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The case for a NZ-Australia Pandemic Cooperation Agreement

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Summary

Humanity faces increasing pandemic risks from “natural” zoonotic spillover events and human actions (accidental or deliberate). Global treaties are crucial to pandemic preparedness and response, and a regional approach for island nations offers additional local benefits for NZ. An agreement with Australia on pandemic cooperation could be the starting point of such a regional approach. Potential benefits include: coordinated disease surveillance, collaborative simulation modelling, shared quarantine facilities, integrated manufacturing of critical supplies (e.g., masks, tests, and vaccines), common protocols for ensuring safe cargo trade, and the establishment of green-zone travel. By working together within a formalised agreement framework, these nations could maximise their capacity to best protect the health and wellbeing of their populations from future pandemic threats and lower the costs of pandemic preparedness and response. Once established, it would be important to investigate an extension of this agreement to interested Pacific Island states.

The global impact of Covid-19 pandemic was huge – and persists. Cumulative excess deaths during the pandemic to June 2024 were estimated at 27.3 million (95% uncertainty interval: 19.3 to 36.3).[1] Future pandemics are likely[2] and may even be at the catastrophic level if bioengineered pathogens are involved.[3] The number of known pathogens with pandemic potential is growing.[4] Avian influenza (H5N1) is now widespread in bird and mammal populations and has a future pandemic potential for humans rated as “moderate risk”.[5]

In response to pandemic threats, international cooperation and treaties (e.g., the International Health Regulations [IHR]), are vital tools to mitigate the risk and potential impact.[6] But for island nations like Aotearoa New Zealand (NZ) and Australia, these global systems may not adequately address island-specific aspects such as “keeping it out” strategies. In this context, NZ could consider an agreement with Australia, potentially a first step in establishing a regional pandemic cooperation agreement that included other interested South Pacific nations (see Appendix).

Potential benefits of a NZ-Australia pandemic cooperation agreement

Both countries are well positioned for such an agreement as they are both island nations, have similar public health systems, economic ties, and numerous existing bilateral agreements and treaties (including defence, free-trade and biosecurity arrangements). Specific potential benefits follow.

1. Coordinated emerging disease surveillance and diagnostic test development

Early detection of emerging pandemics enables a rapid start to effective island biosecurity. Indications of a potentially catastrophic pandemic could trigger a “keep it out” strategy (exclusion strategy[7]). A coordinated surveillance system that includes analysis of early warnings from other countries would strengthen this capacity. Joint efforts in diagnostic-test development would ensure access to accurate and scalable testing and genomic pathogen surveillance[8] at the earliest possible stage. Australia’s move to establish a CDC-type agency recognises the need for more federal coordination of this vital function,[9] with this reinforced in the just released Inquiry Report on the Covid-19 pandemic report in Australia[10] (along

with linkages in surveillance with NZ[10]). A similar proposal for a CDC has been put forward for NZ.[11]

2. Collaborative simulation modelling for health and macro-economic impacts

Accurate simulation modelling can guide decision makers in assessing the potential health and economic impacts of pandemics and the optimal level of control measures. Rapid epidemiological modelling helped guide the NZ pandemic response in March 2020,[12] and there was even a joint Australian-NZ team that did integrated health and economic modelling during the pandemic.[13] Ideally, however, a range of modelling studies for different types of pandemics should be conducted in advance (see Appendix). Given the complexity of modern-day modelling work, which requires integrated teams of epidemiologists, economists and computer scientists, there are advantages in supporting at least one permanent Australia-NZ research team that does such modelling.

3. Shared top-quality quarantine facilities for travellers

For severe pandemics (especially those with catastrophic potential), quarantine facilities at the border can be valuable components of “keep it out” style exclusion strategies for island nations – by allowing some capacity for citizens to return from overseas. We note that, during the Covid-19 pandemic, both Australia and NZ experienced multiple system failures associated with quarantine facilities by relying on poorly ventilated hotels.[14 15] Nonetheless, Australia also had a very well-designed outdoor quarantine facility at Howard Springs near Darwin,[16] which had no such failures.[14] An expanded Howard Springs facility, or a similarly designed one elsewhere, could be maintained and shared by both countries – with NZ contributing annually to maintenance costs for a guaranteed use of some of the capacity during a pandemic. Further, a shared facility could be established at the Air Force base at Ōhakea in NZ, as it has the particular benefit of being able to accept international flights.

4. Integrated manufacturing capacity for critical supplies

As we have recently seen, global supply chains can easily become overwhelmed during a pandemic, leaving nations without access to crucial items. A NZ-Australia pandemic agreement could facilitate the capacity for shared manufacturing and thus guarantee critical supplies that are invariably needed at the onset of any pandemic, notably diagnostic tests and personal protective equipment (PPE) such as masks/respirators (see Appendix). Depending on the pandemic, supplies of vaccines, antimicrobials, and ventilation/filtration equipment may also be required. There would be major economies of scale if NZ supported such production capacity in Australia, rather than attempting this itself. There are already multiple sites in Australia developing mRNA vaccines, including the Moderna mRNA Vaccine Manufacturing Facility in Melbourne, which has a goal of producing up to 100 million vaccine doses annually.[10 17]

5. Shared work on protocols that ensure safe cargo trade and establish “green-zone” travel arrangements

A key benefit of an NZ-Australia pandemic agreement could be pre-agreed mechanisms for ensuring safe cargo trade (both shipping and cargo flights), e.g., when these countries are using “keep it out” exclusion strategies in the context of severe pandemic threats. Similarly, it would allow the establishment of “green-zone” travel and trade corridors between the two countries (see Appendix).

