EVALUATION OF THE VIRTUAL TRIAGE AND ASSESSMENT CENTRE 2.0 PROGRAM IN RENFREW COUNTY

Centre for Digital Health Evaluation, Women's College Hospital Institute for Health Systems Solution and Virtual Care

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Acknowledgements

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Table of Contents

Acronyms

CAC Clinical assessment centre

CDHE Centre for Digital Health Evaluation

CTAS Canadian Triage and Acuity Scale

EAVC Episodic Access to Virtual Care

ED Emergency department

EMR Electronic medical record

FHT Family health team

FPHR Focused paramedic health review

HCCSS Home and Community Care Support Services

IVC Integrated Virtual Care

MOA Medical office assistant

MOH Ministry of Health

NP Nurse practitioner

OH Ontario Health

OHT Ontario Health Team

PAN Patient Advisors Network

PCP Primary care provider

PPE Patient partner evaluator

RN Registered nurse

RPM Remote patient monitoring

STI Sexually transmitted infection

VTAC Virtual Triage and Assessment Centre

WCH Women's College Hospital

WIHV Women's College Hospital Institute for Health System Solutions and Virtual Care

Operational Definitions

Attachment: A process by which patients are formally linked or registered with a primary care provider, such as a family doctor or a family health team, to access primary health care services. This relationship ensures the patient can access the same provider and maintain a relationship on a continuous basis.

Clinical assessment centre: An office staffed with medical office assistants and community paramedics (and an occasional family physician) that supports the delivery of in-person care services for the VTAC program.

Health811: A free service that patients can call or access 24/7 to speak to qualified health care professionals to receive advice regarding medical issues or concerns.

Hybrid visit: A VTAC appointment type that includes a family physician, attending by phone or video, and a community paramedic, at a clinical assessment centre or at the patient's home.

Integrated Virtual Care: A program that works in parallel to the VTAC program that aims to attach unattached residents in Renfrew County to a virtual family physician with in-person allied health support.

Scale: Expanding a local implementation to make it more widely available and impactful (1–3). This could involve increasing the capacity of the program so that more people can benefit from it.

Spread: Horizontal diffusion or replication of an innovation/initiative to new settings (1,2). This could involve piloting the initiative in one or few selected sites, followed by systematic efforts to replicate it in other locations.

Sustainability: Long-term maintenance of an initiative through adaptation to context over time, such that the initiative as well as the practices and policies that support it are integrated and institutionalized within the structures and systems for health care delivery (1,4).

Executive Summary

Background

This report summarizes the evaluation of the Virtual Triage and Assessment Centre (VTAC) program which delivers care to residents of Renfrew County through in-person and virtual modalities. The objectives of this evaluation are to:

1. Identify and describe the core components of the VTAC program.
2. Determine how components of the VTAC program can be adapted for implementation in other regions.
3. Explore opportunities to integrate the VTAC model of care with other services and assess the program's adaptability, scalability, and sustainability.

PROJECT HIGHLIGHTS

- The program fills a care gap in Renfrew County through in-person and virtual care modalities, and is valued by patients.
- Replication of this model of care would be most valuable in other rural or under-resourced regions with no urgent care options.
- The VTAC program has potential to be further integrated with existing resources including pharmacies, Ontario Health Teams (OHTs), and Health811.

Methods

We conducted a document review, key informant interviews, analyzed program utilization data, the program budget, and patient surveys and interviews.

Key Findings

- The VTAC program fills a care gap in Renfrew County, and is valued by patients for its convenience, timeliness, and ability to divert visits away from the emergency department.
- On average, 4,200 appointments are completed each month, of which, approximately 70% are with unattached patients.
- A local component is valuable to the program to know the population being served and to identify opportunities for service integration.
- The cost of the program is high compared to other alternatives, such as a pharmacist or nurse practitioner. Further evaluation is needed to determine whether the complexity of clinical presentations and quality of care justifies the higher cost per visit.

Recommendations

PROGRAM IMPROVEMENTS

1. To improve the patient experience, consider the possibility of advanced booking and automatically sending patients their encounter notes following each visit.
2. Provide additional training opportunities for staff, especially as the program continuously and rapidly evolves, and not all staff work consistent hours. This should include an online repository of training guidelines that can be accessed and referenced at any time.
3. Consider more robust follow-up procedures as “no news is good news” can lead to loss to follow-up and compromise patient safety, particularly for unattached patients.
4. Continue with plans to expand the paramedic scope of practice, enabling family physicians to focus on more complex patients.
5. Provide clinical guidance for physicians regarding the delivery of virtual care in an under-resourced region.
6. Conduct community resource mapping to promote integration with existing services in the OHT, including pharmacy services for minor ailment consultations and medication reviews.

PROGRAM ADAPTATIONS

1. The program can be scaled up or down based on the resources available and needs of the region but should maintain: a) the team-based structure where trust can be built between staff members, b) the availability of in-person appointments, and c) a local component.
2. This model of care appears to be most valuable in rural and under-resourced regions. Further evaluation is needed to understand program value in urban or well-resourced regions.

INTEGRATION, SPREAD, SCALE, AND SUSTAINABILITY

1. Spread of the program would be most appropriate in regions that do not have access to urgent care services, have high rates of unattachment, and have an allied health program that has capacity to conduct in-person assessments, such as community paramedicine.
2. Conduct a comprehensive community needs assessment to identify where the VTAC model of care would be most appropriate.

1.0 Introduction

1.1 Context

Providing primary care for rural, remote, and underserviced communities is a significant challenge in Ontario. Renfrew County is the largest county in Ontario spanning approximately 7,500 km^2 with a population of over 100,000 people (5). Of this population, approximately 20% are unattached (6) meaning they do not have a family physician or access to an alternative primary care provider (PCP). The county has five hospitals (7) and does not have any urgent care or walk-in clinics.

The Virtual Triage and Assessment Centre (VTAC) program began as a COVID-19 assessment centre in March 2020 and has evolved into an innovative model of care, delivering care for chronic and acute conditions using both in-person and virtual care modalities. The program targets residents of Renfrew County without a PCP or who are unable to access their PCP in a timely manner. The Integrated Virtual Care (IVC) program works in complement with the VTAC program and aims to attach unattached residents in Renfrew County. The VTAC program is supported through a collaboration among primary care, paramedics, hospitals, public health, and other care partners.

1.2 Purpose and Objectives

The purpose of this evaluation is to generate and synthesize evidence regarding the VTAC program. Specifically, the objectives of this evaluation are to:

1. Identify and describe the core components of the VTAC program.
2. Determine how components of the VTAC program can be adapted for implementation in other regions.
3. Explore opportunities to integrate the VTAC model of care with other services and assess the program's adaptability, scalability, and sustainability.

2.0 Methodology

2.1 Document Review

Documents were requested from the VTAC program to understand the program history, adaptations, current processes, and program operations. These documents included paramedic medical directives, publications, program budgets, and monthly reporting data sent to Ontario Health (OH). The VTAC program shared dashboard data which included visit outcomes stratified by modality, visit types stratified by populations of interest, and reasons for visit. Documents were also provided by OH related to the Episodic Access to Virtual Care (EAVC) program to enable program comparisons.

2.2 Key Informant Interviews

We conducted semi-structured interviews with VTAC staff from October 2023 to March 2024. Interviews focused on day-to-day tasks, the nature of interactions with other program staff, patients, and the broader health care system, descriptions of services provided, perceptions and experience with coordinating and delivering coordinated care, and the challenges and opportunities related to the program. Interview participant roles are shown in Table 1. Interviews were conducted over Zoom, audio-recorded, and transcribed verbatim for analysis. Interview guides are available in Appendix A.

Table 1. Interview participants.

Participant Role	n
Family physician	7
Community paramedic	3
Medical office assistant	3
Program lead	2
Total	**15**

2.3 Secondary Data Analysis

The VTAC program conducted a simultaneous evaluation which included a patient survey and patient interviews that focused on their experience with the VTAC program, reason for visit, satisfaction, and areas of program improvement. The survey results and anonymized interview transcripts were shared with the CDHE team for secondary data analysis. Patient interview demographics are available in Appendix B.

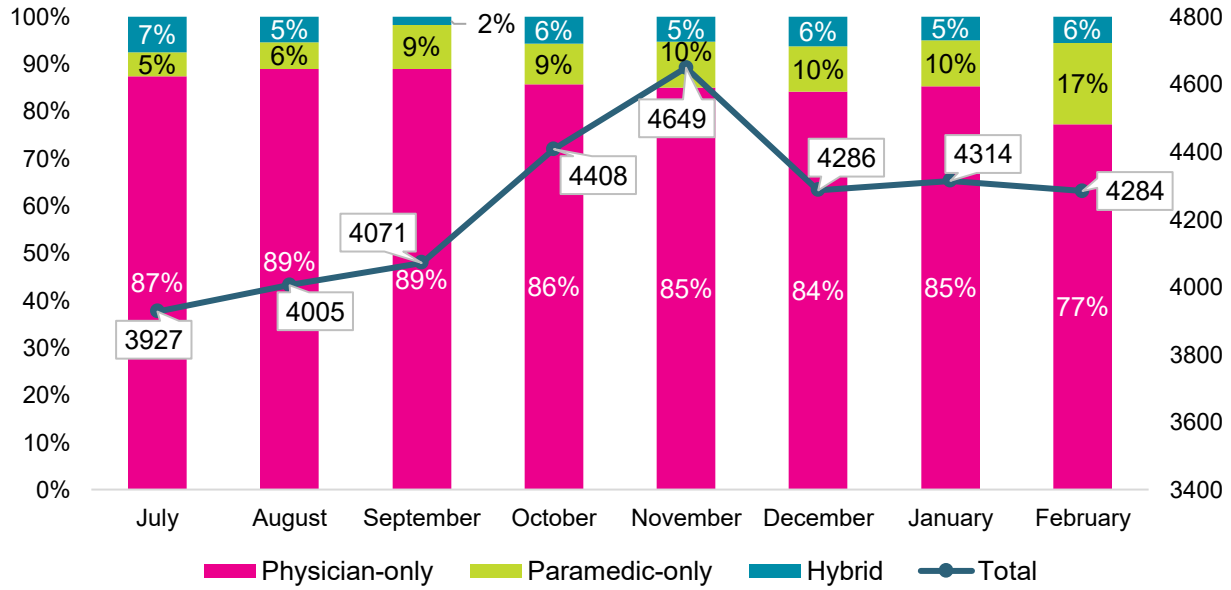
3.0 Results

3.1 Program Overview

The VTAC program provides care to residents of Renfrew County, targeting those who are unattached or who are attached but cannot access their PCP in a timely manner. The program is staffed by medical office assistants (MOAs), community paramedics, and family physicians. Appendix C provides details on the program staffing model.

In February 2024, there were 4,284 appointments, of which, 77% were physician-only, 17% were paramedic-only, and 6% were hybrid as shown in Figure 1. Appendix D provides additional information on program utilization.

Figure 1. VTAC appointments by type (July 2023 to February 2024).



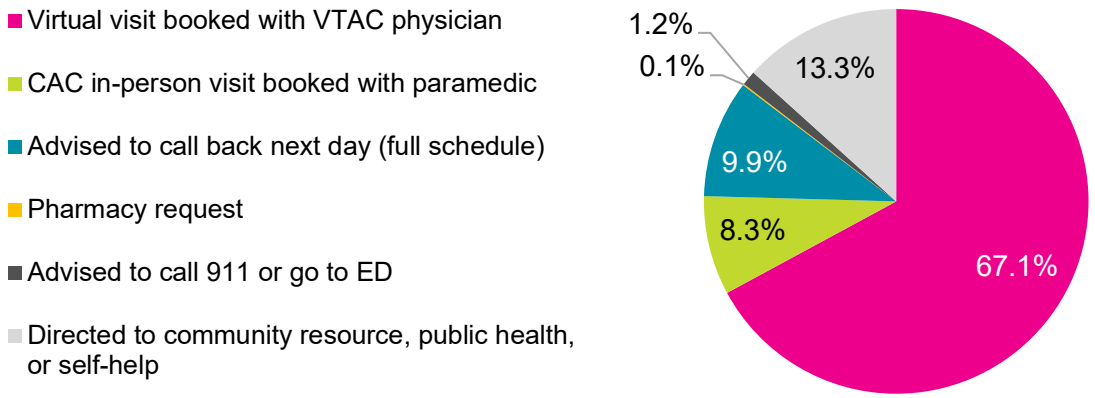
The patient journey through the VTAC program can be described in two phases: 1) patient triage, and 2) clinical encounter. A detailed program map can be found in Appendix E.

PATIENT TRIAGE

Patients call a toll-free number to connect with an MOA who will conduct triage and book a same-day virtual appointment with a family physician or an in-person appointment with a paramedic at a clinical assessment centre (CAC). There are three CACs located in Pembroke, Renfrew, and Arnprior. Most calls (67% in February 2024) are received during the weekday between 8am to 5pm with patients reporting that they had to call early in the morning to secure an appointment.

In February 2024, MOAs received 5,793 calls (approximately 187 calls per day). MOAs triage based on clinical condition and patient preference for modality. As shown in Figure 2, most calls are triaged directly to a virtual physician appointment (73%). For conditions related to ears, nose, throat, cough, and cold, an in-person paramedic appointment is often scheduled (8%). Occasionally, MOAs request patients for images via email for dermatology-related issues and upload them into the electronic medical record (EMR) prior to the clinical encounter. In cases where the presenting conditions appear urgent, MOAs may advise patients to visit the emergency department (ED) which occurred with 1.2% of callers in February 2024.

Figure 2. Outcome of MOA triage calls (n=5,793) (February 2024).



MOAs located at CACs manage clinic flow and conduct in-person patient triage including taking patient vitals (i.e., height, weight, blood pressure, temperature) prior to their appointment with a paramedic. In addition to patient triage and appointment booking, MOAs coordinate physician requisitions and referrals, book follow-up appointments, escalate paramedic appointments to include a physician (i.e., hybrid), and actively manage the clinic schedule in real time. Following an appointment, MOAs are responsible for sending encounter notes to a patient's regular PCP, if attached, and to the patient upon request.

CLINICAL ENCOUNTER

FAMILY PHYSICIAN APPOINTMENTS

Family physicians in the VTAC program provide medical consultations for both acute and chronic issues, patient education, order investigations (e.g., blood work, diagnostic imaging, etc.), and refer to specialists. Physicians also participate in hybrid appointments which are discussed further in this report.

In February 2024, there were 3,312 physician-only appointments (approximately 107 per day) with 98% occurring over the phone, few appointments over video (<1%), and 2% in-person at a

CAC. Common reasons for an appointment with a physician include respiratory tract infections, mental health and addictions, musculoskeletal concerns and chronic pain, hypertensive conditions, and dermatological conditions. On average, physician appointments are 15-minutes long and were described to be sufficient to address the majority of health concerns. However, some physician participants reported that these appointments were inadequate for addressing complex and unattached patients due to patients having multiple health concerns that require more attention. Specifically, physicians reported feeling unsure about their responsibilities in coordinating patient care. For example, one physician mentioned that while they can address individual health concerns, they were not able to provide holistic and preventative care (e.g., order regular blood work, cancer screening, discuss lifestyle and habits, etc.) within a single visit. Furthermore, physicians reported having to rely on unattached patients to follow-up, which was perceived to be challenging as the physician had no prior relationship with the patient. Some physicians will consult the VTAC EMR and ConnectingOntario for a patient history to inform what investigations and referrals are required and proactively arrange follow-up appointments with patients to ensure they receive the care they need. Physician participants described doing their best to provide comprehensive care by tackling multiple issues in one visit, ordering multiple investigations, and advising patients to seek preventative care through community programs, and booking a follow-up appointment.

> *"The other day I saw an elderly male patient, never seen him before. He'd run out of all of his medications. He had been told about VTAC, but he'd been delayed in contacting us. This was my only opportunity to talk to him and I didn't know when I was going to talk to him again. I asked him to do blood work for his comorbidities and also screening. I told him about Health811 to get his FIT test ordered. I ordered imaging modalities for a musculoskeletal concern that he had as well. Then I reached out to the front desk to book him in for follow-up, because I felt that leaving it to the patient was going to be unreliable."*
>
> – Family Physician-03

When following-up on imaging results, some physicians mentioned that sometimes they do not receive them and were unsure whether this was due to images being sent to the wrong clinic or whether patients have not completed the test. In this regard, patients are advised that "*no news is good news*". In instances where a patient follows up regarding their test results and the physician has not yet received them, physicians can access ConnectingOntario if the imaging was completed at a hospital or will follow-up directly with the imaging clinic. Physicians expressed the importance of educating patients about being proactive in their care, and what resources are available to them.

"The best patient for VTAC is a patient who is self-driven and who speaks for themselves and knows what they deserve as a human. When you're a family doctor and you have patients, you can take on some type of a paternalistic role. [For example,] 'oh, call [patient], she hasn't had her PAP test in four years, just remind her.' But we don't do that in VTAC. You really need somebody like a woman [who says] 'I just turned 50, this is what's happening in my life, this is what I think I need.' Then when you get your mammogram done, if it's abnormal, I'll call you. If you want us to review the results, you call us. So, I'm putting a lot of responsibility on the individual. ...They don't really take that same type of ownership which makes it very difficult and worrying as a clinician because if I only have 15 minutes, I can't ask you when the last time you had a colonoscopy."

