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Transforming Care Case Study

University of Michigan Health System: *Case Management*

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The AAMC launched the Readiness for Reform (R4R) initiative in 2010 to support the nation's medical schools and teaching hospitals in implementing key elements of health care reform. R4R began with a voluntary institutionwide survey to assess members' level of preparedness for eight key focus areas of health reform: education, research/comparative effectiveness, payment reform, care delivery reform, community and patient engagement, access, quality, and health information technology (HIT).

The AAMC now supports a number of projects aimed at identifying and sharing best practices related to the R4R focus areas in member institutions. More information on the R4R initiative can be found at: www.aamc.org/initiatives/r4r.

This case study is one in a series that will highlight member success stories in the eight R4R focus areas.

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Background

University of Michigan Health System is a nationally regarded research-intensive academic medical center (AMC). Its clinical enterprise encompasses the university hospital, which has 42,000 admissions per year, and a large multispecialty faculty practice of 1,700 physicians, which receives 1.8 million visits per year. Its primary care clinical staff includes 180 physicians in general internal medicine, family medicine, geriatrics, and the women's health division of obstetrics. It is the premier university in a state that for decades enjoyed a largely unionized workforce with generous health benefits. Additionally it is located in a state whose commercial insurance market is dominated by Michigan Blue Cross Blue Shield, which has a progressive record in health care innovation and provided some of the resources incorporated into the University of Michigan Faculty Group Practice's infrastructure.

The health system was 1 of 10 Medicare Physician Group Practice (PGP) demonstration sites that consistently earned a performance payment in all five years of the demonstration. Most participants who earned performance payments achieved significantly lower costs in a number of common chronic diseases compared to the base period. This paper describes how Michigan attained these results.

The Faculty Group Practice began a substantial transformation starting in 1996, migrating from a traditional, departmentally oriented academic faculty practice to a true group practice. In stages over several years, the group practice took over the management of the practice and all of the hospital's clinics—primary care, specialty, and diagnostic outpatient services. The Faculty Group Practice took over the Cancer Center in 2001 and the Livonia Surgery Center in 2002 with spectacular results that convinced the health system leadership to turn over more of the clinic management to the group practice. Full responsibility for the clinics was assumed in 2006.

The Faculty Group Practice's leadership developed a common strategy for the entire practice. There was a concerted, conscious effort to break down departmental silos. Medical directors manage each clinic with significant autonomy. Each medical director receives a balanced scorecard on performance. Revenue is collected centrally, departments have been paid on an Relative Value Unit (RVU) basis since 2010, and overhead is shared. These changes in funds have enabled department collaboration in the creation of new multidisciplinary clinics staffed by multiple specialties and also have enabled primary care physicians and specialists to collaborate in the management of patients with complex chronic diseases. This fundamental change in the organization and management of the group practice enabled many of the initiatives described below, which contributed to the overall success of the demonstration.

Factor 1: Participate in demonstrations only if they align with system mission and strategy

The leadership of the Faculty Group Practice believed the future is heading in the direction of pay for performance and shared savings with payers, and therefore that the Faculty Group Practice needed to gain experience and capability in managing care more effectively. Decisions about participation were based on an overall strategic direction of improving cost and quality and toward

Six Factors for Success for Managing the Cost and Quality of Care



building a culture of improving care. Learning how to better manage care “was the right thing to do.” Leadership was not certain if the system would earn incentive payments, but they believed that they would learn valuable lessons from its participation. The prospect of earning financial benefit was welcomed but did not drive decisions.

Programs, tools, and techniques employed in the demonstration generally were applied to all patients (except where there was a sound programmatic reason not to¹) and used to create an environment where all such tools were seen as aids to patient care—not aids to a payer. The demonstration, and other payer-sponsored projects were seen “as part of an overall effort to improve care.” Additionally, while participation in individual programs had to be approved at the leadership level, no specific approvals needed to be sought at the practice level, thus obviating discussions among practicing physicians about the specific merits of a particular demonstration program.

