization to coordinate ACO activities. Typical leadership positions include chief executive officer (CEO), medical director/CMO, chief information officer (CIO) and chief financial officer (CFO). Examples of early activities for the core leadership team include:

- Developing, managing and communicating with the physician network.
- Completing the organizational design and implementing it. Key organizational design elements include governance, membership and financial flows.
- Developing an organizational strategy for the ACO. What target market (private insurer, employer, Medicare, Medicaid)? What services? Which physicians and hospitals? What investment sources? What operating philosophy and competitive strategy?
- Integrating the ACO's strategy with those of its sponsors and member entities.
- Identifying and addressing gaps in the physician network and the services provided, and addressing gaps in services. This may include recruiting or making arrangements with specialists that otherwise would not be part of the network.
- Developing the network's approach to accessing the full continuum of care. This usually includes the development and management of relationships with post-acute care providers such as rehabilitation, home care, skilled nursing and hospice.

ACOs also typically include core staff to communicate with and coordinate between physician offices regarding quality, patient service and utilization, and cost management initiatives. Other support staff are typically engaged in analyzing data from insurance claims, EHRs and other sources.

Catholic Medical Partners began its journey towards developing ACO-like capabilities in 2005 with a staff of six and now has a staff of 22 (a ratio of one staff member per 41 physicians).

2. Leveraging the health system's management resources. ACOs organized by health systems rely heavily on health system management during the start-up. Afterwards, management commitments from the system continue to be substantial.

Activity	Start Up Costs	Ongoing (Annual) Costs
Group I. Network Development and Management		
1. Providing ACO management and staff	X	X
2. Leveraging the health system's management resources	X	X
3. Engaging legal and consulting support	X	X
4. Developing financial and management information support systems	X	X
5. Recruiting/acquiring primary care professionals, right-sizing practices	X	X
6. Developing and managing relationships with specialists	X	X
7. Developing and managing an effective post-acute care network	X	X
8. Developing contracting capabilities	X	X
9. Compensating physician leaders	X	X
Group II. Care Coordination, Quality Improvement and Utilization Management		
10. Disease registries	X	X
11. Care coordination and discharge follow-up	X	X
12. Specialty-specific disease management	X	X
13. Hospitalists	X	X
14. Integration of inpatient and ambulatory approaches in service lines	X	X
15. Patient education and support		X
16. Medication management		X
17. Achieving designation as a patient-centered medical home	X	X
Group III. Clinical Information Systems		
18. Electronic health record (EHR)	X	X
19. Intra-system EHR interoperability (hospitals, medical practices, other)	X	X
20. Linking to a health information exchange (HIE)	X	X
Group IV. Data Analytics		
21. Analysis of care patterns	X	X
22. Quality reporting costs	X	X
23. Other activities and costs		X

Members of the hospital/health system management team are typically on the boards of their physician organization, and spend additional time as well. Some functions are purchased from the system.

The management teams of the three health systems in the case studies – Memorial Hermann, Metro Health and Catholic Health System – estimated that they spend 10 percent to 25 percent of their time *on an ongoing basis* on the activities covered in this white paper.

3. Engaging legal and consulting support. Start-up legal costs vary widely among the case studies and depend heavily on the organizational form.

With respect to ongoing legal costs, we have two estimates based on actual experience: \$24,000 per year for New West Physicians and \$40,000 to \$55,000 total for Catholic Medical Partners. These could be substantially higher if, for example, the organizing entity required or sought a definitive ruling from the Federal Trade Commission.

Almost every hospital or health system moving toward becoming an ACO is incurring expenses associated with various types of consultants – ranging from physician integration consultants, to actuaries, to organizational development consultants, to financial analysts.

4. Developing financial and management information support systems. The installation of a common practice management system was one of the first steps taken by New West Physicians when it came together as one primary care group. Without this, it was impossible to consolidate financial information from individual practices and also have a uniform system of scheduling.

The initial cost of New West's practice management software was \$600,000 (this was several years ago); New West is considering an upgrade at a cost of at least \$500,000.

Health systems organizing ACOs have a number of tactical decisions to make in the area of practice management systems. For example, do they try to get all practices on the same practice management software, even though they are not necessarily on the same electronic health record? Most EHR software packages include practice management software; however, it can be priced separately.

5. Recruiting/acquiring primary care professionals, right-sizing practices. In each of the case studies, there is a strong appreciation of the need to develop and sustain an effective network of well-located, right-sized physician practices. This frequently requires adding primary care physicians, nurse practitioners or physician assistants. Three of the case studies are also working to organize primary care physicians into efficiently sized practice units (i.e., two to four physicians plus physicians' assistants and/or nurse practitioners).

