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**An Australian perspective on the impact of COVID-19 for urgent surgical patients**

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In recent times, the world has united against COVID-19. Whilst the direct impact of COVID-19 has been clearly evident, its ramifications on outcomes for non-COVID-19 patients will not be completely elucidated until long after it has been contained. As the world grapples with this novel coronavirus, the last few months have seen governments and policy makers shift resources to address the pandemic. With telehealth replacing face-to-face consultations, cancellation of elective surgery, whittling down of medical teams, and staff redeployment to supplement critical care sectors; the resolve to contain COVID-19 has been unmistakable. In taking these preparatory steps, we must ensure no patient group is inadvertently disadvantaged, as the burden of other diseases progress unabated.

In Australia, the first case of COVID-19 was reported on January 25th.[1] Following this, entry of foreign nationals from China was banned on February 1st and the first COVID-19 death occurred on March 1st.[1, 2] Shortly after, travel bans were instituted on Iran, South Korea and Italy.[1] Having reached 100 cases on March 10th, a human biosecurity emergency was declared on March 17th.[1] Two days later, borders were closed to non-residents and non-citizens.[4] On March 23rd, mandatory closure of all non-essential businesses was enacted.[1] In the state of Victoria, citizens were permitted only to leave the house for food, necessary supplies, medical care, exercise or essential work.[5]

Through these seemingly drastic measures, Australia was able to 'flatten the curve'. As we write this, the COVID-19 fatality is 108.[5] The daily increase in cases initially peaked at 469 on March 28th, and the curve effectively flattened for the following months. However, subsequent resurgences of cases have occurred with a shift from overseas transmission to community transmission. This is on a background of 3,117,788 tests conducted, of which 0.3 % have been positive. There are currently 92 hospitalised COVID-19 patients, of whom 18 are in ICU, with a national capacity of 4,400 existing ventilators.[5, 6] Personal protective equipment stockpiles have also been boosted. The Australian

Government should be applauded for their decisiveness in managing this unprecedented situation in the absence of herd immunity or a vaccine.

With physical distancing and 'stay at home' imperatives bestowing some sense of stability, it is necessary to review the 'new normal' for surgical patients. Specifically, a shift has been observed regarding emergency and acute surgical presentations. At a tertiary hospital in Melbourne, in the month during lockdown (April 2020), there were 4,825 emergency presentations. Of these, 1384 (29%) were COVID-19 related. There were 1,109 patients swabbed and 9 (0.81%) tested positive, with just a single patient requiring admission (Fig 1). The remaining 3,441 non-COVID-19 related emergency presentations represent a 25% drop compared to the 4,618 in 2019 during the same timeframe. Further comparisons indicate a decrease in overall hospital and surgical admissions from emergency, of 30% (831 to 583) and 23% (287 to 221) respectively. At another hospital and level one trauma centre, acute surgical referrals and acute operative cases experienced reductions of 22% and 48% respectively for the month of April between 2019 and 2020. This reduction occurred in the context of an increase in acute surgical workload of 15 to 20% in January and February (Fig 2).

Despite the low incidence of COVID-19 in the Australian community at that time, the number of patients presenting for COVID-19-related concerns represented a significant healthcare burden. Conversely, independent of the pandemic, surgical diseases continued to progress in the community. Many surgical patients had been displaced by COVID-19-related measures, through cancellation of non-urgent elective surgery (which peaked in the months of April & May during lockdown, Fig 3) and rescheduling of non-urgent clinic appointments. Whether this will lead to poorer health outcomes or quality of life is yet to be determined. However, the impacts on acute surgical patients are perhaps more immediate, as illustrated by the following case example.

A 47-year-old lady presented with necrotising fasciitis of the breast.[7] This began as a breast abscess noticed one month prior to presentation. She was anxious about seeking medical attention amidst the 'stay at home' mandate and reluctant to divert healthcare resources from the overwhelming number of critically ill COVID-19 patients, as seen in media footages of Lombardy and New York City. A complicating factor was her inability to secure a face-to-face consultation at her general practitioner's clinic. Consequently, she presented with a rare, life-threatening, virulent infection, requiring complete mastectomy, multi-day intensive care admission, renal replacement

therapy and transfer to another hospital for hyperbaric oxygen therapy. Had she presented earlier, less radical measures would've been sufficient, avoiding the significant morbidity and resource allocation of her advanced pathology.

