PATIENT AND CARER PERSPECTIVES

Patients and families experiences with video telehealth in rural/remote communities in Northern Canada

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Aim. To explore patients’ and families’ experiences with video telehealth consultations as a method of health care delivery in rural/remote communities in Northern Canada.

Background. Accessing health services in isolated populations where human resources and infrastructure are constrained by vast geographical landmasses poses challenges and opportunities for nurses, health care providers, patients and families.

Design. A qualitative approach was adopted with a purposeful sample of 10 patients and four family members representative of nine communities.

Method. Selection criteria included patients receiving telehealth visits for a minimum of a year and willing to share their experiences. Data were collected during the winter of 2006 using semi-structured video taped interviews and analysed using a qualitative thematic content analysis.

Results. Patients and families experiences of their telehealth visits centered on three key themes: lessening the burden (costs of travel, accommodations, lost wages, lost time and physical limitations), maximising supports (access to family, friends, familiar home environment, nurses and other care providers), tailoring specific e-health systems to enhance patient and family needs.

Conclusion. The benefits of telehealth extend not only to patients and families but are linked to benefits for providers as well as the health care system.

Relevance to clinical practice. This study indicates that video telehealth is an effective mechanism for delivering nursing and other health services to rural/remote communities and can impact positively on the quality of health care. The integration of telehealth practice can enhance the coordination, organisation and implementation of health care services.

Key words: Canada, family, healthcare, patient, telehealth, telenursing

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Background

Patients, families, nurses and health care providers are faced with accessing and negotiating health care services with limited resources in countries where vast geographical landmasses exist. Research results indicate the complexity of nursing care in rural/remote settings is shaped by environment, distance, geography, policy structure and social context (Dillon & Loermans 2004, Stewart et al. 2004). Health services are often urban-centric and thereby do not adequately meet the needs of rural/remote populations.

Government policy makers have examined rural/remote health care issues and subsequently develop strategies to address health care needs. Researchers have spent time examining the experiences of both nurses and other health care providers and the populations they serve. Quality health care is assessed in terms of availability, skill, personal interaction, organisational flexibility and responsiveness. Quality of care measurement tools not only addresses...
morbidity and mortality rates but the ability of health care providers to recognise and respond to rural population environment variables (Moscovice & Rosenblatt 2000).

As telehealth is increasingly used to access nursing and other health services in rural/remote communities the timely exploration of how video telehealth technology can enhance patient’s and their family’s health care experiences is urgently required. Research results indicate higher satisfaction and confidence for patients using telehealth regardless of age, gender and disease processes (Nesbit et al. 2005). Although satisfaction with telehealth has been reported in the literature there has been less written about patients and families experiences with telehealth. Telehealth technologies have been heralded as the answer to providing care to those populations due to geographical limitations that do not have access to specialised care. The broad use of telehealth has ranged from diverse practice settings such as paediatrics to gerontology. Recent research studies indicate that telehealth has many benefits for patients and their families as well as for health care providers (Miller & Levesque 2002, Young & Ireson 2003, Savenstedt et al. 2004). A survey of paediatric surgical telehealth clinics indicated that 100 percent of the respondents would participate again in telehealth consultation and would also recommend it to others (Miller & Levesque 2002). Initially the health care team was concerned that clinical assessment would be difficult without the ability to carry out a hands on assessment, however with trained staff this proved not to be the case.

Another study designed to evaluate the effect of telehealth on: (1) clinical decision making, (2) nurse-practitioner consultation, (3) clinical outcomes and (4) cost effectiveness indicated that 95% of the 150 telehealth pediatric cases seen were considered a success by the telehealth team (Young & Ireson 2003). Parents were also extremely satisfied as they did not have to experience travel related inconveniences such as the cost of mileage and lost work time. A two year study of telehealth for end-of-life care found that telehealth greatly decreased travel time, time away from support systems and client/family loss of income due to travel reducing both emotional and financial stress (Whitten et al. 2003). There is evidence that the general public and specifically in remote communities are well aware of the benefits of telehealth but to date there is little empirical evidence as to the costs associated with the implementation and delivery of services (Wootton et al. 2001).

