

# The transition to a “virtual practice” in primary care during the COVID-19 pandemic: experience from one medical centre in New Zealand

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## ABSTRACT

Coronavirus disease 2019 (COVID-19) has rapidly spread across the globe, driving radical transformation in the way patient care is delivered in primary and secondary care. As part of the response against COVID-19 across primary care in New Zealand, practices and medical centres have largely transitioned to telehealth over a short period of time while maintaining the traditional business model of in-person care on an as-required basis. To inform other primary care services and future practice, we describe our experience at one general practice and the challenges faced in the process of converting to telehealth in the midst of the COVID-19 pandemic.

Coronavirus disease 2019 (COVID-19) is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). It was first detected in the Wuhan province of China in December 2019, with subsequent epidemics in several countries including Iran, Italy, Spain, the UK and the US. On 11 March 2020, the Director-General of the World Health Organization characterised COVID-19 as a pandemic. As of 9 June 2020, a total of 7,039,918 cases and 404,396 deaths have been confirmed worldwide.<sup>1</sup>

New Zealand confirmed its first case of COVID-19 on Friday 28 February 2020. The number of confirmed cases continued to increase reaching 66 on 21 March 2020 when the first case of community transmission was reported. On the same day the Government introduced the COVID-19 Alert System (a regularly updated four-level alert system that specifies the public health and social measures to be taken in the fight against COVID-19) and announced Alert Level 2 which allowed businesses and public venues to operate but limited gatherings to

small groups.<sup>2</sup> On 23 March 2020, a State of National Emergency was declared and the Prime Minister announced that the country has moved to Alert Level 3 before moving into Alert Level 4 (lockdown) from midnight 25 March 2020. At midnight on 27 April 2020, the country moved into Alert Level 3 and on 14 May 2020 it entered its first day at Alert Level 2. After reporting no active COVID-19 cases for the first time since 28 February 2020, New Zealand moved to Alert Level 1 at midnight 8 June 2020.

According to the World Health Organization, 1,154 confirmed COVID-19 cases and 22 deaths have been reported in New Zealand as of 9 June 2020.<sup>1</sup> While the response to the COVID-19 pandemic is ongoing, future resurgence and subsequent waves may occur.<sup>3</sup>

The rapid spread of COVID-19 across borders has driven radical transformations in the way patient care is delivered in primary care.<sup>4</sup> As part of the response against COVID-19 across primary care in New Zealand, practices and medical centres have

largely “switched” to telehealth over a short period of time while maintaining the traditional business model of in-person care on an as-required basis. To inform other practices and a likely second wave of COVID-19,<sup>3</sup> we describe our experience in the process of converting to telehealth at one urban medical centre, the challenges faced, and our plans for the weeks and months to come.

Our practice is run by eight general practitioners (GPs) and four practice nurses serving a population of 5,000 patients (54% female; 14% ≥ 65 years; 69% European, 11% Māori and 6% Pacific Peoples; 34% New Zealand deprivation quintiles 4 and 5).

### Before COVID-19

Before the COVID-19 pandemic, we relied heavily on the traditional model of in-person consultations, and telehealth played a minor role in patient care. All of our GPs actively utilise ManageMyHealth™ patient portal (an online tool that allows direct patient-to-doctor communication via messaging, online booking, access to investigations and repeat prescription requests). However, its uptake is low in our patient population. Only two GPs in our practice utilised phone consultations before COVID-19 but did so on only a few occasions throughout the year and mainly for medication adjustment and mental health follow-up reviews. None of us had used video consultations nor were we planning or in the process of integrating telehealth/virtual consultations into routine patient care.

### Early preparation

For us February 2020 was a month of anticipation. As for the rest of world, we were increasingly familiar with reports of the novel coronavirus, later typed SARS-CoV-2, spreading outside of its epicentre to other countries including Iran and Europe. Early in February, we held weekly meetings to update ourselves with the ever-growing knowledge of COVID-19; its epidemiology, symptomatology, management and outcomes. As we learned more about its basic reproduction number, R0 (an indicator of the transmissibility of the virus), the mild clinical course in children, and the high mortality rate among older adults, immunosuppressed, and those with comorbidities, it became increasingly important for us to understand what this would mean for our staff and patient population.

We deliberated on how we would respond to COVID-19 if it arrived on our shores. As February progressed, our meetings became more frequent (from two to three meetings a week to our daily 08:30am ‘huddle’) and we shifted our focus into exploring new approaches and implementing policies aimed at protecting staff and vulnerable patients including new organisational models of care provision. In addition to the regularly updated Ministry of Health information for primary care services,<sup>5</sup> we received regular guidance and support from our primary health organisation and district health board,<sup>6,7</sup> and exchanged ideas with other local medical centres on how to best deal with the growing COVID-19 crisis including the transition to telehealth.

