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EXPERIENCE REPORT

Hurdles of innovation—insights from a new healthcare delivery innovation program

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Abstract

Introduction: Healthcare systems are actively working to innovate their care delivery models, seeking to improve service quality, improve patient and provider satisfaction, and reduce cost.

Methods: By critically evaluating our experiences to date, this article highlights challenges systems may face in the process of trying to redesign healthcare and offers insights on how to navigate hurdles. We identify barriers to—and ultimately approaches to promote—rapid, scalable, sustainable, and transformative care redesign.

Results: Dedicated electronic health record IT and analytic support, and ongoing leadership engagement and communication, play a valuable role in enabling redesign efforts. Flexible, but guided, innovation support helps teams stay accountable and motivated, while accommodating new project needs and directions. Understanding the change ecosystem and evaluating and sharing outcomes on an ongoing basis, enables teams to adapt as needed. Facilitation and support help realize the value of diverse, engaged teams; novel approaches and techniques draw out innovative perspectives and promote creative thinking.

Conclusions: Although not an exhaustive list of challenges or strategies to overcome them, we hope these insights will contribute to a culture of innovation and support other institutions in their healthcare redesign initiatives.

KEYWORDS
healthcare delivery, healthcare redesign, innovation, quality improvement

1 | INTRODUCTION

In the face of substantial and growing healthcare costs,[1] critical shortages across the healthcare workforce,[2-5] and persistent and widening care disparities,[6] healthcare innovation is sorely needed. Healthcare innovation efforts are increasing across organizations, with varying goals, structures, and supports.[7,8] Existing efforts vary from large initiatives, such as the Veteran Health Administration's (VHA) Quality Enhancement Research Initiative (QUERI) and Diffusion of Excellence (DoE) program, to more localized efforts, such as UT Austin's Texas Health Catalyst and University of Pennsylvania's Health Innovation Center.[9-13] Despite the proliferation of innovation efforts, changing

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healthcare delivery remains complex and difficult.[14] This article reports on one such effort to improve healthcare delivery- The Susan and Richard Levy Health Care Delivery Incubator (The Incubator).

The Incubator was designed to bring about *rapid, sustainable, scalable, and transformational* healthcare redesign. Successful redesign is envisioned as resulting in high-value, innovative healthcare, as reflected by novel programs or care pathways that improve quality and satisfaction, reduce or stabilize costs, and address disparities faced by vulnerable populations. Although these goals are lofty, the program is designed with structures and supports to maximize success.

The Incubator funds multidisciplinary teams over one-year to redesign care for patients experiencing a serious illness, defined as a condition and/or treatments that impose a significant burden on patients, caregivers, or providers. Teams self-identify a care delivery challenge and apply to a competitive application cycle for funding and support. The Incubator funds team members' time—up to 20% of a full-time equivalent for up to 12 team members. Teams are guided through a design process that aligns with Asch and colleagues' approach and is infused with elements of design-thinking: (1) Emersion in the way things currently work (through literature review, interviews, observations, and patient journey maps), (2) Problem definition, ensuring the team is focusing on the right problem (aligning/empathizing with patient concerns/experience), (3) Divergence—brainstorming alternatives/generating new design approaches (asking "How Might We?" questions, learning from analogous challenges in other industries, and using personas to inform and evaluate ideas), and (4) Rapid testing—prototyping and exploring new approaches,[15] The curriculum incorporates subject matter experts who offer just-in-time lectures and personalized coaching. We provide project management and research support, offer expedited access to electronic health record (EHR) analytic and build teams, and connect teams with academic and operational mentors.

We recognize that a good idea alone is insufficient for successful implementation.[16] Accordingly, we coach teams to be forward thinking about feasibility, sustainability and spread, considering environmental and operational dimensions of their innovation, including leadership support, clinician and staff acceptance, complexity, productivity, resource availability, and outcomes.[17] Despite this support, the path to innovation is still rife with barriers.[18,19]

2 | QUESTION OF INTEREST

This article explores hurdles facing healthcare delivery redesign and offers insights to navigate the challenges.

3 | METHODS

By critically evaluating our experiences to date, this experience report highlights challenges systems may face in the process of trying to redesign healthcare—specifically as they relate to the goals of rapid, sustainable, scalable, and transformational redesign. We discuss several barriers towards achieving each of these redesign goals and share insights on how to navigate hurdles. Although not an exhaustive list, the challenges and approaches presented here are a product of debriefing interviews with team-leads and numerous team discussions evaluating our program design and processes.

4 | RESULTS

There are numerous barriers towards achieving the Incubator's goals of rapid, sustainable, scalable, and transformation healthcare redesign (See Table 1). These challenges and approaches to overcoming them are discussed in detail below. In addition, we have categorized the strategies to address these challenges into three areas: engaging leadership and stakeholders, supporting the innovation team, and streamlining access to resources.

