Integrated Virtual Care

Implementation Guidebook

Healthcare Excellence Canada
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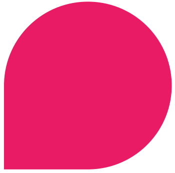

About Petawawa Centennial Family Health Centre (PCFHC)

PCFHC provides team-based primary care in Renfrew County, Ontario, serving the medical needs of Petawawa and area's 20,000 people. Since 2006, the PCFHC has taken a team-based approach to patient care and well-being. Patients are supported by physicians, nurse practitioners, nurses, mental health clinicians, registered dietitians, clinical pharmacists, midwives and other health promotion specialists. The clinicians work as a team to ensure patients receive the right level of care by the right person at the right time. Although health promotion and disease prevention are priorities, acute, episodic care and ongoing chronic disease management and education all contribute to the comprehensive primary care offered at the PCFHC.

About Healthcare Excellence Canada

Healthcare Excellence Canada (HEC) works with partners to spread innovation, build capability and catalyze policy change so that everyone in Canada has safe and high-quality healthcare. Through collaboration with patients, caregivers and people working in healthcare, we turn proven innovations into lasting improvements in all dimensions of healthcare excellence. Launched in 2021, HEC brings together the Canadian Patient Safety Institute and Canadian Foundation for Healthcare Improvement.

The views expressed herein do not necessarily represent the views of Health Canada.

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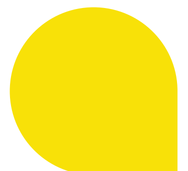
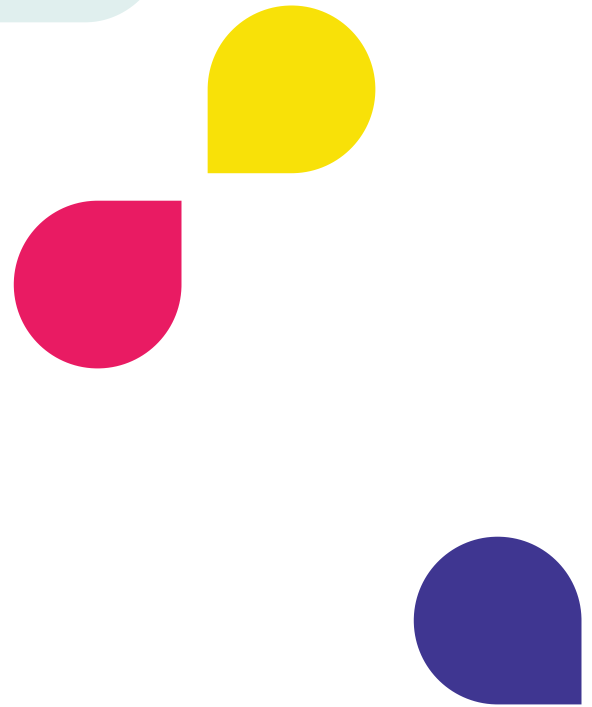
HEC honours the traditional territories upon which our staff and partners live, work and play. We recognize that the stewardship of the original inhabitants of these territories provides for the standard of living that we enjoy today. Learn more





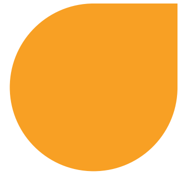
About Integrated Virtual Care (IVC) and this IVC implementation guidebook

Integrated Virtual Care (IVC) was developed by the Petawawa Centennial Family Health Centre (PCFHC) in response to the healthcare crisis in Renfrew County in which an estimated 25,000 people did not have access to a family physician and, ultimately, team-based primary care. With the support of Healthcare Excellence Canada's (HEC) Strengthening Primary Care in Northern, Rural and Remote Communities (Strengthening Primary Care) program, IVC is attaching many of these people to a family physician and providing them with access to comprehensive, team-based primary care.

