PERSPECTIVE

Planning for the next pandemic: Reflections on the early phase of the Australian COVID-19 public health response from the emergency department

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Abstract

EDs play a crucial role as frontline health services throughout public health emergencies, including pandemics. The strength of the Australian public health response to coronavirus disease 2019 (COVID-19) has mitigated the impact of the pandemic on clinical services, but there has still been a substantial impact on EDs and the health system. We revisit major events and lessons from the first wave of COVID-19 in Australia to consider the implications and avenues for system-level improvements for future pandemic and public health emergency response for EDs. Notwithstanding, the remarkable efforts of healthcare workers across the health system, COVID-19 has uncovered structural and planning challenges and highlighted weaknesses and strengths of the Australian federation. In anticipating future pandemics and other public health threats, particularly in the face of climate change, hard-won lessons from the COVID-19 response should be incorporated in future planning, policies, practice and advocacy.

Introduction

The present paper reflects on the early phase of the coronavirus disease 2019 (COVID-19) response in Australia to identify opportunities for strengthening public health emergency systems to better support EDs. In Australia, there have been 29 451 COVID-19 cases and 910 deaths (at 15 April 2021).[1] Although each life lost and 'long-COVID' case represent tragic individual stories, this must be considered in a global context of over 130 million cases and 2.9 million deaths.[2] The Australian public health response has prevented clinical services from being overwhelmed, unlike other high-income countries.[3] Nevertheless, COVID-19 has and continues to have substantial impacts on EDs. Although the response is ongoing, a timely reflection on the strengths and weaknesses of our existing systems during the initial phase, and ways to improve preparedness for the next public health emergency,

is worthwhile. This is especially pertinent in considering climate change, itself a major public health threat, as increased risk of emerging zoonoses and altered distribution of disease reservoirs and vectors are anticipated.[4]

Australia is a federation of states – a strength and a weakness in pandemic response

Australian healthcare workers (HCW) may not have in-depth understanding of the public health role delineations and interplay between state, territory and Commonwealth jurisdictions, which may have exacerbated disorientation in perceived guidance and leadership during the early pandemic response. Contradictory information from multiple sources caused understandable frustration, for example regarding testing indications, 'flu' clinic establishment and personal protective equipment (PPE) use.

The national decision-making body for health emergencies is the Australian Health Protection Principal Committee (AHPPC), which is comprised of all state and territory Chief Health Officers and chaired by the Australian Chief Medical Officer. AHPPC oversees various subcommittees, including the Communicable Disease Network Australia (CDNA). Based on CDNA advice, AHPPC provides policy recommendations for the Commonwealth Government, for example restrictions for international arrivals and changes to the COVID-19 case definition.[5] In practice, response implementation, such as testing criteria and management of international arrivals, is operated by

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state and territory governments. Although an effective early measure, the international border closure and quarantine systems raise complex issues of human rights infringement for citizens attempting return, the wellbeing of residents forced to leave Australia, and its psychological impact. Implementation challenges, including quarantine failures, have also been closely examined by state inquiries in the Victorian hotel quarantine review and the NSW Ruby Princess inquiry.[6] Breaches have also occurred in New Zealand, without the challenges of federalism. Nonetheless, we would do well to review the fitness of our National and sub-jurisdictional pandemic plans and biosecurity policies following the COVID-19 experience.

A National Centre for Disease Control (CDC) to improve coordination of public health emergencies has been called for since the 2009 H1N1 pandemic, including by current federal Chief Medical Officer Professor Paul Kelly.[7] While coordination is important, this perhaps simplifies the complex legislative and policy structures of Australia's cooperative federalism. Although the Commonwealth is the major funder of public health systems, states and territories remain responsible for public health implementation and public hospital services.[8] Even with an established National CDC, differences in health system capacity and populations between jurisdictions may demand tailored local responses. Domestic travel restrictions, although a blunt policy tool, have been effective in containing outbreaks, with consequent marked differences in COVID-19 experiences between jurisdictions. This ability of states and territories to impose public health orders commensurate to local risk has arguably been a major strength of the Australian response, and one that is integrally linked with the existing health and legislative framework.

