

Responding to the pandemic at a national and state public health level

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Abstract. Australia's planning and preparedness for a health emergency response has served us well in the response to the COVID-19 pandemic. Despite this, rapid and agile decisions were required to manage the public health impact. In the face of uncertainty and the seemingly evolving nature of the virus, we have seen precautionary actions and outcomes beyond that articulated in planning. The timely closure of international borders, requiring 14-day quarantine of returning travellers in designated facilities, is one such outcome; yet potentially the single most effective measure in controlling the pandemic in Australia. Our testing strategy, case and contact management, social restrictions and community measures have successfully suppressed the virus to a level of no domestic community transmission. The framework for this success was the effective utilisation of existing public health committees, whole of government leadership and responsiveness at all levels and community support. With the impending commencement of the COVID-19 vaccine program, this framework continues to support navigating our way out of the pandemic.

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Introduction

On the back of the 1918 influenza pandemic, advocacy for national leadership in public health management of infectious disease was the primary influence in the establishment of the Commonwealth Department of Health in 1921, directed by John Cumpston. Cumpston, as Director of Federal Quarantine, was involved in the 1913 smallpox outbreak in New South Wales (NSW) where the authority for State versus Federal response was contested. However, the States retained autonomy in the new structure with the Federal Health Council the mechanism for collaboration¹. The structure of the health system during the COVID-19 pandemic remains remarkably similar.

Health emergency arrangements and supporting legislation

The Australian Government Crisis Management Framework outlines the 'all hazards' crisis management approach and the arrangements for co-ordination (Figure 1)². States and Territories have aligned frameworks. Specifically, in Queensland, the COVID-19 response leverages existing state disaster management arrangements, reflected in the Queensland Disaster Management Arrangements³.

The Australian Health Protection Principal Committee (AHPPC), formed in 2006, provides advice to whole-of-government crisis committees. AHPPC is chaired by the Commonwealth Chief Medical Officer and membership includes State and Territory Chief

Health Officers and subcommittee Chairs. Three AHPPC subcommittees, which provide leadership and co-ordination in their respective areas of expertise, have been integral to the public health COVID-19 response: the Communicable Disease Network of Australia (CDNA), the Public Health Laboratory Network (PHLN), and formalised during the pandemic, the Infection Control Expert Group (ICEG). Additionally, invited experts sat on AHPPC, COVID-19-specific advisory committees for Australians at high risk (Aboriginal and Torres Strait Islander people, people with disability, aged care) were established to report to AHPPC and other expert committees to report directly to the Commonwealth on specific issues.

The COVID-19 response is underpinned by various pieces of Commonwealth and jurisdictional legislation (*The National Health Security Act 2007 (Cth)*; *International Health Regulation 2005 (WHO)*; *Biosecurity Act 2015 (Cth)*; *Public Health Act 2005 (Qld)*), enabling a national surveillance function and an effective, rapid, coordinated and cooperative health sector response to significant public health events including disease outbreaks and biosecurity threats at the international border.

The relevant legislation was used with good effect. For example, on 20 January 2020, the National Incident Room, as the National Focal Point under the *International Health Regulations 2005 (IHR)* was activated and CDNA recommended the novel coronavirus be a Listed Human Disease under the *Biosecurity Act 2015*. On 18 March a 'human biosecurity emergency' was declared under the *Biosecurity Act 2015*.

