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Australian Quarantine Policy: From Centralization to Coordination with Mid-Pandemic COVID-19 Shifts

COVID-19
Viewpoint

Abstract: *Combining a historical institutionalism approach with institutional isomorphism and punctuated equilibrium, this article analyzes quarantine policy change across 120 years of Australian quarantine history. By anchoring its analysis within specific time periods (the years before the Spanish flu, seven decades of inaction, and multiple post-1997 pandemic updates and responses), the authors highlight when and why policies did or did not change and how the constant push-and-pull between state and Commonwealth institutional ownership altered policy possibilities. The heart of the analysis showcases how Australia's successful COVID-19 response is a unique output of prior quarantine policies, institutional evolution, and mid-pandemic alterations of key national pandemic response plans.*

This article uses historical institutionalism (Hall and Taylor 1998; Thelen 1999) to explain Australian quarantine policy. Historical institutionalism's calculus approach explains why certain quarantine-relevant institutional arrangements may persist (Hall and Taylor 1996; Peters 2016) along with the why and how of later institutional and policy shifts.¹ Despite an expectation that deviation from a prior institutional order may be historically infrequent within path-dependent histories (Dopfer 1991), deviation does occur (Greener 2005). By using concepts within policy and administrative studies and a purposeful broadening of Australia's quarantine policy history from a narrow COVID-focused analysis to a historical exercise, we highlight both the institutional isomorphism of incremental change (e.g., Mintrom and Norman 2009) and the punctuated equilibria of rapid change (e.g., Krasner 1984; True, Jones, and Baumgartner 1999) across time.

This potentially comparative framework helps illustrate two major findings. The first is the acclaim being given to Australia for its COVID-19 response (Cave 2020; Charlton 2020; Gan 2020),² as Australia's quarantine policy shifts have been crucial to this success. The second is our institutional and policy placement of the Australian SARS-CoV-2 response within the 2008 Australian Health Management Plan for Pandemic Influenza (AHMPPI) (updated in 2019) and the Australian Health Sector Emergency Response Plan for the Novel Coronavirus. By placing this modern response against the backdrop of Australia's quarantine policy history, we explain when policy feedback from pandemics shaped institutional and policy change

(late 1800s to early 1920s, late 1990s to 2019), where institutional and policy change was largely nonexistent (early 1920s to mid-1990s), and where institutional and policy change is occurring mid-pandemic in response to SARS-CoV-2's viral characteristics (2020). This history is embedded within Australian understandings of itself as a nation, conflicts between the states and territories and the Commonwealth,³ and prior pandemic health responses.

We highlight how Australian responses to the Spanish flu (1918) and, later, SARS-CoV (2003), H5N1 (1997, 2005), H1N1 (2009), MERS-CoV (2012), Ebola (2014), and SARS-CoV-2 (2020) are outputs of Australia's Spanish flu response and how, in particular, Australia's H5N1, SARS, MERS, and Ebola responses may be viewed as policy "dry runs" for today's COVID-19 quarantine policies. Of the four categories of the 2008 AHMPPI pandemic response, our focus is on the two quarantine policy categories: border measures and social distancing. The other two categories (pharmaceutical measures⁴ and infection control⁵) are beyond our quarantine-focused scope. We analyze each quarantine policy category to identify where Australia's COVID-19 implementation is reminiscent of prior eras, where the plan is being followed, where the plan has been overlooked, and where policy innovations are occurring. The output is a historically based analysis of quarantine policy stasis and change.

Prophylactic Quarantine, the "Nation," and Commonwealth Control

The history of Australian quarantine policy is a history of contestation. Links among Australian

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biomedicine, contagion, hygiene, and epidemics were (and are) infrequently removed from “a language of defense of nation—resistance, protection, invasion, and immigration” (Bashford 1998, 388). Quarantine policy is tied to the creation of an Australian nation. In March 1900, just nine months before federation and independence, the bubonic plague broke out in Sydney. With a new vaccine, the New South Wales government had only planned to inoculate frontline workers. Journalists called for a broader inoculation campaign, the government caved, and soon the government faced a “melee” in which “men fought, women fainted and the offices [of the Board of Health] were damaged” (Townsend 2007). This incident helped lay the groundwork for quarantine policies in newly independent Australia.

Australia’s early quarantine policy adoption contrasted with colonial Britain’s abolishment of human quarantine in 1896. While Britain viewed quarantine as “anti-commercial, anti-social, and anti-Christian,” Australia did not (Maglen 2005, 197, quoting W. L. Eames). Early Australian sanitation standards⁶ and vaccination rates were less robust than Britain’s, but Australia had another obvious difference: diseases endemic in Britain “only occurred in Australia when imported from abroad” (Maglen 2005, 215). Therefore, the Australian understanding of its immense geography⁷ and the significant distance between itself and others are irremovable from quarantine policies. Quarantine became central to an “imagining of Australia as an island-nation, in which ‘island’ stood for ‘immunity’” and in which non-Australians were “perceived as diseased” (Bashford 1998, 388). In this history, the individual body and its “disease” or “purity” became a racialized metaphor for institutional and policy behaviors.

In Australia’s first and only Constitution (1901), public health was mentioned twice. Section 51(ix) gives Parliament the power to quarantine, and Section 69 requires the states to transfer quarantine services to the Commonwealth. With the 1908 Quarantine Act and the 1909 establishment of the Federal Quarantine Service, quarantine policy biopolitics became entwined with Australia’s geographic isolation to influence immigration policy. The pairing of the Quarantine Act with the Immigration Act in 1909 created the legal precedent for Australia’s infamous “White Australia” policy (e.g., Jupp 2002). These acts altered Australian responses to international trade, and when epidemiological responses were required, Australia’s “prophylactic quarantine” (Bashford 1998, 393, citing the 1883 Report on Quarantine) meant that Australia’s ports had become locations of immigration, trade, biopolitics, and biosecurity.

