

# Survey protocol for exploring video and phone use in Aotearoa New Zealand general practice: considerations for future telehealth

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## ABSTRACT

**Introduction** Telehealth became the most practical option for general practice consultations in Aotearoa New Zealand (NZ) as a result of the national lockdowns in response to the COVID-19 pandemic. What is the consumer experience of access to telehealth and how do consumers and providers perceive this mode of care delivery going forward?

**Methods and analysis** A national survey of general practice consumers and providers who used telehealth services since the national lockdowns in 2020 will be distributed. It is based on the Unified Theory of Acceptance and Use of Technology framework of technology acceptance and the access to care framework. The data will be statistically analysed to create a foundation for in-depth research on the use of telehealth services in NZ general practice services, with a specific focus on consumer experiences and health outcomes.

**Ethics and dissemination** Ethics approval was granted by the Auckland Health Research Ethics Committee on 13/11/2020, reference AH2539. The survey will be disseminated online.

## BACKGROUND

Primary healthcare is provided from the community by a broad range of health professionals and aims to reduce the causes, development and severity of diseases by providing treatment and education including the promotion of self-care.<sup>1 2</sup> Within Aotearoa New Zealand (NZ), most primary healthcare services and funding models are provided by clinicians working within general practice, such as doctors, nurses and nurse practitioners. The NZ health system is, in the majority, tax funded, but most consumers are required to make copayments for services rendered within general practice.

Telehealth (care at a distance using information and communications technologies)<sup>1</sup> became the most practical option for general practice consultations in NZ during COVID-19 alert levels 3 and 4<sup>2</sup> after 23

March 2020. Telehealth was not a frequently or routinely used consultation modality in primary care, and specifically in general practice, up to this point in NZ.

Traditional telehealth research highlights that, in comparison with in-person consultations, telehealth has lower costs for both consumer and provider and that there is no difference in service utilisation or disease progression for people with long term conditions,<sup>3</sup> along with the convenience of phone or video consultations. However, the introduction of video for telehealth (as opposed to the phone) has been accompanied by disruption in processes, and concerns in clinical quality and accountability, and patient privacy.<sup>3 4</sup>

The priority in NZ, at the onset of the pandemic, was to limit exposure to and possible spread of COVID-19 while accessing and/or providing care. Within days, general practices set up telehealth processes (and associated software), and patients were triaged into video and/or phone appointments or in-person appointments, where physical examinations of patients were required and could be done safely.<sup>3</sup>

Continuity of care, as a process measure of access to care, remained a priority during this time. Continuity of care is the longitudinal therapeutic relationship between a clinician and patient,<sup>5</sup> which is essential for patient-centred<sup>6</sup> and person-focused care.<sup>7</sup> Consumer experience research describes how patients prefer continuity of care with the same provider, are unaware when a telehealth option is available and tend to revert to 'how we've always done things' when under pressure.<sup>8</sup> Person-focused care recognises the longitudinal relationship between clinician and patient that incorporates multiple interactions about a combination of long-term and short-term health issues over time.<sup>7</sup> This



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approach, in turn, assumes the inclusion of different modes of interaction, such as in-person clinic visits, video and phone discussions and consultations, email/secure message correspondence and patient portal interactions.

Penchansky and Thomas<sup>9</sup> describe access to care in terms of dimensions of accessibility, availability, affordability, service design, acceptability, implementation and design. Saurman<sup>10</sup> adds awareness (knowing that a service is available) as the final dimension. Telehealth is one way to enable access to care but could potentially also become a barrier in terms of equity,<sup>11</sup> where one assumes the availability of technologies and skills to be able to participate in, for example, a video consultation. The International Covenant on Economic, Social and Cultural Rights treaty<sup>12</sup> outlines the right to equitable healthcare. NZ has an obligation under Te Tiriti o Waitangi (the Treaty of Waitangi) to ensure that improved health is equitably accessed for both Māori and non-Māori.<sup>11 13</sup> Changes resulting from the introduction of telehealth must consider whether the new processes will result in improved health outcomes and be accessible equitably. With these considerations in mind, upscaling telehealth from sudden unplanned emergency use to business as usual requires understanding of the consumer experience in the postemergency COVID-19 period.

