THE COMMONWEALTH FUND

Case Study

Case Study Series Introduction and Overview • July 2010

The Triple Aim Journey: Improving Population Health and Patients' Experience of Care, While Reducing Costs

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ABSTRACT: Case studies of three organizations participating in the Institute for Healthcare Improvement's Triple Aim initiative shed light on how they are partnering with providers and organizing care to improve the health of a population and patients' experience of care while lowering—or at least reducing the rate of increase in—the per capita cost of care. The organizations—CareOregon, a nonprofit managed health care plan serving low-income Medicaid enrollees; Genesys Health System, a nonprofit integrated delivery system in Flint, Mich.; and QuadMed, a Wisconsin-based subsidiary of printer Quad/Graphics that develops and manages worksite health clinics and wellness programs—were selected to illustrate diverse approaches. Lessons from these organizations can guide others who wish to undertake or promote transformation in health care delivery.

The mission of The Commonwealth Fund is to promote a high performance health care system. The Fund carries out this mandate by supporting independent research on health care issues and making grants to improve health care practice and policy. Support for this research was provided by The Commonwealth Fund. The views presented here are those of the authors and not necessarily those of The Commonwealth Fund or its directors, officers, or staff.

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Commonwealth Fund pub. 1421
Vol. 48

INTRODUCTION TO THE TRIPLE AIM

In October 2007 the Institute for Healthcare Improvement (IHI launched the Triple Aim initiative, designed to help health care organizations improve the health of a population patients' experience of care (including quality, access, and reliability while lowering—or at least reducing the rate of increase in—the per capita cost of care. [1] Pursuing these three objectives at once allows health care organizations to identify and fix problems such as poor coordination of care and overuse of medical services. It also helps them focus attention on and redirect resources to activities that have the greatest impact on health.

Without balanced attention to these three overarching aims, health care organizations may increase quality at the expense of cost, or vice versa. Alternatively, they may decrease cost while creating a dissatisfying experience for patients. Many problems that health care systems face can be linked to one or more of these objectives. Problems like supply-driven care, preventable

readmissions, and overbuilding may represent a failure on all three counts.

While easy to understand, the Triple Aim is a challenge to implement. Various forces and traditions have encouraged physicians and hospitals to focus on acute and specialized care over primary and preventive care and to think narrowly about care for particular conditions or episodes of care for individual patients, without considering the health of a population.

To achieve the Triple Aim, health care organizations must broaden their focus to organize care to meet the needs of a defined population. Payers, especially those with little direct influence on health outcomes and patient satisfaction, find they must forge new kinds of partnerships with providers. Success requires a willingness to take on new roles and a commitment to honest self-appraisal—otherwise it is easy for health care organizations to continue to work on

Exhibit 1. Overview of Triple Aim Case Study Sites

	CareOregon	Genesys Health System	QuadMed
Macro-integrator	Oregon-based nonprofit managed health care plan serving Medicaid enrollees, including those dually eligible for Medicare	A nonprofit integrated health care delivery system based in metropolitan Flint, Michigan, and surrounding Genesee County.	A Wisconsin-based subsidiary of printer Quad/Graphics that develops and manages worksite health clinics
Micro-integrators	Safety-net medical clinics operated by a public health department, a local hospital system, and federally qualified health centers and similar community organizations	Primary care providers affiliated with the Genesys Physician–Hospital Organization, Genesee Health Plan (a tax-supported nonprofit serving the uninsured), and other community organizations	Teams of workplace-based primary care providers and wellness volunteers
Targeted population	Low-income patients, including those with complex chronic conditions, who are served by safety net clinics	1) Patients who receive all or most of their health care through Genesys Health System and its affiliated physicians 2) Low-income uninsured county residents who receive basic health care through Genesee Health Plan	Employees, family members, and some retirees of Quad/Graphics and other companies that contract for services from QuadMed
Care model	1) Fostered the development of patient-centered medical homes in safety-net clinics (known as Primary Care Renewal) 2) Developed a multidisciplinary case management program (known as CareSupport) to help high-risk members find community-based resources, resolve difficult behavioral issues, and improve self-management	1) Engaged community-based primary care providers in a physician–hospital organization that emphasizes care coordination, preventive health, and efficient use of specialty care 2) Promotes health through the use of health navigators, who support patients in adopting healthy lifestyles to prevent and manage chronic disease 3) Partnered with a county health plan to extend access to primary care and other basic services to low-income, uninsured county residents	1) Developed worksite clinics that place a high priority on patient health and convenience by organizing care around prevention and outcomes rather than production (i.e., the volume of work or number of patients seen in a day) 2) Use of wellness programs to promote physical activity, weight loss, smoking cessation, and early identification of chronic diseases

objectives that play to their existing strengths and neglect those that do not.