IVC family physicians predominantly work off-site, supported by an on-site team of interdisciplinary health professionals at the local clinic. They deliver care by virtual means and coordinate all aspects of their patients' primary care. Patients can receive in-person and virtual care, in the clinic or at home, depending on their individual needs and preferences. IVC is an innovative approach that can be adopted to improve equitable access to team-based primary care in communities across the country. For a concise overview, refer to the promising practice summary on IVC.

This guidebook draws on insights from the implementation and evaluation of the PCFHC IVC to provide practical guidance for organizations considering adopting an IVC program. It explores how IVC can be integrated into existing team-based primary care models, the steps required to achieve this and strategies for optimizing performance once established. It is also intended as a reference for existing IVC teams to help train new staff, document and inform policies and procedures, and facilitate continuous improvement.

For questions and comments, please contact Judy Hill, Executive Director, PCFHC, Administrative Lead IVC (Judy.Hill@pcfhc.ca) or Dr. Jonathan Fitzsimon, Medical Lead, IVC (Jfitzsi2@uottawa.ca).



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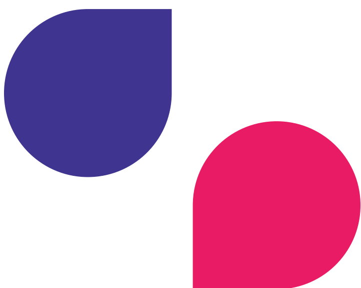


Establishing an IVC team

It takes a strong team to establish and maintain an Integrated Virtual Care (IVC) program. Established primary care teams with on-site physicians, nurse practitioners and other interdisciplinary health professionals are ideally suited for IVC.

Each IVC team needs to consist of members with the skills and experience to meet the needs of the community being served.

Explore the team member roles and responsibilities that the Petawawa Centennial Family Health Centre (PCFHC) utilized for their IVC program.

Executive director (admin lead)

Responsibilities include:

- Development and implementation.
- Management and leadership.
- Human resources support (e.g. employment contracts, payroll).
- Finances.
- Performance.
- Liaise with system and community leaders to advocate for the IVC program.
- Participate in program evaluation.

Family physician (medical lead)

Responsibilities include:

- Development and implementation of IVC specific clinical pathways and protocols.
- Assess digital tools, needs and priorities.
- IVC family physician recruitment.
- IVC family physician orientation (e.g. training on IVC clinical protocols and pathways).
- Ongoing optimization of the IVC physician team.
- Support the implementation of best practices and guidelines to ensure that clinical standards are maintained.
- Clinical support for IVC family physicians, nurse practitioners, and other inter-professional healthcare providers (IHPs).
- Clinical outcome metrics and priorities.
- Program evaluation.
- Liaise with system and community leaders to advocate for the IVC program and optimize cooperation with other community resources.

Office administrator (admin manager)

Note: could also be a program coordinator, executive assistant, HR manager, or QI specialist

Responsibilities include:

- Assist admin lead with development and implementation.
- Set up digital tools for the IVC program.
- Develop workflows to support the integration of the program into the clinic.
- Training and admin support for staff and providers.
- Physician onboarding (e.g. ensuring completion of mandatory training related to electronic medical records [EMRs], privacy).
- Identification of unattached patients.
- Establish in-person appointment scheduling templates and processes.
- Establish data collection processes.
- Participate in program evaluation.

Nurse practitioner or physician

Responsibilities include:

- Provide in-person appointments when necessary.

Pharmacist

Responsibilities include:

- Update cumulative patient profile including medication list in patient chart prior to first encounter with IVC physician.

Systems navigator (admin support, formerly Health Links)

Responsibilities include:

- Contact and onboard unattached patients.
- Create and update patient chart prior to the first encounter with new physician.
- Appointment scheduling.
- Facilitate video visits in patient's home using portable WI-FI.

Off-site physician

Responsibilities include:

- Provide primary care to their assigned practice population primarily through phone and video appointments as determined by clinical need and patient preference.
- Provide care coordination with the primary care team.

