Haliburton County

Paramedic Master Plan

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Dear Council, CAO Mike Rutter and Paramedic Chief Tim Waite:

After several months of analysis and review, Emergency Management Group (EMG) has completed the Haliburton County Paramedic Service Master. Numerous documents and sets of data were examined including Haliburton County reports, Provincial legislation, Ministry of Health Emergency Health Service standards and policies, Canadian Census statistics, and Paramedic Service records.

Our EMG consultant team would like to thank County CAO Mr. Mike Rutter and Paramedic Chief Tim Waite for being very generous with their time and assisting us along the way. Interviewing key individuals, touring various facilities with management staff, and interpreting various forms of collected material from a county perspective would not have been possible without their assistance. Our team had many specific questions and Chief Waite along with his management/administrative team were instrumental in providing the answers. Lastly, we would like to thank the Paramedics and Paramedic Union for their time in assisting us through interviews and surveys. All this assistance has helped provide a full 360-degree view of the Haliburton County Paramedic Service.

As a result of this process, we have identified key challenges and provided recommendations for a path forward. The goal for EMG through this project was to provide a ten-year Paramedic Master Plan. It will become apparent to the reader that many of the recommendations have been made within the first six years of this plan. This is however not a reflection of the Chief, his management team, nor the frontline Paramedics. In fact, all members of the Service should be commended for being able to manage and serve the public at a high standard while operating such a lean Paramedic Service with respect to human resources (management, administration, and frontline).

The listed recommendations offer a recommended course of action, and many are ordered in a fashion to move forward in smaller steps, but the final direction and order lies fully within the hands of the County. We encourage continued discussion and review,

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understanding that it is the County and its representatives that have the best perspective of the needs and circumstances within their community.

One area of great success would appear to be the Community Paramedic Program which, by all accounts, has had an immensely positive impact on underserviced community members. This program must continue to evolve and progress and should be fully supported behind a strong 9-1-1 emergency response system and appropriate administrative support as noted within the recommendations.

While there were a few broad areas to address, the most immediate challenge is the diagnostic interfacility transfer volume deriving from the Haliburton Highlands Health Services sites located in Haliburton and Minden. This significant transfer volume is affecting present deployment daily, at times leaving the community with few or no ambulance resources and taking its toll on all Paramedic Service staff from the Chief to the frontline Paramedics.

A theme noted within the recommendations is collaboration. Collaboration is essential in providing the best healthcare to the community and needs to be at the forefront moving forward. Through collaboration we believe there are solutions to the major challenges that will ensure the best needs of the community are cared for.

There are costs associated with some of the recommendations noted in this report and expenses in healthcare can be significant. It must be iterated that investment into the 9-1-1 emergency response Paramedic Service (frontline, management/supervision, and administration), is cost shared at 50% with the Ministry of Health Emergency Health Services branch of the provincial government. This funding is retroactively provided upon cost approval from the Ministry. The estimated costs noted within the recommendations represent the full cost associated with the improvement and the County share should be 50% of those totals. With these investments, Council has an opportunity to support an overworked department by helping them resource adequately to meet the challenges found in the Master Report.

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In conclusion, it was a pleasure to work with such a skilled team of professionals. We can see the pride that this team takes in delivering the best service possible to its community members. The dedication of the employees of Haliburton County Paramedic Service is to be commended.

Yours Truly,

EMG Consultants

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ABBREVIATIONS

ALS	Advanced Life Support
ACP	Advance Care Paramedic
ADRS	Ambulance Dispatch Reporting System
AMPDS	Advanced Medical Priority Dispatching System
AOD	Ambulance Offload Delay
CACC	Central Ambulance Communications Centre
CCP	Critical Care Paramedic
CEPCP	Central East Prehospital Program
CMEC	Critical Minimum Emergency Coverage
CSWB	Community Safety and Wellbeing
CT	Computerized Tomography
CTAS	Canadian Triage Acuity Scale
DPCI	Dispatch Priority Card Index
EHS	Emergency Health Services
EMCA	Emergency Medical Care Attendant
EMS	Emergency Medical Services
EOWC	Eastern Ontario Wardens Caucus
EPCR	Electronic Patient Care Reports
HHHS	Haliburton Highlands Health Services
MMAH	Ministry of Municipal Affairs and Housing
MOH	Ministry of Health

MOHLTC	Ministry of Health and Long-Term Care
MRI	Magnetic Resonance Imaging
PCP	Primary Care Paramedic
PRU	Paramedic Response Unit
SCA	Sudden Cardiac Arrest
SIRCH	Supportive Initiative for Residents in the County of Haliburton
WSIB	Worker Safety Insurance Board

Executive Summary

EXECUTIVE SUMMARY

The Transforming Environment within Emergency Services

The role of a paramedic today has extended from emergency response and transportation, to include a wide range of community-based health and public services that are enhancing access to care and services by connecting patients to primary and community care.

With the ever-evolving delivery of paramedic services, and with the increasing population and diversification within the County of Haliburton, the Haliburton County Paramedic Services are responding to an increase in incidents and more complex calls than ever before. Planning requires an emphasis on organized and connected care that puts patients first, while being efficient to alleviate and ease costs.

Purpose

The anticipated population growth, unique demographic trends and the evolution of the County has unquestionably put stresses and challenges on the current paramedic services. The Paramedic Master Plan has been developed to ensure that the Haliburton County Paramedic Service is able to meet the demands and sustain the current service levels with the development and multiplicity of Haliburton County. With the future projections and anticipations, the development of the Master Plan included detailed analysis of the potential response time performance, considering factors such as roadway networks, town development, travel time as well as community resources.

The objective of the Master Plan is to identify the future staffing, fleet, and station resources thar are required to respond to 9-1-1 demands and the needs of the County's growing and aging population, equitably and consistently. The Master Plan also identifies opportunities and prospective opportunities to mitigate costs.

The Master Plan will also be used to help guide workforce development, staff retention and the well-being needs of the paramedics.

Resource Needs

This Master Plan identified the needs and has proposed 20 recommendations based on the comprehensive analysis located in this report. The following recommendations are based on data collection and researching the challenges facing the Haliburton County Paramedic Services today. These recommendations present the best scenarios to aid and assist the County in moving forward and are not the only available solutions. They are attempts to make the

greatest impact in the most effective and efficient manner based upon industry standards. While they are presented in a numerical order, items may be skipped and the path may be altered depending on continued risk tolerance, desire to change and willingness to consider financial challenges.

1.16.1 Immediate Recommendations (present-1 year)

These recommendations will have the most impactful outcome on the immediate future of Haliburton County Paramedic Service (HCPS). They are noted as immediate recommendations either because they can be implemented relatively easily or because they are so crucial to the continued operation of the Service.

1. Create an interfacility transfer working group (In progress at time of release of this Master Plan).
2. Re-evaluate/update HCPS deployment plan to support recommendations
3. Development of key performance indicators (KPIs)
4. Become more involved with the county community safety & wellbeing plan. (In progress at time of release of this Master Plan)
5. Expand the current annual report.
6. Explore synergies on future capital expenditures.

1.16.2 Short Term Achievable Recommendations (1-3 years)

The following short-term recommendations can be achievable with a focused direction and support.

