# Discuss the Impact of COVID-19 on Ophthalmic Care

Doctors are privileged to view the human experience through a unique lens. We take care of patients on some of the worst days of their lives. Our role is to view the patient holistically, not as a diagnosis or a hospital number but as a person who has trusted us to solve their problem and look after them. Over the last 18 months, humanity has experienced an abundance of bad news. The pandemic has complicated the doctor-patient relationship like never before, as lockdowns, social distancing and mask-wearing have become a part of daily life.

The impact of the COVID-19 virus on ophthalmic care and on communities around the world has been staggering and will be ongoing for years to come. However, amongst the seemingly endless bad news, there are moments of hope. Huge advances have been made in research and innovation. Even at the peak of the pandemic in the UK, emergency health services were maintained, including emergency (sight- or life-threatening) ophthalmic care[[1]](#footnote-1). In this essay I will discuss the impact of the COVID-19 pandemic on three elements of ophthalmic care. First, the impact on ophthalmic patients; second, the impact on the training of Ophthalmologists; and finally, the impact on innovation and research which has thrived despite the pandemic. I will highlight how adaptation and resilience has enabled ophthalmic care to continue and evolve despite the ongoing challenge of COVID-19 in the UK and globally.

On 11th March 2020, the World Health Organisation declared the COVID-19 outbreak a pandemic. In the coming months, a significant proportion of the population were asked to work from home; schools and universities closed their doors and healthcare was disrupted, with the majority of non-emergency ophthalmic care postponed. The impact globally was unprecedented, with 238 million cases and 4.9 million deaths at the time of writing[[2]](#footnote-2). In the UK, existing social and health inequalities widened. The impact on society, and by extension ophthalmic patients, was significant. As the number of cases and deaths increased, so too did levels of anxiety, depression, and drug misuse[[3]](#footnote-3).

The impact on ophthalmic patients in the UK was almost immediate. Some local ophthalmic units closed during the first lockdown; many outpatient appointments were cancelled or moved to a virtual format and of course, elective surgeries were postponed. A sharp increase in demand for ophthalmic care was anticipated - however, the opposite was seen. The A&E department at MEH saw the number of patients presenting decrease by more than 50%1. A change in the reasons for patients presenting was also observed – for example, trauma and painful conditions such as corneal ulcers continued to present to hospital. By contrast, the number of patients presenting with retinal detachment fell by approximately 53% across the UK compared to 20191. It has become apparent that this short-term lull in presentations led to patients presenting later on with more advanced pathology as restrictions eased.

The long-term impact on ophthalmic patients is less clear. Ophthalmic units are working through the backlog of patients waiting for elective surgeries. Decreased access to health services is likely to have led to sub-optimal control of diabetes and hypertension, increasing the risk of future retinopathy. With many working from home and the majority of schooling and education moved online, most of us spent more time using screens and less time outside. Adults watched Tiger King, teens turned to social media and kids were given iPads to keep them occupied while their parents worked from home. This dramatic increase in ‘close work’ is likely to have increased the incidence and progression of myopia in the general population[[4]](#footnote-4). This could lead to serious ocular problems in future, with increased risk of open-angle glaucoma, cataract, retinal detachment and myopic maculopathy[[5]](#footnote-5). School closures and social isolation increased the risk of trauma due to domestic violence[[6]](#footnote-6), as well as non-accidental injury in paediatric patients.

Poor healthcare outcomes due to a patient’s racial or socioeconomic background is an ongoing problem and the pandemic has exacerbated existing health discrepancies for Black, Asian and Minority Ethnic (BAME) communities[[7]](#footnote-7). On May 25th, 2020, the death of George Floyd sparked global grief and anger which was fuelled by decades of racial discrimination. In light of this, we each have a duty to examine our own implicit bias and to work to tackle known healthcare disparities. This includes actively working to recruit trainee Ophthalmologists from the BAME community[[8]](#footnote-8), as well as supporting inclusion in research and clinical trials. Together we can work to promote diversity and eliminate existing inequalities in ophthalmic care.