New West Physicians estimates the costs of starting a new five-provider primary care practice *de novo* (i.e., by pulling solo practice physicians together or hiring physicians) to be \$450,000 per physician (spent to develop a practice over three years). The costs of acquiring an existing practice (as opposed to developing a practice *de novo*) can be significantly lower. In New West's experience, acquiring a primary care practice costs approximately \$100,000 per physician.

Metro Health's cost per physician for *de novo* primary care practices is similar to that for New West. Metro estimates that it costs \$1 million for each two to three

physician practice added to its network; this includes real estate, building modifications, equipment, clinical information systems, hiring and training staff, and building practice volume to a break even level.

These costs vary significantly for different markets. Practice acquisitions may also vary based on the purchaser, the past performance of the practice and the market.

6. Developing and managing relationships with specialists. How many specialists are needed in an ACO, in what specialties and locations? How are specialists selected? How is their performance monitored and rewarded? These issues are critical to success in an accountable care environment.

Not surprisingly, the case study that is furthest along in developing and managing its specialty network is the one that is led by primary care physicians (New West Physicians). The three case studies that involve health systems are working through this issue cautiously. (This makes sense, given health systems' reliance on the good will of specialists.) Memorial Hermann is working with panels of physicians organized by service line (the Clinical Programs Committee of MHMD) to address this function.

New West Physicians works with a network of 150 specialists. Through its analysis of claims data, plus special studies using data from its EHR, New West is able to monitor the performance of specialists. Those that are persistently out of line in their utilization of resources or on quality measures are referred to the New West board of directors for action.

This is not a capital intensive item in itself. However, the information flows have to be in place to accomplish this objective. (These are described later.) Also, the relationship between the overall organization and the specialist practices has to be such that performance monitoring and adjustments can occur.

7. Developing and managing an effective post-acute care network. Rehabilitation, long-term acute care, psychiatric care, nursing homes, home care and hospice care are important components for those

organizations intending to operate as ACOs; all four case study organizations have either integrated these providers into their networks or are moving in that direction. This is not a capital-intensive item; it mainly involves ACO administrators and physician leaders identifying and screening which organizations they want to be part of their referral network.

In some instances, health systems that are forming ACOs are going a step further. Initiatives are under way not only to integrate these capabilities into the ACO, but also to merge the post-acute care providers into the health system.

8. Developing contracting capabilities. The ACO's contracting capabilities must mature as it takes on new forms of agreements. All of the case study organizations have staff devoted to contracting and risk management issues. Memorial Hermann, which is in the process of contracting with large employers, has established a subsidiary for-profit company (MHealth) to accomplish this activity. Memorial Hermann is also evaluating whether the system needs its own HMO license.

Smaller organizations have a single professional working in this area. In the prototype cost structures developed later in this white paper, we have assumed there will be one full-time person in health plan and Medicare contracting, and risk management, starting in the first year. The cost is estimated at \$100,000 per year plus another \$50,000 in administrative support, or a total of \$150,000 per year.

9. Compensating physician leaders. Several of the case studies make an effort to compensate physician leaders for time away from their practice. Paying for attending governance meetings is very common. Some organizations also pay for other management-related activities, such as quality and care coordination planning and monitoring, and network development.

Physician board members are often paid a flat stipend. At Catholic Medical Partners, this is \$150 per board or committee meeting. Some organizations pay a portion of a physician's salary and prorate it as a proportion of the Medical Group Management Association (MGMA) median (or other benchmark) for his/her specialty.

Group II. Care Coordination, Quality Improvement and Utilization Management. These activities and costs relate to the core functions of the ACO. Generally speaking, these costs are associated with pursuing a network-wide, evidence-based, patient-centered approach to work flow, care coordination and treatment.

10. Disease registries. Disease registries were implemented manually in the case studies, well in advance of the implementation of EHRs. Metro Health hired college students to assist in a manual process of going through individual medical records and establishing its initial registries for six chronic conditions, representing a total of 5,000 patients. The cost for this initial process was approximately \$55,000.

11. Care coordination and discharge follow-up. This is viewed as foundational by all case study participants. Catholic Medical Partners is able to provide a good estimate of costs since this is accounted for separately in its clinical integration initiative.

Catholic Medical Partners had 68 practices participating in its care management program (equivalent of 200 physicians of all specialties) with total spending of \$3 million for the past year. This includes payments to nurses at the practice level,³ and the salaries of four nurses in the Catholic Medical Partners' offices (a cost of \$280,000, included in the \$3 million) who train nurses in participating practices.