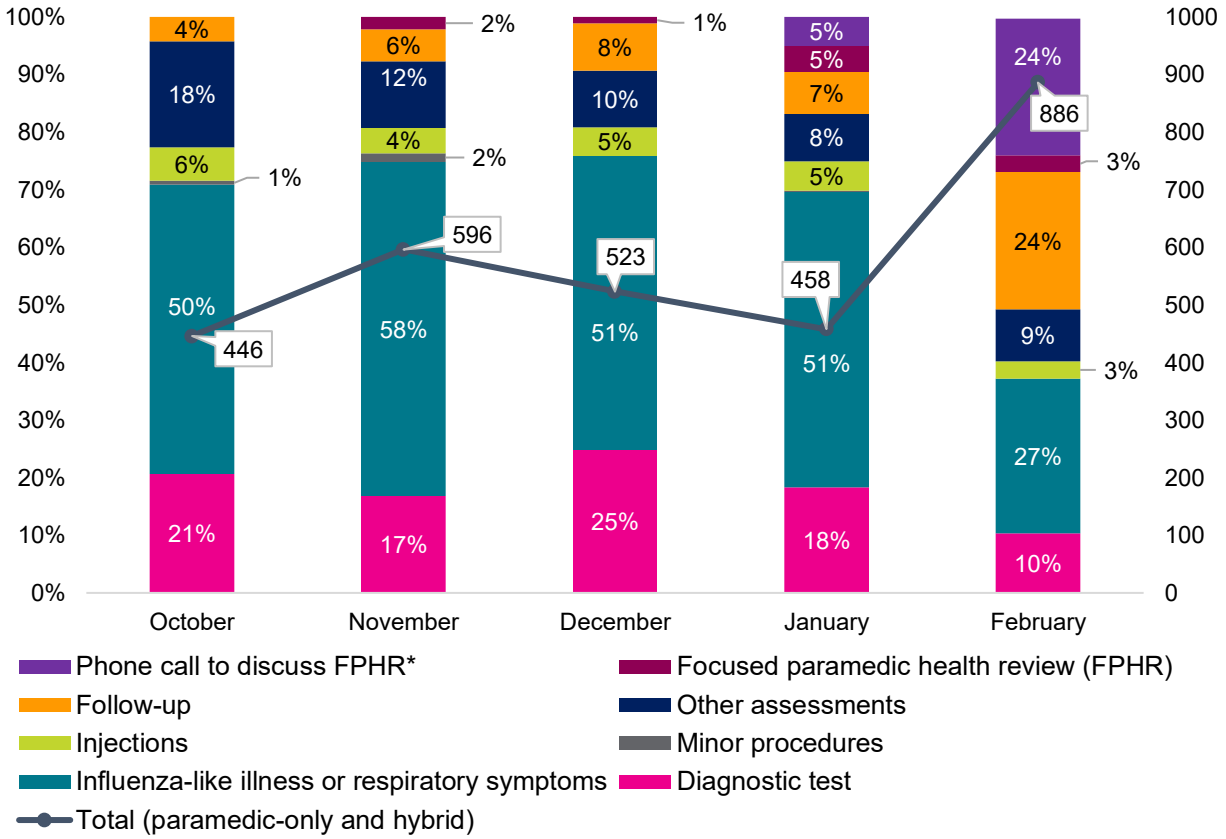
– Family Physician-02

Regarding the appropriateness of phone appointments, in situations where physicians felt that an in-person assessment was necessary (e.g., ear infection, chest pains, etc.), patients would be redirected to a CAC or to the Renfrew County Community Paramedicine Program for homebound patients. Based on our interview data, in-person physician visits are used to address health concerns among frail, complex, and older adult patients, or chronic musculoskeletal or dermatological conditions. Physicians stated that more in-person family physician appointments would be valuable to patients. Additionally, physicians mentioned that more support for preventative care and mental health and addictions services would be helpful.

PARAMEDIC APPOINTMENTS

In February 2024, there were 736 paramedic-only visits (approximately 37 per day) with 54% occurring over the phone, 35% at a CAC, and 12% at a patient's home. Reasons for visit include influenza-like illnesses, ear infections, COVID-19 testing, allergy shots, medication injections, point-of-care blood tests to assess respiratory status, metabolic status, and renal function, phlebotomy, and suture and staple removal. Additionally, since November 2023, paramedics conduct focused paramedic health reviews (FPHRs) for unattached patients under age 60. FPHRs focus on education for a variety of topics including cancer screening, immunizations, hypertension, physical activity, weight management, tobacco use, and alcohol use. As shown in Figure 3, the most common reason for visit is for an influenza-like illness or respiratory symptoms (27% in February 2024), closely followed by a phone call to discuss the FPHR (24%) (*only introduced in January 2024), and follow-up (24%). During a phone call to discuss the FPHR, a paramedic gathers patient history, medications, and risk factors to better prepare for the FPHR. Follow-up phone calls are to continuously monitor patient status, provide safety netting instructions, and discuss any questions or further actions related to the discharge plan.

Figure 3. Reasons for paramedic-only and hybrid visits (October 2023 to February 2024).



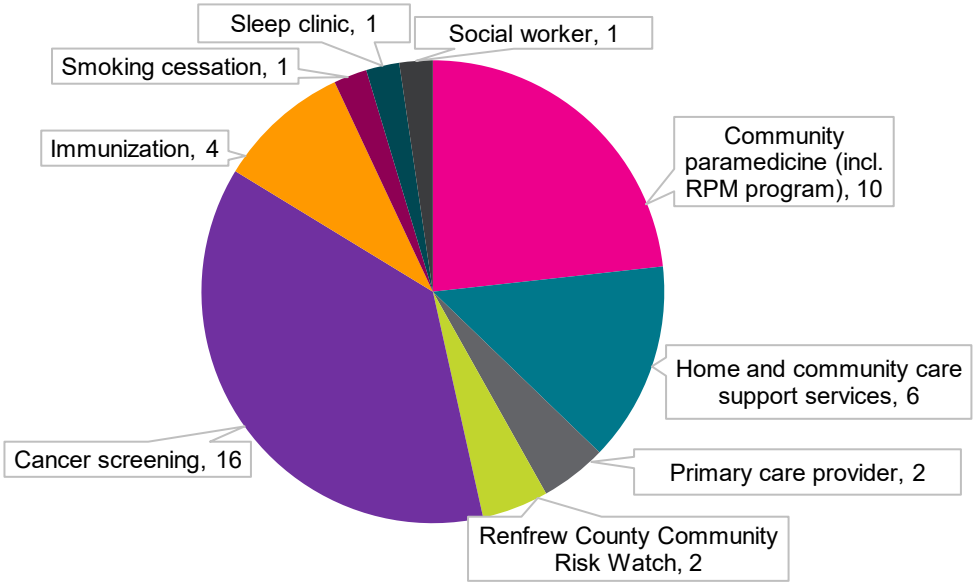
One of the main assessments completed by paramedics is deciding if an illness is bacterial or viral.

> *"I'll do a basic assessment that includes what's been going on with [the patient], a set of vitals, listening to their lungs, checking their ears, throat, lymph nodes, and temperatures. Once I've done all that, I tend to make a decision as to whether it's bacterial and needs a physician assessment, or viral and could be treated without a physician."*
>
> – Paramedic-03

The community paramedicine program is making efforts to increase its scope of practice within the VTAC program to align with their current practices in Renfrew County. Potential future iterations of the program include ear flushing, wound care, tick removal, immunizations, and assessment and treatment for eye infections/pink eye, insect bites, sexually transmitted infections (STIs), dermatological conditions, musculoskeletal concerns, and mental health and addictions. The Community Paramedicine Program is leading a new initiative, the mesa program (8), to address mental health, substance use, and addiction challenges, with plans to integrate the VTAC program. Training modules have been developed to equip paramedics with the necessary knowledge and clinical skills to address the abovementioned conditions. Additionally, proposed

topics of expansion for FPHRs include diabetes, cardiac, and chronic obstructive pulmonary disease care, and point-of-care ultrasounds. In February 2024, as part of the VTAC program, paramedics referred 43 patients, out of 736 paramedic-only appointments, to other community resources and services, as shown in Figure 4.

Figure 4. Number of referrals made by paramedics in the VTAC program (February 2024).



HYBRID APPOINTMENTS

In-person paramedic appointments at CACs can be escalated to include a family physician virtually in real time to become a hybrid appointment. Additionally, through integration with the Renfrew County Community Paramedicine Program, community paramedics can escalate in-home visits to include a family physician virtually. In February 2024, there were 236 hybrid appointments (approximately 12 per day) with 94% occurring at a CAC and 6% at a patient's home.

In a hybrid appointment, paramedics take a patient's history, physically assess them, then escalate to a family physician. Physicians found this process to be efficient and described paramedics to be competent and reliable. The ability for paramedics to physically assess and see patients made physicians more confident in their clinical decision making. Based on our interview findings, common reasons for hybrid visits include upper respiratory tract infections, hypertension, and other conditions related to ear, nose, and throat, specifically for older adults with chronic conditions. However, in some cases, physicians have expressed concerns about the differences in clinical knowledge, especially when asking paramedics to assess symptoms or care for complex patients that is outside of the paramedics' usual scope of practice.

> *"I had a kid with six days of fever. Most physicians will recognize 'okay, the biggest red flag here that I need to rule out, is Kawasaki disease.' So, I was asking the paramedic, 'Is there any conjunctival injection? Is there a rash on the hands?' ... I had to take some time with the paramedic and say, 'Remember, you may not be aware of this, this is very uncommon, so not to worry, but these are features of Kawasaki disease.' Ultimately the child did have those features and had to be taken to the hospital. But if I had read the paramedic's examination, they may not have known to check for those specific findings."*
>
> – Family Physician-03

Trust between paramedics and physicians is important. One paramedic described being frustrated that their assessments were not trusted by physicians.

> *"I had a patient the other day who had what I believed was strep throat. That's kind of our bread and butter. I know what strep throat looks like. If I had Doctor A, they would have known they've been like 'okay, yeah, [paramedic-02] sees this all the time. She knows what she's talking about. I look at her chart. She's had a fever. I trust her.' Whereas this doctor I had was like, 'well, I'm not sure. Can you send me a picture?' Well, trying to get a picture of the back of someone's throat is really difficult to begin with. It's like, 'well, I don't know, I don't like that picture. Can you take it again?' Well, it was 20 minutes of taking pictures of someone who doesn't necessarily believe what I can see. So that's a struggle too."*
>
> – Paramedic-02

All staff mentioned that adapting to rapid changes within the program was a challenge, especially for those who worked part-time and did not regularly check their email. In some instances, staff would hear conflicting information regarding program changes, adding to the confusion.

PATIENT PROFILE AND EXPERIENCE

Most patients using VTAC services are unattached (69% in February 2024). Unattached patients were found to attend more physician-only appointments compared to in-person or hybrid appointments. This may be driven by a need for chronic disease management and medication reviews, a service exclusively offered by physicians and may not require an in-person assessment.

Among surveyed patients (n=381) from July 2023 to January 2024, 88% were satisfied with the program, 90% reported they would recommend the program to others, and 77% stated that it helped them avoid the ED. See Appendix D, Figure D5-3 for patient satisfaction survey results.

Interviewed patients stated that the program is straightforward and easy to navigate, providing good quality of care. Moreover, they appreciated the convenient and timely access to care provided through the program. Attached patients perceived the program to be more accessible than their regular PCP, especially as the program offers virtual and same-day appointments, and evening and weekend availability. This was particularly expressed by patients who were having trouble accessing their PCP.

> *"[B]eing able to get in contact, get the appointment set up in a very short time and having that call within 24 hours, and the conversation lasting 10 minutes, all of it was very efficient ... beyond anything that an individual would experience going into an emergency. No wait time ... managing this from the comfort of my own home, the reduced stress, knowing that I was going to get my medication, we were assuming I was going to get my medication refilled through my family physician, because the frustration that I was having with my family physician, trying over a period of a week to get through to them, and repeated calls being put on hold for up 90 minutes the first time before I finally hung up... VTAC was very efficient and met my needs completely."*
>
> – Patient-05

However, patients perceived care to be less personalized due to the lack of a pre-existing relationship. Consequently, physicians were perceived to be more cautious.

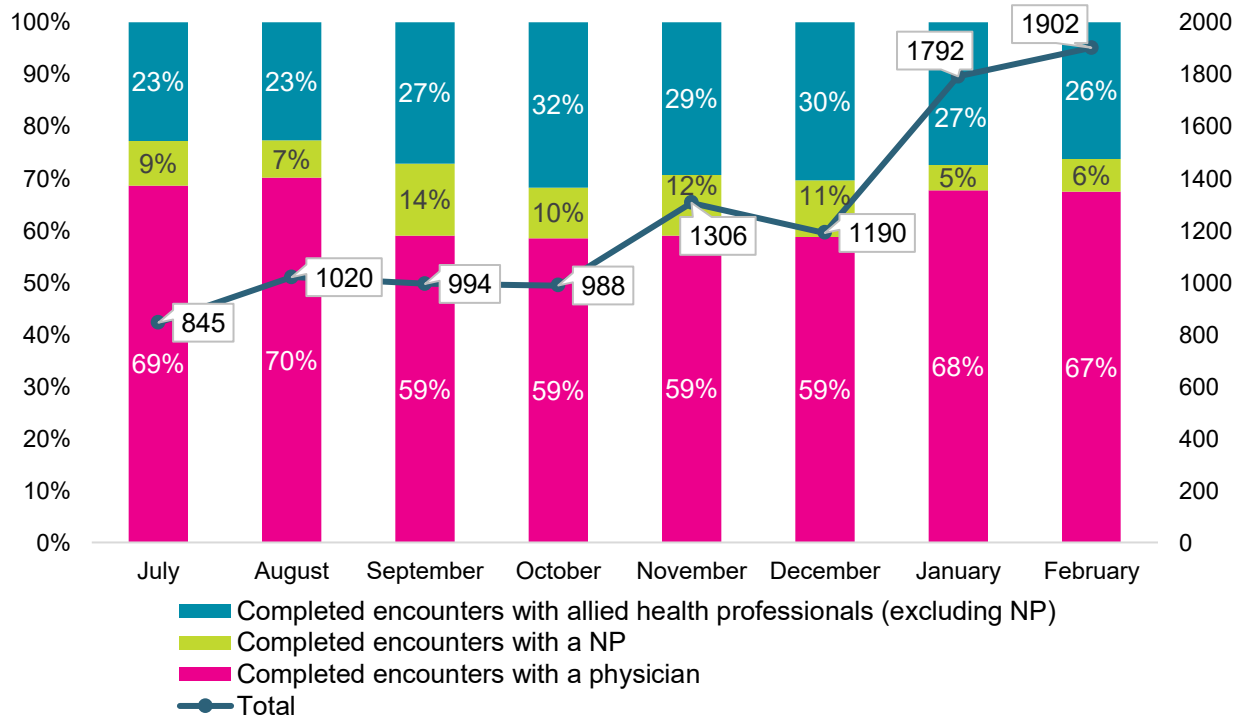
> *"I needed a prescription for a medication to support lactation. I have my own experience with the medication caring for other people and I knew that I needed it, I knew what the dosage was, I knew what the risks were. The doctor who I spoke to was very hesitant to give it to me and wanted to give a much lower dose than what I wanted. If it was my own family doctor; she knows me, she knows my career, she knows my experience, she knows what I do, and I feel that we would have had a more effective conversation together …she would have listened to my perspective a bit more. Whereas this physician, she didn't know who she was talking to, and she wanted to be cautious with the medication that has risks. … because she didn't know me, she was a lot more conservative in her approach."*
>
> – Patient-06

Knowledge of local resources was difficult for physicians who newly joined the program. This created challenges in coordinating care and facilitating access to local resources for patients. Other challenges included limited exchange of patient information across different health care facilities (i.e., local pharmacies and hospitals), and difficulties navigating the digital infrastructure of the virtual care environment, particularly with tasks such as electronically sending images prior to their appointment or filling out the questionnaire prior to an FPHR.

INTEGRATED VIRTUAL CARE

The IVC program aims to attach unattached residents in Renfrew County to a non-local, virtual family physician complemented by in-person and virtual care delivered by allied health professionals from the family health team (FHT) based at the Petawawa Centennial Family Health Centre (9). The IVC program leverages the VTAC EMR to identify unattached patients who frequently use VTAC services that may be suitable for the IVC program. As of February 2024, IVC has attached 6,174 unique patients. The majority of IVC encounters are with a family physician (67% in February 2024), with about a quarter (26%) conducted with allied health professionals, and a small proportion (6%) with a nurse practitioner (NP), as shown in Figure 5.

Figure 5. Completed encounters in the IVC program (July 2023 to February 2024).



COST COMPARISON ANALYSIS

Table 2 shows the cost per visit for physician-only, paramedic-only, and hybrid visits in Q2 (July to September) and Q3 (October to December) 2023. There was a higher volume of all visit types in Q3 compared to Q2 which resulted in a lower cost per visit. Cost per visit includes labour and infrastructure costs. Cost comparison analysis methods are available in Appendix F.

