

# Telehealth experiences of vulnerable clients living in Tasmania

Pieter Jan Van Dam PhD<sup>1</sup>  | Diane Caney PhD<sup>2</sup> | Richard C. Turner PhD<sup>3</sup> |  
Phoebe Griffin PhD<sup>4</sup> | Mitchell Dwyer PhD<sup>1</sup>  | Sarah Prior PhD<sup>5</sup> 

<sup>1</sup>University of Tasmania, School of Nursing, Burnie, TAS, Australia

<sup>2</sup>Department of Communities, Hobart, TAS, Australia

<sup>3</sup>Hobart Clinical School, University of Tasmania - Tasmanian School of Medicine, Hobart, TAS, Australia

<sup>4</sup>University of Tasmania - Tasmanian School of Medicine, Launceston, TAS, Australia

<sup>5</sup>University of Tasmania - Tasmanian School of Medicine, Burnie, TAS, Australia

## Correspondence

Pieter Jan Van Dam, University of Tasmania - Tasmanian School of Medicine, Private Bag 34 Hobart, TAS 7001, Australia.  
Email: pieter.vandam@utas.edu.au

## Abstract

**Objective:** To understand the experiences of vulnerable clients who used telehealth during the Coronavirus pandemic.

**Design:** The study employed a qualitative enquiry, utilising semi-structured interviews lasting 30-60 minutes with a thematic analysis approach to explore factors influencing client experience with telehealth.

**Setting:** A wide range of locations across Tasmania, Australia.

**Participants:** Twelve participants who were considered to be vulnerable on a number of domains, including: health and human wellbeing factors, social risk factors, functional limitations, and individual behavioural factors.

**Interventions:** The provision of telehealth consultations to vulnerable clients.

**Main outcome measures:** Four global themes were discovered: i) Telehealth saves time, money and energy; ii) User friendly technology facilitates care; iii) Rapport and confidentiality helps clients to feel safe; and iv) Fit for purpose telehealth provides a quality service.

**Results:** The discovered themes entailed the major finding that most participants were satisfied with the overall quality of the telehealth service they received and the convenience of this service. Concerns were raised regarding the limitations around social interaction, physical examination, and access to fit-for-purpose telehealth devices.

**Conclusion:** This research with vulnerable clients, from Tasmania, supports the evidence that the utilisation of telehealth allows more convenient access to care. To optimise the service, however, concerns regarding the desire for social interaction, appropriate physical examination, and access to fit-for-purpose telehealth devices will need to be addressed.

## KEYWORDS

COVID-19, telehealth, vulnerable clients

## 1 | INTRODUCTION

Telehealth has long been used to improve access to care for patients located in rural and regional areas, becoming a mainstay of disease-specific management for certain conditions (eg stroke and congestive heart failure).<sup>1,2</sup> More recently, similar technology has been used to deliver care to vulnerable clients defined as having highly complex or exceptional needs—those with numerous chronic medical conditions and social issues which require the coordinated input of multiple specialties across different services.<sup>3,4</sup> Since the advent of COVID-19 in March 2020, patients in this category may be at greater risk of deterioration, due to disruptions in their usual care, stemming from the need to maintain social distancing and closure of some health facilities. Whilst many clinicians appear to have used telehealth to maintain contact with their patients during the pandemic, there is little information on how this has been received by patients, particularly those with more complex health needs, considered as vulnerable.

Vulnerable clients are identified in Tasmania as having exceptional needs defined by a number of characteristics, based on a taxonomy developed in the United States by the National Academy of Medicine.<sup>5</sup> These include health and human well-being factors, social risk factors, functional limitations and individual behavioural factors. More specifically, in Tasmania, these factors can refer to a multiplicity of need across 2 or more health service areas, challenging behaviours that place staff, clients, families and the community at risk, inability to manage daily tasks, cope with their chronic condition(s) and navigate complex services or extreme difficulty finding long-term, stable, appropriate accommodation. Clients are referred into a specific pathway based on their vulnerability through providers including hospitals, housing, disability, guardianship administration, general practitioners and mental health services. Clients are defined as vulnerable after having their individual cases considered by a multi-service team. There is no specific health care solution for vulnerable clients. However, maintaining ongoing health care support and a responsiveness service model may increase the likelihood of short- and long-term effective client outcomes.

