ONTARIO COMMUNITY PARAMEDICINE SECRETARIAT

Report on the Status of Community Paramedicine in Ontario

November 2019

ISBN: 978-1-4868-4034-2

ISN: 2563-0156

Recommended Citation:

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EXECUTIVE SUMMARY

The Ontario Community Paramedicine Secretariat was established in 2018 with the support of the Ontario Ministry of Health (MOH) and its 14 Local Health Integration Networks (LHINs). The role of the Secretariat is to support the ongoing growth and development of community paramedicine programs across Ontario, continuing the work that began in 2014 when the MOH began investing $6M annually towards supporting this developing area of care.

To better appreciate how the field and practice of community paramedicine is rapidly evolving in Ontario, the OCPS launched its inaugural 2019 *Report on the Status of Community Paramedicine in Ontario*. This review has involved contacting all 52 municipal paramedic services and all 14 LHINs across Ontario to determine the current state of their LHIN and non-LHIN funded community paramedicine programming. Identified paramedic service representatives were asked a series of structured questions pertaining to their respective program's goals, characteristics of the individuals and patients they were serving, health system partnerships, successes and challenges, and plans for the future. The following summarizes what was found:

Virtually every part of Ontario is now being served by at least one community paramedicine program.

Across Ontario's 52 municipal paramedic services, 48 (92%) are now operating a total of 143 unique community paramedicine programs – representing an average of 3 programs per service that served an estimated record 56,640 individuals and patients in 2018-19. 7(13%) municipal paramedic services were providing a single program, while 4 (8%) were not providing a program at all. Excluding these services, the remaining 41 (78%) were operationalizing an average of 3.4 programs per service. This indicates that the majority of municipal paramedic services across Ontario are now including some additional novel dimension or model of care beyond the three early predominant types of community paramedicine models of care (*Assessment and Referral Programs, Community Paramedic-Led Clinics* and *Home Visit Programs*) that were described in the MOH's 2017 *Community Paramedicine Framework for Planning, Implementation, and Evaluation*. New models of care that have emerged and spread amongst municipal paramedic services in more recent years include: *Remote Patient Monitoring Programs, Community Paramedic-Specialist Response Programs, Hospital Discharge Programs,* and *Influenza Surge Programs*.

The rapidly evolving and growing multi-dimensionality of community paramedicine programs being offered appears to represent a growing intentional strategy by Ontario's municipal paramedic services to provide individuals and patients with greater access to other community-based care providers and services that can help lessen a patient's reliance on the province's 9-1-1 safety net and reduce emergency department visits and hospitalizations.

Assessment and Referral Programs are the most common type of community paramedicine programming across Ontario

Most municipal paramedic services across Ontario have aligned their community paramedicine programs with their traditional emergency response activities by having all of their frontline paramedics routinely identify individuals and patients who may benefit from a community paramedicine intervention when or if they do call 9-1-1. Currently, community referral programs, through which frontline paramedics connect individuals calling paramedic services with other care providers, is the most common community paramedicine program model in place across Ontario. In 2018-19, 45 (87%) of 52 Ontario municipal paramedic services actively referred 23,040 patients to other services such as LHIN home and community care services through these programs.

The majority of Ontario's Paramedic Services are operating a variety of community paramedicine programs

In 2018-19, 39 (75%) Ontario's municipal paramedic services were delivering more than one community paramedicine model of care. 35 (90%) were offering Home Visit Programs that served an estimated 3,790 patients, 23 (59%) were offering Community Paramedic-Led Clinics that served an estimated 17,680 patients, 23 (59%) were offering Remote Patient Monitoring programs that served an estimated 2,300 patients, 10 (26%) were offering Community Paramedic-Specialist Response Programs that served an estimated 7,840 patients, and 6 (15%) were offering additional programs that served another 1,990 patients.

There is a growing trend of paramedic services operating multi-component or multi-dimensional community paramedicine programs that represents a rapidly maturing community paramedicine landscape across Ontario ever since the MOH's 2014-2017 demonstration project period. With the growing role that multi-component or multi-dimensional community paramedicine programs are now playing, 24 municipal paramedic services that are offering community paramedicine services stated that they have a complement of between one and three full-time equivalent community paramedics staffing their initiative, while 8 noted that they have at least four or more full-time equivalent community paramedics employed to deliver their programs.

The most commonly identified goals across all Ontario community paramedicine programs are to connect individuals and patients to other health care services, improve the integration of care, and to reduce repeated utilization of paramedic services.

Towards their goal of better integrating care, municipal paramedic services across Ontario have listed numerous health system partners from home and community care, primary care, long-term care, palliative care, mental health service providers, and public health units who are actively working to deliver more integrated care with them. A number of municipal paramedic services pointed to having team huddles and/or establishing connectivity tables as key characteristics of their programs' successes. Their successful teamwork approach can be summarized by the following statement:

> *Our willingness to adapt, be flexible, easily reachable, and mobile as Community Paramedics have made us a key method by which other local service providers are utilizing us to overcome their own barriers and challenges in delivering services to their patients.*
>
> – Guelph Wellington Paramedic Service

By consistently partnering with other health system partners, community paramedicine programs have ensured that individuals and patients and other health care providers can better navigate the health system, thereby reducing their need to call 9-1-1 and be transported to a local emergency department. Community paramedicine programs continue to also note that their ability to intervene before a patient's condition worsens is a key marker of their unique impact.

Increasingly, community paramedicine programs are demonstrating their considerable capability to redirect 9-1-1 calls, reduce emergency department visits, decrease hospitalizations and avoid revisitations. Furthermore, outcomes data continues to show that for frail individuals and patients enrolled in community paramedicine Home Visit Programs, almost no increased utilization of 9-1-1 services has been observed compared to the previous year, when their utilization would typically be expected to increase with their expected advancing frailty and age.

There is a growing broader interest in the development of community paramedicine across Ontario and beyond.

The Ontario Community Paramedicine Secretariat has collected 28 media articles, where local, regional and national media outlets have written or reported about the impacts that Ontario community paramedicine programs are having over the past year.

The growing publication of research study findings over the last year related to community paramedicine activities in Ontario in peer-reviewed academic journals demonstrates that Ontario's growing investment in community paramedicine programs is indeed achieving increasingly evidence-informed patient and system level benefits that are well-understood and reproducible. Ontario community paramedicine research is helping to lead a growing global interest in the development of community paramedicine models and research around them.

With the current move towards the creation of Ontario Health Teams (OHTs), the establishment and growth of community paramedicine programs will become one clear opportunity to advance the mission and activities of this integrated team-based approach to the delivery of more patient-centred care. If OHT development parallels the development of the Accountable Care Organization (ACO) movement in the United States, then community paramedicine will likely take on an even great role in the future of the delivery of care across Ontario

Overall, in 2019 community paramedicine programs appear to be evolving to better meet their local needs and becoming increasingly well-positioned to support the province's current goal to end hallway healthcare by improving access to more proactive care and other community-based health care providers and in helping to support patients to stay safely in their homes and communities for as long as possible.

BACKGROUND AND CONTEXT

The umbrella term '***community paramedicine***', describes a growing field of paramedicine practice that emphasizes a more proactive and preventive approach to care that utilizes paramedics in expanded roles.[1] Community paramedicine leverages paramedics to provide immediate or scheduled primary, urgent, and/or specialized healthcare to vulnerable patient populations by focusing on improving the health system access, care, and experiences across the continuum of care.[2] It represents an evolution of embedding emergency management principals[3] into a paramedic's scope of practice to help patients stay healthy and independent in their communities, prevent future unplanned health events and decline, support recovery after an acute medical event, and optimize the provision of future care.[4]

In 2014, the Ontario Ministry of Health (MOH) began investing $6 million annually to support the development of 30 Community Paramedicine Demonstration Projects across the province. This funding was allocated on the recommendation that the MOH invest in the development of community paramedicine as part of the 2012 *Living Longer, Living Well Report*[5] by Dr. Samir Sinha that informed the development of the Government of Ontario's subsequent Seniors Strategies.

[1] Lezzoni LI, Dorner SC, Ajayi T. Community Paramedicine—Addressing Questions as Programs Expand. N Engl J Med. 2016;374(12):1107–9.
[2] CSA Group. Community Paramedicine: Framework for program development. Toronto, ON: CSA Group; 2017.
[3] CANADA. An Emergency Management Framework for Canada [Internet]. 3rd ed. Ottawa: Emergency Management Policy and Outreach Directorate; 2017. Available from: www.PublicSafety.gc.ca
[4] Nolan MJ, Nolan KE, Sinha SK. Community paramedicine is growing in impact and potential. CMAJ. 2018;190(21):636–7.
[5] Sinha SK. Living longer, Living well: Recommendations to Inform a Seniors Strategy for Ontario. Gov Ontario [Internet]. 2012;234. Available from: http://www.longwoods.com/blog/wp-content/uploads/2013/01/seniors_strategy.pdf

In 2017, at the conclusion of a successful three-year demonstration period, the MOH decided to provide Ontario's 14 Local Health Integration Networks (LHINs) with $6 million in on-going base funding to continue the development of community paramedicine programs across every region of Ontario and transferred to each LHIN the responsibility of overseeing these ongoing activities.

In 2018, upon the recommendation of Ontario's LHIN CEOs, an Ontario Community Paramedicine Secretariat (OCPS) was established under the oversight of a volunteer provincial OCPS Steering Committee (membership and staff listed in Appendix A). The Secretariat Staff supports the Steering Committee in further advancing the field of community paramedicine in Ontario and in advising the LHINs and the MOH on the current and future policy and practice directions for community paramedicine in Ontario.

The overall goal of the Secretariat is to support the strengthening of collaborations and partnerships, particularly with primary, home and community care providers, that can reduce hallway healthcare, prevent hospitalizations, and improve patient-centred care and experiences as they transition from acute care settings back to the community. The Secretariat also specifically supports a larger provincial community paramedicine network, enabling and facilitating work on the creation and dissemination of standardized care processes, performance reporting and measurement activities, and other aspects of knowledge translation and exchange.

THE WORK OF ONTARIO COMMUNITY PARAMEDICINE SECRETARIAT (OCPS)

The current objectives of the Secretariat are to support the OCPS Steering Committee as they:

- Act as the principal advisor to the Ontario LHINs and MOH for the implementation, evaluation and spread of community paramedicine models of care across the province.
- Provide leadership and guidance on the standardization of processes, measurement and reporting for community paramedicine programs in the province.
- Build capacity and provide opportunities for knowledge transfer and exchange (KTE) across different community paramedicine programs to promote quality improvement.

The current work of the OCPS is helping to serve and support a growing provincial network of paramedic services and community paramedicine programs as they navigate the current period of considerable healthcare system transformation. To do this, three working groups to support the work of the Ontario Community Paramedicine Secretariat have been established to help further the goals of the OCPS Steering Committee (See Appendix B for membership).