Table 2. Cost per VTAC visit (Q2-Q3 2023).

Visit type	Q2 cost per visit	Q3 cost per visit
Physician-only	$82.64	$74.50

Paramedic-only	$253.69	$178.51
Hybrid	$306.41	$231.67

In Q3, we estimate a cost savings of $786,885 in avoided ED visits ($251 per Canadian Triage and Acuity Scale (CTAS) 4-5 ED visit which includes physician and infrastructure costs (10)). This analysis takes the 3,350 patients that said they would have presented to the ED had they not received an appointment with the VTAC program (as there are no local alternatives) and subtracts the number of patients that were advised to attend the ED (215 patients). The analysis assumes that all patients that reported they would have gone to the ED would follow through with this had VTAC not been available.

Table 3 lists potential comparators to the VTAC program including physician, NP, and pharmacy services.

Table 3. VTAC visit comparators.

	OHIP Billing Code(s)	Cost per visit
Physician services		
Minor assessment	A001	$23.75
Intermediate assessment	A007	$37.95
Limited virtual care by video	A101	$20.00
Limited virtual care by telephone	A102	$15.00
Nurse practitioner services		
East Region Virtual Care Clinic (EAVC program)[1]		$52.92
Pharmacy services		
Minor ailment consultation		$15 - $19

Compared to other physician services, the cost per visit within the VTAC program is more expensive. However, the VTAC program fills a needed care gap due to the shortage of family physicians and primary care services in the county. Should patients choose to attend an in-person walk-in clinic outside of the county, a comparable cost would be $37.95 for an A007 intermediate assessment. However, there are few public transportation options and patients incur additional travel and time costs. A virtual walk-in clinic would cost $15 or $20 per visit depending on the modality (i.e., phone or video). Had the VTAC program not been available, a proportion of visits

[1] Cost per visit estimate is based on the budget for the East Region Virtual Care Clinic, **not** on actual dollars spent.

would instead result in an ED visit with cost per visit ranging from $17.10 to $251 (10) depending on the day, time, type of assessment, and if infrastructure costs are considered.

Other fee codes such as K005 for primary mental health care at $70.10 per visit or K030 for diabetes management at $40.55 per visit may be an appropriate comparator for the services VTAC physicians provide. However, these visits do not meet the conditions required to bill these fee codes including a minimum time requirement of 20 minutes or an existing/ongoing patient-physician relationship. Further evaluation is needed to determine appropriate fee code comparators for VTAC visits and what proportion of visits would be of similar complexity.

Compared to the East Region Virtual Care Clinic (EAVC program), the cost per visit is estimated to be lower at $52.92. The services are provided virtually by an NP with no in-person options. The comparability (i.e., quality of care and reasons and complexity of visits) between the EAVC and VTAC programs has not yet been assessed. Currently, these programs are mutually exclusive such that Renfrew County residents contacting the East Region Virtual Care Clinic are redirected to the VTAC program. Compared to pharmacy services, consultation for 13 minor ailments cost $15 (virtual) or $19 (in-person) per visit, regardless of whether a prescription is issued.

Cost per visit should be considered alongside other elements of the quintuple aim including the patient experience, provider experience, health outcomes, and equity. The value of the VTAC program would depend on what proportion of the visits could substitute for an ED visit, a virtual NP visit through EAVC, a pharmacist visit for minor ailments, and, for those who are attached, visits with their PCP billed as A001, A007, etc. The VTAC program offers one point of care that can address a wide range of needs, which is inherently more patient-centered than having patients choose from a range of options where they are unsure if their needs can be met. It also offers remuneration that has enabled them to recruit and retain a sufficient number of physicians to provide services on an ongoing basis. Further evaluation is needed to determine whether the complexity of clinical presentations and quality of care justifies the higher cost per visit.

Recommendations for program improvements

1. To improve the patient experience, consider the possibility of advanced booking and automatically sending patients their encounter notes following each visit.
2. Provide additional training opportunities for staff, especially as the program continuously and rapidly evolves, and not all staff work consistent hours. This should include an online repository of training guidelines that can be accessed and referenced at any time.
3. Given that the patient population is mostly unattached, consider more robust follow-up procedures as “no news is good news” can lead to loss to follow-up and compromise patient safety. This may include standardizing processes for follow-ups initiated by the physician. For example, if the test result has not been received within a certain number of days, a VTAC staff member should follow-up with the patient.
4. Continue with plans to expand the paramedic scope of practice within the program to align with their work elsewhere in Renfrew County. With the proper education and clinical training, this has the potential to free capacity for family physicians to focus on more complex patients.
5. Provide clinical guidance for physicians regarding the delivery of virtual care in an under-resourced region. For example, in the face of clinical uncertainty, identify alternative options or existing resources that can be leveraged to ensure patient safety is not compromised. This can be achieved through community resource mapping and creating a list of provincial and local resources available for physicians to refer to, promoting further program integration. Community resource mapping should prioritize identified program gaps such as preventative care and mental health and addictions services.
6. Explore opportunities for integration with local pharmacies to address minor ailment consultations and medication reviews. Currently, only a small proportion of calls are triaged to pharmacy (0.1% in February 2024). Triaging appropriate medication-related requests to pharmacies can free capacity for family physicians and address patients’ needs at a fraction of the cost.

3.2 Program Adaptations

CORE PROGRAM COMPONENTS

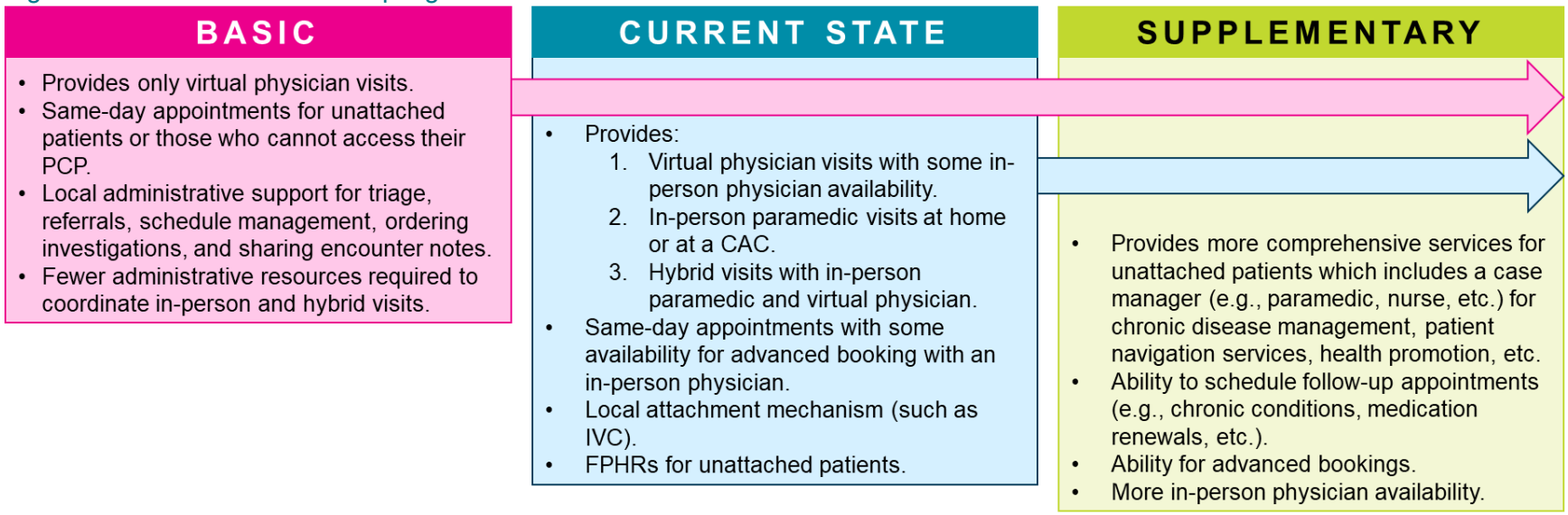
If the VTAC program were to be replicated in other contexts, core program components that should be maintained include:

1) The ability to provide same-day virtual and in-person appointments.
2) The availability to deliver care for both unattached and attached patients.
3) Hiring local staff members (i.e., MOAs, paramedics) who are knowledgeable about the area they serve.
4) Primary care provider expertise (i.e., family physician, nurse practitioner) and capability to address acute and chronic health conditions, order investigations and provide follow-up care, write prescriptions, and refer to specialists.

ADAPTING THE VIRTUAL TRIAGE AND ASSESSMENT CENTRE MODEL OF CARE

Components of the VTAC model of care can be adapted and implemented in other regions. We present three options for adapting the various components of the VTAC program in Figure 6.

Figure 6. Three versions for adapting the VTAC model of care.



The basic version provides same-day, virtual family physician visits with local MOAs to support administrative tasks. However, it does not provide options for in-person appointments and would have fewer labour and infrastructure costs compared to the current model. This version would be similar to a virtual walk-in clinic. The current state version reflects the existing model of care operating in Renfrew County which includes in-person paramedic appointments, virtual and some in-person physician appointments, hybrid appointments, a local attachment mechanism, and FPHRs for unattached patients. The supplementary version includes a case manager for unattached patients, the ability to schedule follow-up appointments and advanced bookings, and provides more in-person physician appointments. The VTAC model of care and its various components can be adapted to the region depending on the resources available and the needs of the community. In addition to adapting program components, further consideration must be made to where this model of care can produce value.

RURAL OR UNDER-RESOURCED REGIONS

The VTAC model of care would likely produce similar value in other rural or under-resourced regions that do not have sufficient PCPs, few to no urgent care clinics, a high number of CTAS 4-5 ED visits, and a high proportion of unattached patients. If the VTAC model of care were to be adapted and implemented in this setting, it should balance the use of local and non-local staff.

Local staff in the VTAC program include MOAs and paramedics who are knowledgeable about the regional geography, care resources available, and the patients they serve. Physicians not residing in Renfrew County mentioned that becoming familiar with the area was a steep learning curve and the MOAs are a valuable resource to learning about the area such as knowing what other local resources exist and which specialists are accepting referrals. In addition to resolving low acuity in-person patient concerns, paramedics in the VTAC program conduct in-person investigations prior to a family physician appointment to inform their clinical decision making, enabling family physicians to see patients efficiently. Without the in-person care component, physicians perceived that they would either refer more frequently to the ED or prescribe more often though it may not be clinically appropriate.

Hiring local staff has supported program buy-in, as many MOAs and paramedics felt that their work within the program made a difference in Renfrew County. In other rural and under-resourced regions, existing local care providers (e.g., community paramedics, nurses, community health workers, etc.) can be leveraged to support in-person care activities with the appropriate clinical training. For example, each municipality has a community paramedicine program that can be leveraged to provide in-person services.

Non-local staff can be recruited from other areas to address human resource deficiencies, such as the lack of PCPs in Renfrew County. Family physicians mentioned that the VTAC model of care was appealing to work in because it enables them to practice rural-style medicine from their preferred location and offers a flexible work schedule. Physicians felt their work through the VTAC program was impactful and meaningful.

URBAN OR WELL-RESOURCED REGIONS

Compared to rural and under-resourced regions, the value of the VTAC program in urban or well-resourced regions is not as evident. Further evaluation is needed to determine the value of the VTAC model of care in these regions, and considerations need to be made to understand if it should be scaled for regions with larger populations that have access to same-day care through walk-in and urgent care clinics.

There are components of the VTAC model of care that can improve the patient experience and be adapted for walk-in clinics, urgent care clinics, and within Ontario Health Teams (OHTs). For example, VTAC encounter notes are sent to a patient's regular PCP and are available to patients upon request. This could inform future walk-in clinic policies to improve the continuity of information across care institutions and providers, especially for those who are unattached. Additionally, the VTAC program provides family physician consultation to homebound patients by leveraging the existing Renfrew County Community Paramedicine Program (i.e., hybrid visit). Community paramedicine programs across the province can be leveraged to provide in-person care for homebound patients, incorporating a family physician virtually where available.

Recommendations for program adaptations

1. Adaptations of the VTAC program can be scaled up or down based on the resources available and needs of the region. Future program adaptations should maintain: a) the team-based structure where trust can be built between MOAs, physicians, and allied health professionals, b) the availability of in-person appointments, and c) a local component as knowledge of existing health services, geographic constraints, and the patient population is essential.
2. Based on our evaluation findings, this model of care would likely be most valuable in rural or under-resourced regions. Further evaluation is needed to understand the value of a VTAC model of care in urban or well-resourced settings.

3.3 Program Integration, Spread, Scale, and Sustainability

OPPORTUNITIES FOR HEALTH SYSTEM INTEGRATION

INTEGRATION WITH ONTARIO HEALTH TEAMS

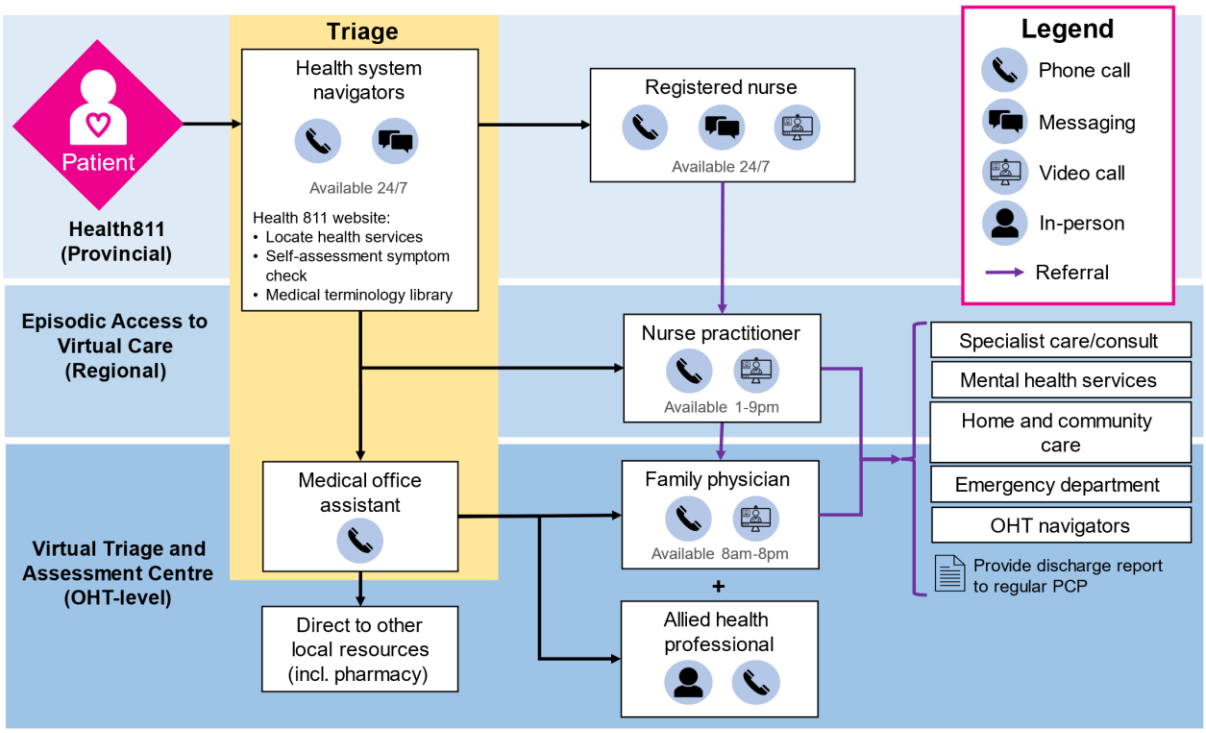
If the VTAC program were to be scaled to other regions, there should be an emphasis on a local component and team-based approach. The VTAC model of care is well-positioned to be integrated within OHTs to leverage existing infrastructure, resources, and partnerships to complement the services provided. For example, requests related to minor ailment consults, immunizations, and annual medication reviews can be directed to local pharmacies and OHT navigators can assist with patient navigation needs. Through integration within an OHT, the VTAC program can refer patients to other OHT partners (e.g., community care, home care, mental health and addictions services, etc.) to provide holistic and coordinated patient-centred care.

Clinical pathways to support hybrid visits can be built across OHT partners. This may include the ability for in-home wellness checks conducted by community paramedics or in-home visits by Home and Community Care Support Services (HCCSS) to be escalated to include a VTAC family physician where appropriate. Like the relationship between the VTAC and IVC programs, existing attachment pathways within an OHT should be integrated with the program. A local approach to replication can help establish trust between care providers. Further resource mapping is needed within individual OHTs, with the involvement of primary care networks, to identify if and how the VTAC model of care can be incorporated into the region.

INTEGRATION WITH HEALTH811

Another opportunity for integration is for the VTAC model of care to be integrated with Health811 and the EAVC program. Figure 7 shows a potential future state of virtual first programs across Ontario at the provincial, regional, and OHT-level.

Figure 7. Potential future state of virtual first programs across Ontario.



This future state centralizes an access point for patients and enables registered nurses (RNs) and NPs to manage clinical conditions within their scope of practice, freeing capacity for the VTAC program to address more complex patients or patients requiring an in-person assessment. In addition to the Schmitt-Thompson triage guidelines, there is a need to determine how clinical conditions are triaged from the Health811 health system navigator to the VTAC program (family physician and/or allied health professional), and how resources can be most effectively allocated. Furthermore, MOAs within the VTAC program should determine if and how requests can be triaged to existing community resources such as local pharmacies for minor ailments or medication reviews, or public health for STI testing.