Factor 2: Build a foundation using internal expertise and experience; build programs into the fabric of the system

Both leaders of the Faculty Group Practice had significant managed care experience prior to the demonstration. Carolyn Blaum, M.D., the designated project director, was the clinical director for the University of Michigan’s managed care company, M-Care, until it was sold to Michigan Blue Cross, and had extensive experience with managed care tools and techniques. The head of the Faculty Group Practice, David Spahlinger, M.D., was the medical director of the group practice’s Independent Practice Association (IPA), which took full capitation for 120,000 lives before it was sold prior to the demonstration. Michigan had already implemented, or had begun to implement, a number of capabilities early in the demonstration:

1 The only exception was the call-back program, which is targeted to Medicare, Medicaid, and the uninsured. Upper Peninsula patients also were excluded from the program.

- The Faculty Group Practice had already established a complex care management unit for Medicare, Medicaid, and uninsured patients, which provided a strong base on which to build. It is staffed by registered nurses, social workers, and patient care assistants; 13,000 patients are enrolled. Barriers to care are identified and addressed through multiple calls; patients with multiple comorbidities are identified, and clinical services are arranged; patients with untreated mental health issues are identified and put into treatment. Complex care management is organized centrally and makes post-hospital discharge telephone calls. Staff arrange for home care as needed. At times, staff from this program go to the clinic to discuss care management with physicians caring for these patients.
- Leadership has a strong impression that this program is working: It addresses common issues such as missed appointments and the correct use of medications. There was a 21 percent decline in 14-day readmissions for patients who received call-backs by the complex care management program in the first 6 months, compared to those who were not called. Given those results, all patients were called back after that. Additionally, a decline in 30-day readmissions was realized for patients who received all their care at the Faculty Group Practice. These declines have continued since the completion of the demonstration. The complex care management program has placed call-backs to Medicare, Medicaid, and uninsured patients discharged from the University of Michigan hospital (except to those patients in the upper peninsula of the state) and has made phone calls post-discharge to other patients of the ambulatory care centers.
- In the second year of the demonstration, the geriatrics clinic, which provides focused care for the elderly, began bringing geriatric faculty into local subacute facilities and offering an expanded inpatient consult service. This program started as an initiative of the geriatrics division. Five skilled nursing facilities took about 45-50 percent of discharges, with the balance going to more than 100 other facilities. Michigan placed four faculty members in the five facilities to manage care for every University of Michigan discharge to those facilities, about 200 patients in all. The faculty are deployed in a hospitalist model: they round seven days a week and are assisted during the week by five nurse practitioners. These physicians have access to University of Michigan Health System medical records and they help facilitate transfers as well as manage patients in the long-term care facilities. This program resulted in a large decrease in length of stay and a reduction in readmissions. Inpatient faculty were more comfortable discharging their patients earlier than they might have in the past, because the geriatric faculty were rounding at the skilled nursing facilities.
- There was also a focus on patients with End Stage Renal Disease. To avoid the complications and costs of catheter-related infections, a goal was set to have an A-V fistula, rather than a temporary catheter, used for every patient, whenever possible. Patients were identified early and sent to nephrologists for early vein mapping, so an A-V fistula could be created and allowed to mature before the patient needed dialysis.
- The geriatrics division launched a palliative care service and began to provide inpatient consultations during the second year of the demonstration. The program provides patients relief from pain and helps patients clarify end-of-life decisions.

