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## Resident Clinical Experience During the Pandemic: What Has It Cost Us and What Have We Gained?

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**DOI:** 10.1542/hpeds.2021-005970

**Journal:** *Hospital Pediatrics*

**Article Type:** Solicited Commentary

**Citation:** Nguyen B, et al. Resident Clinical Experience During the Pandemic: What Has It Cost Us and What Have We Gained? *Hosp Pediatr*. 2021; doi: 10.1542/hpeds.2021-005970

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**Title:** Resident clinical experience during the pandemic: What has it cost us and what have we gained?

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**Conflict of Interest Statement:** The authors have no conflicts of interest relevant to this article to disclose.

**Funding Source:** None

**Contributors Statements:**

Dr. Nguyen conceptualized and designed the manuscript, drafted the initial manuscript, and approved the final manuscript as submitted.

Dr. Barber conceptualized the manuscript, reviewed and revised the manuscript, and approved the final manuscript as submitted.

Dr. Rassbach conceptualized the manuscript, reviewed and revised the manuscript, and approved the final manuscript as submitted.

COVID-19 and pediatrics residency training: before 2020, it was difficult to imagine a public health crisis that could so immediately bring critical aspects of health care and society to a grinding halt. Yet slightly more than a year into the pandemic, we are still seeing significant disruptions in health care and society due to the pandemic. This month's article by Geanacopoulos et al evaluated the impacts of the COVID-19 pandemic on pediatric residents in the ED, ICU step-down unit, and hospitalist settings in one training program. The authors determined that residents provided care for fewer patients on their ED and hospitalist services, worked fewer shifts, and had decreased exposure to common respiratory and gastrointestinal diagnoses. While residency programs often rely heavily on experiential learning while also integrating didactic learning, during the pandemic many programs had to shift their focus within education by creating alternate experiences, such as the virtual curriculum this program created.

Programs across all specialties are now reevaluating how they assess clinical competency, and how they will achieve educational goals for trainees required of a residency program.<sup>1-6</sup> As pediatric residency leaders, we must balance the need to graduate residents on time with fulfilling our mission to provide a comprehensive training experience. The pandemic has created more questions around clinical competency than answers. We thus ask: How has the pandemic affected pediatric residents' clinical competency? In what areas can programs augment residency education to assure graduates are ready to practice without supervision? If we decide residents working fewer shifts and caring for fewer patients are still competent doctors, how does this impact the future of medical education? If we decide residents working fewer shifts and caring for fewer patients are less competent doctors, how should we address this problem for current residents? Our pediatrics community will need to evaluate competency ratings for trainees during the pandemic and determine whether additional educational supports may be indicated.<sup>7</sup> The AAMC, AACOM, ACGME and ECFMG recently published a transition to residency toolkit to address the needs of graduating medical students whose medical school education was interrupted by the pandemic.<sup>8</sup> Similar resources may be needed for transitions from residency to fellowship or practice during the pandemic. The effects of the pandemic may persist through this generation of trainees and we should continue to look at educational outcomes for these learners.

In addition to clinical competency related to patient care and medical knowledge, the pandemic has implications for other competencies as well. With objectively decreased patient contact, we suspect residents have had fewer opportunities to develop communication skills including around challenging communication scenarios. From a systems-based-practice perspective, trainees may have had fewer opportunities to engage in interprofessional collaboration on daily rounds, discharge planning, and ambulatory care. Surely, residents will continue to develop these skills and have these experiences well into their careers, but as we reflect on our own experiences, we know that a solid foundation was created during training.

However, the pandemic has also created novel training opportunities for residents. Our trainees are becoming masters of telehealth while identifying ongoing training needs in this area.<sup>9</sup> Telehealth is clearly an important health care innovation that increases access to care and provides a patient-centered approach. Telehealth has also provided opportunities for faculty to directly observe and provide feedback to trainees, which are important strategies for fostering

professional growth in the era of competency-based medical education. Telehealth has also facilitated continued trainee involvement in patient care during quarantine and has provided flexibility to address resident wellness needs. In addition, our trainees are often the experts in COVID-related illness and complications, educating faculty on the evolving standards of care for MIS-C patients. Further, trainees are on the forefront of evaluating mental health needs of pediatric patients and of communities impacted by anxiety and social isolation related to the pandemic. The pandemic has also been a crash course for residents on public health principles and challenges, occupational health needs, and the need to combat health inequities. Our learners are on the cutting edge of facing new diagnoses and changing epidemiological conditions, learning alongside faculty that are also navigating these new waters and gaining new skills during the pandemic.

In addition to the multifaceted effects on trainees, the pandemic is also impacting the many patients who interface with trainees. On one hand, lower patient volumes in the hospital and clinics could mean more time that trainees can spend with patients. On the other hand, it could mean that patients aren't coming to their doctor when they need to be, deferring preventative and other necessary care. In the aftermath of canceling weeks to months of residents' continuity clinic appointments, we must evaluate the impacts on patient continuity. What will be the health outcomes years down the line for our vulnerable populations who already had decreased access to care? Has telehealth created new opportunities to reach them or have the increased barriers to in-person appointments further fragmented their road to appropriate care?

