COVID-19 and Ophthalmologic Education: A Call to Innovate

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UNQUESTIONABLY, COVID-19 HAS HAD DEVASTATING effects on human life. Seemingly every person and every sector have been affected by the pandemic, and the field of ophthalmology and the education of its trainees are no exception. In March of 2020, ophthalmologic training was transformed abruptly as health care systems scrambled to accommodate the influx of coronavirus cases sweeping our nation, and the current landscape of resident and fellow education appears drastically different than it did before.

At my own institution, residents have been redistributed from operating rooms and clinics, now cancelled, to essential care only, covering our eye-specific emergency room, inpatient ophthalmology consults, and a COVID step-down unit. Across the country, many of my peers have been redeployed from ophthalmology entirely, working exclusively in COVID intensive care units, general emergency rooms, and general medicine floors as the clinical demands of the pandemic have outpaced the human resources necessary to care for these patients. In New York, the epicenter of the disease, every single ophthalmology program in the region had reassigned trainees to COVID-19 wards by mid-April.[1] Even trainees who have continued to provide ophthalmic care have been affected by stricter protocols for in-person visits and decreased patient volume: both outpatient clinical care and surgical volume have decreased by greater than 75% in recent months.[2] Many are concerned about the effect that this shift has had on the education of the next generation of ophthalmologists, but in this moment, caring for patients with COVID, preserving personal protective equipment, and protecting both our patients and ourselves have taken priority.[2]

Although it is apparent that surgical and clinical training have suffered over the past few months as a result of this shift in priorities, it is also true that this challenge has led to rapid innovation in how we teach, learn, and exchange ideas. My home institution, among numerous others across the country, has shifted to an entirely virtual didactic format, hosting subspecialty lectures, surgical conferences, and grand rounds exclusively online.[2] We have benefited from pooling resources with other institutions, inviting their trainees to attend our educational sessions and in turn being able to learn from faculty members at outside medical centers who bring diverse skill sets, knowledge bases, and teaching styles. Some institutions have made their weekly grand rounds available to the public online, facilitating a novel method of exchanging ideas across the country and the world and allowing for cross talk between different institutions and specialties. In addition, current circumstances have accelerated the utilization and development of telemedicine. Before COVID-19 social distancing restrictions, 74% of patients were unaware of existing telemedicine options.[3] The landscape has drastically changed as a result of the pandemic, with leading telemedicine platforms now reporting an increase in virtual patient visits from 157% to 700%.[3]

Laboratory research, and thus resident and fellow research experience, has suffered as a result of nationwide closures of lab space and the halting of nonessential research activities. At my home institution of Harvard University, nearly all research operations were shut down by mid-March, with only essential personnel—such as those performing COVID research—allowed to enter laboratory space.[4] As a result of our institutional review board prioritizing the review of protocols directly related to COVID-19, there have been delays in research even when it does not require physical laboratory access. However, many affected researchers have redirected their efforts toward combating the coronavirus, joining multidisciplinary teams in the effort to develop a novel vaccine. For example, a Massachusetts Eye and Ear research team is using adeno-associated virus, the same vector used in the treatment of RPE65-mediated inherited retinal disease, in the development of a unique gene-based vaccine approach.[5]

Although it is evident that the education of current trainees in ophthalmology has been severely impacted by the COVID-19 pandemic, this challenge has also led to rapid innovation in the spheres of education, telemedicine, and research that otherwise never could have happened on such a large and sweeping scale. Beyond this, trainees of the COVID-19 generation are living through unique circumstances that have led them to adapt, innovate, and demonstrate resilience and creativity in trying times. I look forward to seeing how my generation uses the lessons learned during this unique era to shape the future of ophthalmology.

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