- The Faculty Group Practice also had in place disease-specific registries that identified and tracked individuals: A diabetes registry was started in 2004, congestive heart failure and coronary artery disease registries were started in 2005 and 2006, respectively. A good portion of this care was provided initially by cardiologists and endocrinologists, as well as primary care physicians. Needed interventions are done by generalist care managers and the primary physician. A specific program in the complex care management program follows patients with congestive heart failure by telephone. Michigan, in contrast to other demonstration sites, did not outsource any disease management or care management to an outside proprietary firm. Two of the other demonstrations did this without savings.
- The emergency department (ED) implemented an admission diversion program called Choices, which was staffed by social workers and registered nurses to treat simple problems that did not need to be seen by a physician and to provide services after ED discharge. This program was suspended, because it did not have enough volume to merit its results. Adding patients from the hospital and clinic may add enough volume to make the program worth its cost in the future.
- The group implemented tools to measure performance against quality metrics with a designated data warehouse with ambulatory data, which was created outside the Electronic Medical Record (EMR) and outside the health system's overall data management system. Michigan itself did not gather data on costs. The Center for Medicare and Medicaid Services (CMS) provided claims for attributed patients and provided economic performance data at the end of each demonstration year. Michigan used post-hoc analysis to understand trends. CMS gathered quality using a sample of cases with data collected from the EMR and from chart reviews.

Factor 3: Build a complete care management system that addresses the entire disease spectrum and the entire continuum of care by leveraging knowledge and skill resources from payers, foundations, and professional societies

Michigan approached care management from two complementary perspectives:

1. Cover the common chronic diseases with tools and techniques specific to those diseases
2. Cover the full continuum of care, including inpatient, emergency department, subacute, and ambulatory. This approach stemmed from the belief of leadership that to “turn the ship” Michigan needed to take on the full spectrum of conditions across the entire continuum of care. To cover the entire continuum, the Faculty Group Practice built upon its internal resources by leveraging a number of outside resources:

Michigan's Blue Cross Blue Shield Patient-Centered Medical Homes initiative. The Faculty Group Practice began its participation in this program in the fourth year of the CMS PGP demonstration. The group put in place the Medical Home infrastructure requirements, which added important capability to succeed in the PGP demonstration.

The Medical Homes initiative enables the Faculty Group Practice to intervene in patient management at the point of service. Blue Cross's requirements include 24-hour access by extended hours or telephone; patient registries to track and monitor care; reporting and analyzing physician-level patient outcomes and patient satisfaction; providing screening and education on preventive measures; and providing electronic access to medical information and technical tools. There are 27 University of Michigan clinics certified in this program, and their success has been rewarded by Blue Cross Blue Shield with a 10 percent increase in evaluation and management (E&M) code reimbursement. The participation required staffing enrichment with advanced nurse practitioners, nurses, and pharmacists to see patients in the conventional manner as well as to do care management at the clinics. Patients are trained in self-care. Blue Cross Blue Shield of Michigan reports across the state reductions in admissions, ER visits, radiology usage, and an increase in the use of generic drugs.

Project BOOST, STAAR, and a new Blue Cross of Michigan initiative. The Faculty Group Practice participates in three 'best practice' discharge planning programs: Project BOOST (Better Outcomes for Older adults through Safe Transitions) is an initiative of the Society of Hospital Medicine (SHM). SHM has developed a bundle of steps to improve discharges and reduce readmissions. BOOST takes some of the best ideas of evidence-based practice for reducing readmission and spreads them across the health care team. It helps identify patients who are at high risk or poor outcomes through trigger criteria. The practices include assessing patient readiness for discharge, educating patients and family caregivers, carefully reviewing medication, and scheduling follow-up appointments. STAAR (State Action on Avoidable Rehospitalizations) is a program from the Institute for Health Improvement. Started in 2009, it works currently in four states, including Michigan. Like BOOST, it provides content reviews, process recommendations, an inventory of best practices, and suggested measurement strategies. Blue Cross has recently begun a statewide program, based on the BOOST toolkit, to reduce readmissions.

Factor 4: Create the right infrastructure at the point of service

Participation in the Medical Home project of Blue Cross—described above—helped Michigan add to capabilities at the practice level. The primary care group practice was redesigned. Each practice site has a medical director. Each site gets a scorecard on access, patient satisfaction, quality scores, and financials, all at the practice level. The medical director at each practice site is responsible for improving these scores.

Additional staff, including advanced nurse practitioners, social workers, pharmacists, and others were added to help manage recently discharged patients and patients with chronic illness. This additional care management staff will also be added to cardiology, pulmonary, and endocrine clinics. Electronic medical records were deployed to the practice sites. Call-backs for other than government-payer patients are done from the clinic.