12. Specialty-specific disease management. All of the case studies are pursuing disease management strategies aggressively. Catholic Medical Partners has disease management programs (in areas such as congestive heart failure, coronary artery disease, asthma, high-risk pregnancies, diabetes, COPD and pediatric obesity) operational at many of its practices. Some of the functions are performed by the staff included in activity and cost element 11.

³These are incremental costs, over and above member practices' core office staffs.

13. Hospitalists. For New West, the employment of dedicated hospitalists working under a well-devised incentive structure is a key element of the group's strategy for controlling costs and reducing hospital readmissions. In New West's model, hospitalists work closely with primary care physicians and discharge managers to avoid readmissions. They also take responsibility for appropriate patients in the emergency department as soon as possible, reducing emergency department costs.

In New West's experience, the average hospitalist costs approximately \$160,000 a year (although some earn up to \$250,000). Hospitalists rely on professional fees for the vast majority of their income. However, additional costs have been incurred during start-up and compensation model transition periods.

14. Integration of inpatient and ambulatory approaches in service lines. Substantial work is taking place to integrate care management approaches in physician offices with those in hospitals and other care locations in health systems. The Memorial Hermann case study discusses the challenge of integrating a strong health system management culture with that of an emerging physician organization. Catholic Medical Partners' member physicians are becoming involved in Catholic Health Systems' service line management activities. Physicians are compensated for their time in these activities. The objectives of these activities are to improve quality and lower cost across all elements of the continuum of care.

Other non-case study systems are going still further, formally contracting with selected physicians to co-manage service lines. Co-management has been used as a standalone physician relations strategy by several health systems.⁴ Now, it is being considered in conjunction with ACO development.

15. Patient education and support. New West Physicians spends \$80,000 to \$100,000 a year on its diabetes education center. Memorial Hermann runs a pilot program for the uninsured to teach them how to more properly use emergency department and inpatient hospital resources, the savings have been substantial. Both New West and Memorial Hermann expect that

these initiatives, although they involve start-up costs, will pay for themselves over time in a risk-based reimbursement environment.

16. Medication management. Catholic Medical Partners has a full-time pharmacist, plus several part-time associates who work with member practices in medication management.

This appears to be a cost effective activity in a value-based reimbursement environment. These salaries are paid through a grant from a large health plan.

17. Achieving designation as a patient-centered medical home. The case study organizations plan on getting their primary care practices designated as medical homes. Three of the four case study organizations had at least one primary care practice certified, and the fourth is making application for all 17 of its practices.

Out-of-pocket costs to achieve National Committee for Quality Assurance (NCQA) certification are roughly \$1,500 per practice. When local practice staff time is added, the cost is approximately \$10,000 per primary care practice. If these practices advance to Level III certification, there is a small additional charge, plus additional staff time.

Group III. Clinical Information Systems. The case study organizations have different information technology strategies. However, each organization engages in the types of activities discussed below. (Please note that this analysis does not account for investments in hospitals' inpatient EHRs. It is assumed that the majority of hospitals will be implementing EHRs absent the formation of an ACO.) This analysis focuses on bringing network physicians online, ensuring connectivity across network components, and utilizing other information sources, such as claims data.

18. Electronic health record (EHR). In three of the four case study organizations, most or all primary care

⁴See, for example, Iowa Health's use of co-management as discussed in HFMA, *Achieving Integration through the Co-management Model*, May 7, 2010, <http://www.hfma.org/Templates/InteriorMaster.aspx?id=20619>.

physicians are on an EHR now or will be in the near future. In the prototype cost estimates that follow, we have used the gross costs – before any potential credits from the federal EHR incentive programs.

Based on information provided by the case study organizations, we believe that the gross cost before credits of installing clinical information systems will be in the \$40,000 to \$75,000 range per physician. This includes the software licenses, hardware and conversion of paper records to digital format, plus office staff and physician down time.

New West Physicians made the conversion from paper to electronic health records over a three-year period. The \$2.9 million in start-up costs included hardware and Allscripts' (software vendor) fees. This was approximately \$50,000 per physician. Other costs of conversion, such as administrative and physician office time, and related downtime, were in addition to this amount.

In a recent study, Medical Group Management Association (MGMA) reported that medical groups spend an average of \$60,000 on their EHR – \$30,000 initially and another \$30,000 within 24 months.⁵

A detailed study of the costs of implementing an EHR in 26 primary care practices (each with 2 to 12 physicians) came up with an average cost of \$32,409 per physician from launch through the first 60 days. For the entire first year, these costs were \$46,659. The authors say that the network they studied, HealthTexas Provider Network (part of Baylor Health Care System), may represent a best-case scenario.⁶ This suggests that an estimate of \$40,000 per physician in front-end costs for a less well-organized system is reasonable.