In 2019 the ***Capacity Building and Knowledge Exchange Working Group*** has been establishing a comprehensive communication strategy that includes organizing and hosting bi-annual provincial meetings, supporting provincial information sharing and developing a webinar series, and supporting a greater online presence to support

knowledge exchange. This will include launch of a website that will provide paramedic services and health system partners with information resources to help facilitate building bridges of integration between health system partners. In the Spring of 2019, the OCPS hosted its inaugural provincial meeting of paramedic services and their health system partners that drew 140 attendees in Toronto. The meeting served to reunite paramedic services on the topic of community paramedicine as more than two years had elapsed since the last meeting of this kind had taken place. More recently, the OCPS hosted its second provincial meeting of paramedic services and their health system partners in Toronto. This meeting that offered an in-person and innovative online meeting platform allowed for over 240 attendees to participate and included the active participation of federal, provincial, municipal and indigenous government representatives alongside a wide variety of representatives from paramedic services and their health system partners.

In 2019 the ***Policy and Practice Working Group*** helped to develop the OCPS's Survey on the *Status of Community Paramedicine in Ontario* framework that will inform their work to provide guidance on implementation including education and best practices. The working group has also spent considerable time reviewing the 2017 *MOH Community Paramedicine Framework for Planning, Implementation, and Evaluation* with the expectation that their efforts will provide practical guidance to update this document reflecting changes to community paramedicine program delivery that have emerged over the past few years. Future work of this working group will include examining delegation of medical acts in community paramedicine programs, determining education and training requirements, and exploring funding criteria.

In 2019 the ***Performance Measurement and Reporting Working Group*** has also utilized the findings of the 2019 *Report on the Status of Community Paramedicine in Ontario* to inform their work around developing a minimum data set (MDS) that could be collected by all Ontario community paramedicine programs and better inform patient documentation standards to reflect the changing landscape of community paramedicine practice. Implementing a new reporting framework will inform both community paramedic practice by standardizing the way that patient information is collected and community paramedicine program evaluation by having a consistent method for reporting. The working group will consult with paramedic services and health technology partners to ensure that uptake of the MDS occurs for fiscal year (FY) 2020-21.

The OCPS has been actively supporting provincial communication efforts and providing avenues for paramedic services and their health system partners to exchange information, collaborate and maximize their collective efforts. The Secretariat has facilitated a number of provincial conversations amongst paramedicine services on topics such as how best to engage as part of emerging Ontario Health Teams and how to best create a supportive role for community paramedicine in the development of community-based palliative care models. Secretariat staff have participated in other events to ensure that partnerships continue to be built and to share how community paramedicine programs can have positive impacts on supporting patient-centred care.

2019 REPORT ON THE STATUS OF COMMUNITY PARAMEDICINE IN ONTARIO

The Ontario Community Paramedicine Secretariat launched its inaugural Report on the Status of Community Paramedicine in Ontario with the support and guidance of the OCPS Policy and Practice Working Group. In order to obtain the most accurate picture of community paramedicine activities across the province OCPS Staff contacted all 52 municipal paramedic service members of the Ontario Association of Paramedic Chiefs (OAPC) to determine the current state of their community paramedicine programming. Paramedic service representatives were asked a series of questions pertaining to program goals, characteristics of the patients they were serving, the role of health system partnerships, successes and challenges, and plans for the future. All 14 LHINs were also engaged to further determine the status of their specifically funded community paramedicine activities.

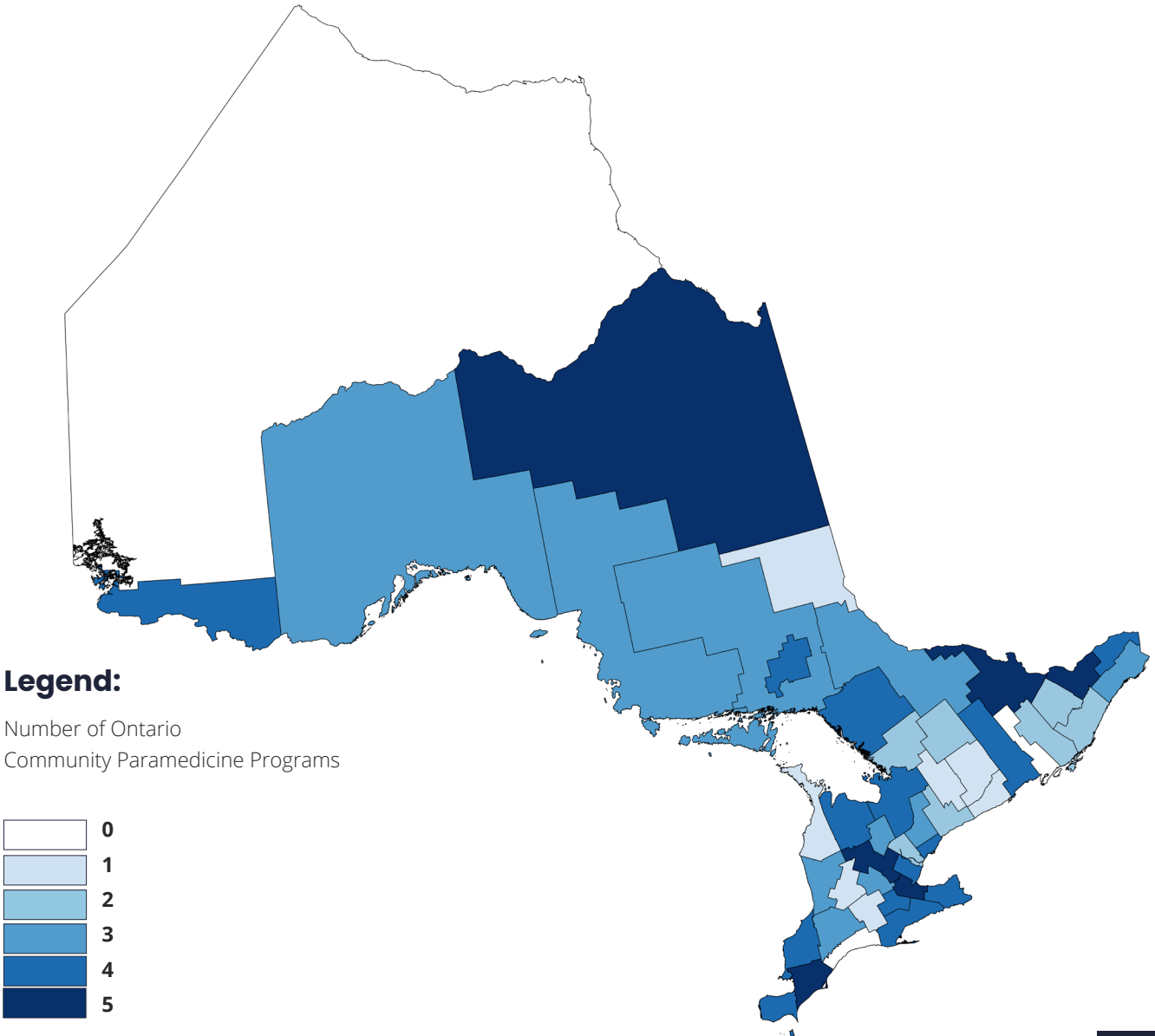
In the following pages, current community paramedicine program characteristics, activities and outcomes are described in detail and emerging and innovative community paramedicine models are further presented. Finally, some general recommendations being proposed for the further advancement of community paramedicine to enhance the current evolving healthcare landscape in Ontario with the development of Ontario Health Teams (OHTs) and other initiatives to help end hallway healthcare.

COMMUNITY PARAMEDICINE PROGRAM CHARACTERISTICS

The State of Current Practice in 2019

All municipal paramedic services in Ontario operate under shared funding between the MOH and municipal governments to provide immediate emergency response services, which differs from their community paramedicine programs which can be fully or partially are funded through their local LHINs. The community paramedicine programs that have been developed have been tailored to better address locally identified population needs identified by the municipal paramedic service in collaboration with their local health system partners.

Figure 1: 2019 Map of Municipal Paramedic Services across Ontario and the Number of Community Paramedicine Programs they operate



Across Ontario's 52 municipal paramedic services, a total of 143 different community paramedicine programs were identified (See Figure 1). In the past fiscal year (2018-19) there was an average of 2.75 community paramedicine programs per service. In total, 48 (of 52, 92%) were offering community paramedicine programs. A closer look at program offerings reveals that in municipal paramedic services that were providing more than one community paramedicine program (as described in Table 1 – Current Community Paramedicine Models Of Care Identified in Ontario), the average was 3.38 programs per service indicating that most municipal paramedic services were including some other dimension of community paramedicine programming beyond the three initially described classifications of community paramedicine models of care in the 2017 *MOH Community Paramedicine Framework for Planning, Implementation, and Evaluation*.

Table 1: Current Community Paramedicine Program Delivery Models Identified in Ontario

Community Assessment and Referral Programs*: This model of care represents a case finding strategy employed by front-line paramedics to connect individuals and patients with other care providers, most often LHIN Home and Community Care Services and local Community Support Services (CSS) Agencies. A specific model of assessment and referral that has been adopted by many Paramedic Services providers across most LHINs in the province is known as Community Referrals by EMS (CREMS).
Community Paramedic-Led Clinics*: This model of care has been established in areas with an identified need where community paramedics advertise and provide health promotion and preventative care services in partnership with local health system partners. Community paramedics in this model may provide flu shots, education about healthy living, chronic disease prevention education, blood pressure checks, blood glucose checks, or other services.
Home Visit Programs*: This model of care usually sees community paramedics working in a team with other health care providers to maximize the available "at home" support through the provision of proactive and preventative home visits for patients that have either repeatedly called 9-1-1 or who have been identified as high risk of 9-1-1 utilization due to their underlying medical conditions and unmet social needs. Some models have embedded community paramedics into primary care teams to support primary care providers in monitoring at-risk patients through more frequent home visits. Other models have embedded community paramedics into a circle of care led by an acute care hospital to support the early discharge of admitted patients and smooth the transition from hospital to home, especially among those patients identified as being at high-risk for re-admission.
Remote Patient Monitoring Programs: This model of care involves patients with chronic health conditions like COPD, CHF and Diabetes who are at high-risk of a future emergency department visit or hospitalization in being enrolled in a home-based patient monitoring program that can allow them to live with greater confidence in their own homes. In these programs, patients enrolled by their primary care providers are provided with remote monitoring devices that can transmit their vital signs to a 24-hour monitored communication hub that alerts a community paramedic when their readings fall outside of expected values. In partnership with their primary care providers, community paramedics working under pre-determined care protocols customized to each patient, are then contacted by a community paramedic by phone or visited in person to address any care issues proactively in order to pre-empt 9-1-1 calls or emergency department visits.
Community Paramedic-Specialist Response Programs: These emerging models of care operating under names such as Community Paramedicine Response Units, Paramedic-Specialist Teams, or Mobile Integrated Health Teams represent a growing level of service coordination and cooperation between traditional paramedic emergency response and emerging community paramedicine programs so that access to other health care providers can be better enabled and accessed in real time through an on-demand system that parallels a traditional 9-1-1 response.
* Summarized description from the 2017 *MOH Community Paramedicine Framework for Planning, Implementation, and Evaluation*.