Yet this early national approach to quarantine was incomplete and controversial. In 1913, Sydney experienced a smallpox outbreak. The Commonwealth declared Sydney a quarantine zone, and the New South Wales premier “protested strongly, arguing the move hurt commerce” (Brew and Burton 2004). Later quarantine policies stopped Australian infections from the initial Spanish flu wave in 1918 (Shanks 2019) before collapsing in 1919 as insufficiently quarantined soldiers returned home from World War I. Many soldiers attempted to break quarantine, including one soldier who was charged with “inciting a mutiny to break out” of a quarantine location (McQueen 1975, 565). The flu led to the deaths of between 12,000 and 16,000 Australians (Curson and McCracken 2006; Townsend 2007).

The policy response to Spanish flu by the Australian states and territories was reminiscent of a pre-federation Australia just two decades prior (Beddie 2001). Not only was Australia unprepared, but state/territory and Commonwealth disputes hampered coordinated responses. This included the failure of a 1918 agreement in which only the Commonwealth could declare interstate quarantine after notification by a state/territory chief health officer of regional concerns. Once the Commonwealth deemed interstate quarantine necessary, only the Commonwealth and not the state/territory could manage the response. When Victoria and New South Wales quibbled over whether New South Wales had accurately diagnosed an influenza epidemic, the situation devolved into “every State for itself” (McQueen 1975, 566). Some states closed, while others, such as Queensland, battled the Commonwealth over whether soldiers could land at quarantine stations, and still others, such as Western Australia, “seized the trans-Australian trains” (McQueen 1975, 566).

Some of these early policy patterns are partially observable in Australia’s COVID-19 response, including each state and territory enacting its own legislation with minimal Commonwealth oversight. While today’s COVID-19 response is partially “coordinated” by the Commonwealth through the Communicable Disease Network Australia and the creation of a National Cabinet (Health of Health 2020a), states/territories have COVID-19 quarantine differences given their first responder roles. In the Spanish flu era, the lack of Commonwealth coordination led to variable policies, including hard closures of domestic internal borders, quarantine camps at border crossings, inoculation depots, mask-wearing requirements, closure of schools and other public gatherings, and calls to handwash and follow cough etiquette (Curson and McCracken 2006). As cases spread, hospitals became overwhelmed, temporary hospitals were created in private and public spaces, and, as primary health workers became ill, “many temporary hospitals had to be staffed by lay volunteers” (Curson and McCracken 2006, 106). As the early Commonwealth agreements collapsed, the output was an Australia “ill prepared” for the Spanish flu pandemic (Beddie 2001; Curson and McCracken 2006, 105). This “abject failure” meant that states “once again [had to] cede control over quarantine to the Commonwealth” (Brew and Burton 2004). This included new parliamentary actions that allowed the Commonwealth to override state/territory legislation in pandemic emergencies.

Another key outcome of the Spanish flu was the creation of a Commonwealth Department of Health in 1921 (Beddie 2001). Despite the hope that the Commonwealth might use the Spanish flu crisis to quickly create such an institution, the reality was continued dithering between the Commonwealth and the states/territories (Roe 1976). In the end, the Department of Health was only created “after public support of the proposal by the British Medical Council in Australia and the Australian Medical Congress in 1919 and 1920 respectively, and an offer of funding from the International Health Board of the [U.S.-based] Rockefeller Foundation” (Brew and Burton 2004; Roe 1976). The funding allowed a former American health services leader in the Philippines (which at the time was a U.S. colony) to promise Australia that the foundation would “supply for at least one year of experts in industrial hygiene, sanitary engineering, and tropical health” along

with “training in the USA of Australians to take over these tasks when the Americans withdrew” (Roe 1976, 180).

The Commonwealth Department of Health was operational by 1921, this centralization of Australia’s political-administrative response to quarantine and public health continued until the late 1990s. As noted in table 1, state- and territory-enacted human health legislation was infrequently updated. Queensland, for example, passed its first Health Act in 1872. This act was found to be inadequate at the onset of the bubonic plague, and thus another Health Act was passed in 1900. Queensland’s Health Act of 1937 consolidated 10 previous health-focused acts, but it was not until 2005 that another Health Act was passed. COVID-19 amendments to the 2005 Health Act allowed Queensland’s chief health officer to declare a COVID-19 public health emergency, make it a notifiable and quarantinable disease, and issue public directions to restrict the movement of people, ban nonessential gatherings, and other public health directives. The current Health Act and this amendment consolidate significant pandemic policy power in the state, not the Commonwealth. This reflected the fact that while Commonwealth involvement in the health system has greatly increased so that it is now the dominant public funder, states/territories remain responsible for public hospitals and significant aspects of public health and safety. Other states/territories similarly updated their legislation in the last 15 to 20 years. Each update is a partial reversal of Australia’s post-Spanish flu policy response.

In the next seven decades of Commonwealth-led public health, it was understood that “quarantine and epidemiology both *required* layers of government, but also *justified* layers of government” (Bashford 1998, 396). Australian governments linked quarantine surveillance to national survival. This surveillance extended to immigration, barring entry of those with identifiable communicable

diseases and removal of people with infectious diseases identifiable at arrival. This task’s racialization became apparent when a 1920s Australian journalist noted that Australia’s top public health official “controls quarantine service and conducts a ceaseless war against the foreign germ declared by his department to be a prohibited immigrant,” thus partaking in an explicit “conflation” of “the germ and the immigrant” to reinforce a “racialized order” (Bashford 1998, 398, 399).

As the 1920s progressed, the international relations of quarantine and globalization created a drumbeat of worry. When Kingsford Smith flew across the Pacific from San Francisco to Brisbane in 1928, the internal journal of the then-Department of Public Health Affairs wrote that Australia’s “sense of security from a geographical isolation has received a shock” (Bashford 1998, 396, citing the Department of Health). However, as noted in the next section, this “shock” was reflected less in updates to Australia’s human health pandemic policy responses than in new interactions of Australian distance and geography with international trade and quarantine.

