Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

workshops, and conferences. Staff who had to travel overseas required approval from senior hospital leadership and were placed on a 14-day leave of absence on return to mitigate any risk of importation of COVID-19.

Leading by example

Senior members of the surgical department, such as heads of department, heads of service, senior consultants, nursing officers, and managers rotated alongside junior members to the NCID SC, serving in equal capacity at the frontline, despite the heavier administrative burden on the senior staff and already stretched manpower situation. However, leading by example helped to boost morale and instill confidence among the juniors during this challenging time, and is another example of "flattening the hierarchy."[5]

Welfare and support

Although there was stigmatization of HCWs by the public in the initial stages of the outbreak, there has been an even bigger movement to show support to the HCWs. This has included free drinks and meals at popular establishments, goodie bags consisting of multivitamins and snacks, and personally written cards from schoolchildren, coordinated by the Human Resource Department. These small gestures from corporates, who themselves are seeing a challenging economic environment, and members of the public, serve to boost morale of the HCWs and strengthen the society's resolve to weather the crisis together. Within TTSH and NCID, the widespread use of murals of appreciation and corporate social media (Facebook, Workplace from Facebook) have allowed the sharing of personal stories and expression of appreciation by colleagues.

CONCLUSIONS

The COVID-19 situation continues to evolve rapidly. Surgical staff form an essential pillar of any hospital, but during this unprecedented time, must step out of their comfort zones to fill gaps. Leadership must remain nimble to make policy changes quickly in response to changing situations and yet remain receptive to feedback and sensing from the ground to keep up morale and resolve of staff during this challenging period. We hope sharing our experience helps other surgical units navigate this crisis successfully.

REFERENCES

1. Government of Singapore. Coronavirus disease 2019: cases in Singapore. Available at: https://www.gov.sg/article/covid-19-cases-in-singapore. Accessed March 20, 2020.
2. World Health Organization. Coronavirus disease (COVID-2019) situation reports. Available at: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports. Accessed March 20, 2020.
3. Lui JNM, Andres EB, Johnston JM. Presenteeism exposures and outcomes amongst hospital doctors and nurses: A systematic review. BMC Health Serv Res 2018;18:985.
4. Ministry of Health, Singapore Communicable Diseases Surveillance in Singapore 2003, Singapore, 2004. Available at: https://www.moh.gov.sg/resources-statistics/reports/the-communicable-disease-surveillance-in-singapore-2003. Accessed April 17, 2020.
5. Chan MC, Yeo SEK, Chong YL, Lee YM. Stepping forward: urologists' efforts during the COVID-19 outbreak in Singapore. Eur Urol 2020 March 17 [Epub ahead of print].

Invited commentary

Being a Surgeon in the Pandemic Era

Clement LK Chia, MBBS, MMED (Surg), FRCS (Ed)
Singapore

The end of 2019 saw the first cases of pneumonia of unidentified origin being reported by the Chinese government in Wuhan, China,[1] with confirmed human-to-human transmission to healthcare workers on January 12, 2020.[2] This was met with a swift response by public health and scientific communities, uncovering its etiology to be a novel RNA beta-coronavirus.[3] Its genome has since been sequenced, with Zhu and colleagues[4] reporting a 75% to 80% similarity to the 2003 Severe Acute Respiratory Syndrome coronavirus. The coronavirus disease (COVID-19) outbreak has since caused a global pandemic, with 896,450 confirmed cases and an unprecedented death toll of 45,526 people.[5]

With the pervasive spread of COVID-19, surgeons will invariably be intertwined and profoundly affected in many areas. Potential exposure to COVID-19 may arise from reviewing patients with surgical complaints in the emergency department, some of whom may have incidental suspicious chest x-ray findings and awaiting COVID-19 swab confirmation, encountering patients with recent travel history in the specialist outpatient clinics, and being exposed to blood or aerosol in the operating theater that may be contaminated with the virus. As such, it is timely for us to reflect on what it takes to be a surgeon in the pandemic era.

Wisdom in rationalizing resources

This article, by Ahmed and coauthors,[6] is highly relevant and topical and summarizes their surgical department's

response as the major supporting stakeholder to the National Center for Infectious Disease (NCID) at the epicenter of the Singapore's battle against COVID-19, where the majority of COVID-19 positive patients are cohorted. Pertinent points that are raised include resource management and use of personal protective equipment (PPE) that is institution-specific. Notably, there are currently detailed guidelines from national and international organizations[7-9] pertaining to this topic that are freely available online and any surgeon can access. Cancer surgery is generally prioritized in view of possible disease progression, but due consideration should be given to other conditions from the perspective of loss of a window of opportunity for intervention, loss of livelihood, and prolonged pain and suffering. There is no "one size fits all" guideline that can be appropriate to every situation, and it is imperative that the surgeon exercises wisdom and discretion in rationalizing surgery in the patient's best interest.