In developing the first phase of the Triple Aim initiative, IHI sought out organizations that could serve as prototypes of "macro-integrators" by linking providers across a continuum of care to optimize service for a defined population. Each of these organizations demonstrated a commitment or willingness to bring together different constituencies—including nursing and medicine, medical care and public health, and specialty care and primary care physicians—to accomplish the Triple Aim's goals. These objectives are carried out at the frontlines by "micro-integrators"—the care providers and teams or community organizations that interact with individual patients and families.

The first group of macro-integrators in the Triple Aim initiative, which began in October, 2007, represented a broad spectrum of health care organizations in the United States, England, and Sweden. It included 15 hospital-based systems, health plans, integrated health systems, public health care departments, safety-net systems, employers, social service agencies, and single-payer national systems. In the summer of 2008, participation in the initiative expanded to 40 organizations, including sites from the U.S. and abroad. In March 2010, IHI embarked on the fourth phase of the project. There are now 60 sites from all over the world participating in the initiative (Exhibits 2 and 3).

IHI helped the participating organizations translate the Triple Aim concept into a specific plan for

Exhibit 1. Overview of Triple Aim Case Study Sites (continued)

	CareOregon	Genesys Health System	QuadMed
Early results	• CareSupport yielded savings of $5,000 per-member, per-year for high-risk patients through better coordination of care, while maintaining or slightly improving their quality of life. • Implementation of patient-centered medical homes in safety-net clinics was associated with improved continuity of care, health screenings, and chronic care management (e.g., 7 percent increases in the proportion of patients with controlled blood pressure and of patients with controlled diabetes during one year). • As a likely result of both interventions, median monthly costs were 9 percent lower for dually eligible patients who received care in medical home pilot sites versus traditional care sites.	• A study by General Motors found the automaker spent 26 percent less on health care for enrollees who received services from Genesys-affiliated physicians versus local competitors. • Use of the hospital, emergency department, and high-tech imaging services were lower than state averages for similar physician groups participating in an insurer's pay-for-performance program. • Use of health navigators among low-income, uninsured patients enrolled in a county health plan improved health behaviors of at-risk patients e.g., 53 percent increase in physical activity among those who were inactive, 17 percent quit rate among smokers, 80 to 90 percent increases in disease self-management by formerly unengaged diabetic patients) and has contributed to a 50 percent reduction in hospital admissions and emergency department visits.	• Worksite wellness programs have achieved increasing participation among Quad/Graphics employees, with about one-quarter achieving health goals that qualify them for incentives. • Diabetes care management has led to a reduction in average blood sugar levels (average HbA1c of 7.5 vs. 8.0). • Offering worksite clinics has been associated with increasing satisfaction with care among Quad/Graphics employees, while the quality of care in QuadMed's clinics meets or exceeds national benchmarks for employers. • Quad/Graphics' employee health care costs have increased at a slower pace than for other midwestern employers (6 percent versus 8.3 percent per year since 1999), and were 31 percent lower in 2008 after adjusting for differences in demographics and benefit design.

Source: Case study authors' synthesis of information from study sites.

Exhibit 2. U.S. Triple Aim Sites, Phase IV: March 2010–November 2010

Health plans	Blue Cross Blue Shield of Michigan (MI) Capital Health Plan (FL) CareOregon (OR) Essence Healthcare (MO) UPMC Health Plan (PA)
Integrated delivery systems (with health plans)	Caromont Health System (NC) HealthPartners (MN) Kaiser Permanente, Mid-Atlantic Region (MD) Martin's Point Health Care (ME) Presbyterian Healthcare (NM) Southcentral Foundation (AK) Vanguard Health System (TN) Wellstar Health System (GA)
Integrated delivery systems (without health plans)	Allegiance Health (MI) Bellin Health (WI) Bon Secours–St. Francis Health System (SC) Caldwell Memorial Hospital (NC) Cape Fear Valley (NC) Cascade Healthcare Community Inc. (OR) Cincinnati Children's Hospital Medical Center (OH) Erlanger Health System (TN) Fort Healthcare (WI) Genesys Health System (MI) University of Chicago—Urban Health Initiative (IL) Taconic IPA (NY)
Safety-net institutions	Contra Costa Health Services (CA) Health Improvement Partnership of Santa Cruz County(CA) Nassau Health Care Corp. (NY) North Colorado Health Alliance (CO) Primary Care Coalition Montgomery County (MD) Queens Health Network (NY) Regional Primary Care Coalition (MD)
Government	Dept. of Defense (DC)
Social services	Common Ground (NY)
State initiative	Vermont Blueprint for Health (VT)
Employers/businesses	QuadGraphics/QuadMed (WI)