Quarantine Policy Shifts Focus Away from Human Health

With no major human health pandemics or epidemics in Australia for seven decades after 1920,⁸ Australia entered a period of “apparent complacency” (Brew and Burton 2004, 1) as human health quarantine policies faced few update pressures. One national Cabinet-level review in 1977⁹ even concluded that the “disease threat to people has reduced to almost insignificant proportions” (Brew and Burton 2004, 1). Therefore, Australia’s human health quarantine “became overshadowed by the focus on animals and plants of agricultural importance” (Nairn et al. 1996, 30). While this separate history could be another article, there are at least four

Table 1 Subnational Health Legislation in Australia

State/Territory	Legislation	Previous Acts	COVID-19 Updates*
Australian Capital Territory	Public Health Act 1997	Public Health Act 1928	At least eight emergency declarations since March 16, 2020, along with currently pending legislation
New South Wales	Public Health Act 2010	Public Health Act 1902, Public Health Act 1991	Public Health Amendment (Scheduled Medical Conditions and Notifiable Diseases) Order 2020 (January 21, 2020), Public Health Amendment (Scheduled Medical Conditions and Notifiable Diseases) Order No. 2 2020 (March 20, 2020), COVID-19 Legislation Amendment (Emergency Measures) Act 2020 (March 25, 2020)
Northern Territory	Public and Environmental Health Act 2011	Public Health Ordinances based on South Australia’s Health Act 1898, Public Health Amendment Act 1981, Public Health Amendment Act 1985	Amendment extending emergency powers from 5 to 90 days (March 24, 2020)
Queensland	Public Health Act 2005	Health Act 1897, An Act to Consolidate and Amend Laws relating to Public Health (1937)	Public Health (Declared Public Emergencies) Amendment Act 2020 No. 1 (February 7, 2020), Public Health and Other Legislation (Public Health Emergency) Amendment Act 2020 No. 11 (March 19, 2020)
South Australia	South Australian Public Health Act 2011	Health Act 1898, Health Act 1935, Public and Environment Health Act of 1987	Amendment Public Health and Wellbeing Regulations to order tests (February 5, 2020), COVID-19 Emergency Response Act 2020 (April 9, 2020)
Tasmania	Public Health Act 1997	Public Health Act 1885, Public Health Act 1903, Public Health Act 1962	COVID-19 Disease Emergency (Miscellaneous Provisions) Act (No. 2) 2020 (May 6, 2020)
Victoria	Public Health and Wellbeing Act 2008	Health Act 1896, Health Act 1958	Local Government Act 2020, No. 9/2020 (March 24, 2020) amendments as related to Public Health and Wellbeing Act 2008 on March 1, 2020, and April 6, 2020
Western Australia	Public Health Act 2016	Health Act 1898, Health Act 1911	At time of COVID-19, WA Parliament had not passed regulations relating to the 2016 act. The act was in Stage 4 of a five-stage implementation plan. COVID-19 emergency declarations were made via the Emergency Management Act 2005 and the Public Health Act 2016

*Updated as of May 12, 2020.

quarantine-relevant observations for human health pandemics from Australia's trade-focused biosecurity policy shifts. Each relates to Australia's current COVID-19 quarantine policy response.

The first observation is that border biosecurity has always mattered. As Australia's distance barrier lessened, policy shifts occurred. The Nairn Review (1996) of Australia's non-human health quarantine policies suggested that Australia must change from its border-focused approach to a managed shared risk approach in which quarantine was viewed "as [a] continuum of activities involving pre-border measures to reduce the threat of entry, well-targeted border controls and post-border measures such as monitoring and surveillance to detect incursions at an early stage, backed-up emergency response plans to contain, control or eradicate pests and diseases when incursions occur" (Tanner and Nunn 1998, 451). The continuum idea would be transferred to Australia's post-2002 human health pandemic policy approaches.

The second observation is an Australian fear of pests and disease importations that devastate local flora and fauna. Australian newspapers are littered with the failed import of introduced species (e.g., cane toad to control cane beetle, European rabbit¹⁰ with the First Fleet) or failures to stop unauthorized imports (e.g., South American fire ant, Asian papaya fruit fly). These fears led to enhanced veterinary surveillance and, as first-time travelers to Australia learn, strong international border biosecurity. This history provided the basis for human screening to occur and ultimately resulted in increased traveler screening at the onset of the COVID-19 pandemic response. This importation fear has been exacerbated with a March 2020 criminal investigation into why New South Wales health authorities and the Australian Border Force allowed cruise ship passengers infected with COVID-19 to disembark in Sydney and transmit the virus across Australia while other international travelers were quarantined.

The third observation is that Australia's borders are not only its international ones. Questions have been raised about whether the unique environments of Australia's six states and two territories require *domestic* barriers to trade (Cook and Fraser 2002; Kellow, Haward, and Welch 2005). Others note that Australia's northern border, the land closest to Australia's nearest neighbor Papua New Guinea, functions as a "front line" with a "task as production of the border is at once 'pushed out' to offshore locations and 'pulled in' to smaller scale borders within Australia's north" (Muller et al. 2009, 784). In response, the Northern Australia Quarantine Strategy provides early warnings for exotic pests (e.g., citrus canker), weeds, and disease detections.

The final observation is that the line between quarantine to protect Australia's flora and fauna and quarantine for human health is infrequently precise. This includes concerns about henipavirus transmission from fruit bats to humans as well as mosquitos carrying Japanese encephalitis, the Chikungunya virus, and the Zika virus. Despite seven decades of no significant human health pandemic or epidemic in Australia after the Spanish flu, its non-human health quarantine policies incrementally evolved as Australia's international trade increased. The necessity of a continuum-based quarantine policy approach, historic Australian fears about disease importation, domestic border concerns, and links between imported pests

and human disease keep quarantine policies near the forefront of Australian decision-making.

Refocusing on Human Health Pandemics and Quarantinable Diseases

There are strong epidemiological histories of Australia's eight quarantinable diseases,¹¹ along with several post-1997 instances when alarms were raised even though no pandemic was declared. Each alarm was a potential punctuated equilibrium in which rapid quarantine policy change was possible. This section focuses on how incremental shifts and punctuated equilibria health threats altered Australian public health pandemic responses. Until Australia's first COVID-19 patient was diagnosed on January 29, 2020, the only other viruses with significant potential or actual Australian threat since the mid-1990s were the H5N1 avian influenza in 1997, severe acute respiratory syndrome (SARS) in 2003, the H5N1 avian influenza in 2004, the H1N1 swine-origin influenza in 2009, Middle East respiratory syndrome (MERS) in 2012, and Ebola in 2014.