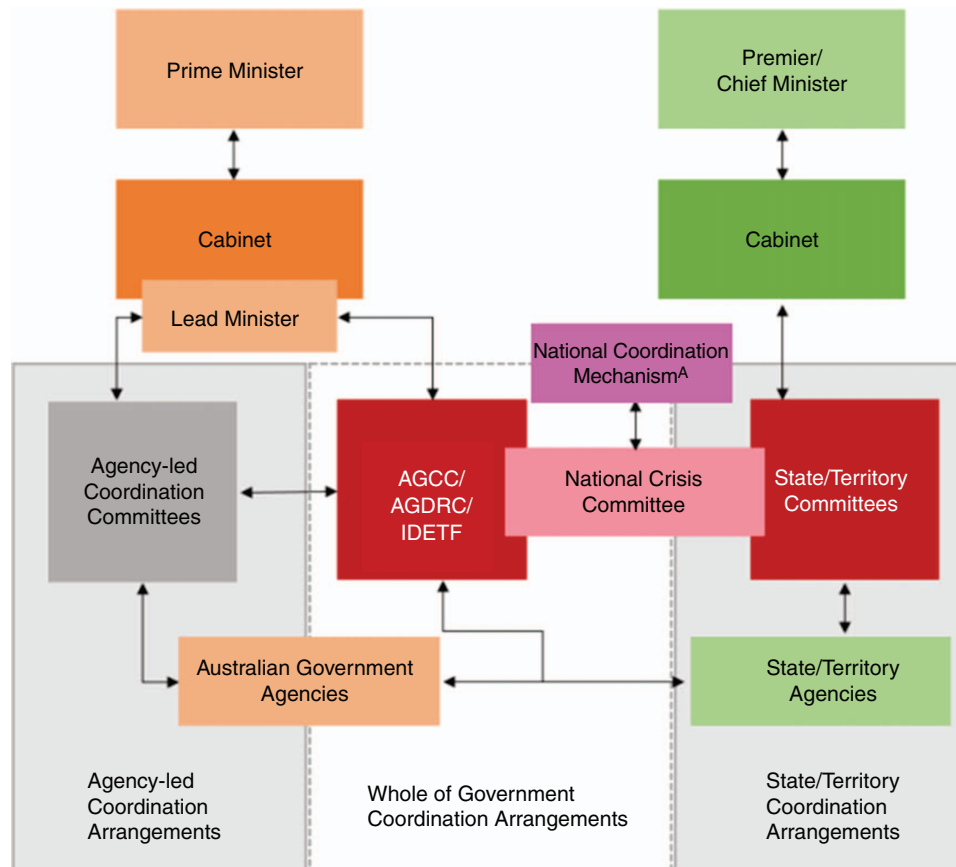


Figure 1. Relationship between state and territory coordination arrangements, agency-led coordination arrangements and whole-of-government coordination arrangements. ^ANote that in response to the COVID-19 pandemic, the National Cabinet was convened to support coordination between First Ministers.

To illustrate the relationship with State and Territory legislation and actions, the Queensland public health legislation enactment and associated actions, similar in other jurisdictions, is depicted in Figure 2.

Preparedness and planning

Following the emergence of H5N1 avian influenza and severe acute respiratory syndrome (SARS), investment in health emergency preparedness and planning increased⁴. From 2004 to 2017, various reviews on Australia's capacity to respond to a communicable disease outbreak were undertaken^{4–8}. Over this time the evaluation of status evolved from 'critical, but stable'⁴ to 'a comprehensive system of capabilities and functions to prepare, detect and respond to health security threats'⁸. However, issues were identified – overlapping Commonwealth and State responsibilities, workforce and surge capacity, and the national medicines stockpile. The H1N1 Pandemic review was particularly pertinent noting that while it was important to be well prepared, we 'must be flexible to accommodate the biological variations in the clinical picture and the potential uniqueness of each pandemic scenario, to enable resources to be effectively directed to achieve optimal outcomes'⁷.

Significant progress was made on the back of reviews, particularly with governance and national co-ordination^{9–12}. The Australian Health Management Plan for Pandemic Influenza was extensively rewritten in 2014. An evidence-based, flexible approach was supported by a raft of evidence summaries and commissioned reports including modelling, using existing systems and governance mechanisms wherever possible. The National Framework for Communicable Disease Control and the Emergency Response Plan for Communicable Disease Incidents of National Significance (CDINS) were developed by CDNA and endorsed by AHPPC. The recommendations from the Joint External Evaluation on International Health Regulations Implementation in 2018 were the focus of Australia's National Action Plan for Health security and areas for improvement included longevity of a skilled public health workforce, better use of genomics and an interoperable system support for surveillance and outbreak management.

This preparation and planning over many years enabled a rapid development of *The Australian Health Sector Response Plan for Novel Coronavirus* (COVID-19 Plan) and it was endorsed by AHPPC on 18 February 2020¹³.

