An audit of a marae-based health centre management of COVID-19 community cases in South Auckland

Matire Harwood, Selwyn Te Paa, Nethmi Kearns, Helaman Luki, Augustus Anderson, Alex Semprini, Richard Beasley

In October 2021, the New Zealand government announced that COVID-19 cases in the community would no longer be exclusively managed in Managed Isolation and Quarantine (MIQ) facilities. Given the significant growth in cases, the isolation model moved towards Community Supported Isolation and Quarantine (CIQ) where cases would isolate at home and receive regular contact via a check-in service run by Whakarongorau Aotearoa[1,2] (WA), contracted by the Ministry of Health. WA also run services such as Healthline, and the COVID-19 vaccination booking line. The check-in service is based on trained non-clinical staff making daily calls to positive cases isolating at home with processes for clinical escalation if required.[3] A public health risk assessment would take into consideration whether cases live in a residence that allows them to isolate safely, have access to own transport, phone and internet as well as masks, food and cleaning products.[4]

However, there has been anecdotal evidence[5–7] of suboptimal management of cases, failure to conduct check-ins and reports of whānau isolating in homes that do not meet the criteria. A recent independent review panel concluded that two of the deaths of COVID-19 cases in home isolation in Auckland were "potentially preventable" with "missed opportunities contributing to the outcome".[8] At a time when over 70% of active cases in a known isolation location are in CIQ,[9] it is crucial that primary care health professionals are informed and aware of their patients' clinical status, the management their patients receive, and their professional responsibilities.

The Papakura Marae Health Centre (PMHC) is one such primary health provider in South Auckland that serves 3,200+ people of whom 95 percent are classified as 'high-need'. We undertook an audit of the management of COVID-19 patients enrolled or seeking care as casual patients at the PMHC using information documented in primary care records. The aim of this audit was to identify aspects of the care of PMHC COVID-19 cases that could be improved with the goal of enhancing patient welfare. The specific objectives are outlined in Table 1a.

There are currently no published standards on the management of COVID-19 cases in primary care. We therefore formulated the standards set out in Table 1b. This retrospective audit was conducted in partnership with the Medical Research Institute of New Zealand (MRINZ), Wellington. We audited the medical records of all patients under the care of PMHC, diagnosed with laboratory confirmed COVID-19 between 14 October 2021 and 18 November 2021. As this was a clinical audit of patients attending the general practice, no approval from an ethics committee was required. The purpose of the audit was not to challenge current government policies, but to document the performance of this Māori health provider in caring for COVID-19 patients in their community, and importantly to use the findings to improve clinical care and health outcomes.

De-identified data relating to patients were collected retrospectively from existing General Practitioner (GP) records by investigators at PMHC using a standard data collection paper form. No patients were

directly contacted for the purposes of data collection. The collected data was coded and entered by investigators at the MRINZ into a REDCap database[10] hosted by the MRINZ.

Thirty-seven patients were included in this audit (Table 2). Nineteen cases (51.3%) were enrolled patients at the practice while the remaining were casual patients. The majority of patients (73%) were of Māori ethnicity and living in high deprivation areas. The mean (SD) number of persons per household was 5.8 (4.0) with 3.3 (1.7) positive cases in each household. Four out of the 26 cases who were eligible for vaccination were fully vaccinated at the point of diagnosis with a further six having received the first dose. Forty-six percent of cases were aged 20 years or younger with three-quarter of cases isolating at home. The primary isolation location was CIQ in 28 cases (75.7%, of whom two were admitted to hospital), MIQ in 8 cases (21.6%, of whom one was admitted to hospital) and hospital in one case which resulted in a prolonged admission including intensive care.

Of the COVID-19 cases, 57% were first notified of their positive result by the PMHC. There was documented evidence in the PMHC records that WA contacted 48.6% of cases for clinical review. In the majority of patients, all three standards were met by the PMHC (Figure 1). All cases were reviewed by PMHC, of whom 33 (89.2%) had clinical reviews made by the GP. Twenty-nine out of 37 cases (78.4%) had a GP clinical review within two calendar days of PMHC being notified of the positive result. Home visits were carried out by GPs on at least one occasion in 25 cases (67.6%). Oxygen saturation was measured at all initial home visits made by the GP (in one case oximetry results were reviewed during a phone consultation). All cases had clear documentation of their clinical characteristics (Table 3) and were asked about their welfare needs. The practice provided kai packs to 31 cases (83.8%) and delivered medication to 14 cases (37.8%) with 13 cases (35.1%) also opting for a hygiene pack delivered by the practice.

