

Provision of primary care in managed isolation and quarantine facilities during the COVID-19 pandemic: lessons learned from Christchurch, New Zealand

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The COVID-19 pandemic has presented health systems in New Zealand and across the world with new challenges across the different levels of care delivery. To protect New Zealanders from the catastrophic effects of COVID-19, the Government adopted a four-level Alert System that guides the implementation of public health and social measures in the fight against this virus. As part of the ongoing response against COVID-19, the Government has introduced temporary restrictions on travellers entering New Zealand.¹ Individuals allowed to enter the country include New Zealand citizens, permanent residents and their immediate family, Australian citizens and permanent residents whose primary place of established residence is New Zealand, air crews and essential health workers.¹ To prevent reintroducing COVID-19 to New Zealand, the Government has established several managed isolation and quarantine facilities (specific hotels designated by the Ministry of Health) across the country based on World Health Organization guidance.^{2,3} Under Alert Level 1, every person entering New Zealand must undertake a minimum of 14 days of managed isolation (arrivals without COVID-19 symptoms) or quarantine (those who are symptomatic, have been in contact with a confirmed COVID-19 case or tested positive after arrival in New Zealand).² All individuals must test negative for COVID-19 before leaving the facility.²

Early on during the COVID-19 pandemic, our medical centre provided primary care

services to a number of facilities (four managed isolation hotels and one quarantine hotel) in Christchurch, New Zealand. At each facility, there was a team of nurses who coordinated patient care with the medical staff. Given that the provision of medical needs to patients in managed isolation/quarantine settings was a new experience for us, we faced several challenges for which we attempted to identify suitable solutions.

We have outlined the following recommendations which represent interventions based on our experience in an attempt to inform future provision of appropriate and safe primary care services at managed isolation and quarantine facilities across New Zealand. Each point describes specific challenge(s) (in *italic*) followed by the adopted/suggested solution(s).

1. *COVID-19 swabs were getting misplaced at the laboratory due to mislabelling of specimen containers and errors in handwritten laboratory request forms. In addition, we noted that the documentation of medical encounters with guests (also referred to as returnees) was inconsistent and sometimes incomplete. We also faced difficulties retrieving and communicating COVID-19 swab results to the nursing team and onsite staff.*

We created a separate medical centre in the practice management system (PMS) and named it "Quarantine Hotel". Each facility/hotel had a separate login to the

PMS. Nurses were given their own login to the system to facilitate documentation of encounters and allow subsequent auditing. For all expected flights, all guests from the manifest (a list of passengers on the plane) were loaded into the PMS before the flight arrived. This facilitated the generation and matching of NHI numbers (National Health Index, a unique identifier for each guest). As a result, accurate laboratory forms could be generated and results would flow back into the PMS electronically. Nurses could check lab results through the PMS allowing spreadsheets of important patients' clinical data to be updated in real time. Unfortunately, due to the limited timeframe, the PMS system was not fully rolled out to gain all the benefits before flights were temporarily ceased in our region.

2. *Lack of equipment used for clinical specimen collection, handling and point-of-care testing and lack of medicines for common acute presentations and symptomatic relief; some guests required routine/regular blood tests (ie, monitoring of an ongoing medical problem).*

We set up a clinic space in each facility. This space acted as the nurses' station and contained all required medical equipment and tools. Guests were, however, seen in their own room with medical/nursing staff appropriately donning and doffing personal protective equipment. Equipment were thoroughly cleaned after use.

We provided all clinical sample collection materials (eg, blood, urine, faeces) on each site, including a sharps container. A basic kit of medical supplies and materials was provided to each hotel. Each kit contained the following: COVID-19 nasopharyngeal swabs, bacterial swabs, swabs for sexually transmitted infections, urinalysis strips, pregnancy test strips, glucometers and glucose test strips, faeces and urine specimen containers, paediatric urine collection bags, dressing packs, paediatric and adult peak flow meters, spacers, inhalers, specimen delivery bags, medication dosing syringes and a selection of dispensed medications with paediatric dosing charts including paracetamol and ibuprofen (tablet and elixir), amoxicillin (tablet and elixir), nitrofurantoin, doxycycline, prednisone and ondansetron.

3. *Management of long-term/chronic medical problems and repeat prescription requests. For many guests, there was no available or up-to-date record of their regular medications, listed medical conditions/comorbidities or allergies.*

We encouraged guests to contact their regular doctor via telephone consultation for presentations related to their chronic medical problems and repeat prescriptions. If physical examination and/or blood testing were required, the doctor was able to contact us or the nursing team to facilitate this. In few occasions, we communicated with the patient's doctor to enquire about aspects related to the management of their long-term condition(s) or exchange important medical information to ensure appropriate follow-up (eg, seriously abnormal blood tests). Communication was mixed using email and telephone.

4. *Access to and affordability of prescription medicines and over-the-counter pharmacy items; some guests did not have online banking or computer access.*

To expedite the processing and delivery of prescribed medications, we used two pharmacies and script fees were billed to the project. For a small surcharge, this significantly reduced the time spent assisting guests with payments. We utilised the Student Volunteer Army⁴ to help deliver over-the-counter pharmacy items purchased by guests. We are aware that the Auckland managed isolation and quarantine facilities use pharmacies that do not charge the surcharge (Anita Naik, oral communication, 19 June 2020).

5. *High phone calling charges and difficulty communicating with guests; many guests were using SIM cards and phone accounts connected to their previous place of residence resulting in international charges.*

We sourced local SIM cards for each isolation/quarantine facility. This allowed guests to contact their usual doctor for a remote consultation if required without having to worry about additional charges. It also improved our ability to communicate easily with guests.

6. *Absence of a dedicated channel of communication between facility nurses and the medical team.*

A mobile phone for onsite nursing staff was provided by the local district health board (DHB) at each location and an email address was set up for each facility. The DHB also created a single email address for the medical team.

Undoubtedly, the need to expand the number of managed isolation and quarantine

facilities across the country is inevitable as the Government opens the borders to international trade, tourists and overseas students. We hope that the above-mentioned lessons are adopted by current and future managed isolation/quarantine facilities across the country. We welcome any feedback or suggestions from other managed isolation/quarantine facilities and are eager to exchange ideas, opinions and thoughts related to this matter.

Competing interests:

Nil.

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