Despite the highly pathogenic avian influenza-like virus H5N1 being detected in China and Hong Kong in 1997 but not leading to worldwide spread, the event led Australian government analysts to later observe a "distinct complacency within government about Australia's vulnerability" (Brew and Burton 2004). This included no post-1920 test of Australia's emergency health response for pandemics,¹² disconnects between immigration and internal disease surveillance, and an Australian "infectious disease control system [that] appears to rely more on unofficial networks and personal contact than on bureaucratic structures" (Brew and Burton 2004). With H5N1 in 1997 as the first punctuated equilibrium point since the Spanish flu, Australia's pandemic response machinery kicked into gear. By June 1999, Australia had its first Influenza Pandemic Plan (Department of Health and Aged Care 1999).

The emergence of SARS in November 2002 in China and its spread to Hong Kong and Vietnam by February 2003 led the World Health Organization (WHO) to issue a global alert on March 12, 2003. While Australia had only six of the nearly 8,100 cases worldwide and none of the more than 770 deaths, this pandemic was "seen as a test for other potential pandemic infectious disease threats, such as . . . influenza pandemic or deliberate release of a bioterrorism agent such as smallpox or anthrax" (Herceg et al. 2005, 277). Australia responded with incremental policy shifts, such as discouraging nonessential travel and screening incoming passengers. The former was not part of the 1999 Influenza Plan, while the latter was encouraged (Department of Health and Aged Care 1999, 28).

While the 2004 H5N1 avian influenza outbreak was not transmitted to humans, nor did it enter Australia's migratory bird flyways (Yee, Carpenter, and Cardona 2009), in retrospect, government reactions were a dry run of later pandemic responses. In 2005, Health Minister Tony Abbott (Prime Minister from 2013 to 2015) authored a *Sydney Morning Herald* article noting that the prior year's H5N1 scare was a warning that Australia faced "competing temptations [such as] 'it won't happen here' complacency, 'there's nothing we can do' fatalism, or 'no precaution is too great' alarmism" (Abbott 2005). The Commonwealth and state/territory human health response was to increase stockpiles of antiviral drugs,

syringes, and masks and to create a National Influenza Pandemic Action Committee in 2005 (Abbott 2005; Pratt 2005).

This H5N1 response became Australia's second punctuated equilibrium point since the Spanish flu. It led to two years of consultations between state/territory and Commonwealth governments to review the 1999 Influenza Pandemic Plan, resulting in the Australia Health Management Plan for Pandemic Influenza, which was finalized in December 2008. The AHMPPI encouraged states/territories to create plans "broadly based on the federal approach" even if they need not be "completely similar" (Kotsimbos et al. 2010, 303). This led to multiple state/territory updates but also differences among state plans. Several states also updated legislation last modified more than 50 years ago (see table 1).

The first opportunity to test AHMPPI occurred in March 2009, when a new swine-origin influenza strain (H1N1) was identified; it was declared a pandemic by the WHO in April, and later that same month, Australia declared H1N1 a quarantinable disease. On May 9, Australia had its first case with formal public health responses beginning on June 17, and by early July, the virus had become "widespread in the Australian community" (Waterer, Hui, and Jenkins 2010, 52). Nonetheless, it was felt that Australia's low casualty count was largely due to "the relatively benign course of H1N1 infection in most patients, not due to any public health success" (Waterer, Hui, and Jenkins 2010, 52). By November 8, Australia had more than 37,000 cases with 189 deaths (Kotsimbos et al. 2010).

Post-H1N1 analysis often shares the following conclusion: Australia's "containment . . . failed almost immediately with widespread dissemination just 20 days after its being declared a quarantinable disease" (Kotsimbos et al. 2010, 302). Policy failures included screening practices expecting typical flu symptoms, nonisolation of exposed cruise passengers, testing limited to people who had traveled only to affected locations, continuation of national sporting events, public perceptions that H1N1 was mild, and insufficient communication between health officials and citizens (Eastman et al. 2010; Fogarty et al. 2011; Grayson and Johnson 2009; Holland and Blood 2013; Jones, Iverson, and Waters 2010; Seale et al. 2009; Waterer, Hui, and Jenkins 2010). The Australian Medical Association criticized the government for "being too slow, creating fever clinics at major hospitals only when GPs' surgeries were overrun" and not quickly distributing stockpiles of personal protective equipment (Eizenberg 2009; Rouse 2009). While limited quarantine was implemented in Victoria along with partial school closures in Western Australia, neither was a widespread policy (Effler et al. 2010; Eizenberg 2009). Reminiscent of early Australian quarantine history, state/territory practices "did not always align . . . [each] dealt differently with quarantine, school closure, tourist screening, medical and nursing staff screening, and travel restrictions" (Kotsimbos et al. 2010, 304).

Australia's 189 H1N1 deaths were 189 too many. If this H1N1 response had been Australia's response with SARS-CoV-2's higher clinical severity, Australia would not be congratulated as COVID success story. A key post-H1N1 institutional response was to create a new whole-of-government¹³ coordination point among state- and territory-level chief health officers and the Australian chief

medical officer (Firman, Williams, and Baggoley 2016) to form the Australian Health Protection Principal Committee and the Communicable Diseases Network Australia.

This early coordinated response was a predecessor of today's more formal coordinated model of implementation being practiced with Australia's COVID-19 response. This new model was an outcome of H1N1 failures and a compromise between state/territory and Commonwealth governments. The opportunity to test this model occurred during MERS-CoV in 2012. Despite 2,500 cases diagnosed in 27 countries and no cases in Australia, the government used the outbreak to partially test its post-H1N1 delegated infection diseases network. One policy action evaluated Australian Muslims' H1N1 knowledge before/after the Hajj (Alqahtani et al. 2016).

The other notifiable and quarantinable diseases in Australia are rare (cholera, rabies, yellow fever) or eradicated (plague, small pox), while others (Ebola, Marburg, Crimean-Congo, and Lassa) have never entered Australia. However, when the WHO declared Ebola a pandemic in August 2014, Australia began screening travelers with certain travel histories (Chan et al. 2017) and, in October 2014, stopped processing visa applications from affected countries. This ban included immigrants as well as entrants via humanitarian programs. People with permanent visas arriving from infected countries could only enter Australia after completing a three-week quarantine *before* travel to Australia (ABC News 2014; Cope et al. 2014). The policy instrument of quarantine would be rapidly expanded in Australia's COVID-19 response.