Ophthalmologists globally have adapted to the ‘new normal’ in different ways. Many were redeployed to treat COVID patients in Intensive Care Units, learning new skills to support our colleagues on the front lines[[9]](#footnote-9). Some found additional time for research with the postponement of routine ophthalmic care; there was a 22.1% increase in ophthalmology publications from March-August 2020 compared with the previous year[[10]](#footnote-10). Some dedicated themselves to medical education, using virtual platforms to engage students. Hundreds of trainees sat their RCOphth exams online, progressing with their training despite a significant loss of time in theatre[[11]](#footnote-11). Indeed, the Virtual Royal College of Ophthalmologists (RCOphth) Congress in 2021 was a prime example of the benefits of virtual collaboration, with delegates able to watch asynchronously and to attend from across the globe without needing to travel. Undoubtedly, the increased utilisation of technology to promote learning will have a positive impact on ophthalmic training in the future[[12]](#footnote-12).

On 8th December 2020, Margaret Keenan was the first NHS patient to receive a COVID-19 vaccine. The development of the vaccines is an inspiring example of what can be achieved by innovation and collaboration on a global scale. Another heart-warming example of innovation having a life-changing impact is the ‘Be My Eyes’ mobile application[[13]](#footnote-13), which connects sighted volunteers with visually impaired people for assistance with daily tasks. This app saw a significant increase in volunteer users during the pandemic. In the same way that virtual consultations can be convenient and effective for patients, for example in oculoplastic clinics[[14]](#footnote-14), this application is an example of technology bringing people together to solve problems.

To quote words often falsely attributed to Charles Darwin, ‘It is not the strongest of the species which survives, nor the most intelligent. It is the one most adaptable to change.’ Health services globally have made exceptional adaptations to cope with the unprecedented challenge of the COVID-19 pandemic. However, as the ‘hidden burden of ophthalmic disease’2 becomes increasingly apparent, it is clear that ongoing adaptations will be needed. The future of Ophthalmology is unpredictable; however, the COVID-19 pandemic has shown that we have the potential to rise to future challenges.

Word count: 1493

References

1 Wickham, L., Hay, G., Hamilton, R., Wooding, J., Tossounis, H., da Cruz, L., Siriwardena, D. and Strouthidis, N., 2020. The impact of COVID policies on acute ophthalmology services—experiences from Moorfields Eye Hospital NHS Foundation Trust. *Eye*, 34(7), pp.1189-1192.

2(COVID Live Update: 238,196,795 Cases and 4,860,593 Deaths from the Coronavirus - Worldometer, 2021)

3 Pfefferbaum, B. and North, C., 2020. Mental Health and the Covid-19 Pandemic. *New England Journal of Medicine*, 383(6), pp.510-512.

4 Wong, C., Tsai, A., Jonas, J., Ohno-Matsui, K., Chen, J., Ang, M. and Ting, D., 2021. Digital Screen Time During the COVID-19 Pandemic: Risk for a Further Myopia Boom? *American Journal of Ophthalmology*, 223, pp.333-337.

5 Williams, K. and Hammond, C., 2019. High myopia and its risks. *Community Eye Health*, 32(105), pp.5-6.

6 Chandan, J., Taylor, J., Bradbury-Jones, C., Nirantharakumar, K., Kane, E. and Bandyopadhyay, S., 2020. COVID-19: a public health approach to manage domestic violence is needed. *The Lancet Public Health*, 5(6), p.e309.

7 Kim, J., 2020. Equality, Inclusion, and Diversity in Healthcare During the COVID-19 Pandemic. *International Neurourology Journal*, 24(2), pp.180-181.

8 Aguwa, U., Srikumaran, D., Brown, N. and Woreta, F., 2021. Improving Racial Diversity in the Ophthalmology Workforce: A Call to Action for Leaders in Ophthalmology. *American Journal of Ophthalmology*, 223, pp.306-307.

9 Harvey, J. and Sinclair, V., 2020. Preparing ophthalmologists for the use of mechanical ventilation during the COVID-19 pandemic. *Eye*, 34(7), pp.1251-1252.

0 Reitinger, J., Jain, S. and Suh, D., 2020. Significant increase in non-COVID-19 related ophthalmology publications during the COVID-19 era: is this a new normal?. *Eye*, 35(4), pp.1041-1042.

1 Chatziralli, I., Ventura, C., Touhami, S., Reynolds, R., Nassisi, M., Weinberg, T., Pakzad-Vaezi, K., Anaya, D., Mustapha, M., Plant, A., Yuan, M. and Loewenstein, A., 2020. Transforming ophthalmic education into virtual learning during COVID-19 pandemic: a global perspective. *Eye*, 35(5), pp.1459-1466.

2 Ferrara, M., Romano, V., Steel, D., Gupta, R., Iovino, C., van Dijk, E. and Romano, M., 2020. Reshaping ophthalmology training after COVID-19 pandemic. *Eye*, 34(11), pp.2089-2097.