Source: Institute for Healthcare Improvement

Exhibit 3. International Triple Aim Sites, Phase IV: March 2010–November 2010

Australia	State of South Australia Ministry of Health
Canada	Central East LHIN Quality Improvement and Innovation Partnership Hamilton LHIN Saskatchewan Ministry of Health British Columbia Team
England	NHS Blackburn with Darwen PCT (NW England) NHS Blackpool PCT (NW England) NHS Bolton PCT (NW England) NHS Bury PCT (NW England) NHS Central Lancashire PCT (NW England) NHS East Lancashire Teaching PCT (NW England) NHS Eastern and Coastal Kent PCT (South East Coast England) NHS Heywood, Middleton and Rochdale PCT (NW England) NHS Knowsley PCT (NW England) NHS North Lancashire Teaching PCT (NW England) NHS Medway (South East Coast England) NHS Oldham PCT (NW England) NHS Salford PCT (NW England) NHS Sefton PCT (NW England) NHS Somerset PCT (SW England) NHS Stockport PCT (NW England) NHS Swindon PCT (SW England) NHS Torbay Care Trust (SW England) NHS Wirral PCT (NW England)
New Zealand	New Zealand Ministry of Health
Northern Ireland	Western Health and Social Care Trust
Scotland	NHS Forth Valley NHS Tayside
Singapore	National Healthcare Group
Sweden	Jönköping

NHS = National Health Service; PCT = Primary Care Trust; LHIN = Local Health Integration Network.
Source: Institute for Healthcare Improvement.

change. This required each organization to first define the population on which to focus testing and learning activities. Then, each participating site was asked to develop measures of per capita cost, experience of care, and health status for that population. The process shifted the focus away from individual institutions and providers—and their outcomes—to population health. IHI encouraged participants to adapt five principles when designing a new model of care (Exhibit 4):

1. Involve individuals and families when designing care models;
2. Redesign primary care services and structures;
3. Improve disease prevention and health promotion;
4. Build a cost-control platform; and
5. Support system integration and execution.

Overview of the Case Studies

The three case-study organizations taking on the role of macro-integrators are:[2]

1. ***CareOregon***: An Oregon-based nonprofit managed health care plan serving low-income Medicaid enrollees, including those dually eligible for Medicare.

2. ***Genesys Health System***: A nonprofit integrated delivery system located in metropolitan Flint, Michigan, and surrounding Genesee County.

3. ***QuadMed***: A Wisconsin-based subsidiary of printer Quad/Graphics that develops and manages worksite health clinics and wellness programs.

CareOregon partnered with safety-net clinics to optimize care for low-income enrollees by developing two innovative programs: a patient-centered medical home initiative in safety-net clinics and a multidisciplinary case management program for members at high risk of poor health outcomes. The health plan engaged its independent providers in carrying out these programs by creating learning communities through which the providers could acquire, share, and practice techniques to realize the objectives of the Triple Aim. By partnering with health care providers to create and pursue a common vision for improving primary care delivery, CareOregon is transforming its role from a payer to an integrator of care on behalf of its members.

Genesys Health System partnered with its affiliated physician–hospital organization and a tax-supported county health plan for the uninsured to develop a model of care known as HealthWorks. HealthWorks embodies the Triple Aim's unifying macro-integrator function through three key elements: 1) engaging community-based primary care physicians in a physician–hospital organization that emphasizes the importance of primary care and makes more efficient use of specialty care; 2 promoting health through the deployment of health navigators, who support patients in adopting healthy lifestyles to prevent and manage chronic disease; and 3) partnering with community organizations to extend the goals of the model to the entire local population.

QuadMed created worksite clinics for Quad/Graphics' employees (and family members that emphasize patient health and convenience. Those who elect to use the clinics are offered a full range of primary care, dental and vision care, and occupational medicine, with referrals to a high-performance specialty care network. The company also introduced wellness programs and offered employees incentives to use them and has worked to improve coordination of care for patients who are hospitalized. By proactively organizing care for employees so that it is oriented toward prevention and outcomes rather than production i.e., the volume of work or number of patients seen in a day), Quad/Graphics—through QuadMed—has transformed its role from a purchaser of health insurance to an "investor" in employee health and productivity.

