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Preserving Ambulatory Healthcare and Education During a Pandemic: Resident Co-Production on the Front Lines of Primary Care

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Abstract

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Introduction

On January 22nd, the United States identified its first case of a novel coronavirus, now known as COVID-19 or SARS-CoV-2. [1] By March 11th, the World Health Organization (WHO) had declared COVID-19 a pandemic.[2] Within a matter of weeks, COVID-19 transformed how individuals interact and congregate. In Ohio, state officials enacted sweeping restrictions on mass gatherings and business practices shortly after the WHO's declaration.[3] Healthcare agencies across the state followed, implementing strategies to slow transmission and prepare for a surge of infected patients.

Ambulatory offices and clinics across the state moved quickly to comply with the new requirements while continuing to meet the needs of patients. Our clinic, an Internal Medicine and Pediatrics (Med-Peds) clinic with resident and faculty providers caring for approximately 8000 vulnerable patients in Cincinnati, faced numerous challenges.[4] In order to effectively and efficiently navigate these obstacles, we created a COVID-19 response team, comprised of residents, faculty physicians, and nurses. The team co-produced new clinic processes that fundamentally changed the way we deliver ambulatory healthcare and support resident education.[5]

Meeting these challenges required rapid innovation, collaboration, and adaptability. In this piece, we share five lessons from our team's work, highlighting our role as residents in the hope that others might not only preserve but enhance ambulatory education for trainees during future outbreaks.

Lesson #1: Create ambulatory leadership roles for residents

Through creation of a “Primary Care Pandemic Elective,” we established resident leadership positions, or “COVID Coaches”, to ensure integration of resident input into evolving clinic policies. As COVID Coaches, we participated in bi-weekly meetings with institutional stakeholders to attain system-level knowledge. We also co-led twice daily clinic huddles described below.

Insights gained from these experiences were channeled into co-production efforts. As residents, we were embedded in multiple tiers of our clinic’s adaptive response to COVID-19, helping us to facilitate rapid adoption of changes amongst co-residents. These leadership roles imparted valuable knowledge about systems-based practice including skills liaising within institutional administrative structures and leadership competencies that will serve us well throughout our careers.

Lesson #2: Develop a continual and structured communication framework

Clear and concise communication became increasingly vital as governmental and institutional changes altered the structure and function of primary care. Our COVID-19 response team employed new communication strategies to keep residents, faculty members, and clinic staff updated.

First, faculty members and COVID Coaches conducted twice-daily interdisciplinary huddles via conference call. These meetings provided time for institutional updates, delineation of new responsibilities, reiteration of evolving clinic processes, general feedback, daily troubleshooting, and clinic preparation. Second, as COVID Coaches, we adopted a three-pronged approach to optimize communication with residents. Coaches (1) sent daily emails with a brief description of new clinic roles (telemedicine provider, triage provider, and in-person provider) and resident assignments, (2) reviewed checklists with residents before each shift to clarify each role’s responsibilities, and (3) posted organizing documents to collaborative spaces in clinic and online with up-to-date information about new clinic processes.

This multifaceted communication approach allowed clinic personnel to adapt quickly in the face of rapidly changing policies and workflows.

Lesson #3: Establish a strategy for telemedicine education

Telemedicine visits were not utilized in our clinic prior to the pandemic.[6] With legislative changes that broadened access to and compensation for telemedicine, our institution redirected traditional in-person visits to virtual appointments.[7,8] After the Accreditation Council for Graduate Medical Education (ACGME) published guidelines in mid-March permitting resident participation in telemedicine, residents began regularly conducting telephone and video visits.[9]

As COVID Coaches, we played a central role in the rapid creation and dissemination of telemedicine protocols. Our online workspace became more than a repository for pandemic-related educational materials and new clinic processes but also a resource for effective delivery of virtual healthcare. Additionally, we designed note templates within our electronic medical record (EMR) for phone and video visits based on governmental and billing guidelines.[7,8]