Transdisciplinary training

There is a need to cohort and centralize the care of COVID-19 patients, especially those who require intensive care support, to enable more efficient use of resources and deployment of specialist care for this group of patients. There will also be a need for other healthcare institutions to contribute manpower to support these specialized infectious disease centers. My institution, which is situated in the north of Singapore, has similarly been contributing junior manpower in phases to the NCID and is functioning with a lean manpower capacity. This, coupled with the rising number of COVID-19—related cases filling up hospital beds, places a significant workload strain on our physician colleagues. Additional surgical wards are being converted to pneumonia cohort wards, and surgeons are being trained to run some of them. It is likely that as the COVID-19 crisis evolves, surgeons will be increasingly tasked with other administrative or frontline roles that require one to adapt and adopt an open mindset. The need for transdisciplinary training and cross coverage has never been more pressing until the current crisis, and surgeons must be ready to step up and out of our comfort zone.

Team morale

Ahmed and associates[6] also raised the point of team morale, with his institution's leadership leading by example and being rostered to the frontline, regardless of hierarchy. While this gesture is commendable, it should be weighed in the context of the risk-to-benefit ratio of potentially exposing to the disease a senior member of the institution, whose role may not be easily replaceable in the event of downtime and potentially creating more harm to the situation. The contribution of senior leadership in administrative roles and decision making is equally vital, especially when the burden of decisions affects the lives of countless fellow colleagues, healthcare workers, and their families. Alternatively, the surgeon could raise team morale via careful manpower planning, with an adequate work rest cycle, and by giving junior members of the team time off to spend with their loved ones and family.

Unity in isolation

The need to seek unity as one healthcare unit is the irony amidst the social distancing and isolation that we must now observe. The current crisis is tantamount to a test of the department and institution on all fronts, from social capital to clinical governance. Constructive feedback and communication should be encouraged, but open dissent and conflict will only serve to create chaos and confusion, and hamper the ability of the system to function and protect the needs of our patients and fellow healthcare workers. Trust in the institution and system to prioritize its staff welfare and safety remains core and vital to achieving unity.

Seeking the silver lining in the crisis

It is inevitable that the pandemic era is accompanied by an avalanche of drastic changes to our surgical practice. Although the inconveniences may be profound in many ways, change is a friend of innovation, and it is during extraordinary times that practice and behavior evolve, and innovative solutions to problems are born. As Ahmed and colleagues[6] allude to in this study, restructuring of surgical teams and shiftwork with leaner manpower capacity are redefining how surgical departments operate more efficiently, and the use of teleconferencing and telemedicine are further entrenched in our practice as we navigate this pandemic. With the tsunami of COVID-19 cases, it is likely that some among us may have to self-isolate or even be on home quarantine for various reasons. For some surgeons, perhaps this period of self-isolation may be a unique opportunity to complete research they could never find time for amidst clinical work; for the trainee, it may be time to read the surgical textbook that has been left untouched, or for some, it may simply be an opportunity for self-reflection and to delve into the deeper meaning of being the right surgeon in the wrong era.

As we rise to the challenges ahead of us, the traditional role of the surgeon remains crucial, and delivery of quality emergency and urgent surgical care must continue. The road ahead may be long and arduous, but with resilience, we will eventually emerge from this crisis triumphant and will redefine our roles as surgeons for many generations to come.

REFERENCES

1. World Health Organization. Pneumonia of unknown cause—China. 2020. Available at: https://www.who.int/csr/don/05-january-2020-pneumonia-of-unkown-cause-china/en/. Accessed April 16, 2020.
2. Huang C, Wang Y, Li X, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. Lancet 2020;395:497−506.
3. Lu R, Zhao X, Li J, et al. Genomic characterisation and epidemiology of 2019 novel coronavirus: implications for virus origins and receptor binding. Lancet 2020;395:565−574.
4. Zhu N, Zhang D, Wang W, et al. A novel coronavirus from patients with pneumonia in China, 2019. N Engl J Med 2020; 382:727−733.
5. World Health Organization. Coronavirus disease 2019 Situation Report − 73. Available at: https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200402-sitrep-73-covid-19.pdf?sfvrsn=5ae25bc7_2. Accessed April 3, 2020.
6. Ahmed S, Tan WLG, Chong YL. Surgical response to COVID-19 pandemic: A Singapore perspective. J Am Coll Surg 2020; 230:1074−1077.
7. Surgical response to COVID-19. Available at: https://www.sages.org/recommendations-surgical-response-covid-19/. Accessed April 3, 2020.
8. Interim infection prevention and control recommendations for patients with suspected or confirmed COVID-19 in healthcare settings. Available at: https://www.cdc.gov/coronavirus/2019-ncov/infection-control/control-recommendations.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fhcp%2Finfection-control.html#take_precautions. Accessed April 3, 2020.
9. American College of Surgeons. COVID-19: Elective case triage guidelines for surgical care. Published March 24, 2020. Available at: facs.org/covid-19/clinical-guidance/elective-case. Accessed March 27, 2020.

Disclosure Information: Nothing to disclose.