Improving communication pathways and local coordination

An important resource for communicable disease management is CDNA's Series of National Guidelines, which provide nationally consistent recommendations for notifiable conditions. However, with an emerging virus the knowledge base necessarily evolves, with corresponding continuous revisions;[9] there were 21 iterations of the COVID-19 guidelines between February and March 2020.[6] The team preparing ACEM's Clinical Management Guidelines for COVID-19 initially met weekly, incorporating revisions as evidence arose. Communicating these to the EDs was critical for pandemic response but faced challenges.

As nucleic acid testing (NAT) for SARS-CoV-2 was first established in Australia, EDs played an important role in facilitating testing for the community. Limited initial testing capacity and uncertainty about transmission dynamics contributed to a dependence on EDs to appropriately select patients and safely collect NAT samples. As case definitions evolved and testing capacity expanded, EDs needed to effectively communicate to staff updates that were often received outside business hours, such as the expanding list of countries fulfilling epidemiological risk for testing. This exposed inconsistent avenues for communication, both between public health authorities and EDs and within departments. In NSW, an ED Community of Practice was established to enable inclusive multidisciplinary collaboration, information and resource sharing, provision of expert advice and rapid escalation of issues that require statewide response. Similar structures exist in other jurisdictions and these channels should be strengthened beyond the COVID-19 response.

Communication pathways within EDs should also be strengthened, especially for timely distribution of information to staff across different shifts. This is relevant to all types of disasters, but with more robust and sustainable mechanisms required for protracted public health emergencies.

Insufficient infrastructure for infection prevention and control (IPC) requirements

Early IPC recommendations adopted a precautionary approach, requiring aerosol precautions and negative-pressure rooms for collecting NAT samples, aerosol-generating procedures in high-risk patients and caring for suspected/confirmed COVID-19 patients. Even in metropolitan EDs, there are insufficient appropriately engineered spaces for this to be consistently undertaken, which bodes poorly when considering the potential threat of viral haemorrhagic fever or future pandemics. Sufficient space and isolation rooms for best practice IPC are challenging under routine conditions, which include presentations of suspected measles or pulmonary tuberculosis. Considering the significant timeframe for re-engineering, urgent investment in IPC hardware should be prioritised.

Review of PPE stockpile adequacy and distribution during the early response should be considered. This is vital to protecting HCW, and in turn, preserving the functionality of the healthcare system. Significant shortages because of high global demand and disruptions in supply chains are the predictable scenario a National Stockpile is intended to address. This was exacerbated by reports of fraudulent, counterfeit and ineffective PPE. Future planning should definitively resolve the expectations and responsibilities for PPE provision at the level of community-based services (including general practices and residential aged care facilities [RACF]) and hospitals by states, territories and the Commonwealth.

Pre-pandemic, routine IPC practices could be broadly considered unsatisfactory. System problems like inadequate hardware contributed to an acceptance of imperfect IPC at an individual and cultural level. Constant vigilance is a requirement for effective IPC. The normalisation of appropriate PPE use, accompanied by personalisation through proper training, fit-testing and fit-checking, must be continued. Likewise, capacity for physical distancing, which is incompatible with ED overcrowding, must be addressed. EDs are routinely at or over-capacity, such that a sudden surge in presentations rapidly overwhelms the system. Pandemic preparedness is yet another argument for definitive system responses to address access block, which relate not just to

hardware problems but also software challenges to ensure systems and capacity management is fit for purpose.

The expectation that it is abnormal for ED staff to take home infections or work when unwell should be embraced, not least because improving HCW safety also benefits patients. A culture of presenteeism is underpinned by the pressures of knowing sick leave may understaff shifts. Early outbreaks in hospitals and RACF also demonstrated the challenges posed by delays in diagnoses for HCW and the substantial implications for service continuity when colleagues are identified as close contacts. The policy window is now open to leverage ambitious goals like eliminating HCW infections, for which surely normalising sick leave uptake is a simple and an important first step.

Distinct but related is the need to develop effective staff surge plans to cope with inevitable absenteeism (because of illness, quarantine or other personal impacts) during disasters. HCW and ED staffing have been impacted by COVID-19 quarantine requirements for travel or workplace contact, domestic travel restrictions and understandably low thresholds for testing and self-isolation.