1. Assist in the development of a business case for local diagnostic imaging. (Underway at time of release of report).
2. Hire an administration assistant.
3. Hire two full time front-line supervisors/superintendents.
4. Acting supervisor/superintendent program.
5. Consider no longer certifying senior management.
6. Add another ambulance to deployment.
7. Evaluate and plan for the future of the community paramedic program.
8. Perform detailed facility needs analysis.

1.16.3 Mid Term Recommendations (4-7 years)

In considering a ten-year plan there is great merit in reconciling progress on a yearly basis. However, around the fifth year it is a beneficial to review whether any or all the recommendations are still valid. Much can change in five years as proven with the most recent pandemic.

1. Hire a third superintendent.
2. Add power load to all new ambulance purchases.
3. New headquarters in Haliburton.
4. Assess the need for a dedicated resource in Algonquin Highlands.
5. Assess progress on the master plan and re-evaluate where necessary

1.16.4 Long Term Recommendations (8-10 years)

Long term recommendation in excess of 7 years are either the very difficult and comprehensive recommendations or they are requiring review at a later date. To predict that far in in advance in todays changing world of municipal services and healthcare can be very difficult, however, there must be a vision to the future that can guide services in the right direction.

1. Hire a fourth Superintendent

SECTION 1

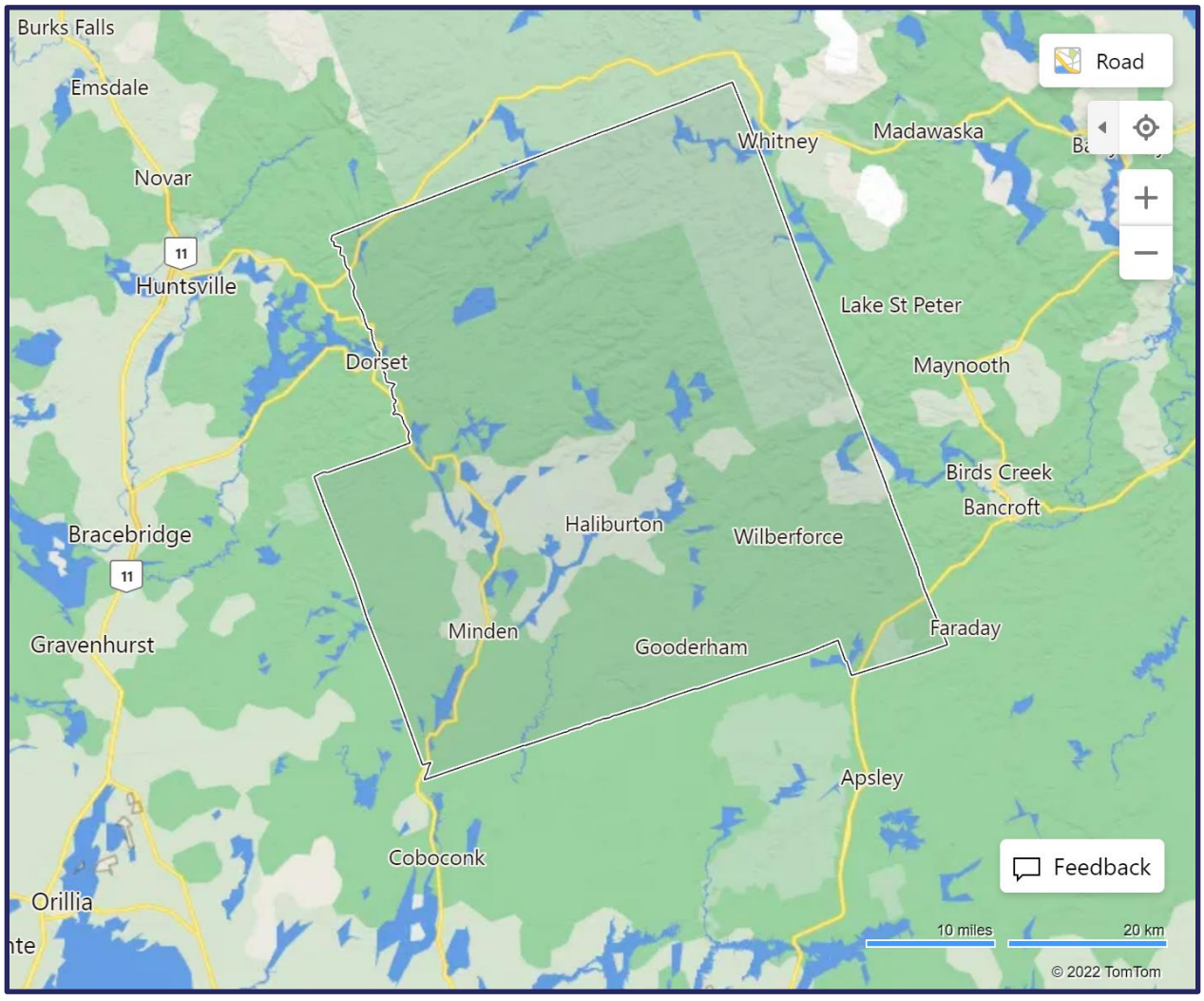
Introduction

SECTION 1: INTRODUCTION

1.1 The County of Haliburton

The County of Haliburton was formed in 1983 and is an upper tier level of government made up of four lower tier municipalities. These municipalities are the Township of Algonquin Highlands, the Municipality of Dysart et al, Municipality of Highlands East, and the Township of Minden Hills. The County seat is in the town of Minden.

Figure #1 – Map of the County of Haliburton

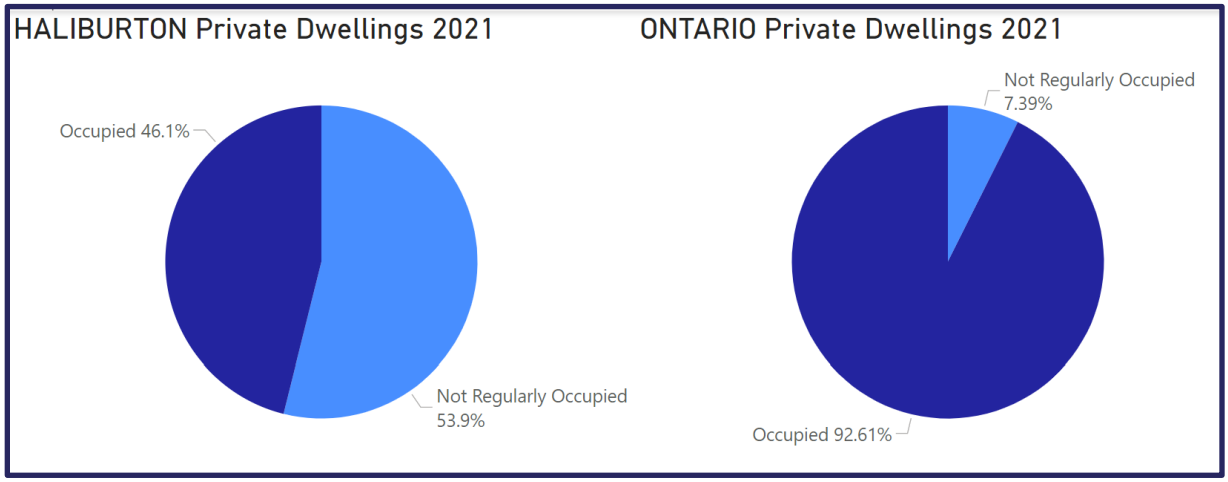


As an upper tier level of government, Haliburton County is responsible for their county planning, county roads, bridges, traffic signals and controls, emergency management, paramedic services, library, tourism, as well as tax policy. Additionally, the County has a robust

Information Technology department and GIS section, as well as being involved in Health Profession Recruitment with a physician recruiter.

