

# Patients' experience and understanding of E-portals in rural general practice: an ethnographic exploration

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## ABSTRACT

**INTRODUCTION:** As of February 2017, almost 300,000 New Zealanders were using E-portals, offered in over 455 general practices. Patient portals are intended to give patients convenient and secure electronic access to their health information and increase their ability to manage their own health care. Early patient experience of E-portal use in New Zealand has not yet been studied.

**AIM:** This exploratory qualitative study provides insight into E-portal use in rural primary care.

**METHODS:** Thirty-three patients from three rural general practice sites were interviewed between December 2015 and June 2016. Eleven patients were not using a portal. Data were analysed using ethnograph and comparative analysis between two researchers.

**RESULTS:** Four major themes emerged from the data: (i) technology acceptance, (ii) activation to full engagement with E-portals, (iii) benefits and concerns, and (iv) the impact of rural contextual understandings for these 33 patients.

**DISCUSSION:** Portal use in New Zealand is in its infancy, but signs suggest that New Zealanders are ready and enthusiastic adopters of such technology. Engagement levels are variable and it is too soon to fully explore the impact of E-portals on the general practice culture, provider relationships and the degree to which portals increase personal self-efficacy in relation to health care.

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## Introduction

According to the New Zealand (NZ) Ministry of Health (MoH), patient portals (E-portals) are secure online sites where patients can access their health information and interact with their general practice. As of February 2017, almost 300,000 New Zealanders were using E-portals, offered in over 455 practices.<sup>1</sup> MoH data do not distinguish between patients who implemented and patients who are actively engaged with the portal.<sup>2</sup>

E-portals are intended to give patients convenient and secure electronic access to their health information and increase their ability to manage their own health care. E-portals can allow patients to manage appointments and repeat prescriptions,

see laboratory results, clinical notes, current diagnoses, immunisation and vaccination history and receive and send secure messages to and from their general practice.<sup>2</sup>

E-portals were implemented in NZ general practice in 2014.<sup>3</sup> In this research, we were especially interested to explore the relevance of E-portals to rural populations. The definition of rural in NZ is somewhat fluid and there is no consensus,<sup>4</sup> but a 2001 survey of rural practices found 214 general practices were considered to fit acceptable international definitions of rurality.<sup>5</sup> The further away people are from services, the less likely they are to use those services, thus potentially impacting health outcomes.<sup>6</sup> It has been argued that a need

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exists for more research and greater understanding of the experience of health care for rural New Zealanders – examining where they live and how they access services.<sup>4</sup> This exploratory qualitative study provides insight into E-portal use in NZ rural primary care.

Much of the research on E-portal use has occurred in the large United States (US) urban-based systems such as the Kaiser Permanente system and urban Federally Qualified Health Centers serving lower income and ethnically and racially diverse patients.<sup>7,8</sup> Little is known about patients in rural and frontier practices and the process of portal implementation, patient activation and full patient engagement.

For NZ, E-portal implementation fits well into the ‘people powered’ focus of the new national health strategy (2015).<sup>9</sup> To date, no research has been published on E-portal implementation in NZ, and no current research-based understanding exists of how rural patients perceive portal implementation. Globally, little is known about the experience of rural primary care practices and patient portals.

The specific aims of this study are to explore patients’ use, understanding and experience with E-portals and to develop a patient-centred understanding of E-portals in rural primary care.

## Methods

### Design

The results (patient interviews) presented here were part of a larger focused ethnographic study that examined rural general practices as a cultural entity. Ethnography comprises a set of qualitative research methods borrowed from the field of cultural anthropology that focus on describing human conduct in natural situations.<sup>10</sup> The conceptual foundation is that general practice is a complex cultural system, which is poorly understood. Practice (viewed as a ‘black box’) needs to be opened.<sup>11</sup> Unlike other qualitative methodologies, focused ethnography embraces cultural understanding as an essential component of research design, data collection strategies and analysis.

### Setting and field sites

Three rural practices were field sites. Sites one and two were located in the South Island; site three in the North Island. Site one was located in a town of ~4000 people in a sheep farming and dairy region. Site two was located in a region of orchards and hops production, with a population of 7000 people. The site three community had a population of ~3900 in a dairy farming region. Two sites had implemented E-portals and the third site was planning to implement them within the calendar year. This third site strongly desired to be involved in the study, because they wanted a sense of patients’ perceptions of E-portals before portal implementation; this practice had a history of embracing innovation.