Addressing inequity must be the centre of our response

COVID-19 exposes and amplifies existing social and health inequities.[10] This is not news to the ED physicians who grapple with the health and social consequences of inequity in serving marginalised communities. Communities in metropolitan areas subject to workforce casualisation have been especially at risk of experiencing and spreading COVID-19, with devastating consequences in RACF. EDs, if adequately resourced, have a unique role in addressing inequities, including consideration for opportunistic COVID-19 vaccinations.

With a delayed vaccine rollout, the socioeconomic and broader health consequences of COVID-19 are far from over. Managing the emotional and psychological consequences for HCW and the community must be incorporated into long-term recovery planning.

The pandemic arrived before recovery from the 2019–2020 Black Summer was underway. Beyond those who delayed healthcare during lockdowns, hazardous alcohol intake, family violence and psychological distress will continue to manifest in increased ED presentations. Advocating for policies that definitively address social inequity is vital to building resilience and supporting community-based alternatives for healthcare.

Conclusion

EDs will remain frontline in supporting responses for pandemics and other public health emergencies. This reflection on the early events of the COVID-19 pandemic is an opportunity to identify avenues for policy, cultural and systems changes to improve preparedness for future public health emergencies.

Acknowledgements

Author contributions

All authors were involved in the conceptualisation, drafting and review of this paper.

Competing interests

All authors are members of the ACEM's Public Health and Disaster (PHD) Committee. The views expressed in this article reflect the authors' and not necessarily those of the PHD Committee or ACEM. LSG is a section editor for *Emergency Medicine Australasia*.

References

1. Commonwealth of Australia. *Coronavirus (COVID-19) Current Situation and Case Numbers*. 2021. [Cited 15 Apr 2021.] Available from URL: https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert/coronavirus-covid-19-current-situation-and-case-numbers

2. Johns Hopkins University & Medicine. *COVID-19 Dashboard by the Centre for Systems Science and Engineering*. 2021. [Cited 15 Apr 2021.] Available from URL: https://coronavirus.jhu.edu/map.html

3. Walton H, Navaratnam AV, Ormond M, Gandhi V, Mann C. Emergency medicine response to the COVID-19 pandemic in England: a phenomenological study. *Emerg. Med. J.* 2020; **37**: 768–72.

4. Lee VJ, Aguilera X, Heymann D *et al*. Preparedness for emerging epidemic threats: a Lancet Infectious Diseases Commission. *Lancet Infect. Dis.* 2020; **20**: 17–9.

5. Commonwealth of Australia. *Australian Health Protection Principal Committee (AHPPC) Novel Coronavirus Statement on 1 February 2020*. 2020. [Cited 15 Apr 2021.] Available from URL: https://www.health.gov.au/news/australian-health-protection-principal-committee-ahppc-novel-coronavirus-statement-on-1-february-2020-0

6. Commission of Inquiry into the Ruby Princess. Report of the Special Commission of Inquiry into the Ruby Princess. 2020. [Cited 15 Apr 2021.] Available from URL: https://www.dpc.nsw.gov.au/assets/dpc-nsw-gov-au/publications/The-Special-Commission-of-Inquiry-into-the-Ruby-Princess-Listing-1628/Report-of-the-Special-Commission-of-Inquiry-into-the-Ruby-Princess.pdf

7. Kelly PM, Lokuge K, Vally H, Cameron AS. Australia needs a national Centre for disease control. *Med. J. Aust.* 2010; **193**: 623.

8. Moloney K, Moloney S. Australian quarantine policy: from centralization to coordination with mid-pandemic COVID-19 shifts. *Public Admin. Rev.* 2020; **80**: 671–82.

9. Communicable Diseases Network Australia. Coronavirus Disease 2019 (COVID-19) CDNA National Guidelines for Public Health Units. [Cited 15 Apr 2021.] Available from URL: https://www1.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-novel-coronavirus.htm

10. Marmot M, Allen J. COVID-19: exposing and amplifying inequalities. *J. Epidemiol. Community Health* 2020; **74**: 681.