Factor 5: Design and test interventions; discard them if they don't work.

Interventions were designed, tried, and kept or dropped based on whether they were working. There was no "conventional wisdom" about what the interventions must be. Thus, the team tried

early modeling to predict who was going to be assigned to them, or to predict who might need supports. This intervention was not successful and it was dropped. The team tried pharmacist-led interventions at discharge for patients taking multiple drugs. This didn't work either and was dropped. Siloed specific disease management programs didn't work and they also were dropped, but disease-specific registries were retained to help physicians and care managers manage patients. A program in the emergency room to divert patients—described above—was tried and dropped for lack of adequate volume.

Factor 6: Focus on what is immediately important for the patient

Michigan consistently achieved high quality scores in the demonstration, but the focus for the practicing physician at each visit was on what that patient needed at that visit, rather than on the quality report card. Michigan provides twice a year report cards on 32 quality measures and this information is placed in the patient's chart just behind the billing sheet, so the physician is sure to see and act on it.

It is noteworthy that while almost all participants in the CMS demonstration scored very high on the 32 required quality metrics—most were around indicia of good management of chronic illness and evidence-based preventive techniques—only a small subset of participants actually earned incentive, including Michigan. Leadership believes this resulted from the combination of programs described above, including a relentless focus on what was important to patients as each was seen in clinic. In addition, the Faculty Group Practice generated exception reports for those patients who did not come to clinic, alerting physicians to call these patients in for needed preventive measures or management of their disease.

Under the terms of the demonstration, some patients who were seen for a single episode of care were attributed to the University of Michigan. Many of these were single episodes for a major intervention—a surgical procedure or other treatment available only at a tertiary center. However, Michigan reduced expenditures during the study period. One leader at Michigan attributes part of that success to having a program for every high-risk group—dual eligibles, frail elderly, patients at risk in transition, patients needing palliative care. Focusing on the sickest patients and focusing on what they needed at each encounter is believed to have contributed to the success of the program in reducing expenditures.

Michigan uses a homegrown electronic medical record for both inpatient and outpatient services and a commercial order entry program. The homegrown program has limited ability to capture data. Michigan is converting to EPIC for its clinics to improve its data-gathering capability.

Outcomes

Description of the Demonstration. The University of Michigan participated in a five-year CMS demonstration project, the PGP Demonstration, which in part motivated the adoption of a number of the programs, tools, and techniques described above. The demonstration sought to show ways in which organized health care delivery systems—including multispecialty groups, community-based integrated delivery systems, and academic centers—could reduce the overall cost of care to Medicare beneficiaries.

The objectives were to encourage coordination of care and to encourage investment in administrative structures and processes to ensure efficient service delivery. There were 10 participants, including two academic medical centers: University of Michigan and Dartmouth-Hitchcock Clinic; two multispecialty groups: Marshfield Clinic in Wisconsin and Everett Clinic in Washington State; five integrated delivery systems: Billings Clinic in Montana, Geisinger Health System in Pennsylvania, Forsyth Medical Group in North Carolina, Park Nicollet Clinic in Minneapolis, and St. John’s Clinic in Missouri; and a network model, Middlesex Health System in Connecticut.

Patients were not enrolled but were attributed to sites based on whether they received a plurality of their office or other outpatient E&M services at a PGP site during the year. Each site had a control group, drawn from the same geographic area. Targets were established based on expenditures for attributed beneficiaries in a base year, inflated by the growth rate of the control group.

Savings were defined as the difference between the target and the actual, with the requirement that savings exceed 2 percent of the base year. For the Michigan demonstration, this amounted to \$5.4 million per year. Part A and Part B expenditures were included. CMS kept 20 percent of the savings accrued, and the demonstration sites received 80 percent. The amount the site received could be attenuated if quality measures were not met. An increasing share of the performance payments were based on whether quality targets were met: 30 percent in the first year, 40 percent in the second year, and 50 percent in the third and fourth years. Quality was measured based on 32 ambulatory care measures covering five common chronic medical conditions.