In summary, the identification of the avian influenza-like virus H5N1 in 1997 led to the first of two punctuated equilibrium points since the Spanish flu. Its output was a revitalization of pandemic preparedness and the 1999 Influenza Pandemic Plan. The second punctuated equilibrium point was the 2004 H5N1 scare, which led to the 2008 AFMPPI and, after H1N1 (2009), deepened understanding of Australia's coordinated whole-of-government response. Each event was a wake-up call to reconsider pandemic responses. In contrast, Australia's COVID-19 has not (yet) led to formal post-virus response updates but is being updated *in the midst of* the pandemic. The AHMPPI's quarantine policy instruments and its mid-crisis updates are discussed in the next sections.

COVID-19 Current State

In December 2019, China reported cases of a viral pneumonia caused by a previously unknown pathogen that had emerged in Wuhan. The pathogen was identified as a novel coronavirus genetically related to the virus that caused SARS in 2003. SARS-CoV-2 causes the illness now known as coronavirus disease 2019 or COVID-19. The WHO declared COVID-19 a pandemic on January 30, 2020. Australia's first case of COVID-19 was diagnosed on January 25 in New South Wales; the initial case and the next 11 cases had links to China (Liebig et al. 2020). The second group arose in Queensland, with one person in a travel group infecting three others (Liebig et al. 2020). Since then, case numbers have increased, with nearly 63 percent of cases in Australia having acquired the disease overseas (Department of Health 2020b).

COVID-19 is a notifiable and quarantinable disease in each Australian state and territory. The Australian Health Sector

Emergency Response Plan for Novel Coronavirus was released on February 18. Its purpose is to guide a “whole-of-government” (Health 2020a, 5) approach and to clarify the roles and responsibilities of the health sector, where national guidance and coordination are provided, and how decision makers are supported through scientifically informed and proportionate responses. This plan, which was only released to the public after pressure was placed on the Commonwealth to explain its responses, is in many ways a partial restatement of AHMPPI, but with an enhanced focus on clinical severity scenarios rather than quarantine policies. As such, the 2020 plan noted that the AHMPPI remains the “key national agreement document to guide Australia’s response” (Department of Health 2020a, 1).

On March 13, the Commonwealth formed a National Cabinet composed of the Prime Minister along with the premiers and chief ministers of each state/territory; it has the same confidentiality and Freedom of Information protections as the Federal Cabinet. It is responsible for endorsing and coordinating national actions in response to COVID-19 (Australian Government 2020a). It is advised and supported by the preexisting Australian Health Protection Principal Committee, which uses available modeling, research, and data to inform National Cabinet decisions. On March 25, the National COVID-19 Coordination Commission was created as a strategic advisory body to advise on public-private partnerships, to coordinate socioeconomic impacts, and to work toward post-pandemic economic recovery (Australian Government 2020b).

By mid-April 2020, Australia’s daily infection rate had dropped significantly, suggesting that, unlike most other countries, Australia’s policy interventions were having an effect. From April 20 to May 5, average daily new infection cases numbered 17, compared with a peak of more than 450 cases on March 28 (Department of Health 2020b). While infections have decreased, there are small outbreak pockets. Of Australia’s 6,896 COVID-19 cases on May 5, approximately 1,200 were cruise ship passengers (Department of Health 2020a). Contact tracing has discovered ongoing community spread in the two most populous states (Victoria and New South Wales) and limited to no community spread elsewhere. Recent hotspots include a meat processing plant in Victoria with nearly 50 infections and a Tasmanian outbreak in mid-April, which, despite restrictions on domestic and international travel and a natural sea border, shut two hospitals for a “deep clean” as 47 health workers had acquired the virus.

Historical Baggage, Punctuated Equilibria, and COVID-19 Responses

This article has linked Australian quarantine policy history and its interaction with public health crises, biosecurity, and trade. With this history and its institutional and policy shifts in mind, this section engages in a quarantine-focused analysis¹⁴ of Australia’s COVID-19 response with the two of four possible pandemic actions within the AHMPPI. Analysis is centered on the AHMPPI quarantine guidance, particularly its border control and social isolation actions.

Border Control

The AHMPPI has three categories of border measures of quarantine policy: communications measures (travel advice for high-risk

locales, border staff information, pandemic-specific in-flight announcements, and communication materials for travelers), identification measures (entry and exit screening), and internal travel restrictions. To date, Australia’s COVID-19 border control response has been mixed. While some present-day actions are AHMPPI recommendations (acknowledgment of visa concerns), others have been implemented against AHMPPI recommendations (mandatory quarantine, domestic border closures, within-state movement stoppages) or have had mixed results (border screening, thermal scanning, cruise ship screening) requiring further specification.

COVID-19 led Australia to quickly provide online travel advice for travelers to high-risk destinations. However, and in contrast to its SARS and other previous pandemic responses, Australia also progressively tightened its international borders despite no mention of international border closures in the AHMPPI (Department of Health 2019, 168) This included travel bans from China on February 1, Iran on February 29, South Korea on March 5, and Italy on March 11. Early empirical analysis suggests that the China ban limited Australian exposure to COVID-19 (Costantino, Heslop, and MacIntyre 2020). By March 15, the Prime Minister signaled that Australia’s international borders would close and all arrivals would face a 14-day self-isolation period. By March 18, the Prime Minister asked Australians not to travel abroad. By March 20, Australia closed its borders to nonresidents and noncitizens as the entire world was designated a “do not travel” zone by the government’s Smartraveller service. On April 7, the advice was that “all overseas travel is currently banned, with few exceptions” (Smartraveller 2020). On April 23, the Prime Minister told Australians that the international border would be closed for at least three more months.