This blueprint for real-time training and distance learning established a reliable and yet nimble framework for addressing patient needs during the pandemic. The infrastructure we created for telemedicine will endure long beyond the pandemic. Furthermore, the experience we gained will pay dividends down the road as health systems increasingly incorporate telemedicine into their ambulatory schemas.[6]

Lesson #4: Preserve precepting and supervision standards

Maintaining comparable levels of resident supervision was a priority during the transition to pandemic care. In addition to upholding long-standing regulatory requirements, we aimed to satisfy supervision requirements for our institution’s Stage 3 ACGME Pandemic Emergency Status.[10,11]

In the first "pre-surge" phase, our residency and clinic leadership created a back-up system for residents and faculty preceptors to ensure appropriate resident staffing and faculty member supervision should residents be redeployed to accommodate a surge in hospitalized patients. In phase two, in-person appointments were converted to telemedicine visits to eliminate non-urgent medical encounters.[12] Only patients with acute needs poorly suited for virtual encounters kept in-person appointments. During this phase, third- and fourth-year residents performed telemedicine encounters at home and precepted remotely to minimize in-house personnel. First- and second-year residents remained physically in clinic to facilitate close supervision. To better accommodate learners, we lowered the resident-to-attending precepting ratio,

simplified schedule templates, and solicited regular feedback.

In phase three, the gradual reinstatement of in-person visits, we have continued to balance in-person and telemedicine encounters to promote physical distancing while simultaneously reshaping the preceptor model.[13] We will continue to adjust the phase in which we operate based on the case burden of our community and hospital system.

Lesson #5: Foster an innovative clinic culture

Uneven terrain during the pandemic required an innovative and adaptable clinic apparatus. To build flexibility into our system, traditional appointments were replaced with new resident roles that included triage, telemedicine, and in-person duties. Responsibilities like direct patient messaging, medication refills, and home health orders were merged into a central pool and fielded by residents assigned to clinic each day. These innovations created a fluid clinic structure that could adapt rapidly.

As the terrain settled, due in large part to proactive interventions by the state of Ohio, COVID Coaches transitioned their efforts to patient outreach and population telehealth.[14] We leveraged our EMR's built-in dashboard function to identify high risk patients.[6] Clinic staff offered these patients telemedicine visits to address chronic needs, provide counseling on COVID-19 prevention, and screen patients for depression and food insecurity. We now have additional outreach campaigns planned for under- and unvaccinated children, as well as patients with poorly controlled hypertension and diabetes.

Conclusion

The COVID-19 pandemic not only changed how we as residents deliver healthcare, but also how we communicate, collaborate, innovate, and educate. While this narrative focuses on positive outcomes, we did encounter unintended consequences, well-intentioned failures, and calculated sacrifices along the way. A brief reflection on our ambulatory pandemic experience uncovered the following shortcomings: (1) Daily revision of clinic policies led to mental stress on staff and residents; (2) New patient outreach strategies generated complex workflows with inadequate tracking mechanisms; (3) Twice daily clinic huddles cut significantly into time typically reserved for ambulatory resident education modules; (4) Traditional healthcare maintenance was briefly de-emphasized as visits focused on distress screening, medication refills, at-home monitoring devices, and COVID-19 counseling.

While we continue to learn from our successes and failures, the COVID-19 experience has already introduced and accelerated changes to our educational experience that will outlive the pandemic. We recognize the utility of telemedicine and plan to incorporate virtual visits into resident templates moving forward, as permitted by regulatory agencies. We have observed the power of patient outreach and expect to regularly execute targeted telehealth campaigns. More importantly, we have witnessed the ability of collaboration to affect positive change in short order. As this pandemic continues and children in many areas of the country return to school, we will continue to adapt to best serve our patients while still fostering resident education. We hope our story will encourage others to share their own insights, fueling conversations that will help us collectively move toward more effective ambulatory training in residency.

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