

A Tall Order: Improve Child Health

Charles Homer, MD, MPH

From the National Initiative for Children's Healthcare Quality, Boston, Mass

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Address correspondence to Charles Homer, MD, MPH, National Initiative for Children's Healthcare Quality, 30 Winter St, 6th Floor, Boston, MA 02108-4720 (e-mail: Chomer@nichq.org).

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IN THE SHORT span of a decade, quality improvement (QI) has gone from a marginal activity undertaken by a few eccentric innovators in child health to an activity at the core of major pediatric teaching hospitals, integrated delivery systems, and professional organizations. Moreover, the evaluation of improvement activities and the development of new methods to do so has become a fertile and increasingly popular area of academic research, with the pediatric health services research community in the forefront as evidenced by the Academic Pediatrics Association's (APA) highly successful conference on QI research conducted in conjunction with the Pediatric Academic Societies meetings. The conference is now a core program of the APA. This expanding interest makes this an opportune time to reflect on the direction of these activities, to see if early course adjustments in the vector of our efforts can increase the likelihood that these activities achieve our common goal: better health for children, their families, our communities, and our nation.

Three key questions can help us assess whether these activities will lead to the improvements we seek:

- Are we focusing our improvement activities on the right areas?
- Are we focusing our research activities on the right areas?
- Are we creating an infrastructure that will enable us to make more rapid and more sustained progress through these 2 sets of activities?

(1) Defects in care abound. Patients are harmed every day by hospital-acquired infections; children with chronic conditions are not provided with the appropriate medication or counseled in ways that enable them to use them effectively; early diagnoses are missed when symptoms were apparent, leaving patients and their families to suffer needlessly. All of these opportunities—which are not different in kind than the focus of QI in adult care—must be addressed to meet the promises we make to our patients and their families and are appropriate topics for improvement.

The elements that distinguish child health and health care from those of adults are well known.¹ These distinctions need be kept in mind in choosing a particular focus for child health improvement efforts. For example, one consequence of the differential epidemiology affecting children is the

challenge of providing care for those children with rare or relatively rare conditions. Uncertainty remains about the optimal systems approach for such children—for example, care in centers compared with care in community based medical homes.² Great variability exists in the presence of systems to monitor and continuously improve care.³ Given that outcomes for many of these children are exquisitely sensitive to variability in care, an expanded focus on improvement in care should remain a high priority.

We also know that the most important drivers of child health are the family and community environments in which the child is raised, most prominently the health and well-being of parents, the consistency and warmth of interaction with family and community, the physical environment, and access to sufficient material resources.⁴ Given this understanding, how can the improvement sciences be used to influence and make this broader child health producing system function at a higher level of performance, both improving outcomes and advancing equity? How can we apply QI to more effectively integrate these multiple levels—child health with family health; primary care with public health; health care, public health, education, housing, public safety, and beyond. If QI science is to make a major difference in true population health outcomes, improvement initiatives will need work in this arena.

These areas should be at the heart of our QI efforts. The mantra driving improvement in the current era is the “triple aim,” as articulated in the national quality strategy: better care, better health, and lower per-capita cost. If interpreted broadly—truly producing better health over the life trajectory and reducing per capita costs over time and across multiple systems (education, justice, workforce)—this articulation will serve child health improvement efforts well. If interpreted narrowly, with a focus only on reducing short-term costs and typical indices of clinical care, or without a commitment to give back savings to benefit children, families, and community, this framing—while helping some important child populations as noted above—will yet again divert attention and resources from the needs of children and place our future at risk.

(2) The focus of our research. QI research has numerous facets, each providing value. Much of the research, appropriately, is evaluative. Such research often starts with a general question: does an initiative work? Further research,

and further efforts to develop methods, dissect interventions further, assessing which elements of a program work. Even more sophisticated studies peel the onion back another layer, examining how the elements of the external and internal environments influence the success of interventions. These studies all help to focus our interventions and our resources.

A useful extension of this research would be to further develop the applied science of improvement itself. Funders, organization leaders, and project participants often remark to me about the time and resources most improvement initiatives require. Evaluations of improvement programs—as with evaluations of organizational change efforts more broadly—show quite variable results.⁵ My own experience over the past 15 years has demonstrated that some improvement coaches are far more effective than others, and that some communities of organizations working together seem to improve and learn more quickly than others. Refining and advancing the sciences of improvement themselves—systems engineering and operations research; psychology of change; behavioral economics as applied to health care; the statistics of networks and improvement; the use of Internet-based communities for improvement; the effective engagement of patients/consumers and others—and how these disciplines interact with the goal of arriving at a more effective, efficient, and reliable approach to system improvement would be a major contribution. One subset of this broader question is developing a clearer understanding of how the improvement sciences complement other approaches to such broad system change such as coalition building and public policy. Such efforts are especially critical as we seek to improve the systems that produce child health.

(3) Accelerating the pace by building the right infrastructure. In the current environment, whenever a practice, hospital, or community focused on children seeks to make substantial improvements, that group needs to garner resources, undertake training, create a measurement system and then launch their program. Greater attention is needed to building the human and nonhuman infrastructure necessary to enable much more rapid, much more omnipresent, and much less costly improvement in systems.

At the level of human resources, programs are needed to train health care professionals—in the course of their undergraduate professional education and in an ongoing manner throughout their careers—in the sciences of improvement. Such programs ideally would work across disciplines, as improvement is a team-based activity. Career tracks are needed in academic medicine in improvement, complementing the current tracks in research, education, and clinical care.

Beyond the level of human resources, other infrastructures are needed as well. Child health and health care is large, but not of near-infinite magnitude. In the last decade, research networks have evolved that incorporate many pediatric emer-

gency department and inpatient hospitalist services. Just as occurred among cystic fibrosis centers, these networks can become the reusable infrastructure for not only research studies, but also for widespread implementation of improved care and indeed a vehicle for a “learning health care system” that continuously improves care and outcomes.⁶ Creating registry systems or flexible, interoperable data systems that enable both population management and comparative data in real time and that can be applied not only for a single condition but for multiple conditions and settings would also vastly accelerate the pace of improvement.

Community or regional improvement resources that can provide technical support to smaller sites and communities can be another component of this improvement infrastructure. A few states are establishing community or regional improvement resources, although most are oriented to adult care.⁷ Pediatric academic centers that themselves demonstrate high reliability care can help provide the relevant improvement expertise and capabilities in child health for these resources.

QI as an organizational activity and as an academic focus is beginning to get the attention and recognition it deserves—and that our health system needs. Remaining conscious of the specific needs of children, including attention both to the rarer conditions affecting children and the broader determinants of child health, advancing the sciences of improvement themselves, and creating an enduring and reusable infrastructure for improving child health, with a key role for academic centers, will assure that these endeavors truly improve child health.

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