What is new in this Briefing

- The risks of future pandemics (natural, accidental, and deliberate) continue to multiply; the next could be far worse than Covid-19.
- International treaties and systems are very important, but may not adequately support optimal responses by island nations, particularly establishing “keep it out” strategies.
- There are numerous potential benefits from a NZ-Australia pandemic cooperation agreement: (1) coordinated emerging disease surveillance; (2) collaborative simulation modelling for health and macro-economic impacts; (3) shared top-quality quarantine facilities for travellers; (4) integrated manufacturing capacity for critical supplies (e.g., masks, tests, vaccines); and (5) common protocols for safe cargo trade and “green-zone” travel arrangements.

Implications for public policy and practice

- Given the potential benefits, the detailed pros and cons of such a pandemic agreement should be further explored in detail by both governments. This work could be commenced once the findings of NZ’s Royal Commission into the Covid-19 pandemic are publicly released (the Government is currently in possession of the phase one report).
- If an agreement were successfully negotiated, strong consideration should be given to expanding it to include interested Pacific Island states (see Appendix).

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Appendix: Additional considerations of the pros and cons

This Briefing does not fully describe all the potential benefits of a pandemic cooperation agreement or consider the relevant aspects of international law that would need to be addressed. For example, other benefits could include joint exercising of pandemic scenarios and of various health-security capabilities and capacities. Another example is joint procurement of any new pandemic vaccines or antiviral treatments on the international market; e.g., if Australia was unable to develop in timely fashion a new pandemic vaccine, the two countries combined could negotiate better deals with pharmaceutical companies or international suppliers, improving access at lower costs. There are also likely to be major economic benefits for NZ in sharing capacity building with Australia that would reduce the economic cost of both pandemic preparedness and response.

Possible downsides of a NZ-Australia pandemic cooperation agreement

While we consider that a NZ-Australia pandemic agreement is likely to have substantial net advantages, it is important to consider possible downsides. Some of these include:

- Wasted efforts if any such agreement is attempted but fails to be successfully negotiated. See here why a global pandemic agreement has so far failed to land despite the need for such provisions.[18] However, the major similarities between Australia and NZ, including in our Covid-19 response, are likely to provide a good basis for relevant negotiations.
- Risk of protracted disputes arising if the agreement is not well-designed initially (e.g., disputes over intellectual-property or financial-resourcing issues). Minimising such risks should be achievable as part of the agreement drafting and negotiating process.
- Loss of some national autonomy that could impede appropriate and fast decision-making by political leaders in a crisis. This is a potential concern given the uncertainties around emerging pandemics, combined with their catastrophic potential. Countries typically share a desire to protect the health of their populations, but leaders may have different levels of concern about the risks to health, to the economy, and for particular groups (e.g., in terms of ensuring equitable health and financial protection of the most vulnerable populations). Furthermore, if citizens in either country felt that their government was compromising national interests in favour of the other, it could lead to public discontent or political resistance. It is relevant that Australia faced such issues internally because their pandemic management decision-making was shared across their federal and state governments.[19] Again, such problems can be anticipated and addressed during the drafting and negotiation process of an agreement.
- Loss of some areas of local innovation in NZ, if the focus is primarily on supporting manufacturing in Australia (e.g., for mRNA vaccine production). Arguably, this potential downside could be more than counterbalanced by requiring NZ involvement in joint pandemic-research collaborations that facilitate two-way technology transfer. There are good precedents for such joint research initiatives in areas such as trans-Tasman work to develop vaccines against Group A Streptococcus to reduce rheumatic fever.[20]
- If the finalised agreement resulted in decisions that diverged from global standards (e.g., WHO recommendations), both nations could face criticism or reputation loss

from the international community and their international trading partners. Countering this concern is that agreements such as the IHR do not prevent countries from applying additional measures that are suitable for their circumstances (though they are required to report their justification to WHO). Indeed, countries like NZ, Australia, and Singapore were generally supported by their populations[21] for their success in minimising the impact of Covid-19, which required using measures that greatly exceeded WHO recommendations.

Expanding this agreement to include other interested states in the Pacific Region

There is a case for starting with a NZ-Australia agreement as a first step, as it is typically easier to negotiate with only two parties involved. But we also favour any successful bilateral agreement being subsequently expanded to include other interested Pacific Island states. This would be a tangible expression of the health-equity goals expressed in the revised IHR and proposed pandemic agreement.[22] It is also consistent with current NZ development goals in the region. Indeed, the NZ pandemic plan already specifically refers to working closely with Australian agencies and Pacific countries.[23] The Australian Government has a stated goal to "Better position Australia, our region, and the international community to prevent pandemics." The range of Pacific states that could be included would need further discussion and negotiation. But a starting point would be the NZ realm jurisdictions (Cook Islands, Niue, and Tokelau) or members of the Polynesian Health Corridors Programme (which also includes Samoa, Tonga, Tuvalu). Alternatively, all the sovereign island states of the Pacific Community could be invited to join. Some difficulties could arise if the bilateral agreement needed respecification with the inclusion of new equal partners.

