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VIEWPOINT

Funding Innovation in a Learning Health Care System

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Throughout the United States, health systems are attempting to change decades of operational systems designed to deliver health care as a reimbursable service into systems that deliver health as a population goal.¹ Alongside those transformative activities are quality improvement efforts, such as those that aim to reduce hospital-acquired infections, readmissions for heart failure, scheduling delays to see a physician, or long waiting times after arriving for an appointment. Toward both transformation and incremental improvement are calls for the learning health system, ie, clinicians who see every patient encounter as a way to make the next one better.² Although the federal government is a major investor in health-related research and could accelerate the development of learning health systems, the current efforts toward that goal may need a redesign of their own.

Public and private payers are attempting to transform the health system through changes in the financial incentives for care delivery. The theory is that when clinicians derive most of their revenue from fee-for-service piecework, it encourages volume, but that they may change their practices to promote value when faced

clinical implementation is not timely or consistent. Older studies have suggested a 17-year gap in translating discoveries into routine practice, with considerable variation within and across health care organizations.³

The Agency for Healthcare Research and Quality (AHRQ), which provides grant funding for health services research, has identified a need to assist health systems become more effective in creating and applying evidence to improve care. But because its grants are structured along models developed to serve more established research processes (eg, RO1 and program project grants), current grant models do not attend to the needs of health systems to build capabilities to improve or to the processes of innovation. In addition, the budget of AHRQ is limited, smaller than many of the institutes and centers of the National Institutes of Health.

One problem is that more than 2 years might be required to secure a grant to develop a delivery system innovation to support the systematic adoption and application of evidence, given the development of the proposal and evaluation through typically 2 review cycles. Long cycle lengths may undermine the relevance and value of an externally funded research grant.

A second problem is that research grant applications are typically evaluated not just on the potential significance of the outcomes, but also the methods the investigators will use to pursue these outcomes. In contrast, the creation of new health system innovations, and even the implementation of existing evidence within health

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systems, takes place in highly pragmatic and naturalized environments where even good ideas typically undergo substantial revision to fit operational realities. Contemporary techniques in health care innovation rely on multiple small experiments, constantly pivoting so that the next week's activities are largely unknown the week before. A proposal attempting to describe that process would almost certainly engender less confidence and be less likely to be funded than one detailing a single, well-specified trial based on traditional methods, even though experience suggests that the former is more likely to be successful when implementing evidence.

Directing federal research support toward those experiments could reduce some of that risk. An inconsistency in federal research investment, such as from the National Institutes of Health and other federal agencies, is that even though the return on these investments depends on practitioners implementing the discoveries that result, there is little associated investment in improving the processes for that implementation. Evaluations of research implementation suggest that

with a budget and a change in reimbursement as occurs with shared savings, bundled payments, or capitation. A problem with this approach is that the complexity of health care organizations makes changing their clinical operations difficult. Promising incentives or threatening penalties may create the motivation for change, but they generally do not create the ability for change to occur. Leaders of health care organizations are understandably cautious about bold experimentation that might jeopardize profit margins.

A third problem is that most federal grants support isolated projects without consideration for creating infrastructure to enable a health care organization to be increasingly efficient over time in implementing delivery system changes. Health systems need teams of innovators, implementers, and evaluators just as

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a biomedical laboratory needs a well-functioning team. But whereas a well-functioning laboratory might be self-contained, a successful innovation program must involve the rest of the health system, establishing trust relationships with clinicians, administrators, information system leaders, legal counsel, and intellectual property and privacy officers. Effective health system innovation is embedded within organizations.

The Center for Medicare & Medicaid Innovation has used a funding process as a part of its demonstration projects that provides recipients with more flexibility than is typical in a research grant to adjust interventions as dictated by what is learned during the implementation process. However, the Center for Medicare & Medicaid Innovation has been criticized for not using a rigorous scientific approach to evaluate interventions in a way that can lead to valid, generalizable lessons.⁴

If researchers are going to have a useful role in assisting health systems in becoming more capable of delivering population health and health care value, a new federal funding strategy for implementing evidence is needed. The funding would be targeted toward investigators with a demonstrated record of applying rigorous scientific methods in the creation, evaluation, and implementation of delivery system innovation, that has resulted in improved patient outcomes, and who are working in an ongoing collaboration with a health care organization that has a demonstrated commitment and evolving capacity to function as a learning health care system. Rather than applying for grants to implement evidence according to prespecified protocols on a project-by-project basis, investigator-organization teams meeting criteria would be eligible to apply for multiyear flexible funding to develop, test, and modify delivery system approaches that result in the systematic adoption and application of evidence to improve care. Evaluation of the research and implementation team and its promise would occur up front, but evaluation of the team processes and outcomes would occur in retrospect, at the time of renewal. Success would be judged not only by the dissemination of results in published scientific reports, but also by whether others adopt the innovation, the size of the population health benefit, and the value achieved with the innovation. To be effective and competitive for this new funding stream, investigators conducting research within a health sys-

tem would need skills that go beyond those of a traditional health services researcher, including knowledge of health care financing, informatics, design, and implementation science.⁵

These investigators also need the cooperation and support of their partner health care organization. One sign of such cooperation is the size of investment a health care organization is already making toward becoming a learning health care system, not only for specific projects, but also toward the organizational infrastructure required to improve with time. Some of these organizational characteristics require tangible resources. Mostly they require leadership. For example, investigators will not be able to effect rapid change if attempts at change are not overtly celebrated within the institution, if information technology systems are locked down in process, or if institutional review boards do not recognize the generally lower level of risk to patients than studies of therapeutics or procedures. Federal investment in research to promote innovation could make these and other changes to organizational culture and operations a requirement for funding.

AHRQ could begin this new grantmaking approach using some of its currently available resources, and the National Institutes of Health could support the effort by repurposing some of its own dissemination and implementing funds. To ensure that public funding of learning health care systems does not inadvertently exacerbate health care inequities, a concerted effort should be made to include less-resourced institutions, such as those that provide care for poorer patients who generate narrower margins. Special preference could be given to projects that include safety-net institutions and their investigators in the lead role, and all funded projects should be evaluated on their success in substantive dissemination programs that improve patient outcomes.

If becoming a learning health care system were easy, even the lowest-resourced health care organizations would be systematically generating and applying evidence to improve population health. However, organizational change is difficult and it is not likely to occur simply by adjusting the way physicians and hospitals are reimbursed. Changing financial incentives is not enough. There is much to be learned about how to help organizations adapt to those changes. Public investment may help to ensure that effective strategies are created and shared.

ARTICLE INFORMATION

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