



Virtual Palliative Care Intervention

Championing virtual care to empower patients and build system capacity

Software applications (apps) are providing health care professionals with opportunities to integrate technology into clinical practice. **This High Impact Practice showcases a pilot study of a model that combines an app for early identification of symptoms with videoconferencing to help support palliative care patients in the community.**

In 2018, a unique collaboration between the William Osler Health System and uCarenet resulted in the development and delivery of a prototype web application called RELIEF. This app allows patients with palliative care needs to self-report their symptoms on a daily basis, in their homes, using electronic assessment tools. The development of the app was supported by a one-time SPARK grant through the [Centre for Aging Brain Health Innovation](#). In addition to the app, the Virtual Palliative Care Intervention (VPCI) includes personal computer video-conferencing to enable virtual palliative care visits and ongoing collaboration and communication.

The pilot study clearly demonstrated that the RELIEF app can be easily integrated into current models of care to help monitor patients' symptom status. Participants in the study reported high levels of satisfaction and initial results show potential for improved care and significant system efficiencies. Most importantly, this model facilitates palliative care in the patient's home, a preferred location of care for many Canadians at end of life. This High Impact Practice describes the key features of the model, potential benefits and how it could help to transform home-based palliative care.

DEVELOPMENT

The overall goal of the VPCI was to enhance the provision of palliative care to the right patient, in the right place, at the right time, by the right health care provider. The aim was to accurately assess patients' symptoms in their home and, when required, provide timely intervention and treatment to support patients and their families receiving a palliative approach to care. This approach enables patients to remain in their homes for as long as possible.

An interprofessional collaboration of health care providers from William Osler Health (a clinical health nurse specialist, eleven palliative physicians and two

clinical nurses) and Ontario Telemedicine Network (OTN), along with representatives from uCarenet and the Centre for Aging and Brain Health Innovation directed the development of the VPCI.

Literature Review and Environmental Scan

A review of relevant literature and current technology applications was conducted to determine if similar web-based palliative care technology applications were in use. A total of 16 sources were appraised taking into account that several studies were limited to patients with a cancer diagnosis. Other studies were technology specific and limited to only one type of device. The review revealed that none of the studies used standardized, validated tools for palliative symptom assessment. This exercise reinforced the uniqueness of the proposed concept and helped to inform the development team's progress.

Pilot Study Design

Ethical approval was obtained from the William Osler Research Ethics Board to conduct a pilot study on the use of the RELIEF app and the OTN virtual consults for palliative and symptom self-reporting. The goal was to provide timely assessment, triaging and intervention at the time it is required. The study measured the feasibility, efficacy and outcomes of the two electronic and virtual components. A specific focus was to obtain basic data and trends regarding patients, self-reporting of symptoms on a daily basis in their homes. The following elements were included in the design of the pilot:

RELIEF Software App

RELIEF (remote self-reporting of symptoms by patients) is a user-friendly, mobile browser-based e-Health app that can be used on a variety of platforms, including a desktop computer, laptop, tablet/iPad, or mobile phone. It enables patients to self-report their symptoms daily, thus allowing regular monitoring and triaging of patients.

HIGH IMPACT PRACTICES

Evidence-informed practices in home and community care that result in better care, better outcomes and better value.

During the pilot testing, patients completed daily online reports using three validated symptom scoring tools: [Edmonton Symptom Assessment Scale–ESAS](#), [Distress Thermometer–DT](#), and [Brief Pain Inventory–BPI](#). Alerts were sent to clinicians of any symptom changes in real time.

OTN Virtual Consults

Through a partnership with OTN, the VPCI offered a video conferencing platform as part of the pilot. Available for patients and families using the RELIEF app, this component facilitated connections to the health care team for individuals living far away or experiencing significant symptom burden and requiring a telephone follow-up assessment. Video conferencing was also offered to patients who were transitioning and unable to leave their home. Virtual home visits to follow up psychosocial support, end-of-life care, goals of care discussions and referrals to community resources were enabled through the video-conferencing platform. Patients were able to use a mobile phone, tablet or desktop computer for virtual consults. The platform also enabled follow up OTN consultations within hospital clinics.

IMPLEMENTATION

RELIEF Software App

The RELIEF study was conducted from May 2018 to January 2019 with patients enrolled from July 30 to December 9, 2018. Total investment to implement and complete the RELIEF pilot study was \$108,250.00. The Spark grant provided \$50K.