Exhibit 4. Triple Aim Design Principles

1. Involve individuals and families when designing care models by:
   - finding new ways to inform individuals and their families about the determinants of health and the benefits and limitations of health care practices and procedures;
   - working to change the "more is better" culture through transparency, education, and communication; and
   - employing shared decision-making with patients and communities.
2. Redesign primary care services and structures by:
   - using teams to deliver basic services;
   - developing shared plans of care;
   - better coordinating care with specialists and hospitals;
   - improving access through scheduling; and
   - enhancing connections to community resources.
3. Improve population health management by:
   - segmenting the population and deploying resources to high-risk individuals or other groups;
   - working with community on health promotion; and
   - executing strategies to reduce variations in outcomes and variations in practice.
4. Control costs by:
   - assuring that payment and resource allocation support Triple Aim goals;
   - introducing yearly initiatives to reduce waste; and
   - rewarding providers for their contribution to better health for the population.
5. Support system integration and execution by:
   - matching capacity and demand for social services across suppliers;
   - ensuring that strategic planning execution with all suppliers including hospitals and physician practices are informed by the needs of the population;
   - developing a system for ongoing learning and improvement; and
   - customizing services based on the appropriate segmentation of the population.

Source: Institute for Healthcare Improvement.

Measuring Success

The IHI's Triple Aim initiative encourages participants to adopt robust measures of outcomes in achieving each of three aims: population health, patient experience, and per capita cost of care Exhibit 5 . The case study sites used a variety of recognized performance indicators and also developed unique metrics (sometimes adapted from other Triple Aim sites) to capture goals and concepts particular to their care models. These homegrown metrics created a dilemma for sites: they better met local needs but did not allow for direct comparison to external benchmarks. As the experience of Triple Aim sites accumulates, new standards might be developed to measure common concerns across sites and settings.

Exemplary results at the study sites have included enhanced access to care, high or improving satisfaction with care, and increases in preventive care, chronic disease management, and healthy behaviors. These improvements have contributed to lower use of resources such as the hospital and emergency department, and to lower overall costs of care for defined populations.

Exhibit 5. Example of Triple Aim Outcome Measures

Dimension	Potential Measure
Population health	1. Health/functional status: single-question (e.g., from the Center for Disease Control and Prevention's HRQOL-4 "Healthy Days Core Module") or multi-domain (e.g. SF-12 or EuroQol surveys) 2. Risk status: composite health risk appraisal score 3. Disease burden: summary of the prevalence of major chronic conditions; summary of predictive model scores 4. Mortality: life expectancy; years of potential life lost; standardized mortality rates. (Healthy life expectancy combines life expectancy and health status into a single measure, reflecting remaining years of life in good health.)
Patient experience	1. Standard questions from patient surveys, for example: a. Global questions from the Consumer Assessment of Healthcare Providers and Systems or How's Your Health surveys b. Experience questions from National Health Service's World Class Commissioning or CareQuality Commission c. Likelihood of patient to recommend provider 2. Set of measures based on key dimensions (e.g., Institute of Medicine Quality Chasm aims for improvement: care that is safe, effective, timely, efficient, equitable and patient-centered)
Per capita cost	1. Total cost per member of the population per month 2. Hospital and emergency department utilization rate

Source: Institute for Healthcare Improvement.

Key Insights

The unique journeys taken by the Triple Aim case study sites highlight the importance of local context as a critical factor in implementing the Triple Aim initiative. On the other hand, common concerns and shared elements across Triple Aim organizations illustrate the fact that the approaches are replicable across care settings with appropriate adaptation. For example, all three sites engaged physicians and other providers (whether employed, contracted, or affiliated) in new ways of delivering care through extrinsic and intrinsic motivators that helped them internalize the goals of Triple Aim.

The methods these organizations used to achieve Triple Aim goals build and expand upon traditional quality improvement and change management techniques to achieve broad system redesign goals, some of which have antecedents in the chronic care model.[3] Many relied on fostering a culture of mutual accountability through transparency in measurement, applying evidence-based standards to improve the quality of care, improving access to primary care and enhancing coordination of care at the patient level, using payment incentives to support patient and provider behavior changes, connecting patients to community resources to meet nonmedical needs, and adapting techniques from other sectors to support more reliable processes.