Compared to the current EAVC program, the VTAC program provides: 1) family physician expertise from 8am to 8pm (EAVC: 1pm to 9pm), 2) in-person and hybrid care services, 3) a local and team-based approach to care, and 4) a formal attachment mechanism through IVC. If the VTAC model of care were to be integrated with Health811 and EAVC, each "layer" within the larger virtual first system can provide differential services and coverage. For example, the VTAC program could provide services during the day whereas EAVC could provide after-hours services.

When comparing the VTAC and EAVC programs, a higher proportion of VTAC visits are attended by unattached patients (70% in VTAC vs. 35% in EAVC), as shown in Table 4. The proportion of visits that result in patients being directed to the ED or referred to specialists are similar between

the two programs. However, it is likely that there are differences between the patient population, reason for visit, and complexity of visit between those that access these services.

Though this comparison reflects outcomes in Q3 2023, it is important to note that these programs are at different levels of maturity with the VTAC program operating since March 2020 and the East Region Virtual Care Clinic since July 2023.

Table 4. Comparison of visit outcomes between VTAC and EAVC in Q3 2023.

Visit Characteristic/Outcome	VTAC	EAVC (East)
Number of visits	13343	3990
Proportion of visits attended by unattached patients	69.9%	34.7%
Proportion of visits directed to the ED	1.6%*	1.7%
Proportion of visits advising patients to follow-up with their regular PCP	2.2%*	3.9%
Proportion of visits referred to specialists	4.3%*	4.2%
Patient-initiated cancelled visits (as a percentage of total visits)	2.6%	8.9%
No shows (as a percentage of total visits)	6.6%	24.3%

*Only includes physician-only and hybrid visit outcomes; excludes paramedic-only visit outcomes.

KEY CONSIDERATIONS FOR SPREAD, SCALE, AND SUSTAINABILITY

IDENTIFYING APPROPRIATE REGIONS FOR SPREAD AND SCALE

To identify regions for spread, a comprehensive community needs assessment should be conducted to determine where the VTAC model of care would be appropriate. This should be prioritized in under-resourced regions that do not have urgent care clinics. The assessment should consider if the program can adequately address the unmet health needs of the region, and whether the gaps in care can be fulfilled by existing programs, resources, or infrastructure. Accessibility should also be considered including whether identified regions have the necessary technological infrastructure (i.e., reliable cellular reception, Internet) and whether the program should be offered in multiple languages. There is also a need to consider the equitable distribution of resources across the province recognizing that the VTAC cost per visit is higher compared to other provincial services (i.e., EAVC, pharmacy).

STAFF ENGAGEMENT AND RETENTION

Family physicians like working in the VTAC program because it enables them to practice rural-style medicine from their preferred location, provides meaningful work where they feel they are making an important contribution, and offers a flexible work schedule. They felt adequately compensated for their time and liked that they were not responsible for administrative work related

to OHIP billing. Similarly, community paramedics liked working in VTAC because it provided a good work-life balance with defined clinic hours and weekends off.

The ability for family physicians to escalate care to non-emergent, in-person options made them feel supported, increased their ability to practice evidenced-based medicine, and provided them with the reassurance that their work was effective in diverting unnecessary ED visits. Family physicians that also worked in urban areas perceived their work through the VTAC program to be more impactful, describing some of their work in urban areas as reassuring the worried well. All staff interviewed, especially local staff (i.e., MOAs, paramedics), felt that their work within the program was fulfilling a need in Renfrew County, supporting program buy-in among staff and contributed to job satisfaction.

There is a need to maintain the components of the VTAC program that support job satisfaction including good work-life balance, flexible scheduling, adequate compensation, minimal administrative tasks related to billing, and the ability to leverage non-emergent, in-person resources.

BUILDING TRUST WITHIN THE CARE TEAM

In the VTAC model, building trust between staff members, especially physicians and paramedics, was crucial. Though one of the attractive features of the VTAC program is the flexible work schedule, it also poses a barrier to building rapport and trust among staff members, especially for those who work infrequently. In the program, there are 26 MOAs covering 10.0 FTE, 12 paramedics covering 7.1 FTE, and 46 physicians covering 6.0 FTE. The ability for flexible scheduling should be balanced with the goal of building a cohesive care team. For example, staff may be required to be available for a certain number of hours per month, or preference can be given to staff who have more availability. Staff who work more frequently within the program may be more up-to-date on program changes.

FINANCIAL PENALTY TO OTHER FAMILY PHYSICIANS

In Renfrew County, physicians at local FHTs were penalized financially for patients who used VTAC services but were rostered with the FHT. There were instances where the FHT asked VTAC physicians not to see their patients and the FHT does not promote the program to rostered patients. If the VTAC program were to be replicated in other regions, physicians will be penalized if rostered patients use VTAC services and will likely cause displeasure among local family physicians.

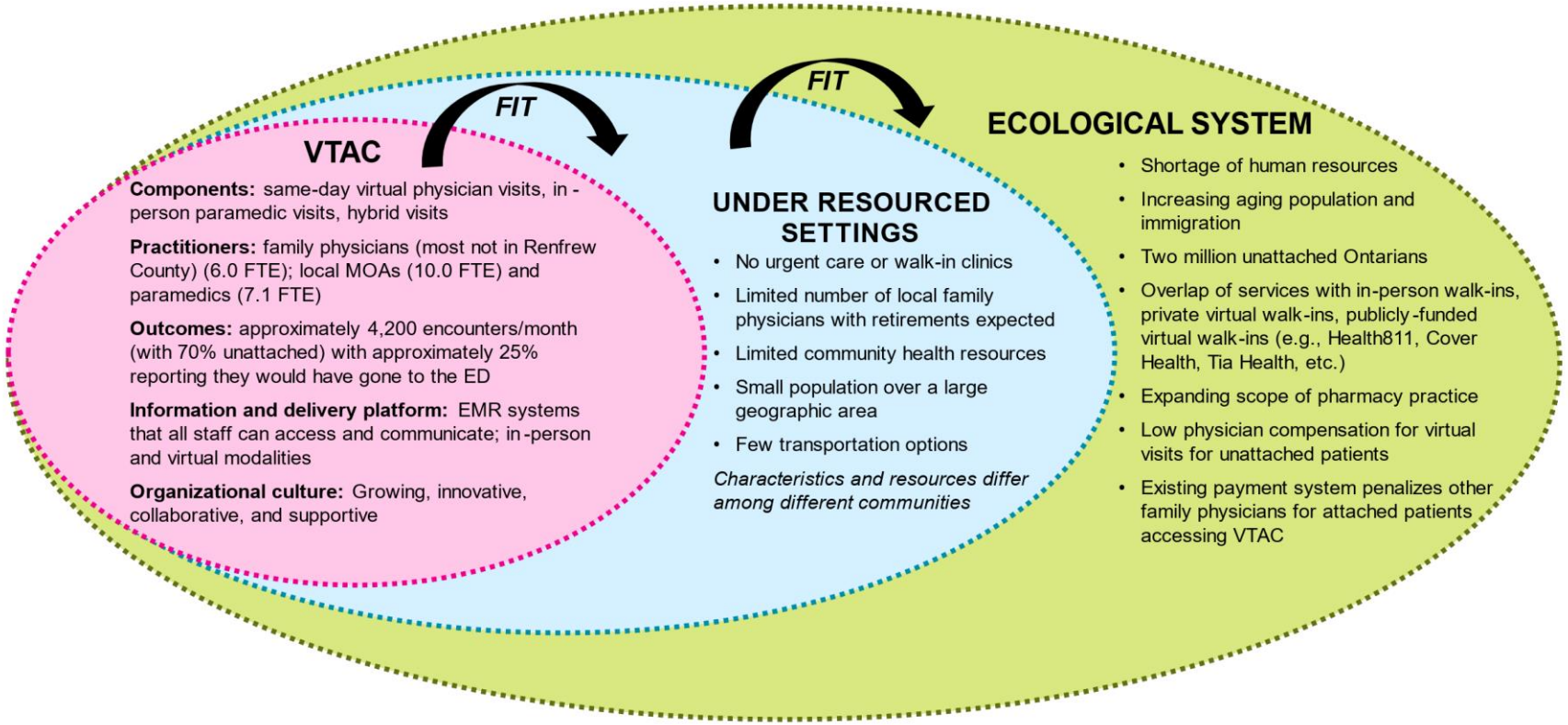
FUNDING MODEL

Currently, physicians delivering services in the VTAC program bill OHIP using fee codes A101 (video) and A102 (phone) compensated at $20 and $15 per visit, respectively, for family physician visits. The program receives additional funding from OH to compensate physicians for additional non-clinical administrative work which comprised approximately 70% of physician costs in Q3 2023.

CONTEXTUALIZING PROGRAM SUSTAINABILITY

Figure 8 presents considerations for the sustainability of the VTAC program using the dynamic sustainability framework, which emphasizes the need for a service to evolve and be refined within a changing community setting nested within the greater health care system (11).

Figure 8. The VTAC model of care according to the dynamic sustainability framework.



The spread of the VTAC model of care to other regions will need to be adapted to the population being served including patient demographics, culture, size, geographic area, health care needs, and existing care resources and programs. There is a need to optimize the fit of the VTAC program to improve the benefit and sustainability of the service. This will require continued learning and problem solving, and ongoing adaptation of the service with a primary focus on fit between health care service, community, and the health care system in which it operates. Continuous feedback and monitoring are recommended to allow the program to be refined and optimized according to local needs.

Recommendations for program integration, spread, scale, and sustainability

1. Spread of the program would be most appropriate in regions that do not have access to urgent care services, have high rates of unattachment, and have an allied health program that has capacity to conduct in-person assessments, such as community paramedicine.
2. To identify where the VTAC model of care would be most appropriate, conduct a comprehensive community needs assessment. The assessment should consider if a VTAC program can adequately address the unmet health needs of the region, and whether the gaps in care can be fulfilled by existing programs, resources, or infrastructure.

4.0 Evaluation Limitations

This evaluation has limitations as listed below:

1. The research team did not have access to clinic and EMR data, thus, we did not evaluate the quality of care received.
2. The use of administrative health data was out of scope for this evaluation, thus, the effectiveness and impact of the VTAC program was not evaluated (e.g., impact of VTAC on ED visits avoided).
3. The research team did not conduct any interviews with patients. Instead, we relied on interviews conducted by the VTAC research team between October 2023 to January 2024.
4. The VTAC program is just beginning to expand the scope of practice for community paramedics. We are not able to evaluate the full suite of services provided by paramedics. The VTAC program rapidly evolves, and recent program changes may not be reflected in this evaluation.
5. The interviews conducted were completed at one point in time creating potential bias. For example, presumably, physicians who like the program are the ones that continue to work there. Staff may have responded favourably to obtain continued funding of the VTAC program and could have introduced social desirability bias in interviews.
6. Due to limitations with the data, we were unable to analyze reasons for visits by modality. Additionally, the cost comparison analysis took into account many assumptions regarding cost avoidance.

5.0 Conclusion

The VTAC program fills a care gap in Renfrew County by using a mix of local and non-local staff to provide both in-person and virtual care services. There is a clear demand for the program in Renfrew County as appointment slots are full month after month. Patients are satisfied with the program and report that it has helped them avoid ED visits. This approach to care benefits when trust is established between staff (i.e., MOAs, community paramedics, and family physicians), which enables care to be delivered efficiently and effectively. The VTAC program also has an attachment pathway for patients through the IVC program. Further evaluation is needed on the IVC program to determine its impact on the quintuple aim and ability for spread, scale, and sustainability.

The program faces challenges providing care for unattached patients with the added complexity that many of these patients are marginalized (e.g., low income, few transportation options, do not receive regular health care, lack of other care resources in the region, etc.). However, the cost per visit is relatively high compared to other alternatives including pharmacy services and the EAVC program. Further evaluation is needed to determine whether the complexity of clinical presentations and quality of care justifies the relatively high cost.

The VTAC model of care appears to be most valuable in rural or under-resourced regions. If the program were to be replicated, it is well-positioned to be integrated into OHTs, and can be integrated into Health811 and regional EAVC programs, with additional consideration to triage criteria and resource allocation.

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Appendix A: Interview Guides

A1. Medical Office Assistant Interview Guide

Welcome/Introductions

Thank you for agreeing to talk about your experience and thoughts about VTAC program. I'm [Name, Credentials, Affiliation]. We are conducting this interview to understand your experience working with VTAC. Please feel free to share what comes to mind – and don't hold back. Your interview will help us understand patients', provider, and staff experiences and how we can make it better for future patients.

Our discussion should take about 45 minutes. With your permission, I will audio-record our conversation so that I can make sure I capture all your views without having to scribble them down as we talk. We will then have this conversation transcribed and we will make sure that the transcription will be cleared of any identifying information so that your responses cannot be traced back to you. Any results that are published will simply be a summary of the findings derived from all participant interviews. It is possible that we may include individual quotes that you have provided us with during this interview. In such instances, no identifiable reference will be made to you directly.

At any point during our discussion, you may choose not to respond to a specific question. Please know that we can take a break at any time or skip over a question if you do not feel comfortable. If you wish to end our discussion before I have asked all the questions, or to withdraw from the evaluation at any time during the interview, you are free to do so. Do you have any questions?

Are you comfortable with our conversation be audio-recorded? We want to make sure that we capture all the information you share with us.

☐ Yes ☐ No

[If yes, begin recording]

Participant Role and Responsibilities

1. Can you tell me about your role and responsibilities as part of VTAC?
   Probes:
   - How long have you worked as [role] in VTAC?
   - What does a typical day look like?
   - How has your role evolved/changed since you started working in VTAC?

2. What did your onboarding process look like at VTAC?
   Probes:
   - Did you receive any training opportunities, at the beginning or while working at VTAC? If so, what were they?
   - Did the training differ from other positions you may have had as a medical receptionist?
     - Can you explain the training process for digital medical equipment?
     - Are there training opportunities that you haven't received by you wished to receive for your role in VTAC?

3. How does your role as a medical receptionist in VTAC differ from other roles you might have had in primary care? (If they have worked in other primary care settings)?
   Probes:
   - How is it the same?
   - Different?

4. Can you tell me about the different tasks you do at work?
   Probes:
   - What is the triage process like?
   - How comfortable do you feel when triaging patients?
   - What is your involvement with patient encounters?
   - How comfortable do you feel when using the digital medical equipment?
   - What health history do you capture for triaged phone calls?
   - Is it different for in-person appointments?
   - Does this change if the patient has been seen at VTAC previously?

Patient Care

5. In your role, tell me about the patients that you interact with.
   Probes:
   - What types of patients are being managed through VTAC?
   - How would you describe the demographics (e.g., age range, gender, geographic location, racial and cultural background, socioeconomic status) of the patients that call?
   - In your experience, what are the typical reasons for why patients call VTAC?
   - Do you receive many repeat calls from patients (i.e., visiting the same patient for the same or a different health concern)?
   - What happens if a call is missed?

6. In your view, to what extent are the needs and preferences of patients being met by VTAC?
   Probes:
   - In what ways are their need being met or not? (e.g., improved access, wait times, avoid visit to ED)
   - In your view, where are the missing points regarding their care?
   - What barriers to patients face to accessing VTAC?

7. Have you heard stories about the experiences of patients receiving care from VTAC?
   - Can you describe a specific story?
   - What is the most common complement you hear from patients about the VTAC service?
   - Are there any complaints?
     - If yes, what are the most common?

8. In your role, how do you coordinate or interact with other VTAC members (e.g., paramedics, family physicians)?
   Probes:
   - In what instances do you triage or escalate care to them?
   - In what instances do you direct patients to other resources outside of VTAC?
   - What are your thoughts on this process?

9. Can you tell me about the patient journey within the program?
   Probes:
   - From what you have observed, how does a patient come to know about the VTAC program?
   - What happens when a patient contacts the VTAC program?
   - What data is collected about a patient at triage (e.g., attachment status, demographic information, etc.)? Who is this shared with?
   - Can you explain the triage process and how you determine the appropriate course of action for patients?
   - What is the criteria or decision-making process for determining when an in-person vs. virtual visit is deemed necessary for a patient?

10. In cases when virtual physician appointments are full:
    - How frequently do patients call back to receive an appointment?
    - Are patients directed to seek alternate care? If so, where?

11. What kind of steps have been taken to address potential barriers to patients engaging with VTAC?
    Probes:
    - How is the program designed to meet different accessibility needs?
    - What improvements to VTAC can be made to better meet the unique needs of patients?
    - What resources and supports do you wish you had to help you support patients within VTAC?

Coordination and Integration of Care

12. What components of the program are its greatest strength?
    Probes:
    - What do you think is the appeal of the program?
    - What value does VTAC provide to patients?

13. What are the areas of growth or improvement for the program?
    Probes:
    - In your view, are there any elements of the VTAC that are unnecessary or that could be scaled back?

14. How do you ensure continuity and coordination of care for patients?
    Probes:
    - How do you communicate with other staff members to coordinate patient care?