Strategies. Most of the sites, including Michigan, undertook a number of steps including evidence-based protocols, adherence to quality protocols through disease management programs, patient registries, provider education and feedback, and implementation of health care information technology. Based on an outside evaluation report, strategies adopted are shown in the table below.

Entity	Disease Mgt	High Risk Care Mgt	Transitions	Stratification & Targeting at POS	Palliative Care	Registry	AdvNurse Pract	Rx tracking	EMR impt tool
Billings	x					x	x	x	X
Dartmouth		x		x		x	X		
Everett		x		x	X		X		
Forsyth				x					X
Geisinger	x			x		x			X
Marshfield	x	X						X	
Middlesex	x		x					X	
Park Nicollet	x			x		x	X		
St Johns				x		x			
Michigan	x	x	x	x	x	x	X		(x)

Abstracted from narrative in Trisolini, Medicare Group Practice Demonstration, Commonwealth Fund, 2006.



Results. A summary of the quality performance and savings results are shown in the table below.

Entity	Quality Percentage					Shared Savings Payments (\$m)				
	PY1	PY2	PY3	PY4	PY5	PY1	PY2	PY3	PY4	PY5
Billings	90.91	97.78	98.11	92.45	100.00					
Dartmouth	95.45	97.78	92.45	94.34	92.23		6.7	3.6	0.3	
Everett	86.36	95.56	94.34	94.34	100.00		.1			
Forsyth	100.00	100.00	96.23	96.23	100.00					
Geisinger	72.73	100.00	100.00	100.00	100.00			2.0	1.8	
Marshfield	81.82	100.00	98.11	100.00	98.11	4.6	5.8	13.8	16.2	15.8
Middlesex	86.36	95.56	92.45	94.34	100.00					
Park Nicollet	95.45	97.78	100.00	100.00	100.00					5.6
St. Johns	100.00	100.00	96.23	98.11	100.00			3.1	8.2	2.6
Michigan	95.45	100.00	94.34	96.23	98.11	2.8	1.2	2.8	5.2	5.3

From RTI International, the outside evaluation vendor for CMS.

It is not entirely certain what set of programs, care management techniques, and other interventions resulted in Michigan, Marshfield, and Dartmouth earning the large preponderance of shared savings during this demonstration. While all participants achieved high quality scores, the quality scores do not appear to correlate with shared savings. Secondly, the high earners include two academic centers but also one community-based group practice. Based on written reports, Michigan appears to have the broadest and most robust set of interventions of all the programs. It is also worth noting that this demonstration compares demonstration site performance to a local, not a national growth rate (unlike the accountable care organization [ACO] regulations). For Michigan, the growth rate was 4 percent; but for others, it was reported to be higher, thus affording others an “easier” target to hit.

Further, during the course of the demonstration, enrollment in Medicare Advantage programs in the area increased dramatically, from 3 percent in the first year of the demonstration to 25 percent in the fourth year. Typically Medicare Advantage enrollees are younger and healthier. The exclusion of these beneficiaries made achievement of the targets all the more difficult. A recent CBO report² claimed that there was an increase in the risk score for the demonstration population due to up-coding, and a portion of savings was attributed to increased risk scores. Leadership at Michigan reports that savings would have been achieved even without an increase in the risk score.