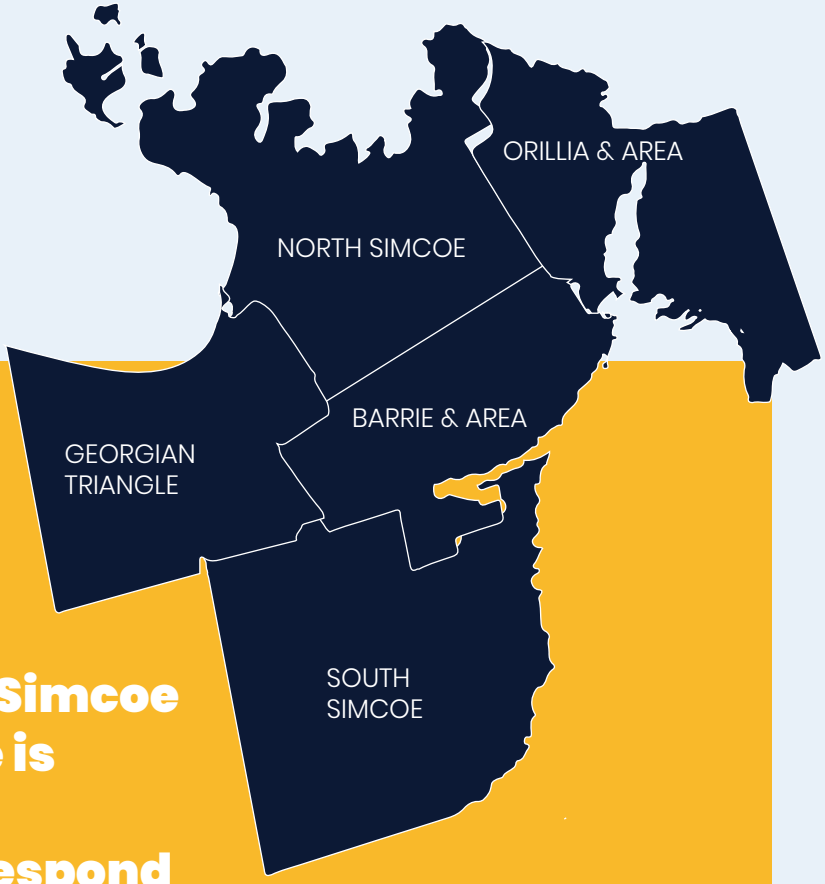
A breakdown of the 143 programs identified in 2019 is presented in Table 2. 87% (n=45/52) of municipal paramedic services were actively referring patients to other healthcare services through formalized Community Assessment and Referral Programs. For 9 services among this group, a Community Assessment and Referral Program represented their only community paramedicine activity. For the remaining 69% (n=36/52) municipal paramedic services, as well as an additional 3 services who were not providing referrals, their community paramedicine programs were multi-dimensional in nature, including a combination of Home Visit Programs (n=35), Community Paramedic-Led Clinics (n=23), Remote Patient Monitoring Programs (n=23), Community Paramedic-Specialist Response Programs (n=10), and Other Activities (n=7).

The rapidly evolving and growing multi-dimensionality of community paramedicine programs being offered appears to represent a growing intentional strategy by Ontario's municipal paramedic services to provide individuals and patients with greater access to other community-based care providers and services that can help lessen a patient's reliance on the province's 9-1-1 safety net and redirect emergency department visits and hospitalizations.

A full list of municipal paramedic services and community paramedicine programming is provided in Appendix C.

Table 2: Identified Ontario Community Paramedicine Programs at the Municipal Paramedic Services Level in 2019

Classification of Community Paramedicine Programs	Number of Programs	Percent of (%) Total	Estimated Total Number of Individuals and Patients Served in 2018-19
Community Assessment and Referrals Programs	45	31.4	23,040
Community Paramedic-Led Clinics	23	16.1	17,680
Home Visit Programs	35	24.5	3,790
Remote Patient Monitoring Programs	23	16.1	2,300
Community Paramedic-Specialist Response	10	7.0	7,840
Other Programs	7	4.9	1,990
Total	**143**	**100%**	**56,640**



CASE STUDY: How the County of Simcoe Paramedic Service is Using Community Paramedicine to Respond to Its Locally Identified Needs

LHINs: Central and North Simcoe Muskoka (NSM)

Paramedic Service: County of Simcoe Paramedic Service (COSPS)

Community Paramedicine Programs Objective: Reducing 9-1-1 call volumes, improving primary care capacity, and supporting acute care cost avoidance in Simcoe County.

Community Paramedicine Program Impact: The County of Simcoe Paramedic Service reported that their Assessment and Referral program has demonstrated that 60% of their referrals to local home care and community services providers result in the achievement of new or increased services for their patients. In 2018, through their Home Visit Program, community paramedics provided 104 unscheduled visits to the 100 rostered chronic disease patients. 79 of these clinics stayed at home following a visit from their community paramedic, 75% of unscheduled visits avoided a 9-1-1 call and 76% of the time these patients were able to remain at home, avoiding an emergency department visit. There were 22 less primary care visits by patients in the home care program during their first 6 months, compared against their last 6 months before entering the program. COSPS partnered with the Orillia Family Health Organization to obtain direct referrals for home visit from their 33 physicians. An analysis by NSM LHIN estimated that the combined cost avoidance resulting from COSPS community paramedicine programs to be $175,280 in 2018 alone.

LHIN REPORTED DATA ON COMMUNITY PARAMEDICINE IN 2018–2019

LHINs have been collecting data on their funded community paramedicine activities using a standardized reporting template that was created by the MOH in 2017. The OCPS has aggregated available data to produce a provincial overview (See Table 3). It is important to note that a number of the data elements being collected by the LHINs reflect process measures of community paramedicine programs requested by the MOH rather than specifically enrolment and outcomes measures. Due to variations in use and uptake of the reporting framework across LHINs and paramedic services, the data provided likely underestimates the actual number of individuals and patients benefiting from LHIN funded community paramedicine activities over a given year.

Table 3: A Provincial Overview of LHIN Funded Community Paramedicine Activities during FY 2018–19

Community Paramedicine Category	Data Element	Provincial Estimate, n (rounded to nearest 10)
Community Assessment and Referral Programs	Number of calls resulting in an individual being referred to local services/programs	23,040
Home Visit Programs	Number of patients enrolled in a community paramedicine Home Visits Programs	3,790
	Number of patients ≥ 75	2,260
	Number of patients with 3 or more ambulatory care sensitive chronic health issues	2,060
	Number of home visits	12,420
	Number of referrals	1,560
Community Paramedic-Led Clinics	Number of patients who attended one-to-one community paramedicine Clinic education sessions	13,340
	Number of patients who attended group community paramedicine Clinic education sessions	4,340
	Number of patients ≥ 75	4,030
	Number of patients with 3 or more ambulatory care sensitive chronic health issues	3,450

EMERGING AND INNOVATIVE COMMUNITY PARAMEDICINE MODELS AND INITIATIVES

39 municipal paramedic services across Ontario are now operating multi-dimensional Community Paramedicine Programs, with deliberate strategies intended to provide individuals and patients in their catchment area with better access to other care providers who may not be readily accessible through the 9-1-1 system and local Emergency Departments. This represents a growing concerted effort that is being made across Ontario to proactively help vulnerable patient or population groups so they don't have to rely on the 9-1-1 safety net to access the care and supports they need. The 2019 Report noted that 28 municipal paramedic services described community paramedicine programs that did not fit the three previously identified classifications of community paramedicine models of care (Assessment and Referrals Program, Community Paramedic-Led Clinic, or Home Visit Programs) initially described in the 2017 *MOH Community Paramedicine Framework for Planning, Implementation, and Evaluation*. These other models being described included Remote Patient Monitoring Programs, Community Paramedic-Specialist Response Programs, and others that included Hospital Discharge Programs, and Influenza Surge Programs. This section describes these other newer emerging models.

Remote Patient Monitoring

In April 2015, the Community Paramedicine Remote Patient Monitoring (CPRPM) Program was launched as a 3-year demonstration project through a $2.1M grant from Canada Health Infoway and the South Central Community Development Corporation with in-kind support from municipal paramedic services across Ontario.[6] Future Health Services, a subsidiary of the South Central Community Development Corporation took on the management of the program with the goal of creating a sustainable and scalable business model to support remote patient monitoring in Ontario.

The CPRPM Program was built on the same components as the jointly funded Canada Health Infoway and Ontario Telemedicine Network (OTN) Telehomecare Program, except that in the CPRPM Model a home visiting community paramedic was employed rather than a remotely available nurse. The CPRPM Program was also strategically initially deployed in the five LHINs that were not providing the OTN Telehomecare Program. Developed as a distributed model to make program expansion possible, the CPRPM initiative quickly expanded from three paramedic services in 2015 to 19 paramedic services by 2018 across 11 of 14 Ontario LHINs, the exceptions being Toronto Central, Central, and Central East LHINs.

Future Health Services worked closely with OTN to identify the best patients for each of their respective programs to avoid potential duplications of service. The OTN Telehomecare Program was developed as a coaching model where a patient's data would be sent to a centralized call centre where nurses would monitor the data and call a patient and provide coaching if there is a concern. This model was developed specifically to support patients with mild to moderate conditions who were willing and able to be coached around their condition using home monitoring equipment and the telephone.

The CPRPM Program was specifically designed with the highest health system users in mind. While the OTN Telehomecare Program was designed as a more time-limited coaching, education and self-management program for individuals living with chronic conditions like Chronic Obstructive Pulmonary Disease (COPD), Congestive Heart Failure (CHF) or Diabetes with the goals of supporting their greater ability to self-manage their disease, the CPRPM Program focused more on providing on-going support for frail individuals who would benefit from continuous monitoring couples with the provision of more proactive support.

Patients were enrolled into a CPRPM program directly by paramedics through referrals from local primary care providers or LHIN Care Coordinators. The CPRPM program was designed to integrate remotely monitored patient vital signs directly into the work flow of local community paramedics and took advantage of their existing distributed resources across the community (paramedic infrastructure that is already in place) because paramedics would also be the ones that would ultimately respond to the same patient in an emergency or a severe acute exacerbation. When patients were enrolled in a CPRPM program, a community paramedic would visit the patient in their home, set up their home monitoring devices, and train the patient on the use of the remote monitoring equipment. Patients were required to take daily readings which could be viewed in real time by a community paramedic. If a reading was outside of a threshold set by the patient's physician, a community paramedic was notified to follow up with the patient. Coaching sessions could be completed by a community paramedic to let patients know about their condition, inquire about their current status, and provide comfort that they were being monitored.

[6] CPRPM was designed to extend the capacity of community paramedicine (CP) programs, first funded as demonstration projects by MOHLTC and later funded by Local Health Integration Networks (LHINs)..

The particular strength of the CPRPM Program was that while community paramedics might contact the patient by phone, they were also able to visit the patient at their home if required. This appeared to provide patients with greater comfort that they could remain in their home and interact with the community paramedic rather than call 9-1-1 and go to their local emergency department. In many LHINs, OTN Telehomecare programs began working in tandem with available CPRPM Programs to further complement each other. For example, if there was an event that required a patient visit, an OTN Telehomecare nurse may call their local community paramedic to visit the patient and address their concerns.

The CPRPM Program was evaluated by researchers at Queen's University[7] and showed that it particularly benefited patients with moderate to severe chronic illnesses that would likely not be able to be managed with coaching alone. The program's overall results showed that for patients enrolled in the program there a 26% reduction in 9-1-1 calls, a 26% reduction in emergency department visits, a 32% reduction in hospital admissions, and a 41% reduction in hospital readmissions was achieved. Combined, this represented a combined cost avoidance of over $29M in downstream health system costs achieved amongst the 2,333 patients that participated in this program during the evaluation period. The overall reductions found in health system utilization generated an estimated $7,279 in cost avoidance for the healthcare system per patient per year, with the cost of community paramedic and equipment of $1,455 per patient per year, a net return on investment (cost avoidance - cost of providing service) $5,842 per patient per year. That the program deferred 3,511 emergency department visits alone demonstrates that it could further represent a practical opportunity to address the province's goal to reduce hallway healthcare.