With medical professionals championing messages on social media such as "stay at home so we can go to work for you", what constitutes an out-of-the-house activity may be misinterpreted. This is despite 'seeking medical care' being one of the government-sanctioned activities for leaving the house during lockdown. Nation-wide quarantine has saved countless lives and remains a powerful weapon against COVID-19. However, we must be cognisant of the potential collateral damage in other areas of population health, notably urgent surgical conditions not recognized or treated in a timely manner and aggressive or advanced malignancies.

As surgeons, it is imperative that we help our patients navigate this foreign landscape. With media coverage of the pandemic inundating our newsfeed, including portrayals of overrun medical services and unfathomable death tolls internationally, some may trivialize their non-COVID-19 illness or not access medical care promptly, from a sense of civic duty. In patients who have had their surgery postponed or appointments rescheduled, a sense of unimportance and abandonment can develop. Thus, it is incumbent on clinicians to advocate for patients' health in the broader sense, based on up-to-date facts. We should balance efforts to contain the pandemic with measures aimed at minimizing morbidity for non-COVID-19 patients. Government agencies, community practices and hospitals must give consistent advice to the public. Messages to enforce lockdown should be nuanced to address other medical concerns. While surgeons are not performing the usual volume of elective surgery, we must reach patients in the community via less traditional communication methods.

We must aim to inform patients via their general practitioner and outpatient clinics as well as non-traditional forms such as social media and surgeons' professional websites. A clear and consistent message should be delivered that if medical attention is needed, attending the emergency room is still safe and encouraged, despite the pandemic or directives to stay home. Furthermore, patient attitudes towards their own healthcare must be addressed. Patients should not wait until they are critically unwell but should present for treatment if they have any concerns, just as they would have prior to the pandemic. Unfortunately, COVID-19 does not discriminate and

affects healthcare and frontline workers equally. Media reports of medical facility breakouts or staff infections may deter patients from attending for fear of contracting the virus at hospitals or clinics. The public needs to be reassured that, medical facilities have measures in place to ensure the wellbeing of staff and patients and are able to move promptly to implement containment measures when outbreaks occur. These messages of ongoing trust in our medical system and reassurance should be delivered by any health professionals being interviewed by the media. It is important that media sensationalism does not erode patients' trust that health services are safe.

With a lag time of weeks between institution of population-level measures and health outcomes, healthcare providers must remain vigilant and adaptable. There are other potential impacts on acute surgical patients that were not considered in this article, such as access to theatre, length of stay and complications rates. The pandemic's complexity is beyond what can be considered in this article. Nonetheless, by collaborating with other specialties and the administration, and effectively communicating with the public, we are confident our patients can achieve optimal outcomes for their urgent surgical conditions during this unsettling period.

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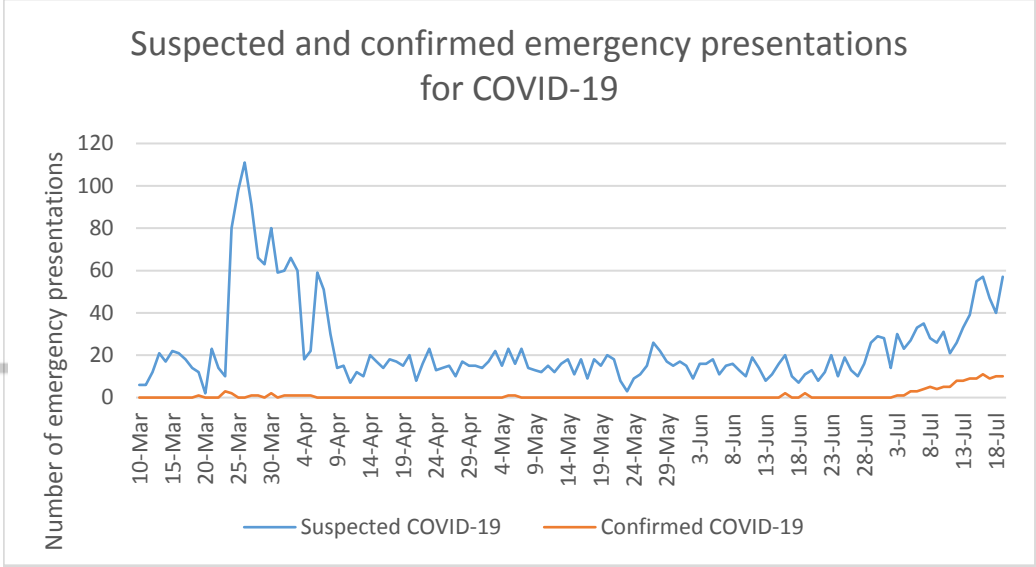