Telehealth in Canada

Recently, the Canadian government has begun to recognise and attempt to create health care policies that address the issues of access, quality and fiscal responsibility for rural health care delivery. The federally funded Romanow (2002) highlighted the fact that even though most Canadians have access to very good health care with health outcomes that parallel and sometimes exceed those of other developed countries, there are indications that this is not the ‘reality’ for Canadians who live in smaller isolated communities. The Society of Rural Physicians of Canada (2002) pointed out to the commission that geography is a determinant of health and the lack of health services contributes to poorer health outcomes for those living in rural and remote northern communities. This is further compounded by the fact that people choose to live in communities based on whether or not they can access quality health services.

The growing shortage of health care professionals has led to problems with the recruitment and retention of providers to smaller communities who are often enticed to live and work in the urban centres. This urban-centric trend has resulted in the ‘slow death’ of rural communities in some parts of Canada and more specifically in the northern more isolated regions. The Romanow (2002) recommended the federal government establish a Rural and Remote Access Fund to support new initiatives for delivering health care to people in rural and remote communities and specifically targeted telehealth as a promising strategy to improve access to care (Romanow 2002).

Challenges in providing nursing and other services in rural/remote regions include: (1) economic viability, (2) low service volume, (3) lack of health human resources and (4) access challenges (lack of roads and air transportation). In remote northern aboriginal communities that are fly-in or have seasonal road access (ice roads) during winter months, telecommunication can be limited depending on radio band access. This results in people having to travel outside their communities for health services causing increased emotional and financial stress. The isolation factor creates challenges in sustaining human resources and educational support for nurses and other health care providers (NWODHC 2001).

Recent recommendations from the Ministry of Health and Long Term Care (MOHLTC) in the province of Ontario recommended the establishment of Alternative Payment Plans to attract and retain physicians in Northwestern Ontario. Northwestern Ontario is also leading most other areas of the province in the delivery of health services using telehealth and e-health strategies. In a recent report it was recommended that all communities be provided with the infrastructure and linked to their nearest district hospital for 24 hours emergency consultation (Clossen 2005). As a result, the MOHLTC increased funding to expand the North Network Telehealth System to additional communities in Northwestern Ontario. The funding allowed for the expansion of
infrastructure, services and training programs for professionals involved in telehealth practice.

Aim
The aim of this study was to explore patients’ and families’ experiences with video telehealth consultations as a method of health care delivery in rural/remote communities in Northern Canada. The patients participated in interviews through video telehealth regarding their telehealth consultations in nurse-led clinics. The patients were asked to share their experiences when accessing services in the telehealth clinic. Furthermore, differences between telehealth visits versus face-to-face consultations with nurses and other health care providers were explored.

Method
Due to the expansion of the North Network Telehealth System by the MOHLTC, a study was undertaken by a team of nurse researchers who have experience in rural and remote nursing practice; but not specifically with telehealth. Phase one focused on an educational intervention for nurses involved in telenuising which included an introduction to the use of the equipment (cameras, scopes) when performing video telehealth assessments. An evaluation of the educational intervention was conducted using pre and postsurveys and the results were reported (Sevean et al. 2008).

During the second phase we explored the experiences of patients and families rather than focusing on the health care providers. We chose a qualitative approach to explore the experiences of patients and families with video telehealth consultation (Cohen & Ornery 1994). This is a useful approach for nurse researchers to investigate patients and families experiences (Dowling 2004). Due to the vast geographical distances between the participants to each other and to the research team, the decision to use the video telehealth network, as a means to conduct the interviews was chosen. This allowed the participants and researchers to have the added advantage of live interaction during the interview over that of a telephone interview.

Each participant had experienced several video telehealth consultations before being approached to participate in the study. Prior to their video telehealth consultations diagnostic test results were forwarded electronically to the tertiary centre, patients assessed by a telehealth nurse and then connected through video conferencing to the physician for their follow-up consultations. The telehealth nurse was present during their visit(s) to conduct further assessments using scopes and specialised cameras to enhance the physician’s view of the patient. In some cases, family members and other health care providers also attend visits to discuss treatment planning and follow-up care.

Sample
The research team through the telehealth coordinator recruited a purposeful sample patients (n = 10) and family members (n = 4) who met the following inclusion criteria: over 18 years of age, physically and psychologically able to participate, had participated in video telehealth consultations with physician specialists within the last year and willing to share their experiences. Eligible patients were approached by the telehealth coordinator, given written information about the study and asked to sign a consent form. The sample included participants from several rural/remote communities (n = 9) with a population range of 2000–10,000.