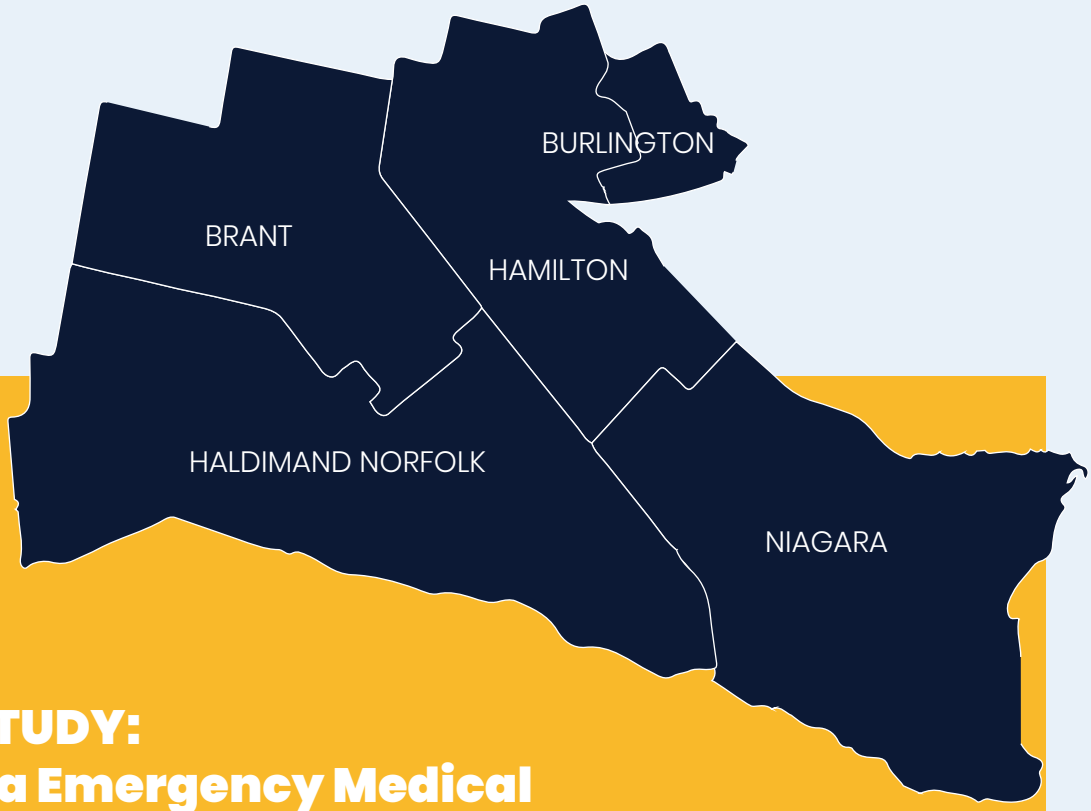
[7] Brohman M, Green M, Dixon J, Whittaker R, Fallon L. Community Paramedicine Remote Patient Monitoring (CPRPM): Benefits Evaluation & Lessons Learned. Toronto, ON; 2018.

Community Paramedic-Specialist Response Programs

Maximizing the mobile aspect of paramedic services is a growing concept where municipal paramedic services are increasingly working to provide either an enhanced real-time response to their enrolled community paramedicine patients or a means for health system partners to respond to their patients as soon as the paramedics are notified of a request for assistance. In some emerging models, community paramedics who are not part of the emergency response plan are being engaged proactively to assign themselves to emergency calls when they hear them in progress. This emerging method of providing either scheduled or unscheduled visits through what are being called Community Paramedic Response Units, Mobile Integrated Healthcare, or Paramedic-Specialist Teams has resulted in a growing use of community paramedics in more flexible ways to better meet the needs of individuals using 9-1-1 services.

Mental Health and Addictions Support Programs

Some municipal paramedic services described developing new partnerships with police, public health, or social services partners in community paramedicine programs designed to support community access to care for patients needing help with behavioural, mental health, and/or addictions conditions. Descriptions of these community paramedicine programs include actively participating in Mental Health Crisis Response Teams, providing care in homeless shelter programs, and assisting in medical oversight at a consumption & treatment site.These approaches to community paramedicine are similar to the rationale that underlies the Community Paramedic-Led Clinic Model that uses a specific location to deliver a community paramedicine program. However, the aims of the program are to address behavioural, mental health or addictions issues rather than a focus on chronic disease management.



CASE STUDY: Niagara Emergency Medical Services Mental Health and Addictions Response Team (MHART)

LHIN: Hamilton Niagara Haldimand Brant (HNHB)

Paramedic Service: Niagara Emergency Medical Services (NEMS)

Community Paramedicine Programs Objective: NEMS aims to leverage community paramedicine as an innovative way to improve response and integrate patient care.

Community Paramedicine Program Impact: The NEMS Mental Health and Addictions Response Team (MHART) is a community paramedic and mental health nurse that use a non-ambulance response vehicle when low acuity mental health 9-1-1 calls are identified. They improve patient and provider safety through scheduled or unscheduled visits to follow up after 9-1-1 calls for overdoses where a patient refuses transport after treatment. Through the MHART program NEMS has seen a 5% reduction overall of mental health transports to local emergency departments despite experiencing a 7% increase in mental health calls in 2018.

Palliative Care Support Programs

Most municipal paramedic services across Ontario are actively evaluating their emergency response services for patients receiving palliative care and some are considering how these patients may be better cared for through community paramedicine programs. Challenges around sharing information between care providers, however, have been central to comprehensively addressing this opportunity. In some cases, municipal paramedic services are approaching this area of service delivery with the direct integration of frontline paramedics. In other instances, patients receiving palliative care are being registered to a community paramedicine program roster first to permit notification to responding paramedics of their overall status. Either approach is requiring paramedic services to determine ways to improve their service delivery model to align with the palliative and end-of-life care preferences of those receiving community-based palliative care.

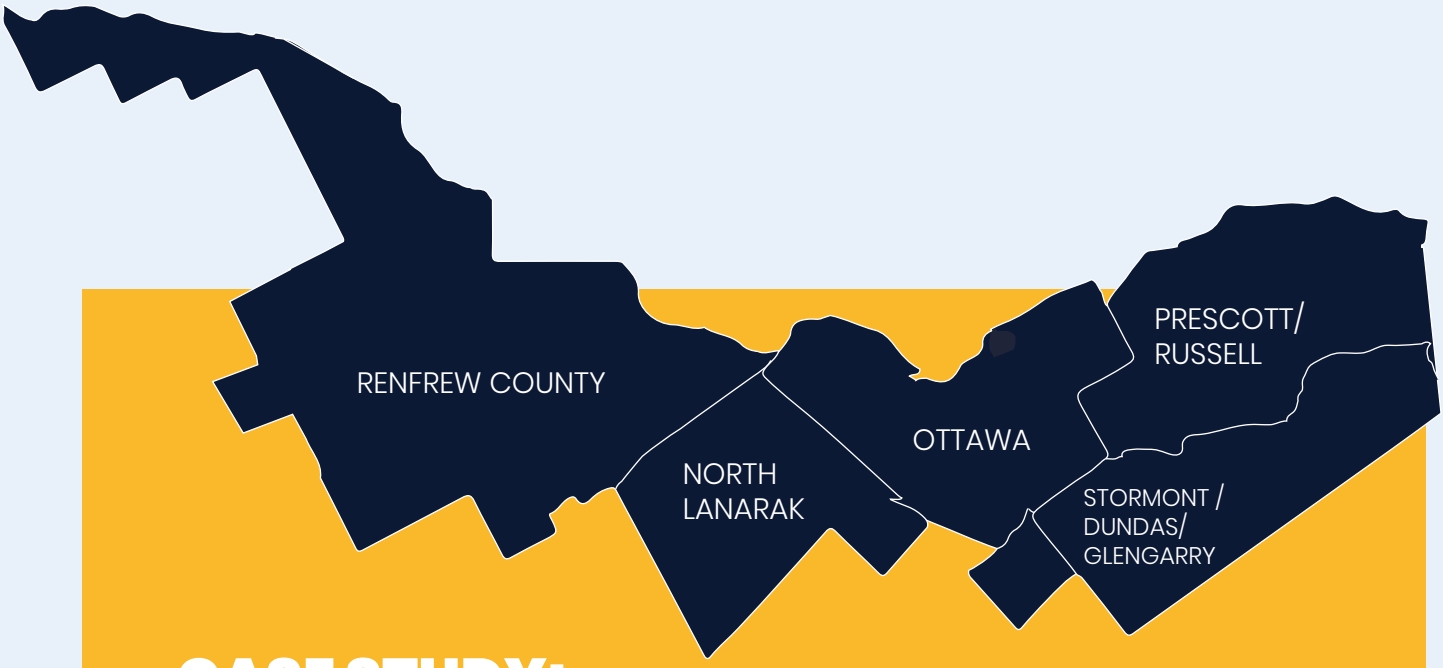
Influenza Prevention and Surge Management Support Programs

In multiple LHINs, community paramedicine influenza surge programs have been initiated to increase vaccination of at-risk populations with the influenza vaccine and to promote a more appropriate response to individuals with influenza-like presentations. In these models, municipal paramedic services are leveraging their mobile service delivery capabilities to assist in public health surveillance activities, provide vaccinations for individuals in community settings, and provide integrated care and support to individuals with influenza-like presentations in retirement, nursing and other residential environments for older adults. In these programs, community paramedics can complete point of care tests to screen patients for influenza and are further able to assist in symptom treatment and in the provision of anti-viral medications which can further support care in-place and pre-empt the need to transfer patients to a local emergency departments.

Transitional Care Support Programs

A number of community paramedicine programs have started partner with discharge planning teams in hospitals to better aid their health system partners in meeting the guidelines established for care transitions by Health Quality Ontario[8] to help avoid hospital readmissions. In some situations, patients are being identified on discharge from an Emergency Department for follow-up by a community paramedic to ensure that the patient and the other providers involved in their care are aware of any changes that have been recommended by the emergency physician such as new or discontinued prescriptions.

[8] Quality Standards: Transitions From Hospital to Home [Internet]. 2019 [cited 2019 Aug 9]. Available from: https://www.hqontario.ca/Portals/0/documents/evidence/quality-standards/qs-transitions-in-care-draft-quality-standard-en.pdf



CASE STUDY:

Champlain LHIN Influenza Prevention and Surge Management Support Programs

LHIN: Champlain

Paramedic Services: Cornwall SDG Paramedic Services, Country of Renfrew Paramedic Service, Lanark County Paramedic Service, Leeds-Grenville Paramedic Service, Ottawa Paramedic Service, and Prescott-Russell Paramedic Services

Community Paramedicine Program Objective: Provide preventative and proactive program to address seasonal increase in 9-1-1 demand and emergency department visits for patients from targeted community residences who experience influenza-like illness.

