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Business Not As Usual: Implementation Strategies That Support Learning During the COVID-19 Pandemic

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The public health emergency of coronavirus disease 2019 (COVID-19) has led to unprecedented health-system pressures and changes in care delivery. The emergent nature of the disease continues to require rapid appraisal of—and continuous adaptation to—new information for operational decision making and direct patient care. The persistence of COVID-19 has necessitated revised structures and processes that support effective implementation of evolving knowledge as part of rapid organizational change. Assessing emergent practices during sustained COVID-19 response, during a time of "business not as usual," reveals strategies that may offer a new and more sustainable approach to address organizational barriers to learning and improvement.

In this commentary, we analyze a specific clinical practice guideline (CPG) that was implemented in response to COVID-19 across a large delivery system nascent in its efforts to build out a learning health system (LHS) infrastructure. The LHS concept promotes continuous improvement from data to knowledge to practice; bringing an LHS to life requires strategic application of implementation frameworks to understand the key factors that link structures to processes in cultivating an environment for change.[1,2] Using the US Department of Veterans Affairs Quality Enhancement Research Initiative (QUERI) Roadmap structure, we outline specific aspects of implementation that were facilitated or accelerated by the COVID-19-altered environment, and lessons learned.[1] We identify key principles and structural investments that support sustained capacity for learning-oriented, responsive improvements as health systems renormalize implementation practices following COVID-19 disruption.

THE INTERVENTION: ANTICOAGULATION MANAGEMENT CLINICAL PRACTICE GUIDELINE FOR COVID-19

Proper anticoagulation is critical for patients hospitalized with COVID-19 because of increased risk of developing complications related to blood clots.[3,4] Despite widely recognized clinical importance of anticoagulation during COVID-19, there is lack of consensus and continuously evolving evidence regarding appropriate dosing and management.[5-8] As a result, our health system needed to develop and implement anticoagulation stewardship at the institution level.

The project lead (S.S.) established a representative anticoagulation workgroup—including providers, pharmacists, and administrators—to develop a CPG and ensure that treatment for patients with COVID-19 followed up-to-date standards of care. The workgroup partnered with a longstanding federally supported evidence-based practice center (EPC) housed at the health system's partner university.[9] The EPC used evidence-grading approaches to examine the emerging knowledge and inform development of the CPG.[10] The CPG was then embedded into the electronic health record as an order set (a type of decision support tool) to promote rapid implementation and consistent provider adherence.[11] Development of the CPG, from the start of evidence collection by the EPC to implementation of the order set, took 4 weeks. In non-COVID times, this type of project could easily take upward of a year, based on system priorities and resource availability. The CPG was iteratively refined 6 times over the subsequent 10 months in response to emerging workflow considerations and new evidence to support more tailored use of the CPG (Supplemental Figure, available online at http://www.mcpiqojournal.org).

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IMPLEMENTATION TAKEAWAYS

Preimplementation Phase

COVID-19 created a system environment that became more attuned to—and supportive of—more rapidly facilitated clinical change in response to fairly preliminary emergent evidence. The urgency to address anticoagulation in patients with COVID-19 created a more active knowledge surveillance environment and an approach toward implementation that prioritized good over perfect.[12] Key accelerators during implementation planning was the engagement and support of system leadership for innovation. A system COVID-19 Command Center was created that offered accelerated review and prioritization, as well as accountability structure, for initiatives related to COVID-19. The Command Center's endorsement of the anticoagulation workgroup's efforts facilitated access to high-demand but limited resources that could support implementation of the COVID-19 anticoagulation guideline (ie, informatics support for electronic health record [EHR] integration and implementation and evaluation resources from the quality improvement department).

Implementation Phase

Despite significant facilitation for the anticoagulation CPG, and high levels of overall support for this resource in provider feedback surveys, standard implementation challenges persisted. Data from the quality improvement support team revealed inconsistent adoption and use of the tool across care sites. These data reflected 2 inertia-related issues. First, this effort of standardized implementation had to transcend the strong effects of unique organizational and practice culture shaping site-specific care patterns across system hospitals. This meant that anticipating and accommodating local contextualization was necessary and difficult. Second, the CPG represented a "living guideline" that continued to update over time after initial rollout. Although substantial dissemination activity (ie, during service line meetings) accompanied the initial rollout of the initiative, the strategies and supports necessary to support clinicians through continued iterative changes was a continual and underappreciated challenge.