### The transition to telehealth

It is important to note that the process of transitioning to telehealth was gradual for our practice. We adopted a policy that guarantees provision of care utilising several methods (in-person and remote consultations via email, texting, telephone and videoconferencing) and regulated access to our practice building for in-person visits. Our goal was to protect staff and vulnerable patients by minimising the number of patients in our practice building. Measures undertaken early-mid March 2020 to achieve this goal included:

- Reduce working hours
- Reduce the number of healthcare professionals on-site
- Suspend acute services
- Suspend the ManageMyHealth™ online booking function to allow for phone triage prior to being seen (patients were still able to request repeat prescriptions and communicate with their GPs)
- Firstly triaging all ‘acute’ consultations over the phone
- Establishing “infectious phone calls and clinic” work streams
- Introduce virtual/remote consultations as appropriate
- Placing signs by our medical centre entrance (Figure 1) and notifications on our website<sup>8</sup> and social media accounts to inform patients of our new policies related to COVID-19

**Figure 1:** Signs and posters at practice entrance detailing new polices and protocols related to COVID-19.



On 9 March 2020, we made the decision to integrate telehealth into our daily practice. We also identified a list of presentations that can be safely managed remotely using email, telephone or videoconferencing. These included repeat prescriptions, follow-up visits for stable chronic conditions including hypertension, asthma, chronic obstructive pulmonary disease, heart failure, depression and diabetes, and acute simple presentations including uncomplicated urinary tract infection and osteoarthritis flares. Later in mid-March, work capacity medical certificates and ACC continuation of work certificates were permitted to be issued following a remote consultation. We started by reviewing already booked appointments for the week and called some patients informing them of our plan to transition to virtual consultations. Many times, the triage phone call was sufficient and resolved patients' requests. Some appointments were deferred/cancelled and others were scheduled as in-person or virtual consultations. Telephone was the main modality to conduct virtual consultations. The fact that some of our GPs were themselves in home self-isolation (quarantine) facilitated the early uptake of virtual consultations.

We developed policies and protocols for our front desk staff on (1) how to screen appointment requests for COVID-19 (ie, fever, cough, sore throat, flu-like symptoms, recent overseas travel, contact with confirmed or probable COVID-19 case—see Appendix), (2) which requests can be booked directly into the GP (eg, mental health review for adults and work capacity certification) or nurse (eg, six-week immunisation, flu vaccination) appointment template, (3) which should be deferred for several months (eg, annual general check-ups), and (4) which should be triaged by a clinician first (ie, almost all other requests). We allocated a daily slot of 30–60 minutes at the beginning of the morning session for GPs to phone-triage presentations/requests. Some patients were asked to come in for an examination provided that they had no COVID-19-related symptoms or contact with confirmed/probable cases (eg, fall at home with a swollen painful knee and partial weight-bearing). Blood tests were only ordered if absolutely necessary. Our newly developed policies and protocols and their level of implementation have evolved over time.

We also implemented a policy that laboratory/imaging request forms, prescrip-

tions, medical off-work certificates and other forms were not to be collected directly from our reception. All prescriptions were faxed to an onsite pharmacy or to a pharmacy nominated by the patient for pick-up. Blood request forms and medical certificates were emailed directly to patients or their relatives with their consent. Emailing of forms was facilitated by the email functionality on the Medtech Evolution practice management system<sup>9</sup> or using practice email address. Invoices were either emailed or text messaged to patients on the same day of consultation.

