

Finding the Silver Lining of Opportunities through the Dark Clouds of COVID-19 Pandemic

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ABSTRACT

No single event so far has stumped the world more significantly than the present COVID-19 pandemic. However, every adversity brings with it an opportunity and as medical community, we must evolve in order to survive this unique challenge. This essay throws light on the various opportunities we can seize or have done so in the pandemic. We explore the opportunities in medical education and training, health research, clinical practices and frontline work, public health and awareness, and revenue generation and allocation of resources. Thus, through this article we understand that, "In every adversity lies an opportunity", an age-old adage has never been truer than in the scenario of the current COVID-19 pandemic.

Keywords: COVID-19, Opportunities, Medical Education, Health Research, Clinical Practice, Public Health, Resource Allocation

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No single event so far has stumped the world more significantly than the present Coronavirus Disease – 2019 (COVID-19) pandemic. In a short time span, world economy, healthcare, livelihood, and even human survival have been direly threatened. However, every adversity brings with it an opportunity and as medical community, we must evolve in order to survive this unique challenge. As a young undergraduate medical student and two young surgeons at the beginning of our medical education and careers in orthopaedic and spine surgery respectively, we have closely seen the management of this pandemic without disruption of routine patient-care at three institutes in three different countries (India, Canada and United Kingdom) while undergoing training. This essay is a culmination of the experiences and observations of the three of us, as an undergraduate medical student and young surgeons, while learning and working on the frontline, about how best we can adapt, evolve to find the silver lining to this dark cloud.

Medical Education and Training: The discontinuation of in-person teaching programmes has had a substantial impact on undergraduate medical education, residency, and fellowship training including much needed practical syllabus

learning like cadaveric dissections in Anatomy, learning basics of clinical examination in Physiology, Staining and Stool examination procedures in microbiology, skill of use of the microscope in histology and histopathology, Family/community visits in Community Medicine and Case history and examination skills in all clinical branches and clinical postings and reduction in elective procedures. However, conventional training has been replaced by an explosion in online education during the pandemic. Several well-known organisations and their members have taken the initiative in this effort. Online lectures (**Figure 1**), structured short-term training programmes, surgical videos, integrated artificial intelligence platforms, journal clubs, and e-learning remote classrooms have all grown commonplace in recent years. Other innovations in the near future include augmented reality and surgical simulator training. Wearable technology, smartphones, and other handheld gadgets will almost certainly become hardware and software tools for residency programmes all over the world. The real problem is to keep going in this direction without jeopardising patient anonymity. Hippocrates once said, "Wherever the art of Medicine is loved, there is also a love of Humanity". Thus,

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Figure 1. Online demonstration of dissection of human cadaveric heart as a part of online teaching schedule for undergraduate medical students (Credits: Department of Anatomy, Seth G.S. Medical College and K.E.M. Hospital, Mumbai)

the human factor in healthcare including connecting with patients cannot be replaced by these simulators and in-person learning will never become fully obsolete. However, these new technological advances will be a valuable addition to ensure training programs are not disrupted by the pandemic.

Health Research: As the world awaited anxiously for a COVID-19 vaccine, it has thrown a spotlight on the importance of medical research. Despite the fact that COVID-19 is primarily a non-surgical phenomenon, we, as surgeons may respond to the situation using the resourcefulness we have developed in operating rooms. The medical device industry's symbiotic relationship can operate as a trigger. Three-dimensional (3D) printing and ventilator design, isolation tents and negative pressure room concepts, robotic unmanned devices for sanitization, and Personal Protective Equipment (PPE) improvisation are various areas where orthopaedic surgeons can put their abilities to use. On the other hand, for medical students, COVID-19 has provided a lot of opportunities to get oriented to the field of health research, learn research methodology, learn and practice application of biostatistics, and also take up small projects which are questionnaire-based which could be conducted online using platforms like Google Forms, through the departments like Community Medicine (Preventive and Social Medicine), Psychiatry, etc. Such projects, although termed as 'small' provide a great head-start and practical experience in the field of medical research, before medical

students are ready to get involved in core clinical on-field or hospital-based researches. Moreover, the institutional review boards have also become more cooperative by allowing online proposal submissions, which makes the process easier.