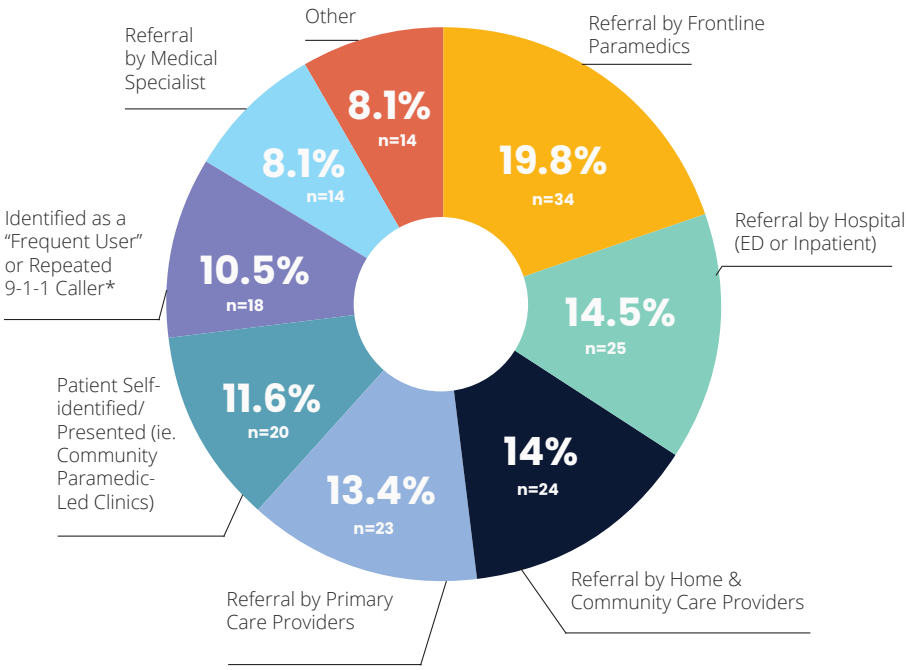
Community Paramedicine Program Impact: Across the Champlain LHIN, over 3400 patients received the influenza vaccination from community paramedics. Some patients were followed by community paramedics with a resulting emergency department diversion of over 2400 patients. By providing both influenza immunization and special medical directives to treat patients with influenza-like illness in retirement homes or long-term care residences, community paramedicine programs helped to address seasonal surges in 9-1-1 calls and subsequent transports to emergency departments attributed to influenza.

COMMUNITY PARAMEDICINE PROGRAM PATIENT/CLIENT IDENTIFICATION AND REFERRAL SOURCES

All of the municipal paramedic service operating at least one community paramedicine program were asked how they identified patients/clients for enrollment in their respective programs. 75% (n=36/48) of the services indicated that they used multiple referral sources to support the identification of patients/clients for enrollment into their programs. In total the 48 municipal paramedic services identified 172 unique referral sources amongst them in relation to their particular programs and these are presented in Figure 3. Individuals and patients were most often identified by the municipal paramedic services themselves via a referral from their own frontline emergency paramedics (n= 34) or through am internal process that identified repeated users of 9-1-1 services (n=18), or by referral from another local health system partner such as a hospitals (n=25) home care provider (n=24), primary care providers (n=23), and specialists (n=14). Community Paramedic-Led Clinics were unique in that individuals and patients attended these on their own accord in response to a notice about the clinic's location, time and services being rendered (n=20). Respondents listed other means of identifying patients 14 times.

Figure 2: Referral Sources of Patients/Clients for Ontario Community Paramedicine Programs.

How are patients identified or referred for enrollment in a community paramedicine program?

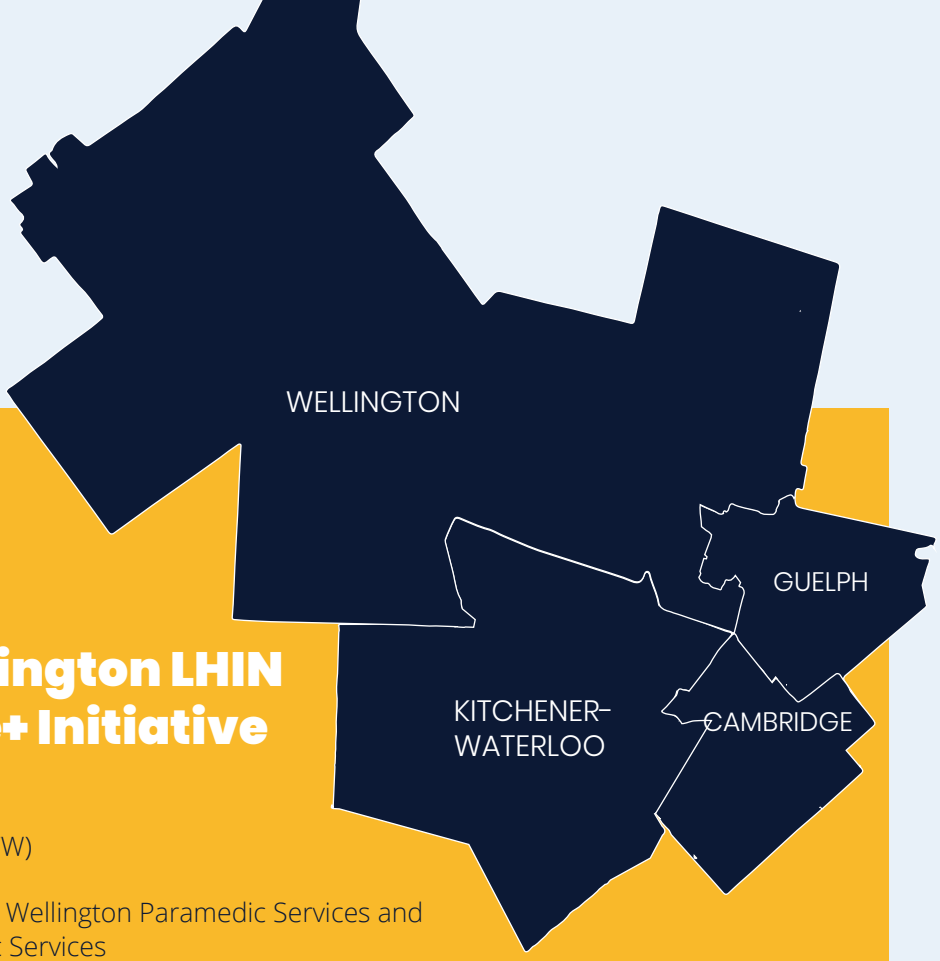


*Paramedic services were invited to indicate how they defined a 'frequent user of 9-1-1-services. While definitions varied, frequency seemed to indicate a minimum of 3 calls in a specific time period that could vary between 30 days and one year.

COMMUNITY PARAMEDICINE PROGRAM HEALTH SYSTEM PARTNERSHIPS

All of the municipal paramedic services operating at least one community paramedicine program were asked to identify any active health system partnerships that they had developed. In total, 96% (46/48) of municipal paramedic services indicated that they had at least one or more partners and many identified their partners by name. The partnership that was identified most often was the Home and Community Care sector by 79% (38/48) of municipal paramedic services. Other sectors where partnerships were identified included: Primary Care Providers (46%, 22/48), Hospitals (50%, 24/48), Long-term Care Residences (8%, 4/48), Public Health Units (17%, 8/48), Mental Health Services (31%, 15/48), and Palliative Care Providers (10%, 5/48). Other Municipal or Community Services were identified as partners by 44% (21/48) of municipal paramedic services and other organizations were identified by 54% (26/48) of municipal paramedic services. Appendix D presents the overall level of partnerships reportedly developed at the level of each municipal paramedic service in the development of their community paramedicine program(s).

Finally, many municipal paramedic services recognized their partnerships with neighbouring paramedic services as important relationships that helped to either initiate their community paramedicine programs or better integrate and coordinate the services that they were providing.



CASE STUDY: Waterloo Wellington LHIN Telehomecare+ Initiative

LHIN: Waterloo Wellington (WW)

Paramedic Services: Guelph Wellington Paramedic Services and Region of Waterloo Paramedic Services

Community Paramedicine Program Type: Remote Patient Monitoring Program

Community Paramedicine Program Objective: Deliver greater integrated care using remote monitoring technology and a collaboration between community paramedicine programs and the WW LHIN's rapid response nursing program.

Community Paramedicine Program Impact: The WW LHIN has partnered with their local paramedic services to integrate their remote monitoring programs under the umbrella program called Telehomecare+. The program involves each municipal paramedic service's Remote Patient Monitoring Program (CPRPM) partnered with the WW-LHIN's rapid response nursing (RRN) Program. Rapid response nurses identify Alternate Level of Care patients and work on case management to help provide services needed for safe discharge from hospitals including coordination with primary care providers, home care providers, community support services and municipal paramedic services. The CPRPM program was identified as one of the services that was most effective at supporting these patients. Community paramedics monitor and provide scheduled home visits to assist in management of their chronic health conditions, respond to alerts in real-time, and coordinate with nurses if a patient's condition improves or declines. The team works to best assist patients stay safe at home, without visiting the emergency department.

The development of Telehomecare+ partnership has enabled further identification of complex patients through other avenues in an attempt to pre-empt Alternate Level of Care designation. Patients can be identified through repeated 9-1-1 calls, the provision of home care services, or via their primary care providers. Community paramedics and RRNs support each other in patient case-finding, case management, and in the ongoing provision of integrated patient care that also includes primary care providers. The Guelph Wellington Paramedic Services stated that the established communication channels have allowed community paramedics to: "*increase an individual's access to health and community programs while redirecting them away from the emergency department, hospital and 9-1-1*".

IDENTIFIED COMMUNITY PARAMEDICINE PROGRAM IMPLEMENTATION CHALLENGES AND OPPORTUNITIES

All municipal paramedic services were asked about (a) the challenges that they have encountered in operating their community paramedicine programs, and (b) how they addressed these challenges in order to develop and implement community paramedicine programs successfully.

Challenges Encountered

For many municipal paramedic services and their health system partners, community paramedicine programs represent a new way of delivering services. As with any new approach, challenges associated with the delivery of these programs were expected. Common and broad systemic challenges faced by most services related to the three themes of ***funding, data-sharing and reporting,*** and ***regulation related issues***.

The funding challenges identified largely related to both the mechanisms for receiving funds as well as the implications for the use of those funds. During the MOH community paramedicine demonstration period, municipal paramedic services operating demonstration projects were funded directly by the MOH. While the transfer of responsibility for the funding and oversight of community paramedicine in Ontario to the LHINs was welcomed, this was not supported with a change to LHIN-related legislation or regulations that could allow municipal paramedic service to be designated transfer payment agencies (TPAs) of LHINs. It is not clear if municipal paramedic services will be TPAs of Ontario Health which is now assuming many of the prior functions of LHINs. Presently, municipal paramedic services that wish to continue to or to become new recipients of LHIN-related community paramedicine funding are required to find a willing TPA – like a local hospital to serve as a funding conduit for their community paramedicine programs. Sinai Health System, for example was subsequently asked to and agreed to be the TPA for Toronto Central LHIN's initiatives being operated by Toronto Paramedic Services. While arrangements like this have helped foster further collaborations, they also continue to represent a logistical hurdle for paramedic services looking to start new or expanded community paramedicine programs.