Being known as part of "Cottage Country", at just over 4,000 square km, the County of Haliburton is home to a large seasonal population as well as many lakes and recreational areas. Intrinsically, Haliburton County's economy is dominated by tourism and businesses associated with such. The permanent population, according to 2021 census data is 20,571, however, the population during the summer months can swell to approximately 45,000[1], this number is recognized to be low as it is based on 2017 data and does not reflect the increases that were a result of the pandemic. According to Statistics Canada, there are currently 21 072 private dwellings within the County which is a greater amount than permanent residents. In Haliburton, 53.9% of the current dwellings are not regularly occupied. In comparison, province-wide,only 7.39% of Ontario dwellings are not occupied consistently. This highly conveys the seasonal nature of the County.

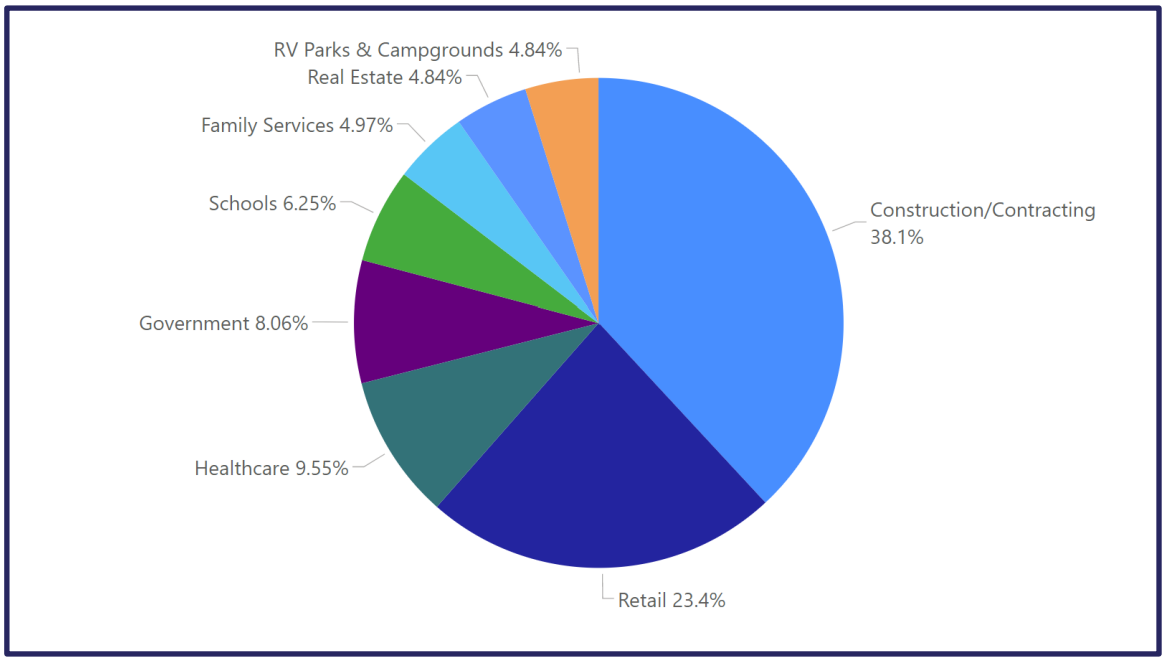
Figure #2 – Occupied Private Dwellings – County of Haliburton vs. Province of Ontario



[1] Co-designing The Active City, "Haliburton Village, Haliburton County", Participatory Planning, accessed October 2022, https://participatoryplanning.ca/projects/haliburton-village-haliburton-county#:~:text=The%20county%20has%20a%20year-round%20population%20of%20just,increases%20the%20population%20to%20approximately%2045%2C000%20in%20summer.

An immediate review of Haliburton County's employment statistics reveals as expected. Employment predominantly focuses on the demands of this seasonal population, including construction and retail.

Figure #3 – Jobs by Industry within the County of Haliburton



1.2 Haliburton Demographics

Upon review, the demographic profile of Haliburton can be summarized as one of extremes. For this report, data has been taken from the most recent Canadian Census (2021) through Statistics Canada[2]. In many cases, the data from Haliburton County is conflicting with the averages across the province. While extreme, this information can paint a concise picture of the present circumstances and should be able to provide a strong objective to move forward.

1.2.1 Population

Over the last five years, the County of Haliburton has experienced a greater than normal population increase according to Statistics Canada. According to the latest census data, Haliburton County experienced the fourth largest population rate increase in Canada, and the

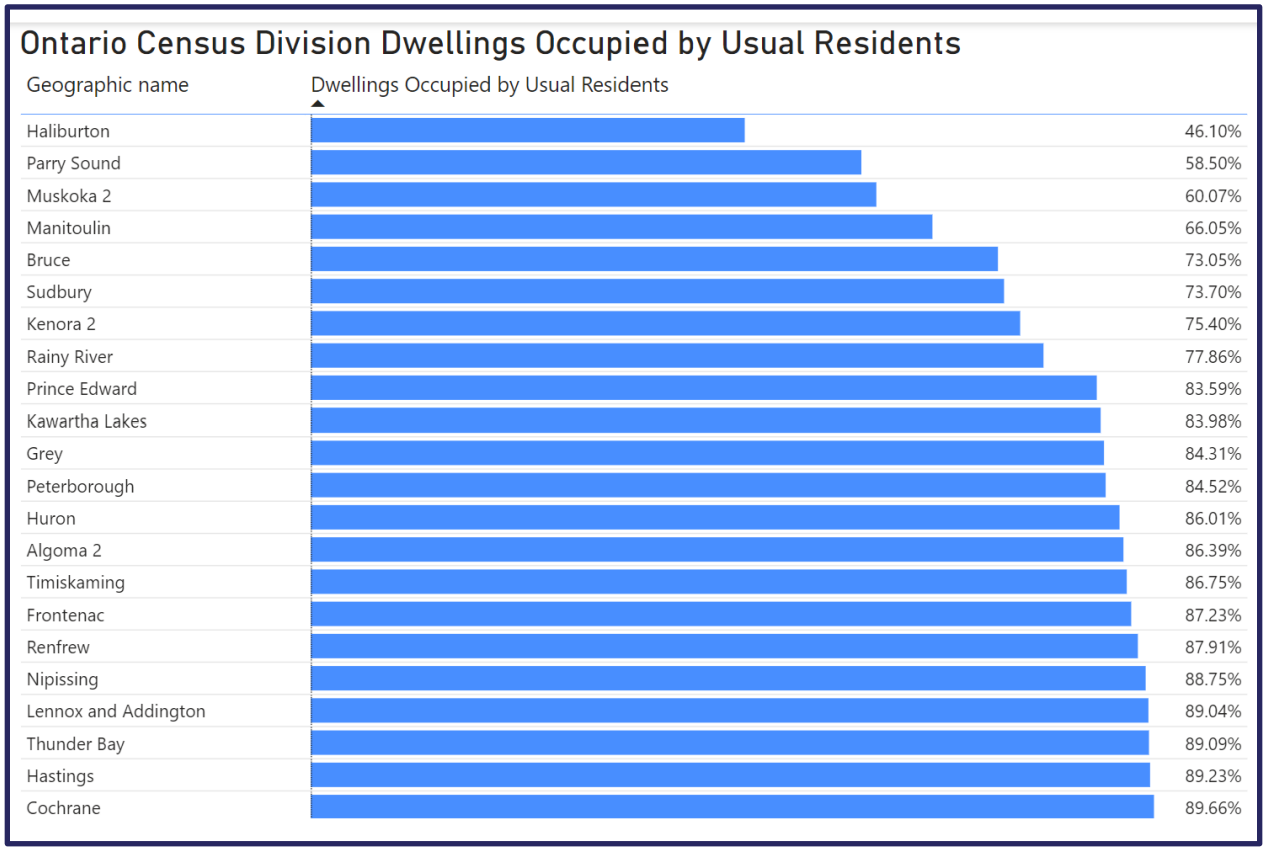
[2] Statistics Canada, Profile Table, Statistics Canada, Accessed October 2023, https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/details/page.cfm?Lang=E&SearchText=Haliburton&DGUIDlist=2021A00033546&GENDERlist=1,2,3&STATISTIClist=1&HEADERlist=0