Notwithstanding the above, one can infer these hypotheses:

- High-risk care management, targeting selected patients at the point of service, and a robust transitions/subacute program seem to be important capabilities. Michigan targeted high-

2 Nelson L. Lessons from Medicare’s demonstration projects on disease management, care coordination, and value-based payment. CBO Issue Brief. 2012 Jan 18. Available at <http://www.cbo.gov/doc.cfm?index=12663>. Downloaded Jan 25, 2012; Nelson L. Working Paper 2012-01: Lessons from Medicare’s demonstration projects on disease management and care coordination. 2012 Jan. Available at <http://www.cbo.gov/doc.cfm?index=12664>. Downloaded Jan 25, 2012.

risk patients in a number of ways: through its high-risk care management program, through targeting specific interventions at clinic visits, and through a robust transition and sub-acute program. Most institutional participants in the Medicare demonstration that did not achieve shared savings did not describe specific programs of care management, discharge planning, or management of high-risk patients. Indeed, the CBO Issue Brief previously cited compares programs that had both in-person and telephone contact with such patients with programs that had only telephone contact with patients. The former set of programs reduced hospitalization; the latter did not. Thus, Michigan's combination of its complex care management program (largely telephone-based with some in-person visits) with treatment at clinics with a focus on what the patient needs at the time of service seems to be borne out by CBO's analysis.

- Academic medical center status implies a greater capability to manage high-risk complicated patients. Indeed, at Michigan, a large number of patients with congestive heart failure and diabetes were co-managed in both primary care and specialty clinics. Faculty Group Practice leaders believe this co-management practice to be superior to care provided solely by either primary care physicians or specialists. In addition, the specific disease management programs, where present at a demonstration site, varied in the breadth (number of diseases covered) and the robustness of the management of the disease. Michigan appears to have one of the stronger disease-management programs among the sites.

Lessons learned

In addition to the key success factors above, other lessons learned include:

The need for contemporaneous, accurate data on expenditures. In this demonstration, the participating institutions were flying blind, because data came at the end of each year, too late to act on. The best that University of Michigan could do was to look at trends in the data retrospectively. The CBO Brief endorses this view, stating “programs that collected timely data on when their patients’ health problems developed or became exacerbated and where they were treated seemed better able to coordinate and manage their patients’ care. Those efforts could be strengthened if CMS improved its capability to provide programs with timely data on their patients’ use of services.”

Attribution of patients for the demonstration included many patients who had only a single contact with the university; in such cases, the university had limited control over these patients’ routine and ongoing care. Any institution planning to enter an ACO-type arrangement needs to look critically at the rules for attribution in such an arrangement.

Engagement of specialists. While primary care physicians were the main focus of attention in physician engagement, specialists were not engaged at the outset. Leadership worked on this issue through specific presentations at specialist gatherings, and specialists got more involved during the demonstration. Ambulatory medicine subspecialists were engaged through the quality process—e.g., cardiology and endocrine. Surgeons were less involved. Nevertheless, a set of patients with complex chronic diseases were co-managed by primary physicians and specialists. In the primary



care clinics, care was team-oriented. The CBO Brief points out that successful demonstration used team-based care.

Academic medical center culture. Organizational culture of AMCs is not the same as at clinically oriented systems such as Marshfield, Geisinger, or Park Nicollet. Academic centers tend to be somewhat more siloed, making cross-cutting- initiatives more challenging. Michigan preemptively dealt with this issue by the transformation of its group practice, described at the beginning of this case study. Certain practices, such as permitting emergency medicine physicians to admit, rather than have hospitalists evaluate and potentially reject admissions, may negatively affect performance. On the positive side, academic centers have much stronger capabilities in managing seriously ill patients, and specialists were mobilized to this end, including not only the specialists involved in chronic disease management, but also geriatricians in the transition program, palliative care for management of seriously ill patients, nephrologists anticipating the need for AV fistulas, and others. The CBO report supports this, saying that programs that targeted interventions to high-risk enrollees, those at greatest risk of hospitalization, appeared to have fewer hospital admissions. Michigan’s targeting of such patients and bringing to bear its considerable specialty expertise in the management of such patients—was supported by CBO’s findings across the demonstration. Any academic institution undertaking the management of a population—such as in this demonstration—will need to be cognizant of both the strengths and the limitations of working in an academic culture and will need to devise ways to mitigate the limitations and take full advantage of the strengths. In particular, in this case, the ability to mobilize geriatrics for the subacute facility program and get a palliative care program going and applied to the management of high-risk patients was a definitive asset.