This audit has shown that PMHC has become the default provider of medical and welfare care for COVID-19 cases isolating in their community. While we recognise that documentation may underestimate WA's and the Ministry of Health's

Table 1: (a) Audit Objectives and (b) Standards

1a	**Objectives**
	1. To ensure that COVID-19 cases in the community were reviewed by the practice 2. To ensure there is documented evidence of the clinical characteristics of COVID-19 cases 3. To ensure there is documented evidence that the welfare needs of patients were ascertained
1b	**Standards**
1	COVID-19 cases should be contacted by the practice within 48 hours of GP notification of result *Rationale:* We considered follow-up by the primary care provider in a timely manner was important to ensure deteriorating patients were not missed
2	COVID-19 cases should have documented evidence of clinical characteristics (vaccination status, symptom status, pregnancy status, co-morbidities, details of COVID-19 related admissions to hospital, outcome of illness) *Rationale:* Clear and accurate documentation of clinical characteristics ensures that potentially vulnerable patients are identified.
3	COVID-19 cases should have documented evidence that welfare needs were ascertained. *Rationale:* As community cases quarantining at home are advised not to leave their property for any reason (apart from exempted reasons such as getting a COVID-19 test), ensuring patients have their welfare needs met is important.

Table 2: Baseline characteristics.

Variable	N=37
Female sex (%)	23 (62.2)
Age (%)	
0-10 years old	11 (29.7)
11-20 years old	6 (16.2)
21-30 years old	8 (21.6)
31-40 years old	3 (8.1)
41-50 years old	3 (8.1)
51-60 years old	4 (10.8)
61-70 years old	2 (5.4)
>70 years old	0 (0)
Ethnicity[a] (%)	
Māori	27 (73.0)
Pacific Peoples	7 (18.9)
European	3 (8.1)
Employment Status (%)	
Full-time	7 (18.9)
Part-time	1 (2.7)
Unemployed	11 (29.7)
Student	16 (43.2)
Other	2 (5.4)

Table 2: Baseline characteristics (continued).

New Zealand Index of Deprivation Decile[b] (%)	
1	0 (0)
2	0 (0)
3	1 (2.7)
4	2 (5.4)
5	1 (2.7)
6	9 (24.3)
7	3 (8.1)
8	2 (5.4)
9	5 (13.5)
10	14 (37.8)
Primary Isolation Location (%)	
CIQ	28 (75.7)
MIQ	8 (21.6)
Hospital	1 (2.7)
Mean number of positive cases in household (Mean (SD))	3.3 (1.7)
Mean number of persons aged ≥18 in household (Mean (SD))	3.2 (2.4)
Mean number of persons aged < 18 in household (Mean (SD))	2.6 (2.2)

[a] Reported as prioritised output using Level 1 codes defined by the Ministry of Health(12)

[b] Calculated using NZDep18(13)

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Figure 1: Percentages of COVID-19 cases meeting each standard at PMHC.