4.1 | Rapidity

The Incubator challenges teams to design, implement, and evaluate a new care delivery model in 1 year; moving quickly throughout the process is paramount. Mining EHR data and building new EHR features can be sluggish, with increasing delays as requests outpace personnel availability. Recognizing the importance that data retrieval and EHR functionality can play in guiding a project's direction and operationalizing change,[20] the Incubator funds dedicated staff from the EHR technical and analytical teams to help prioritize incubator teams' requests. Institutional processes and competing demands can also slow redesign efforts; teams are paired with senior operational leaders to help resolve barriers and secure resources expeditiously.[21] For instance, senior leaders have helped advocate for the importance of teams' work, overcoming reluctance and resistance by highlighting potential benefits for various stakeholder groups.

Large organizations do not move quickly. One team spent 6 months waiting for institutional approval to purchase a cell phone to text message patients. After 4 months, another team abandoned efforts to purchase rights to use a patient questionnaire. In another example, a graduate student intern was unable to access the EHR for the entirety of his two-month internship, despite beginning onboarding paperwork prior to his start date. One team leader commented on the various operational challenges, "It's mind boggling all the barriers that come up for the things that are supposed to be really simple."

Innovative care approaches often involve unanticipated budgetary costs. We developed a simple process for the approval of unanticipated project costs to respond rapidly to new expenses and project needs. As we noticed trends in unanticipated costs, we updated project budgetary templates to include placeholders for these items.

There is a tension between the momentum to innovate and the complex institutional approval processes for change. To facilitate rapidity and ensure project momentum is sustained, we support teams in developing agendas and action-item accountability tracking.

TABLE 1 Key barriers to healthcare redesign and strategies for addressing them

		Strategy categorization		
Barrier to redesign efforts	**Strategies to address**	**Engage leadership and stakeholders**	**Support the innovation team**	**Streamline access to resources**
Rapidity				
Sluggish processes (eg, data mining requests and electronic health record builds).	Fund dedicated staff to reduce competing demands.			x
Competing institutional demands and complex processes.	Teams paired with senior operational leaders to navigate complex processes and support resource attainment.	x		
Unanticipated budgetary expenses.	Updated budgetary templates to include common costs and streamlined processes for approving unanticipated project costs.			x
Institutional complexities impede progress and set norms for slow change.	Provide agenda-setting support, facilitate action-item tracking, and set milestone expectations to motivate progress. Encourage rapid prototyping. Consider feasibility in project selection.		x	
Sustainability and scalability				
Decision-makers consulted too late to provide input/not invested in supporting change.	Incorporate key decision makers into the teams or engage in regular communication.	x		
Benefits of new programs not accrued by departments requiring investment of resources can lessen support for new initiatives.	Engage institutional leadership.	x		
Difficult to demonstrate benefit based on small numbers of patients.	Engage system financial analysts to develop projections and update over time.			x
Opportunities for scaling may not be recognized.	Diverse stakeholders engaged early on to understand the broader change ecosystem, enabling early recognition of scaling opportunities.	x		
Lack of dedicated time for publications may impede scaling efforts.	Provide publication support after formal funding period.		x	
Need for ongoing commitment when time is no longer protected, and efforts may not be rewarded.	Encourage early standardization of new processes. Provide connections to grant experts.			x
Transformation				
Difficult to envision transformative change when overwhelmed.	Protected time for team-members to innovate.		x	
Hierarchy and clearly defined systems of care may impede creative thinking.	Encourage cognitively diverse teams, including patient and community representatives, fostering alternate perspectives.		x	
Power differentials and different backgrounds may lead to some reticence for team members to participate and offer outside of the box ideas.	Facilitate conversation and meaningful engagement across the team, offering varying ways to contribute.		x	
Hard to think outside of healthcare norms.	Offer guided design thinking sessions.		x	
Resistance to change among frontline workers.	Work with experts in ecosystem alignment to gain support throughout the process.	x		

Further, our curriculum timeline includes several milestone presentations to motivate progress. We coach teams to rapidly prototype ideas, encouraging quick exploration and refinement of novel approaches. Finally, anticipating these challenges, feasibility is one of our competitive selection criteria, encouraging realistic project goals. One consideration in determining feasibility is the size of the potential target population; there needs to be a large enough population to draw from to be able to enroll individuals in new care pathways and

have opportunities to evaluate and refine the new processes. For several teams, part of the innovation process is finding ways to readily identify these eligible individuals and determine the appropriateness of the new care delivery approaches given the patients' needs and life circumstances. Further, patient autonomy is key; patients are given the option to follow existing care pathways.