The project team developed an implementation toolkit with the following components:

- Study protocol
- RELIEF app user manual
- FAQ guide
- Participant recruitment process guide
- Informed consent form

Twenty existing clients and newly referred patients to the Brampton Civic Hospital Supportive Palliative Clinic were invited to participate in pilot testing of the RELIEF app. Participants provided written consent outlining their participation. The patients were shown how to use the app through an orientation and training session; were provided with a user manual; and were given contact information if they required additional assistance. The participating patients were required to use the app to

submit three reports daily about their pain and other symptoms, including psychosocial factors. Monitoring of these reported symptoms was 24/7 and follow-up was provided by the palliative care nurse and the palliative physician. Members of the broader team (community care coordinator, visiting nurse, pharmacy, and PCU resource) collaborated to make recommendations on a range of care options, including:

- Stabilizing patient in their home
- Scheduling a clinic visit for patients
- Connecting with patients via OTN videoconference
- Coordinating a home visit by a nurse or doctor
- Arranging for a direct admission to the palliative care unit.

The uCaret team provided an in-person teaching session for the clinical nurse specialist and a “train the trainer” package to facilitate education for the participating providers on how to use the app. Using this approach, the clinical nurse specialist was able to provide small group training sessions for the physicians and staff supporting the study.

Team decisions about recommended care were based on a wide range of clinical and practical considerations, including the need for medical intervention, the ability of patient and family to manage in the home and the availability of resources. In some cases, the palliative clinical nurse was able to determine the best option independently; in other cases, input from the palliative physician and other team members was solicited. The right place for follow-up palliative care was determined on a case-by-case basis.

Participation and Data Access

The pilot study allowed patients, families and health care professionals and administrators to use and test the app and access information. Data access rules were established as outlined in the following chart.

Users	Access to System Data
System Administrators	Full access to all data in order to maintain system
Health Care Professionals	Access to view patient report entries and health care workers dashboard; ability to set the away status for patient
Patients/Families	Access to complete 3 assessment forms

A benefit of this model of intervention is the ability to initiate treatment before symptoms escalate. Responses to the virtual reporting included telephone assessment calls with advice, urgent home visit by a community nurse or palliative physician, scheduling clinic appointments, coordinating an OTN visit within 48 hours or a direct admission to an acute palliative care unit.

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OTN Virtual Consults

The OTN videoconference pilot ran from August 3, 2018 to December 7, 2018. Patients and families enrolled in the RELIEF study were offered the use of this tool to facilitate timely access to a palliative care physician when required. Participants in the OTN virtual consults pilot (including the RELIEF enrollees) were chosen based on the following criteria:

- New patients and those who did not have access to telemedicine connection were not included.
- Currently enrolled in outpatient clinic/or community service
- Receiving care from a palliative care MRP (most responsible practitioner)
- Accessing home and community care services
- Experiencing urgent pain/symptom issues
- Experiencing delays in receiving services due to wait times
- Living in a remote location (more than 30-minute drive to hospital)

A total of 52 patients were recruited to participate in the OTN virtual consult pilot. Of these, 62% had a diagnosis of cancer, 17% had a dementia diagnosis, 8% suffered from congestive heart failure and 1% had COPD. During the pilot, all these patients were seen, 42 follow-up appointments were scheduled and 29 full-day clinics were held.

Stakeholder Engagement Strategy and Activities

A key element of the pilot project was the multi-stakeholder engagement strategy that involved not only education and training activities for all participants, but also wider outreach to raise awareness about the value and potential of using virtual care to enhance palliative care programs. Engagement strategies included exhibits at consumer health events, conference presentations, patient user guides, and a targeted media campaign with newsletters and articles.

OUTCOMES

Patients and family caregivers alike were surprised at how much care could be managed virtually without the need for face to face visit. Patients also appeared to be more open and at ease discussing their pain and symptom issues from the comfort of their home, rather than in a clinic, leading to more informed decision-making about their care.

