# BUILDING AND SUSTAINING VIRTUAL PATIENT MEDICAL HOMES DURING THE COVID-19 PANDEMIC

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**Conflict of Interest:** The authors declare that this manuscript has been read and approved for submission by all those that are named. We know of no conflicts of interest associated with this publication. We can confirm that this manuscript is original, has not been published before, and is not currently being considered for publication elsewhere.

**Abstract:**

The purpose of this study was to evaluate the [redacted] Primary Care Network's ([redacted] PCN) ability to support 61 primary care practices in building and sustaining virtual Patient Medical Homes (PMHs) during the COVID-19 pandemic. A mixed methods evaluation determined that the [redacted] PCN achieved this mandate. The organization provided physician members with access to allied health care team members using virtual platforms. Care coordinators continued to optimize the use of Electronic Medical Records (EMRs) from their home offices. Patient care remained of high quality, revealed through the analysis of patient experience data collected both before and during the pandemic. Despite a new requirement to work remotely, healthcare teams remained collaborative. The number of clinics that the PCN supported in improvement work remained steady as the pandemic progressed in March and thereafter.

**Key Words:** Primary Care**,** Patient Medical Home, Patient's Medical Home, Virtual Care, Healthcare Administration, Innovation in Primary Care, Technology, Quality Improvement, Allied Health Teams, Team-Based Care, Interprofessional Healthcare Teams, [redacted]

| **Abbreviation** | **Definition** |
|---|---|
| PCN | Primary Care Network |
| [redacted] PCN | [redacted] Primary Care Network |
| PMH | Patient Medical Home |
| COVID-19 | Novel Coronavirus (2019-nCoV) |
| EMR | Electronic Medical Record |
| PCRN | Primary Care Registered Nurse |
| BHC | Behavioural Health Consultant |
| MIA | Measurement and Improvement Associate |
| PMHC | Patient Medical Home Coordinator |
| QI | Quality Improvement |
| AITCS II | Assessment of Interprofessional Team Collaboration |

**Background:**

Primary Care Networks (PCNs) were established in Alberta to improve and better coordinate access to primary health care for patients. PCNs across the province work with physician members to deliver quality allied health care services to patients under the Patient Medical Home (PMH) model.

The [redacted] Primary Care Network ([redacted] PCN) is the largest of 40 of PCNs in the province of Alberta, supporting approximately 475 primary care physicians and their patients in the greater [redacted] area. For physicians looking to build their PMHs, the [redacted] PCN provides 61 family practices with designated access to Primary Care Registered Nurses (PCRNs), Behavioural Health Consultants (BHCs), Patient Medical Home Coordinators (PMHCs), and Measurement and Improvement Associates (MIAs).

**Purpose:**

To evaluate the ability of the [redacted] PCN to assist 61 primary care practices in building and sustaining a virtual medical home during the COVID-19 pandemic.

**Methods:**

An evaluation framework was designed to determine whether the [redacted] PCN was effective in providing continued support to 61 family practices in building and sustaining their PMHs virtually. The evaluation focused on the extent of the PCN's ongoing work in three PMH pillars including team-based care, patient-centeredness, and quality improvement.

Patient encounter data was analyzed to understand the volume and type of patient appointments occurring virtually. Patient experience data was reviewed to ensure that the patient's voice was represented in the assessment of the quality of care provided. Quality Improvement (QI) data collected through an internal database was reviewed to understand the QI activity of physician members.

New qualitative data collection methods were implemented. 12 semi-structured interviews were conducted with allied healthcare teams (N=9) and physician members (N=3) to understand their unique

experiences with the virtual PMH. Larger groups participated in facilitated SWOT exercises to help reach a group consensus regarding virtual PMH support.

The Assessment of Interprofessional Team Collaboration (AITCS II) was used to measure the ability of healthcare teams to remain collaborative and effective in the virtual PMH.

The two-person evaluation team independently reviewed and interpreted the data. The team came together to discuss the data and come to a consensus regarding findings.

## RESULTS:

### TEAM BASED CARE

#### Continued Allied Health Support

The [redacted] PCN was successful in continuing to provide physician members with access to allied health care team members. Only 2.87% of clinics that had been supported with allied health care team members prior to the pandemic refused remote EMR access to clinicians (BHCs and PCRNs) and/or Patient Medical Home Coordinators (PMHCs).