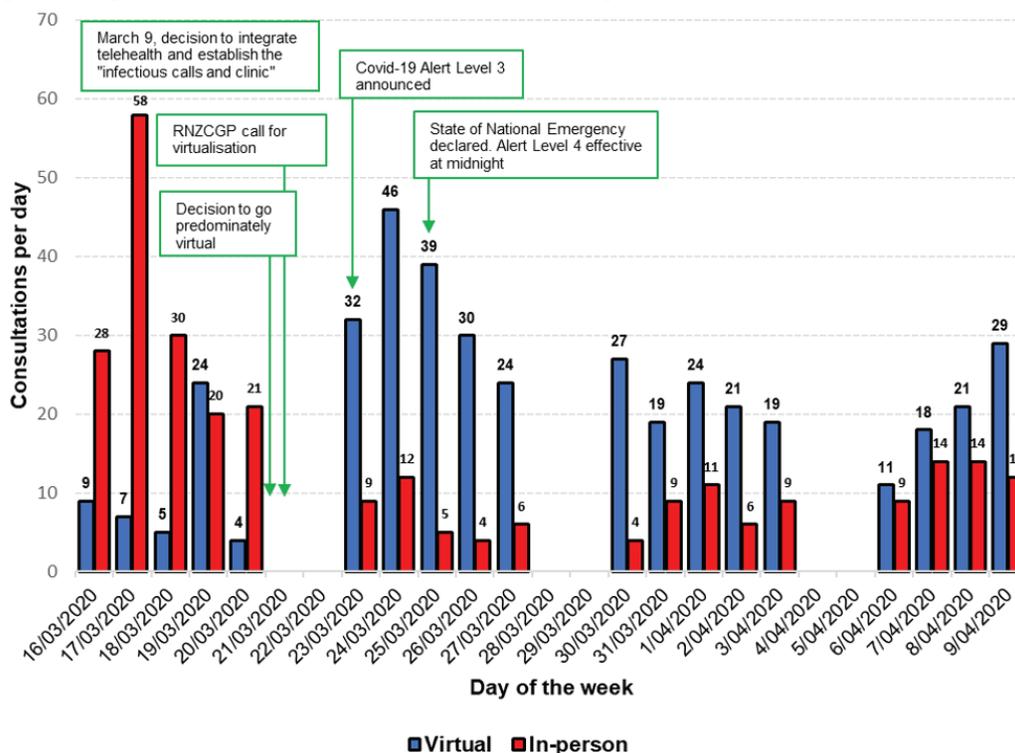
By the week of Monday 9 March 2020, we established a daily morning session ‘infectious phone call list’ where patients with flu-like symptoms, coryza, sore throat and other established symptoms of COVID-19 were phone-triaged. Patients who required further assessment were invited in for a video or ‘drive through consultation’. Patients were asked to park in our ambulance area and remain in their car for an in-person assessment conducted by a team of one GP and two nurses in full personal protective equipment. Provided

sufficient nasopharyngeal swabs in our stock, patients who met the current criteria for COVID-19 testing were swabbed and advised to self-isolate as per Ministry of Health advice. If no swabs were available on the day, we referred patients to our local community-based assessment centres (CBACs) for testing.

“Go hard, go early”

Driven primarily by information received from Italy<sup>10</sup> pertaining to the significant contribution of practice waiting rooms in the spread of COVID-19, the Royal New Zealand College of General Practitioners circulated an email on 21 March 2020 titled “Call to action: Go Hard, Go Early” urging all of its members to immediately switch to virtual consultations (eg, phone, email or video consultations) with the goal of reducing in-person visits by 70% starting on 23 March (less than 48 hours later). This was followed by a webinar hosted by the College on the following day detailing and explaining these recommendations.<sup>11</sup> This is also the day New Zealand went into Level 3 before transitioning into Level 4 (lockdown) 48 hours later.

Figure 2: In-person and virtual consultations at one medical practice.



## Switching to telehealth

We made the decision to switch to predominantly remote consultations following the College's recommendation. By this time around 15–55% of our daily consults were virtual, all of which were conducted by telephone (Figure 2). We thought it would be relatively easier for us to make the “switch” given that we had already (but not uniformly) integrated telehealth into our routine patient care. Despite this, 23 March 2020 was a day to be remembered. It was the day when general practice was forced to make a giant leap toward telehealth.

We rushed to ring patients who had already been booked in for in-person consultations on that Monday and the rest of the week and advised them of the switch. As the day progressed, we began to find it difficult to reach patients using landlines or even our personal mobile phones due to significant countrywide congestion. We resorted to other communication modalities including text messaging using Medtech. Our already established protocols and policies were immediately and strictly reinforced. We managed to reduce in-person consultations significantly on the first week of the lockdown (in-person consults constituted 22% of total consults on the Monday and remained <20% for the rest of the week).

We had already invested in telehealth by acquiring webcams and headsets early in the process, which allowed the use of other communication platforms/applications such as Zoom<sup>12</sup> and doxy.me.<sup>13</sup> Telephone was the mainstay modality in our practice, constituting 99% of telehealth consultations over the first three weeks of lockdown (355 phone, 124 in-person, and 5 video consults). Photos were used as adjunct to virtual consultations in specific complaints (eg, skin lesions, wounds and rashes) and all were uploaded to the patient's portal.

The total number of appointments dropped significantly by 40–60% compared to pre-COVID-19. Reasons for this were several and include the regulated access to the practice building under Levels 3 and 4, significantly reduced staff on-site, patients' perceptions that practices were overwhelmed by COVID-19 related work, and fears of becoming infected with the COVID-19 virus. This resulted in significant

reductions in total revenue by approximately 55%. Our consultation billing scheme also contributed to the downfall in revenue; we billed phone/video consultations that were followed by in-person examination only once and reduced the charge significantly for phone consultations lasting less than five minutes.