There are significant ongoing operating costs related to conversion to a clinical information system, plus updating these systems and training physicians and staff. Metro Health's CIO noted, "We have an Epic upgrade every year." Continuing improvements and

upgrades are estimated at \$2.5 million per year. Slightly less than half of this is for the outpatient part of the system, or roughly \$1 million per year. This would approximate \$10,000 per physician who is on Epic.

For New West Physicians, continuing costs of maintaining its EHR exceeded \$2 million over a three-year period. This included operating costs, maintenance fees and processing, and continuing training, or about \$10,000 per physician per year.

19. Intra-system EHR interoperability (hospitals, medical practices, other). Interoperability – the ability to share clinical and claims data in a meaningful way – is a foundational issue for all of the case studies. The costs to achieve this connectivity can be substantial.

In this working paper, the activities and costs associated with sharing information among providers working together as an ACO are addressed here (in activity and cost element 19). The costs of participating in a health information exchange, which often includes substantial numbers of non-ACO participants, is addressed below (in activity and cost element 20).

The activities needed to communicate patient information within the case study organizations vary substantially. New West has all primary care physicians on the same EHR. In addition, New West must communicate with its specialists, most of whom are not on the system. This is done primarily with scanning, paper and fax. Costs for establishing an electronic interface so that patient data could be moved from the hospital's EHR into New West's EHR were minimal (\$15,000) and were paid by the hospital. Interface costs generally depend on the number of connections that must be made.

Metro's primary care physicians and all system care locations (including the hospital) are on the same EHR (Epic). Movement of patient information from physicians not on the system (including the vast majority of specialists) is being addressed with paper and fax.

Memorial Hermann and Catholic Medical Partners have physicians on a mix of EHRs, plus a significant number of physicians not yet on an EHR. These organizations

⁵MGMA, *Electronic Health Records: Status, Needs and Lessons*, April, 2011, p. 25.

⁶Neil S. Fleming, et. al., "The Financial And Nonfinancial Costs of Implementing Electronic Health Records in Primary Care Practices," *Health Affairs*, March 2011, p. 485.

rely heavily on scanning, paper and fax; however, they plan to make use of their health information exchange (see below) for both internal and external interoperability.

EHRs often include a data repository (or warehouse) for storing and readily accessing transactional data associated with each patient. However, ACOs and similar organizations frequently have to develop additional data warehouse capabilities in order to:

- Analyze insurers' claims data. Claims data are especially valuable for population health management because they include a much higher proportion of the patient's total health care interactions than an EHR. New West, Metro Health and Catholic Medical Partners all receive, process and analyze claims data on their patients.
- Analyze data from physician's offices and other health care providers not using the ACO's EHR.

Several case studies are hoping to partner in the development of data warehouses and other data processing efforts – some with health plans and some with other health systems.

20. Linking to a health information exchange (HIE). Three of the case study organizations expect to rely heavily on a health information exchange. HIEs translate data from multiple EHRs into continuity of care documents, which include a standard set of data on each patient encounter, and transmit this document to the various EHRs. HIEs are expected to play a vital role in linking physicians and hospitals that are not on the same EHR.

The Memorial Hermann Information Exchange (MHIE) is being developed in cooperation with Cerner. MHIE development costs are estimated at \$2.5 million for Memorial Hermann, and estimated annual operating costs are \$1.5 million.

Metro Health is a co-founder of its regional HIE and pays \$100,000 annually to support it. Catholic Health pays \$200,000 annually. (Catholic Health's payment covers the cost for Catholic Medical Partners.) However, these regional cooperative HIEs are the beneficiaries of several grants. It is likely that costs will increase once the grants are fully expended.

GROUP IV. DATA ANALYTICS

21. Analysis of care patterns. All of the case study organizations have staff to integrate and analyze data from multiple sources. Current sources include payer claims data, data from practices, inpatient data from hospitals, plus data from other sources.

Additional costs are incurred in purchasing and implementing software to assist in the analysis. The software used by New West Physicians is Analytics (a product from New West's EHR vendor, Allscripts). The initial cost was \$40,000 and annual costs are \$1,800 per physician, or about \$100,000 per year.

Metro Health uses "Crimson," a software package from the Advisory Board, which costs \$90,000 per year. Metro Health also has a staff of two who work with the output of its Crimson software. New West Physicians has one staff person who oversees analysis of the claims data from Secure Horizons, its major risk-adjusted capitated contract, with four other staff who provide support.

