The Triple Aim: Care, Health, And Cost

The remaining barriers to integrated care are not technical; they are political.

by Donald M. Berwick, Thomas W. Nolan, and John Whittington

ABSTRACT: Improving the U.S. health care system requires simultaneous pursuit of three aims: improving the experience of care, improving the health of populations, and reducing per capita costs of health care. Preconditions for this include the enrollment of an identified population, a commitment to universality for its members, and the existence of an organization (an "integrator") that accepts responsibility for all three aims for that population. The integrator's role includes at least five components: partnership with individuals and families, redesign of primary care, population health management, financial management, and macro system integration. [*Health Affairs* 27, no. 3 (2008): 759–769; 10.1377/hlthaff.27.3.759]

CONGESTIVE HEART FAILURE (CHF) is the most common reason for admission of Medicare patients to a hospital.[1] Sadly, 40 percent of Medicare patients discharged after admission for CHF are readmitted within ninety days, even though well-designed demonstration projects have shown for years that that rate can be reduced by more than 80 percent with proper management of patients.[2] Patients experience this reactive system as one providing poor service and lacking memory. Caregivers experience frustration, despite their best efforts.

■ **U.S. health system scorecard.** CHF care is not an isolated case. It is a prime example of what goes wrong when a health care system lacks the capacity to integrate its work over time and across sites of care. The recent "Scorecard" from the Commonwealth Fund Commission on a High Performance Health System gives the U.S. health care system an overall score of 66 percent, with 100 percent referring to the top decile of known performance.[3] The commission notes that even though U.S. health care expenditures are far higher than those of other developed countries, our results are no better. Despite spending on health care being nearly double that of the next most costly nation, the United States ranks thirty-first among nations on life expectancy, thirty-sixth on infant mortality, twenty-eighth on male healthy life expectancy, and twenty-ninth on female healthy life expectancy.[4] As a side effect of the

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cost burden, the United States is the only industrialized nation that does not guarantee universal health insurance to its citizens. We claim we cannot afford it.

■ **Care improvement efforts.** Most recent efforts to improve the quality of health care have aimed to reduce defects in the care of patients at a single site of care in all six dimensions identified by the Institute of Medicine (IOM): safety, effectiveness, patient-centeredness, timeliness, efficiency, and equity.[5] Slow progress in each of these is occurring, as measurements, incentives, knowledge, will, and experiments come increasingly into alignment. However, the task of improving individuals' care is hardly completed. In the wave of projects on "pay-for-performance" (P4P) and public reporting, policymakers, payers, and health care leaders are still struggling to make highly reliable and safe health care a norm rather than an exception.[6] Moreover, too few improvement efforts address defects in care across the continuum, such as those that plague patients with CHF.

Defining The "Triple Aim"

Work to improve site-specific care for individuals should expand and thrive. In our view, however, the United States will not achieve high-value health care unless improvement initiatives pursue a broader system of linked goals. In the aggregate, we call those goals the "Triple Aim": improving the individual experience of care; improving the health of populations; and reducing the per capita costs of care for populations.

■ **Interdependent goals.** The components of the Triple Aim are not independent of each other. Changes pursuing any one goal can affect the other two, sometimes negatively and sometimes positively. For example, improving care for individuals can raise costs if the improvements are associated with new, effective, but costly technologies or drugs. Conversely, eliminating overuse or misuse of therapies or diagnostic tests can lead to both reduced costs and improved outcomes. The situation is made more complex by time delays among the effects of changes. Good preventive care may take years to yield returns in cost or population health.

■ **An exercise in balance.** Pursuit of the Triple Aim is an exercise in balance and will be subject to specified policy constraints, such as decisions about how much to spend on health care or what coverage to provide and to whom. The most important of all such constraints, we believe, should be the promise of equity; the gain in health in one subpopulation ought not to be achieved at the expense of another subpopulation. But that decision lies in the realms of ethics and policy; it is not technically inherent in the Triple Aim.

A health system capable of continual improvement on all three aims, under whatever constraints policy creates, looks quite different from one designed for the first aim only. The balanced pursuit of the Triple Aim is not congruent with the current business models of any but a tiny number of U.S. health care organizations. For most, only one, or possibly two, of the dimensions is strategic, but not all three. Thus, we face a paradox with respect to pursuit of the Triple Aim. From

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the viewpoint of the United States as a whole, it is essential; yet from the viewpoint of individual actors responding to current market forces, pursuing the three aims at once is not in their immediate self-interest.