Interprofessional health providers (IHPs) (e.g., dietitians, counsellors)

Responsibilities include:

- Provide clinical care to IVC patients through a blend of in-person, phone and video appointments as part of the delivery of comprehensive, team-based primary care.

Board of Directors

Responsibilities include:

- Provide a governance structure for the organization delivering IVC.

Digital tools

The effective implementation of digital tools to support clinical and administrative workflows is essential for effective Integrated Virtual Care (IVC).

Here is an outline of the digital tools used by the Petawawa Centennial Family Health Centre (PCFHC) for their IVC program. Refer to the HEC and Canada Health Infoway Clinician Change Virtual Care Toolkit for information on the optimal use of virtual care modalities.

IVC website

- Provides information and links to services such as secure messaging and online appointment booking to patient.
- Needs to be updated locally.

Email server

- Enables communication between providers and with patients.
- Requires Microsoft 365.

Video visit system

- Enables patients and providers to conduct online video visits.
- Meets privacy and security standards.
- Integrates with electronic medical records (EMRs) and supports workflows.
- Provides video visit capabilities at the clinic for patients who do not have internet access at home.

Secure messaging system

- Allows for exchange of secure text communications with patients.
- Meets privacy and security standards.
- Integrates with EMRs and supports workflows.

Telephone system

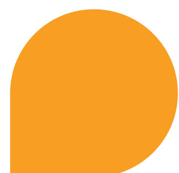
- Enables appointment booking, phone calls and administrative phone calls to patients.
- Requires Voice over Internet protocol (VoIP) phone system which provides call functionality and prevents physician's personal phone number from being shown to patients.

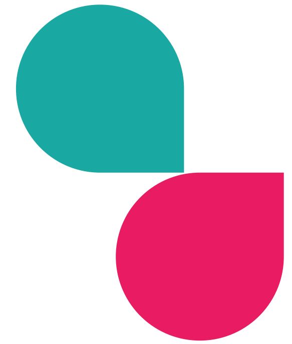
Online appointment booking

- Allows patients to book appointments online with physician, nurse practitioner, and inter-professional healthcare providers (IHPs).
- Meets privacy and security standards.
- Integrates with EMR and supports workflows.

Remote patient monitoring

- Allows coordination with the County of Renfrew Paramedic Service, which can install equipment and instruct patients on its use to allow remote patient monitoring (e.g. vital signs). Agreed-upon parameters with the patient's family physician can trigger paramedic home visits.
- Requires internet access.





IVC physicians

Funding

Physician compensation models that are well-suited for Integrated Virtual Care (IVC) include salaried and blended salary models. Capitation models – where healthcare providers are paid a fixed amount per patient, per period regardless of the amount of care provided – can also be effective, provided there is group consensus on cost-sharing agreements. Additional funding requirements for IVC operating costs will vary, depending on the existing staffing and funding, and the scale of the IVC program being implemented in any given location.

Recruitment

The role of an IVC physician represents an excellent opportunity for those seeking flexible, part-time hours and the ability to work remotely. It also provides the chance to deliver longitudinal, comprehensive primary care with the clinical and administrative support of an established primary care team. To connect with potential IVC physician candidates, engagement with regional and provincial organizations, family medicine residency programs and existing primary care networks is required.

Registration

For the Petawawa Centennial Family Health Centre (PCFHC), the IVC physician registration process follows the Ministry of Health of Ontario registration process for physicians. Similar processes should be followed based on the funding model and jurisdiction.

Onboarding and training

In addition to the standard onboarding requirements for any family physician joining the primary care team, onboarding an IVC physician also needs to include an overview of the clinical protocols and pathways of the IVC. Training on the optimal use of virtual care is also recommended. Healthcare Excellence Canada's and Canada Health Infoway's (CHI) Clinician Change Virtual Care Toolkit is excellent for this.

Ongoing team support

- Clinical support provided by the medical lead.
- Admin support provided by the admin lead and support staff.
- Patient care support provided by a team of interdisciplinary health professionals.