22. Quality reporting costs. Proposed Medicare ACO reporting requirements include 65 data measures – including numerous elements taken from patients' charts and some elements requiring patient surveys. The case studies and other similar organizations anticipate significant costs to meet the requirements. For most, this includes new data warehouse requirements and a need for substantial staff. INTEGRIS Health (a 12-hospital system in Oklahoma) estimates current data reporting costs at \$9 million per year (an average of \$750,000 per hospital).

This estimate is based on historical, not anticipated experience. Some of the case studies are well under way in assembling the relevant data. For example, Catholic Medical Partners and/or its affiliated system, Catholic Health, collect several data elements and already conduct a patient survey. However, all of the case studies have more work ahead to meet these criteria.

23. Other activities and costs. Other forms of analytical support are not present in the case studies but are nevertheless expected to be common elements

of the future, emerging ACO. For example, Atlanticare and other health systems are experimenting with modeling the cost of catastrophic patient care. These systems are designing innovative approaches to delivering care to targeted populations with chronic conditions and high costs. In some instances, the numbers of hospital admissions and costs of care from a housing complex or other concentrated geographic area is so high that it may be cost effective to place a “resident health advisor” in the area to work with high-risk residents.

COST EXAMPLES FOR TWO PROTOTYPE ACOS

We have used the case studies to estimate the front-end infrastructure costs and the annual operating expenses for two prototype organizations:

- ACO Prototype A is being organized by a 200-bed freestanding hospital. In addition to the hospital,

the ACO includes 80 primary care physicians (PCPs) and 150 specialists.

- ACO Prototype B is being developed by a five-hospital system. The system includes 1,200 inpatient beds. Its affiliated IPA has 250 PCPs and 550 specialists.

In both prototypes, we have assumed that 50 percent of the organization’s primary care physicians are already on an EHR. We have also assumed that each prototype organization participates in an existing regional health information exchange (HIE). We have also assumed that each prototype includes a post-acute care network (e.g., rehabilitation, long-term care, home health, hospice care).

Cost Estimates for ACO Prototype A. Cost estimates for Prototype A are shown in Exhibit 2.

2 INFRASTRUCTURE COST ESTIMATES FOR ACO PROTOTYPE A (ACO INCLUDES 200-BED HOSPITAL, 80 PCPS, 150 SPECIALISTS)

Categories of Costs	Cost Estimates		Comments
	Start up	Ongoing (Annual)	
Group I. Network Development and Management			
1. Providing ACO management and staff	\$550,000	\$1,450,000	Ongoing cost estimate assumes CEO, CMO, CIO, CFO, plus a quality/care coordination staff of three. Costs include estimates for occupancy, furniture, fixture and equipment. Analytical support staff is excluded here and included in 21.
2. Leveraging the health system’s management resources	\$250,000	\$200,000	It is estimated that key health system managers and selected staff will spend at least 10% of their time on ACO-related issues on an ongoing basis, more during the start-up period. (Note: Although included here, these costs do not usually appear on the ACO-related organization's financial statement.)
3. Engaging legal and consulting support	\$350,000	\$125,000	Estimates based on a composite of case study and other organizations.
4. Developing financial and management information support systems	\$500,000	\$80,000	Start-up costs assume a practice management system is purchased. Ongoing costs assume additional primary care practices per year are put on the practice management system. Ongoing costs are mostly professional time (from internal or external IT professional resources).
5. Recruiting/acquiring primary care professionals, right-sizing practices	\$400,000	\$800,000	Assumes a primary care network of 10 participating practices at the outset; adding one new 3-physician practice per year. Costs here represent a blend of acquired practices at \$100,000 per physician and <i>de novo</i> practices at \$450,000 per physician.