Additional notes on pandemic-modelling capacity

As discussed above, accurate simulation modelling can guide decision-makers in assessing the potential health and economic impacts of pandemics and the optimal level of control measures. Pandemic-related cost-benefit modelling work was done prior to the Covid-19 pandemic for NZ,[24] but it was relatively simplistic. Although some modelling work was helpful early in the Covid-19 pandemic for NZ (e.g., in March 2020[12]), it took till July 2021 before high-quality integrated health and economic modelling was published, actually by an Australian-NZ team.[13] More timely Covid-19 modelling related to the specific issues (e.g., safe air-travel arrangements,[25] safe shipping,[26] and Covid-19 surveillance[27]) and more general disease modelling made important contributions to shaping the pandemic response following the decision to adopt an elimination strategy.[28] Trans-Tasman teams have also published joint modelling work in other domains such as tobacco control,[29] HPV vaccination,[30] and cardiovascular-disease prevention.[31]

Epidemiological modelling and cost-benefit analyses should also probably be integrated into a wider multi-criteria decision analysis (MCDA) framework (which had only very limited use during the pandemic in NZ[32]). MCDA can help capture some harder to quantify variables including:

- Potential catastrophic risks such as societal collapse after devastating pandemics (e.g., at the extreme end of the spectrum that could arise from bioengineered pandemics);
- Adverse impacts on health inequities and economic inequities and Te Tiriti obligations;
- Maintaining population trust in government agencies and healthcare systems, especially if the latter were to collapse in a severe pandemic;

- Potential adverse impacts of specific control measures on individual autonomy, e.g., on freedom to travel internationally;
- Risks of long-term damage to society or institutions, including: educational attainment if schools are closed, potentially unrecoverable economic collapse to some businesses (e.g., to tourism), or even more general economic collapse.

Societal values around some of these variables could be obtained from community consultation, taking particular note of Māori and Australian Indigenous input. Options include hui and participatory democratic processes such as citizen assemblies; the latter are being used for public engagement in NZ in a few specific areas,[33] [34] and could have a role in pandemic preparedness and assist with decision-making during a prolonged response, e.g., around decisions to exit a particular level of pandemic restrictions.

Protocols for ensuring safe cargo trade and green-zone travel corridors

Both countries were fairly successful in maintaining safe cargo trade during the Covid-19 pandemic and modelling work was done on this topic for NZ.[26] Having relevant safety protocols for shipping and air-cargo trade would be particularly critical if NZ were reliant on new pandemic vaccines or other supplies being manufactured in Australia. Such plans for functioning trans-Tasman trade (in a context where global shipping might be degraded) would have benefits across a wide spectrum of catastrophic risks (see this recent NZ-specific example:[35]).

Establishing a “green zone” or travel corridors between the countries was also attempted during the height of the Covid-19 pandemic, but was successful only for brief periods (some authors described this trans-Tasman zone as a “tightrope”[36]). Nevertheless, there are numerous advantages to allowing safe trans-Tasman travel in situations where both countries have successfully kept out a new pandemic of high severity. Pre-pandemic planning for this in any agreement could include joint modelling work and careful attention to agreed protocols for border biosecurity, testing, contact tracing, etc.

The limited use and success of green-zone travel during the Covid-19 pandemic reflected a lack of consistent definitions and processes, including how to respond to its failure (as happened with the trans-Tasman corridor). Defining what is needed for green-travel between NZ and Australia would enable other green-zone nations to connect.

The key is to define and measure what “adequate surveillance” means in the context of these proposed definitions:

- Green zone: no local transmission AND adequate surveillance.
- Red zone: local transmission OR inadequate surveillance.
- Amber zone: after a single transmission; or for two maximum incubation periods after last local transmission AND adequate surveillance.

In this context “local transmission” could be: “one or more cases in an area with no travel or traveller exposure during the incubation period”. Enhanced surveillance around recent entrants would also identify local spread from their source area.

Maintaining mask/respirator stocks as a critical aspect of pandemic preparedness

Face masks have a key role in pandemic preparedness[37] because they are effective against a range of airborne infections, offering immediate protection against emerging pathogens

in the period before diagnostic tests and vaccines are widely available. Respirator masks (particularly N95) are substantially more effective than surgical (typically blue) masks and should be the default mask type used by both healthcare workers and the general population in a public health emergency.[37] However, PPE shortages[38] can critically undermine such infection control and so, as with vaccines, there is a case for a joint NZ-Australian approach to local mask-manufacturing capacity. Nevertheless, given the relatively simpler technological requirements, further investigation may reveal that it is more appropriate for each country to have its own manufacturing arrangements.

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