Lastly, we wonder about the implications of the pandemic on the career outcomes and professional identity of doctors new to their respective fields. Socialization and the learning environment are critical elements of professional identity formation, and both have been significantly impacted during COVID-19.<sup>10</sup> We reflect on our own personal experiences of how social interactions and the learning environment during residency shaped our own career goals and the specialties we would eventually find ourselves in. COVID-19 has resulted in learner exclusion from some environments, atypical experiences in other environments, and an unclear perspective on what future careers may look like apart from a pandemic. We wonder how opportunities to work with mentors have been impacted by the pandemic.<sup>15</sup> We may see a shift in trainees' career goals and outcomes as a result. For example, the ambulatory experience does not provide a typical primary care experience; will doctors be dismayed or swooned by the opportunities of telehealth? In the hospital setting, does a below-normal census provide a false sense of security in what could otherwise be a busier, more stressful environment, and thus attract some trainees to this previously unconsidered path? Will residents be able to differentiate the stresses of a specialty experience apart from the hurdles that the pandemic has brought? And how does the pandemic affect wellness? In a time where burnout is at the forefront of our profession's minds, could fewer shifts have a positive influence allowing for balance with personal demands and self-care? Or are the decreased social interactions that often support wellness in a stressful training environment contributing to increased burnout? Recent studies have highlighted the need to address trainee wellness in the era of COVID-19.<sup>11-14</sup>

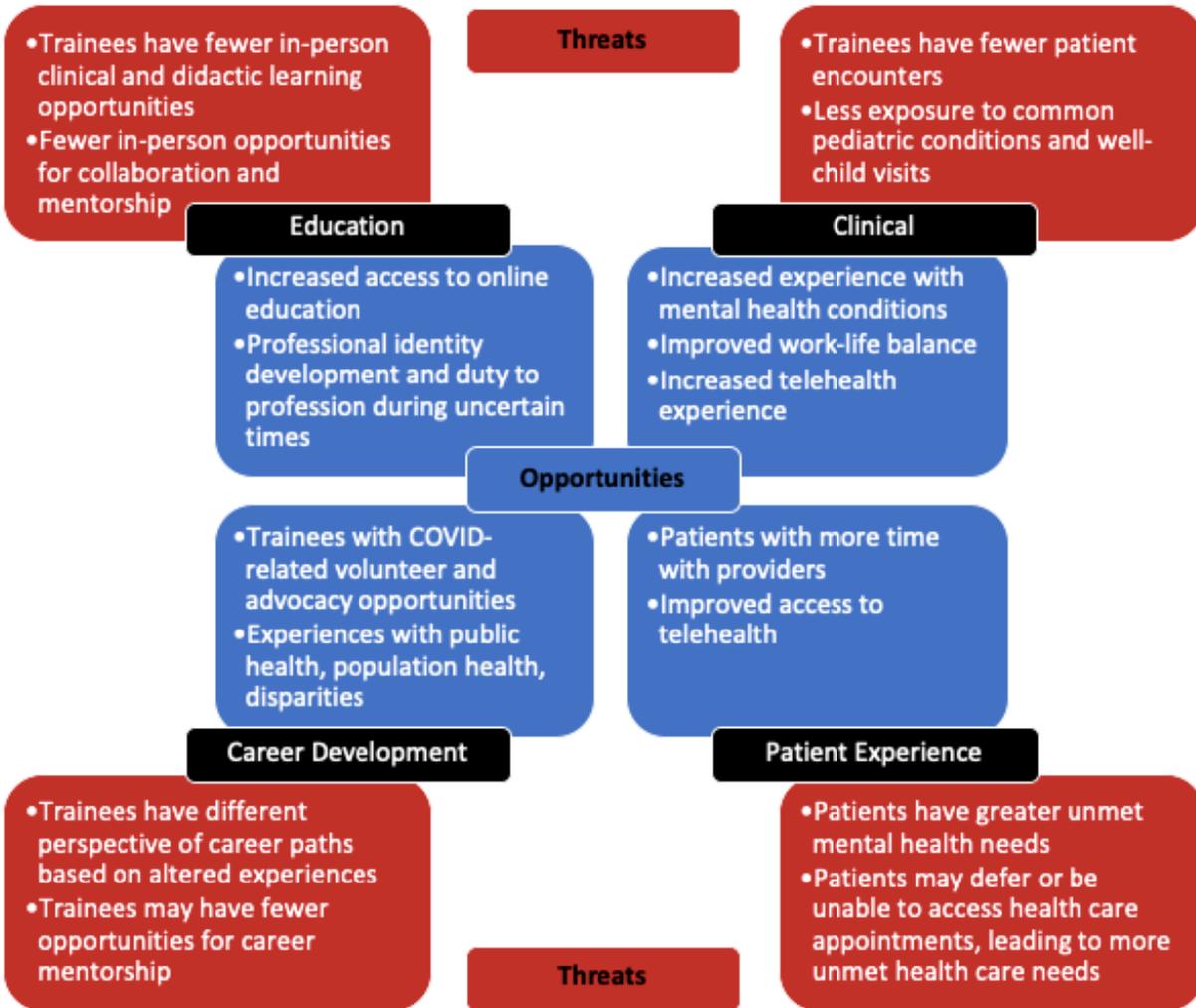
The future of this generation of trainees remains a black box that we will continue to need to assess thoughtfully. This article is an important step forward in uncovering the impacts this pandemic has had on our trainees. While it's easy to visualize the negative ramifications of the pandemic including loss of educational opportunities and altered career perceptions—we must also consider the positives that have resulted, including an enhanced sense of duty as a physician during a time of great uncertainty and fear of life-threatening illness, the adaptability learned by trainees in the setting of changing roles and responsibilities, and the new opportunities provided during the pandemic in the form of time for other activities such as scholarship, volunteerism, and advocacy.

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**Figure 1: Threats and Opportunities in the Residency Training Environment Related to the COVID-19 Pandemic**



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