The presence of multiple chronic conditions is linked to poor clinical outcomes, including rapid functional decline, and higher rates of hospitalisation, rehospitalisation and mortality.<sup>6,7</sup> Several studies from the pre-COVID-19 era highlighted a number of advantages and disadvantages of telehealth as perceived by these complex patients.<sup>8-10</sup> Patients with multiple chronic conditions frequently use technology to access and manage health information, in particular to support decision-making

### What is already known on this subject:

- Telehealth is an established and growing service and has been proven to be effective and efficient in monitoring healthcare issues in many rural areas
- During the COVID-19 pandemic in Australia, telehealth was widely used as an alternative to face-to-face health and medical consultations
- Vulnerable clients require ongoing access to healthcare services. May need something more robust?

### What this study adds:

- It demonstrates that telehealth can be an appropriate service for vulnerable clients regardless of whether face-to-face services are available
- A better understanding of the advantages and concerns of using telehealth in general has been created

about treatment.<sup>7</sup> It has been suggested that online tools add to patients' self-care<sup>11</sup> by improving information provision and enhancing communication. Patients in the United States who used these resources have previously reported increased health related knowledge and a greater sense of empowerment to improve their health.<sup>12</sup> The Internet has also become a resource for the development of social support systems for people affected by chronic diseases.<sup>13</sup> An Australian study<sup>14</sup> comparing patient perceptions of telehealth service delivery versus traditional in-person service delivery found that the majority of patients thought telehealth was 'just as good as' or 'better than' an in-person medical appointment and suggested that telehealth appointments may be beneficial beyond the current pandemic.

One of the disadvantages of telehealth is the continued existence of a 'digital divide' which is most evident among older individuals in the health care setting.<sup>15</sup> Similarly, access to digital services, platforms or hardware is also a limiting factor most notably in rural and regional areas where Internet services and bandwidth allowances are often smaller than those in metropolitan areas.<sup>16</sup> Activities and technologies related to electronic health (eHealth), such as telehealth, generally require access to and proficient use of the Internet. A qualitative study in Canada revealed that patients with multiple chronic conditions had concerns about privacy, accessibility, the loss of necessary in-person visits, increased

social isolation and the offloading of responsibility onto patients for care management in a telehealth setting.<sup>17</sup> In a similar study from Denmark,<sup>18</sup> the patient's perceived value of telehealth and their interest in using it was variable, with a suggestion that this was linked to treatment burden. A study in China<sup>19</sup> found that among health care workers and patients, the biggest concern surrounding the use of telehealth services was the authenticity and reliability of data from remote monitoring of patients. This finding was echoed in a similar study of cardiology patients in the United States during COVID-19<sup>20</sup> with patients concerned about the thoroughness of the clinical examination via a telehealth platform. These studies also showed that patients found the scheduling of telehealth appointments to be problematic, and cautioned that patient satisfaction with telehealth may be inflated during COVID-19 due to concerns for health and safety connected with in-person health care visits.

It remains unclear how the experience of vulnerable patients, those with multiple chronic conditions, has been altered by COVID-19 and its associated challenges. Vulnerable patients require complex care across different providers and should be regarded as experts in both telehealth and in-person care delivery where these services have been used. With increased calls to expand the coverage of telehealth in Australia,<sup>21,22</sup> there is impetus to learn more about the experiences of vulnerable patients who have used telehealth during COVID-19. Doing so will inform cost-benefit analyses of telehealth consultations, whilst also providing information that could assist in improving access to health and social care for people with more complex needs. With this in mind, the aim of the current study was to explore and understand the experiences of telehealth for a specific population of patients—those considered vulnerable—from Tasmania, Australia, during the year 2020.

## 2 | METHODS

Qualitative methodology with a thematic analysis approach was used to explore factors influencing patient experience with telehealth service delivery. For this study, telehealth systems were defined to include both telemonitoring and telephone support<sup>23</sup> with video-enabled consultations as required or requested. We used a purposive sampling method to recruit and interview 12 participants who were considered to be vulnerable on a number of domains including health and human well-being factors, social risk factors, functional limitations and individual behavioural factors. Some participants also acted as carers for others in their family. In addition, participants had accessed at least one

telehealth service during 2020. Participants interviewed came from a diverse mix of ages and a range of locations across Tasmania.