Challenges were also noted to exist with data sharing and data stewardship capabilities that impacted on the reporting abilities and processes of community paramedicine programs. While municipal paramedic services can collect several process measures, the number of outcome measures they are able to collect are often limited to the number of individuals and patients served, numbers of referrals made, and effects on 9-1-1 utilization and transport rates. However, determining additional systemic impacts at the home and community care or hospital level were hard or not possible to measure without data sharing agreements and capabilities. Measuring patient, caregiver and provider experience and satisfaction has not been standardized as well.

Several municipal paramedic services also reported their challenges associated with attempting to quantify non-events or 'near-misses,' where patients do not go to the emergency department or call 9-1-1 after being enrolled in a community paramedicine program. Pre-post analyses can be problematic as an enrollee's condition likely evolves with time. Municipal paramedic services that provide Remote Patient Monitoring Programs have a means to quantify some of these 'near-misses' by using the number of electronic alerts that they receive from patients to demonstrate situations that may have resulted in calling 9-1-1 or going to the ED in the absence of being linked to a Remote Patient Monitoring Program. A standardized patient-centred outcomes reporting framework and data sharing agreements with health system partners could help facilitate improved reporting of the outcomes that matter resulting from community paramedicine programs.

Finally, the establishment and evolution of community paramedicine programs represents a significant culture change for paramedics who are principally bound by the Ambulance Act to transport every patient to the emergency department, regardless of complaint or acuity.[9] The interaction between frontline and community paramedicine paradigms can be a potential challenge in addition to integrating their work and functions with other health system partners. Further work is needed around case finding and care prioritization to ensure that the roles and functions amongst frontline paramedics, community paramedics, and their health system partners can be optimized. Future regulatory changes being proposed in an enhanced Ambulance Act that could facilitate models of care such as treat and refer or treat and release will be important steps towards addressing this challenge.

Addressing Challenges

The widespread proliferation of community paramedicine models across Ontario in the past five years is testament to the clear desire of virtually every municipal paramedic service across Ontario to address challenges to develop effective community paramedicine programs. The fact that most community paramedicine programs are being funded and supported with additional resources beyond the LHIN investments reflects the knowledge that these programs can help to achieve desired patient and system outcomes in order to address locally identified needs.

[9] Emergency Health Services Branch Ontario Ministry of Health and Long-Term Care. Basic Life Support Patient Care Standards [Internet]. 2nd ed. Toronto, ON: Queen's Printer for Ontario; 2016. 1–293 p. Available from: http://www.lhsc.on.ca/About_Us/Base_Hospital_Program/Medical_Directives/BLSPCS-v3.0.1.pdf

Municipal paramedic services described that most of their challenges were mostly addressed through strong local engagement of health system partners and through meaningful two-way feedback about strategies and opportunities to address barriers to patient care as a shared goal by all members of the healthcare continuum. Municipal paramedic services stated that developing a shared commitment to overcome challenges was a strong result of their commitment towards building strong local relationships, expanding levels of trust, and engaging in collaborative and mutually beneficial efforts with health system partners. Municipal paramedic services also stated that by clearly communicating roles and responsibilities (for both community paramedics and health system partners), the efforts to connect individuals and patients with the most appropriate health services was facilitate. Holding meetings such as 'team huddles', supporting the development of 'connectivity or situation tables' were examples of teamwork that aligned common goals and provided space to ask questions such as; "Did this (treatment or intervention) work? Why didn't it work? What could have been done better? And by Whom." The constantly cited local approach to teamwork to integrated patient care might be best summarized by one paramedic service that stated that being engaged and more integrated with their local hospital discharge planners meant they were also able to "provide wrap-around care" to their community paramedicine patients".

DEMONSTRATING SUCCESS THROUGH ONTARIO-BASED RESEARCH IN COMMUNITY PARAMEDICINE

Findings from Toronto published over the past year have shown that Assessment and Referral Programs improved access to home care services by 24%, led to an average increase of 17.4 hours in total home care services per person, while reducing 9-1-1 calls by 10% and ambulance transports to emergency departments by 7% over the study period.[10] The Ontario based CP@Clinic model also demonstrated through a randomized control trial that the establishment of Wellness Clinics in subsidized housing buildings can reduce 9-1-1 calls by 28% while also improving patient well-being and quality of life.[11] A Home Visit program in Renfrew County has demonstrated its ability to achieve reductions in 9-1-1 utilization by 24%, ED visits by 20%, and hospital admissions by 55%.[12] The Ontario Community Paramedicine Remote Patient Monitoring (CPRPM) Program demonstrated its ability to provide a 542% return on investment for helping older patients with chronic conditions to live in their homes and reduced their need to call 9-1-1 by 26%, visit the ED by 26%, or be admitted to hospital by 32% while further improving the efficiency of Home Visit Programs by allowing community paramedics to manage greater caseload.[13] Finally, a community paramedicine enabled hospital discharge program from Sudbury resulted in a 50% reduction in total health care costs per patient and estimated cost avoidance to be $10,000 per patient enrolled.[14] Multiple other examples of reports or news stories reflecting the demonstrated success of community paramedicine initiatives across Ontario have been catalogued in Appendix F.

[10] Verma A, Klich J, Thurston A, Scantlebury J, Kiss A, Seddon G, Sinha SK. Paramedic-initiated home care referrals and use of home care and emergency medical services. Prehospital Emergency Care. 2018 May 4;22(3):379-84.

[11] Agarwal G, Angeles R, Pirrie M, McLeod B, Marzanek F, Parascandalo J, Thabane L. Evaluation of a community paramedicine health promotion and lifestyle risk assessment program for older adults who live in social housing: a cluster randomized trial. CMAJ. 2018 May 28;190(21):E638-47.

[12] Ruest MR, Ashton CW, Millar J. Community Health Evaluations Completed Using Paramedic Service (CHECUPS): Design and Implementation of a New Community Based Health Program. JHHSA. 2017;(Fall).

[13] Brohman M, Green M, Dixon J, Whittaker R, Fallon L. Community Paramedicine Remote Patient Monitoring (CPRPM): Benefits Evaluation & Lessons Learned. Toronto, ON; 2018.

[14] McNeil D, Blanchard T. Community Paramedicine Program Evaluation [Internet]. Available from: https://agendasonline.greatersudbury.ca/index.cfm?pg=feed&action=file&attachment=16613.pdf

LOOKING TOWARDS A FUTURE FOR COMMUNITY PARAMEDICINE IN ONTARIO

The Ontario Community Paramedicine Secretariat has become actively engaged with Ontario's municipal paramedic services and LHINs to understand how community paramedicine has been evolving and identify emerging programs and innovative practices that have demonstrated their ability to deliver improved patient and system outcomes that could also be scaled and spread across Ontario.

Within a rapidly transforming healthcare landscape, community paramedicine programs are demonstrating their growing ability to address care gaps and support the current agenda to address hallway healthcare by improving patient care to pre-empt or prevent emergency department visits and hospital admissions.

The findings of our report illustrate that multiple municipal paramedic services are already starting to integrate community paramedicine initiatives with their regular emergency response activities either by facilitating the pre-notification of worsening symptoms amongst patients enrolled in Remote Patient Monitoring Programs or by identifying patients who could benefit from a more comprehensive assessment available from a community paramedic amongst those who call 9-1-1. Indeed, if the 9-1-1 system was imagined originally as a safety net designed to catch people when something goes wrong, community paramedicine could represent a safety harness that can prevent patients from falling into or back into the 9-1-1 safety net.

During this time of significant health system transformation in Ontario, including enabling new models of care for select 9-1-1 callers, we can draw on findings from other jurisdictions that have undergone some of these aspects of system change. Models of care enabled through an integration of community paramedicine programs and emergency response have further demonstrated their overall ability to achieve reductions in rates emergency department visitation and an increase in referrals to primary care providers.[15,16] Allowing alternative models to ambulance dispatch have achieved successful results elsewhere,[17] particularly when callers are able to speak with an individual who has experience as a frontline responder.[18] The experience and abilities of paramedics as responders provides them with unique insights during a call for help, as has been demonstrated through Ontario's CPRPM program.[19] Other examples of providing 'on-demand' community paramedic availability have demonstrated promising results in helping maintain individuals safe in their homes who are waiting to transition to long-term care, even preventing long-term care admissions.[20] Integrating community paramedicine programming with ambulance communication centres and spreading the success of similar programs province-wide could potentially have a further significant impact on improving care in the community, reducing emergency department visits, and hospital admissions (and alternate level of care) that contribute to the hallway healthcare problem. The OCPS therefore encourages the Ministry of Health to consider community paramedic staffing models in communications centres.

Most municipal paramedic services that are delivering community paramedicine services already have established relationships with physicians in fields other than emergency medicine to support setting and service appropriate medical delegation of controlled acts in the delivery of their community paramedicine programs. Most frequently, community paramedicine programs can enable a direct link to primary care providers and facilitate shared care planning that enables these patients to avoid emergency department visits.[21] Similar program designs have been reported in other settings where paramedic scopes of practice have been expanded.[22]

[15] Swain AH, Hoyle SR, Long AW. The changing face of prehospital care in New Zealand: the role of extended care paramedics. J New Zeal Med Assoc NZMJ [Internet]. 2010;19(123):11–4. Available from: http://www.nzma.org.nz/journal/123-1309/3985/

[16] Evans R, McGovern R, Birch J, Newbury-Birch D. Which extended paramedic skills are making an impact in emergency care and can be related to the UK paramedic system? A systematic review of the literature. Emerg Med J [Internet]. 2013 Apr 10;594–603. Available from: http://www.ncbi.nlm.nih.gov/pubmed/23576227

[17] Jensen JL, Carter AJE, Rose J, Visintini S, Bourdon E, Brown R, et al. Alternatives to Traditional EMS Dispatch and Transport: A Scoping Review of Reported Outcomes. Can J Emerg Med. 2015;17(5):532–50.

[18] Dib JE, Naderi S, Sheridan IA, Alagappan K. Analysis and applicability of the Dutch EMS system into countries developing EMS systems. J Emerg Med. 2006;30(1):111–5.

[19] Brohman M, Green M, Dixon J, Whittaker R, Fallon L. Community Paramedicine Remote Patient Monitoring (CPRPM): Benefits Evaluation & Lessons Learned. Toronto, ON; 2018.

[20] Ruest M, Stitchman A, Day C. Evaluating the impact on 911 calls by an in-home programme with a multidisciplinary team. Int Paramed Pract. 2012;1(4):125–32.

[21] Leyenaar M, Mcleod B, Chan J, Tavares W, Costa A, Agarwal G. A scoping study and qualitative assessment of care planning and case management in community paramedicine. Irish J Paramed. 2018;3(July):1–15.

[22] Mason S, Coleman P, Keeffe CO, Ratcliffe J, Nicholl J. The evolution of the emergency care practitioner role in England: experiences and impact. Emerg Med J. 2006;23:435–9.

As such, the OCPS expects that new models of care that are designed to complement and extend existing community paramedicine programs will be successful in enabling paramedics to:

- Arrange or provide transportation of patients to destinations other than an emergency department where they can receive further treatment;
- Diagnose and treat patients on-site and if necessary, refer them to another health care provider;
- Treat and release patients from their care on-site; and
- Refer select patients before, during or after a 9-1-1 call to the most appropriate care options in the community.
- Provide 'on-demand' assistance or consultation, in person or over the phone in coordination with primary care providers or other health system partners.