Before border closures, screening measures were slowly implemented despite the AHMPPI noting screening importance (Department of Health 2019, 130–133). News reports indicated either limited or no advice given upon arrival. As one journalist noted on March 23, passengers were asked to wear masks upon arrival despite no masks being provided, an ushering through duty-free before visa/customs checks in which flyers saw staff without masks, and an arrivals hall with people not social distancing (Bramston 2020). Information about whether policy improvements would occur soon became a nonissue as the international border closure began.

While news reports indicated that thermal scanners were deployed at eight Australian airports in 2009, by 2014, it was suggested the scanners were not used to evaluate passenger fevers during the Ebola epidemic (Ironsides 2014; Medew 2009). The AHMPPI indicates that thermal scanners are not recommended even if there is a “public expectation of screening in some form” (Department of Health 2019, 136). Mixed messaging during COVID-19 indicates policy confusion. This may reflect evidence from SARS that if Australia only implemented international border screening, such measures would only “reduce the probability of a major epidemic by up to 7%” (Glass and Becker 2006, 1096) and that “screening and distribution of information at borders play a relatively minor role in reducing the international spread of SARS when compared with control measures applied in the infected region and preparedness in the uninfected region” (1098).

Other international border measures included an initial 14-day self-quarantine and later, on March 28, a mandated 14-day quarantine for all international arrivals in designated hotels. Self-quarantine with a 14-day specification is within the AHMPPI, but interestingly, it is neither recommended nor not recommended (Department of Health 2019, 139). Moreover, mid-pandemic quarantine policy shifts in late March are not specified in the AHMPPI. This may reflect a national document prepared for influenza and not a disease in which people are highly infectious during incubation with asymptomatic people potentially infecting others. In fact, Australia's SARS and H1N1 experiences suggested that influenza epidemics in which people are not infective during incubation may not require border measures (Department of Health 2019, 129). This expectation is counter to COVID-19 viral concerns about asymptomatic carriers, and thus we see an initial mid-pandemic policy shift to self-quarantine and later, another policy shift to mandatory quarantine as a response to advice given to the newly created National Cabinet.

In addition, and since early April 2020, Australia has encouraged (but not required) its nearly 200,000 visitor visa holders to return to their home country. Other categories such as the popular Australian Working Holiday Visa (frequently used by backpackers) are not extendable unless the visitor works in a COVID-related sector. Seasonal workers or holders of the Pacific Labour Scheme visas necessary to maintain Australia's food supply were granted extensions if already in Australia. The need to differentiate visa category provisions was noted in the AHMPPI (Department of Health 2019, 139) even if specific recommendations were left undiscussed.

Replicating subnational border closures during the Spanish flu, Tasmania (March 19) and Northern Territory (March 21) were the first to implement hard border closures. The closures refused entry to the state/territory even for some of its residents. Such closures were not recommended by the AHMPPI (Department of Health 2019, 142), and yet on March 24, South Australia also closed its borders, Queensland followed on March 25, and Western Australia on April 6. The only states with no hard border closures are the most populous, New South Wales and Victoria, despite both having higher community spread than the other states/territories combined (Department of Health 2020a).¹⁵ Although not closed they are effectively enclosed (to other states but not to each other) given closures and domestic travel bans elsewhere. Internal border closures were not publicly opposed by the Commonwealth government. This creates an impression of Australia protecting itself against international outsiders as well as the rest of Australia protecting itself against the 58 percent of Australians who live in New South Wales and Victoria.¹⁶

Despite subnational border closures being a mixed lesson from the Spanish flu and not recommended by the AHMPPI, Western Australia went even further. On March 31, Western Australia prohibited movement (enforced via police checks) at its eight subregion borders, while Queensland chose to ban travel of more than 50 kilometers from home. More generally across Australia, messaging to discourage all but local travel increased before the four-day Easter break. Reports of undeterred travelers with reservations in Victoria's nonurban locales amplified concerns that

rural towns with limited health capacity may face disproportionate health impacts. Reports of reduced travel during Easter did occur. Given just 300 new cases diagnosed in the few weeks following Easter, exhortations to "stay home" appear to have been heeded.

Notwithstanding a March 15 ban on cruise ships docking in Australia, Australia experienced a progressive increase in infected incoming cruise passengers. This includes passengers returning from the *Diamond Princess* in Japan, the disembarking of COVID-infected *Ruby Princess* passengers in New South Wales, and the arrival of the *Artania* in Western Australia. In the latter, Western Australian citizens disembarked for a 14-day quarantine at Rottnest Island,¹⁷ while other Australians and foreign nationals were moved via police escort directly from the *Artania* to onward flights. As of early May, nearly 15 percent of 551 Western Australian cases had arisen from the *Artania* (Hedley 2020). This crisis is ongoing as other cruise ships remain in Australian waters despite Australian Border Force orders to leave by June 15 (ABC News 2020b). On April 4, New South Wales police launched its largest peacetime operation in Sydney Harbor to refuel/restock five crew-only cruise ships to allow departure to home countries.

The AHMPPI recommends cruise ship passenger screening only if clinical severity is high while expecting "disease surveillance systems" on board (Department of Health 2019, 138). Despite previous Australian experience of cruise ship affected passengers and crew during H1N1 (2009), the plan does not specify whether the cruise ship or the local public health authority must screen passengers before disembarkation (Department of Health 2019, 138). The recent launch of a criminal investigation into the *Ruby Princess* disembark decision with 369 cases or about 13 percent of New South Wales's cases (New South Wales Department of Health 2020) suggests such policy confusion will receive attention. This aspect of quarantine and border control policy has had limited research (e.g., MacIntyre 2020).

Self-Isolation

The second category of AHMPPI quarantine-related measures is self-isolation or social and physical distancing. The AHMPPI divides this category into seven parts: school closure (proactive and reactive), workplace closure, working from home, mass gathering cancellation, contact tracing, voluntary case isolation, and voluntary quarantine of contacts. Within this component of quarantine policy, we also found mixed results. While certain present-day actions are found within the AHMPPI (partial or full workplace closure, public space closure), most others were unplanned mid-pandemic policy expansions of AHMPPI recommendations (limiting movement to grocery, medical appointments, pharmacy, and daily exercise, monitoring at-home quarantine of positive COVID-19 patients). Such mid-pandemic shifts may reflect early evidence of category importance in limiting exposure with COVID-19's high clinical severity (Dalton, Corbett, and Katelaris 2020) and the activation of national coordination measures during this pandemic.