Data were collected through interviews conducted over the phone or via an online platform depending on participant preference and were performed by one of 3 members of the research team. One member of the research team was also present at each interview in a liaison role. This team member was known to all participants prior to each interview. Participant bias was handled through an in-depth exploration of how the participant felt about the use of telehealth by using open-ended questions. Researcher bias was avoided by using investigators not known to the participants asking the interview questions. All interviews were audio-recorded and transcribed verbatim by an external provider. Written informed consent was obtained and reconfirmed prior to each interview.

The semi-structured interview schedule included questions that enabled the participants to tell us about the way in which they used telehealth services (which services, how often), how they felt about using these services (positive or negative experiences), whether they felt the services could be improved and how. Participants were also given an opportunity to add any further comments about their experiences with telehealth throughout the COVID-19 pandemic prior to concluding their interview.

Data were analysed by thematic analysis using the Thematic Network technique described by Attride-Stirling.<sup>24</sup> This method involves the coding line by line to develop *Basic Themes* followed by the organisation of data into *Organising Themes*. These themes are then further categorised into overarching *Global Themes* that encompass the principal metaphors in the data as a whole. In this study, global themes represent the position of the participants regarding telehealth as a service for health care delivery.

The primary thematic analysis team consisted of 2 members of the research team with review by an external person with experience in qualitative research and health service delivery. The focus of the primary analysis, coding, was on words and phrases that participants used to describe their experience, highlighting areas that captured key meanings and repeated expressions. Codes were then used to determine some first-level basic themes that were then grouped based on their content and shared ideas (organising themes). This type of categorisation is beneficial in health service improvement research, as the data come directly from participants and have not been pre-determined. After identification of these categories, the final, global themes were developed, reviewed and decided, supported by quotes directly from participant interviews.

## 2.1 | Ethical approval

Ethical approval was obtained from the Tasmanian Health and Medical Human Research Ethics Committee (H0023006).

## 3 | RESULTS

Twelve participants, living in Tasmania, with 6 or more chronic conditions were included in this study. Table 1 shows the participants' baseline characteristics including their predominant form of vulnerability. All participants resided in areas classified as either inner or outer regional,<sup>25</sup> and all had accessed a telehealth service at least once during 2020. Of these, 58 per cent were female. The age range of the participants was between 19 and 69 years. Analysis of the interview transcripts yielded 4 global themes providing a deeper understanding of the telehealth experience of patients who are vulnerable across multiple domains. The main areas of discussion in the interviews focused on the reasons for using telehealth, the likes and dislikes of telehealth, methods used, privacy and possible improvements. Data sufficiency was reached after 12 interviews, as no new insights were uncovered.

### 3.1 | Theme 1: Telehealth saves time, money and energy

The global theme of 'telehealth saves time, money and energy' highlighted that staying at home in one's own

environment was a preferred option for most participants. Telehealth reduced the need for travel and provided a better quality of life. Most participants lived far from the nearest health service, and they expressed that not having to travel impacted their life positively. Time was saved, which could be spent on other activities.

I don't have to clog up an entire day mucking around with doctor's appointments to get a script that's recurring. I can just do that on-line through my doctor.

(Participant 8)

The significant reduction in travel time also had an impact on the participants' out-of-pocket costs, with one participant reporting that he had reduced his cost by 115 dollars per consultation. Moreover, due to participants suffering from multiple conditions causing feelings of tiredness and anxiety, the significant reduction in travel contributed to being able to cope better with their illness during the day.

If I drive into Hobart and I am even just in Hobart for a half an hour to an hour I come home to sleep because I am just exhausted and that's just the nature of my illness. But, yes, not having to do that all the time has actually made my life a lot less complicated.

(Participant 2)

The word convenience was mentioned by most participants and related to their daily routine not being interrupted too much and cost savings.