15. How does VTAC currently fit within broader primary care services?
    Probes:
    - How do you envision VTAC fitting within broader primary care services? What would be the key functions/components of this model?
    - What changes are needed to further integrate VTAC with existing care resources (including primary, community, acute, and emergency care)?

16. In your view, what makes the VTAC program successful in Renfrew County?
    - What components help make it successful?

17. If you could change anything about the VTAC program, what changes would you make?
    Probes:
    - What challenges, if any, do you face with regards to your role/involvement with VTAC?
    - How could VTAC be improved to better fit within your workflow and organizational structure/process?
    - What additional resources would be helpful to support your role within VTAC?

Those are all the specific questions that I had today. Was there anything else that you would like to share with me that perhaps I didn't ask?

A2. Family Physician Interview Guide

Welcome/Introductions

Thank you for agreeing to talk about your experience and thoughts about VTAC program. I'm [Name, Credentials, Affiliation]. We are conducting this interview to understand your experience working with VTAC. Please feel free to share what comes to mind – and don't hold back. Your interview will help us understand patients', provider, and staff experiences and how we can make it better for future patients.

Our discussion should take about 45 minutes. With your permission, I will audio-record our conversation so that I can make sure I capture all your views without having to scribble them down as we talk. We will then have this conversation transcribed and we will make sure that the transcription will be cleared of any identifying information so that your responses cannot be traced back to you. Any results that are published will simply be a summary of the findings derived from all participant interviews. It is possible that we may include individual quotes that you have provided us with during this interview. In such instances, no identifiable reference will be made to you directly.

At any point during our discussion, you may choose not to respond to a specific question. Please know that we can take a break at any time or skip over a question if you do not feel comfortable. If you wish to end our discussion before I have asked all the questions, or to withdraw from the evaluation at any time during the interview, you are free to do so. Do you have any questions?

Are you comfortable with our conversation be audio-recorded? We want to make sure that we capture all the information you share with us.

☐ Yes ☐ No

[If yes, begin recording]

Participant Role and Responsibilities

1. Where are you physically located?

2. Do you have your own practice outside of VTAC? If so, how many hours per week do you work within your own practice?

3. Can you tell me about your role and responsibilities as part of VTAC?
   Probes:

- How long have you worked as [role] in VTAC?
- What does a typical day look like?
- Approximately how many patients do you see in a day?
- How has your role evolved/changed since you started working in VTAC?
- Why did you decide to start working here?
- How many hours/days per week are you working with VTAC?
- Do you conduct virtual and or in-person appointments?

4. In your role, how do you coordinate or interact with other VTAC members (e.g., medical receptionist, paramedics)?
   Probes:
   - In what instances do you triage or escalate care to other providers (e.g., paramedics, specialists, etc.)?

5. Did you receive any training opportunities for your involvement with the VTAC? If so, what were they?
   Probes:
   - Are there training opportunities that you haven't received by you wished to receive for your role in VTAC?

Patient Care

6. In your role, tell me about the patients that you interact with/serve.
   Probes:
   - What types of patients are being managed virtually and in-person through the VTAC?
   - How would you describe the demographics (e.g., age range, gender, geographic location, racial and cultural background, socioeconomic status) of the patients you care for?
     - How does this compare to the demographics of the population that access care through a regular family practice?
   - In your experience, what types of health care services or support do you typically provide to patients during virtual and in-person visits?
   - Do you find you are able to provide quality care in the different modalities of the visits?
     - Virtual?
       - What types of visits are done by virtual video visits? For what conditions?
     - In person?
       - What types of visits are done in-person? For what conditions?
     - Hybrid?
       - What types of visits are done in hybrid? For what conditions?
     - Do patients have a strong preference for one modality over the other?
       - [If YES], why do you think that's the case?
   - Do you conduct many repeat visits for patients (i.e., visiting the same patient for the same or a different health concern)?

7. I am wondering if you can help me get a better understanding of the patient journey.
   Probes:
   - From what you have observed, how does a patient come to know about the VTAC program?
   - Do patients tell you about their journey to get to VTAC? What other places have they tried?
   - What happens when a patient contacts the VTAC program?
   - What clinical information can you access when you see a VTAC patient?
   - Can you explain the criteria or decision-making process for determining when an in-person vs. virtual visit is deemed necessary for a patient in VTAC?
   - How do you determine that a virtual visit should be escalated to an in-person visit? How often does this happen?
   - How does the choice of a hybrid visit, or a paramedic visit only get made?
   - What happens after a visit if another visit is required? Or if testing is required?
   - Can you tell me about referral process for specialists?
   - What is the process for medication reviews and renewals?
     - For what conditions do you often have to renew prescriptions (e.g., hypertension, renal, lipids, GI, pain management, diabetes)?
     - What happens if a prescription doesn't get renewed? How is that communicated to the patient?
     - In your view, how does prescription renewal bring value to the patients and the VTAC? How does it contribute to the broader goals of providing access to quality care?
     - If VTAC isn't available, have patients mentioned where else they get their prescriptions renewed?

8. In your view/role, can you describe how VTAC ensures the patients' problem(s) are addressed adequately and resolved?
   Probes:
   - Are/were there instances that you have observed where the patients' problem(s) were NOT addressed or resolved? What happens then?
   - In your view, where are the missing points within VTAC regarding patient care?

9. In your view, do you think VTAC appropriately addresses the health care needs of patients?
   Probes:
   - For which types of patients or patient complaints do you feel VTAC is most appropriate or useful?
   - For which types of patients or patient complaints do you feel VTAC is NOT appropriate or useful?
10. What kind of steps have been taken to address potential barriers to patients engaging with VTAC?
    Probes:
    a. How is the program designed to meet different accessibility needs?
    b. What improvements to VTAC can be made to better meet the unique needs of patients?

c. What resources and supports do you wish you had to help you support patients within VTAC?

11. Can you tell me about your use and access the VTAC EMR?
    - What works about the EMR system?
    - Are there any missing components?

Coordination and Integration of Care

12. What are the areas of growth or improvement for the program?
    Probes:
    - In your view, are there any elements of the VTAC that are unnecessary or that could be scaled back?

13. Is VTAC able to provide continuity and coordination of care for patients? Why or why not?
    Probes:
    - How do you communicate with other staff members to coordinate patient care?

14. What changes are needed to further integrate VTAC with existing care resources (including primary, community, acute, and emergency care)?

Spread, Scale, and Sustainability

Given everything you have shared about the VTAC program, we're going to talk about the possibility of spreading and scaling the program in other regions across the province.

15. In your view, what makes the VTAC program successful in Renfrew County?
    - What components help make it successful?

16. How do you envision the scale and spread of VTAC to other regions in Ontario?
    Probes:
    - Within the community paramedic role, what elements should be maintained?
    - Do you have any recommendations for enhancing the role for community paramedics?

17. How do you envision sustaining VTAC in Renfrew County in the future?
    Probes:
    - Within your role, do you foresee any barriers when thinking about the sustainability of VTAC?

18. If you could change *anything* about the VTAC program, what changes would you make?
    Probes:
    - What challenges, if any, do you face with regards to your role/involvement with VTAC?
    - How could VTAC be improved to better fit within your workflow and organizational structure/process?

- What additional resources would be helpful to support your role within VTAC?

Those are all the specific questions that I had today. Was there anything else that you would like to share with me that perhaps I didn't ask?

A3. Paramedic Interview Guide

Welcome/Introductions

Thank you for agreeing to talk about your experience and thoughts about VTAC program. I'm [Name, Credentials, Affiliation]. We are conducting this interview to understand your experience working with VTAC. Please feel free to share what comes to mind – and don't hold back. Your interview will help us understand patients', provider, and staff experiences and how we can make it better for future patients.

Our discussion should take about 45 minutes. With your permission, I will audio-record our conversation so that I can make sure I capture all your views without having to scribble them down as we talk. We will then have this conversation transcribed and we will make sure that the transcription will be cleared of any identifying information so that your responses cannot be traced back to you. Any results that are published will simply be a summary of the findings derived from all participant interviews. It is possible that we may include individual quotes that you have provided us with during this interview. In such instances, no identifiable reference will be made to you directly.

At any point during our discussion, you may choose not to respond to a specific question. Please know that we can take a break at any time or skip over a question if you do not feel comfortable. If you wish to end our discussion before I have asked all the questions, or to withdraw from the evaluation at any time during the interview, you are free to do so. Do you have any questions?

Are you comfortable with our conversation be audio-recorded? We want to make sure that we capture all the information you share with us.

☐ Yes ☐ No

[If yes, begin recording]

Participant Role and Responsibilities

1. Can you tell me about your role and responsibilities as part of VTAC?
   Probes:
   - How long have you worked as [role] in VTAC?
   - What does a typical day look like?
     - What does a typical day look like for a paramedic who is involved in making an in-person visit?
       - What is the travel time on average?
       - Can you walk me through a case example on what this looks like?
     - What does a typical day look like for a paramedic who does not have any in-person visits to make?
   - How has your role evolved/changed since you started working in VTAC?
   - How does it compare to the other work you do as a paramedic?

2. In your role, how do you coordinate or interact with other VTAC members (e.g., medical receptionist, family physicians)?
   Probes:
   - In what instances do you triage or escalate care to other providers (e.g., family physicians)?

3. Did you receive any training opportunities for your involvement with the VTAC? If so, what were they?
   Probes:
   - Are there training opportunities that you haven't received by you wished to receive for your role in VTAC?

Patient Care

4. In your role, tell me about the patients that you interact with/serve.
   Probes:
   - What types of medical issues are being managed in-person through the VTAC?
   - How would you describe the demographics (e.g., age range, gender, geographic location, racial and cultural background, socioeconomic status) of the patients you visit/care for?
   - In your experience, what types of health care services or support do you typically provide to patients during in-person visits (at home or at a clinical assessment centre)?
     - For what reasons do you see a patient at home versus at the clinical assessment centre? (CAC)
       - Acuity
       - Limited availability of family physicians
   - Does care differ between patients at home versus at a clinical assessment centre?
     - How does this compare to the medical services you may provide through other programs (i.e., RPM)
   - Do you conduct many repeat visits for patients (i.e., visiting the same patient for the same or a different health concern)?
   - Are there times when patients are referred to you - that should have had care elsewhere? Can you give some examples?

5. I am wondering if you can help me get a better understanding of the patient journey.
   - From what you have observed, how does a patient come to know about the VTAC program?
   - What happens when a patient contacts the VTAC program?
   - Can you tell me a bit about hybrid vs paramedic only visits?
     - How do they differ regarding process?
     - How does the type of visit get decided?
     - Types of patients?
     - Types of medical issues?

- Approximately how many patients do you see in a day? How many of these are at a patient's home vs. at a CAC? How do these patients and visits differ?
- What happens after the visit?
- Tell me about the remote patient monitoring program and its involvement with VTAC.
    - What clinical conditions does the program monitor? How does it monitor patients?
    - Who monitors these patients?
    - Where is this information stored?
    - Is the data collected from the RPM program shared with VTAC? Is it shared with any health care providers outside of VTAC?
    - How are patients onboarded onto the RPM program?

6. In your view/role, can you describe how VTAC ensures the patients' problem(s) are addressed adequately and resolved?
   Probes:
    - Are/were there instances that you have observed where the patients' problem(s) were NOT addressed or resolved?
        - What happens then?
    - Does VTAC follow-up with these patients?
    - In your view, where are the missing points within VTAC regarding patient care?

7. In your view, do you think VTAC appropriately addresses the health care needs of patients?
   Probes:
    - For which types of patients or patient complaints do you feel VTAC is most appropriate or useful?
    - For which types of patients or patient complaints do you feel VTAC is NOT appropriate or useful?

8. What kind of steps have been taken to address potential barriers to patients engaging with VTAC?
   Probes:
    - How is the program designed to meet different accessibility needs?
    - What improvements to VTAC can be made to better meet the unique needs of patients?
    - What resources and supports do you wish you had to help you support patients within VTAC?

9. In your opinion, what would patients do if they didn't have access to the VTAC service?

Coordination and Integration of Care

10. What do you think are the strengths of the program?
    Probes:
    - What do you think is the appeal of the program?
    - What value does VTAC provide to patients?

11. What are the areas of growth or improvement for the program?
    Probes:
    - In your view, are there any elements of the VTAC that are unnecessary or that could be scaled back?

12. How do you ensure continuity and coordination of care for patients?
    Probes:
    - How do you communicate with other staff members to coordinate patient care?

13. Can you tell me about your use and access the VTAC EMR?
    - What works about the EMR system?
    - Are there any missing components?

14. How does VTAC currently fit within broader primary care services?
    Probes:
    - How do you ***envision*** VTAC fitting within broader primary care services? What would be the key functions/components of this model?
    - What changes are needed to further integrate VTAC with existing care resources (including primary, community, acute, and emergency care)?

Spread, Scale, and Sustainability

Given everything you have shared about the VTAC program, we're going to talk about the possibility of spreading and scaling the program in other regions across the province.

15. In your view, what makes the VTAC program successful in Renfrew County?
    - What components make it successful?

16. How do you envision the scale and spread of VTAC to other regions in Ontario?
    Probes:
    - Within the community paramedic role, what elements should be maintained?
    - Do you have any recommendations for enhancing the role for community paramedics?

17. How do you envision sustaining VTAC in Renfrew County in the future?
    Probes:
    - Within your role, do you foresee any barriers when thinking about the sustainability of VTAC?

18. If you could change *anything* about the VTAC program, what changes would you make?
    Probes:
    - What challenges, if any, do you face with regards to your role/involvement with VTAC?
    - How could VTAC be improved to better fit within your workflow and organizational structure/process?

- What additional resources would be helpful to support your role within VTAC?

Those are all the specific questions that I had today. Was there anything else that you would like to share with me that perhaps I didn't ask?

A4. Program Leader Interview Guide

Welcome/Introductions

Thank you for agreeing to talk about your experience and thoughts about VTAC program. I'm [Name, Credentials, Affiliation]. We are conducting this interview to understand your experience working with VTAC. Please feel free to share what comes to mind – and don't hold back. Your interview will help us understand patients', provider, and staff experiences and how we can make it better for future patients.

Our discussion should take about 45 minutes. With your permission, I will audio-record our conversation so that I can make sure I capture all your views without having to scribble them down as we talk. We will then have this conversation transcribed and we will make sure that the transcription will be cleared of any identifying information so that your responses cannot be traced back to you. Any results that are published will simply be a summary of the findings derived from all participant interviews. It is possible that we may include individual quotes that you have provided us with during this interview. In such instances, no identifiable reference will be made to you directly.

At any point during our discussion, you may choose not to respond to a specific question. Please know that we can take a break at any time or skip over a question if you do not feel comfortable. If you wish to end our discussion before I have asked all the questions, or to withdraw from the evaluation at any time during the interview, you are free to do so. Do you have any questions?

Are you comfortable with our conversation be audio-recorded? We want to make sure that we capture all the information you share with us.

☐ Yes ☐ No

[If yes, begin recording]

Participant Role and Responsibilities

1. Can you tell me about your role and responsibilities as part of VTAC?
   Probes:
   - How long have you worked as [role] in VTAC?
   - What does a typical day look like?
   - Do you hold any other leadership positions across the healthcare system?
     - [If yes] How do these roles relate to VTAC?

2. Can you tell me about the roles of other individuals involved in the program (e.g., family physicians, community paramedics, administrative staff) and how you coordinate/interact with them?
   - Can you provide an overview of the staffing model?
     i. Paramedics

1. How many paramedics work for VTAC?
2. How many are scheduled to work per day?
3. How have their roles evolved since the program's inception?

ii. Family Physicians
1. How many family physicians work for VTAC?
2. How many are scheduled to work per day?
3. How have their roles evolved since the program's inception?

iii. Receptionists?
1. How many receptionists work for VTAC?
2. How many receptionists are scheduled to work per day?
3. How have their roles evolved since the program's inception?

- Have there been any changes made to the staffing model since the program's inception?

Implementation

3. Were you involved in the design and or the implementation of VTAC?
   [If yes, continue to Q4]
   [If no, skip to Patient Care section]

4. Can you describe the journey and process of designing and implementing VTAC?
   Probes:
   - What was your role in the implementation process?
   - Were there any specific resources or supports that helped facilitate/guide the implementation?
   - What challenges did you face and how did you overcome them?
   - How has VTAC evolved since its initial implementation?
   - Are there any lessons learned or best practices from the initial implementation that were applied in the subsequent iterations of the program?
   - How has your role evolved/changed since you started working in VTAC?

5. What stakeholders, groups, or organizations did you interact with to support the VTAC implementation?
   Probes:
   - Who did you engage or collaborate with (e.g., community organizations, OHTs, etc.)?
   - What challenges, if any, did you face when working with these groups?
   - How did you promote program buy-in from different groups?

Patient Care

6. In your view, to what extent are the needs and preferences of patients being met by VTAC?
   Probes:
   - In what ways are their need being met or not? (e.g., improved access, wait times, avoid visit to ED)
   - In your view, where are the missing points regarding their care?
   - What barriers to patients face to accessing VTAC?

7. Have you heard stories about the experiences of patients receiving care from VTAC?
    - Can you describe a specific story?