Take hospitals as an example. Under current market dynamics and payment incentives, it is entirely rational for hospitals to try to fill beds and to expand services even though the work of Elliott Fisher and John Wennberg strongly predicts the net effect to be much higher cost and no higher quality.[7] Most hospitals seem to believe that they can protect profits best by protecting and increasing revenues. Higher efficiency in local production can help, too, but systemic efficiencies that reduce revenues or admission rates are threats to profit. The same payment dynamics often lead hospitals to focus only on care within their walls, viewing CHF readmissions, for example, as indicating defects outside the hospital, not as their responsibility to avert.

■ **A "tragedy of the commons."** Rational common interests and rational individual interests are in conflict. Our failure as a nation to pursue the Triple Aim meets the criteria for what Garrett Harden called a "tragedy of the commons."[8] As in all tragedies of the commons, the great task in policy is not to claim that stakeholders are acting irrationally, but rather to change what is rational for them to do. The stakes are high. Indeed, the Holy Grail of universal coverage in the United States may remain out of reach unless, through rational collective action overriding some individual self-interest, we can reduce per capita costs.

■ **Obstacles to pursuit of the Triple Aim.** The changes we would need to mobilize pursuit of the Triple Aim are large, and the obstacles are daunting. Among the biggest barriers are supply-driven demand; new technologies including many with limited impact on outcomes; physician-centric care; little or no foreign competition to spur domestic change, as it does in manufacturing; and too little appreciation of system knowledge among clinicians and organizations, leading them to suboptimize the components of the system with which they are most familiar, at the expense of the whole.

■ **Promising innovations.** Despite these obstacles, a handful of innovators are starting to challenge the U.S. health care market. These disruptive innovations are by no means yet mainstream, but the examples align surprisingly well with the objectives of the Triple Aim. For example, innovations in primary care such as the medical home, as well as "Minute Clinics" and other retail health care providers are challenging the prevailing approach to primary care.[9] Experiments in telecommunications are offering care that is no longer location-specific.[10] One form of foreign competition—"medical tourism"—is beginning to catch on. Also, a few hospitals, such as Virginia Mason Medical Center, Denver Health, and ThedaCare, are learning

to use systems knowledge to reduce costs and improve profit, such as by adapting "lean production" to health care.[11]

■ **Measuring health care quality.** In general, opacity of performance is not a major obstacle to the Triple Aim. Many tools are in hand to construct part of a balanced portfolio of measures to track the experience of a population on all three components. At the Institute for Healthcare Improvement (IHI), for example, we have developed and are using a balanced set of systemwide measures closely related to the Triple Aim.[12] A more complete set of system metrics would include ways to track the experience of care in ambulatory settings, including patient engagement, continuity, and clinical preventive practices.

■ **Measuring costs and health status.** Measuring per capita costs is still a big challenge; it requires that we capture all relevant expenditures, index them appropriately to local market circumstances, and be able to measure actual costs in a care system whose current methods of pricing and discounting obscure them. Population health measures would require some form of registration or sampling for defined populations and would be speeded by widespread implementation of electronic health record systems. Citing one serious gap, the IOM recently concluded that measures of both cost and care across the continuum, impeded by the fragmentation of delivery itself, still need much more developmental work.

Preconditions For Pursuit Of The Triple Aim

Despite the social need and the feasibility of measurement, actual pursuit of the Triple Aim remains the exception. What would be the preconditions for changing that?

We suggest that three inescapable design constraints underlie effective accomplishment of the Triple Aim: (1) recognition of a population as the unit of concern, (2) externally supplied policy constraints (such as a total budget limit or the requirement that all subgroups be treated equitably), and (3) existence of an "integrator" able to focus and coordinate services to help the population on all three dimensions at once.

■ **Specifying a population of concern.** A "population" need not be geographic. What best defines a *population*, as we use the term, is probably the concept of enrollment. (This is different from the prevailing meaning of the word *enrollment* in U.S. health care today, which denotes a financial transaction, not a commitment to a healing relationship.) A registry that tracks a defined group of people over time would create a "population" for the purposes of the Triple Aim. Other examples of populations are "all of the diabetics in Massachusetts," "people in Maryland below 300 percent of poverty," "members of Group Health Cooperative of Puget Sound," "the citizens of a county," or even "all of the people who say that Dr. Jones is their doctor." Only when the population is specified does it become, in principle, possible to know about its experiences of care, its health status, and the per capita costs of caring for it. Under current conditions, such registries are rare in the United States,

especially for geographically defined populations. Creating them will require research, development, and investment.