The VPCI model of intervention shows potential for better care and system efficiencies. Some of the features and benefits of the pilot include:

- Daily reporting of symptoms leads to early identification of symptoms with treatment initiated before symptoms escalate, resulting in fewer ER visits.
- Ease of use supports self-reporting by patients, a recognized best practice (research reveals health professionals may under or over report patient symptoms depending upon their experience).
- Triage allows nursing resources to be prioritized appropriately for urgent physical/psychosocial symptomatic care in the home. Patients needing more comprehensive assessment are seen in a clinic or admitted directly to a palliative care unit.
- Regular symptom monitoring and video-conferencing enable patients to receive timely/appropriate care by palliative care team members in their homes, thus saving the time and eliminating the challenge of visiting a hospital or clinic.
- Remote monitoring improves equity through better access to care, particularly for those patients located at a distance from the hospital.
- Access to real-time information and videoconferencing supports better communication and coordination between inter-professional palliative care team members and patients and families.

VPCI PILOT STUDY RESULTS



RELIEF app (20 patients)

\$1,086,257

health care cost avoidance
(16 patients)

Greater than 80%
patient compliance and participation

0
patient visits to ER (during the study)

94%
user satisfaction (patients and clinicians)

92% of clinicians
reported improved confidence

75% of clinicians
felt the tool improved quality of care



OTN Virtual Consults (52 patients)

Improved efficiency and access to care

Increased patient satisfaction

Palliative care physicians doubled
home visits from 4 to 8 in one day

ENABLERS OF SUCCESS

Essential to the successful uptake and use of technology applications for virtual palliative visits is the inherent philosophy of person- and family-centred care. This approach to care is built on mutually respectful partnerships and works to improve the quality of life of patients and their families facing challenges associated with life-threatening illness, through the prevention and relief of suffering. Other key enablers for success include:

- **Adaptable** – the app is easily integrated into current practice and models of care and care settings.
- **Efficient** – easy to use for both patients and health care providers and training time is minimal (20–30 minutes).
- **Versatile** – intake for OTN virtual program can be completed by clerical staff and training can be completed by nursing staff.
- **Practical** – nurses facilitate completion of the ESAS the day of or the day before the virtual visit for efficiency.

“Thank you so much. My pain went from a 9.5/10 yesterday to a 3-4/10 today. This is liveable”

—RELIEF app pilot study participant

NEXT STEPS

The project team has applied for funding for an expanded study of the RELIEF app with an estimated sample size of 200. The goal is to obtain additional data to help validate the pilot study conclusions and the financial projections and to confirm the patient satisfaction levels through interviews. The larger study, will also provide an opportunity to reach other patient populations that might benefit from use of the RELIEF app. The Nurse Practitioners Association of Ontario has expressed interest in partnering in the study which would allow the sample size to be increased substantially.

The Palliative OTN program is continuing to operate at William Osler Health in partnership with the Telemedicine team. Full implementation of technology innovations such as RELIEF requires strategic investment at a regional or provincial health systems level. This type of investment will ensure the availability of resources and infrastructure necessary for the adoption and integration of the application into home care programs and provider practice.

Technology is an enabler to effective and efficient home and community-based palliative care and has been identified as a pan-Canadian priority. The 2018 Framework on Palliative Care in Canada recommends: “Promote the use of technology to enhance communication between specialized palliative care providers and community-based care providers, including caregivers.” As this framework translates into actions, it is anticipated that more technology applications such as the one described in this High Impact Practice will be adopted to advance palliative care in Canada.

SOURCES

- Centre for Aging and Brain Health Innovation – Spark Program <https://www.cabhi.com/the-spark-program/>
- Health Canada Framework on Palliative Care in Canada (2018). <https://www.canada.ca/en/health-canada/services/health-care-system/reports-publications/palliative-care/framework-palliative-care-canada.html>

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William Osler Health System is a hospital system that serves 1.3 million residents of Brampton, Etobicoke, and surrounding communities within the Central West Local Health Integration Network. Osler’s emergency departments are among the busiest in Canada. The Supportive Palliative Care Program serves those people who reside within the Central West LHIN as well as patients who reside close to their boundaries.

Ontario Medicine Network (OTN) is committed to transforming health care, specifically by enhancing access to care and making health care work better for Ontarians. They do this by being an enabler for virtual solutions that support distance care and health self-management.

The Centre for Aging + Brain Health Innovation (CABHI) is a solution accelerator focused on driving innovation in the aging and brain health sector. Established in 2015 through funding of \$124 million (CAD), it is the result of the largest investment in brain health and aging in Canadian history, and one of the largest investments of its kind in the world.



The Canadian Home Care Association (CHCA) advances initiatives that address pan-Canadian priorities in home and community care. As a recognized authority, the CHCA facilitates knowledge sharing, creates connections, informs policy and practices, and advocates for better integrated home and community care for all Canadians.

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