Prospective research may be challenging, but academic writing and retrospective research that may have been neglected owing to other commitments may be undertaken. This is already happening, and the medical information system has been hit by a storm characterised by a large daily increase in published articles, accelerated review processes, curated hubs for easy and effective access, increased attention to preprint platforms, and free access to all pandemic-related articles in the previous months.¹ LitCovid (LitCovid: <https://www.ncbi.nlm.nih.gov/research/coronavirus/>) – is an excellent example of a tool for keeping up with the published SARS-CoV-2/COVID-19 papers. Many university courses and online resources are now free, and now is the ideal moment to cooperate, create, and achieve, particularly in research.

Clinical Practices and Frontline Work: The fastest-growing opportunity in clinical practice has to be increased adoption of telemedicine. Because of the development and downsizing of portable electronics, almost every family now has at least one digital device, such as smartphones and webcams, that allows patients and healthcare professionals to communicate. To decrease the danger of exposure to COVID-19, video

conferencing and similar television technology are being utilised to deliver healthcare programmes for individuals who are hospitalized or who are in quarantine. In addition, using a tele-physician to cover several sites can help with some of the challenges of skills shortage. Telehealth has a number of advantages, particularly in non-emergency/routine care and when services do not require direct patient-provider engagement. Remote care saves healthcare resources and increases access to care while reducing the danger of direct transmission. On the 25th of March, 2020, the Medical Council of India in partnership with National Institution for Transforming India (NITI) Aayog published the **TELEMEDICINE Guidelines**, which constitute Appendix 5 of the Indian Medical Council (Professional Conduct, Etiquette, and Ethics Regulation, 2002).² The guidelines give details of maintaining a digital trail/documentation of the consultation, fee for telemedicine consultation (which could be the same as in-person consultation) and guidelines for platforms rendering telemedicine consultations. Promoting the use of telemedicine should be considered in light of available infrastructure such as the internet and technological support in many regions of India.

Talking more about working in the frontline, we, surgeons, had to use PPE kits while talking to the patients in emergency. However, patients need to see our faces to develop that trust as a surgeon. So, we were given badges with our faces printed on them, so that the patients can see what we look like. We believe that this was very innovative to adapt to the unfortunate adverse working conditions. Surgeries had to be performed with full PPE gear. We can say that it is indeed exhausting to operate on patients in a 4-5 hours long case wearing PPE, but there was no alternative. After surgery and post-extubation, most patients remained in the OR (Operation Room) for 30 minutes washout period before being shifted to the ward. Clinics were entirely virtual and we had to adapt to do clinical examination over video conferencing. But we would like to take this positively as learning a new skill. However, this was particularly challenging for elderly patients not adept at it and in rural areas with poor connectivity. Many colleagues tested COVID-19 positive and we were out

of action for few weeks. Many colleagues were helping in COVID-19 Intensive Care Units (ICUs). So, the overall burden on the existing services was tremendous. Luckily, hospitals came up with wellness centres and relaxation zones to help us cope with the added stress. We are of the opinion that these centres and zones prove to be extremely beneficial and are a gem rising out of this pandemic for healthcare workers and should be continued even post-pandemic.