When approved for remote EMR access, PMHCs continued to extract data, provide patient outreach, coordinate appointments, and optimize the EMRs of physicians from their home offices. BHCs and PCRNs continued to see existing and new patients. However, they shifted the method in which they provided care by meeting patients virtually over the telephone and video.

Healthcare teams felt that supporting physicians remotely was not much different than providing support while physically in the clinic. Some believed that supporting remotely provided additional flexibility and efficiency that did not exist when working in clinics. For example, the remote support provided them with a new opportunity to work fluidly. In other words, rather than only working in clinics on designated days,

teams were able to work with patients from multiple clinics per day. Teams were able to perform outreach to or see patients as needs arose, rather than waiting for their designated clinic day to address these needs.

All physician interviewees regarded their experience of working with their allied health team remotely positively, demonstrating gratitude for the continued provision of support. Each of the physicians indicated that they were using their allied health team members at the same level if not to a greater extent than before the pandemic.

**Team Collaboration**

Despite the new requirement to work remotely, healthcare teams remained collaborative. Teams achieved an average score of 4.21 out of a possible 5.00 on the Assessment of Interprofessional Collaboration Scale (AITCS II). This score indicated highly collaborative teamwork. Many further expressed a feeling of increased collaboration with their teams, and some mentioned feeling more connected to their teammates than ever. Overall, interviewed physician members expressed satisfaction with their continued ability to collaborate and communicate with their teams.

**Provision of Patient Care**

The method in which PCRN and BHC appointments occurred with patients changed significantly once the pandemic began. All appointments that were previously occurring in clinic began occurring over video and telephone. The number of interactions between providers and patients increased throughout the pandemic. The volume of appointments that occurred overall and by provider before (Jan-Feb) and during the pandemic (Mar-May) is demonstrated in table 1 below.

A comparison of patient interaction data collected in January vs. May of 2020 (before and during the pandemic) revealed that the focus of appointments remained consistent during the two time periods.

Both the PCRNs and BHCs felt that they could use digital health tools to see patients for most reasons within their scope of practice. They felt that patients were more comfortable and at ease with virtual interactions, particularly with respect to mental health. However, it was noted that there were times that a physical meeting with a patient could not be replaced with a digital meeting. Physician interviewees similarly mentioned the benefits of virtual care for patients.

## PATIENT-CENTEREDNESS

Patient experience data collected both before and during the pandemic revealed that patients regarded their care as high quality in both time periods. The percentage of patients rating their care as excellent increased from 61% prior to the pandemic to 67% during the pandemic. In neither period did patients rate their care as poor.

## QUALITY IMPROVEMENT

The [redacted] PCN continued to offer quality improvement support to physicians throughout the pandemic. This support was facilitated by three full-time Measurement and Improvement Associates (MIAs). The number of clinics actively involved in improvement work remained steady as the pandemic progressed in March and thereafter. The number of physicians involved in projects as well as the number of projects themselves increased. However, the types of QI projects that PMH teams were focusing on changed. When physicians initiated new projects, nearly all of them were COVID-19 related. New routine screening projects were put on hold by physicians during this time due to changing government priorities. Details on quality improvement work occurring both before and during the early stages of the pandemic are highlighted in Table 2.

| **Table 1: Appointment Volume Over Time** | **Jan** | **Feb** | **Mar* Pandemic** | **Apr** | **May** |
|---|---|---|---|---|---|
| Overall | 1797 | 1648 | 1831 | 2408 | 2585 |
| Behavioural Health Consultant (BHC) | 962 | 901 | 1050 | 1335 | 1485 |
| Primary Care Registered Nurse (PCRN) | 835 | 747 | 783 | 1073 | 1100 |

| **Table 2: Quality Improvement Activity** | **Jan** | **Feb** | **Mar* Pandemic** | **Apr** | **May** |
|---|---|---|---|---|---|
| # active improvement projects | 247 | 261 | 267 | 287 | 289 |
| # clinics involved in improvement work | 60 | 60 | 60 | 60 | 61 |
| # physicians involved in improvement work | 243 | 243 | 244 | 245 | 246 |
| # active COVID related improvement projects | 0 | 0 | 3 | 22 | 23 |