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European Association of Urology



## Letter to the Editor

### Stepping Forward: Urologists' Efforts During the COVID-19 Outbreak in Singapore

#### 1. Introduction

Since it was first reported in Wuhan, China, in December 2019, the novel coronavirus has rapidly spread worldwide [1]. To date it has infected more than 83 000 individuals, and in the past week has made inroads into Europe [2,3]. On January 30, 2020, the World Health Organization (WHO) declared the situation a public health emergency of international concern and on February 11, 2020 named the disease COVID-19 [3].

Even before the first confirmed case in Singapore on January 23, 2020, authorities including the Ministry of Health (MOH) raised national alert levels and implemented wide-ranging, multiagency public health measures [4]. By February 6, 2020 and up to February 19, 2020, Singapore had the highest number of confirmed cases outside of mainland China [3]. The rate of contagious spread has since been overtaken by other affected countries, and Singapore's sustained national efforts in early detection and containment have been acknowledged by Harvard University [5] and the WHO [6].

Since the 2003 severe acute respiratory syndrome (SARS) outbreak that killed 33 people, including healthcare workers, in Singapore, the nation has improved national outbreak readiness by increasing training of infectious disease control personnel and improving infrastructure. The National Centre for Infectious Disease (NCID), a purpose built 330-bed facility, officially opened in September 2019 [7]. It is connected to Tan Tock Seng Hospital (TTSH), one of the largest acute hospitals in Singapore (1700 beds and 9000 staff) [8]. NCID contains a screening centre (SC), isolation and cohort wards, a high-level isolation unit, operating theatres, radiology suites, and laboratories.

As the forefront of the efforts in Singapore, the NCID SC operations required secondment of TTSH staff, with urologists among those deployed. The SC assesses patients in terms of travel or contact history [9], respiratory symptoms, fever, suspected or confirmed COVID-19 status, and primary health care referrals. Emergency physicians oversee operations in consultation with infectious disease physicians. At all times, a quarter of the urology department complement of doctors was deployed to the SC, working 10-day rotations.

This correspondence shares our early experience, highlighting the impact on urology practice, lessons learnt, and the role of urologists in outbreaks.

#### 1.1. Impact on urology practice

TTSH reacted quickly to the COVID-19 outbreak and reduced inpatient and outpatient services in preparation for a possible surge of COVID-19-related admissions and arranged staff secondment to the NCID: internists were deployed to outbreak wards and surgeons to the SC. The TTSH urology department implemented urgent measures to reduce specialist clinics, outpatient procedures, and use of operating theatres.

Scheduled clinic appointments were screened. Patients with nonurgent conditions were consulted via telephone and rescheduled for a minimum of 6 months later, with prescriptions written for pickup or delivery. Clinics prioritised known or suspected malignancy, obstructive uropathy, and immediate postoperative cases.

Likewise, outpatient procedures were stratified by urgency. Prostatic biopsies and cystoscopy for patients at high risk of malignancy and extracorporeal shockwave lithotripsy for obstructive ureteric calculi were allowed to proceed. All nonurgent procedures were cancelled.

Use of operating theatres was reduced from up to three to just one theatre daily. Elective surgery cases were consulted via telephone and postponed, with priority reserved for oncology and obstructive uropathy cases.

Ward rounds were reduced to essential personnel only, with all teaching rounds cancelled and elective admissions minimised.

To minimise contagious spread, meetings were held via video conferencing. Journal clubs, preoperative and postoperative discussions, and multidisciplinary meetings were held in small groups in breakout rooms, with physical distancing maintained using desktop and mobile-based applications.

In addition, real time location systems tracked staff movement in high-risk areas in cases of positive COVID-19 contact.

#### 1.2. Impact on residency training and undergraduate education

Escalation of the alert level mandated cessation of interhospital staff movement, with residents who were rotating in other hospitals remaining there indefinitely. Undergraduate

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clinical attachments were cancelled. Residency and undergraduate teaching switched to online learning.

With national annual residency examinations scheduled for early 2020, disruption of rotations, an increase in administrative load due to rescheduling of patients, and SC responsibilities, residents were understandably anxious. Urology consultants acted immediately to address this: they lobbied for postponement of examinations with the MOH, ensured that every effort was devoted to providing support to staff at the SC, and led by example in serving at the SC.

### 1.3. Our role as urologists and lessons learnt

Managing the initial stages of the COVID-19 outbreak has reinforced critical lessons. Firstly, a key step is the maintenance of departmental emergency contingencies for manpower cuts and diversion to facilitate quick responses to hospital and nationwide emergencies. Similarly, contingencies should be made for education in exceptional cases of disruption.

Secondly, the importance of administrative leadership in the organisation of clinics, procedure lists, and use of operating theatres cannot be underestimated. Urgent patient rescheduling was facilitated by existing protocols that register contact information for all patients and triage them to the appropriate urology services. This outbreak highlighted the importance of positive doctor-patient relationships and trust in making such inconveniences more acceptable to patients.

