

The Hard Work of Health Care Transformation

Richard M.J. Bohmer, M.B., Ch.B., M.P.H.

Governments and regulators influence the performance of health care organizations and practitioners primarily through positive and negative financial incentives, regulatory constraints

on their licenses to practice, and support of performance-improvement activities through education, research, and measurement programs. The financial approaches aim to motivate change in the way organizations and practitioners configure their systems and deliver care, under the assumption that once they're motivated to seek surplus or avoid sanction, they'll be willing and able to make local operational changes to reduce cost and improve safety, patient experience, and outcomes. Unfortunately, experience shows that although a changed market may be a helpful precondition to local performance improvement, it hardly guarantees effective operational change.

Some organizations have suc-

cessfully transformed themselves, however, substantially improving efficiency and quality. How have they done so? One popular approach is top-management-led structural and governance change — moving boxes on organizational charts of an individual entity or regional system. Services are merged or broken up, new roles defined, and new responsibilities assigned. This approach appeals to boards, CEOs, and consultants because big changes can be made rapidly. But such rearrangements may disappoint.¹ Examination of organizations that have achieved and sustained substantial performance improvements reveals that lasting transformation requires the relentless hard work of local operational redesign.

Organizations' delivery of care is ultimately governed by structures and processes at the ward, clinic, or practice level. These elements have usually accreted over time, often in response to regulations or technology and without subsequent performance review or deliberate updating. In contrast, successful "transformers," from Seattle's Virginia Mason Medical Center to the Salford Royal National Health Service Foundation Trust in England, constantly make small-scale changes to their structures and processes over long periods.² Everything from communicating with patients to cleaning gastroscopes to ordering tests and choosing therapies has been subject to redesign. Major change emerges from aggregation of marginal gains.

These organizations' experiences clarify that multidisciplinary teams must undertake this redesign work.³ The provision of modern health care integrates so

many specialized skills — clinical and nonclinical — and patients routinely cross so many intra- and interorganizational boundaries that no single designer can create a highly functioning microsystem. Such teams often have diverse membership, including not only patients, referring doctors, corporate staff, and community service providers but also design engineers. When these teams redesign local structures and processes, they do more than write a “best practice protocol.” They also reconfigure the workflow, workforce, supporting technology, and even physical care delivery sites.

Other hard truths emerge from studying successful organizations. Teams often redesign local structures and processes despite the lack of senior support, adequate data, capital, or a reimbursement system that rewards their efforts. Although consultants routinely list support from senior leaders as a key prerequisite for change, initiation and early leadership of such teams often comes from the middle — committed clinicians and managers volunteering early mornings and late evenings to create better-functioning systems for their patients. Teams use whatever imperfect data are available, often collecting essential data by hand; they recognize that important organizational design decisions are often made with insufficient information. And few redesigns get it 100% right the first time. In practice, health care transformation is a long series of local experiments.

Transformation requires sustained change in individual behavior, team interactions, and operations design. Although consultants and information technology vendors can help, experience

has shown that more than anything, change depends on internal redesign work.

If detailed, low-level, repetitive redesign of local operating systems one at a time is the reality of improving health care, how do successful transformers support their staff through that process? How do they change in a systematic way? And how can organizations seeking transformation make the process easier and faster than it was for the vanguard?

Examination of high-performing organizations suggests seven essential organizational elements that support orchestrated team-based redesign. First, these organizations deploy many redesign teams concurrently — some permanent, some temporary. Virginia Mason convenes small teams transiently to redesign key processes, whereas Intermountain Healthcare (Utah and Idaho) has a permanent team structure responsible for redesign and long-term oversight. Both organizations have developed expertise in managing multidisciplinary teams.

These redesign teams are typically led by clinicians, although managers are well represented. They aim to improve the quality and the efficiency of care simultaneously, and the organizations see no conflict between those goals. Because many clinicians don't feel empowered or prepared to lead such efforts or feel comfortable with resource stewardship, transformers invest heavily in leadership development, usually creating their own leadership programs rather than outsourcing them, and they free leaders from some clinical duties to create sufficient time for this work.

Transforming organizations have a routinized process for

change. The basis for their standardized approach to analysis, redesign, improvement, and management varies, but what's most important is not which model — lean manufacturing, continuous improvement, six sigma — is chosen but that the process is internalized, repetitive, and consistent so that the same language is used throughout the organization and independent teams can undertake redesign autonomously.