■ **Policy constraints.** The policy constraints that shape the balance sought among the three aims are not automatic or inherent in the idea. Rather, they derive from the processes of decision making, politics, and social contracting relevant to the population involved. For example, a nation or state might or might not decide that "universal coverage" is mandatory; a community in a town meeting or an employer in negotiation with a labor union might or might not decide to spend no more than x dollars per capita or y dollars per year on health care. Logically—that is, mathematically—optimizing on three aims at once requires constraints on at least two of them.

■ **Integrator.** An "integrator" is an entity that accepts responsibility for all three components of the Triple Aim for a specified population. Importantly, by definition, an integrator cannot exclude members or subgroups of the population for which it is responsible. The simplest such form, such as Kaiser Permanente, has fully integrated financing and either full ownership of or exclusive relationships with delivery structures, and it is able to use those structures to good advantage. We believe, however, that other models can also take on a strong integrator role, even without unified financing or a single delivery system. That role might be within the reach of a powerful, visionary insurer; a large primary care group in partnership with payers; or even a hospital, with some affiliated physician group, that seeks to be especially attractive to payers.

In crafting care, an effective integrator, in one way or another, will link health care organizations (as well as public health and social service organizations) whose missions overlap across the spectrum of delivery. It will be able to recognize and respond to patients' individual care needs and preferences, to the health needs and opportunities of the population (whether or not people seek care), and to the total costs of care. The important function of linking organizations across the continuum requires that the integrator be a single organization (not just a market dynamic) that can induce coordinative behavior among health service suppliers to work as a system for the defined population.

Functions Of An Integrator

■ **Involving individuals and families.** Pursuit of the Triple Aim requires that the population served become continually better informed about both the determinants of their own health status and the benefits and limitations of individual health care practices and procedures. An effective integrator would work persistently to change the "more-is-better" culture through transparency, systematic education, communication, and shared decision making with patients and communities, rather than by restricting access, shifting costs, or erecting administrative hurdles to care. Many members of the population, especially those with chronic illnesses, will need someone who can work with them to establish a plan for their ongoing care, guide them

through the technological jungle of acute care, advocate for them, and interpret.

■ **Redesign of primary care services and structures.** We believe that any effective integrator will strengthen primary care for the population. To accomplish this, physicians might not be the sole, or even the principal, providers. Recently, physicians and other clinicians have proposed principles for expanding the role of primary care under the title of the medical home. This expanded role includes establishing long-term relations between patients and their primary care team; developing shared plans of care; coordinating care, including subspecialists and hospitals; and providing innovative access to services through improved scheduling, connection to community resources, and new means of communication among individuals, families, and the primary care team facilitated by a patient-controlled personalized health record. The integrator would assume responsibility for building the capability and infrastructure to enable primary care practices to function in this expanded role.

■ **Population health management.** The integrator would be responsible for deploying resources to the population, or for specifying to others how resources should be deployed. Segmentation of the population, perhaps according to health status, level of support from family or others, and socioeconomic status, will facilitate efficient and equitable resource allocation.[13] The growing availability of high-quality health information on the Internet will help all segments manage their own care and understand options for treatment.

Today's individual health care processes are designed to respond to the acute needs of individual patients, rather than to anticipate and shape patterns of care for important subgroups. An integrator would act differently, assigning much more value and many more resources, for example, to the monitoring and interception of early signs of deterioration among the 100 CHF patients in a doctor's panel or the 1,000 CHF patients who used the hospital last year.

Famously, the "actual" causes of mortality in the United States lie in behavior that the individual health care system addresses unreliably or not at all, such as smoking, violence, physical inactivity, poor nutrition, and unsafe choices.[14] An integrator would increase preventive efforts. An integrator would also encourage and cooperate with governmental policies, agencies, and programs to discourage smoking, combat obesity, provide alternatives to violence and substance abuse, and address community determinants of mental health problems.

