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## Editorial

## Trauma care in a low-COVID pandemic environment: A new normal



A pandemic is defined as an outbreak of a disease that spreads quickly over a wide geographical area and infects a high proportion of a population. The novel coronavirus or SARS-CoV-2 is highly infectious resulting in spread between patients or from patients to health care workers (HCWs) by either contact with viral colonised surfaces, or by droplet formation from coughing, or by aerosol generating procedures (AGPs) such as intubation or suction of the oropharynx.

During a pandemic, the ability of a trauma system to deliver timely and appropriate care will depend on whether or not the system is overloaded. If a health system is under stress, there is less availability of the critical care resources (such as intensive care beds or ventilators) required to manage seriously injured patients. The risk of transmission of infection also adds another layer of complexity to the management of seriously injured patients as appropriate Personal Protective Equipment (PPE) needs to be readily available.

As we have seen with the current COVID-19 pandemic, some countries have managed to control spread early (eg Taiwan, Singapore, New Zealand and Australia) by immediate action involving physical distancing, widespread testing, contact tracing, isolation of positive cases and supportive treatment.

The good news is that the actions of successful countries in controlling the pandemic have resulted to date in less strain on their respective health systems as well as a decrease in overall trauma caseload. Countries that have been less successful in controlling the pandemic have found their health systems overloaded which impedes their ability to deliver usual care to both COVID and non-COVID patients.

The bad news is that we don't know how long the pandemic will last, if immunity post-infection is long lasting or if an effective vaccine will be discovered. This means that the virus may be in circulation in all countries albeit at low levels for some time. This will have implications for all clinical practice.

The COVID-19 management strategies involving shutting non-essential services such as bars and nightclubs, reducing travel and encouraging physical distancing have had the side effect of significantly changing the epidemiology of trauma. This was recently demonstrated by Christey et al. [1] who found a 43% reduction in all injury-related admissions to a New Zealand Major Trauma Service (MTS) when they compared a two week period both before and after the onset of level 4 pandemic restrictions in New Zealand.

Systems for categorising patients as high or low risk are vitally important even in low-COVID environments as the resources required and the time taken to evaluate and treat a major trauma patient who is high risk are dramatically greater than one who is low risk.

Risk stratification tools [2,3] consider a number of factors and amongst those asymptomatic carriage is of particular concern. The findings of a small USA study [4] show that there may be a high prevalence of asymptomatic carriage of the virus. The researchers found that almost 50% of positive cases, who were asymptomatic at the time of testing, were still shedding the virus from the nasopharynx and thus increasing the risk of transmission to HCWs or other close contacts. This would necessitate treating all undifferentiated patients as being potentially COVID-19 positive until proven otherwise by definitive viral swab testing.

Use of resources is a real issue for trauma care even when the community prevalence of COVID is low. The insidious nature of early COVID infection, compromised cognition and the “unreliability” of a subset of trauma patients all result in a significant proportion needing to be initially treated as if they were infected. Even in a low-COVID environment the possibility that emergency care resources could be overwhelmed is not minimal. For those reasons, recommendations that aim to preserve the capability of Emergency Departments are as relevant in low COVID environments as they are when there is a high prevalence of the disease.

Current recommendations [5] for the management of injured patients in a COVID-19 environment include bypassing the Emergency Department for uncomplicated injuries, minimising invasive procedures, in particular those that are AGPs, and providing surgical treatment that is only absolutely essential. Other recommendations include using minimal radiology investigations and /or the early use of interventional radiology to stop bleeding where possible and thus avoid surgical intervention.

Injuries which should be diverted from the Emergency Department for non-surgical treatment or delayed surgery, include many orthopaedic injuries as recommended by the British Orthopaedic Association [6]. Local referring hospitals should be supported by the MTS to manage some patients who would normally be transferred to the MTS according to local trauma transfer guidelines (eg multiple rib fractures, stable spine fractures, head injury not requiring urgent neurosurgical intervention). This joint decision making is made easier by the recent general uptake in the use of telehealth modalities. Telehealth can also be used for virtual post-operative clinics and thus avoid unnecessary visits to the MTS outpatient departments [7]. Early consensus around ceilings of care need to be discussed in particular for patients who are considered to have a very low chance of survival as judged by age, co-morbidities and patient wishes. Palliative Care and Aged Care Physicians should be part of the initial trauma team response to counsel both patients and families where, in the opinion of the senior members of the trauma team, aggressive surgical or Intensive Care treatment is thought to be not in the patient's best interest and unlikely to be of benefit [8].

The COVID 19 pandemic presents challenges for trauma clinicians with the ongoing risk of virus transmission for both patients and clinical staff which will need to be managed over the coming months or longer. All countries will have resourcing challenges such as the supply of adequate supplies of PPE, the availability of operating theatres and intensive care beds, as well as the provision of appropriate evidence-based care to victims of trauma who require significant resource utilisation in non-pandemic times. There will also need to be a re-evaluation of the way that trauma care is delivered with careful consideration of the indication for any trauma -related procedure from intubation to acute surgical care. Non- surgical treatment may become the new “normal” for many conditions that may have been previously treated operatively and senior clinicians will need to be involved in early decision making with patients and family members regarding the best course of action for each patient.

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