Health care is undoubtedly one of the most complex sectors of the U.S. economy. This complexity has created an increased need for evidence about what works best for whom in order to inform decisions that lead to safe, efficient, effective, and affordable care. Calls have been on the rise for approaches to evidence generation that draw from, and better inform, real-world practice; that leverage the increasingly vast amounts of digital health data; and that are more cost-effective. These approaches are at the foundation of a learning health system, one that seamlessly generates knowledge from the practice of health care and applies it to drive continuous improvement.

Health delivery system leaders are facing shrinking operating margins and pressure to do more with less, while at the same time contending with the resource- and knowledge-intensive demands of moving to value-based reimbursement approaches that emphasize population management. In addition, as is the case with clinicians and patients, system leaders are often faced with a lack of evidence on which to base their operational decisions.

The Patient-Centered Outcomes Research Institute's (PCORI’s) National Patient-Centered Clinical Research Network, PCORnet, symbolizes a new approach to research, one that is integrated into the delivery of care and that leverages its experiences, rather than creating a set of parallel infrastructures and processes. Critical to the long-term sustainability of such a network of networks will be demonstrating its value to its many stakeholders. Among these stakeholders are the leaders of health systems who must balance other demands on organizational energy and resources to support such activities.

In April and June 2014 the Institute of Medicine’s (IOM’s) Roundtable on Value & Science-Driven Health Care, with the support of PCORI, convened two workshops aimed at accelerating progress toward real-time knowledge generation through the seamless integration of clinical practice and research.
as embodied by PCORnet—and one of the fundamental concepts of a continuously learning health system.

The first workshop brought together health care system leaders, both administrative and clinical, and researchers to consider the issues and strategic priorities for facilitating progress toward sustainably integrating knowledge-generation efforts, such as PCORnet, into practice. The second workshop convened health system CEOs to consider opportunities for leadership that will inform the decisions of field leaders moving forward.

Over the course of the two workshops, participants explored the role of continuous learning in health care, the value proposition for continuous learning and the requisite integration of research and practice in health care, continuous learning as an executive agenda priority, and conditions for sustainability for integrated research and care processes. Participants also highlighted key components of a strategy for progress.

**Continuous Learning and Improvement in Health Care**

Workshop discussion touched on the potential implications for continuous learning and improvement approached to health care.

Michael McGinnis, senior scholar at the IOM, noted that, when asked to reflect on their experiences, in his opinion virtually all successful corporate CEOs would likely speak to the centrality of continuous learning to their effectiveness and efficiency—even to their survival.

“What we want to do is fail forward fast,” said Thomas Graf, chief medical officer for population health and longitudinal care service lines at the Geisinger Health System. “If you are not failing, you are not doing enough.” Graf added that it is important to learn something from failure and then keep iterating to the best design possible.

Creating value is good, said Peter Knox, executive vice president and chief learning and innovation officer at Bellin Health, but the real goal should be to create value at speed.

**The Value Proposition**

Individual participants discussed the components of the value proposition for integration of research and practice for health systems.

John Steiner, senior director of the Institute for Health Research at Kaiser Permanente Colorado, said that the value proposition of integrating research with operational and clinical care is much broader than just what can be learned. Tools developed for research that eventually become part of operations also contribute to the value equation.

Being a part of PCORnet is allowing institutions to pick up the pace of learning and improve-
Taking cost out of the system will not happen without moving toward population health and providing value, and both of those steps require knowledge of the sort that a learning health system can produce.

Creating the Conditions for Sustainability

The sustainability of knowledge-generation efforts, including PCORNet, was touched on by workshop presentations and discussions over the course of the series.

Sustainability requires that learning become part of the fabric of care and that health care organizations embrace infrastructure support as essential to their survival, said Patrick Conway, chief medical officer and deputy administrator for innovation and quality at the Centers for Medicare & Medicaid Services. Furthermore, he noted, infrastructure needs to become part of the financial model in a way that enables investments in the research infrastructure that will drive continuous learning and improvement on the scale of population health.

There is a business imperative to conduct research related to institutional goals for health care delivery, said James Rohack, chief health policy officer for Baylor Scott & White Health, but governance and related operational mechanisms need to be in place to shorten the cycle time from research evidence generation to related health care organization management decisions.

Continuous Learning as an Executive Agenda Priority

Health system leaders weighed in on the executive perspective for making continuous assessment and improvement a core business practice.

Belonging to a research network should be an executive agenda priority, said Jonathan Perlin, president of clinical services and chief medical officer at HCA, because it enables an organization to contribute to answering the big questions that concern the nation regarding health care while also improving care for individual patients and improving the sustainability of the health care system.

Taking cost out of the system will not happen without moving toward population health and providing value, and both of those steps require knowledge of the sort that a learning health system can produce, said Steven Corwin, CEO of New York–Presbyterian Hospital.

Ed Havranek, director of the Center for Health Systems Research at Denver Health, noted that there are times when the reimbursement system acts as an impediment to bringing research findings into the clinic, an issue that Uma Kotagal, senior vice president for quality, safety, and transformation at Cincinnati Children’s Hospital Medical Center, said arises from the fact that revenue streams and incentives are too often dissociated. One solution to this problem, she said, would be for those who pay for health care to start paying for continuous innovation.
A critical piece of a sustainable research enterprise, said Thomas Garthwaite, chief operating officer and vice president of the HCA Clinical Services Group, is the ability to estimate impact, which not only provides feedback to clinicians, but also offers justification to management.

Patients need to be made aware of the benefits of belonging to a health care system that engages in research and that belongs to PCORnet, said Bray Patrick-Lake, a member of the PCORnet Executive Leadership Committee.

During the final session of the workshop series, Eric Larson, vice president for research of Group Health, highlighted several recurring themes he recognized as important for progress. These included:

- **Alignment of research with organizational goals, priorities, and infrastructure planning:** Larson highlighted a point made by several workshop speakers that every organization has a finite bandwidth, not only in terms of financial resources, but also with regard to institutional energy. Therefore, he noted, better alignment of research initiatives with performance improvement initiatives and consideration of implementation potential and provider burden in research design can maximize the impact of that research.

- **Implementation at scale:** Larson noted that several workshop speakers suggested that research without implementation does little to advance the development of a continuously learning health care system, and implementation that does not go beyond individual hospitals or health plans falls short of the transformational potential needed to effect major change. In that regard, he suggested that there is a need to advance the science of implementation and to make better use of the knowledge that already exists within the confines of individual health systems.

- **Sustainability in patient partnerships:** Partnerships with patients at all stages of priority setting, knowledge generation, and implementation can be drivers for the sustainability of continuous learning and improvement in health care. Larson noted that, throughout the workshop, speakers mentioned that patients want practical research that addresses their concerns and questions; they are eager to participate when these conditions are met; and they have taken an increasingly active role in driving research priorities themselves. He noted that new platforms and methodologies provide opportunities to better capture the patient experience and perspective, both in routine care and from outside the health care system, and to use these tools to drive learning.