In addition, these organizations have an internal support resource that includes skills in design, project management, data analysis, financial analysis, and organizational development. Organizations may be tempted to rely on management consultants for support, but the transformers have worked to develop these capabilities internally.

They also have well-developed measurement systems that include both a capability for developing or reviewing measures of clinical or financial performance and the capacity to collect, report, and act on internally generated data. Data are often an Achilles' heel: few doctors believe they have adequate data for system redesign. Transformers, however, do the best they can with available information, recognizing that data will improve over time. They address clinicians' need for evidence-based decision making by treating design change as a test of concept, rather than implementation of a known answer. Redesign becomes a process for testing new metrics and data sources, which can, over time, mitigate short-term data inadequacy.

Furthermore, a senior oversight group is responsible for establishing teams, setting their priorities, monitoring their prog-

ress, addressing institutional barriers to change, and integrating multiple teams' work. This group ensures that teams remain focused on organizational priorities and have the necessary resources, and it resolves conflicts that arise when multiple groups make demands on shared resources. The teams thus become part of a broader structure for clinical governance and form the core of performance-management and improvement efforts. At Intermountain, the permanent teams both redesign and manage care systems.

Finally, because any model of team-based redesign devolves authority and accountability away from top executives, transformers have invested in creating a widely understood set of unifying values and norms. Whether expressed in value statements, compacts, or credos, these standards help align staff behavior both with the organization's goals and among the professions working together to meet those goals, and they guide behavior when there's no clear decision rule. Many organizations find this

 An audio interview with Dr. Bohmer is available at NEJM.org

approach challenging, and not only because it's slow or requires investment. It also risks requiring job cuts, or at least job changes. Most challenging, however, is the fundamental change it represents in an enterprise's governance. Clinician-led teams take control of patient-facing organizational subsystems and reform clinical protocols and operations, review performance data and make modifications, and may even have local financial control and responsibility. In effect, instead of taking their work context as a given, staff actively create the local system needed to provide the best possible care. This shift may be a bridge too far for some organizations, especially those facing reduced revenue or an urgent need for a turnaround.

Unfortunately, in the longer term, the prolonged hard work of repetitive, incremental, and often small-scale rebuilding of local operating systems probably cannot be avoided. Individual behavior change motivated by payment reform may be insufficient to generate the quality and efficiency gains needed in coming years. In

their first year, the Pioneer Accountable Care Organizations have achieved only modest results.⁴ However, organizations seeking transformation can ease the process by building the support system described above. The short-term investments that are required can be surprisingly small, because most organizations already have many of the requisite human assets. The most substantial hurdle, it seems, is the change in mindset.

Disclosure forms provided by the author are available at NEJM.org.

From the Nuffield Trust, London.

1. Imison C, Sonola L, Honeyman M, Ross S. The reconfiguration of clinical services. London: King's Fund, 2014.
2. Bohmer RMJ. Designing care: aligning the nature and management of health care. Boston: Harvard Business Press, June 2009.
3. James BC, Lazar JS. Health system use of clinical programs to build quality infrastructure. In: Nelson EC, Batalden PB, Lazar JS, eds. Practice-based learning and improvement: a clinical improvement action guide. Oakbrook Terrace, IL: Joint Commission Resources, 2007:95-108.
4. Schwartz AL, Chernen ME, Landon BE, McWilliams JM. Changes in low-value services in year 1 of the Medicare Pioneer Accountable Care Organization Program. *JAMA Intern Med* 2015;175:1815-25.

DOI: [10.1056/NEJMp1606458](https://doi.org/10.1056/NEJMp1606458)

Copyright © 2016 Massachusetts Medical Society.

Uncertainty in the Era of Precision Medicine

David J. Hunter, M.B., B.S., Sc.D.

A National Research Council report on “precision medicine” explains that the term “refers to the tailoring of medical treatment to the individual characteristics of each patient.” The report goes on to say, “It should be emphasized that in ‘precision medicine’ the word ‘precision’ is being used in a colloquial sense, to mean both ‘accurate’ and ‘precise.’”¹ In

the colloquial sense, “precision” also implies a high degree of certainty of an outcome, as in “precision-guided missile” or “at what precise time will you arrive?” So will precision medicine usher in an age of diagnostic and prognostic certainty?

In fact, the opposite will probably result. The new tools for tailoring treatment will demand

a greater tolerance of uncertainty and greater facility for calculating and interpreting probabilities than we have been used to as physicians and patients.

Oncology has been called “the clear choice for enhancing the near-term impact of precision medicine.”² New tools extract information from cancer genomes that include both the mutations