

BC Cancer Kelowna Remote Patient Monitoring (RPM) Final Evaluation Report

Executive Summary

The following document provides an evaluation of the BC Cancer Kelowna remote patient monitoring (RPM) pilot that took place from June 2021 until June 2022. In October 2020, BC Cancer also conducted a RPM pilot in Victoria with dual modality Head and Neck cancer patients. Two recommendations coming out of this pilot were brought forward in the planning and implementation of the Kelowna pilot:

1. To use a dedicated monitoring nurse to ensure continuity of care, ensure familiarity with the RPM model of care and HHM platform, and avoid the burden of orientating a group of nurses for the RPM pilot.
2. To support a patient population that would not have a similar or parallel level of care to RPM.

Project Background

The use of immunotherapy (alone or combined with chemotherapy) is increasing at BC Cancer and is currently approved for treatment in many cancer types and tumor stages. The toxicities related to immunotherapy can be life threatening, occurring during or between treatments, and therefore require prompt clinical management. Currently at BC Cancer Kelowna, the standard of care for new immunotherapy, combination immunotherapy, and combination chemo-immunotherapy patients is NO weekly follow up except at the Medical Oncologist's discretion, which would be done by a rotating chemotherapy nurse.

To better support patients, BC Cancer Kelowna and the Office of Virtual Health (OVH) initiated a ***pilot project to understand how the RPM model of care can be used to effectively monitor, educate and empower, and care for patients receiving immunotherapy.*** For the pilot, patients received surveys on their Telus Home Health Monitoring (HHM) tablet. Telus HHM biometric reading devices were used to provide pulse and temperature information twice weekly. Survey answers or readings outside the normal range automatically generated an alert in the HHM platform for the monitoring nurse, who would call the patient. The nurse would then verify the issue and either provide advice directly or consult the patient's medical oncologist and provide advice afterwards.

Results

Barriers & Limitations:

All Kelowna immunotherapy patients were eligible for referral to the monitoring nurse for enrollment. The monitoring nurse then screened and gathered consent from patients. Overall, 74% of referred patients were enrolled into the RPM pilot.

Barriers to patient enrollment including survey completion included:

- poor health or poor technological literacy,
- language barriers,
- significant cognitive impairment of the patient, and
- absence of a caregiver to perform tasks on the patient's behalf (if needed).

Diversity of the pilot population was not measured, or controlled for. Future use of RPM should consider having surveys available in alternative languages. In total, 61% of all enrolled patients

completed 6 months in the pilot. Reasons patients were not able to complete the pilot included: declining health, acceptance into hospice care, and patient decision to withdraw.

Patient Feedback:

- Patients found Telus HHM and the biometric medical devices easy to use.
- ~36% of patients made PFC referral requests through their surveys; patient satisfaction with this service was not measured nor PFC's ability to manage the increased patient load.
- Patient engagement in the RPM pilot was strong:
 - o 74% overall response rate to patient RPM surveys.
 - o 36% of patients accessed the RPM immunotherapy specific educational material.
- Patient overall satisfaction with the RPM pilot was high. They found value in being on the RPM program, including feeling emotionally supported and well-managed for symptoms by the healthcare team, empowered to manage their care and track vitals and symptoms, and satisfied with follow up calls and their improved access to healthcare through RPM.

Clinician Feedback:

- Responses unanimously agreed education material was useful and agreed the pilot increased patient knowledge about their own treatment and patient ability to manage their side effects.
- Responses unanimously agreed the RPM model of care enables earlier intervention of patient's symptoms or side effects, increases the chances of identifying an irAE at an earlier stage, and prevents unnecessary hospitalizations and emergency department visits.
- Responses unanimously agreed that the RPM model of care enhanced the ability to coordinate care, increases RN involvement with patient care, and reduces patient anxiety.
- Improve survey questions; approximately 16% of calls to patients were due to mis-understood survey questions.
- Staffing shortages and busy schedules impacted the roll out:
 - o 29% of clinicians believed they were **not** sufficiently consulted on implementation of the RPM pilot
 - o 50% thought they were **not** properly briefed on the value of the RPM model of care.
- However, 80% found value with the "In the Know" bulletins.
- Although quantitative data for unplanned hospitalizations and emergency department visits was not available (due to time and resource limitations), responses unanimously agreed that the RPM model of care prevented unnecessary hospitalizations and emergency department visits. Clinician perception of the RPM model of care's effect on unplanned patient calls or visits to BC Cancer was not as clear: 50% of responses agreed that RPM reduced the number of patient calls or unplanned physician appointments, while 71% agreed that RPM increased their productivity.

Estimated effort:

- The workload of the dedicated RPM monitoring nurse was estimated at 1.45 hours per patient per week (758 hours to monitor 23 patients), excluding documentation and technical assistance time.
- Approximately 50% of that time was spent on survey results review, which could be improved with clinician lead changes to the Telus HHM platform.
- Technical assistance would be better offloaded to a dedicated technology assistance team (service desk model).
- There is no baseline data to compare the nursing workload for non-RPM patients.

- The value of a dedicated monitoring nurse was recognized by the care team, however it did highlight the necessity of having a dedicated backup monitoring nurse for illness, vacation, or other leave of the primary nurse.

Conclusion:

The RPM model of care was strongly appreciated by patients and more moderately appreciated by clinicians. Barriers to patient participation can be reduced to further engage patients. The effect of the RPM model of care on productivity is unclear, although opportunities exist for streamlining the current surveys and Telus HHM platform.

Guiding Principles for Future Digital and Virtual Health Initiatives at BC Cancer:

Guiding principles from this evaluation should be considered as part of planning, implementation and evaluation of future digital and virtual health initiatives at BC Cancer:

1. **Health Equity & Inclusion:** Introduction of digital or virtual health solutions pose the risk of creating inequitable access to health information, as not all patients will benefit. Consider health equity and inclusion in implementation planning and the unique needs of our diverse patient population (e.g., providing surveys in multiple languages).
2. **Implications of Increased Access:** Opportunities to increase access to services (e.g., increase Patient and Family Counseling referrals through RPM program) require necessary health system support to handle increased patient workload.
3. **Understanding Patient Education Preferences:** Patients' preferences for how they would like to receive and access education materials can impact their level of engagement with digital and virtual health solutions.
4. **Plain Language:** Work with the patient and family experience team to develop patient questions in plain language to reduce clinical workload required to clarify survey questions.
5. **Technology Selection:** Flexible solutions could allow BC Cancer clinicians to provide ownership on survey question/ content development (versus controlled by the vendor). Data collection planning should consider the required effort to review and synthesize results upfront (e.g., opportunities to automate reporting, graphical representation of results, etc.). Technical assistance should be built into support model.
6. **Enhanced clinician consultation:** Improve clinician consultation as part of digital and virtual health solution implementation including clarity on anticipated benefits of solution to providers and patients.