The AHMPPI does not recommend school closures unless there is evidence of "high clinical severity and/or high transmissibility specifically in children" (Department of Health 2019, 144–145; emphasis added), a situation not present in COVID-19 (Wu and

McGoogan 2020). Prime Minister Scott Morrison was criticized in March/April for nonclarity on whether schools should close. This concern was amplified with questions about child care for health and essential workers along with internet access inequalities for home education. The first state to mandate school closures was Victoria on March 24. The others followed in late March as public schools neared their break between terms 1 and 2.

By late April, it was agreed that decisions on how school would be structured, how teaching would occur, and the care of children unable to stay home would be led by each state/territory. In last days of April, schools reopened in two states and one territory, while Australia's more populous states chose different strategies. On May 11, only certain grades were to return to school in Queensland, while in New South Wales, students would attend in-person one day a week. Where schools have been fully open for more than one week (Western Australia, South Australia), attendance averages range between 60 percent and 75 percent, while the rest learn from home (ABC News 2020c).

In contrast, a public battle between the Commonwealth and Victoria has broken perceptions of relative COVID-19 intergovernmental unity. This includes the federal minister of education stating that Victoria was taking a "sledgehammer" to children's education by refusing to open Victorian schools (ABC News 2020c). Given historical precarities between levels of government (whether during a pandemic or not), the federal minister was forced to apologize just a few hours later (ABC News 2020c). Even in states where schools fully reopened, local newspapers in Western Australia displayed competing advertisements from the Department of Education asking parents to send their children to school, while the teachers union only supported schools opening for "vulnerable students and the children of essential workers" (Warriner 2020).

The AHMPPI recommends working from home and workplace closure if "moderate to high clinical severity" is present and if such measures can be "reasonably accommodated" (Department of Health 2019, 147–148). This recommendation has been largely followed. Many employers allow some employees to work from home and/or closed offices so employees could work from home. Google's COVID-19 Community Mobility Report indicates drops between 37 percent (Victoria) and 23 percent (Northern Territory) for work-related visits since mid-February with public transit utilization reductions between 68 percent (Victoria) and 55 percent (South Australia, Northern Territory) (Google 2020). Despite early evidence suggesting that an 80 percent stay-at-home rate is necessary for Australia to flatten the curve and limit community spread (Hanrahan 2020), progress is being made.

The public space closure was rapid. This included international sporting events (e.g., Melbourne's Round 1 in the Formula One World Championship) and domestic events played without fans before full stoppage. Public spaces such as the arts, movie theaters, national parks, beaches, playgrounds, and skateboard parks were progressively closed. This matches the AHMPPI expectations that if clinical severity is "high" with "moderate to high transmissibility" (Department of Health 2019, 149), such closures will occur. Not mentioned in the AHMPPI is current

national guidance encouraging (but not requiring) noninfected Australians to limit their outside trips to the grocery store, pharmacy, and medical appointments. This includes allowing people to engage in daily exercise if they are in groups of no more than two (excluding family groups) and if they maintain social distance. The failure of people to abide by such guidance in public spaces resulted the deployment of new technologies such as drones to monitor gatherings and the issuance of significant fines in Brisbane, Melbourne, and elsewhere. As Australia reduces its case load, the decision to allow increased numbers of individuals to gather is being encouraged by the Federal Cabinet but ultimately, is being decided on a state-by-state basis. This shift away from Commonwealth control of public space reopening has created important flexibilities as states/territories respond to new cases.

Contact tracing has been consistently employed since the start of Australia's pandemic response, matching AHMPPI expectations. Contact tracing helps identify potentially infected people and allows health officials to determine where community spread is occurring and where spikes in care and isolation are needed. Contact tracing has led to quarantining thousands of other individuals if a contact was diagnosed with COVID-19. To further contact tracing, the Commonwealth launched COVIDSafe app on April 26 to track user contacts. The Prime Minister initially stated that 40 percent of active mobile phone users were required for contact tracing to work effectively with one-quarter of users downloading the app in its first two weeks (ABC News 2020a). However, in a May 6 submission to the Commonwealth Senate Select Committee on COVID-19, it was established that 40 percent was only aspirational and not based on modeling or evidence (Australian Senate 2020). Concerns about privacy, data placement on a government server managed by Amazon, and civil liberties have limited app uptake.

At the start of COVID-19, all infected patients were isolated in Australian hospitals. As numbers increased, infected patients could be isolated in their homes under state/territory health legislation. State/territory-led monitoring of whether infected people are staying home is occurring. This includes requirements that once tested, people must be isolated until notified of results—usually within 48 hours. The ability to forcibly detain and isolate is now legislated in all state/territory Health Acts, thus leading some noncompliant individuals to be fined, extending to international arrivals quarantined in hotels. In one recent case, a quarantined traveler in Western Australia was caught leaving a hotel and was jailed and denied bail (Menagh 2020). Such state/territory actions are not discussed within the social isolating option of the AHMPPI. Instead, current quarantine policies appear to have migrated from border control policies and into domestic spaces as Australia modifies the AHMPPI for the COVID-19 era.

Conclusion

Australian quarantine policies are irremovable from its self-perception as nation, its view of noncitizen "others," its international trading prerogatives, and its reaction to human health pandemics. This article created a framework for early analysis of Australia's COVID-19 quarantine policy responses. Analysis was enhanced through a historical institutionalism approach that identified moments of institutional isomorphism *and* punctuated equilibrium across 120 years of Australian quarantine policy history.

By combining historical institutionalism with public administration concepts while carefully ensuring that typical pitfalls are minimized (Raadschelders 2011; Radaelli, Dente, and Dossi 2012), this study showcases the potential of institutionalist and policy-administrative approaches for pandemic analyses.

