RESEARCH ARTICLE

Evaluating Implementation Factors of Indigenous Communities in Northern Ontario for eConsult

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ABSTRACT

The creation of innovative platforms is of limited benefit if not implemented properly with careful consideration of regional contexts. Digital health platforms can be a tool that may improve access to quality care for residents of Northern Ontario. The health innovations framework of Chaudoir et al. [1] was used to address patient, provider, organization, and system level factors relevant to the implementation of electronic consultation (eConsult) in the North West Local Health Integration Network (LHIN) for Indigenous communities. An environmental scan was conducted through a systematic literature search of three databases and grey literature. For the implementation of eConsult in Indigenous communities in Northern Ontario, it was recommended that: (1) an Indigenous care expert should be consulted to include features that ensure the provision of culturally competent care to patients; (2) further investigation into the role of nurses and nurse practitioners in Indigenous communities should be conducted; (3) the possibility of partnering with provincial Aboriginal Health Access Centres and the Northern Ontario School of Medicine should be explored; (4) the gain of federal government funding and support; and (5) the function of eConsult should potentially extend to act as a centralized source of public health information. Extreme regional diversity is prevalent across Northern Ontario, and additional analyses should be done at a more local level prior to the implementation of eConsult.

INTRODUCTION

Complex sub-regional differences exist in Northern Ontario, including the proportion of urban, rural, Indigenous, and Francophone populations [2-7]. These differences result in unique health access challenges [7]. If properly implemented, digital health platforms are a tool that may improve access to quality care for residents of Northern Ontario. Electronic consultation (eConsult) is a web-based platform that facilitates communication between primary health care providers (HCPs) and specialists. The platform provides primary care providers quick access to specialist consultation and referrals, can improve patient quality of care, and mitigates unnecessary specialist appointments [8]. Formally known as the Champlain Building Access to Specialist Care through eConsult (BASE) Project, eConsult was initiated in 2009 by Dr. Clare Liddy and Dr. Erin Keely in the Champlain Local Health Integration Network (LHIN) in Southern Ontario [8]. Results from over a decade of use in this region indicate that eConsult can reduce specialist wait times, improve timely access to care, enable physician learning, and facilitate continuity of care [8]. The success of eConsult spurred the provincial government to invest in expanding the service across Ontario. This paper evaluates patient, provider, organizational, and systems level factors as informed by the Chaudoir et al. [1] framework for innovation implementation.

METHODOLOGY

A passive environmental scan was conducted using three databases and a grey literature search [9]. Analysis of included literature was informed by the five-factor framework of Chaudoir et al. [1], including patient, provider, organizational, structural, and innovation level components of the implementation setting. Innovation level components were excluded from this analysis because it required the comparison of existing operations of a single organization to eConsult and was not within the scope of this environmental scan.

Databases searched included MEDLINE, EMBASE, and Ovid Health Star. A keyword search was applied. Studies included were focused on locations within the North West LHIN or the North East LHIN, published in 2009 or later, and contained two or more Chaudoir et al. [1] framework factors relevant to health innovation implementation. The initial search yielded 206 articles, 35 met the inclusion criteria. The grey literature search included a search of the Ontario Government, Ontario Ministry of Health and Long-Term Care, Government of Canada, and Northeast and Northwest LHIN Healthline websites.

RESULTS AND DISCUSSION

Patient level factors impacting innovation implementation for Indigenous communities in Northern Ontario included historical factors, potential mistrust of HCPs, cultural and spiritual beliefs, and polarized attitudes towards web-based care in communities. Centuries of discriminatory policies, forced relocations, residential schools, and forced sterilizations have created severe health inequities [7], leaving communities with long-lasting and intergenerational trauma [10,11]. Yet these effects vary drastically across communities. Some Indigenous people have a distrust for health professionals, which is reinforced by racism prevalent in some health care institutions in Northern Ontario [12].

Cultural and spiritual beliefs must be considered when delivering quality care [13], such as the belief that wellness is comprised of the connections between people, communities, generations, and the land. Providing culturally competent care to Indigenous patients is essential and should be considered in eConsult implementation [6,9,10].

Lastly, communities may have negative attitudes towards web-based initiatives as they may be perceived as detracting from the community's own capacity building and physical or staff resourcing. Moreover, there are issues with technology and internet access, privacy concerns, and some prefer to leave the community to receive care [16]. Patient level factors highlight that it is crucial to listen to Indigenous community members' needs and values, involving them in the implementation process.