As medical students, many of us got the opportunity in getting involved in the frontline work alongside our seniors, residents and faculty in order to tackle this grave pandemic. While our seniors like faculty, residents and interns were spending hours together in the isolation wards, testing centres, Out-Patient Departments (OPDs), Operation Rooms,



Figure 2. Medical graduates, residents and senior doctors working on the frontline wearing PPE kits (Credits: Dr. Ashutosh Jadhav)

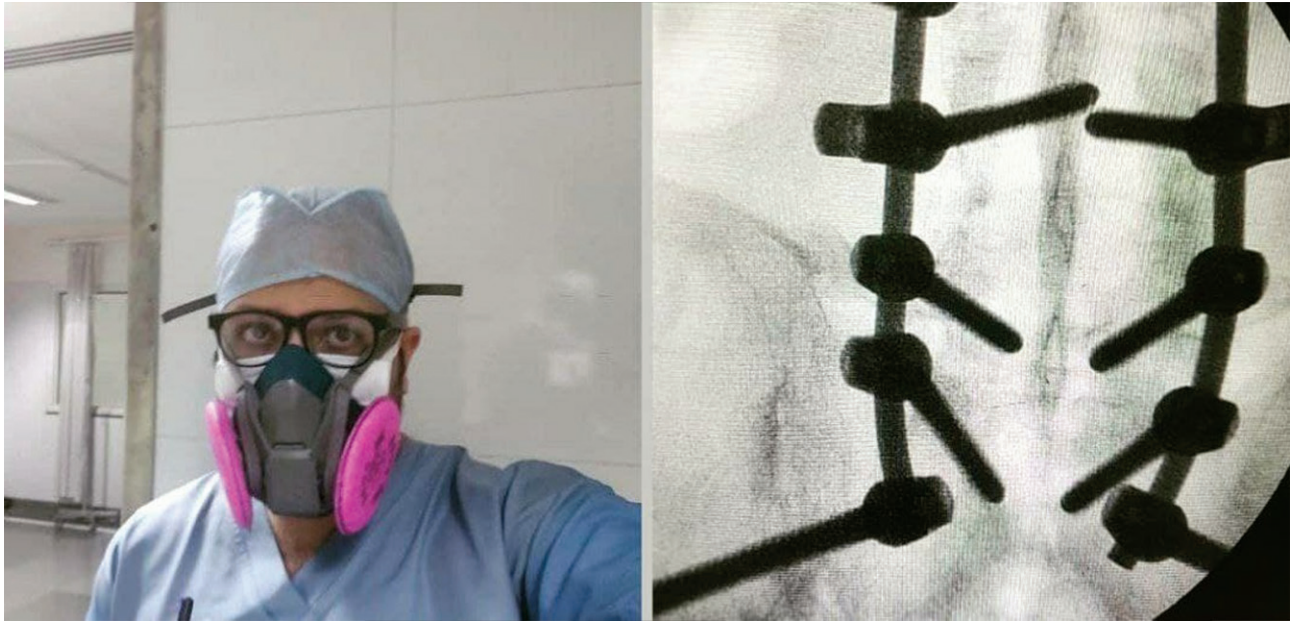


Figure 3. Continuing surgeries in the O.R.'s on the frontline in the pandemic

etc. wearing PPE kits continuously and getting drenched in sweat (Figure 2 and 3); we were honoured to contribute in every possible way by working in the 'COVID-19 war rooms' (Figure 4) for counselling of patients' relatives, contact tracing, direction to avail hospital facilities and explanation of the process to get admitted, etc. I could say

that this idea of setting up the war rooms was unique and has proven to be the need of the hour. The most gratifying feeling is when a recovered patient especially calls to thank for all the guidance in booking a bed and transfer to the hospital. There have been patients who told that they felt as if they were living in a country like the USA for getting a



Figure 4. 'COVID war rooms' in Mumbai, India where medical students volunteered to contribute to the fight against COVID-19 (Credits: Dr. Kanchan Sahwal)

quick response for their conditions. I am very much sure that this experience will definitely help us in the near future in clinical practice.