4.2 | Sustainability and scalability

The Incubator's goal is for teams to complete their year of support having developed a sustainable and scalable new model of care. Sustainability involves creating business models that demonstrate the impact of newly created roles, changes in effort allocation, or practice changes. Many of these decisions are made at intermediate managerial levels; accordingly, we try to include these individuals on the teams at the project outset. If not directly incorporated into the teams, we encourage regular communication with key decision-makers on the project progress and expected future directions, enabling teams to identify ways to align their efforts with existing initiatives and priorities. We also require a letter of support from clinical chairs as part of the application process; this helps identify environments receptive to change and lays the groundwork for ongoing communication with the department. In addition, as an example of one institutional complexity, we have encountered situations in which a project imposes new costs to its clinical department but provides new revenue or cost savings to the health system. We have learned that this tension can be resolved and managed with support from institutional leadership.[22] The senior operational mentors—often members of the C-suite—paired with each of the innovation teams receive periodic updates, as well as final reports, on project progress and outcomes, Accordingly, these leaders weigh in on ways to effectively demonstrate value, including factors to consider in return-on-investment calculations, and provide guidance on approaches to effectively secure ongoing support. Further, having a senior organizational leader as one of the Incubator's co-directors helps ensure the appropriate level of leadership is engaged; the co-director vets teams' needs, enhances access to and receptivity of C-suite members and other leaders, guides teams in how best to frame requests to garner support, and helps loop-in and navigate access to other resources. A distinct challenge occurs in cases where the innovation involves moving care into the community and outside of the health center; this may result in improved care and satisfaction but may not have a positive impact on revenue. In such instances, institutional leadership can help support these efforts, tying these initiatives into overall strategy and vision,[23] while the Incubator also loops in institutional experts who can help identify research and philanthropic avenues for ongoing support.

Since our teams face a short timeframe to design, test and refine their innovation, they rely upon small numbers of patients to demonstrate their case. Making compelling arguments for ongoing sustainability based on a handful of patients can be difficult; yet, without ongoing resources, potentially beneficial new approaches and innovation efforts may be abandoned.[24] Although we attempt to address this by connecting teams with system financial analysts to demonstrate return on investments, there is still uncertainty and projection needed to provide this narrative. After their Incubator funding, project teams continue reporting data to permit ongoing assessment of performance relative to the financial model.

Throughout the project period, the Incubator encourages an awareness of the clinical landscape and internal and external stakeholder perspectives. Activities early in the project period encourage teams to engage with stakeholders and map out their perspectives and investment in the proposed changes. This awareness of the broader change ecosystem helps position teams for success for their innovations as envisioned, but also supports teams to recognize opportunities to organically scale efforts to new teams or settings. Scalability is also dependent on a degree of open-mindedness and flexibility, to adapt to and accommodate needs that may emerge.

Publication is also key to scaling as publications provide a means of disseminating successful innovations. Unfortunately, the challenge of small numbers extends to publication; teams delay writing outcome papers until after their funding period has ended to accumulate enough patients for more impactful data. However, this results in lack of dedicated time to write and submit manuscripts. To support academic productivity, we assist teams by drafting sections as needed to jump-start manuscript development, and regularly check in and offer ongoing assistance for publication efforts, even after the funding period.

Scalability and sustainability both require ongoing leadership and commitment beyond the project period, when protected time is no longer available. Within an academic health system, clinical faculty are expected to provide patient care and rewarded for traditional measures of productivity, for example, publications and grants. Quality improvement initiatives, while valuable for clinical care and personally fulfilling for providers, are often un-or-under rewarded for advancement and promotion considerations[25]; fortunately, at our institution these efforts are increasingly being recognized and incorporated into evidence for excellence. Recognizing that when protected time ends sustained project attention can face additional challenges, we encourage efforts to integrate new initiatives into standard processes prior to the completion of the funding period. In addition, we connect interested team leads with institutional experts in grants to garner additional support for those who want to pursue external funding to further scale their innovations. We also acknowledge that a passion and drive for improvement as well as a shared sense of purpose among the team, appear to be key to initial and ongoing success. While much of this lies in the team members themselves, several aspects of the innovation process, including developing a team problem statement and interviewing patients and family members to understand the biopsychosocial impacts of care delivery, help to reinforce these features of success.

4.3 | Transformation

The Incubator tasks teams with moving beyond incremental quality improvement projects to redesigning care models.[26] The complexity

and interconnectedness of healthcare, combined with the high stakes of experimentation, make improvement difficult. Further, redesigning whole care models is more complicated than redesigning aspects of a care experience (the more traditional application of design-thinking in healthcare).