TABLE 1 Demographic information

Age	Sex	Region of Tasmania	Preferred mode of communication	Predominant form of vulnerability <sup>a</sup>	ASGS-RA classification <sup>24</sup>
19	Male	South	Phone	Health and human well-being factors	Inner regional
41	Female	South	Phone	Social risk factors	Inner regional
47	Female	North West	Phone	Social risk factors	Outer regional
50	Female	North West	Phone	Social risk factors	Outer regional
50	Female	South	Phone	Health and human well-being factors	Inner regional
55	Not stated	South	Phone	Social risk factors	Inner regional
56	Male	South	Phone	Health and human well-being factors	Inner regional
62	Female	South	Mixed <sup>b</sup>	Health and human well-being factors	Inner regional
65	Female	South	Phone	Health and human well-being factors	Inner regional
66	Male	North West	Phone	Health and human well-being factors	Outer regional
69	Male	North	Phone	Social risk factors	Outer regional
72	Female	South	Mixed <sup>b</sup>	Health and human well-being factors	Inner regional

<sup>a</sup>Classification based on taxonomy of Long et al.<sup>26</sup>

<sup>b</sup>Preference dependent on whether patients' body needed to be viewed.

He has had a couple of video calls with Melbourne, which has been really handy for us not to have to jump on a plane and just go to Melbourne for the day or whatever.

(Participant 2)

Some participants felt that the convenience of having care delivered via telehealth reduced their risk of being exposed to illness when they attended health services.

I don't have to go into the doctor's surgery where's there is sickness everywhere.

(Participant 8)

### 3.2 | Theme 2: User-friendly technology facilitates care

It was found that participants used telehealth to access a wide variety of services including general practitioners, medical specialists and psychologists. These different services often used their own ways of making contact either by sending e-mail links for telehealth consultations or by contacting the participants by phone. Most participants found using various methods of telehealth a straightforward procedure with many simply using a phone to communicate.

They actually gave us a [web]link to who to go through. We tested it out the night before, set it up the night before, and then did it the morning after we set it up. So, it was all pretty straightforward.

(Participant 1)

Many participants reported that they did not use electronic technology for other purposes. Bandwidth issues were mentioned and, on some occasions, led to problems in being able to communicate well. The virtual waiting rooms added to the ease of using services online. Nevertheless, some participants felt that the consultations were rushed, and this could potentially lead to missing information and little opportunity to ask questions impacting on the therapeutic nature of the session. Others reported that clinicians sometimes had difficulty navigating telehealth platforms, which affected the quality of the consultation. Suggestions offered by participants for clinicians included the following:

To take that time to speak a little more slowly. You have got bandwidth situations happening as well, so you just need to speak more slowly, wait for an answer.

(Participant 7)

...If they've got a lot of experience, it seems to be quite easy to use. If they've got limited experience, it can be quite tedious.

(Participant 8)

### 3.3 | Theme 3: Rapport and confidentiality helps clients to feel safe

Most participants expressed that they felt that their privacy was protected through telehealth methods. Most participants did not think that maintaining confidentiality was a concern. It was mentioned that protecting patient privacy could be a problem if the participant engaged in a telehealth consultation in a public space. However, most participants used the virtual services at home. Not knowing who was listening in with the health care professional was also mentioned as a potential issue. Participants preferred that a health care professional notify patients at the beginning of a consultation session where they were located and who was joining the session.

I think it is really important for practitioners to talk to their client about where they are, who is in the room, who's not in the room.

(Participant 8)

The ability to build rapport with health care professionals was regarded as important in feeling safe during a virtual consultation. Participants who had been in a professional relationship with the health care professional prior to the telehealth session felt comfortable, contributing to the willingness to share information and to remember more about the treatment of their illness. Feeling listened to was also reported as being important for enabling participants to feel safe and trust that their doctors would request further follow-up if required.

A phone call is fine because I know my GP well and the GP can make the judgement.

(Participant 10)

They need to be able to pick when things aren't quite right and then maybe saying I need to see you face-to-face.

(Participant 3)

### 3.4 | Theme 4: Fit-for-purpose telehealth provides a quality service

The theme of fit-for-purpose telehealth provides a good service included both support and non-support for

telephone consultations. Most participants expressed that telehealth can be a very good service and most preferred telehealth over face-to-face consultations.