highest within Ontario. While Canada saw a 5.2% increase and Ontario had a 5.8% increase in population, Haliburton County added 2,509 residents for 13.9% increase.

While a population increase typically signals growth within a community, the recent increase in Haliburton appears to be disingenuous. A great number of this growth has been due to seasonal residents making Haliburton their primary residence. This population growth does not always equate to new tax growth, as seasonal residents who are now permanent residents do not add more revenue to the tax base within the County. This does, however, indicate the need for more emergency services as the higher the population the greater the need for community supports. The trend of relocating from more urban areas has been exasperated by the recent pandemic and the growing acceptance and ability for workers to work from home. According to Canadian Census data the percentage of those working from home in Haliburton doubled from 10.5% to 21% from 2016 to 2021, and it is anticipated that this will increase even further with improved technology and internet connectivity within the County.

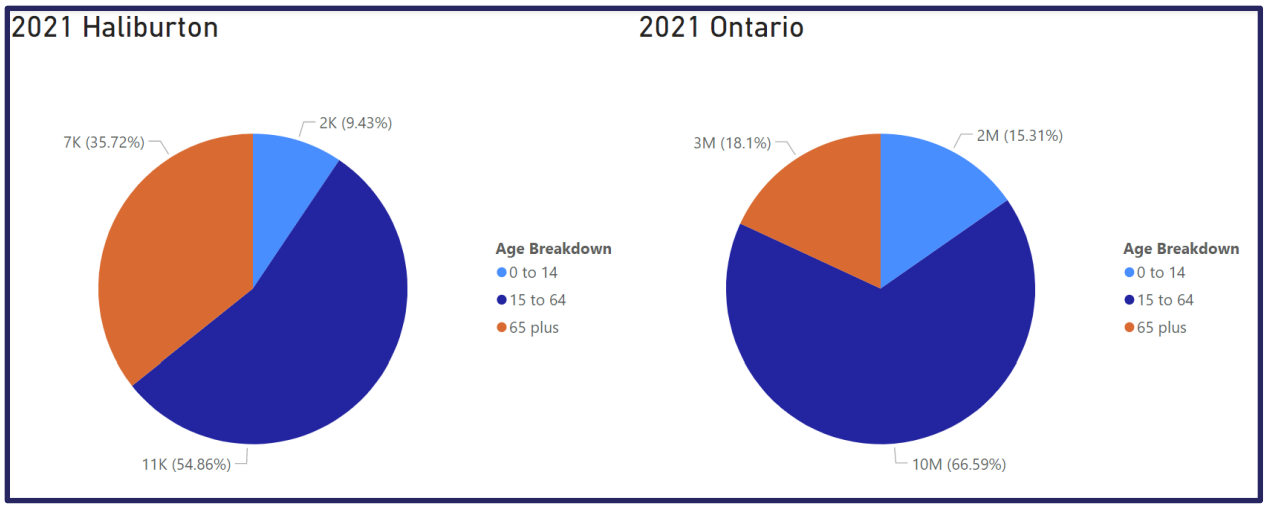
With the benefit of recent Census data, reviewing data from Statistics Canada regarding the percentage of dwellings occupied by usual residents provides a good comparison to other areas of the province. At 46% Haliburton County has, by far, the least number of usual residents per dwelling. As noted above, 54% of the dwellings in Haliburton are utilized by seasonal residents.

Table #1: Ontario Census Data – Permanent Residents Occupancy



A breakdown of the age in population is another significant factor when considering current statistics. An analysis of the community age groups is based upon the most recent Statistics Canada data. The current statistics reveal a much more aged population in Haliburton than the entire province. As seen below, it is evident that the older adult population of Haliburton is nearly double that of the entire province; with 35.72% of the population being 65 or older as opposed to Ontario with 18.1% of the population being over 65. An older population typically indicates increased use of healthcare and services, lower income (due to pension earnings), and a smaller workforce. When combined with a lack of housing, balanced growth becomes hard to obtain.