8. What kind of steps have been taken to address potential barriers to patients engaging with VTAC?
   Probes:
    - How is the program designed to meet different accessibility needs? Is there that can be done in this regard?

9. How does VTAC ensure continuity and coordination of care for patients?
   Probes:
    - How do staff members communicate to coordinate patient care?

10. How does VTAC currently fit within broader primary care services in Renfrew County?
    Probes:
    - How does VTAC compare to other primary care practices in Renfrew County (e.g., scope of services, program size, program integration, infrastructure, availability, etc.)?
    - How do you ***envision*** VTAC fitting within broader primary care services in the future?
    - What changes are needed to further integrate VTAC with existing care resources (including primary, community, acute, and emergency care)?

Program Components

11. Which components of the program are VTAC's greatest strengths?

12. How are staff members trained and onboarded to the program?

13. What are the areas of growth or improvement for the program?

14. How do you determine when existing staff are at capacity and program capacity needs to be increased (e.g., hiring more medical receptionists, paramedics, family physicians, etc.)?
    Probes:
    - How do you determine whether VTAC is meeting patient needs and demand?

Cost

15. What cost were considered when deciding how to implement or change VTAC?

Spread, Scale, and Sustainability

Given everything you have shared about the VTAC program, we're going to talk about the possibility of spreading and scaling the program in other regions across the province.

16. If the VTAC program were to spread and scale, how do you envision the scale and spread of VTAC this happening in other regions in Ontario?
    Probes:

- What elements of the program should be maintained?
- What lessons learned or recommendations can you share for the scale, spread, and implementation of VTAC?

17. How do you envision sustaining VTAC in Renfrew County in the future?
    Probes:
    - Can you provide any insights about plans for sustaining certain components of the VTAC program?
    - Clinical Assessment Centers: Are there strategies in place to ensure CACs remain open for in-person care in the future? Are there considerations for using space from existing practices to operate the CAC?
    - How will you measure program success and impact?
    - Do you foresee any barriers when thinking about the sustainability of VTAC?

18. What challenges, if any, do you face with regards to your role/involvement with VTAC?

19. What additional resources would be helpful to support your role within VTAC?

Those are all the specific questions that I had today. Was there anything else that you would like to share with me that perhaps I didn't ask?

Appendix B: Patient Interview Demographics

Table B1. Patient interview demographics (n=10).

	n
Gender	
Female	6
Male	4
Age	
18-64	9
65+	1
Attachment Status	
Attached	4
Unattached	3
Unknown	3
Occupation	
Employed	5
Unemployed	2
Retired	2
Unknown	1

Appendix C: Staffing Model

Table C1. Staffing model of the VTAC program.

Staff	FTE	Location	Availability
Medical office assistants	• 6.0 FTE remote • 4.0 FTE at CACs	Remote and in-person at CACs	Virtual: • 24/7. In-person at CACs: • Variable, according to CAC hours. Usually Monday to Friday from 8am – 4pm.
Paramedics	• 7.1 FTE	In-person at CACs or at a patient's home.	Variable, according to CAC hours. Usually Monday to Friday from 8am – 4pm.
Family physicians	• 6.0 FTE	Remote and in-person at CACs	Virtual: • 7 days per week from 8am – 8pm. In-person at CACs: • Variable, usually 8 hours per week.

Appendix D: Program Utilization Data

D1. Medical Office Assistant Calls

Figure D1-1. MOA triage calls by time and day (July 2023 to February 2024).

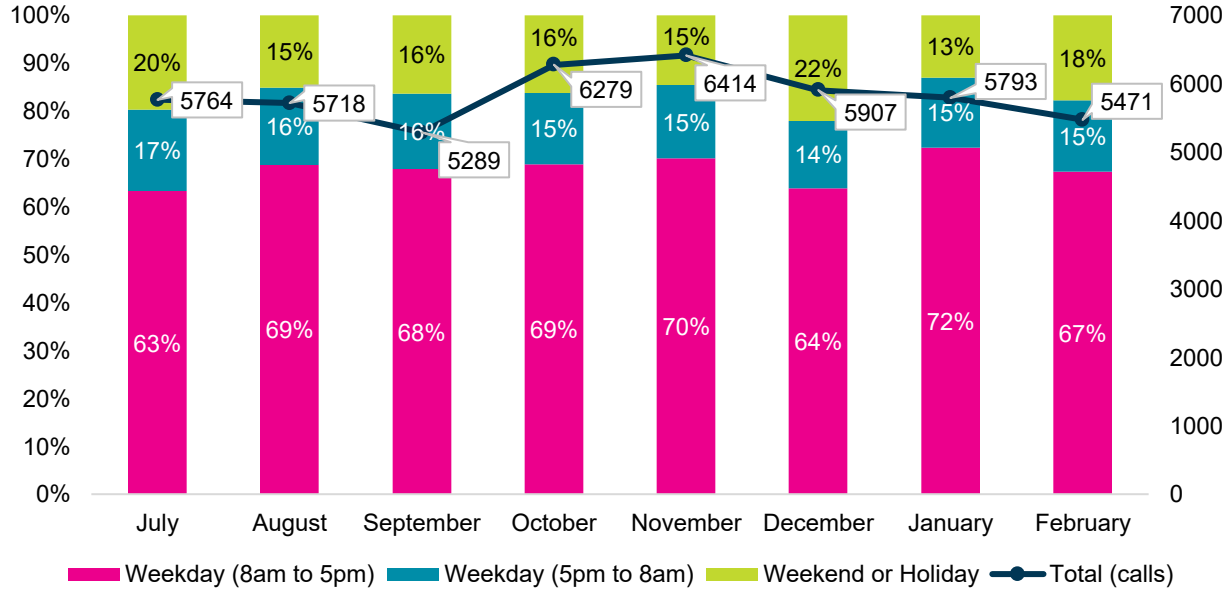
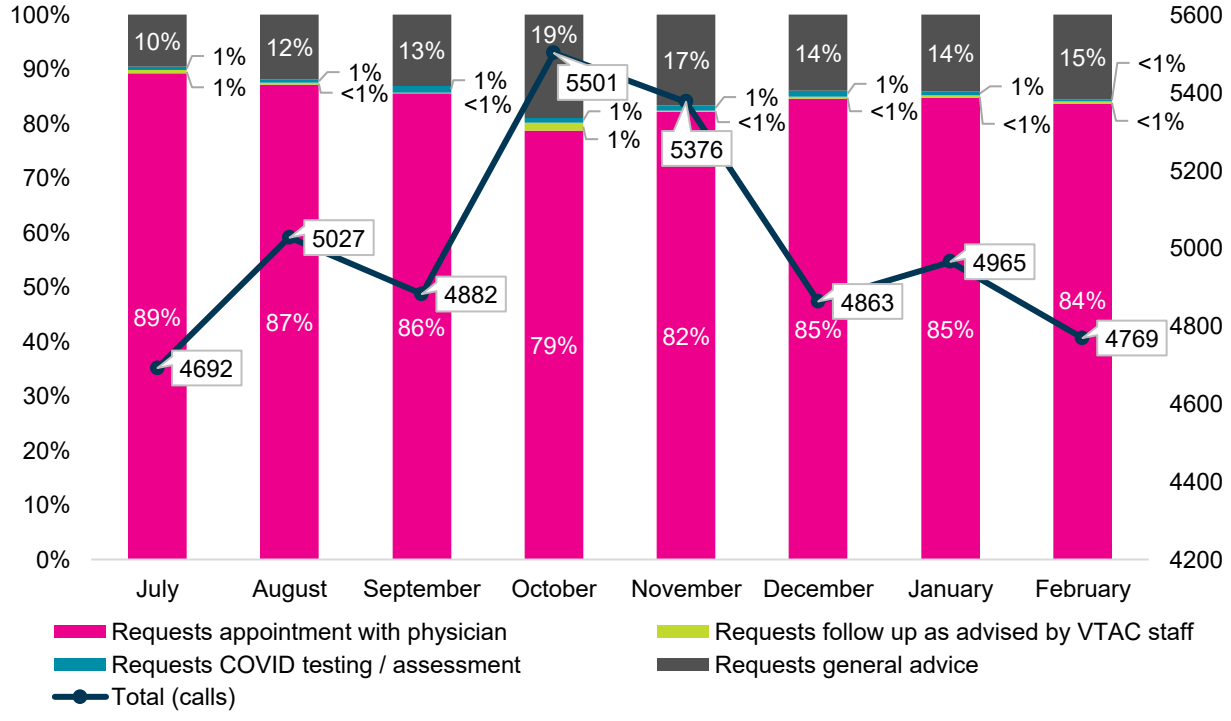


Figure D1-2. Reason for call (according to patient) (July 2023 to February 2024).



D2. Physician Profile and Appointments

Figure D2-1. Time spent practicing family medicine and location of VTAC physicians (n=44).

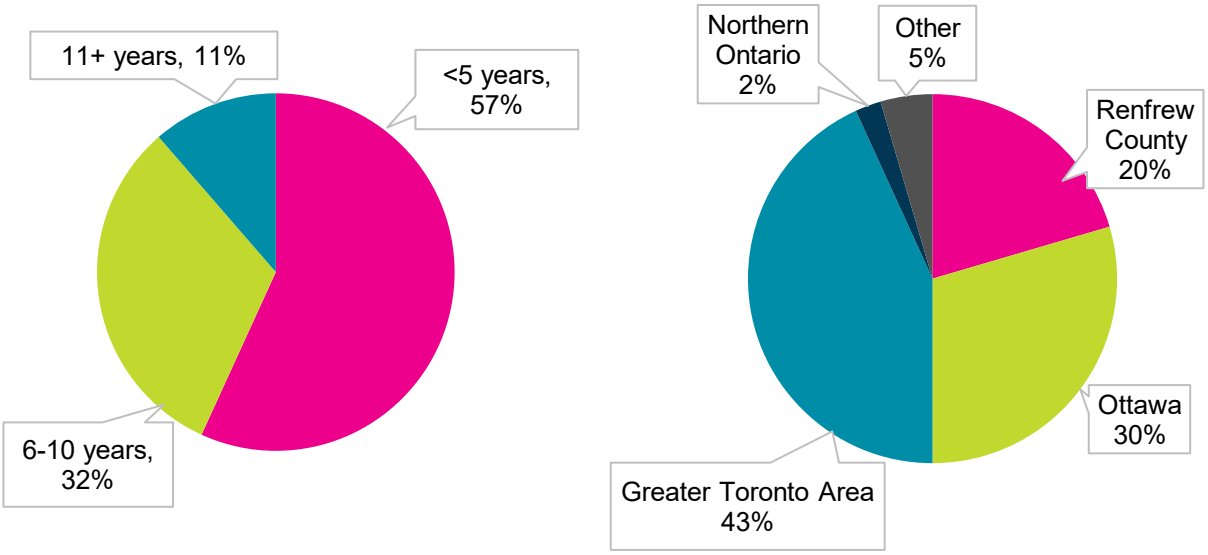


Figure D2-2. Physician-only appointments by modality (July 2023 to February 2024).

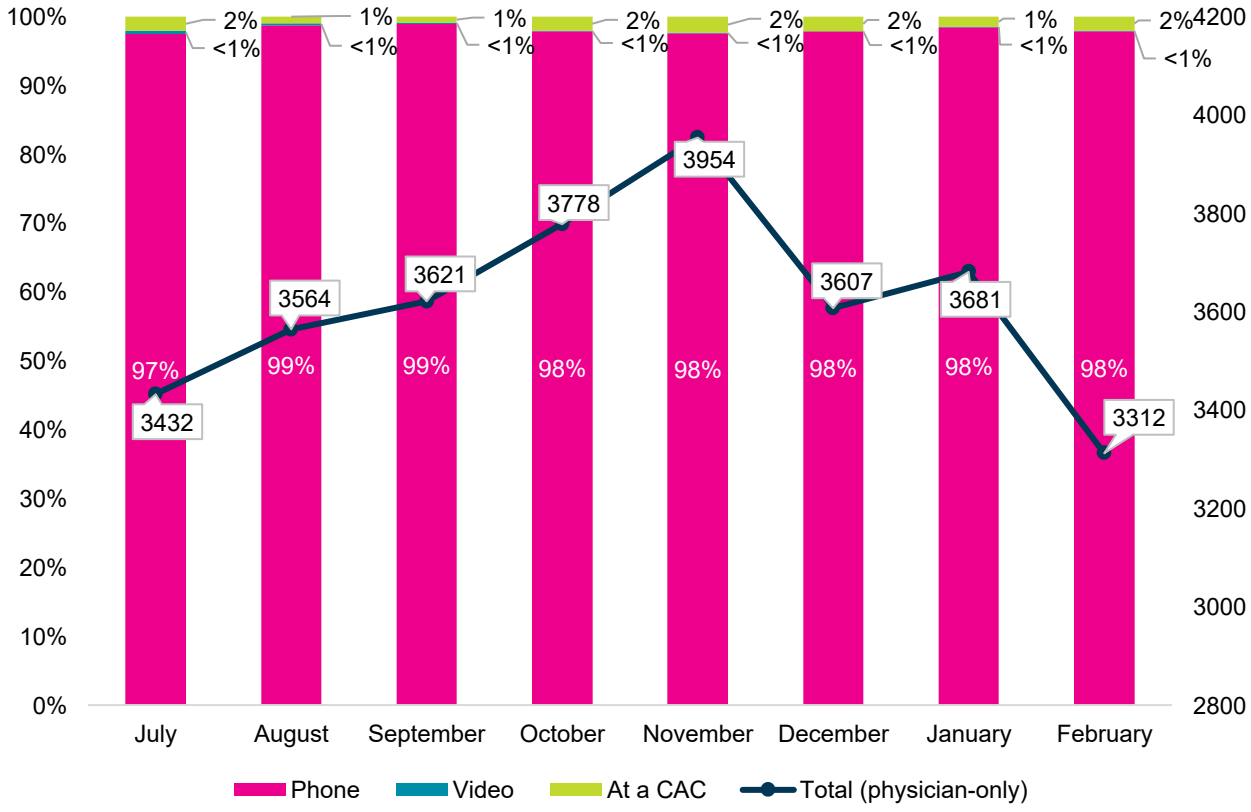


Figure D2-3. Reasons for physician-only and hybrid appointments (n=3,548) (February 2024).

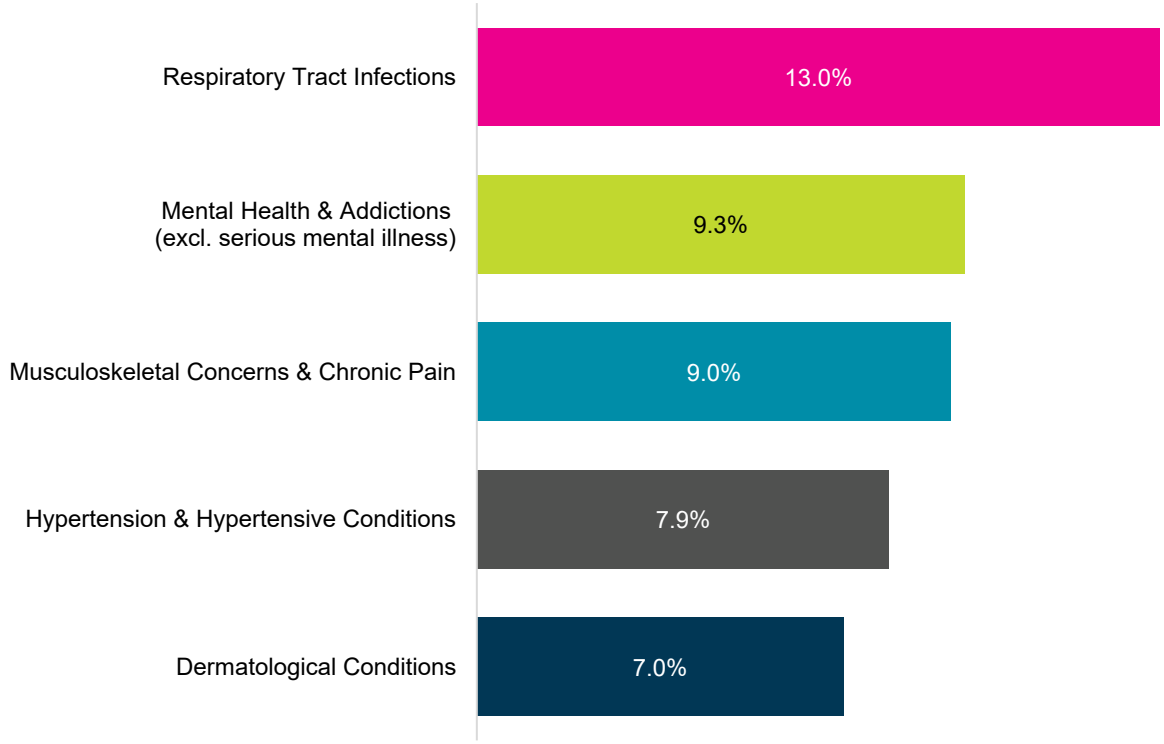
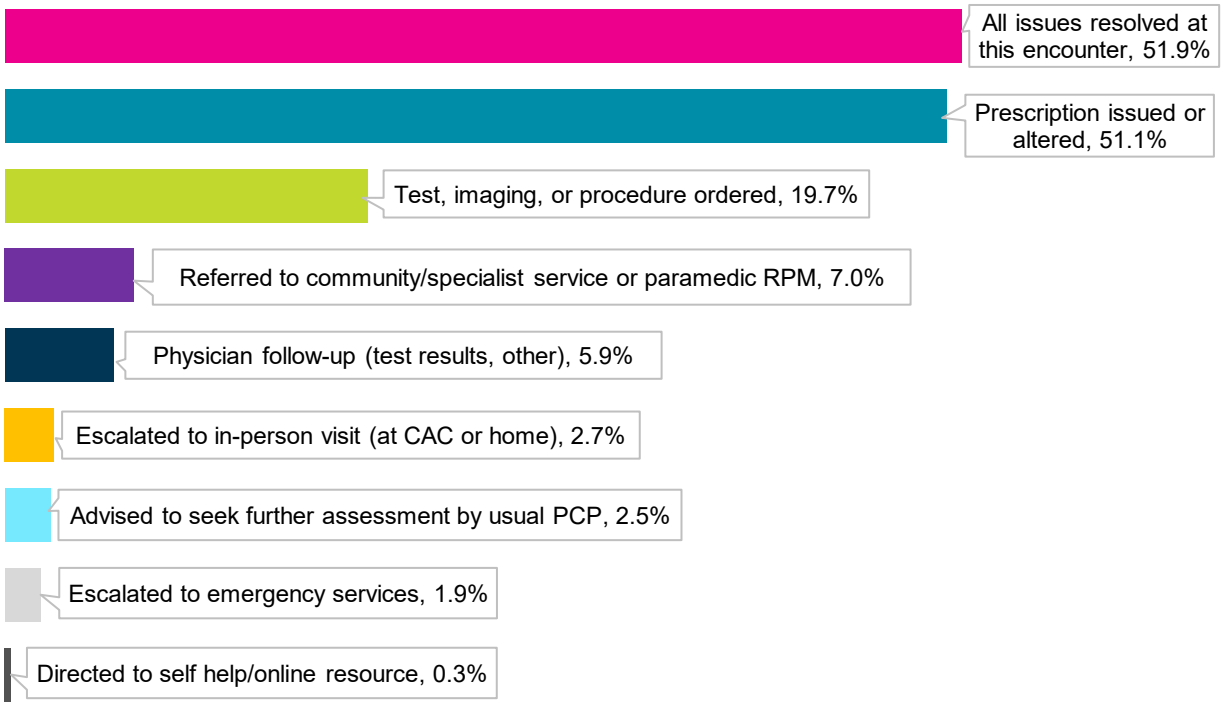