Oh God, no, it [telehealth] is way better. I can do so many things now that I could not do even two years ago.

(Participant 8)

However, the nature of the consultation was important. Participants largely preferred the convenience of telehealth for routine consultations, but many indicated that a consultation to discuss a new diagnosis or one requiring a physical examination was better face to face.

I've got a problem with my elbow and because on the phone they can't see my elbow, and it varies a little bit in colour which worries me. So, in my next consultation, I hope I can do the face-to-face.

(Participant 5)

Appropriate telehealth also related to being comfortable at home, as this led to more robust conversations with health care professionals.

You could have incredibly open and more in-depth conversations with your doctor when you were on Telehealth, because you are quite comfortable because you are in your own environment.

(Participant 8)

Some participants expressed concerns that being on the phone could lead to losing the personal and practical connection with their health care professional, who may not understand the context surrounding the participant's illness/es.

I am on the phone; I don't get the context. ... whereas if I'm face-to-face, they can explain it better to me.

(Participant 1)

Some participants mentioned that the social interactions with their health care professionals had been diminished and this created a further sense of disconnection.

I suppose there's no chit chat about the crisis in the world or did you have a good weekend bushwalk. The latest GP that I've been going to asks about snow and all that type of stuff,

but through the phone consultation, there's none of that.

(Participant 6)

Fit-for-purpose telehealth also encompassed discussion about services having good processes for supporting telehealth delivery, such as the option to have consultations via video or phone, providing follow-up and managing wait times. Most participants reported having to wait for their consultation, but observed it was often for less time than for a face-to-face consultation and it was more convenient because it was in the comfort of their own homes.

A lot of their telehealth appointments were over the phone when it wouldn't work online. That was fine, they had no issue with that. It was just easy dial, right, we've got a phone number, just ring that instead and it was done immediately.

(Participant 7)

...He was a little late, maybe ten minutes past the appointment time, but that's actually faster than waiting inside the clinic.

(Participant 4)

## 4 | DISCUSSION

This study was conducted at the peak of the COVID-19 pandemic in Tasmania, Australia. Physical distancing requirements between health care professionals and clients were mandated in community and outpatient departments providing care, aiming to reduce the risk of spread of the virus.<sup>27</sup> To achieve this distancing, telehealth services were used as an alternative method of providing medical and allied health consultations including general practitioner services, specialist services, nursing services and psychology services, as well as many others. In this study, many participants had not used telehealth prior to the COVID-19 pandemic, but the strict restrictions and social distancing requirements strengthened the case for people to use telehealth as a means of monitoring their conditions.

Most participants were satisfied with the overall quality of the telehealth service they received and the convenience of this solution to health service access during the pandemic. Their perceptions were in line with evidence from other studies that found the quality of telehealth consultations to be on par with face-to-face consultations.<sup>28</sup> It was unexpected to find that many clients adapted well to using telehealth to stay in contact with their health care professional or start a new relationship, particularly as

there was no planning or preparation time prior to this change. Moreover, this unanticipated finding arose from the fact that many participants often struggle to manage daily tasks and navigate complex services. This finding provided insight into self-management activities in relation to telehealth for this particular cohort.<sup>29</sup> The extensive support this cohort receives through the Tasmania Department of Communities Board of Exceptional Needs may have contributed to the smooth uptake of these activities. Having this ongoing support in place has the potential to lead to good outcomes for vulnerable patients using telehealth.

This study found, however, that many participants use their phone as their main mode of access, which might have contributed to ease of use during a telehealth consultation as they are familiar with the function, consistent with a previous patient satisfaction study.<sup>30</sup> Participants who used the Internet for their digital consultations mentioned access problems due to Internet services and bandwidth allowances being smaller in rural and remote areas, which has previously been noted as a telehealth limitation in such areas.<sup>31</sup> The Royal Australasian College of Physicians suggests that if local governments intend to provide high quality digital services in rural and remote areas, they should consider specifically funding digital services for clients with complex needs.<sup>32</sup>