IVC patients

A patient-centred approach is the most effective way to support enrollment and deliver care through the Integrated Virtual Care (IVC) program. Outlined below are key steps that the Petawawa Centennial Family Health Centre (PCFHC) IVC team used to identify, onboard and provide care for IVC patients.

Identify IVC patients

Identifying the community to be served by the IVC, along with the unattached patients within it, can be challenging. Additionally, decisions may need to be made about which patients to prioritize for enrollment. The optimal approach will depend on the specific characteristics and needs of the community, as well as the capacity of the team.

Guidance and lessons learned from PCFHC IVC patient identification so far:

- Patients without a primary care provider were identified by the PCFHC IVC team through the use of the Renfrew County Virtual Triage and Assessment Centre (VTAC).
- Patients invited to join IVC were asked if there were others in the home without a primary care provider. This helped maintain a balanced level of complexity within the patient roster and gives families the option of all having the same family physician.
- Patient identification was later expanded to include those registered with Health Care Connect, unattached patients discharged from a local hospital, and individuals identified as palliative care patients.

Offering the IVC program to patients

To engage patients in the IVC program, the first step is to contact them directly, typically via phone. During this initial contact, the IVC program should be clearly explained – covering the services available, how the program operates and the unique model of care where the new family physician primarily works off-site. This includes providing a range of virtual care options while coordinating in-person visits with a team member as needed. If the patient is interested in joining IVC, their contact information is then updated, including obtaining consent to use their email for future communication.

Onboard patients to the IVC program

The onboarding process for patients entering the Integrated Virtual Care (IVC) program begins by obtaining the necessary consent for participation, which can be done through methods such as secure messaging.

Once consent is received, enrollment forms are completed to attach the patient to a specific family physician. Patients are then asked to fill out medical intake forms. Consent is also sought to obtain previous medical records, if available. Before the patient's first encounter with their IVC physician, a patient chart is created that includes a cumulative patient profile containing their medical and surgical history, current medication list (often reviewed by a team pharmacist in cases of polypharmacy), allergies and other relevant details.

Additionally, patients are educated on navigating the IVC program, including how to book appointments, with supportive materials provided to ensure a smooth experience.

Guidance and lessons learned from the PCFHC IVC onboarding:

- The onboarding process has been refined to include a three-part initial secure message to the patient. This message now includes consent to participate in the program, a roster form to be signed (which appears after the consent is completed) and a medical questionnaire. Additionally, a consent form for the use of artificial intelligence scribe technology during clinical encounters, and the use of anonymous, aggregated data for program evaluation and research purposes, has been included in the initial consent.
- Maintaining a consistent number of patients for onboarding at any given time helps the administrative staff and pharmacist manage the workload more effectively.

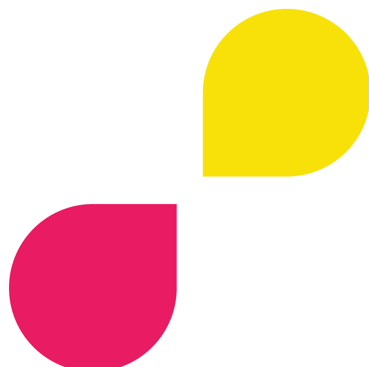
IVC Patient Navigation Tool
The IVC Patient Navigation Tool was developed collaboratively by the Petawawa Centennial Family Health Centre (PCFHC) Integrated Virtual Care (IVC) team, patient and provider partners, and HEC. It is shared with all IVC patients to guide them in understanding available services, booking appointments and navigating their care journey through IVC. The tool also addresses common questions patients may have.

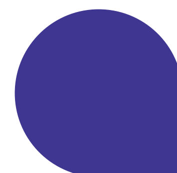
Initiate IVC

- New patients are scheduled for an introductory appointment with the IVC family physician. This appointment may be optional, depending on factors such as how long the patient has been unattached, their previous access to primary care and the availability of recent primary care medical records.