### Sample

A convenience sample of 33 patients across these field sites participated in this study. The age range was 21–87 years (European  $n = 31$ , Māori  $n = 1$  and Pacific  $n = 1$ ). Twenty-two patients were active portal users. Patient recruitment was facilitated by reception staff who distributed information sheets to patients who expressed interest in E-portals or were currently enrolled in a portal. Patients had the choice to volunteer for an interview or not. Participants are identified by sex (F or M) and age only.

### Data collection

The three primary care practices were contacted by email with phone follow up. Two semi-structured interview guides were developed by both authors based on the aims of the research, the conceptual framework of a practice-based focused ethnography and the qualitative descriptive research design. One interview guide was specific to providers and the other to patients. Participant observation involved reception staff, clinic assistants, registered nurses (RNs) and general practitioners (GPs). The actual E-portal was observed in two sites, and the potential to integrate the portal into an electronic health record was considered in the third practice. The process of E-portal interaction was observed, as were front desk staff answering questions regarding the portal. These

observations were documented as field notes and used to inform the analysis.

The research project, including data collection protocol and interview guide, were approved by Massey University Human Ethics committee (ref. no. 15/61). Forty-eight hours of participant observation, including patient interviews, occurred in two practices, and in the third practice, only interviews were conducted.

### Data analysis

Analysis was carried out by both authors (JC and SK). Initially, analysis was conducted separately and then both authors came together to discuss findings. All data, including audiotaped transcripts, field notes and analytic notes were organised by the qualitative research software, Ethnograph™ (Colorado Springs, CO, USA). Consistent with the methodology, the analysis embraced both the emic (insider) perspective of the first author (JC), a life-long New Zealander, and the etic (outsider) perspective of the second author (SK), a US-based researcher interested in health information technology and E-portal implementation in rural primary care.

Analysis was focused on cultural understanding of two specific groups: patients who used portals and patients who were interested in using portals (within case); this was based on thematic analysis. A cross-case analysis compared and contrasted the two patient groups. There are themes that occur for both groups of patients that potentially extends the applicability of the research findings beyond the sample and setting.<sup>12</sup>

### Trustworthiness and rigour

Trustworthiness and rigour in this study were assured by analysis in pairs. There was also peer involvement and review in the analysis, in both the US and NZ member checking, prolonged and lengthy engagement in the field, and rich and thick description in all write-ups. Member checking occurred in discussion with several general practice patients, and all participants were given a research summary (with requested feedback) if they indicated a wish to receive one.<sup>13</sup>

## Results

Themes emerging from the data are: technology acceptance, activation to full engagement of E-portals, benefits and concerns, and the impact of rural contextual understandings for these 33 patients. These themes are now explained below.

### Technology acceptance

For most of the 33 participants (including many older people), technology was viewed as a positive in their health care. Many participants felt strongly that they should be using technology and accepted it as part of their health care. Participants in the practice that had not yet implemented E-portals demonstrated enthusiasm for the idea and saw great benefit in their care. The majority of participants, whether in their 20 or 30s or aged over 80 years, had a chronic health condition for which they needed to interact with their general practice on a routine basis.

'I do use the computer quite a lot and the iPad and so on. And get news and things and look up health things through the computer and iPad. Well, that'd be good [referring to E-portals] because then I could look at what they've got written down on their computer about me.' [M 85, non-portal practice]

### Activation to full engagement of E-portals

The process of patient portal implementation was generally viewed in two parts – activation and engagement. Patients sign up for an E-portal and this is defined as activation. Involvement with various functions of the portal is viewed as engagement.

Some participants described themselves as early adopters and naturally engaged by technology, so they signed up of their own accord. GPs encouraged others to sign up, due to their having complicated health issues, needing multiple repeat prescriptions and frequent laboratory monitoring. Participants with minimal computer skills, described it as an easy application to master with the support of receptionists and clinic assistants.