Continued

Categories of Costs	Cost Estimates		Comments
	Start up	Ongoing (Annual)	
Group I. Network Development and Management			
6. Developing and managing relationships with specialists	Included above	Included above	Includes working with, identifying and monitoring practice patterns in specialty services. Costs may include specialist recruitment. Costs are primarily leadership, system staff and consulting time; these are included under 1, 2 and 3.
7. Developing and managing an effective post-acute care network	Included above	Included above	Includes evaluating potential network providers, working with them to develop standards, then monitoring and adjusting. Costs are primarily leadership, system staff and consulting time; these are included under 1, 2 and 3.
8. Developing contracting capabilities	\$150,000	\$150,000	Estimate assumes a managed care contracting specialist plus assistant. Actuarial consulting is included above in element 3.
9. Compensating physician leaders	\$75,000	\$75,000	Costs of compensating physician leaders for time away from practice. Assumes 1,000 hours at \$75 per hour.
Group II. Care Coordination, Quality Improvement and Utilization Management			
10. Disease registries	\$75,000	\$10,000	Costs shown here are to establish the initial registries manually then maintain them electronically. Quality staff costs are included in element 1.
11. Care coordination and discharge follow-up	\$150,000	\$1,000,000	Costs are modeled based on Catholic Medical Partners' care coordination program, where RNs are placed in primary care practices. Cost estimating parameters are 1 care coordinator per 350 patients with chronic conditions (works out to 1 coordinator for every 1.5 physicians) at \$75,000 per coordinator. Core staff costs are an additional \$150,000.
12. Specialty-specific disease management	—	\$150,000	Specialty-specific disease program costs are accounted for in elements 1, 2, and 23. Costs shown here are for care coordinators in selected specialist offices.
13. Hospitalists	\$80,000	\$160,000	This estimate is the cost of one hospitalist FTE. The New West case study suggests that substantial gains can occur with dedicated hospitalists. This estimate assumes that health systems will elect to re-orient their current hospitalists – adding an accountability line to the ACO and re-designing their incentive structure – rather than adding a new hospitalist service. It is assumed that the resulting changes will add one FTE.
14. Integration of inpatient and ambulatory approaches in service lines	Included above	Included above	Costs are included in elements 1, 2 and 3. Additional costs – in the form of physician payments for co-managing inpatient services – may be incurred by the health system. However, these are assumed to be absorbed by the health system and offset by savings to the health system.
15. Patient education and support	—	\$100,000	Assumes a diabetic education program.
16. Medication management	—	\$100,000	A full-time pharmacist working with the primary care practices will cost about \$100,000 per year.
17. Achieving designation as a patient-centered medical home	\$100,000	\$15,000	Achieving NCQA Level 1 certification for 10 primary care practices initially. This includes both NCQA fees and time of practice staff. As PCPs are added, and the group goes for Level III certification, the costs would be at least an additional \$15,000 per year.

Continued

Categories of Costs	Cost Estimates		Comments
	Start up	Ongoing (Annual)	
Group III. Clinical Information Systems			
18. Electronic health record (EHR)	\$2,000,000	\$1,200,000	<p>Start-up estimate assumes \$40,000 per physician for 40 PCPs who don't already have an EHR. Ongoing costs assume the addition of EHRs for 10 specialists a year (those most closely aligned with the ACO) to get on an EHR, plus the new primary care physicians added to the network.</p> <p>This analysis does not account for hospital investments in EHRs beyond connectivity to network components. It is assumed that the majority of hospitals will be implementing EHRs absent the formation of an ACO.</p> <p>Ongoing costs for upgrades and maintenance are estimated at \$10,000 per physician.</p>
19. Intra-system EHR interoperability (hospitals, medical practices, other)	\$200,000	\$200,000	Largest cost items are expected to be ongoing development of system interfaces plus data warehouse enhancements.
20. Linking to a health information exchange (HIE)	\$150,000	\$100,000	Assumes shared costs in HIE development with other health care organizations, based on two case studies.
Group IV. Data Analytics			
21. Analysis of care patterns	\$210,000	\$210,000	Costs shown here are for analytical software (e.g., Crimson, Analytics) plus staff costs.
22. Quality reporting costs	\$75,000	\$75,000	One FTE is assumed. Related costs of data warehouse enhancements are included above in element 19. Costs will likely be higher to meet Medicare ACO reporting requirements.
23. Other activities and costs	—	\$100,000	Costs reflect anticipated supplemental analyses not currently incurred by the case study organizations – e.g., predictive patient modeling.
Total	\$5,315,000	\$6,300,000	

Total infrastructure costs for ACO Prototype A are estimated to be \$ 5.3 million in start-up costs and \$ 6.3 million in ongoing (annual) costs.

Cost Estimates for ACO Prototype B. Estimates for Prototype B are shown in Exhibit 3 on the following page.