Overall, clients in this study felt comfortable talking with their health care professional remotely. However, some participants reported fewer social conversations during the telehealth consultation. This lack of social interaction could lead to barriers in developing trusting relationships with health care professionals,<sup>33</sup> potentially affecting the outcome of the consultation or conversation. A qualitative study in Canada reported that, among other concerns, participants with multiple chronic conditions felt that the loss of face-to-face consultations increased social isolation.<sup>16</sup> Telehealth education could help telehealth professionals learn how to maintain a strong holistic approach to the client-health care provider relationship.<sup>34</sup> This education could focus on developing a 'webside manner' or 'digital warmth' and learning ways in which to engage clients with increased awareness around the use of different facial expressions, voice modulation and body language. This type of intervention is supported by other studies reporting that medical trainees who completed telehealth education developed core competencies in patient care.<sup>35</sup> This education could also address the concerns that some clients expressed, such as feeling rushed and preferring telehealth consultations with health care professionals with whom they have a prior or good relationship.

In contrast to experiencing fewer social interactions, being comfortable at home was an import finding as this

led to more in-depth conversations with health care professionals and therefore a better experience. Many vulnerable clients suffer from mental health issues and being at home in their own environment could alleviate anxiety and stress issues some clients otherwise would experience in a busy health care environment.<sup>36</sup>

Participants reported reduced time and costs, particularly in relation to travel, as an important benefit of telehealth consultations. This benefit may have contributed to participants' satisfaction and willingness to adopt telehealth consultations. However, it is important to note that some participants preferred to have physical examinations performed during a face-to-face consultation, which related to the limitations of performing adequate physical examinations virtually. This concern was also raised by patients using head and neck telemedicine<sup>34</sup> where patient satisfaction surveys suggested that patients were anxious about missing routine laryngoscopies. Carefully considering relevant and appropriate services for vulnerable clients, tailored to their individual and collective needs, will add to the sustainability of telehealth for this cohort.

## 4.1 | Limitations

The findings of this study are constrained by some limitations. The study cohort consisted of clients who are vulnerable across multiple domains from a single Australian jurisdiction (although care was taken to include clients from each region of the State). Therefore, the clients' views might not represent the views of telehealth users who do not have multiple and chronic health and well-being issues. The number of participants was relatively low. Notwithstanding this, data sufficiency was reached in this study, as the global themes became saturated after analysing 12 interview transcripts.

## 5 | CONCLUSION

This study contributes to the body of knowledge regarding the use of telehealth with vulnerable clients and supports existing evidence that the use of telehealth will allow clients to access their care more conveniently. The adoption of telehealth services for the cohort investigated might become the new normal. However, concerns regarding social interactions, physical examinations and access to fit-for-purpose telehealth modes of delivery will need to be addressed to ensure that the services provided are high quality.

## CONFLICT OF INTEREST

None.

## AUTHOR CONTRIBUTIONS

PVD: conceptualization; formal analysis; investigation; methodology; project administration; writing – original draft; writing – review & editing. DC: conceptualization; investigation; writing – review & editing. RT: conceptualization; investigation; methodology; writing – review & editing. PG: conceptualization; formal analysis; writing – review & editing. MD: writing – original draft; writing – review & editing. SJP: conceptualization; investigation; methodology; project administration; writing – original draft; writing – review & editing.

## DISCLOSURE

The authors have nothing to disclose.