'I am not very flash, not a computer wizard person you know. The girls at reception really got it going for me. I came from the doctor and they set it up from this side. Got an email and then it was easy.' [F 62]

In one setting, practice nurses and clinic staff took the lead in facilitating patient activation, while in another clinic, the GPs initiated conversations about patients establishing an E-portal.

### Patient engagement with E-portals

Participants were clear about the immediate convenience of E-portal use. The benefits described included either obviating the need for appointments for repeat prescriptions, improving access to laboratory results, the ability to obtain an appointment in the middle of the night when ill and knowing the availability of their favourite clinician for appointment scheduling.

'Having the lab results, then to have the doctor's notes, it helps to have an understanding, a greater understanding that I never had before.' [F 46]

Having laboratory results in written form in front of them increased understanding of their health conditions and provided feelings of reassurance through seeing the results rather than waiting for a phone call with abnormal results. The ability to read the clinical notes helped them to gain more clarity about their health conditions. If they had trouble understanding the results, they could send an email to their GP who would generally respond within 48–72 h.

Levels of engagement with the E-portals varied among patients. For some, the focus was on obtaining laboratory results on the portal site as there was no promotion of the other functionalities by the practice. Some engaged with the portal frequently while others engaged only when necessary to repeat a script and schedule a clinic visit.

### Patient benefits and concerns regarding E-portals

The benefits for patients moved beyond just the functionality of the E-portals. Patients expressed

greater confidence in their ability to communicate with GPs, noted they were able to understand GPs better and set personal goals. Some participants articulated greater satisfaction after reading their clinical notes, understood the consultation better and felt more confident. Email communication with GPs helped their own communication skills with healthcare providers.

'I did not understand the doctor at all. He wasn't very good with patients but when you read his notes, it sounds like he actually knew a lot more than what he told you at the time. It really helped me to begin to understand - a greater understanding of him and my health problems.' [F 23]

'Well, I used to come to the doctor, and say blah, blah, blah and then come home and think- Well what have I actually said. Now I can go to a visit and have goals and keep myself focused.' [F 61]

Concerns articulated by participants focused on three areas: IT, confidentiality and ethics. Participants revealed that their E-portal is not always user-friendly on mobile devices. Rural residents who do not have a landline or a computer rely on a smart phone and need to have an 'app-based' E-portal. Another technology challenge was the need for each portal user to have a separate email address. Participants revealed that some couples share an email address and needing a separate email address was problematic. Preferences for a family-based portal for children's healthcare needs was concerning because of the need to manage multiple email accounts. A few participants also commented on the 'lack of kiwi' appearance of the portal design. It was felt to be 'so American':

'The portal needs to be more New Zealand, you know have Māori designs and some components in the Māori language.' [M 37]

Participants noted the lack of high-speed broadband, making the E-portal less user-friendly than is ideal. High speed broadband is a recognised challenge for many NZ rural areas.

Participants expressed some ethical concerns about ease-of-access to laboratory results. With laboratory results now available online to

patients, concern was expressed regarding the responsibility of GPs and Practice Nurses to report bad news. One participant was concerned about whether there were new protocols to deliver bad news to patients. Confidentiality was a concern for a few participants. Management of the clinician notes and email communication was concerning. There was hesitancy in using the email function because of lack of clarity of the ultimate destination of the email:

‘I did wonder where it was going (emails). I thought is it just going to go to them (the GP or practice nurse) or is it going to go to Auckland or Christchurch or Singapore? I don’t know, or is it just going down to xxxx practice?’ [F 70]

### The rural context

‘You could do a lot for your health care without having to come into town.’ [M 60]

Participants often commented that ‘others’ were much more rural than themselves. For participants, E-portal use was viewed as mildly beneficial as rural patients although this was modified by their degree of rurality. Coming to town often meant multiple errands. The E-portal would eliminate unnecessary time and visits to general practice because many functions could occur online. Some expressed concern about the practice’s assumption that their time was not valuable and that waiting for delayed appointments was considered acceptable. It was suggested that the connectivity could be extended to include text messages such as; ‘Sorry, your GP is running 15–20 min late.’ Patients could then adjust their schedule of errands.

The changing nature of rural general practice services was acknowledged by several patients, as there was high GP turnover and ageing and retiring GPs. One participant articulated the change.