■ **Financial management system.** The broken financing system of the present mirrors the fragmented care system. An effective integrator would assure that payment and resource allocation support the Triple Aim. An important first step for a systems approach to cost control would be defining, measuring, and making transparent the per capita cost of care for a defined population. For example, companies could begin to show on employees' paychecks the amount of money spent per employee by the company to provide health insurance. The Centers for Medicare and Medicaid Services (CMS) could provide regions with cost information per benefi-

ciary to allow comparisons of costs and inflation across the country.

A mainstay of reduction and control of per capita costs would be yearly initiatives to reduce waste in all of its forms, especially procedures, tests, and visits that represent rework, errors, unscientific care, or otherwise valueless services. George Isham, medical director of HealthPartners in Minneapolis, has called for a project to identify the ten most common forms of waste in each medical specialty.[15] Any integrator collaborating on improvement of value with its suppliers of specialty care would be very interested in Isham's list. An indication of progress on the Triple Aim would be doctors' leading and energetically participating in such efforts.

Perhaps the most powerful needed change is to disrupt the dynamics of supply-driven care and instead to match supply better to underlying needs. An integrator would approach new technologies and capital investments with skepticism and require that a strong burden of proof of value lie with the proponent. Operating budgets would encourage thinking across boundaries. An integrator would ask, "Might two additional home outreach nurses be better for the Triple Aim than another cardiologist?" Capital budgets would be informed by the insights of Fisher and Wennberg, and good integrators would encourage through incentives—and, if needed, regulations—strict limits on the growth of facilities.

The hallmarks of proper financial management in a system pursuing the Triple Aim, we suspect, are government policies, purchasing contracts, or market mechanisms that lead to a cap on total spending, with strictly limited year-on-year growth targets.

■ **System integration at the macro level.** A conscientious integrator would aspire to produce or contract for individual care and population-based interventions that are evidence-based and highly reliable. To achieve that, all in the system of care would need access to up-to-date medical knowledge, standardized definitions of *quality* and *cost*, and evidence and measurement collected and distributed by a thoroughly trustworthy body. In effect, patients, caregivers, organizations, and managers would know the "state of the system" with respect to its reliability, adherence to evidence, cost, and progress in improvement.

In most cases, the integrator would not be a direct provider of all necessary services. Instead, it would need to commission some services from suppliers through business relationships consciously designed to facilitate pursuit of the Triple Aim. Michael Porter and Elizabeth Teisberg have called for a redefinition of competition in health care.[16] They assert that value is added by care that produces the best outcomes at the lowest cost over time. An integrator, following their logic, might contract with a multifunctional group of providers to serve a specific subpopulation.

Precedents And Possibilities

The Triple Aim is far from a totally new idea. As one would expect, organizations and other stakeholders in a variety of countries that begin with a population

in mind tend to want to achieve all three goals at once. Among these stakeholders are (1) government-sponsored or -owned health care systems that have legally chartered duties to defined populations and that own facilities, employ clinicians, and provide and manage clinical services (in the United States, these include the Veterans Health Administration, the Indian Health Service, and the Military Health Command); (2) classical staff- and group-model health maintenance organizations (HMOs), such as Kaiser Permanente, HealthPartners, and Group Health Cooperative of Puget Sound, which combine insurance and care delivery functions (although usually not public health systems) for enrolled populations; and (3) national and other governmental health care systems that aggregate tax revenues into global budgets and, through employment, ownership, and contracting, ensure care for populations. Examples include the National Health Service (NHS) in the United Kingdom and health care in Sweden, where counties act as integrators, using general tax revenues to fund the comprehensive care systems that county-level executives organize and improve for their entire population.[17]

In the United States, a few additional cases of Triple Aim–oriented organizations have emerged. Some employers, fed up with out-of-control costs but unwilling to give up trying to ensure proper care for their employees, have started their own care systems, reminiscent of the roots of Kaiser Permanente. For example, QuadGraphics, a large U.S. publishing company, started QuadMed, a wholly owned subsidiary that provides care to QuadGraphics employees using a highly innovative model of strong primary care as the mainstay.[18]

Occasional entrepreneurial hospital-based systems, often with very high market share and strong community roots, such as Intermountain Health Care, Geisinger Health System, Bellin Health System, and (for care of the underserved) Denver Health, try to knit together components of the care system in virtual aggregates through technical support and innovative contracts. The numerous recent state-level initiatives for universal health insurance coverage inevitably face the Triple Aim as the only route to affordability; Massachusetts, as one example, has established a Quality and Cost Council to try to determine how to keep all three aims in a single field of vision.[19]