The intention of consumers and providers of general practice services to use telehealth technology after having experienced it is important to understand for future adoption of video and/or phone during consultations. The Unified Theory of Acceptance and Use of Technology (UTAUT)<sup>14</sup> asserts that if there is perceived ease of use, perceived usefulness and positive social norm (peer support for adoption), one can predict user acceptance. To make sense of the intent to use theory (UTAUT), we will contextualise the findings in the theory of access to care by Penchansky and Thomas.<sup>9</sup>

## AIM AND OBJECTIVES

In the context of NZ general practice and the COVID-19 pandemic, our research question is, ‘What is the consumer experience of access to telehealth and how do consumers perceive this mode of care delivery going forward?’. This also includes the providers’ experience because telehealth in this context consists of real-time (synchronous) interactions between consumer and provider, that is, consultations via video and/or phone (mobile and/or landline).

### Research aim

To explore the use of video and phone consultations in general practice since 23 March 2020 to describe: (1) factors (negative and positive) about consumers’ access to telehealth; and (2) perceptions of consumers and providers regarding future use of telehealth in NZ general practice.

### Research objectives

To achieve the research aim we will:

- ▶ Conduct a scoping literature review.<sup>15</sup>

- ▶ Design two questionnaires (consumer and provider) to gather data on the use of video and phone consultations to describe the consumer’s perspective (unknown at this stage) and the providers’ perspectives (to provide context to the consumer’s experiences).
- ▶ Use the UTAUT to measure the acceptability of technology (video and phone) and attitudes to future use of telehealth.
- ▶ Contextualise the UTAUT findings using the access to care theory<sup>9</sup> and equity as lenses.
- ▶ Publish the findings as an exploratory descriptive study to establish a base for future research.

## METHODS

Our study is a prospective observational study. In the absence of a standardised checklist for our study, we have adopted the Strengthening the Reporting of Observational Studies in Epidemiology statement<sup>16</sup> to guide the study design. The statement covers the reporting of cohort, cross-sectional and case-control studies.

Since most NZ primary healthcare services and associated funding models operate within general practice, our sampling strategy consists of a national survey to describe the use of video and/or phone for NZ general practice consultations since the lockdown periods are associated with the COVID-19 pandemic. Consumers and general practice providers (doctors and nurses) will be invited to participate. The NZ lockdown period moved from alert level 3 (23 March 2020) to level 4 (25 March), returning to level 3 (27 April) and progressing to level 2 (13 May) and level 1 (8 June). A second short term and regionally targeted lockdown occurred in August moving the country to level 2 nationally with Auckland at level 3 temporarily. Just before the lockdowns started, general practitioners (GPs) were directed to conduct at least 70% of their consultations via video or phone or a combination of both. We have created two questionnaires (one for consumers and one for general practice providers, ie, GPs, nurse practitioners and registered nurses).

Data will be collected between 1 December 2020 and 30 June 2021. Ideally, we would have conducted the survey as close to the first lockdown as possible but the research team and governance establishment processes, questionnaire design, and ethical approval process caused delays.

This initial telehealth survey is designed to target providers and consumers who use general practice services, as this is how the bulk of NZ primary healthcare is delivered. However, follow-up surveys are planned. The next survey will cover telehealth in allied health services in primary care and a separate one will cover midwifery. This should enable the ability to develop a multidimensional understanding of telehealth in primary care in NZ.

Since a survey cannot be designed to cover all aspects of a research question, there is also a need for follow-up qualitative studies to explore and examine nuances that cannot be detected by a questionnaire, for example, sensitive aspects of consultations, the patient-clinician

relationship, and decisions and policies about whether to use an in-person, video or phone modality for a consultation.<sup>17 18</sup>

### Participants

Anyone (consumers) can participate if they are 18 years or older; have had at least one general practice consultation with their GP, nurse or nurse practitioner by phone or video after 23 March 2020; are able to understand English well enough to complete the survey; currently reside in New Zealand; and are able to confirm that they have understood what the study is about and agree to participate. Any general practice provider (doctor or nurse) can participate if they have conducted a consultation via phone or video after 23 March 2020.

Since this is a national study, and due to the increase in workload in general practice resulting from the changes brought about by the pandemic, individual consumers will not be identified or recruited by their general practice providers. We will disseminate the survey via the Royal New Zealand College of General Practitioners, the College of Nurses Aotearoa (NZ), the New Zealand Telehealth Leadership Group and other organisations that regularly communicate with clinicians. To recruit consumers, we will use social media such as Facebook and Twitter; the news media; and flyers and posters in health-care services, for example, general practices. The questionnaires will be delivered online, and participants will self-select to complete them.

### Variables

The questionnaire design has been informed by the UTAUT<sup>14</sup> and theory of access to care.<sup>9</sup> The UTAUT variables are perceived usefulness, perceived ease of use and effect of social influence on use. The access to care variables include accessibility, availability, affordability, service design, acceptability, implementation and design. The questionnaire contains questions about demographics, how a person accessed a telehealth consultation (eg, how they made appointments) and how the appointment occurred (eg, by phone or video or combination of both). It also contains questions about the acceptability of healthcare via telehealth and intention to use video and/or phone again for consultations (using the UTAUT). Some health outcome questions are also included, for example, able to make an appointment.