Sustainment Phase

A key measure of implementation success for the workgroup has been sustainability of anticoagulation stewardship efforts. Sustainability is always a challenge owing to shifting priorities and resources, but this has been especially so, given that the work was seeded during a distinct period of COVID-19 disruption. It has been challenging to take advantage of the acceleration that COVID-19 alignment offered (ie, prioritized resources and institutional support), while not overly associating the stewardship infrastructure with a temporary timeframe. The workgroup has also needed leadership support to extend their scope beyond COVID-19 treatment, which has been difficult, given traditional evaluation expectations. Specifically, stakeholders are primed to want to see highly visible outcomes changes (eg, costs and mortality) that are difficult to demonstrate with a short timeframe and relatively small patient population. In addition, granular process information—for example, contextual factors from user-level data that help explain when and why the order set was overridden—required time and novel skillsets to analyze and incorporate to refined implementation strategies (ie, tailored provider feedback) that could draw continued operational support.

INVESTMENTS NEEDED TO INTEGRATE IMPLEMENTATION PRACTICES WITH AN LHS ORIENTATION

For LHS, continued investment is needed to sustain the types of effective implementation practices that emerged with the urgency to rapidly translate and apply clinical knowledge during COVID-19 response. First, nimbleness and adaptability was in part due to the operating guidelines of the COVID Command Center. Responsive change can become more difficult as health systems become bigger, with more layered leadership and coordination structures. This emergent Command Center structure became an accelerator of change, offering a pathway for prioritization of ideas for improvement and supporting the delegation of decision-making authority and allocation of resources. Post—COVID-19 response, this enabling clearinghouse remains critical. Partnered with the robust resources and support

offered by health systems' quality improvement (QI) teams, organizations need a separate governance structure designed to translate priorities, catalyze action, and enable continuous learning along with these efforts. This is the very idea behind a LHS infrastructure: systems in which "internal data and experience are systematically integrated with external evidence, and that knowledge is put into practice."[13] Formalizing this structure requires clear guidelines for how goals are established and promoted, explicit processes (eg, criteria, timeframe, accountability mechanisms) for delegating resources and development of improvement initiatives to smaller organizational subunits and strategies for translating and embedding learnings beyond organizational silos.

Another key insight to link LHS concept to implementation process was the need to support clinicians' capacity for responsiveness to new information. Health systems can better respond to this dynamic nature of evidence-based practice by shifting from static practice support structures to creating a culture around "living guidelines." Structures such as the EPC—whether they are university or community based or library services internal to health systems—are critical but underused resources for development and maintenance of living guidelines. Seeking out and building up existing research resources to support evidence monitoring, and training clinicians to interact with and interpret evolving evidence, is a high-value investment for health systems looking to embed learning and continuous improvement as a core organizational goal.

Finally, enabling a less conventional approach to evaluation of improvement efforts requires updated thinking around how to generate, access, and leverage data for analysis. Health systems can lean on EHR vendor resources, using built-in or customized tools that capture provider time and effort spent interacting with the EHR, as a way to identify and address implementation challenges or inefficiencies.[14,15] Leveraging these EHR metadata is a more novel area of investment in analytics to support operations but can help support timely organizational learning.

CONCLUSION

In one health system's efforts to develop and implement a new care guideline during COVID-19, we identified key implementation facilitators when business was not as usual. Leadership support and resource allocation were accelerated, as was tolerance for rapid and iterative action in an uncertain environment of emergent information. However, we still struggled to overcome organizational inertia in progress toward key implementation outcomes of fidelity and sustainability, especially given the ever-evolving and prolonged nature of COVID-19 response. COVID-19 has strengthened our organizational commitment to a learning health system model to support and maintain responsiveness. This includes structures meaningfully linked to processes that accelerate organizational improvements that emerge from the front lines, promote "living guidelines" for care delivery that are supported by continuous review of emergent evidence, and enhance the analytic capacity to support organizational learning. As we work toward a new "business as usual," we believe these investments will help to create a more conducive and sustainable implementation environment.

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SUPPLEMENTAL ONLINE MATERIAL

Supplemental material can be found online at https://mcpiqojournal.org. Supplemental material attached to journal articles has not been edited, and the authors take responsibility for the accuracy of all data.

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