Figure D2-4. Outcome of physician-only and hybrid appointments* (n=3,548) (February 2024).



*Outcomes are multi-selection

D3. Paramedic Appointments

Figure D3-1. Paramedic-only appointments by modality (July 2023 to February 2024).

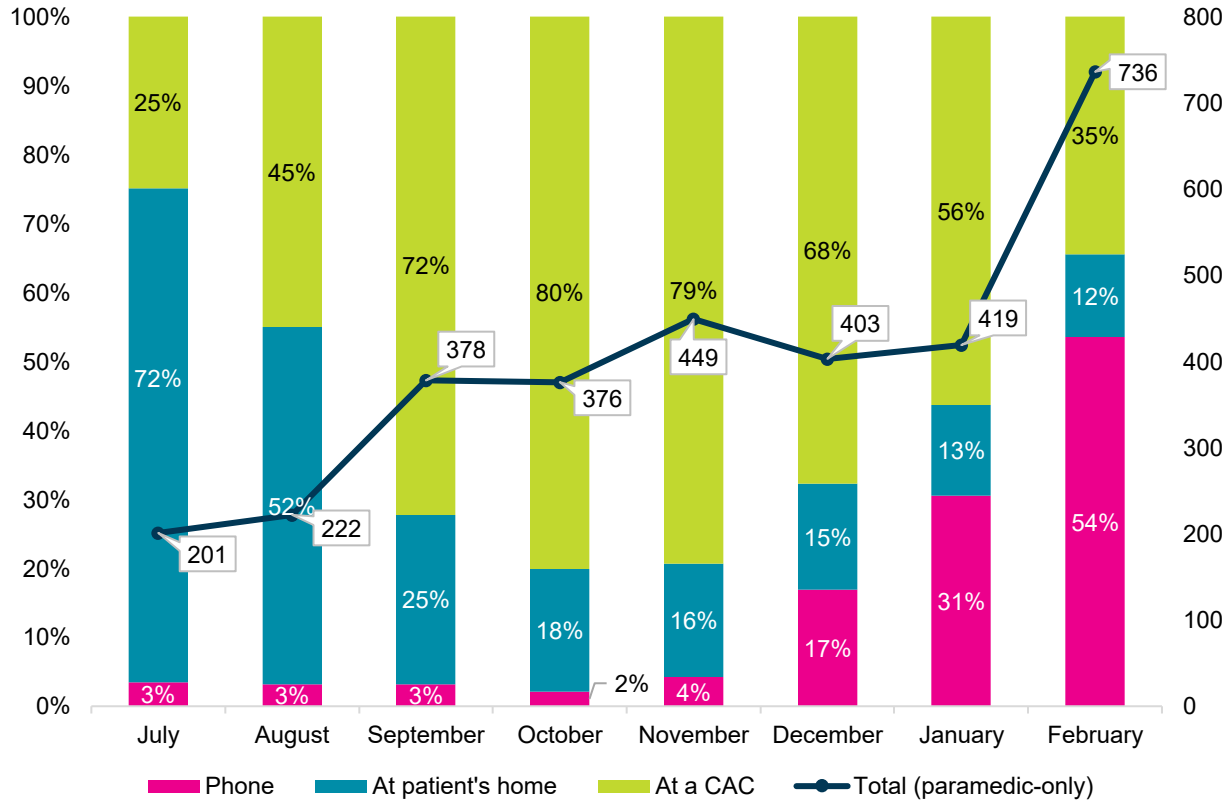
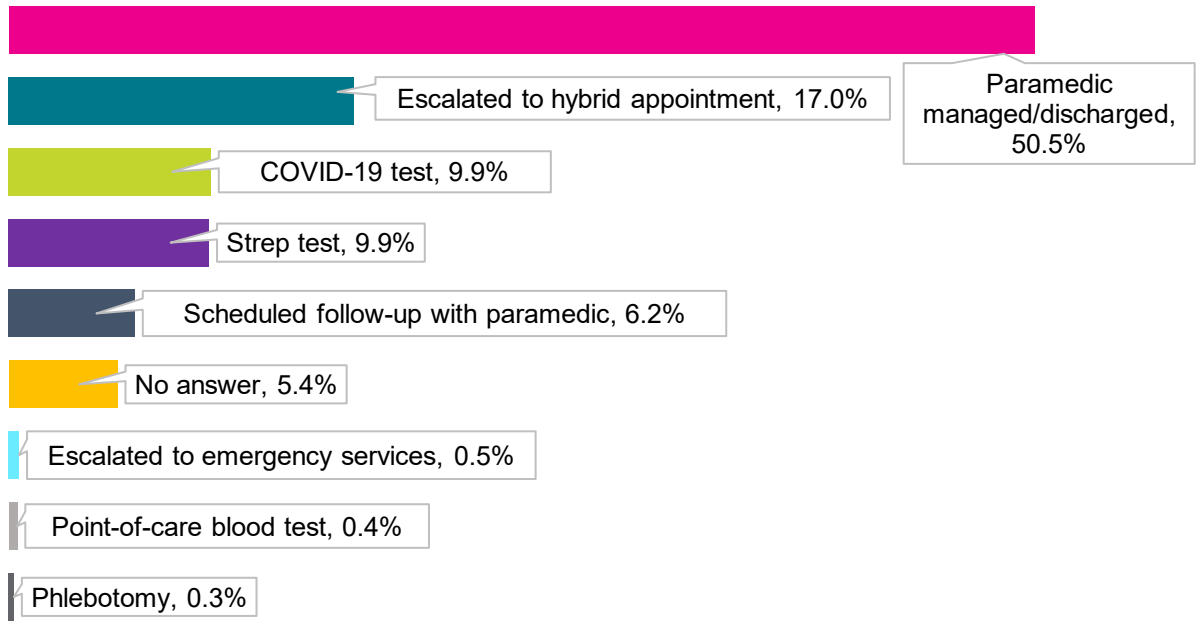


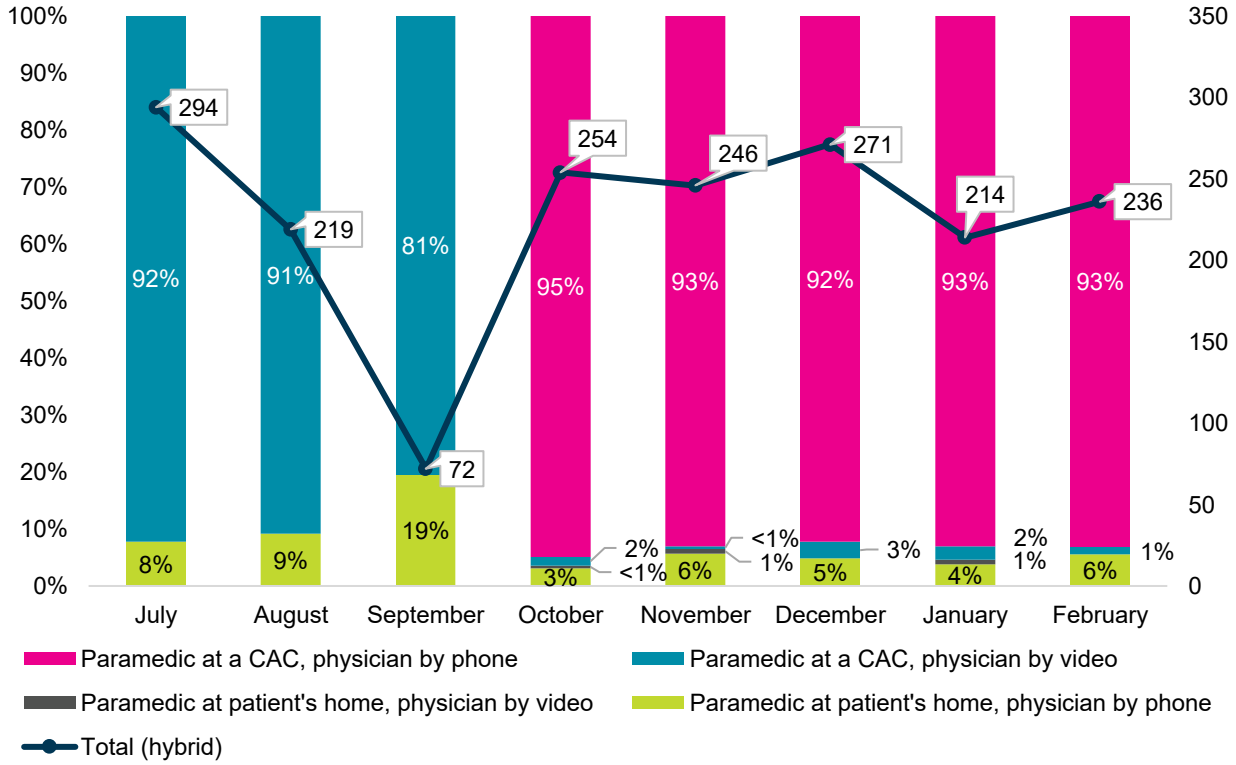
Figure D3-2. Outcome of paramedic-only and hybrid appointments* (n=972) (February 2024).



*Outcomes are multi-selection

D4. Hybrid Appointments

Figure D4-1. Hybrid appointments by modality (July 2023 to February 2024).



D5. Patient Profile and Experience

Figure D5-1. Unique patients by attachment status (July 2023 to February 2024).

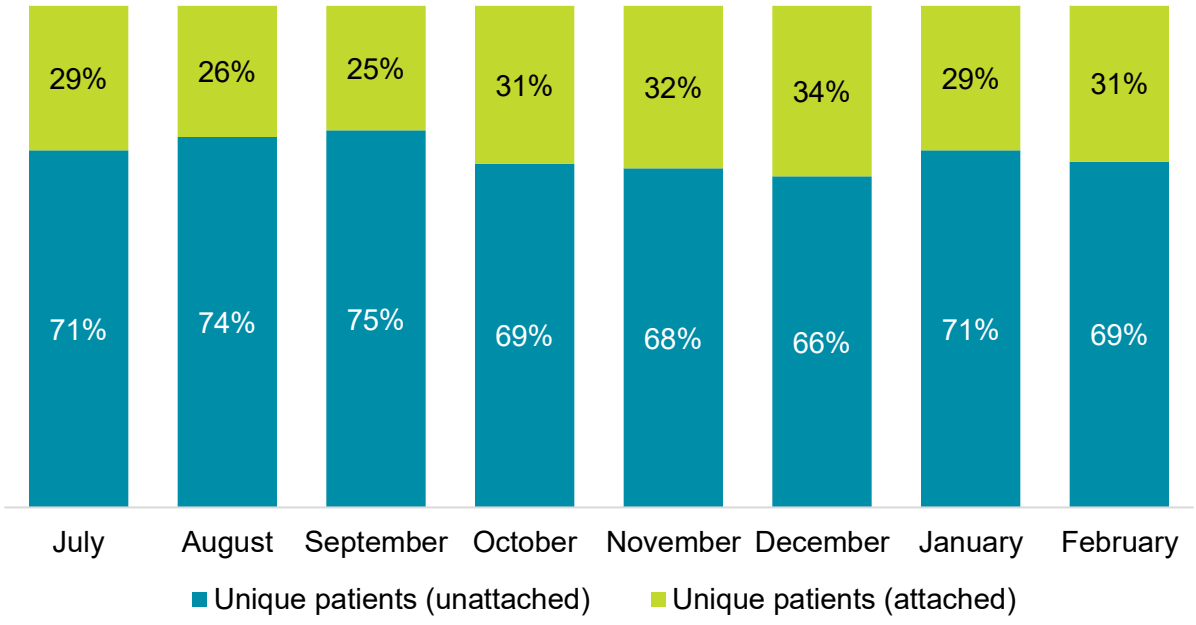


Figure D5-2. Attachment status by appointment type (July 2023 to February 2024).

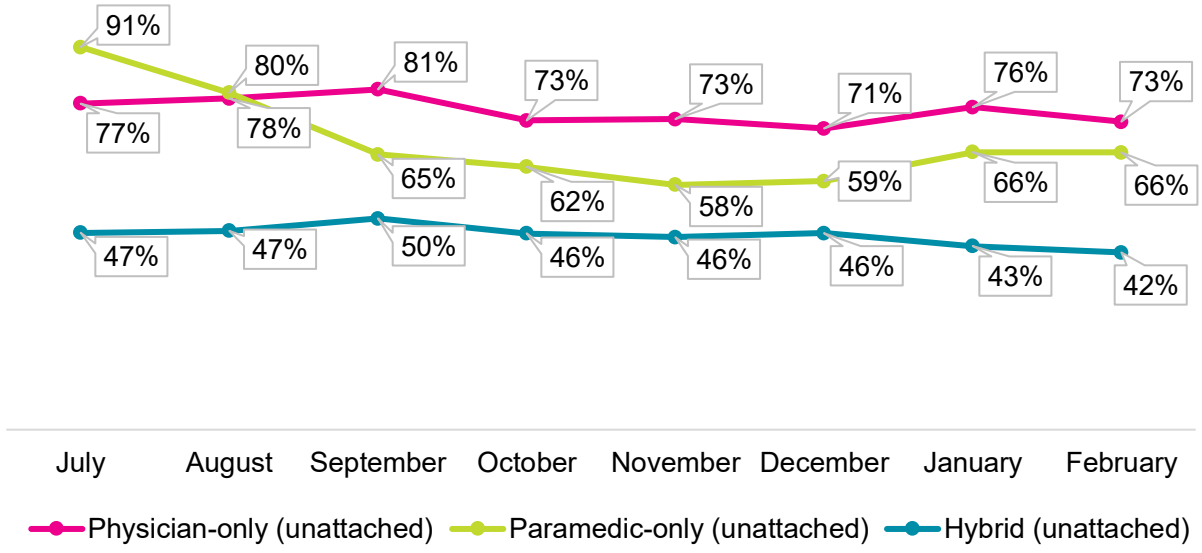


Figure D5-3. Results from the patient experience survey (n=381).

