

# Shifting all isolation/quarantine facilities to a single air force base: The need for a critical analysis

13 September 2020

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**In this blog the arguments for and against shifting all COVID-19 related isolation/quarantine facilities to a single air force base at Ōhakea are considered. The main advantage would be a reduction in the risk of border control failures, which can potentially involve outbreaks in NZ's largest cities with large health and economic impacts. The main disadvantage would be reduced numbers of returnees that could be allowed back into NZ, with these returnees assisting with economic recovery. There is therefore a need for an integrated health and economic analysis with the NZ Government being explicit about its decision-making.**

In this blog the assumption is made that the current Auckland outbreak of COVID-19 will be successfully controlled and NZ will regain its COVID-19 elimination status for community transmission in the coming months. This status could then allow for a more focused consideration of how best to do quarantine at the border, but analysis of the issue could begin now. The big question is around continuing to use hotels as isolation/quarantine facilities or to switch to dedicated facilities at an air force base. To start with, the various problems with the current approach of using hotels are summarised below:

**Disease transmission to workers/community.** This problem has been seen most starkly with a hotel quarantine failure in Victoria, Australia. Here “the [vast] bulk of cases

during the state's second wave could be tracked down to a family of four returned travellers staying at a single quarantine hotel" [1]. A detailed inquiry into hotel quarantine is ongoing in Victoria. In NZ, a facility maintenance worker in August was infected from a returnee, based on genetic sequencing of the virus [2]. As the suspected mode of transmission was shared elevator space [3], this can be seen as a design failure associated with using facilities with shared space involving both workers and those in quarantine. Fortunately, this particular case did not lead to a larger community outbreak. The cause of the current Auckland-based August/September outbreak is still unknown - but this could also be a facility-based failure (other less likely alternatives include infected air crew or seafarers on shore leave).

**Escapes of returnees** have occurred from a number of Australian hotel quarantine facilities ie, in Perth, Sydney and Toowoomba. Escapes of returnees from NZ hotel isolation/quarantine facilities have occurred on at least six occasions (four of the six escapes are described here; another one here; and one that only got 100m away here). All such escapes pose some risk of disease spread into the community, though the risk is potentially declining with recent security upgrades.

**Other types of security lapses** have included a person breaking into a NZ facility (eg, for theft of a laptop), and a faulty door may have facilitated another attempted break-in. (Nevertheless, another attempted break-in was foiled at an earlier stage ie, in Rotorua.) Also guards have fallen asleep and a private security guard breached returnee confidentiality. Some of these type of security lapses are being addressed, eg, by a larger role of the military in providing security at these facilities.

**The high cost.** The cost of isolation/quarantine in NZ hotels (some of which are high-end) is estimated to be almost \$500 million until the end of the year for the 32 hotel facilities currently in operation.

Given some of these problems, Australian-based experts have argued the need to improve quarantine, and have highlighted the benefits of purpose-built facilities, as opposed to using hotels. Other commentators have raised the need to move such facilities outside of cities (eg, to a NZ air force base) and there is also some NZ political interest in moving quarantine facilities to military bases. In the rest of this blog the relative advantages of the two options are discussed.

## **Advantages of the current hotel-based approach**

**Higher volumes of returnees.** Clearly the use of hotels (32 in Auckland, Hamilton, Rotorua, Wellington and Christchurch) allows for large number of returnees with 5,394 in the facilities as per 8 September (47,508 since 26 March). At this time the previous three-day average was 370 people arriving in the country per day which is equivalent to 135,000 per year. These numbers are probably at least 10 times what Ōhakea could be readily adapted to manage. However, this limit would depend on whether there was a decision to expand the size of the Ōhakea base by renting or buying surrounding farm land, construction of additional facilities, and adding further security fencing.

**Economic benefits of returnees.** This high number of returnees will be having economic recovery benefits for NZ as returnees can bring both skills (described as a "brain gain" for the country) as well as capital. They will also enhance consumer demand in the retail and

housing sectors. Some might even continue to work for overseas companies while being based in NZ and so will not compete with other New Zealanders for jobs.

**Support for hotel workers.** The re-purposing of existing hotel resources also helps keep these hotels economically viable and hotel staff employed.

## **Advantages of using Ōhakea Air Base**

This air force base is relatively self-contained and is 27 km from the nearest city, Palmerston North. The runway is suitable for large aircraft (eg, international flights are sometimes diverted there – including the very large A380 aircraft). The advantages for establishing isolation/quarantine facilities at this base include:

- **Much lower risk of outbreaks.** This base could be a “one-stop-shop” with aircraft flying directly from overseas and so there would be no disease transmission risk with using buses and domestic airlines to move people to facilities around NZ. The on-base facilities could be re-purposed and new buildings built to quarantine standards. That is, separate units with proper ventilation (as per WHO advice on air flow [4]) and zero shared space with workers or others in quarantine. Of note is that Hong Kong has used modular integrated construction technology to rapidly build some of its quarantine facilities. Such construction would also help generate jobs for New Zealanders. Workers supporting the isolation/quarantine facilities at Ōhakea could all live on the base eg, for one month periods and then be tested prior to any periods off the base.
- **If a failure occurs and a worker is infected** then this outbreak would be contained to the base. In the remote chance that an infected worker had a false negative test and triggered an outbreak off the base – then this outbreak would be more likely to occur in the nearest city, Palmerston North, a very much smaller city than Auckland. As such, the health and economic impact of any restrictions required to control the outbreak would be much less severe.
- **Lower risk of disease spread within family/whanau groups.** Design with proper air flow may also reduce the risk of disease spread within these groups staying in the same unit. This advantage is particularly important if the group has members at higher risk of death from COVID-19 (older people and those with chronic conditions).
- **Much better security.** An air force base controlled entirely by the military would provide for far better security than hotel facilities in down-town city centres. Also it is in a rural setting and any escapees would be much more obvious than in busy city streets.
- **NZ needs a permanent isolation/quarantine facility** for the future anyway. The world is likely to face future pandemics from natural sources (eg, influenza pandemics, other new coronaviruses) as well as the possibility of synthetic bioweapons. It may therefore be a good investment to have purpose-built isolation/quarantine facilities established in advance at a highly secure military base.
- **Ultimately lower cost?** The cost of purpose-built facilities at Ōhakea is likely to be far less than the \$500 million expected for hotel-based facilities by the end of 2020, especially if modular designs (as per Hong Kong) were used. But ultimately the overall economic analysis would need to also consider: (i) the risk reduction of an outbreak (eg, perhaps estimated from the final cost of the Auckland outbreak in August and September); (ii) the economic benefit to the country of returnees; and (iii) the economic benefit of supporting hotel workers at the existing facilities or construction workers who would build the new facilities at Ōhakea.

**In summary**, it would seem from a public health perspective there is a reasonable case for a single high-quality option of using Ōhakea air base so as to reduce the risk of outbreaks from border control failures. But this approach would substantially reduce the number of returnees and therefore limit the economic benefits from returnees for the country. There is therefore a need for an integrated health and economic analysis with the NZ Government being explicit about its decision-making.

NZ has a long history of combating the introduction of animal and plant diseases with some of the toughest biosecurity systems in the world. Thinking about human biosecurity in more systematic and evidence-informed ways is a relatively new challenge. This shift in thinking could be part of taking a more strategic approach to our COVID-19 response and building essential infrastructure to manage other external public health threats on the horizon.

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Public Health Expert Briefing (ISSN 2816-1203)

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### Source URL:

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