The most concerning potential confounder is the passing of time and possible normalisation of telehealth in general practice, or conversely a reversion to prelockdown preferences for in-person consultations. Some people may have forgotten or have imperfect memories of their experiences of lockdown, which in turn may skew the results. These confounders may be sources of bias, especially because of self-selection and self-reporting required to respond to the survey. However, we are also measuring intent to continue using telehealth in the future (as well as collecting data on past experiences), and future intentions will not be affected by time or memory.

### Power calculation

The NZ population is 4900 600<sup>19</sup> with the Pacific population as the smallest at 8.3% of the total population. The Maori population accounts for 16.7% of New Zealanders.<sup>19</sup>

To calculate the power needed, we will assume that the percentage of Pacific people (because this is the smallest subpopulation) is 8.3%, and the main survey outcome is a binary value (satisfied with telehealth or not but that can be any other binary question as well). We will need 2000 total individuals to get a coefficient of variation (CV) of a maximum of 5% when at least 70% in the Pacific population is satisfied with telehealth. The other subpopulations are larger and therefore their CV is smaller, everything else being equal. The CV decreases as the satisfaction percentage increases.

### Data analysis

As a descriptive study, the analysis will be divided into two parts. The analysis will be completed using 'R' and various applicable specialist libraries. The general format for the analysis will follow that of Wickham and Grolemund.<sup>20</sup> The first phase is the descriptive analytics and exploratory data analysis. The results of the online questionnaire will be summarised to provide an overview of telehealth users' experiences using packages such as 'skimr',<sup>21</sup> and special packages for Likert scales such as 'likert'<sup>22</sup> within the context of an opinionated data framework.<sup>23</sup> Descriptive statistics to describe the central tendency and variation across each sample will be described then will be presented by packages such as 'finalfit'.<sup>24</sup> The exploratory data analysis will divide the population based on the outcome parameters such as whether the consumer was able to get their needs met via a telehealth consultation. Routine tests such as  $\chi^2$  and analysis of variance along with similar non-parametric tests such as the Mann-Whitney U tests will also be undertaken.<sup>25</sup>

The second phase will be to develop explanatory statistical models, depending on the results of the exploratory data analysis. The approach will be on building exploratory analytic models to understand what factors explain the outcome parameters, such as whether the patient achieved a satisfactory outcome or not. Approaches such as logistic regression<sup>25</sup> or a random forest analysis via 'ranger'<sup>26</sup> may well be applicable. This will enable the relative variable importance in contributing to the outcome variance to be considered via importance plots.<sup>27</sup>

### LIMITATIONS

The main value of the results will be to inform future studies on telehealth in NZ general practice specifically but also primary care more generally. The survey is limited to people who self-select to participate, written English capacity and relies on recall of experiences of telehealth since lockdown, which may create bias resulting in the inability to generalise the results. Further bias is introduced by the online nature of the survey as those without access to social media or other dissemination methods

will be excluded. Often these, people are most negatively affected by increased telehealth. Bias has been mitigated by the use of theory to frame the survey, that is, the UTAUT model of user acceptance<sup>14</sup> and the access to care framework.<sup>9 10</sup> Additional mitigation measures include hard copy posters in GP waiting rooms and community venues. Hard copy questionnaires have been formatted so that participants who used telehealth but are unable to complete the survey online will be able to participate.

Some consumers who may benefit from a telehealth service may not be able to use it due to lack of access to appropriate technology, privacy or may lack the skills required to use the technology effectively. Others who may have attempted to make a telehealth appointment and abandoned it due to lack of skills or appropriate technology may want to participate in this research. Since the research is limited to those who actually experienced a telehealth appointment, the voice of those who were not successful will not be heard until follow-up studies have been completed.

The results of this study will help inform future research that addresses the above limitations. The design of follow-up qualitative and quantitative studies will aim to capture additional experiences, including but not limited to, other languages, those living with disability and those who could not access telehealth.

## CONCLUSION

This protocol describes the first of several studies on telehealth in NZ general practice and other primary care services as a response to the changes brought about by the COVID-19 pandemic. The next step after analysing the data will be to establish how processes and workflows for providers are changed to accommodate telehealth as a 'business as usual' option. An in-depth investigation into the consumer experience will be designed to establish what can be done to enhance consumers' health outcomes via telehealth and enrich their ability for self-care.

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