## ORCID

Pieter Jan Van Dam  <https://orcid.org/0000-0003-3341-6793>

Mitchell Dwyer  <https://orcid.org/0000-0002-9956-2569>

Sarah Prior  <https://orcid.org/0000-0001-5782-9141>

## REFERENCES

- Johansson T, Wild C. Telemedicine in acute stroke management: systematic review. *Int J Technol Assess Health Care*. 2010;26(2):149-155. doi:10.1017/s0266462310000139
- Anker SD, Koehler F, Abraham WT. Telemedicine and remote management of patients with heart failure. *Lancet*. 2011;378:731-739. doi:10.1016/S0140-6736(11)61229-4
- Gray CS, Mercer S, Palen T, et al. eHealth advances in support of people with complex care needs: case examples from Canada, Scotland and the US. *Healthc Q*. 2016;19(2):29-37. doi:10.12927/hcq.2016.24696
- Melchiorre MG, Papa R, Rijken M, et al. eHealth in integrated care programs for people with multimorbidity in Europe: insights from the ICARE4EU project. *Health Policy*. 2018;122(1):53-63. doi:10.1016/j.healthpol.2017.08.006
- Long P, Abrams M, Milstein A, et al., *Leadership Consortium for a Value & Science-Driven Health System. Effective Care for High-Need Patients: Opportunities for Improving Outcomes, Values and Health*. National Academy of Medicine Special Publication; 2017.
- Friedman B, Jiang HJ, Elixhauser A. Costly hospital readmissions and complex chronic illness. *Inquiry*. 2008;45(4):408-421.
- Lee TA, Shields AE, Vogeli C, et al. Mortality rate in veterans with multiple chronic conditions. *J Gen Intern Med*. 2007;22(Suppl 3):40. doi:10.1007/s11606-007-0277-2
- Zulman DM, Jenchura EC, Cohen DM, et al. How can eHealth technology address challenges related to multimorbidity? Perspectives from patients with multiple chronic conditions. *J Gen Intern Med*. 2015;30(8):1063-1070. doi:10.1007/s11606-015-3222-9
- Mangin D, Parascandolo J, Khudoyarova O, et al. Multimorbidity, eHealth and implications for equity: a cross-sectional survey of patient perspectives on eHealth. *BMJ Open*. 2019;9:e023731. doi:10.1136/bmjopen-2018-023731
- Gordon K, Gray CS, Dainty KN, et al. Exploring an Innovative Care model and telemonitoring for the management of patients with complex chronic needs: qualitative description study. *JMIR Nurs*. 2020;3:e15691. doi:10.2196/15691
- Friedman CP. A “fundamental theorem” of biomedical informatics. *J Am Med Inform Assoc*. 2009;16(2):169-170. doi:10.1197/jamia.M3092
- California HealthCare Foundation Consumers and health information technology: A national survey; 2010. Accessed January 22, 2021. <https://www.chcf.org/publication/consumers-and-health-information-technology-a-national-survey/>
- Schatell D. Web-based kidney education: supporting patient self management. *Semin Dial*. 2013;26:154-158. doi:10.1111/sdi.12057
- Isautier JM, Copp T, Ayre J, et al. People's experiences and satisfaction with telehealth during the COVID-19 pandemic in Australia: cross-sectional survey study. *J Med Internet Res*. 2020;22(12):e24531. doi:10.2196/24531
- Diamantidia CJ, Becker S. Health information technology to improve the care of patients with chronic kidney disease. *BMC Nephrol*. 2014;15(7): doi:10.1186/1471-2369-15-7
- Thomas J, Barraket J, Parkinson S, et al. *Australian Digital Inclusion Index: 2021*. Melbourne: RMIT, Swinburne University of Technology, and Telstra; 2021:1-20. doi:10.25916/phgw-b725
- Steele Gray C, Miller D, Kuluski K, et al. Tying eHealth Tools to patient needs: exploring the use of eHealth for community-dwelling patients with complex chronic disease and disability. *JMIR Res Protoc*. 2014;3:e67.
- Runz-Jørgensen SM, Schiøtz ML, Christensen U. Perceived value of eHealth among people living with multimorbidity: a qualitative study. *J Comorb*. 2017;7:96-111. doi:10.15256/joc.2017.7.98
- Chen P, Xiao L, Gou Z, Xiang L, Zhang X, Feng P. Telehealth attitudes and use among medical professional, medical students and patients in China: a cross-sectional survey. *Int J Med Informatics*. 2017;108:13-21.
- Singh A, Mountjoy N, McElroy D, et al. Patient perspectives with telehealth visits in cardiology: an online patient survey following the rapid switch due to COVID-19. *JMIR Cardio*. 2020;5(1):1-13. doi: 10.2196/25074
- Duckett S. Coming out of COVID-19 lockdown: the next steps for Australian health care; 2020. Accessed March 2, 2021. <https://grattan.edu.au/wp-content/uploads/2020/06/Coming-out-of-COVID-lockdown-the-next-steps-for-Australian-health-care.pdf>
- McDonald K. Past time for government to move on telehealth; 2020. Accessed February 2, 2021. <https://www.pulseitmagazine.com.au/blog/5370-past-time-for-government-to-move-on-telehealth>
- Henderson C, Knapp M, Fernandez J-L, et al. Cost effectiveness of telehealth for patients with long term conditions (Whole Systems Demonstrator telehealth questionnaire study): nested economic evaluation in a pragmatic, cluster randomised controlled trial. *BMJ*. 2013;346:f1035. doi:10.1136/bmj.f1035
- Attride-Stirling J. Thematic networks: an analytic tool for qualitative research. *Qual Res*. 2001;1(3):385-405. doi:10.1177/146879410100100307
- Department of Health. Health Workforce Locator; 2019. Accessed January 21, 2021. <https://www.health.gov.au/resources/apps-and-tools/health-workforce-locator/health-workforce-locator#hwc-map>