This article showed that while Commonwealth and state/territory contestation remains, significant subnational action is occurring in cooperation with the Commonwealth. This is confirmed by a 2020 COVID-19 plan and the rapid formation of a National Cabinet in which the Commonwealth's role is largely to communicate, to coordinate, to apportion and provide services where necessary, and to evaluate. Quarantine policy placement in Commonwealth hands in Australia's first 20 years remains in place at Australia's international borders even as the Commonwealth ceded domestic borders and other human health quarantine measures to the states/territories. Where mixed messaging occurs (thermal scanners, cruise ships, and schools), the reasons include poor communication of the government's integration of science into screening (thermal scanners) and unclear lines of responsibility between states and the Commonwealth (cruise ships). Bickering about school reopenings between levels of government highlight historical disagreements about Commonwealth influence over state/territory schooling.

Potentially new COVID-19-related empirical research on border closures (e.g., Adekunle et al. 2020; Costantino, Heslop, and MacIntyre 2020; Liebig et al. 2020) and social distancing (e.g., Chang et al. 2020; Milne and Xie 2020; Neufeld and Khataee 2020; Williem et al. 2020) is under review. Ongoing policy actions within Australia's COVID-19 response and its post-COVID action plans will be enhanced as policy learning and epidemiological learning accelerates. Overall, we find that Australia's quarantine policy history and pandemic responses have been largely *reactive*. This includes its Spanish flu responses, the 1999 Influenza Plan creation after H5N1 in 1997, and the 2008 creation of the AHMPPI after H5N1 in 2004. In contrast, the current Australian COVID-19 quarantine policy responses *are being proactively modified mid-pandemic*. This has led to instances in which AHMPPI plans are not followed or are extended beyond previously planned policy responses. Australia's capacity to competently navigate policy shifts mid-pandemic given COVID-19's clinical severity, its national coordination and collaboration with subnational actors, and its reliance on evidence-based science and medical analysis are potential exemplar behaviors for other countries.

Australia's pandemic responses and its history of tight biosecurity have institutionalized quarantine policies into Australian identities. While certain racialized path dependencies and policy contestations arising from the birth of the Australian nation remain, the adoption of a policy continuum approach after the Nairn Report (1996) and continued institutional and policy learning after the late 1990s have strengthened Australia's response. Given that the present mix of Commonwealth and partially delegated and coordinated state/territory responses are flattening the curve, there is still room to adjust the AHMPPI in light of current experiences and to strengthen pandemic health relations between the Commonwealth and states/territories. Nonetheless, it is arguable that Australia's quarantine policy response to COVID-19 has been more effective than those of many other countries. Assuming no significant

outbreak spikes, the competent management of any new pandemic waves, and an appropriately timed return to normality, Australia's response will become a model for others.

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Notes

1. This article uses the institution-focused calculus approach within historical-institutionalism (e.g., Hall and Taylor 1996) instead of historical-institutionalism's cultural approach. A discussion of whether Australia's culture (e.g., Collins 1985) helped or hindered change is a separate topic.
2. For discussion of another successful COVID-19 response, see Moon (2020) on South Korea.
3. Brown and Bellamy (2007) discuss interactions of Australia's national government (also known as the "Commonwealth") and its federalist structure.
4. Antivirals and vaccines.
5. Hand hygiene, personal protective equipment, and cough/sneeze etiquette.
6. In a Queensland Museum memoir, the author discussed Queensland's pre-federation legislation, its difficulty in implementing new health regulations in the early twentieth century, and creation of "rat gangs and disinfectors" who struggled against doctor denialists claiming Australia had not yet witnessed "true Asiatic plague" (Thearle 2002, 232).
7. Australia's land mass is approximately the size of the United States' "lower 48," although it has a population that is one-fifteenth of the United States.
8. After the Spanish flu, there was an outbreak of "Asian influenza" (H2N2) in 1957–58 and a Hong Kong influenza (H3N2) in 1968. A Russian influenza (H1N1) in 1977 was a pseudopandemic given immunity among those born before the late 1950s. In Australia, none of the three led to significant fatalities, and as far as we are aware, none imposed quarantine (Department of Health 1999).
9. This report was likely written in response to the U.S. (H1N1) swine flu in 1976. For more on this U.S. epidemic and its failed vaccination campaign, see Sencer and Donald Millar (2006).
10. Temporary fences were constructed during the Spanish flu at certain state/territory borders. The idea was borrowed from Western Australia's construction of a 3,256-kilometer (2,023-mile) fence in the first decade of the twentieth century. This fence intended to prevent rabbits from entering Western Australia. The fence's negative impact upon Australia's Aboriginal communities, Australia's "stolen generations," and the fence's contribution to Aboriginal marginalization are portrayed in an award-winning film *Rabbit-Proof Fence* (2002).
11. The eight include COVID-19, cholera, MERS, plague, rabies, smallpox, viral hemorrhagic fever, and yellow fever. Australia's National Notifiable Diseases Surveillance System (created in 1991) also collects data on 6 bloodborne diseases, 12 gastrointestinal diseases, 4 other bacterial infections, 6 sexually transmissible infections, 15 vaccine preventable diseases, 9 vector-borne diseases, and 8 zoonoses.
12. Australia's first influenza pandemic plan (1999) only provided two planning exercise scenarios, one of which was "taken from the US draft influenza pandemic plan" (Department of Health 1999, 67–68). For the importance of community-level scenarios and collaborative engagements, see French (2011) and French and Raymond (2009).
13. See also Hall and Paul Battaglio (2020).
14. This quarantine-specific analysis excludes other responses, which are separate articles. This includes a A\$100 billion stimulus (the largest in Australian history, approximately 10 percent of gross domestic product), the first-ever postponement

of Australia's national budget discussions, concerns about insufficient Commonwealth and state/territory-level stockpiles, private/public donations of stockpiles to China early in the crisis, strict testing limits until late March, and civil rights questions. Australia's post-pandemic economic realignment will be very important. For lessons from Australia's response to the 2008 financial crisis, see Bell and Hindmoor (2019) and Fenna and 't Hart (2019).

15. The Australian Capital Territory (1.7 percent of Australia's population) had no domestic border closure, as it is surrounded by New South Wales.
16. Given small case pockets in both states in early May and in contrast to South Australia (two weeks of no new cases) and Western Australia (one week of no new cases), domestic border closures appear to be working.
17. This island was removed of its vacationers so that quarantine could begin. The island is located 34 kilometers offshore from Western Australia's most populous city, Perth.

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