Finding energy to envision change is challenging when operational demands are overwhelming. Often those on the front lines of healthcare that witness the "headaches" of practices are also the ones who are too overwhelmed to take a step back to innovate.[27] It is difficult to evaluate opportunities and think creatively when embedded within a system that has clear standards of care and well-established hierarchy. By protecting team members' time we hope to create the space to innovate, freeing up time from existing patient care and operational responsibilities.[28] To foster creativity, we require interdisciplinary teams including non-clinicians and patient representatives, encouraging cognitive diversity by including people who have different styles of problem-solving and unique perspectives. By incorporating a variety of perspectives, teams can challenge the status quo, question common biases and assumptions, and explore innovative approaches.[23] Team leads are tasked with identifying a patient representative—referred to as a patient innovation partner—who has experience with the focus area and a willingness to identify with and share their healthcare experience and care preferences. Oftentimes, patient innovation partners may be dealing with complex health issues that may impede regular team meeting attendance and participation. In addition, for both patient partners and community members, power differentials and a lack of familiarity with clinical and academic norms may lead to discomfort or reluctance to contribute. Accordingly, we recognize that multidisciplinary teams do not guarantee innovation[29]; team members need to understand what each can contribute and develop trust and open conversation to encourage robust exchange of ideas.[30] We provide training during our opening retreat on flattening hierarchies and recognizing the value of different work styles. We reinforce these lessons by encouraging each team member to offer input, facilitating conversations to draw out more reticent individuals, providing asynchronous and written opportunities for participation, and strategizing with team leads how to promote meaningful engagement and contributions from all team members. Further, patients are encouraged to be true partners in care design, rather than simply sharing information or responding to ideas.[31]

Although teams receive training in design-thinking and are encouraged to think "out of the box", individuals often revert to familiar tools and approaches. Divergent thinking requires pushing aside standard spreadsheets and checklists and entertaining novel techniques and approaches. We provide several guided sessions, walking teams through activities outside of their traditional problem-solving toolbox. Teams initially respond to new activities with hesitancy, but with guidance and assurance, begin thinking in novel ways. Hesitancy, or resistance, to proposed change was also evident among those on the front lines, for whom redesigned care means additional or alternative work demands. To ameliorate this, our teams work with experts in ecosystem alignment and stakeholder engagement to maximally gain support through the innovation process. Despite these approaches, we still question how to enable transformative redesign while those tasked with this work remain entrenched in traditional models.

5 | DISCUSSION

In the process of innovating healthcare, it is important to learn about successful approaches for making changes. We appreciate others who have already shared insights into successful strategies for improving care and sustaining improvements- and hope this article continues those conversations.[24,32,33] Although health systems take distinct innovation approaches, there are certainly common elements and lessons-learned can translate across efforts.[34] For instance, while the VHA programs focus on implementation and diffusion of promising or evidence-based practices; their work highlights that even with research-support initiatives, not all efforts are successfully implemented or sustained.[12] Acknowledging the possibility of setbacks supports a culture of ongoing organizational learning and critical thinking.[10,35] Robust evaluation of both successes and failures enables continual discovery into predictors of and barriers to success, that can result in new strategies and approaches to change.[12] Identifying and providing metrics—patient, employer, and health system impacts—that demonstrate the real-world value of investments and new initiatives across multiple stakeholders encourages ongoing support.[11,36]

Developing effective tools and techniques that will enable successful innovation will bring about positive change for years to come. We recognize that redesigning care delivery requires a nimbleness and openness to change that is intentional, tolerant of ambiguity, and pervasive throughout the organization and its values, culture, and behaviors.[37-39] We recognize that innovation requires an understanding and responsiveness to local context and resource limitations—and that iteration in response to challenges is to be expected.[13] Although the Incubator is still relatively new, teams are beginning publish on their experience—highlighting the iterative nature of their work to achieve tangible benefit[40,41] Initial debriefings with these teams highlight that the structures and supports provided by the Incubator, especially the dedicated time to focus on innovation, were key to their successes.

Part of the challenge of healthcare innovation is that change is dependent upon people; we believe resistance to change can be overcome by appealing to psychological motivations and connecting improvement efforts with personal goals.[42] Like others in this innovation space, we acknowledge the intersection of research and operations is complex, and requires ongoing diligence and numerous partnerships and collaboration to be successful[10,43] Further, as our initial experiences and other efforts have demonstrated, ongoing resources help to support efforts to scale new approaches to care delivery.[43]

Recognizing the importance of local context, the specific strategies we have developed to address challenges to healthcare delivery innovation may not always translate directly to other health system.

Through the strategy categorization included in Table 1, we have identified key principles that foster success; other organizations can modify the specific tactics to support these principles. Despite this anticipated variation, acknowledging the complexity of the healthcare innovation ecosystem and offering multiple levels of support will remain fundamental for success. We hope that other institutions and organizations involved in this work will engage with us to create a learning healthcare innovation community.[44]

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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