■ **HMOs as integrators.** So what happened to HMOs? As conceived by their greatest champion, Paul Ellwood, HMOs were, or were intended to be, integrators exactly as we propose, in pursuit of the Triple Aim.[20] On closer inspection, the HMO movement was eventually defined by its organizational structure rather than its aims and performance. The experience of people enrolled in HMOs was not sufficiently improved to overcome the restriction of choice of providers or the perceived barriers to access to specialists that became part of the HMO model. Because they restricted care, HMOs were vulnerable to competitive retaliation by indemnity insurers and others, which began offering products called "HMO" or "managed care" that merely managed money, not care. Furthermore, proponents of HMOs might have overestimated the cost-saving potential of proper preventive care, instead of

"Innovations in payment design encourage integrated behavior without the managerial superstructure of an HMO."

viewing population health status and per capita cost control as separate aims.[21] Finally, HMOs were competing for doctors and acute care suppliers in an environment in which these providers were in control of demand and thus revenue. The HMO was not an attractive business alternative for them.

■ **Encouraging signs for integrated care.** Even with the similarity between an HMO and our view of the integrator, we are encouraged in large measure because the possibilities of integrated care have so thoroughly changed with the advent of electronic support systems and the possibilities for virtual integration and instant communication that were unimaginable when HMOs were first described. Fisher's recent proposals for virtual integration of care through extended medical staffs, for example, represent innovations that draw on some of the principles of classical HMOs, but with entirely new processes and relationships at their core.[22] Innovations in payment design, such as bundled payment experiments by the CMS for chronic disease management and Harold Luft's conceptualization of case rates for local microsystems, offer interesting approaches to encouraging integrated behavior without the managerial superstructure of an HMO.[23]

■ **What it takes to progress toward integrated care.** From the (we hope temporary) failure of the best features of the HMO concept we take the lesson not that all integrated care is destined to fail, but rather that pursuit of the Triple Aim threatens the U.S. status quo health care system. The current behavior, destructive of the Triple Aim and inimical to the best aspects of sound, managed care, is a predictable, indeed inevitable, consequence of the current rules. If we want different behavior, we will need new financing and competitive dynamics. What new financing or dynamics, different from today's, would lead rational hospitals to try to reduce readmissions dramatically for CHF?

If we could ever find the political nerve, we strongly suspect that financing and competitive dynamics such as the following, purveyed by governments and payers, would accelerate interest in the Triple Aim and progress toward it: (1) global budget caps on total health care spending for designated populations, (2) measurement of and fixed accountability for the health status and health needs of designated populations, (3) improved standardized measures of care and per capita costs across sites and through time that are transparent, (4) changes in payment such that the financial gains from reduction of per capita costs are shared among those who pay for care and those who can and should invest in further improvements, and (5) changes in professional education accreditation to ensure that clinicians are capable of changing and improving their processes of care. With some risk, we note that the simplest way to establish many of these environmental conditions is a single-payer system, hiring integrators with prospective, global bud-

gets to take care of the health needs of a defined population, without permission to exclude any member of the population.

Indicators Of Progress

In our lighter moments, we have tried to imagine the most elegant possible "Triple Aim Test," asking, "How would we know at first glance that the care for a population is actually making progress on the Triple Aim?" Our proposed test has only three items. First, hospitals involved in the Triple Aim would be trying to be emptier, not fuller. They would celebrate as success that the hospital is less and less often needed by the population. Second, Fisher and Wennberg would be happier. They would observe that the dynamics of supply-driven care are no longer strong and that patients pull resources, rather than vice versa. And third, patients would say of those who try to maintain and restore their health: "They remember me." They would recognize that the health care system is mindful of their needs, wants, and opportunities for health even when they themselves forget. Health care would also be mindful that people have excellent uses for their wealth other than paying for care they do not need or for illnesses they could have avoided.

Whether or not the Triple Aim is within reach for the United States has become less and less a question of technical barriers. From experiments in the United States and from examples of other countries, it is now possible to describe feasible, evidence-based care system designs that achieve gains on all three aims at once: care, health, and cost. The remaining barriers are not technical; they are political. The superiority of the possible end state is no longer scientifically debatable. The pain of the transition state—the disruption of institutions, forms, habits, beliefs, and income streams in the status quo—is what denies us, so far, the enormous gains on components of the Triple Aim that integrated care could offer.

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