It is recommended that an Indigenous care expert be consulted to determine how eConsult can facilitate the delivery of culturally competent care.

Provider level factors concern the attitudes, beliefs, and perceived level of autonomy of HCPs who will implement the innovation in their practice. For Indigenous communities, there are typically three types of HCPs: nurses, physicians, and nurse practitioners [7]. It is crucial to evaluate the role of each patient-facing provider in order to determine how eConsult may be the most beneficial and potentially facilitate continuity of care. **Physician factors** found to positively impact implementation include being able to provide culturally competent care, establishing positive patient relationships, and communicating effectively with patients [12-14]. **Nurse practitioners** play a key role in multiple care settings, such as at Aboriginal Health Access Centres (AHACs) [2,15]. However, minimal sources regarding provider factors of nurse practitioners in Northern Ontario were obtained in this environmental scan. **Community health nurses** work in expanded roles and can be responsible for providing acute, emergency, routine, and preventative care, in addition to coordinating on-site and off-site team interventions [21]. Some nurses at remote stations reported feeling ill-equipped to effectively treat patients because they lacked access to further

training [22].

For provider level factors, it is recommended that further analysis be conducted into the roles of community nurses and nurse practitioners in how they facilitate the chain of care within Indigenous communities. eConsult may be a viable platform that can fill in gaps in communication and continuity of care.

Organizational level factors include constructs relevant to the organizational environment where the innovation will be implemented. Indigenous patients encounter multiple organizations on their care journey, including community Band Offices, AHACs, and small and large hospitals. Band offices are federally funded organizations located on reserves, offering local primary care for residents from a registered nurse or nurse practitioner. Locum physicians may make visits to the office and are provincially funded. Provincially funded AHACs are usually located near a northern urban centre. They provide culturally competent care to Indigenous patients who live both on and off reserves and have existing electronic medical record infrastructure [23]. Depending on where patients are located, secondary care may be accessed at small hospitals that are linked with medium to large hospitals through network clusters that comprise the multi-specialty physician network [24]. Large hospitals may support smaller isolated hospitals by means of a satellite network. When considering the continuity of care between organizations, patients from non-isolated Indigenous communities have more concerns about access to post-clinical services than isolated communities, due to the lack of clarity in where follow-up should be sought [22]. Factors relevant to eConsult implementation, including fragmented funding, discontinuous organizational structure, high staff turnover, and absences of reliable patient transportation services, make coordinated care extremely difficult for Indigenous patients [2,11,17-20].

At an organizational level, it is recommended to investigate partnering with AHACs to implement eConsult due to their provincial funding and existing capacity for providing culturally competent care.

Structural level factors include social, political, and economic considerations. For Indigenous patients, primary care is typically federally funded, whereas secondary care is provincially funded [7]. This economic dichotomy creates complexity and deficits in service provision while neglecting some services entirely [9,23,24]. Politically, there is a trichotomy (federal, provincial, local) that governs health care provision, leading to fragmented sources of information. This was apparent by the local confusion and contradiction during the 2009 H1N1 influenza pandemic [28]. Lastly, Indigenous communities suffer from human resource shortages of trained health care professionals [28]. Factors influencing implementation of eConsult include economic and political fragmentation of both funding sources and governance, a deficit of policies mandating culturally competent care, and shortages of human health resources.

From a structural perspective, it is recommended to consider extending the function of eConsult to serve as an integrated health information source to provide consistent health information to solve the issue of contradictory health information from regional, provincial, and national authorities.

Factor	Recommendation
Patient	Engage Indigenous care experts to determine how eConsult can facilitate delivery of culturally competent care.
Provider	Conduct further analysis into the roles of community nurses and nurse practitioners in how they facilitate the chain of care within Indigenous communities
Organization	Investigate partnering with AHACs to implement eConsult
Structural	Consider extending the function of eConsult to serve as a unified health information source

Figure 1. Five recommendations for the implementation of eConsult in Northern Ontario informed by analyses of the patient, provider, organizational, and structural level factors.

CONCLUSION

Analyses of the patient, provider, organizational, and structural level factors were used to make five recommendations for the implementation of eConsult in Northern Ontario (see Figure 1). Significant regional differences exist for each community. Northern Ontario presents a broad, fragmented, and complex implementation landscape that has many challenges, and it is recommended to invest in understanding local contexts when implementing eConsult.

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