Figure #4 - 2021 Population - County of Haliburton vs. Province of Ontario



1.2.2 Housing Stock

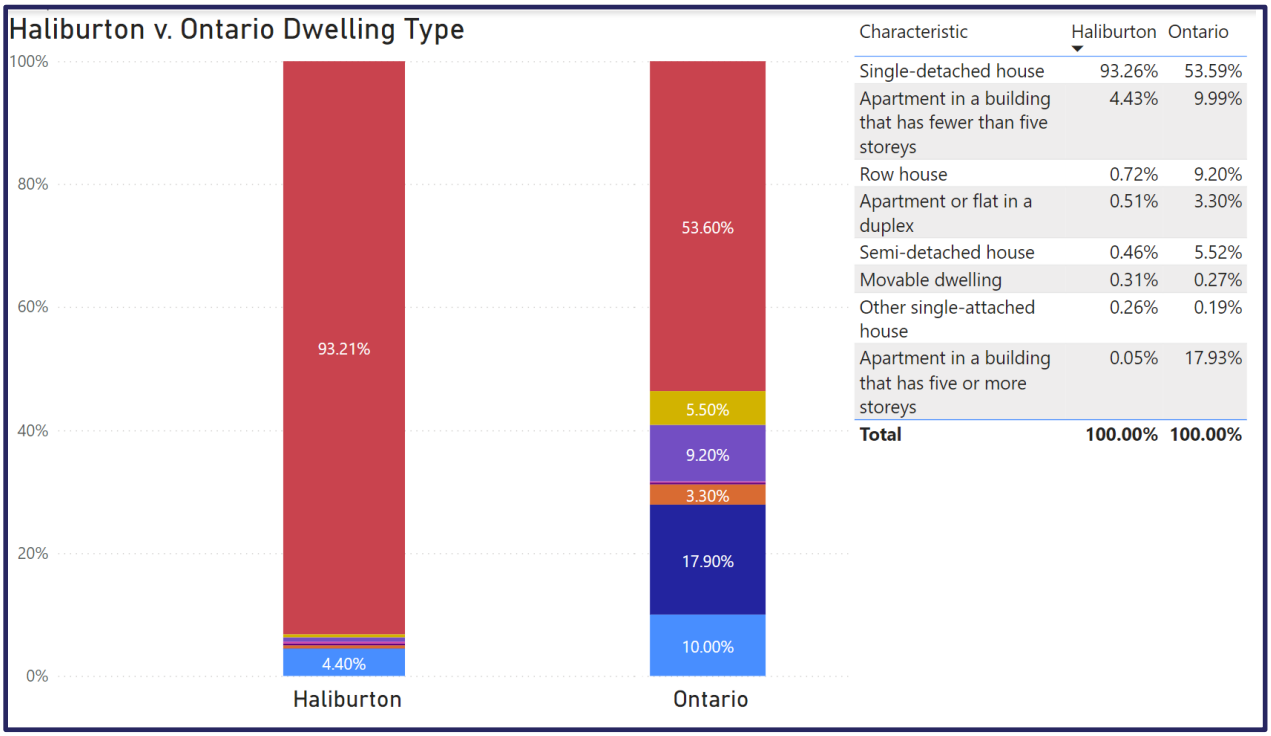
Housing in Haliburton is a genuine issue. While Haliburton experienced a 13.9% increase in population since 2016, there has been a 0.2% decrease in dwellings over the same period. This can be attributed to seasonal residents transitioning their primary residence to Haliburton.

There is also a lack of affordable housing that not only creates problems with staffing within all levels in the County but can also contribute to homelessness. Through the consultation process, a lack of available housing has been noted as a real barrier to recruiting and retaining staff.

Upon review, there is a substantial difference between the types or styles of dwellings offered between Haliburton and the rest of Ontario. In Haliburton, over 93% of dwellings are single detached homes whereas that number is 53.6% for Ontario. The prevalence of single detached homes in Haliburton does not typically indicate a vibrant rental market which would be essential for new workers starting out in a community. Row housing, apartments in a duplex as well as semi-detached housing account for less than 1% each of the dwelling composition within

Haliburton. Currently, five story or higher apartments are essentially non-existent, as opposed to the Province, which makes up for nearly 18% of housing.

Table #2: Dwelling Types – County of Haliburton vs Province of Ontario



Characteristic	Haliburton	Ontario
Single-detached house	93.26%	53.59%
Apartment in a building that has fewer than five storeys	4.43%	9.99%
Row house	0.72%	9.20%
Apartment or flat in a duplex	0.51%	3.30%
Semi-detached house	0.46%	5.52%
Movable dwelling	0.31%	0.27%
Other single-attached house	0.26%	0.19%
Apartment in a building that has five or more storeys	0.05%	17.93%
Total	**100.00%**	**100.00%**

The Ministry of Municipal Affairs and Housing (MMAH) under the Housing Services Act, 2011 (HSA) requires all Service Managers to develop a ten-year Housing and Homelessness Plan. In Haliburton County, by provincial mandate, this responsibility falls to the City of Kawartha Lakes.

The City of Kawartha Lakes drafted the most recent Housing and Homelessness Plan in 2019. Lack of housing stock was noted as an issue in this report. It was noted that from 2010 to 2018 market rent prices rose by nearly 20% while vacancy rates fell drastically to just under 2%.[3]

Affordable housing is still tougher to obtain for low-income residents. Those waiting for community housing face a wait time of up to ten years for availability to affordable housing. The County Council adopted a model from the Housing and Homelessness Plan that would aim to significantly increase housing in the County over the next ten years with a goal of an additional

[3] Building Stronger Communities, The City of Kawartha Lakes and the County of Haliburton Housing and Homelessness Plan (2020-2029), accessed October 2022, https://www.kawarthalakes.ca/en/living-here/resources/Housing-Rental-Listings/KL-Housing-and-Homelessness-Plan-2019-Accessible.pdf

750 rental units. However, there are many factors involved in achieving this goal including funding and willingness of private contractors to build units.

Finally, a review of the composition of households in Haliburton shows that most households are of two or less people (77.8%) as compared with the Province of Ontario (59.2%). This further suggests that a substantial part of the population consists of older adults without dependants living at home.

1.2.3 Poverty

According to the Ontario Living Wage Network, the living wage required to live in Haliburton is $19.42 an hour[4], which reflects the 2018 living conditions. This data indicates that Haliburton ranks the fourth highest living wage in Ontario; the calculation was made just behind Toronto, Halton, and Peel. According to Supportive Initiative for Residents in the County of Haliburton (SIRCH) Community Services contributing factors to poverty are "seasonal and low-paying employment and lack of public transportation are exacerbated by difficulty in finding affordable housing options, high food prices and lack of affordable childcare"[5].

The median household net income in Canada went up 9.8% from 66,500 in 2015 to $73,000 in 2020[6]. In Ontario, the median household net income was $79,500 in 2020, while in Haliburton County, it was up from $56,800 to $66,000[7].

The unemployment rate in Haliburton has steadily been increasing on a macro level over the course of the last five census reports, however, most recently, the rate is lower than the provincial average of 12.2%.

[4] Ontario Living Wage Network, accessed October 2022, https://www.ontariolivingwage.ca/rates

[5] SIRCH Community Services, About Haliburton County, accessed October 2022, https://www.sirch.on.ca/about-us/resources/#:~:text=Haliburton%20County%20has%20a%20child%20poverty%20rate%20of,work%20and%20to%20the%20high%20numbers%20of%20pensioners.

[6] Statistics Canada, Income in Canada-2020, accessed October 2022, https://www150.statcan.gc.ca/n1/pub/11-627-m/11-627-m2022040-eng.htm

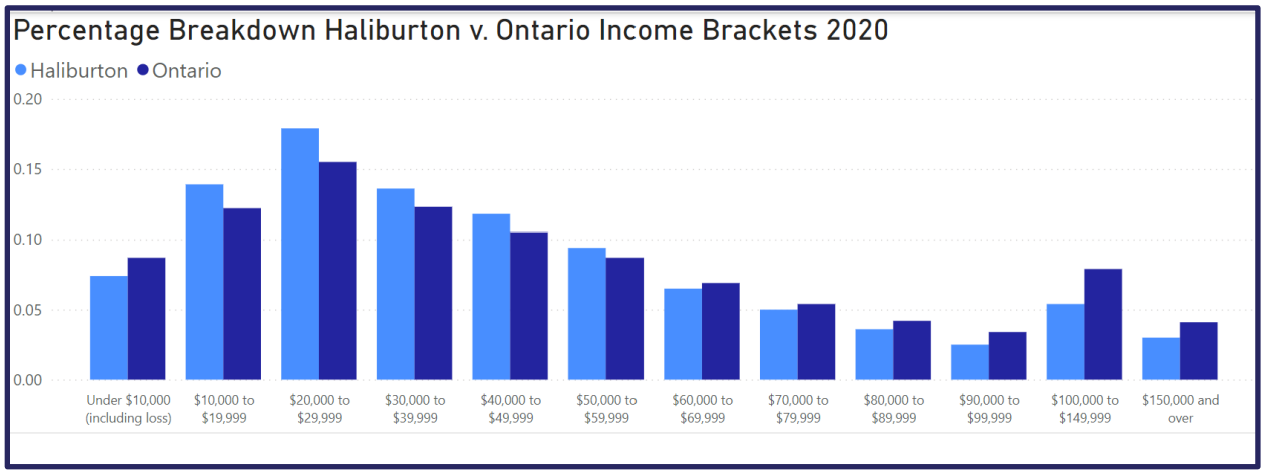
[7] Statistics Canada, Census Program Data Viewer, accessed October 2022, https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/dv-vd/cpdv-vdpr/index-eng.cfm