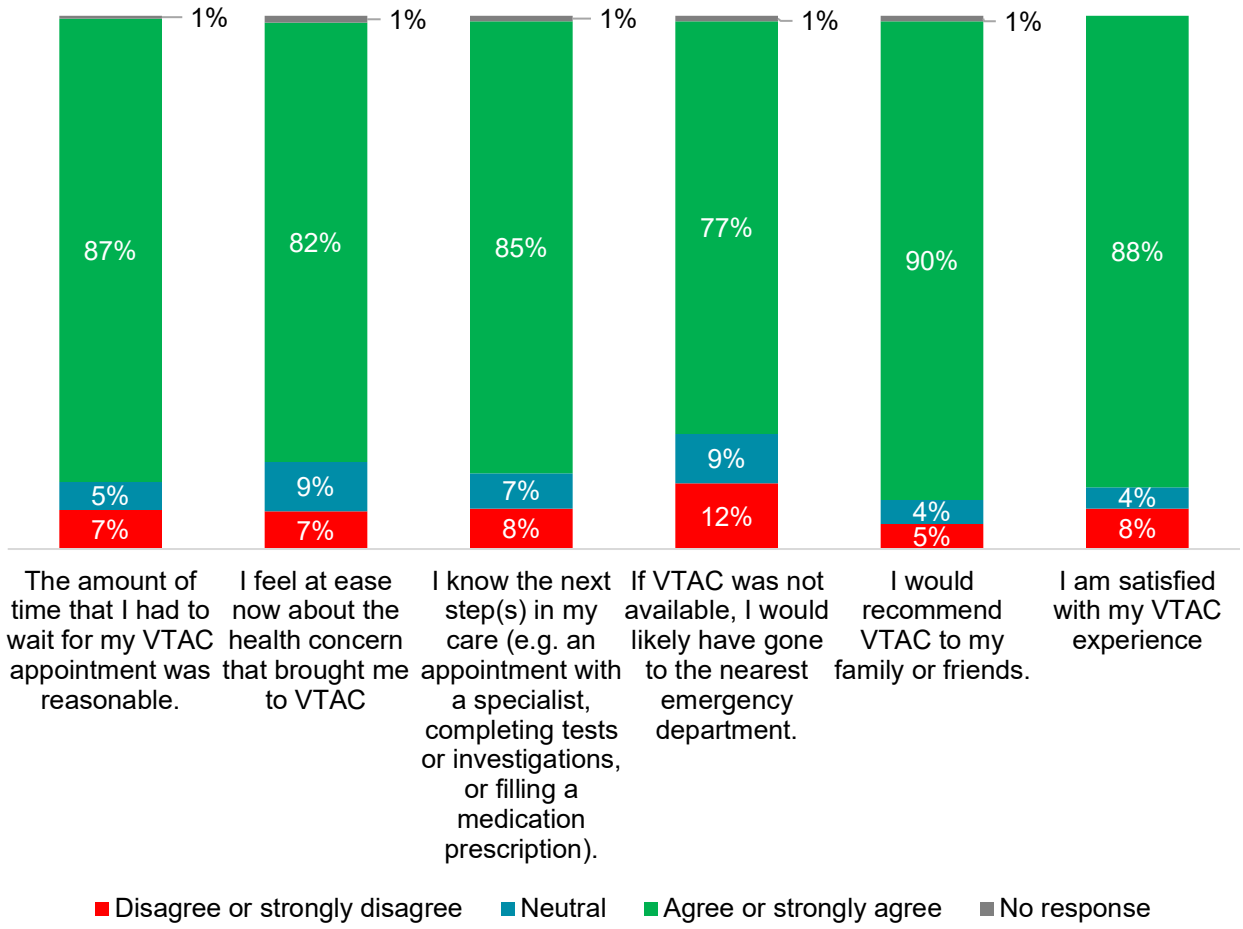
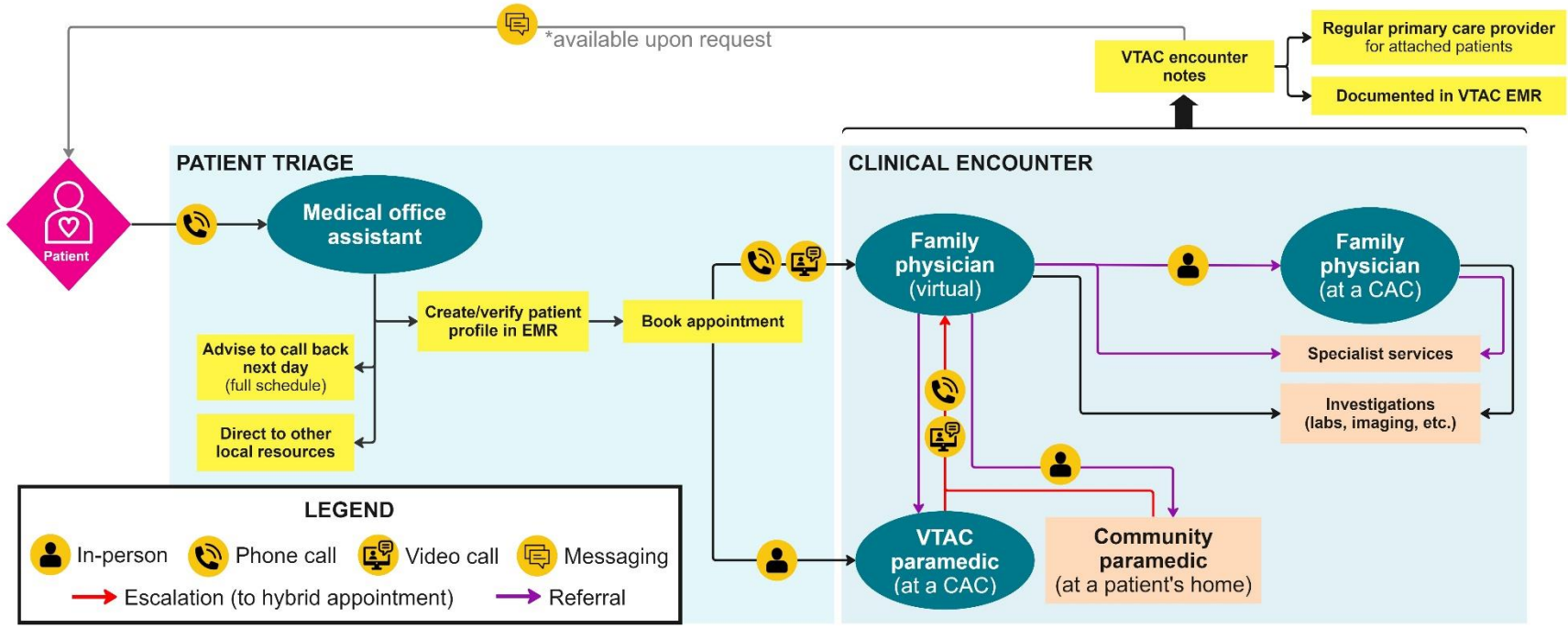


Table D5-1. Visit type stratified by older adults (age 65+) and attachment status (January 2024).

Visit type	All visits	Visits for age 65+	Visits for unattached	Visits for attached
Total virtual physician visits	84%	92%	88%	76%
Total in-person physician visits	1%	2%	1%	2%
Total virtual paramedic visits	3%	1%	4%	1%
Total in-person paramedic visits (at CAC)	5%	2%	4%	10%
Total in-person paramedic visits (at home)	1%			
Total hybrid visits (at CAC)	5%	2%	3%	10%
Total hybrid visits (at home)	0%	1%	0%	1%

Appendix E: Program Map

Figure E1. VTAC program map.



Appendix F: Cost Comparison Analysis Methods

Table F1. Breakdown of Q2 and Q3 2023 costs by visit type.

	Labour						Infrastructure
Visit type	# of visit type/ total # of visits involving a physician (%)	Physician compensation[2] as a % of all visits involving a physician	# of visit type/ total # of visits involving a paramedic (%)	Paramedic costs[3] as a % of all visits involving a paramedic	# of visits (%)	Other staff costs as a % of total visits	Infrastructure costs as a % of total visits
Q2 (July to September) 2023							
Physician-only	10,617 (94.8%)	$559,738.25	-	-	10,617 (88.5%)	$237,998.31	$79,612.02
Paramedic-only	-	-	801 (58%)	$179,246.03	801 (6.7%)	$17,955.79	$6,006.33
Hybrid	585 (5.2%)	$30,841.75	585 (42%)	$130,910.02	585 (4.9%)	$13,113.78	$4,386.65
Total	**11,202 (100%)**	**$590,580.00**	**1,386 (100%)**	**$310,156.05**	**12,003 (100%)**	**$269,067.88**	**$90,005.00**
Q3 (October to December) 2023							
Physician-only	11,339 (93.6%)	$602,769.44	-	-	11,339 (85.0%)	$175,789.98	$66,176.05
Paramedic-only	-	-	1,233 (61.5%)	$193,788.19	1,233 (9.2%)	$19,115.36	$7,195.97
Hybrid	771 (6.4%)	$40,985.56	771 (38.5%)	$121,176.56	771 (5.8%)	$11,952.91	$4,499.67
Total	**12,110 (100%)**	**$643,755.00**	**2,004 (100%)**	**$314,964.75**	**13,343 (100%)**	**$206,858.25**	**$77,871.69**

Table F2. Q2 and Q3 cost per visit.

[2] Assuming each visit involving a physician is billed to OHIP at a rate of $15 per visit (A102 billing code).
[3] Includes the cost of MOAs at a CAC who are responsible for triaging patients in-person, taking patient vitals, managing clinic flow, and setting up hybrid visits.

	Q2 2023			Q3 2023		
Visit type	Total cost	# of visits (%)	Cost per visit (total cost/# of visits)	Total cost	# of visits (%)	Cost per visit (total cost/# of visits)
Physician-only	$877,348.58	10,617 (88.5%)	$82.64	$844,735.48	11,339 (85.0%)	$74.50
Paramedic-only	$203,208.15	801 (6.7%)	$253.69	$220,099.52	1,233 (9.2%)	$178.51
Hybrid	$179,252.20	585 (4.9%)	$306.41	$178,614.70	771 (5.8%)	$231.67
Total	**$1,259,808.93**	**12,003 (100%)**	**-**	**$1,243,449.69**	**13,343 (100%)**	**-**

Appendix G: Additional Quotes

Theme	Quote
Patient experience	"I'm very, very, very satisfied with the quality of care. ... Back in September, I wasn't feeling well, so I stayed home for two or three days, and on the third day I said I'm going to go and get tested ... I still wasn't feeling great. ... Well, I went to go get assessed and they asked, 'did you want to do a COVID-19 test while you're here?' I said sure. I think I went for a COVID-19 test, and the paramedic said: 'Well, since you're here, did you want me to assess you?' So, I just went there. He swabbed me. He gave it in to go get the results done and then he literally brought me back and did a full head to toe assessment on me, even though that's not what I was booked for. So, he checked everything, logged it, and recorded it. That to me is an above and beyond kind of service when all I had called in for to the 1-800 number was, I wanted a COVID-19 test. I leave there knowing that they did their job. They tested and assessed me appropriately." - Patient-01
	"It's been good. It's usually quite straightforward. When we have issues that come up that need to be addressed right away; I need a referral, or I need a medication prescription, or I need to know if this is normal, or if this is okay, or if this is a reason to go to the emergency room, it's been excellent." - Patient-06
	"The efficiency of it is a really big thing and getting the problem resolved quickly. I make an appointment and it's resolved hopefully, or at least I can speak with a physician within 24 hours or less as opposed to waiting days and weeks for an appointment with the family physician or sitting for hours in the emergency." - Patient-05
Provider experience	"I think overall, we do a good job of being creative with what limited resources we have at certain times. I don't feel that my care is subpar because of many of the resources we have. I'm able to get a swab done by a paramedic. My patients who think that they might have a yeast infection, we're actually able to send them in for self-swabbing through LifeLabs or Dynacare. There are still ways to do investigations where we can reach a diagnosis and provide adequate focused prescriptions and not just empiric treatment based on a history alone." - Family Physician-03
	"I did not think I was going to love it because it's very minor, right? Like, another thing we do is suture removal, stitches removal, stuff like that, minor like wound care kind of things…. I didn't think I would like it and I've actually really enjoyed it, and my learning has skyrocketed doing this." - Paramedic-03
	"I like working with the patient population really the feedback I get, I haven't seen a physician in the last four or five years, especially after COVID-19. It's

	nice to see someone in-person. A lot of people have been saying it's really nice to be seen in-person by a physician. … It's kind of nice to be appreciated and I feel like I'm really helping the community..." - Family Physician-05
Challenges and areas of improvement	"I had a young woman, a schoolteacher, call a month ago, and she says 'I'm fainting almost every day. I'm busy all the time, I've lost eight pounds in three months. I don't have a family doctor and I'm really worried. I've done all of these tests in the past and now I'm having a hard time functioning.' That's a patient that I can't just take 15 minutes with." - Family Physician-02
	"The ones who are really, really unwell and very, very urgent, they're actually not that hard to help. It's the ones who are a bit less urgent that it's very challenging to help them because the specialists are so burdened with urgent cases that they don't have the capacity to see non-urgent ones, so they get bumped or the referrals get rejected. I would say the hardest part of my job is trying to figure out who to refer to because in my inbox, I'll have maybe 10 new messages in a day and most of them are about referral rejections." - Family Physician-03
	"I have had people call from as far as Windsor. It's hard in those cases, we can do some stuff over the phone. I think if we had some guidelines in regard to that. I know they don't want to take [appointments] away from anybody which I understand. But it kind of gets messy because you're all of a sudden referring to these specialists that we've never heard of, which is fine, but there's a delay. You have to get that requisition, we have to get our other admins, the reception support admins to upload that to our EMR. So, there's a huge delay there that takes days. It's not ideal, I just think it's a struggle for them, but you don't refuse care." - Medical Office Assistant-01
Program value	"Our paramedics do a lot in our area. The paramedics go out and they meet our seniors. They go into the seniors' homes and do senior calls. We've started using them in a clinic-based form for ear, nose, and throat situations in flu time. If you wake up, your little guy of four years old has an earache, you can call us in the morning, and he can be seen that morning. They are all set up via a computer. They can look in his ear, and the physician can see it on the other side and say, 'yes, he's got an earache. Where does the prescription need to go? What pharmacy are you using?' And it's sent, and they're on their way. That has been a God sent in our area." - Medical Office Assistant-02
	"I think the access to in-person options is always a very important aspect. There [are] essentially like no other option aside from the ER. There was literally no walk-in clinic for over two hours, aside from the ER, which I think the majority of places don't have such an issue." - Family Physician-04
	"I haven't had one person that's come through that just doesn't say, 'Oh, my gosh! This is the greatest thing since slice bread.' They're just ecstatic because

	the alternative is a 6 to 8 hour wait in an emerge right? And somebody comes in and three minutes later I've got a positive strep result. And I'm on the phone and they're out in 10 minutes. By the time they drive over to their pharmacy, the prescription is filled, and they're on their way. That's just huge for them." - Paramedic-01
	"I think is one of the key successes we've had with paramedics is using VTAC to reduce the burden on 911 paramedics and emergency departments, particularly around 911 transfers to emerge. Having a concept where not just the community paramedic but also 911 paramedic could access a family physician through VTAC very quickly in the context of an unattached patients. We believe there's an ability to reduce unnecessary transfers to ED there. [The] 911 paramedic can now speak to a family doctor and come up with a combined hybrid assessment management plan and then offer that to the patient. Then, if the patient has been assessed and they have a solution to that problem, [they can] choose not to go to the emergency department at that point." - Lead-02
	"We also have paramedics working in the local emerges now doing triage to help with the shortage of staff… If it's deemed not to be something that is emergent, they can say 'Well, here's another option'. They're not refusing them, but they're giving them the option of the assessment center or VTAC. A large number of them are coming and doing a 180 and going out of the emerge, coming, and being successfully treated here [at a CAC]." - Paramedic-01
	"The key strengths of the program are that it's all same day ... So even though it's a walk-in clinic style, you have an appointment time so that you're not waiting …you're leaving with self-care instructions; you're leaving with safety netting instructions, you're leaving with a prescription if that's what's required ... further testing if that's required. I think there's a lot of strengths especially for unattached patients, but also for patients whose doctor works twice a week and wouldn't get to see them for a month." - Paramedic-03
Reasons for working in the VTAC program	"I was trying to find a way without having a full family practice to dip back into that knowledge and practice, but without having a family practice and tie myself down, because now VTAC offers me the flexibility. We used to have 8pm to 10pm shifts, which was my favorite, but that was cut. But basically, I could put the kids to bed and hop onto VTAC and do two hours and still feel like I'm being efficient, I'm contributing, but not get into my family time. To do a couple of hours here and there around the kids' schedules and around the hospital schedule is also really attractive." - Family Physician-02
	"I have the opportunity in VTAC to manage medical conditions that I don't always get to manage in [Urban City]. We have a lot of specialists here, and I truly enjoy medicine. I have patients who I think I can make a significant difference in their quality, where I don't feel that I can make the same

	difference here. I think I do a good job here, but I think my time is better served and more impactful in this community." - Family Physician-03
	"I actually really enjoy the fact that I feel like it's super needed, and I'm actually contributing. … I'm actually contributing to something happening… there's this problem and I'm contributing to making it better. That's probably the most reward I get out of this." - Paramedic-03
	"It was kind of nice to be able to also work from home and not have to worry about commutes. I also thought this was a good way to give back because it was an under serviced community, and I felt like I was dealing with a little bit more medical problems as opposed to— sometimes, some of the work I do in [Urban City], I feel like it's kind of just reassuring worried well. It felt like I was contributing to an underprivileged group in some ways. I did like the payment system because it wasn't fee for service because I'm not that fast with patients so it's kind of nice to have an hourly rate and not worry about how much you're making, even if you're having to take longer with a patient." - Family Physician-01