The Ontario Community Paramedicine Secretariat is prepared to assist with the development of evaluation frameworks for the delivery of community paramedicine programs as new models of care are developed by drawing from innovative solutions.[23] As community paramedicine is further integrated in delivery of care and treat-and-release and alternate destinations become part of the routine delivery of emergency response, community paramedicine will play an active role in ensuring that patients receive the appropriate care.

[23] Turner J, Siriwardena AN, Coster J, Jacques R, Irving A, Crum A, et al. Developing new ways of measuring the quality and impact of ambulance service care: the PhOEBE mixed-methods research programme. Program Grants Appl Res. 2019;7(3):1–90

CONCLUSION

The OCPS was recently established during a time of both regulatory changes to the practice of paramedicine and the greatest level of health care system transformation seen in decades.

This 2019 Report on the Status of Community Paramedicine in Ontario helps to provide a clear understanding of how the field of community paramedicine is growing and evolving to better meet the needs of Ontarians in need of care and support in ways that can deliver integrated patient-centred care and help to reduce hallway healthcare.

With community paramedicine programs now being delivered by 92% of municipal paramedic services across Ontario, the rapidly evolving and growing multi-dimensionality of community paramedicine programs represents a growing intentional strategy by Ontario's municipal paramedic services to provide individuals and patients with greater access to other community-based care providers and services that can help lessen a patient's reliance on the province's 9-1-1 safety net and avoid emergency department visits and hospitalizations.

With the current move towards the creation of Ontario Health Teams (OHTs), the establishment and growth of community paramedicine programs will become one clear opportunity to advance the mission and activities of this integrated team-based approach to the delivery of more patient-centred care. If OHT development parallels the development of the Accountable Care Organization (ACO) movement in the United States, then community paramedicine will likely take on an even greater role in the future of the delivery of care across Ontario.

In spite of the challenges that have been presented, community paramedicine programs are demonstrating effective and efficient ways to provide short-to-midterm episodic care to underserved patient populations. It is further expected that more multi-dimensional community paramedicine strategies will be developed to help patients overcome barriers or challenges in accessing timely coordinated care. The OCPS is eager to continue to support planning and implementation of community paramedicine programs and future reporting on the impacts of these programs.

Overall, in 2019 community paramedicine programs appear to be evolving to better meet their local needs and becoming increasingly well-positioned to support the province's current goal to end hallway healthcare by improving access to more proactive care and other community-based health care providers and in helping to support patients to stay safely in their homes and communities for as long as possible.

[26] Mason S, Coleman P, Keeffe CO, Ratcliffe J, Nicholl J. The evolution of the emergency care practitioner role in England: experiences and impact. Emerg Med J. 2006;23:435–9.

[27] Turner J, Siriwardena AN, Coster J, Jacques R, Irving A, Crum A, et al. Developing new ways of measuring the quality and impact of ambulance service care: the PhOEBE mixed-methods research programme. Program Grants Appl Res. 2019;7(3):1–90

APPENDIX A

Community Paramedicine Steering Committee Membership

Name	Title/Position and Organization	Representative Role
Co-Chairs		
Dr. Samir Sinha	Director of Geriatrics, Sinai Health System, University Health Network Expert Lead – Ontario Seniors Strategy Senior's Physician Lead – Toronto Central LHIN	Geriatrician Representative
Michael Nolan	Chief of Paramedic Services, County of Renfrew Board Member – Ontario Association of Paramedic Chiefs (OAPC)	Chief Paramedic Representative
Members		
Adam Thurston	Superintendent, Community Safeguard Services, Toronto Paramedic Services	OAPC Toronto Zone Representative
Amy Olmstead	Director, Home and Community Care Branch, Ministry of Health	Ministry of Health Representative
Dr. Andrew Costa	Assistant Professor, Schlegel Chair in Clinical Epidemiology & Aging | Dept. of Health Research Methods, McMaster University	Research & Evaluation Representative
Brad Davey	Chief Executive Officer, Connex Ontario	Community Mental Health Representative
Brent McLeod	CP Strategic Lead, Hamilton Niagara Haldimand Brant Local Health Integration Network	LHIN Representative
Chris Spearen	Chief and General Manager, York Region Paramedic and Seniors Services	Paramedic and Long-Term Care Representative
Dan McCormick	Chief Administrative Officer, Rainy River DSSAB	Northern Ontario Service Deliverers Association (NODSA) Representative
Doug Socha	Chief, Hastings Quinte EMS	OAPC East Zone Representative
Dustin Carter	Superintendent of Community Paramedicine, Middlesex-London EMS	OAPC South West Zone Representative
Dr. Gina Agarwal	Associate Professor, Academic Family Physician, Primary Care Epidemiologist	Primary Care Representative
Jean Carriere	Director and Chief of EMS, Cochrane District, CDSSAB	OAPC North Zone Representative
Jeff Gunner	Chief, Weeneebayko Area Health Authority Paramedic Service	Indigenous Paramedic Service Representative
Joe Pedulla	Superintendent, Community Paramedicine and Research, Hamilton Paramedic Service	OAPC Central Zone Representative
Karen Hurlburt	Vice President, Strategy and External Relations, Sinai Health System	Hospital Representative
Kate Krestow	Manager, Public Education and Awareness, Ministry of Senior Affairs and Accessibility	Ministry of Senior Affairs and Accessibility Representative
Leslie Hirst	Regional Palliative Care Network Director, Hamilton Niagara Haldimand Brant Local Health Integration Network (LHIN)	Palliative Care Representative
Lisa Levin	Chief Executive Officer, Advantage Ontario	Long-Term Care and Services for Seniors Sector Representative
Melissa Roney	Deputy Chief (Acting) Greater/ Grand Sudbury Emergency Services	Frontline Paramedic

Name	Title/Position and Organization	Representative Role
Michelle McMillan	Community Paramedicine Coordinator, Cornwall SDG Paramedic Services	Frontline Paramedic
Philip Kilbertus	Director, System Planning, North East Local Health Integration Network	LHIN Representative
Dr. Richard Dionne	Director of EMS Fellowship and Associate Professor, EMS Associate Medical Director, University of Ottawa & Regional Paramedic Program of Eastern Ontario	Base Hospital Physician Representative
Dr. Ron Hoffman	Assistant Professor, Nipissing University	Community Mental Health Sector Representative
Sharon Lee Smith	Interim Chief Executive Officer, Mississauga Halton Local Health Integration Network	LHIN CEO Representative
Slawomir Pulcer	Captain, Professional Standards, Essex-Windsor EMS	Frontline Paramedic
Steve Haddad	Director, Emergency Health Services Branch (ESHB), Ministry of Health	Ministry of Health Representative
Sue VanderBent	Chief Executive Officer, Home Care Ontario	Home Care Sector Representative
Pending	Public Health Representative	
Pending	Patient or Caregiver Representative	
Community Paramedicine Secretariat Staff		
Matthew Leyenaar	Director, Community Paramedicine Secretariat	Ex-officio
Ryan Strum	Research Analyst, Community Paramedicine Secretariat	Ex-officio
Mashiat Haque	Program Assistant, Community Paramedicine Secretariat	Ex-officio

APPENDIX B

Current Membership of Ontario Community Paramedicine Secretariat Working Groups

Capacity Building & Knowledge Exchange Working Group

- Joe Pedulla (chair)
- Gary Staples
- Gordon Perolli
- Jordan Kachur
- Karen Totzke
- Katie Dainty
- Kevin McNab
- Rebecca Poulin

Performance Measurement & Evaluation Working Group

- Brent McLeod (chair)
- Andrew Costa
- Craig Hennessy
- Gina Agarwal
- Jeff Dodge
- Jim Greenaway
- Justin Lammers
- Kim Wilhelm
- Lesley Hirst
- Mathieu Grenier
- Melanie Dissanayake
- Michelle McMillan
- Rick Ferron
- Shannon Sibbald

Policy & Practice Working Group

- Dustin Carter (chair)
- Chris Spearen
- Elizabeth Anderson
- Kayella Mackenzie
- Kyle Grant
- Kyle MacCallum
- Merideth Morrison
- Michel Ruest
- Natalie Kedzierski
- Richard Trombley
- Walter Tavares

APPENDIX C

List of Ontario Paramedic Services and their Reported Types of Community Paramedicine Programs

Paramedic Service	Assessment and Referrals Programs	Community Paramedic-Led Clinics	Home Visit Programs	Remote Patient Monitoring Programs	Community Paramedic-Specialist Response Programs	Other
Algoma District Paramedic Services	X	X	X			
Brant/Brantford Paramedic Services	X	X	X	X		
Bruce County Paramedic Service	X					
Chatham-Kent EMS	X	X	X	X	X	
City of Greater Sudbury Paramedic Services	X	X	X	X		
Cochrane District EMS	X	X	X	X		X
Cornwall SDG Paramedic Services	X		X		X	
County of Renfrew Paramedic Service	X	X	X	X	X	
County of Simcoe Paramedic Service	X		X		X	X
Dufferin County Paramedic Service	X		X	X		
Elgin EMS						
Essex Windsor EMS	X	X	X	X		
Frontenac Paramedics	X	X				
Grey County Paramedic Services	X	X	X	X		
Guelph Wellington Paramedic Service	X	X	X	X	X	
Haldimand County EMS	X					
Haliburton County Paramedic Service	X		X			
Halton Region Paramedic Service	X	X	X	X		
Hamilton Paramedic Service	X	X	X	X		X
Hastings Quinte Paramedic Services	X	X	X	X		
Huron County Paramedic Services	X	X				X
Kawartha Lakes Paramedic Service	X					
Kenora District Services Board						
Lambton EMS	X		X	X	X	
Lanark County Paramedic Service	X		X			
Leeds Grenville Paramedic Service	X		X			

Paramedic Service	Assessment and Referrals Programs	Community Paramedic-Led Clinics	Home Visit Program	Remote Patient Monitoring Programs	Community Paramedic-Specialist Response Programs	Other
Lennox and Addington EMS						
Manitoulin-Sudbury DSB Paramedic Services	X		X	X		
Middlesex-London Paramedic Service	X		X	X		
Muskoka Paramedic Services	X		X			
Niagara EMS	X		X	X	X	
Nipissing Paramedic Services	X	X	X			
Norfolk EMS	X	X	X	X		
Northumberland EMS	X					
Oneida EMS						
Ottawa Paramedic Service	X	X	X	X	X	
Oxford County EMS	X					
Parry Sound EMS	X	X	X	X		
Peel Region Paramedic Service	X	X				
Perth County Paramedic Service	X					
Peterborough County Paramedics	X					
Prescott-Russell Paramedic Service	X		X		X	X
Rainy River District Paramedic Services	X	X	X			X
Rama Paramedic Services			X	X		
Region of Durham EMS				X	X	
Region of Waterloo Paramedic Services	X		X	X		
Six Nations EMS	X					
Superior North EMS (Thunder Bay)	X		X	X		
Timiskaming EMS	X					
Toronto Paramedic Service	X	X	X			X
Weeneebayko Area Health Authority Paramedic Service		X	X			
York Region Paramedic Services	X	X	X			