Figure 1

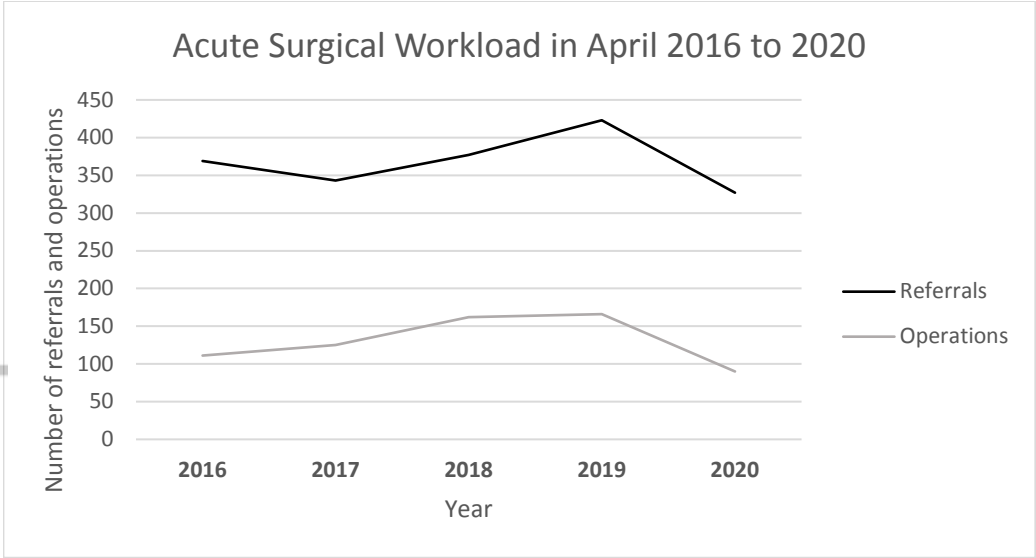


Figure 2

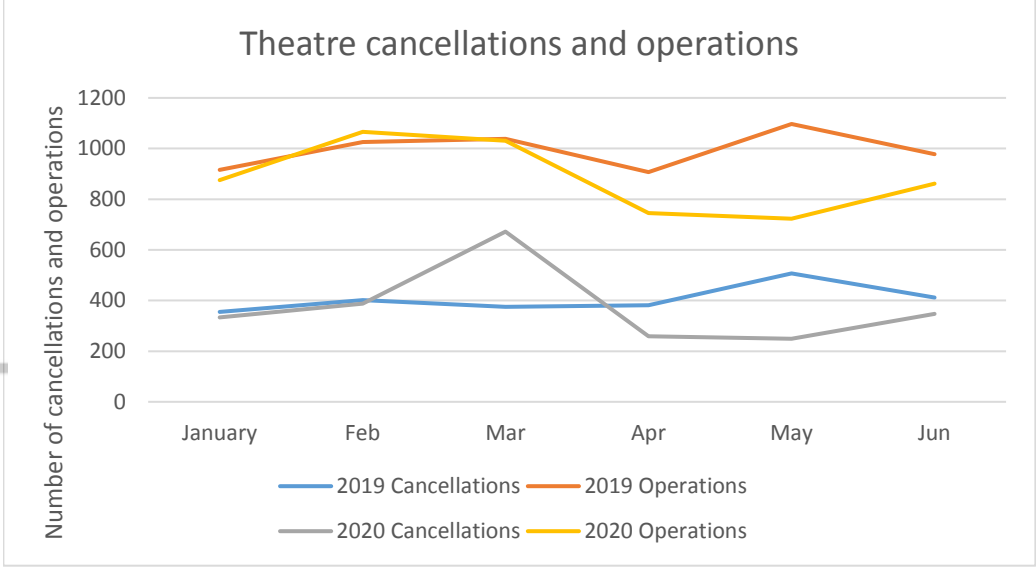


Figure 3

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