Table #3: County of Haliburton Unemployment Rate

	2001	2006	2011	2016	2021
Unemployment Rate	5.2%	7.5%	9.3%	9.6%	11.1%

A detailed look into different income brackets of Haliburton, as opposed to Ontario, reveals a far greater percentage of low-income earners in Haliburton than in the province. The graphic below details that while Ontario has a higher percentage of earners below $10,000, Haliburton has a greater percentage of low-income earners than the province. Low income earners are defined as earners making between $10,000-$59,999. Therefore, Ontario then has a greater percentage of earners from $60,000 up. In total, 74% of Haliburton earners make less than $60,000 a year while in Ontario that number is 68%. Again, these numbers can be attributed to a mix of an older population collecting retirement earnings and low paying jobs within the County.

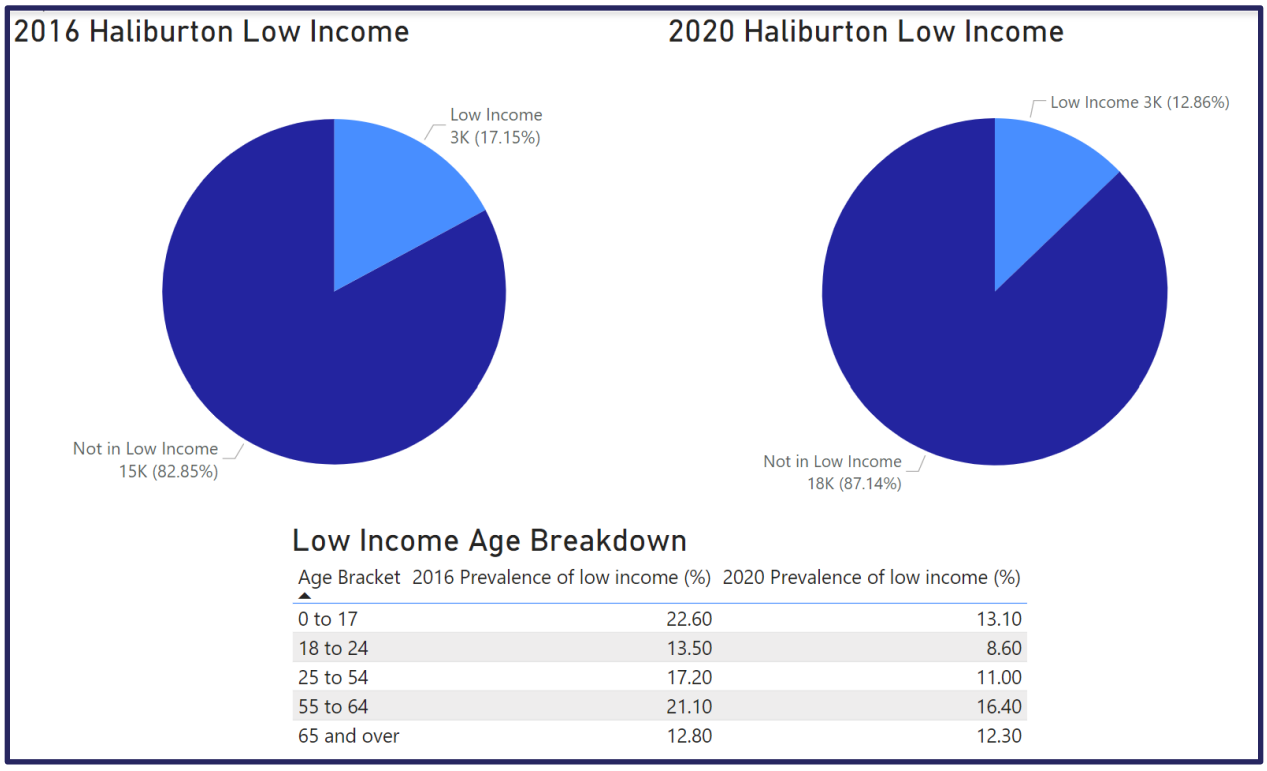
Table #4: Annual Income – County of Haliburton vs. Province of Ontario



Other datasets relating to income and poverty are available from Statistics Canada which has been gathered through census data.

There is low-income indicator data available for the last two census periods. To be considered a low-income household, a specific criterion must be met, which is generated through a complex mathematical formula. The median single person household net income for 2021 was $26,503. The median household net income for a family of four for 2021 was $53,005. The percentage of low-income households has lowered from 2016 to 2021 from 17.15% to 12.86%.

Figure #5 – County of Haliburton – Low Income Breakdown – 2016 - 2020

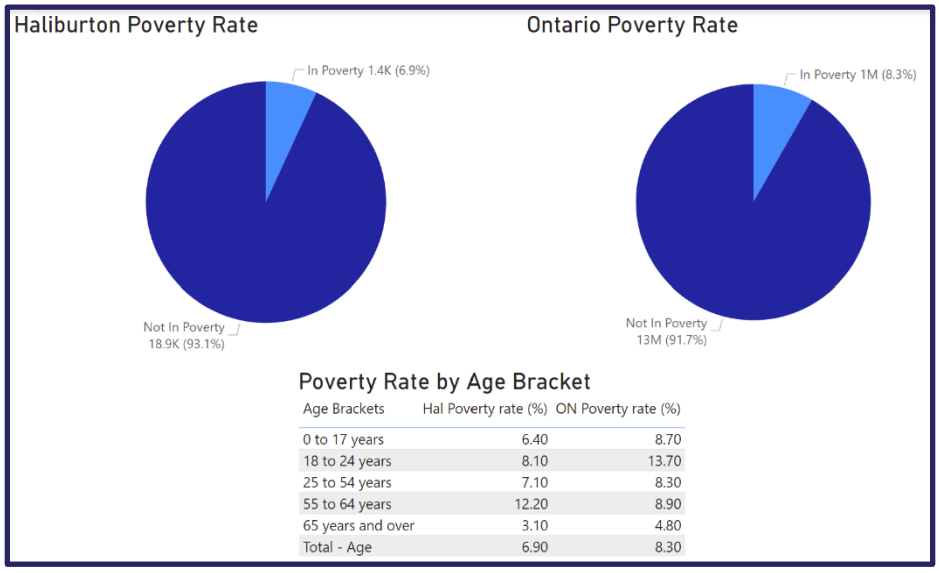


Low Income Age Breakdown

Age Bracket	2016 Prevalence of low income (%)	2020 Prevalence of low income (%)
0 to 17	22.60	13.10
18 to 24	13.50	8.60
25 to 54	17.20	11.00
55 to 64	21.10	16.40
65 and over	12.80	12.30

In 2021, the census contained the poverty rate data. Poverty rates indicate the percentage of people under the determined poverty line for the specified period. These rates were based on 2020 data. As the chart below indicates, poverty rates in Haliburton for 2020 at 6.9% were better than the Ontario rate of 8.3%.