APPENDIX D

List of Ontario Paramedic Services and their Identified Health System Partners

Paramedic Service	Home & Community Care providers	Primary Care providers	Hospitals	Long-term care residences	Public Health Units	Mental Health services	Palliative Care providers	Municipal or community services	Other
Algoma District Paramedic Services			+		+			+	
Brant/Brantford Paramedic Services	+		+						
Bruce County Paramedic Service	+								
Chatham-Kent EMS	+	+	1			1		+	
City of Greater Sudbury Paramedic Services	+	+	+			+			+
Cochrane District EMS	1		4			1		5	7
Cornwall SDG Paramedic Services	+	+	+	+			+		
County of Renfrew Paramedic Service	+	2	2	+			+	+	
County of Simcoe Paramedic Service	+	1	+	+					6
Dufferin County Paramedic Service	+		+			+	+		1
Elgin EMS									
Essex Windsor EMS	1	2	+						+
Frontenac Paramedics		2		+			+	1	
Grey County Paramedic Services	+	+							
Guelph Wellington Paramedic Service	1	4	4		1	1		8	9
Haldimand County EMS									
Haliburton County Paramedic Service	+		+						1
Halton Region Paramedic Service	+				+			1	
Hamilton Paramedic Service	+	1	1		1	+	2	2	1
Hastings Quinte Paramedic Services	+		+					1	3
Huron County Paramedic Services		+				2	2	7	
Kawartha Lakes Paramedic Service	1		1					+	
Kenora District Services Board									
Lambton EMS	+		+			+			13

Paramedic Service	Home & Community Care providers	Primary Care providers	Hospitals	Long-term care residences	Public Health Units	Mental Health services	Palliative Care providers	Municipal or community services	Other
Lanark County Paramedic Service	+								
Leeds Grenville Paramedic Service			1						
Lennox and Addington EMS									
Manitoulin-Sudbury DSB Paramedic Services	+								
Middlesex-London Paramedic Service	1	+	+			+			3
Muskoka Paramedic Services	+	+					+	+	
Niagara EMS	1	+	+		+	+		1	+
Nipissing Paramedic Services	+	+						3	
Norfolk EMS	1	1	1						1
Northumberland EMS	+								
Oneida EMS									
Ottawa Paramedic Service	+	1	+		+				3
Oxford County EMS	1							2	
Parry Sound EMS	5						+		
Peel Region Paramedic Service	+						3	1	
Perth County Paramedic Service	+								
Peterborough County Paramedics	+				+				
Prescott-Russell Paramedic Service	+	+	+		+			+	+
Rainy River District Paramedic Services			+						
Rama Paramedic Services	+								
Region of Durham EMS					+		3		
Region of Waterloo EMS	2	1			+		2	4	
Six Nations EMS									
Superior North EMS (Thunder Bay)	+	+					+	+	
Timiskaming EMS	+								
Toronto Paramedic Service	+		+			+		+	
Weeneebayko Area Health Authority Paramedic Service								5	
York Region Paramedic Services		+	+	+		+	+	+	+

* When specific names of health system partners were reported, these have been indicated as a number.
**When specific names of health system partners were not reported but were described generally, these have been indicated as a '+'.

APPENDIX E

Identified Non-LHIN Funding Sources for Ontario CP Activities:

Ontario municipal paramedic services were asked to indicate if they were running any non-LHIN funded community paramedicine programs. The following sources of funding were identified along with their corresponding paramedic services:

- Municipal Funding, including special project funding:
  - Chatham-Kent EMS
  - City of Greater Sudbury Paramedic Services
  - County of Renfrew Paramedic Service
  - Essex Windsor EMS
  - Lambton EMS
  - Toronto Paramedic Services
  - York Region Paramedic Services
- Canada Health Infoway/Future Health Services Community Paramedicine Remote Patient Monitoring:
  - Brant/Brantford Paramedic Services
  - Chatham-Kent EMS
  - Cochrane District EMS
  - County of Renfrew Paramedic Service
  - Dufferin County Paramedic Service
  - Essex Windsor EMS
  - Grey County Paramedic Services
  - Guelph Wellington Paramedic Service
  - Halton Region Paramedic Service
  - Hamilton Paramedic Service
  - Hastings Quinte Paramedic Services
  - Lambton EMS
  - Middlesex-London Paramedic Service
  - Niagara EMS
  - Norfolk EMS
  - Parry Sound EMS
  - Rama Paramedic Services
  - Region of Waterloo EMS
  - Superior North EMS (Thunder Bay)
- Public or Private Grants/ Donations:
  - Huron County Paramedic Services
  - Lambton EMS
  - Middlesex-London Paramedic Services
- Hospital:
  - Lambton EMS
  - Leeds-Grenville Paramedic Service
- Public Health Unit:
  - Frontenac Paramedics

APPENDIX F

Available online media articles for the 2018–19 Period

LHIN Updates or News:

Waterloo Wellington LHIN
March 7, 2018
Investing in Guelph's most vulnerable residents : A supportive recovery room
http://www.waterloowellingtonlhin.on.ca/newsandstories/Stories/20180307_SupportiveRecoveryRoom.aspx

Municipal Reports or Content:

County of Essex - Administrative Report
September 5, 2018
Vulnerable Patient Navigator Program
https://coe-pub.escribemeetings.com/filestream.ashx?DocumentId=10032

County of Simcoe
Community Paramedicine
https://www.simcoe.ca/paramedicine

Media Articles about Paramedicine Referral Programs and Community Partnerships:

CBC News
January 21, 2018
Supported Recovery Rooms use is 'increasing", says pilot project manager
https://www.cbc.ca/news/canada/kitchener-waterloo/guelph-supported-recovery-groups-1.4494957

Guelph Today
April 4, 2018
Funding extended for Supported Recovery Room pilot project for users to sleep off effects of substance use
https://www.guelphtoday.com/local-news/funding-extended-for-supported-recovery-room-pilot-project-for-users-to-sleep-off-effects-of-substance-use-882942

Simcoe.com
August 23, 2018
Collingwood doctors screen patients for poverty to improve health
https://www.simcoe.com/news-story/8807550-collingwood-doctors-screen-patients-for-poverty-to-improve-health/

The London Free Press
September 11, 2018
Senior falls a hidden cost to ambulance services, Western study finds
https://lfpress.com/news/local-news/senior-falls-a-hidden-cost-to-ambulance-services-western-study-finds

The Observer
November 7, 2018
Paramedicine pilot program seeks permanent funding
https://www.theobserver.ca/news/local-news/paramedicine-pilot-program-seeks-permanent-funding

InsideOttawaValley.com
February 12, 2018
Community paramedics making a difference in Renfrew County
https://www.insideottawavalley.com/news-story/8130055-community-paramedics-making-a-difference-in-renfrew-county/

Ottawa Citizen
January 14, 2018
Paramedic house calls helping health system cope with nasty flu season
https://ottawacitizen.com/news/local-news/paramedic-house-calls-helping-health-system-cope-with-nasty-flu-season

The Standard
September 23, 2018
Community paramedics 'unsung heroes' to the vulnerable in Waintfleet
https://www.stcatharinesstandard.ca/news-story/8919856-community-paramedics-unsung-heroes-to-the-vulnerable-in-wainfleet/

Media Articles about Community Paramedicine Home Visit Programs:

The Echo Haliburton County
March 16, 2018
Community paramedicine bringing care into homes
http://www.haliburtonecho.ca/community-paramedicine-bringing-care-into-homes

My Haliburton Now
October 10, 2018
Community Paramedic Proving Effective in Haliburton County
https://www.myhaliburtonnow.com/28952/community-paramedic-proving-effective-in-haliburton-county/

Media Articles about Community Paramedicine Wellness Clinics:

Global News
January 7, 2019
Paramedics host drop-in clinics in Toronto Community Housing buildings
https://globalnews.ca/news/4823055/toronto-paramedics-clinics-tch-buildings/

Toronto.com
November 2, 2018
Scarborough community paramedic clinic helps people manage their care
https://www.toronto.com/news-story/8991006-scarborough-community-paramedic-clinic-helps-people-manage-their-care/

Toronto.com
October 25, 2018
Community paramedics run weekly clinic in Etobicoke
https://www.toronto.com/news-story/8980362-community-paramedics-run-weekly-clinic-in-etobicoke/

CBC News
March 22, 2018
How Toronto Paramedics are giving TCH residents 'lots of confidence' about their health
https://www.cbc.ca/news/canada/toronto/tch-paramedic-clinics-1.4586630

BayToday.ca
March 25, 2018
"Paramedics and Pancakes" spring tune-up found some people in need of a little work under the hood
https://www.baytoday.ca/local-news/paramedics-and-pancakes-spring-tune-up-found-some-people-in-need-of-a-little-work-under-the-hood-873248

General Media Articles about Community Paramedicine:

Blackburn News
November 8, 2018
Lambton paramedicine program expands while awaiting full funding
https://blackburnnews.com/sarnia/sarnia-news/2018/11/08/lambton-paramedicine-program-expands-awaiting-full-funding/

The Sarnia Journal
April 13, 2018
Trial paramedic program easting strain caused by frequent 9-1-1 callers
https://thesarniajournal.ca/trial-paramedic-program-easing-strain-caused-by-frequent-9-1-1-callers/

The Chatham Daily News
May 30, 2018
Paramedic team works to keep patients out of hospital
https://www.chathamdailynews.ca/2018/05/30/paramedic-team-works-to-keep-patients-out-of-hospital/wcm/e7dd0930-939d-26b7-53a9-48291e3f1836

CTV News - Windsor
September 7, 2018
Vulnerable Patient Navigator program credited with helping Windsor-Essex residents
https://windsor.ctvnews.ca/vulnerable-patient-navigator-program-credited-with-helping-windsor-essex-residents-1.4084722

Windsor Star
September 6, 2018
Vulnerable patient program helps sick people get help, reduces 911 calls
https://windsorstar.com/news/local-news/vulnerable-patient-program-helps-sick-people-get-help-reduces-911-calls

CTV News Windsor
Video Clip
Vulnerable patient Navigator
https://windsor.ctvnews.ca/video?clipId=835122

Guelph CHC
January 8 - May 6, 2018
Supported Recovery Room-Final Evaluation Report
https://guelph.ca/2015/05/guelph-wellington-emergency-medical-service-receives-service-award-geriatric-excellence/

CTV News - Kitchener
Video Clip
24-hour beds for people struggling with addiction
https://kitchener.ctvnews.ca/video?clipId=1305266&binId=1.1147261&playlistPageNum=1%22%20%5Cl%20%22_gus&_gucid=&_gup=twitter&_gsc=QQ4FQ3b

CTV News - Northern Ontario
Video Clip
Premier extends Paramedicine project
https://northernontario.ctvnews.ca/video?clipId=1133705

CBC News - Ottawa
April 6, 2018
Renfrew paramedics road-testing portable records system
https://www.cbc.ca/news/canada/ottawa/renfrew-paramedics-prehos-digital-health-1.4606568

OrilliaMatters.com
August 17, 2018
Paramedicine program success results in funding booster shot
https://www.orilliamatters.com/local-news/paramedicine-program-success-results-in-funding-booster-shot-1018262

Global News
February 22, 2019
New paramedic pilot program gets financial boost from City of Kawartha Lakes
https://globalnews.ca/news/4989081/paramedic-pilot-program-city-of-kawartha-lakes/

The Oshawa Express
April 2, 2019
Primary care outreach program now permanent
http://oshawaexpress.ca/primary-care-outreach-program-now-permanent/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