Ongoing IVC

- IVC patients receive comprehensive, team-based primary care led by their IVC physician, using a combination of virtual, at-home and in-clinic options tailored to their individual needs and preferences.
- Refine policies and protocols, and optimise clinical workflow.
- Continuous liaison with existing local and external service and support providers.
- Identify challenges and implement improvements to clinical processes.
- Change management as the IVC program grows, evolves and additional patients and physicians join the program.





IVC evaluation and continuous improvement

Effective measurement and evaluation of the Integrated Virtual Care (IVC) program is essential for ensuring successful implementation and optimal performance, and to demonstrate impact and the potential for future scale and spread of IVC. Careful selection of key performance indicators is crucial, with metrics including enrolment rates, access to services, appointment types and volumes, continuity of care, utilization of team resources, utilization of other healthcare services, as well as patient, team and provider experiences. These indicators provide valuable insights into the program's effectiveness and identify areas for improvement.

Key considerations when evaluating IVC

- Establish a comprehensive evaluation approach that defines clear metrics and outlines how evidence will guide ongoing adaptations. Engage diverse perspectives that represent the people and communities IVC serves, fostering partnerships that ensure evaluation strategies and goals are aligned with the experiences, needs and preferences of those impacted.
- Ensure IVC remains equitable by matching care to an individual's needs, accounting for social, economic, geographic and personal factors (e.g. age, gender, language, education, employment, income, migration background, race, ethnicity, place of residence, and physical and mental abilities). Stratifying data using equity indicators (e.g. understanding the characteristics of those served) can lead to more meaningful insights. The Canadian Institute for Health Information (CIHI) Measuring Health Inequalities: A Toolkit offers valuable guidance on measuring and reporting health inequalities, with a focus on stratifying health indicators. While primarily designed for analysts and researchers, this resource can support effective analysis and reporting.

PCFHC IVC evaluation and improvement approach

The Petawawa Centennial Family Health Centre (PCFHC) Integrated Virtual Care (IVC) team is engaged in an ongoing, comprehensive evaluation program grounded in the Quintuple Aim Framework. This includes input from patients, community members, providers and local healthcare partners. Data is regularly collected, analyzed and reviewed by a committee representing diverse perspectives. This committee evaluates the effectiveness of IVC and identifies unintended outcomes, recommending actions to enhance positive impacts and address challenges.

Examples of how IVC has adapted through evaluation and continuous improvement include:

- Refinements to the consent, roster form, medical questionnaire and AI consent processes.
- Establishing the scheduling algorithm for new and follow-up appointments.
- Tracking monthly and yearly patient attachments.
- Measuring cancer screening rates.
- Conducting a patient enrollment survey.
- Monitoring the physician-to-nurse practitioner appointment ratio on a monthly basis to inform nurse practitioner capacity needs and physician requests for in-person assessments by nurse practitioners.
- Administering an annual patient satisfaction survey in accordance with Ministry of Health mandates.

Tools to support IVC readiness, planning and long-term success

Readiness to receive (implement)

HEC's Readiness to Receive Assessment tool is designed to guide discussions that support informed decision-making and help sites implement practices, such as IVC, from elsewhere. This tool encourages sites to assess their readiness for change by focusing on leadership alignment, infrastructure, organizational culture and operational resources. It provokes critical dialogue around key factors like sponsorship, culture and resource allocation, fostering conditions that ensure successful implementation and ongoing sustainability.

Implementation plan

Developing a thorough, practical implementation plan is crucial. The Institute for Healthcare Improvement's Quality Improvement Project Charter can be used as a resource to help organizations plan to implement IVC.

Long-term success

HEC's Long Term Success Tool (LTST) helps identify the risks and strengths of 12 key factors that influence the long-term success of improvement initiatives or practices, such as IVC, that support safe, high-quality healthcare. Use the LTST with your team every three to six months to support effective planning for long-term success.