13 Avila, M., Wolf, K., Brock, A. and Henze, N., 2016. Remote Assistance for Blind Users in Daily Life. *Proceedings of the 9th ACM International Conference on Pervasive Technologies Related to Assistive Environments*.

14 Kang, S., Thomas, P., Sim, D., Parker, R., Daniel, C. and Uddin, J., 2020. Oculoplastic video-based telemedicine consultations: Covid-19 and beyond. *Eye*, 34(7), pp.1193-1195.

1. Wickham, L., Hay, G., Hamilton, R., Wooding, J., Tossounis, H., da Cruz, L., Siriwardena, D. and Strouthidis, N., 2020. The impact of COVID policies on acute ophthalmology services—experiences from Moorfields Eye Hospital NHS Foundation Trust. *Eye*, 34(7), pp.1189-1192. [↑](#footnote-ref-1)
2. (COVID Live Update: 238,196,795 Cases and 4,860,593 Deaths from the Coronavirus - Worldometer, 2021) [↑](#footnote-ref-2)
3. Pfefferbaum, B. and North, C., 2020. Mental Health and the Covid-19 Pandemic. *New England Journal of Medicine*, 383(6), pp.510-512.

   1 Ibid 1 [↑](#footnote-ref-3)
4. Wong, C., Tsai, A., Jonas, J., Ohno-Matsui, K., Chen, J., Ang, M. and Ting, D., 2021. Digital Screen Time During the COVID-19 Pandemic: Risk for a Further Myopia Boom?. *American Journal of Ophthalmology*, 223, pp.333-337. [↑](#footnote-ref-4)
5. Williams, K. and Hammond, C., 2019. High myopia and its risks. *Community Eye Health*, 32(105), pp.5-6. [↑](#footnote-ref-5)
6. Chandan, J., Taylor, J., Bradbury-Jones, C., Nirantharakumar, K., Kane, E. and Bandyopadhyay, S., 2020. COVID-19: a public health approach to manage domestic violence is needed. *The Lancet Public Health*, 5(6), p.e309. [↑](#footnote-ref-6)
7. Kim, J., 2020. Equality, Inclusion, and Diversity in Healthcare During the COVID-19 Pandemic. *International Neurourology Journal*, 24(2), pp.180-181. [↑](#footnote-ref-7)
8. Aguwa, U., Srikumaran, D., Brown, N. and Woreta, F., 2021. Improving Racial Diversity in the Ophthalmology Workforce: A Call to Action for Leaders in Ophthalmology. *American Journal of Ophthalmology*, 223, pp.306-307. [↑](#footnote-ref-8)
9. Harvey, J. and Sinclair, V., 2020. Preparing ophthalmologists for the use of mechanical ventilation during the COVID-19 pandemic. *Eye*, 34(7), pp.1251-1252. [↑](#footnote-ref-9)
10. Reitinger, J., Jain, S. and Suh, D., 2020. Significant increase in non-COVID-19 related ophthalmology publications during the COVID-19 era: is this a new normal?. *Eye*, 35(4), pp.1041-1042. [↑](#footnote-ref-10)
11. Chatziralli, I., Ventura, C., Touhami, S., Reynolds, R., Nassisi, M., Weinberg, T., Pakzad-Vaezi, K., Anaya, D., Mustapha, M., Plant, A., Yuan, M. and Loewenstein, A., 2020. Transforming ophthalmic education into virtual learning during COVID-19 pandemic: a global perspective. *Eye*, 35(5), pp.1459-1466. [↑](#footnote-ref-11)
12. Ferrara, M., Romano, V., Steel, D., Gupta, R., Iovino, C., van Dijk, E. and Romano, M., 2020. Reshaping ophthalmology training after COVID-19 pandemic. *Eye*, 34(11), pp.2089-2097. [↑](#footnote-ref-12)
13. Avila, M., Wolf, K., Brock, A. and Henze, N., 2016. Remote Assistance for Blind Users in Daily Life. *Proceedings of the 9th ACM International Conference on Pervasive Technologies Related to Assistive Environments*. [↑](#footnote-ref-13)
14. Kang, S., Thomas, P., Sim, D., Parker, R., Daniel, C. and Uddin, J., 2020. Oculoplastic video-based telemedicine consultations: Covid-19 and beyond. *Eye*, 34(7), pp.1193-1195. [↑](#footnote-ref-14)