Thirdly, senior staff serving at the SC were crucial for a balanced distribution of senior and junior doctors and in boosting frontline staff morale. It was essential to balance their leadership and administrative roles during the outbreak with their service commitments at the SC, but having senior staff lead by example contributed greatly to ensuring the remaining urology services ran smoothly, while motivating junior staff at the SC.

Fourthly, the COVID-19 outbreak undoubtedly interrupted residency training and undergraduate education. With the rigors of undergraduate medicine and residency, it is easy to forget empathy, morality, and social responsibilities as a doctor. This outbreak was taken as an opportunity to remind junior doctors of the humanitarian aspect of medicine, as in the Hippocratic oath: “I will remember that I remain a member of society, with special obligations to all my fellow human beings, those sound of mind and body as well as the infirm” [10].

Lastly, embracing technology is important not just in clinical practice but also in administration and communications. Interhospital and interdepartment meetings were facilitated by existing electronic nationwide patient records with video-conferencing using desktop and mobile applications, while education relied heavily on online learning.

As we deal with COVID-19 worldwide, this is a timely reminder to urologists of our responsibilities as doctors first and foremost. COVID-19, infectious diseases, and emergency medicine are far removed from a urologist’s specialised skill set, but we should always remember the Hippocratic oath we swore and the importance of empathy and servitude: “May I always act so as to preserve the finest traditions of my calling

and may I long experience the joy of healing those who seek my help” [10]. Although we have dedicated our careers to genitourinary surgery, in times of need, urologists have a role to play in serving society and public health.

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### CRediT authorship contribution statement

**Ming-Chun Chan:** Conceptualization, Writing - original draft.

**Sharon E.K. Yeo:** Writing - review & editing, Supervision.

**Yew-Lam Chong and Yee-Mun Lee:** Writing - review & editing, Supervision.

### References

- [1] Zhu N, Zhang D, Wang W, et al. A novel coronavirus from patients with pneumonia in China, 2019. *N Engl J Med* 2020;382:727–33. <http://dx.doi.org/10.1056/NEJMoa2001017>.
- [2] World Health Organization. COVID-19 situation in the WHO European region. <http://who.maps.arcgis.com/apps/opsdashboard/index.html#/ead3c6475654481ca51c248d52ab9c61>.
- [3] World Health Organization. Coronavirus disease (COVID-2019) situation reports. [www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports](http://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports).
- [4] Ministry of Health Singapore. Updates on COVID-19 (coronavirus disease 2019) local situation. [www.moh.gov.sg/covid-19](http://www.moh.gov.sg/covid-19).
- [5] Niehus R, De Salazar PM, Taylor A, Lipsitch M. Quantifying bias of COVID-19 prevalence and severity estimates in Wuhan, China that depend on reported cases in international travellers. *medRxiv* 2020. <http://dx.doi.org/10.1101/2020.02.13.20022707>.
- [6] World Health Organization. Director-General’s remarks at the media briefing on COVID-19 outbreak on 18 February, 2020 [www.who.int/dg/speeches/detail/who-director-general-s-remarks-at-the-media-briefing-on-covid-19-outbreak-on-18-february-2020](http://www.who.int/dg/speeches/detail/who-director-general-s-remarks-at-the-media-briefing-on-covid-19-outbreak-on-18-february-2020)
- [7] National Centre for Infectious Disease. About NCID. [www.ncid.sg/About-NCID/Pages/default.aspx](http://www.ncid.sg/About-NCID/Pages/default.aspx).
- [8] Tan Tock Seng Hospital. Corporate profile. [www.ttsh.com.sg/About-TTSH/Pages/Corporate-Profile.aspx](http://www.ttsh.com.sg/About-TTSH/Pages/Corporate-Profile.aspx).
- [9] Hellmich TR, Clements CM, El-Sherif N, et al. Contact tracing with a real-time location system: a case study of increasing relative effectiveness in an emergency department. *Am J Infect Control* 2017;45:1308–11. <http://dx.doi.org/10.1016/j.ajic.2017.08.014>.
- [10] Oxtoby K. Is the Hippocratic oath still relevant to practicing doctors today? *BMJ* 2016;355:i6629. <http://dx.doi.org/10.1136/bmj.i6629>.

Ming-Chun Chan<sup>a,\*</sup>  
Sharon E.K. Yeo<sup>a,b</sup>  
Yew-Lam Chong<sup>a,b</sup>  
Yee-Mun Lee<sup>a,b</sup>

<sup>a</sup>Department of Urology, Tan Tock Seng Hospital, Singapore

<sup>b</sup>Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore

\*Corresponding author. Department of Urology, TTSH Medical Centre, Tan Tock Seng Hospital, 308433 Singapore. Tel. +65 98289877, Fax: +65 68894260.

E-mail address: [mingchunchan@hotmail.com](mailto:mingchunchan@hotmail.com) (Ming-Chun Chan).

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