‘The GP came here at the same time as we did and thirty years [ago] we were the same and so we knew each other, he knew me and I knew him and you know your kids and all that. But we haven’t got that any more and I don’t think we’ll ever have that any more either. That is gone, finished, past tense so this is another decent tool [E-portals] and I think

it’s good, good to have. ... I think it [an E-portal] would be quite useful because with a lot of you know surgeries and everything now that all combined into medical centres and you’re not always given the same doctor. Sometimes you feel a wee bit that you’re repeating yourself, you’re telling the same story because it’s a different person seeing you each time.’ [M 73]

Participants seemed to suggest that E-portals might ameliorate the sense of disconnection created by the changes in GP practice and subsequent diminished continuity of care. Some participants suggested that as receptionists and other clinic staff were costly, E-portal implementation was simply a way to reduce costs especially in smaller rural practices.

### Discussion

In summary, findings suggest that E-portal implementation in NZ follows a known trajectory expressed in the international literature,<sup>14</sup> with some unique areas for NZ. Clearly, for these three practices, E-portal implementation is at an early stage of development and there is a journey ahead for full patient engagement.

Rural New Zealanders, unlike other rural groups internationally, appear to embrace technology in their primary care.<sup>15</sup> While not always technologically confident, patients expressed a willingness to enrol in the E-portal based on practice staff support and GPs’ recommendations. The E-portal provided ease and efficacy for patients who have the curiosity, confidence and willingness to use it. Similar to other studies, not all patients used all functionalities but clearly rural NZ patients were willing to consider use of all functionalities in their health care and expressed minimal resistance.<sup>7,16</sup> None of the participants saw E-portal functions as needing improvement, apart from providing a more bicultural presentation and creating an app for easier smartphone use.

It has been found that consumers who have electronic access to their personal health records feel that they know more about their health and the care their providers give them, feel more connected to their primary care providers and this leads them to actively improve their health.<sup>17</sup>

The asynchronous communication opportunity created by E-portals potentially supports mutual trust and responsibility, and strengthens patient-provider relationships with only a slight increase in workload or office visits.<sup>18</sup> Portals enable patients to gain greater insights into information, allowing improved engagement in clinical decision-making and higher patient satisfaction.<sup>19</sup> An ability to receive secure messages as part of a patient portal was found to increase satisfaction and customer retention.<sup>18</sup> Greater transparency and trust is engendered when patients can read their clinical notes.<sup>18,20,21</sup> Both trust and transparency are essential in a culture of safety in health care.

The findings noted above were not articulated by patients in this study, yet a few patients in our study describe a greater understanding of their healthcare problems, increased confidence in their clinician, and an increased ability to set personal health goals. The E-portal journey in NZ is just beginning, and many patients remain unaware of such transformation of patient-provider relationships at this stage and see E-portal use as a convenience.

We were interested in the value of E-portals for rural patients. Patients tended to perceive benefits as being greater for someone who was more rural than themselves – living further from town or in another area of NZ. Participants were aware of the challenges for rural general practice and expressed the view that E-portals could ‘streamline things’. The definition of rurality is fluid in NZ,<sup>6</sup> and many participants, although enrolled in a rural practice, did not consider themselves personally disadvantaged by their location. This is in contrast to international literature where rural primary care has struggled to implement patient E-portals because of specific challenges such as bandwidth and digital divides for both providers and patients alike.<sup>22,23</sup>

### Limitations

This research reports the views of 22 patients who implemented and engaged with an E-portal, and 11 patients whose practice had not yet implemented E-portals. Including patients who have not yet had a chance to engage could be viewed as a limitation. These patients are from only three

rural practices and the results may not be able to be generalised to other rural areas, especially given the fluidity of New Zealand’s definitions of rural. The newness of portal implementation means these results should be viewed as more tentative than fixed. The question as to whether the exponential growth in technology will increase or reduce disparities should be a central focus of future research.

### Implications for further research

As this is early exploratory research on the E-portal experience and implementation process, more research is needed on the totality of the rural patient experience. In particular, the experience of patients choosing not to enrol or those who enrol (activate) but do not engage with the portal should be explored. The values of person-centred care and patient empowerment are concepts that need to be fully developed in a larger research project when E-portal use is more established and normalized in rural general practice culture.

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**COMPETING INTERESTS**

None.