**3 INFRASTRUCTURE COST ESTIMATES FOR ACO PROTOTYPE B
(ACO INCLUDES A 5-HOSPITAL SYSTEM WITH 1,200 INPATIENT BEDS, 250 PCPS, 550 SPECIALISTS)**

Categories of Costs	Cost Estimates		Comments
	Start up	Ongoing (Annual)	
Group I. Network Development and Management			
1. Providing ACO management and staff	\$600,000	\$3.2 million	Ongoing cost estimate assumes a staff of 22, including CEO, CMO, CIO, CFO, quality/care coordination staff and financial analysts. Costs include estimates for occupancy, furniture, fixture and equipment. Start-up cost estimate reflects the initial cost of a core team including senior leadership. Analytical support staff is excluded here and included in 21.
2. Leveraging health system's management resources	\$300,000	\$250,000	It is estimated that key health system managers and selected staff will spend at least 10% of their time on ACO-related issues on an ongoing basis, more during the start-up period. (Note: Although included here, these costs do not usually appear on the ACO-related organization's financial statement.)
3. Engaging legal and consulting support	\$500,000	\$125,000	Estimates based on a composite of case study and other organizations.
4. Developing financial and management information support systems	\$500,000	\$160,000	Start-up costs assume a practice management system is purchased. Ongoing costs assume 8 practices per year are put on the practice management system. Ongoing costs are mostly professional time (from internal or external IT professional resources).
5. Recruiting/acquiring primary care professionals, right-sizing practices	\$800,000	\$1,600,000	Assumes a primary care network of 15 participating practices at the outset; adding two new 3-physician practices per year. Costs here represent a blend of acquired practices at \$100,000 per physician and de novo practices at \$450,000 per physician.
6. Developing and managing relationships with specialists	Included above	Included above	Includes working with, identifying, and monitoring practice patterns in specialty services. Costs may include specialist recruitment. Costs are primarily leadership and staff time; these are included under elements 1, 2 and 3.
7. Developing and managing an effective post-acute care network	Included above	Included above	Includes evaluating potential network providers, working with them to develop standards, then monitoring and adjusting. Costs are primarily leadership and staff time; these are included under elements 1, 2 and 3.
8. Developing contracting capabilities	\$150,000	\$150,000	Estimate assumes a managed care contracting specialist plus assistant.
9. Compensating physician leaders	\$190,000	\$190,000	Costs of compensating physician leaders for time away from practice. Assumes 2,500 hours at \$75 per hour.
Group II. Care Coordination, Quality Improvement and Utilization Management			
10. Disease registries	\$150,000	\$20,000	Costs shown here are to establish the initial registries manually then maintain them electronically. Quality-related staff costs are included in element 1.
11. Care coordination and discharge follow-up	\$300,000	\$3,000,000	Costs are modeled based on Catholic Medical Partners' care coordination program, where RNs are placed in each practice. Cost estimating parameters are 1 care coordinator per 350 patients with chronic conditions (works out to 1 coordinator for every 1.5 physicians) at \$75,000 per coordinator. Core staff costs are an additional \$300,000.

Continued

3 **INFRASTRUCTURE COST ESTIMATES FOR ACO PROTOTYPE B (ACO INCLUDES A 5-HOSPITAL SYSTEM WITH 1,200 INPATIENT BEDS, 250 PCPS, 550 SPECIALISTS), *CONTINUED***

Categories of Costs	Start up	Ongoing (Annual)	Comments
Group II. Care Coordination, Quality Improvement and Utilization Management			
12. Specialty-specific disease management	—	\$300,000	Specialty-specific disease program costs are accounted for in elements 1, 2 and 23. Costs shown here are for care coordinators in selected specialist offices.
13. Hospitalists	\$160,000	\$320,000	This estimate is the cost of two hospitalist FTEs. The New West case study suggests that substantial gains can occur with dedicated hospitalists. This estimate assumes that health systems will elect to re-orient their current hospitalists – adding an accountability line to the ACO and a re-designing the incentive structure – rather than adding a new hospitalist service. It is assumed that the resulting changes will cause the addition of two FTEs.
14. Integration of inpatient and ambulatory approaches in service lines	Included above	Included above	Costs are included in elements 1, 2 and 9. Additional costs – in the form of physician payments for co-managing inpatient services – may be incurred by the health system. However, these are assumed to be absorbed by the health system and offset by savings to the health system.
15. Patient education and support	—	\$100,000	Assumes a diabetic education program.
16. Medication management	—	\$100,000	A full-time pharmacist working with the primary care practices will cost about \$100,000 per year. This cost was not included under the umbrella organization.
17. Achieving designation as a patient-centered medical home	\$150,000	\$25,000	Achieving NCQA Level 1 certification for 15 primary care practices initially. This includes both NCQA fees and time of practice staff. As PCPs are added, and the group goes for Level III certification, the costs would be at least an additional \$25,000 per year.
Group III. Clinical Information Systems			
18. Electronic health record (EHR)	\$7,050,00	\$3,500,000	Assumes \$40,000 per physician for the PCPs who don't already have an EHR, and a similar amount for 20 specialists a year (those most closely aligned with the ACO) to get on an EHR. This analysis does not account for hospital investments in EHRs beyond connectivity to network components. It is assumed that the majority of hospitals will be implementing EHRs absent the formation of an ACO. Ongoing costs for upgrades and maintenance are estimated at \$10,000 per physician per year.
19. Intra-system EHR interoperability (hospitals, medical practices, other)	\$400,000	\$200,000	Ongoing costs are primarily for IT staff engaged in developing software interfaces and data warehouse enhancements, which could be contract staff engaged by the health system.
20. Linking to a health information exchange (HIE)	\$200,000	\$200,000	Cost estimate is based on the Catholic Medical Partners case study. Costs could increase over time as other sources of HIE funding (e.g., grants) become less available.