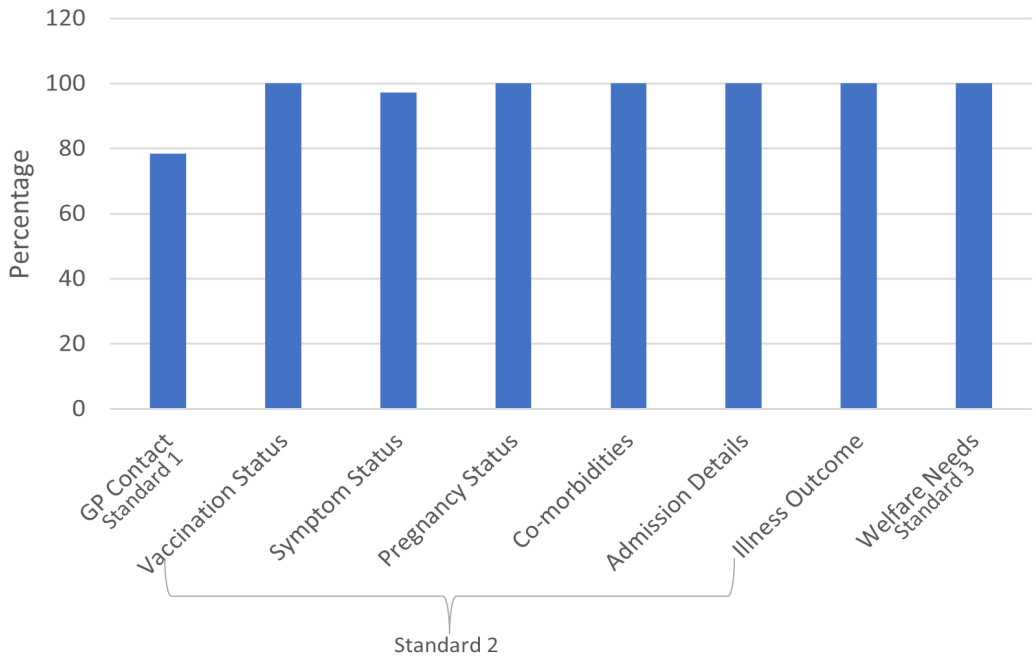

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Table 3: Clinical Characteristics of community COVID-19 cases

Variable	N=37
Symptom status (%)	
Symptomatic at time of testing	18 (48.6)
Asymptomatic at time of testing	18 (48.6)
Unknown	1 (2.7)
Pregnancy (%)	1 (4.3), N=23
Vaccination status (%)	
Not eligible due to age <12 years	11 (29.7)
No dose received prior to positive test	16 (43.2)
1 dose only	6 (16.2)
Fully vaccinated	4 (10.8)
Co-morbidities (%)	
Current/Ex-smoker	12 (32.4)
Obesity	5 (13.5)
Diabetes	3 (8.1)
Cardiovascular Disorders	6 (16.2)
Respiratory Disorders	3 (8.1)
Other	6 (16.2)
Hospitalised due to COVID-19 (%)	4 (10.8)
Admission to ICU due to COVID-19 (%)	1 (25.0) N=4
Patient outcome at time of data collection (%)	
Ongoing COVID-19 illness	31 (83.8)
Recovered	6 (16.2)
Death	0 (0)

involvement in case management, it is clear from this audit that the PMHC essentially took over the role of the Ministry of Health's service provider. The level and quality of medical care provided by the specialist GPs and support teams in this audit was of a high standard, and one that could not be achieved by remote monitoring by non-medical personnel guided by decision support tools. In addition to providing medical care, PMHC is a Māori health care provider whose services are underpinned by 'Te Whare Tapa Whā' and provides holistic healthcare that involves the whole whānau. This is evidenced by the welfare support (not limited to kai, medication and hygiene packs) supplied by the PMHC, not otherwise provided by the public health system. The challenges faced by the Ministry of Health in ensuring timely and appropriate clinical and welfare support potentially impacts on the health and disability system's commitment to upholding te Tiriti o Waitangi. With 45% of all cases in the current outbreak being of Māori ethnicity,[9] the current system continues to disadvantage a high priority population already facing exisiting inequities in the care they receive.

In accordance with the Medical Council of New Zealand guidance that audits should lead to an action plan that improves clinical care and health outcomes,[11] we recommend that the Ministry of Health transfers responsibility and resources for the management of COVID-19 cases isolating in the community to primary care, which is ideally placed to provide the continuity and standard of care required. However, this transfer would need to be adequately resourced, and be based on better shared information between the different health entities and GPs.

Addendum

This article was submitted December 2021. There have been changes in relevant policy and service since then.

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Author information:
Matire Harwood: General Practitioner, Papakura Marae Health Centre, Auckland; Associate Professor, Faculty of Medical and Health Sciences, University of Auckland, Auckland; Senior Clinical Research Fellow, Medical Research Institute of New Zealand, Wellington.
Selwyn Te Paa: Assistant Clinical Research Fellow, Medical Research Institute of New Zealand, Wellington.
Nethmi Kearns: Senior Clinical Research Fellow, Medical Research Institute of New Zealand, Wellington
Helaman Luki: Intern, Medical Research Institute of New Zealand, Wellington.
Augustus Anderson: Informatics Manager, Medical Research Institute of New Zealand, Wellington
Alex Semprini: Deputy Director, Medical Research Institute of New Zealand, Wellington; Adjunct Professor Victoria University of Wellington, Wellington.
Richard Beasley: Director, Medical Research Institute of New Zealand, Wellington; Professor Victoria University of Wellington, Wellington.
Corresponding author:
Matire Harwood, Papakura Marae Health Centre, 29 Hunua Road, Papakura, Auckland
m.harwood@auckland.ac.nz
URL:
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