The distinguishing factor was a population-based approach, which requires building a strong partnership between the macro-integrator organization health plan, health system, purchaser and the micro-integrators (care providers or community organizations to evaluate whether resources were being optimally deployed to meet population needs. It is through these decisions and discussions that defects and perverse incentives can be addressed and cured. As an example, Genesys Health System consolidated and "right-sized" its hospital bed capacity to reduce oversupply in the community. It is now focusing on increasing primary care capacity to support more efficient and effective

care, including support for healthy behaviors that reduce the need for expensive acute and specialty care.

CONCLUSION

As more organizations adopt the goals of Triple Aim and share unique and successful approaches to the challenging problems of coordination of care, chronic disease management, and preventive health, the program is likely to yield more innovations that can be extended to a variety of settings. With time, evidence is likely to accumulate on the effectiveness of such models in improving population health, controlling costs, and improving patients' experience of care. With that combination of experience and evidence, the programs they have pioneered may become more commonplace.

NOTES

[1] Background on the Triple Aim was derived from: D. M. Berwick, T. W. Nolan, and J. Whittington, "The Triple Aim: Care, Health, and Cost," *Health Affairs,* 2008 27(3 : 759–69; Institute for Healthcare Improvement, "The Triple Aim: Optimizing Health, Care, and Cost," *Healthcare Executive*, Jan/Feb 2009: 64-66; and presentations and materials from the Institute for Healthcare Improvement's seminar, *The Triple Aim: Optimizing Health Care Resources for the Good of a Population,* October 29–30, 2009, Boston, Mass.

[2] The information provided on the case study sites was obtained from site visits, interviews and e-mail communications with organizational leaders (recognized in the acknowledgments , the organizations' Web sites, presentations and internal documents provided by the organizations, and other publicly available sources.

[3] E. H. Wagner, B. T. Austin, M. Von Korff, "Organizing Care for Patients with Chronic Illness," *Milbank Quarterly*, 1996 74(4):511–44.

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Acknowledgments

The authors are grateful to the following individuals who generously provided their time and information for this case study series: David Ford, CareOregon's CEO; David Labby, M.D., Ph.D., CareOregon's medical director; Rebecca Ramsay, M.P.H., senior manager of CareSupport and clinical programs at CareOregon; Debra Read, M.P.H., CareInnovations program evaluation coordinator at CareOregon; Amit Shah, M.D., medical director of Multnomah County Health Department; Susan Kirchoff, R.N., director of clinical operations for the Multnomah County Health Department; Melinda Muller, M.D., Legacy Health's senior medical director of primary care; Mark Taylor, CEO of Genesys Health System; Trissa Torres, M.D., M.S.P.H., F.A.C.P.M., medical director of Genesys HealthWorks; Mike James, president and CEO of Genesys Physician Hospital Organization (PHO); Ann Donnelly, senior vice president of administration and medical management for the PHO; Dhiraj Bedi, D.O., a family practice physician affiliated with the PHO; Erin Conklin, project manager at Genesys HealthWorks; Linda Hamacher, executive director of Genesee Health Plan; Teresa Dehmel, Ruth Anne Harmes, and Jemeka Thomas, health navigators at Genesee Health Plan; Thomas Simmer, M.D., chief medical officer of Blue Cross Blue Shield of Michigan; Raymond Zastrow, M.D, QuadMed's president; Thomas Van Gilder, M.D., J.D., M.P.H., medical director for quality initiatives; John Neuberger, QuadMed's vice president of operations; and Diane Collelo, R.N., certified diabetes educator at QuadGraphics.

We also thank Carol Beasley, M.P.P.M, Madge Kaplan, and Val Weber at the Institute for Healthcare Improvement for their collaboration in developing the project and recruiting the case study sites. We acknowledge David B. Nash, M.D., M.B.A., F.A.C.P., dean of the Jefferson School of Population Health and the Dr. Raymond C. and Doris N. Grandon Professor of Health Policy at Thomas Jefferson University, for helpful external review of the QuadMed report. At The Commonwealth Fund, we thank Anne-Marie Audet, M.D., M.Sc., for guidance of the project, Cathy Schoen, M.S., Melinda Abrams, M.S., and other reviewers for helpful comments; and the communications team for their support of this project.

Editorial support was provided by Deborah Lorber.

This study was based on publicly available information and self-reported data provided by the case study institution s). The Commonwealth Fund is not an accreditor of health care organizations or systems, and the inclusion of an institution in the Fund's case studies series is not an endorsement by the Fund for receipt of health care from the institution.

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