

## The Need to Build Capability and Capacity in Quality Improvement and Patient Safety

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The use of quality improvement (QI) methods and safety principles can improve child health outcomes and reduce harm. Multi-institution collaboratives have achieved improved results by identifying and implementing best practices and by using rigorous improvement methodology.<sup>1</sup> Children's hospitals and their partner academic institutions have redesigned not only specific aspects of patient treatment but also the fundamental processes that determine how care is given and how the work within hospitals is carried out and communicated. Although this progress is to be commended, more needs to be done. Significant variations in care and outcomes, and gaps in the capability of physicians to engage in and lead QI, continue to exist. These deficiencies could be remedied by increasing the availability of improvement curricula, training opportunities, and skilled faculty. An integrated approach to building capacity for quality and safety would connect children's hospitals and their academic partners, addressing alignment of quality priorities and resources across organizations, education and training for physicians in the science of improvement, and recognition of the legitimacy of QI activities for professional development and career progression.<sup>2</sup>

Multiple national organizations have developed programs intended to support and catalyze these goals. The Accreditation Council for Graduate Medical Education and the American Board of Pediatrics have recognized the need both to educate those who care for children on the front lines and to develop improvement leaders who can build effective teams, manage quality projects, and apply improvement knowledge and skills. By setting requirements for education and certification, these organizations have helped the professional mandate to ensure that physicians are prepared to engage in QI and safety work. The Accreditation Council for Graduate Medical Education's Next Accreditation System will focus on an outcomes-based program evaluation, built on the expectation that a resident will become progressively more competent throughout training.<sup>3</sup> The Pediatrics Milestone Project is testing strategies to assess learners from undergraduate medical education through graduate medical education and practice. The Association of American Medical Colleges' Integrating Quality Initiative challenges partner academic institutions to integrate quality and continuing education activities.<sup>4</sup> The goal of their Teaching for Quality (Te4Q) initiative is to ensure that every US academic health center

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has a critical mass of faculty to engage in, model, and lead education in health care improvement, patient safety, and reduction in excess health care costs.<sup>5</sup>

Adapted from the Dreyfus model and aligned with the Te4Q constructs and the Pediatric Milestone Project, we propose 4 levels of physician competency, along a continuum, required to improve quality in practice.

- The clinician familiar with QI has a basic awareness of the need for quality and may have learned some quality principles.
- The proficient clinician has participated in a QI effort and demonstrates the ability to analyze one's practice and to use data and tests of change to make improvements.
- The expert clinician has achieved the performance level of the proficient clinician and is able to lead a project team in a successful QI effort.
- The master clinician is a quality and safety scholar who is often an organizational or system leader.

To build sufficient capability (competence) and capacity (sufficient numbers) in QI across pediatrics, all pediatricians must be proficient in QI and a critical mass of experts will need to be trained. Many institutions have developed excellent educational and training opportunities to enable their physicians to develop expertise in leading QI and safety initiatives (eg, Carolinas Medical Center's Levine Children's Hospital, Cincinnati Children's Hospital Medical Center, Intermountain Healthcare, and Texas Children's Hospital). The program developed by the Cincinnati Children's Hospital Medical Center<sup>6</sup> is based on the underlying tenets of learning through action and demonstrating results. To graduate from their intermediate program, participants must develop and lead a successful QI project. Participating board-certified pediatricians are

eligible for Maintenance of Certification credit. Graduates are able to provide quality leadership, accelerate their organization's ability to improve, and contribute to national improvement collaboratives.

It is unlikely that individual institutions alone will be able to meet this ambitious goal of increasing the national capacity and capability for leaders in QI. To reach a critical mass of physicians with QI leadership capability, other regional/national resources will need to be enhanced and/or created. Although currently available Web-based clearinghouses of QI tools and training opportunities seem best suited to standardization and training at the "familiar" or "proficient" levels, as we move toward advanced competency at the expert and masters levels, opportunities are more limited and often institution specific. One potential to accelerate the development of capacity is to build on existing advanced-training initiatives that provide opportunities for scale. For example, the Children's Hospital Association, the Society for Hospital Medicine, and collaborative improvement networks all provide training to develop clinicians who are proficient and, in some cases, expert in QI. These programs could provide educational templates, share lessons learned, and work across institutions to build capability.

Regional centers could be created to build on existing infrastructures. For example, the American Academy of Pediatrics chapter and district system could support dissemination. Regional training nodes, supported in collaboration with organizations with a track record for training in advanced QI methods, would not only allow for the application of a standardized curriculum and approach but would also capitalize on existing expertise. In addition, these training centers could, in turn, serve as the basis for regional improvement collaboratives as they bring together

practitioners with an interest in QI. We have already seen the success of such regional initiatives in Ohio and California.<sup>1</sup>

To support the development of QI capability and capacity at academic centers, it will be important to ensure that there is academic recognition and promotion for successful QI activities. Most academic health centers' strategies for building improvement capability focus on engaging and developing faculty as improvement leaders, educating trainees, and advancing the scholarship of health care improvement through rigorous methods and QI. If academic health centers genuinely regard clinical systems excellence as a fundamental component of their mission, on par with research and education, they must reward individuals who help achieve these goals with the principal currency of academic health centers, namely academic promotion.<sup>7</sup> Furthermore, academic promotion contributes to faculty retention and the development of exceptional role models for trainees.

A communication strategy that highlights key incentives (eg, American Board of Pediatrics' maintenance of certification program, academic recognition and promotion) and opportunities (eg, participation in collaborative improvement networks) for improving quality may be an important adjunct to engage individuals and institutions to accept the challenge of training more leaders in QI. Equally important may be our ability to provide examples of the expected return on investment that has been achieved when well-trained leaders in QI are in place in hospitals, medical schools, and primary care settings.

Aggressive goals and actions are required if we are to close the gaps in quality of pediatric care and meet the external mandates for pediatricians to not only engage in QI activities but to teach/mentor pre- and

postgraduate trainees in improvement science and to build the foundation for ongoing quality and best outcomes for children.

A significant increase in the number of leaders with QI expertise is required to accelerate the pace of improvement, sustain the gains, and provide the required mentorship to trainees and clinical teams. We encourage partnerships among institutions and organizations that can help us go further and get there faster.

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