Continued

Categories of Costs	Start up	Ongoing (Annual)	Comments
Group IV. Data Analytics			
21. Analysis of care patterns	\$450,000	\$450,000	Costs shown here are for analytical software (e.g., Crimson, Analytics) and staff costs.
22. Quality reporting costs	\$100,000	\$100,000	One FTE plus support staff is assumed. Related costs of data warehouse enhancements are included above in element 19. Costs will likely be higher to meet Medicare ACO reporting requirements.
23. Other activities and costs	—	\$100,000	Costs reflect anticipated supplemental analyses not currently incurred by the case study organizations – e.g., predictive patient modeling.
Total	\$12,000,000	\$14,090,000	

Total infrastructure costs for ACO Prototype B are estimated to be \$12.0 million in start-up costs and \$14.1 million in ongoing costs.

SUMMARY AND IMPLICATIONS

At this time, how an ACO would actually operate is unknown, especially under the Medicare program because the final program design has not been determined. However, the case studies of New West Physicians, Metro Health, Memorial Hermann and Catholic Medical Partners – four organizations with different sizes and different approaches, operating in different environments – provide a useful starting point for making early assessments of the activities that need to be undertaken and the costs involved.

The costs of developing and sustaining ACOs are substantial. Our estimates for ACO Prototype A – an ACO developed by a one hospital system and including 80 primary care physicians and 150 specialists – are \$5.3 million in start-up costs and \$6.3 million in ongoing costs. Estimates for Prototype B are considerably higher. In addition to the large dollar investments involved, there is a substantial required investment in time, talent and organizational focus.

These activities and cost estimates are higher than the current budget of any one case study organization, in part because:

- The estimates combine the actions of multiple case study organizations. No one case study is engaged in all of the activities at this point in time.
- Cost mitigation factors (such as using federal stimulus funds to offset information technology, or allocating some costs to other budgets) have not been factored in.

Thus these estimates should be viewed as a starting point for planning, not as a budget.

The cost estimates include several elements that may be unexpected – e.g., the costs of adding and right-sizing primary care practices, making adjustments in the use of hospitalists, and adding care coordinators in physician offices. However, there is evidence that these activities produce substantial savings, improve quality, and can pay for themselves in a value-based reimbursement environment. In other words, ACOs engaging in the full range of activities can be expected to fare better than those that do not.

The sources of funds to offset these costs may come from multiple directions, for example:

- Some of the costs may have already been incurred and are already regarded as fixed costs; also a portion of the costs may come from other budgets. This may be especially common in cases where partially integrated health systems are the ACO sponsors.

- Some information technology costs can be offset by stimulus funds. Also, in the case studies, a portion of these costs is being incurred by member private practices rather than by the ACO.
- ACO sponsors/members can be expected to pay dues and make other investments. In the case studies, the investors include health systems and member physicians.
- Health plans (as the Catholic Medical Partners case study illustrates) may also be investors in some cases. Health plans stand to benefit substantially from ACO initiatives, not only in their value-based contracts but in their other contracts as well. As providers' practice patterns change, care for all patients (including those that continue under fee for service arrangements) tends to show quality improvements and cost reductions.
- Indications are that many of the costs (hospitalist adjustments are a good example) are excellent investments by the new ACO and pay for themselves under value-based reimbursement. In other words, performance-based reimbursement can more than offset these added costs.
- In the aggregate, over time, the net revenues from ACO contracts will need to offset a significant portion of the start-up and annual costs.

ACO organizers will need to develop their own situation-specific approach to the revenue and investment side of this equation. In almost every case, a combination of revenue and investment approaches will be required.

It is clear a large commitment is going to be required of the sponsors. Sponsors are going to have to make conscious decisions that the returns warrant this scale of investment. These investments are likely to be more attractive if: (a) the investments can be amortized over a high volume of contracts with value-based reimbursement (e.g., over commercial contracts as well as Medicare and Medicaid); and (b) the expectation is firm that ACOs are going to be required under future contracts.

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