The communities were scattered throughout Northwestern Ontario a sparsely populated land mass the size of France. The participants represented a variety of health care specialties such as; paediatrics, surgery, oncology and palliative care and lived at least 100–600 km from the tertiary centre. In some cases family members accompanied the patient to their visits and volunteered to be part of the interviews.

Ethical considerations
Ethical approval was obtained from both the University and Regional Hospital Ethics Boards adhering to local research ethical governance. Written information was given to the participants regarding the purpose of the study, potential risks and benefits, how confidentiality would be maintained and that they may withdrawal from the study at any time. Signed informed consents were obtained before the interviews took place. Every effort was made to ensure the confidentiality of the participants throughout the study and dissemination of results.

Data collection

Video interviews were carried out from January–March 2006 by members of the nursing research team with ten patients and four family members. Each interview lasted approximately an hour and was recorded through the video telehealth network. Open-ended questions were used to probe the patients and families experiences of telehealth and the differences between telehealth vs. traditional face-to-face visits. Although the participants had varying health needs, the focus of the interviews was on the patients and families experience with video telehealth consultations.
Data analysis

The recorded interviews were transcribed verbatim and transcribed as text (Bowling 1977). A qualitative analysis resulting in themes was conducted by the team of nurse researchers to identify the main themes related to patients and families experiences with telehealth visits. Following Bowling’s (1997) three phase analysis, the transcripts were first read through several times by the team of researchers to gain a sense of the content. Phase 2 involved developing initial themes such as lessening the burden and subthemes such as costs of travel and accommodation. Finally in the third and final phase, the key themes emerged through discussion and agreement of the researchers which reflected the essence of the patients and families experiences of video telehealth.

As the researchers we claim responsibility for reliability and validity in qualitative research (Morse et al. 2002). This was ensured by rigor within the research design and verification strategies throughout the study by the research team. This approach builds on the work of Guba and Lincoln (1989) but suggests that to attain rigor responsibility lies with the researcher (Morse et al. 2002).

Findings

Three key themes were identified: (1) lessening the burden – costs of travel, accommodations, lost wages, lost time and physical limitations; (2) maximising supports – access to family, friends, local care providers and familiar home environment; (3) tailoring specific e-health systems to enhance patient and family needs.

Lessening the burden

This theme incorporated the aspect of having to travel great distances in poor weather conditions while experiencing physical limitations such as pain, fatigue and immobility. Additionally, costs related to travel such as transportation and accommodations including lost wages and time were of great concern. This aspect of not having to travel to receive health care was characterised by expressions of relief, satisfaction and gratefulness:

We don’t know what the weather is going to be like. One day could be windy. The next you get up in the morning and it’s snowing. It’s horrible! I am 69 and you can’t be on the road like this. (153:10)

Several participants commented that not having to travel was not only a tremendous cost savings but also protected valuable time and at the end of the day resulted in a better quality of life. For example, one cancer patient who had recently completed treatments perceived not having to travel resulted in multiple benefits:

Yes, it would take me away from my job if I had to travel. This is my recuperation time, because the major operation was just three weeks ago and my chemo and radiation treatments prior to my operation. (61:7)

Another, cancer patient also spoke to the convenience of telehealth:

So personally it was very nice just to pop in here, have my 20 minute appointment and just carry on. It’s not an intrusion into your life. (38:1)

The same patient went on to say:

It’s a time savings [not to travel] with the time change and it’s really tiring staying overnight…if you are a chemo patient you only have seven days of feeling good and 1 1/2 are wasted in the car for a 10 minute appointment. That’s not the best scenario. (134:1)

Maximising supports

Patient’s perceptions of supports were divided into subcategories which included: access to local care providers (nurses, physicians) and availability of family/friends as well as a ‘feeling of comfort’ in their home community. Having familiar social supports directly involved in the telehealth visit creates a sense of normality by: (1) the availability of nurses and other care providers who are familiar with the patient’s condition, (2) someone to act as an advocate for the patient and (3) maintaining a sense of familiarity being in their home community. For example one participant emphasised the importance of access to specialists that are not usually available in rural/remote communities:

Did I feel connected? And I did; I felt that I had good access to my oncologist. (114:1)

Very happy …we were able to come here and talk to the specialist by teleconference like this. (31:2)

Another patient pointed out the incredible flexibility of the system to bring both providers and families together from different places:

you can talk to your doctor and the specialist – Unbelievable! (118:2)

It is significant to note that participants valued the fact that the telehealth nurse was able to be present during the visit to provide information and advocate for them:

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The nurse sits here with you….which was great care… checking you with your vitals…going through your health, checking on you. It was like being in the hospital or walking into the Emergency room—which is great care! (63:2)

A patient spoke to the quality of the visit as a result of the familiar presence of the community telehealth nurse

the fact there’s a nurse here its important more productive. (73:1)

A mother whose child is receiving care through telehealth did express

it would be nice to have…. you know, the ultimate is to have everyone in the same room (135:6);

but, on the other hand, the services for her child are urban centric (not in her remote community) and they are able to have access to multiple services through telehealth:

I just hope that telehealth never loses or gets cut back because it’s important being in Northwestern Ontario…there are just so many more services because they are a bigger metropolitan area [Toronto]…it would just be sad for the residents in this area. (149:6)

This same mother emphasised the importance of health care professionals being able to see her child:

I could talk with the dietician on the phone, but then she wouldn’t really …see him and it really is all about his growth and development. (11:6)

Participants also emphasised the positive aspects of having family support available to them during the visit. One patient describes how beneficial it is to have family members available during the consultation:

It was really helpful and plus the two doctors went into things in a slightly deeper level and then came back to me. So I really think everyone benefited over that. (83:3)

An older woman living in a long term care facility who requires air ambulance transfer to the urban centre for visits to a dermatologist expressed extreme gratitude for telehealth services:

If I visit them [in the urban centre], then I wouldn’t be able to explain a lot of things or have my nurse [from the long term care facility] or daughter with me….It helps the patient a lot when they have a nurse or somebody there who knows what’s really going on. (195:3)

The husband of one patient with co-morbid illnesses requiring follow-up with several specialists in the urban centre is grateful to reduce the number of trips to the urban centre:

You can’t beat it. You can’t beat it… you can still see the doctor once or twice a year. (182:4)

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**Tailoring specific e-health systems to enhance patient and family needs**

Patients identified technical and organisational issues that impacted on their experiences during the telehealth visits. These included the characteristics of professional communication using the telehealth technology and the ability of both physicians and nurses to communicate in a caring manner with patients and families. For the most part, patients were surprised at the technology available in the video telehealth examination room that made their visit seem realistic and similar to a traditional face-to-face visit. For example, one patient who had a large wound on her coccyx expressed how efficiently the system worked for her:

The staff can assist for example the nurse here examined me prior to the telehealth visit…she took pictures of my sore before we started and he [dermatologist] already saw this beforehand’. (132:9)

Another example included:

It’s neat. We’ve got two cameras like this, but one is a bit bigger. But when they wanted to see my stomach, I stood up and they moved it…and she had this smaller camera that she puts on my stomach and he [the surgeon] can get a good view of my hernia. (78:5)

Several patients expressed satisfaction with the quality of their telehealth visits due to enhanced communication with nurses and other health care providers. Due to provincial policies and standards the telehealth video clinics are organised to maximise the patient’s experience as well as protecting the health care professional’s time:

I’m quite pleased with them. I think that we’ve had really good service from the doctors and the facilities where the clinics have been run. We have always left the appointment having gone through our list of questions and having everything answered and really had a good feeling about the experience. We don’t wander out of here cursing and swearing and saying, I wish we could have gone in there with him face-to-face…we haven’t had a bad experience’. (139:5)

The health care provider’s time is used more efficiently as indicated by this patient:

the appointment actually goes well because you come more prepared…with Telehealth we always have our questions for the oncologist there is no waste of time. (61:1)

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**Discussion**

We found that there are several challenges patients and families from remote communities face when having to travel long distances to access the appropriate nursing and other
health care services not available in their home communities. These include; poor weather conditions, loss time and wages associated with travel, the feeling of being disconnected in the larger urban centre and separation from family, friends and local health care providers. Rural participant’s reactions of relief and gratefulness to receiving their health care through telehealth in their home communities are supported by the literature and our findings.