## Summary of our experience

With the lifting of social and public health measures across the globe, resurgence and future second waves of COVID-19 are possible.<sup>3</sup> Newly established organisational models of patient care that integrate telehealth need to be sustainable in the medium to long term. Our goals for the weeks and months to come are to strengthen our telehealth infrastructure, fine-tune our virtual triage and consultation systems, and increase patients' uptake of online portals such as ManageMyHealth™.

Although we have not systematically examined patients' views and acceptability of telehealth as a modality of care during the COVID-19 pandemic, informal feedback and our experience suggest that most patients embraced telehealth especially those with access barriers related to proximity, transport, cost and child care. We are hopeful that the increased uptake by GPs and patients may result in reduced health inequities through improving access to care.

Some patients, particularly older adults, expressed resistance to telehealth in general for several reasons including their preference of in-person visits, resistance to technology and perceived low value for cost. Additionally, most patients found video consultations problematic primarily due to technical issues. Zoom videoconferencing, however, was the platform of choice for our GP semi-daily virtual meeting as it facilitated physical distancing.

On reflection, the early preparation for the pandemic before it arrived on our shores allowed us to plan, introduce and modify protocols and policies related to COVID-19. The relatively gradual introduction of telehealth before the College call for immediate “virtualisation” in late March provided us and our patients with additional time to familiarise ourselves with these new modalities (ie, e-mail, phone and videoconferencing). Technical barriers,

however, resulted in a low uptake of video consultations in our practice. In addition, triage/infectious phone calls and the daily infectious clinic were very helpful measures in reducing in-person visits. To address deficiencies and mitigate challenges faced by patients and GPs during this pandemic, we are currently developing protocols and policies to guide our response in the event of future similar challenges (eg, pandemics/national disasters) including compulsory telehealth training.

To facilitate virtual triage and management of common presentations/conditions in general practice, we will ensure that/encourage our patients (especially those with high-risk chronic medical conditions) to obtain home monitoring medical devices such as blood pressure monitors, oxygen saturation monitors, temperature probes, peak flow meters and glucometers. Although the role of, and outcomes associated with home-based monitoring in the management of chronic conditions such as hypertension, heart failure and chronic obstructive pulmonary disease have been studied,<sup>14</sup> research is needed to examine the cost-effectiveness of the use of home monitoring devices among the general primary care patient population.

The suitability of presentations for virtual consultations may be contingent on several factors including acuity (ie, acute mental health distress with suicidal ideation

versus follow-up review for chronic treated depression), severity of presentations (eg, mild versus moderate/severe asthma exacerbation), the necessity for a physical examination (eg, a 75-year man with weeks history of abdominal pain, altered bowel habit and weight loss). Likewise, several patient-related factors may influence doctors' ability to conduct virtual consultations (eg, access to phone/internet connection).

## Conclusion

Telehealth has enabled many of us to continue providing care to our patients while maintaining the necessary public health measures adopted in the fight against COVID-19. However, the rapid transformation in the way patient care is delivered has created increased uncertainty over the future of general practice. Is this "switch" to telehealth going to be sustainable in the long-term? What will be the level and degree of telehealth adoption beyond COVID-19? What is the role of the New Zealand Medical Council,<sup>15</sup> the Royal New Zealand College of General Practitioners<sup>16</sup> and primary health organisations in providing further support and guidance on the appropriateness of telehealth in various presentations and clinical circumstances? How is the situation created by COVID-19 going to affect practices and medical centres in the medium to long term? Many questions remain to be answered.

## Appendix

### Flow for phone calls into booked appointments

Reception triages phone call:

*Use triage phone script to screen for infectious symptoms (1 & 2)*

1. Have you recently (in the last two weeks) travelled overseas or been in close contact with a confirmed or probable COVID-19 case?
2. Have you got cold-like/respiratory symptoms? Fever, cough, runny nose, sore throat, diarrhea or vomiting, earache

**If YES to 1 or 2 above:**

What they want to see a doctor for?

1. Self-isolation questions/advice → ring Healthline 0800 358 5453
2. Medical certificate for self-isolation → nurse telephone consultation
3. Viral illness/fever/respiratory symptoms/diarrhoea or vomiting and want a medical appointment → put onto the acute doctor/infectious phone call list for a phone call and annotate next to their name. It would be helpful if they can get a temperature and pulse rate at home.

**If NO to both:**

1. **Other acute symptoms** (eg, urinary symptoms, chest pain, etc) → acute nurse template screen
2. **All other patients** → put onto the doctor's triage phone template\* for an initial phone call. The doctor will decide if patient needs to come in for examination. If non-urgent complaint, put onto phone triage list for another suitable day.

\*A two-minute phone call from the doctor or nurse to decide what kind of appointment the patient needs.

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**Competing interests:**

Dr Miriam Martin is the owner and medical director of Village Health.

Dr Ibrahim S Al-Busaidi reports no conflicts of interest.

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