26. Long P, Abrams MK, Milstein A, Anderson G, Apton KL, Dahlberg ML. *Effective care for high-need patients: opportunities for improving outcomes, value, and health*. Washington, DC: National Academy of Medicine; 2017.
27. Department of Health and Human Services, Tasmania: COVID-19 Case and Outbreak Management; 2021. Accessed March 23, 2021. [https://www.dhhs.tas.gov.au/publichealth/communicable\\_diseases\\_prevention\\_unit/infectious\\_diseases/coronavirus/covid-19\\_case\\_and\\_outbreak\\_management](https://www.dhhs.tas.gov.au/publichealth/communicable_diseases_prevention_unit/infectious_diseases/coronavirus/covid-19_case_and_outbreak_management)
28. Currell R, Urquhart C, Wainwright P, Lewis R. Telemedicine versus face to face patient care: effects on professional practice and health care outcomes. *Cochrane Database Syst Rev*. 2000;(2):CD002098. doi: 10.1002/14651858.CD002098. Update in: *Cochrane Database Syst Rev*. 2015;9:CD002098. PMID: 10796678
29. Parker S, Prince A, Thomas L, Song H, Milosevic D, Harris MF. Electronic, mobile and telehealth tools for vulnerable patients with chronic disease: a systematic review and realist synthesis. *BMJ Open*. 2018;8(8):e019192. doi: 10.1136/bmjopen-2017-019192
30. Kruse CS, Krowski N, Rodriguez B, Tran L, Vela J, Brooks M. Telehealth and patient satisfaction: a systematic review and narrative analysis. *BMJ Open*. 2017;7(8):e016242. doi: 10.1136/bmjopen-2017-016242
31. Drake C, Zhang Y, Chaiyachati KH, et al. The limitations of poor broadband internet access for telemedicine use in rural America: an observational study. *Ann Intern Med*. 2019;171:382-384. doi:10.7326/M19-0283. [Epub ahead of print 12 May 2019]
32. Royal Australian College of Physicians: Telehealth; 2020. Accessed January 20, 2021. <https://www.racptelehealth.com.au/>
33. Luz PLD. Telemedicine and the doctor/patient relationship. *Arq Bras Cardiol*. 2019;113(1):100-102. doi:10.5935/abc.20190117
34. Jumreornvong O, Yang E, Race J, Appel J. Telemedicine and medical education in the age of COVID-19. *Acad Med*. 2020;95(12):1838-1843. doi:10.1097/ACM.0000000000003711
35. Triantafillou V, Layfield E, Prasad A, et al. Patient perceptions of head and neck ambulatory telemedicine visits: a qualitative study. *Otolaryngol Head Neck Surg*. 2021;164(5):923-931. doi:10.1177/0194599820943523
36. Andrade CC, Devlin AS. Stress reduction in the hospital room: Applying Ulrich's theory of supportive design. *J Environ Psychol*. 2015;41:125-134. doi:10.1016/J.JENVP.2014.12.001

**How to cite this article:** Van Dam PJ, Caney D, Turner RC, Griffin P, Dwyer M, Prior S. Telehealth experiences of vulnerable clients living in Tasmania. *Aust J Rural Health*. 2022;00:1-9. doi:[10.1111/ajr.12835](https://doi.org/10.1111/ajr.12835)