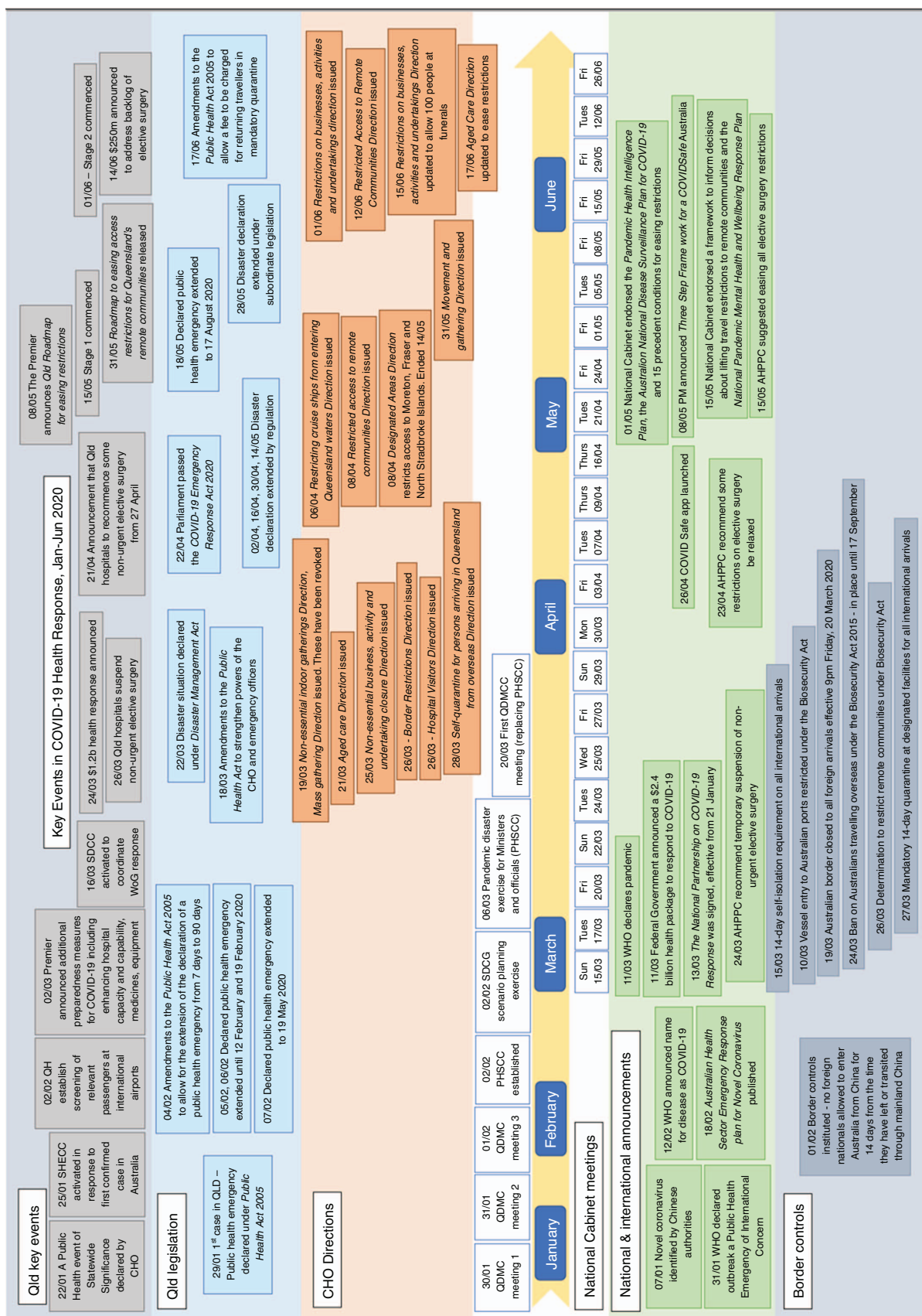


Figure 2. Key events and timing of the initial COVID-19 health response in Australia and the relationship with Commonwealth, State and Territory legislation (Department of the Premier and Cabinet, Queensland Government).

The first phase

However, ‘no plan of operations reaches with any certainty beyond the first encounter with the enemy’s main force’¹⁴ and this was certainly true of the COVID-19 response.