In a recent study of stroke survivors and their care givers it was found that patients and families preferred video encounters if it meant that they did not have to leave their homes (Winters & Winters 2007). This view of telehealth supports the growing emphasis on the role of video telehealth in lessening the burden for patients and families in rural communities where information systems are often poorly coordinated and access to health services is limited. There is an assumption that in modern western societies men and women share family responsibilities equally but in reality women living in rural and remote communities in Canada are more likely to be the primary caregivers within families and shoulder the burden of making arrangements for funding and travel and additional stress occurs when they have to leave their families to access health care (McBain & Morgan 2005).

The benefits of telehealth extend not only to patients and families but are linked to the benefits for providers as well as the health care system in smaller communities. A recent qualitative study of physicians and managers regarding the impact of telehealth on clinical practice concluded that telehealth increased access to specialist care providers in remote regions, improved continuity of care and increases availability of direct communication between health care providers (Gagnon et al. 2006). There is growing evidence that telehealth visits are as effective as face-to-face consultations and can result in cost savings of at least 10% (O’Reilly et al. 2007).

One of the participants in the study commented:

I am 200 miles away in the wintertime; I am no spring chicken anymore. Can we not get on telehealth? And he [the physician] looked at me and said ‘you know that is a smart idea, when the benefits outweigh the costs why don’t we use the technology?’ (72:4)

Managing technological change is difficult and policy makers must strategise to ensure: the focus is to solve clinical problems not deploy technology; the system should have strong clinical leaders; a plan to overcome system barriers (i.e. funding, organisation, scheduling, physical remunerations, jurisdictional issues); education and promotion strategies to increase the awareness of nurses and other health professionals; the availability of dedicated resources to change management with a focus on training, process and professional standards of telenursing/telehealth practice and above all else keep the services consumer focused (Brown 2002). Bridging the technology-to-practice gap can lessen the burden for patients and families and enhance the quality of their care experience.

Limitations

The small and geographically focused nature of the descriptive study makes generalisations and transferability of the findings difficult, other than to the stakeholders. The findings could have been improved by increasing the sample size, including other geographical sites conducting interviews with providers as well as patient and family members. It is also acknowledged that the participants were interviewed through the same video network where they received their care, although little evidence was found that it impeded their responses.

Conclusion

In this study video telehealth technology as a mode of patient care delivery was well received by patients and families in rural/remote communities in northern Canada. Patients and families re-told their experiences with telehealth and consistently expressed that they received high quality specialty care without leaving their homes; thereby reflecting the vision statement of the Canadian Society of Telehealth ‘Optimal health and healthcare, anyone, anytime, anywhere-enabled by information and communication technology’ (CST 2006). The participants also commented on the importance of the role of the telehealth nurse as a patient advocate. Although technology does not delineate nursing accountability, responsibility, competency and/or ethics nurses are required to integrate ‘nursing frameworks, theories, evidence-based practice’, into their provision of nursing care when using telehealth (CNO 2005).

Relevance to clinical practice

Telehealth is becoming an increasingly effective mechanism for delivering nursing services to rural/remote communities. Canada has embraced telehealth to provide specialty services to under serviced areas. However, one could argue that this modality is still being used as a complementary service and has not yet fully realised its capacity to positively impact the delivery of everyday healthcare. Future applications of telehealth could include expanding the use of digital cameras and internet connections to link nurses and other health professionals.
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professionals to patients as well as using asynchronous or store-and-forward capabilities to send assessments to specialists anywhere-anytime globally (Jadad 2004). What this paper adds to the knowledge of telehealth includes the need to: (1) recognise the significant benefits of telehealth for patients and families; (2) overcome system barriers and jurisdictional issues to expand the use of telehealth and (3) promote the use of telehealth where access to care is limited in rural/remote regions. The World Health Organization recognises that telehealth can contribute to better health outcomes for citizens but care must be taken by policy makers not to create new inequalities or unnecessary health services (Sorensen 2007).

Contributions

Study design: PS, SD, MP, SS, SP; data collection and analysis: PS, SD and manuscript preparation: PS, SD, MP, SS.

References


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