Public Health and Awareness: The COVID-19 pandemic has brought attention to the need of family and community-based healthcare. The relevance of home-based prevention as well as the limitations of curative treatments has been recognised across the world. India must concentrate on improving the foundations of good health, such as diet, lifestyle, heredity, and the environment, as well as social aspects like sanitation, cleanliness, water, and education. By enhancing people's health through a participative approach, the load on secondary and tertiary care can be minimised. We should use the COVID pandemic as an opportunity for implementing a 'One Nation - One Health System (ONOHS)' for providing promotive, protective, preventive, curative, rehabilitative, and palliative care throughout the life cycle.³ Based on its unique capabilities, India must build an integrated paradigm for equitable and universal healthcare. The concept 'ONOHS' needs to be seriously considered by dissolving the 'pathy' based silos. 'ONOHS' should not be misconstrued as an attempt to monopolize any particular system or a threat of losing anyone's identity. It entails evidence-based integration, with the greatest available knowledge systems working in patients' best interests. This approach may satisfy people's genuine demands while still adhering to global norms, priorities, and social requirements. This strategy, which starts with integrated basic medical education, might stimulate trans-disciplinary research, person-centred clinical practise, and public health promotion. Adding on to this, the pandemic has also provided the time to medical students and other students as well the practitioners, to set up their Non-Profit Organizations (NPOs)/ Non-Government Organizations (NGOs) or volunteer in the pre-existing or new organizations so as to create awareness in various subjects like COVID-19, mental health, de-addiction; Lesbian, Gay, Bisexual/ Biromantic, Transgender/Transsexual, Queer, plus (LGBTQ+); sexual and reproductive health and much more, as well as to provide pro-bono services like psychotherapy/ psychological counselling, de-addiction support, education to the underprivileged, etc. Working in some of those has given me great exposure and experience. I got to learn so much from every smallest thing. Working effectively in a team for a collective cause is another thing I learned.

Revenue Generation and Reallocation of Resources: COVID-19 has also posed a danger to the long-term sustainability of healthcare systems. The ongoing expenses of the COVID-19 pandemic, along with the looming

financial crisis will ultimately force us to do more with less. The pandemic's tragedy has ironically provided a chance to address the increasingly acknowledged problem of "too much medication" in a safe and equitable manner, therefore improving both healthcare sustainability and equity. Before COVID-19, the argument for combating too much medication was apparent. Over-diagnosis and misuse account for at least a quarter of regular healthcare spending, according to data from the Organization for Economic Cooperation and Development.^{4,5} According to current estimates, over a million potentially unnecessary tests and treatments are administered to Canadian patients each year.⁶ Misuse and over-diagnosis may be far more dangerous in poor and middle-income countries.⁷ More immediately, healthcare executives are grappling with critical concerns about how to deal with backlogs in elective surgery and other operations that have been postponed in recent months. In some regions of Canada, for example, two-year waiting lists for various operations are already commonplace. This has prompted a renewed focus on minimising unnecessary treatment, such as Magnetic Resonance Imaging (MRI) for uncomplicated osteoarthritis, in order to provide much faster care to individuals on waiting lists who are truly in need. This pandemic has provided us with an excellent chance to audit healthcare expenditure and allocate resources more efficiently. Since revenue generation is being impacted significantly, cost management and resource efficiency are required. A frequent assessment of available resources should be conducted, and resource allocation and patient prioritising should be agreed upon accordingly. The ramping up of the "Make in India" initiative by the Indian Government is a good example of ensuring the availability of PPEs, sanitizers, ventilators and other equipment at affordable prices with reduced dependence on imports while giving a boost to the local industry.⁸

To summarize, "in every adversity lies an opportunity" is an age-old adage and has never been truer than in the scenario of the current COVID-19 pandemic. One of the major opportunities emerging from this pandemic is the boost to healthcare expenditure, overhaul of medical training, emphasis on medical research and greater importance to public hygiene and sanitation. Yes, it is a very frightening situation that we are facing which is no less than an existential threat for the entire world. But we are certain that things will get better and the world will be healed, and in the meanwhile, this is also a chance to implement huge beneficial changes that would otherwise be impossible to achieve by traditional ways.

END NOTE

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