The progress of the pandemic is well reported and impossible to cover in detail here. However, it is worth highlighting the rapid and intense response in the months following reports in December 2019 of pneumonia of unknown cause in Wuhan. CDNA first met on 10 January 2020 and provided advice to clinicians. By 20 January the disease had been detected in countries outside China and it was apparent, though not yet officially recognised, there was widespread human to human transmission. CDNA recommended a CDINS be declared. Concurrently, PHLN was supporting jurisdictional laboratories in developing RT-PCR assays to detect the virus. By 21 January laboratories in Victoria, NSW and Queensland had the capability. On 23 January the first CDNA COVID-19 Public Health Guideline (SoNG) was published¹⁵ and CDNA and AHPPC started meeting daily. The first cases diagnosed in Australia were on 25 January in Victoria and NSW. On 1 February the international situation was such that CDNA expanded the epidemiological case definition to all of China, requiring any returning traveller to quarantine on entry to Australia. That same day, the government closed international borders to foreign nationals from China. At the time there were 12 confirmed cases in Australia, all linked to Wuhan. CDNA and AHPPC, with the support of modelling, continued to assess the risk of importation and similar measures were applied over time to Iran, South Korea, Italy. Then on 20 March, a closure of the borders to any foreign nationals was enacted. There were 873 confirmed cases in Australia. On 27 March, National Cabinet on the advice of AHPPC determined that the risk of voluntary home quarantine was too great and that all returning travellers would be required to undertake mandatory quarantine at designated facilities.

During this period, 24 versions of the SoNG were published. From the beginning, there was uncertainty due to a paucity of evidence and information on the nature of the virus. Yet, decisions had to be made on public health responses. This was done in the context of balancing the precautionary principle with proportionality in what was then a strategy of containment. Some of the most memorable decisions invoked much debate which, in the writer’s view, led to a robust outcome. These included considering asymptomatic transmission in the infectious period for the purposes of contact tracing before asymptomatic infection was well recognised, continuing a broad testing strategy despite restricted laboratory consumables, not closing schools automatically on detection of a case (as was done in the H1N1 pandemic) as children did not appear to drive transmission and revising the release from isolation criteria to a ‘no-test’ solution when persistent viral shedding

was recognised. Other measures such as the requirement for a 14-day quarantine period have stood the test of time.

From mid-March social restrictions were being considered at AHPPC and implemented in jurisdictions through legislation (Figure 2). The combination of measures described, along with the extraordinary co-operation of the community, was more successful than expected and by 20 April case numbers indicated the virus was suppressed.

After the first phase

The COVID-19 Plan states:

A key goal of the decision making process is to achieve a response that is proportionate to the level of risk. . .to the level of impact the novel coronavirus outbreak is likely to have on the community, and on vulnerable populations within the community, will make the best use of the resources available and minimise social disruption.

Proportionality has been the topic of much public debate. To achieve the current goal of no community transmission, in the face of a virus whose nature is unpredictable and changing, requires continuous review of current policy and a ‘go hard, go early’ approach. This was most recently illustrated by CDNA extending the required period of isolation from 10 to 14 days for cases with a variant of concern. It has been recognised that measures to control the pandemic, while having an economic, social and non-COVID-19 health impact, are beneficial for both the pandemic outcome and, in the longer term, the economy¹⁶. Currently in Australia, every case is closely managed with rapid and extensive contact tracing, often supported by social restrictions, in line with the suppression strategy to a level of no community transmission (virtual or temporary ‘elimination’).

We continue to strive for national consistency, as we continue to learn about the virus and the impact of our response, but will inevitably continue to see some local differences, as the context of each and every case or outbreak is different. On the cusp of commencement of the COVID-19 vaccine program, the transition from the current public health response will be complex and will need to consider the efficacy of the vaccine in preventing transmission, the vaccine coverage required, the global prevalence of disease, the impact of variants of concern and how this is effectively communicated to the public. The decision-making during this period will once again need to deal with uncertainty but be decisive and agile. The strength of existing national and State/Territory public health emergency governance, structures and relationships, along with whole of government leadership and responsiveness at all levels, and effective engagement of the community, all bolstered by the past 12 months experience, will support our effective navigation out of the pandemic.

Conflicts of interest

The author declares no conflicts of interest.

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Biography



Sonya Bennett is a practicing Public Health Physician and has Fellowships with both the Royal Australian College of General Practitioners and the Australasian Faculty of Public Health Medicine. Sonya is currently the Executive Director Communicable Diseases Branch, and the Deputy Chief Health Officer, Queensland

Health where she is responsible for leading the state-wide strategic direction and policy for communicable diseases, immunisation and statewide incidents of public health significance. Sonya has been Chair of the Communicable Disease Network of Australia since July 2019 and through the COVID-19 Pandemic and in that role is also a member of the Australian Health Principle Protection Committee. Sonya served 15 years in the Royal Australian Navy and remains an active reservist as the current Director General Navy Health Reserves.

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