Figure #6 – Poverty Rate County of Haliburton vs. Province of Ontario



Poverty Rate by Age Bracket

Age Brackets	Hal Poverty rate (%)	ON Poverty rate (%)
0 to 17 years	6.40	8.70
18 to 24 years	8.10	13.70
25 to 54 years	7.10	8.30
55 to 64 years	12.20	8.90
65 years and over	3.10	4.80
Total - Age	6.90	8.30

It must be restated that this data represents a snapshot in time and can be highly fluid depending on a variety of factors through time. For example, should a major employer close their facility, income and numbers would be highly affected.

1.2.4 Homelessness

A mix of limited housing and inadequate paying jobs can lead to homelessness. The Canadian Observatory on Homelessness defines homelessness as describing,

> *"…the situation of an individual or family without stable, permanent, appropriate housing, or the immediate prospect, means and ability of acquiring it. It is the result of systemic or societal barriers, a lack of affordable and appropriate housing, the individual/household's financial, mental, cognitive, behavioural, or physical challenges, and/or racism and discrimination".*

They further go on to describe four classifications of homelessness.

1. Unsheltered – entirely homeless and living on the streets or in places not intended for human habitation.

2. Emergency Sheltered – including those staying in overnight shelters for people who are homeless, as well as shelters for those impacted by family violence.

3. Provisionally Accommodated – referring to those whose accommodation is temporary or lacks security of tenure.

4. At Risk of Homelessness – referring to people who are not homeless, but whose current economic and/or housing situation is precarious or does not meet public health and safety standards[8].

Homelessness is to difficult track as there is normally a lack of a fixed address from which to coordinate services. In Haliburton, as well as other communities, an initiative called Homelessness Registry Week assists in tracking homeless citizens. At key intervals, homeless citizens are encouraged to complete a survey and will, in turn, get their names placed on the 'by-name list'. This list allows the community to support the homeless and aids in assisting with placements. The list is focused on the vulnerability of those who are homeless. There is a lack of available data to suggest the recent level of homelessness in Haliburton. However, as noted above, the mix of inaccessible housing and level of poverty within the County would suggest

[8] 20,000 Homes, Registry Week Final Report. Accessed October 2022, https://www.kawarthalakes.ca/en/living-here/resources/Poverty-Reduction-/20000-Homes-Registry-Week-Final-Report--Accessible-Version.pdf

that homelessness is present and must continue to be addressed through a coordinated multi-jurisdictional approach.

1.3 History of Paramedic Services in Ontario

Paramedic services in Ontario can be considered the youngest branch of emergency services. Fire and police services have a rich history throughout Ontario, as well as Canada. Modern paramedic services in Ontario started in the 1960's when the Director of the Emergency Health Services Division (EHS) of the Ontario Hospital Services Commission was tasked with developing "a balanced and integrated system of ambulance services"[9]. The Director sought to achieve this first through the standardized "Fundamentals of Casualty Care" training course at "Camp Borden" (Canadian Forces Base Borden), an armed forces base near Barrie, Ontario. This four-week course would eventually evolve into a mature community college program in the 1970's. Provincial certification would soon follow with the Emergency Medical Care Attendant (EMCA) provincial certification exam. Much standardization and training continued through the 1980's but it wasn't until 1995 that advanced skills came into being with the implementation across the province of the Defibrillation and Symptom Relief Program. Up until that point, ambulance attendants could only provide advanced first aid, oxygen and transportation for the ill and injured, with the exception of some advanced programs in certain study locations. With defibrillation, ambulance attendants were now able to provide the immediate life saving act of defibrillating patient's heart during cardiac arrest. The symptom relief program gave ambulance attendants the ability to provide medication for some of the more serious life-threatening illnesses. They were able to address breathing issues with Ventolin, allergic reactions with epinephrine, and chest pain with nitroglycerin and ASA. This brought some form of advanced life support (ALS) to every citizen of Ontario[10].

Until 2000, responsibility for ambulance services in Ontario fell completely within the responsibility of the Ministry of Health (MOH) through the EHS branch. The MOH was accountable and in control of funding, training, legislating, and dispatching ambulances until the government reconfigured numerous services under what was called Local Services Realignment. This reform of the provincial/municipal relationship altered responsibility for many services including land ambulance, thus making it part of the financial obligation of the upper tier municipalities. The transfer of responsibility for land ambulance was performed under an arrangement whereby, the province would maintain control of legislation, dispatching

[9] Ontario Association of Paramedic Chiefs, History of EMS in Ontario, accessed October 2022, https://www.oapc.ca/history/

[10] Ontario Paramedic Association, History of paramedics in Ontario, July 27, 2015, www.ontarioparamedic.ca/before-9-1-1/history-of-paramedics-in-ontario

and provide 50% provincial funding to the municipalities for the costs associated with the provision of services.

Throughout the early 2000's, there have been many advancements within ambulance services with one notable development being the introduction of the term 'paramedic'. This title was meant to denote the true evolution of the provision of care. Throughout the province, there are currently three levels of paramedic care being delivered dependant on the needs of the municipality. These three levels are:

- Primary Care Paramedic
- Advanced Care Paramedic
- Critical Care Paramedic

Most recently, there has been a fourth category known as Community Paramedic. This concept moves paramedics from acute care providers to continuing and chronic care providers. This new concept is in support of an effort to prevent emergency calls and reduce hospital visits.

1.4 Haliburton County Paramedic Services

Haliburton County Paramedic Services (HCPS) operates out of three stations located in Minden, Haliburton, and Tory Hill responding to over 9,600 service calls in 2022.

1.4.1 Administrative Structure

Haliburton County Paramedic Services is one of six county departments – Corporate Services, Planning, Public Works, Economic Development & Tourism, IT and EMS. The administration is standard for a paramedic service in Ontario with one noticeable exclusion: the lack of front-line supervision. The chief of paramedic services is head of the Department and reports to the chief administrative officer (CAO). As the lead of the Department, the chief has overall responsibility for the effective performance with four primary key areas of responsibility:

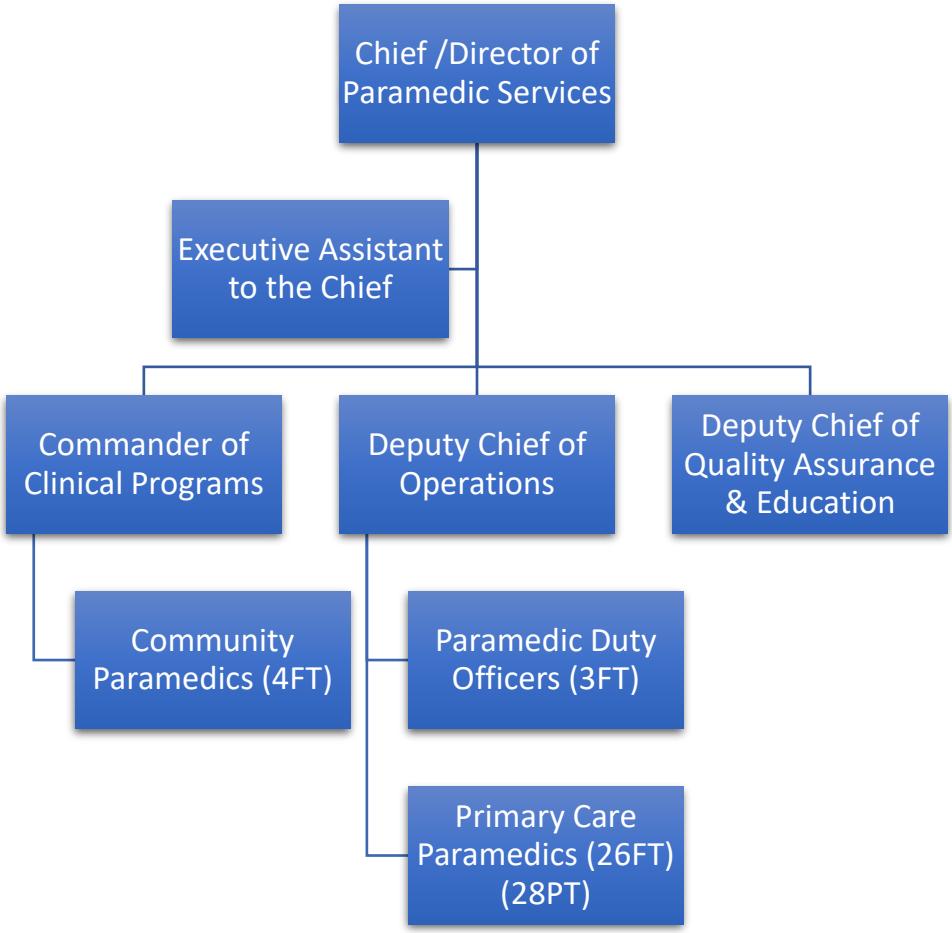
- Financial Administration
- Personnel Administration
- Operational Management
- Community & Public Relations

The chief has an executive assistant that functions as an administrator for the department as well as performing some functions for the county. Reporting to the chief are two deputy chiefs who have split the traditional roles into an operations role as well as a quality assurance and education position. The key responsibilities for the deputy chief of operations involves facilities, fleet, equipment, health & safety, and scheduling. The primary responsibilities of the deputy

chief of quality assurance & education include training, staff performance, policy review and creation, investigations, and research. The two positions work in tandem along with the chief on any matter that requires varied involvement. The commander of clinical programs is a newer position within the service which oversees the operations and reporting of the Community Paramedic Program.

Each paramedic station has a paramedic duty officer who oversees some administrative function in addition to their role as part of the ambulance crew. They audit electronic patient care reports (EPCRs), maintain and order required stock for base, review shift envelopes to identify and reconcile expense receipts as well as any issues identified by crews.

Figure #7 – Organization Chart for the County of Haliburton



1.4.2 Paramedics

The modern-day paramedic is a highly trained caregiver who has exceptional assessment and technical skills to treat emergency patients for both medical and traumatic presentations. As mentioned above, there are three distinct levels of paramedic care within the province of Ontario:

- Primary Care
- Advanced Care
- Critical Care

Primary Care Paramedic (PCP)

A Primary Care Paramedic (PCP) requires a two-year program at a community college which provides approximately 500 hours of road experience with a paramedic crew. After successfully graduating from the paramedic program, there is a comprehensive provincial exam where a passing mark of over 70% must be achieved to practice as a paramedic in Ontario.

Once hired by a paramedic service, further testing and annual recertification from the service medical director of a base hospital must carried out. Once the medical director is satisfied with their skills and knowledge, they will certify the paramedic in delegated acts under their medical license.

The skills and knowledge that a PCP possesses at this point include:

- Emergency patient care
- CPR
- Supraglottic airway
- Manual defibrillation
- Basic life support (BLS) trauma care
- Blood glucose testing
- Hypoglycemia management
- SpO2 monitoring
- IV initiation/monitoring
- Pelvic binding
- CPAP (Continuous Positive Airway Pressure)
- ETT & Trach suctioning
- Emergency Trach reinsertion
- Opioid toxicity management
- Emergency childbirth, including:
    - Delivery
    - Breech Delivery
    - Shoulder dystocia management
    - Nuchal cord management
    - 3rd stage management (Umbilical Cord management/Brandt maneuver, post-partum hemorrhage management, including Oxytocin administration)
- Neonatal Resuscitation

- COVID assessment/management/ vaccination
- Non-narcotic analgesia (narcotic administration as a skill is imminently pending)
- Termination of Resuscitation (medical/traumatic)
- ROSC Management
- Lead two ECG interpretation.
- 12 lead ECG application / interpretation and STEMI diagnosis
- STEMI & stroke bypass
- Field trauma notification for medivac (trauma bypass)
- Taser probe removal
- Emergency-disconnect for home dialysis

Additionally, under the medical director's license, a PCP can deliver the following medication upon correct diagnosis:

- Acetaminophen (Tylenol)
- Acetylsalicylic Acid (ASA)
- Dimenhydrinate (Gravol)
- Diphenhydramine (Benadryl)
- Epinephrine
- Glucagon
- Ibuprofen (Advil)
- Ketorolac (Toradol)
- Naloxone (Narcan)
- Nitroglycerine Spray
- Salbutamol (Ventolin)
- Dextrose 50%
- Dexamethasone
- Oxytocin
- Ondansetron
- Glycopyrrolate (Palliative)
- Haloperidol (Palliative)

Advance Care Paramedic (ACP)

To become an Advanced Care Paramedic (ACP) there is an additional year of community college education required over and above the PCP program. This again would include a period of practical experience. In addition to the PCP skill set, ACPs are qualified to perform and/or use:

- Advanced airway management equipment
- Orotracheal and nasotracheal intubation equipment
- Lighted stylet intubation equipment
- Orogastric and nasogastric tubes
- Mechanical ventilation
- Laryngoscopy and removal of foreign body obstruction using Magill forceps.
- Initiate an Intravenous Line (autonomous IV start)
- Initiate intraosseous and external jugular sites.

- Initiate fluid bolus (Gravity and Pressure Infuser)
- Pharmaceutical therapy
- Needle thoracostomy
- Chest tube monitoring
- Synchronized cardioversion and external transcutaneous cardiac pacing.
- Treatment of cardiac emergencies according to Heart & Stroke Foundation Advanced Cardiac Life Support (ACLS) guidelines

In addition to the above list ACPs are certified to give these extra medications:

- Adenosine
- Atropine
- Calcium Gluconate
- Dextrose
- Diazepam
- Dopamine
- Lidocaine
- Midazolam
- Morphine
- Sodium Bicarbonate

Critical Care Paramedic (CCP)

The highest level a trained paramedic in Ontario can receive is the Critical Care Paramedic (CCP). A CCP requires the additional specialized training (over and above the ACP) completed by the base hospital associated with service suppling CCP care. Currently CCPs are only located within the Toronto Paramedic Service and within the Ontario Air Ambulance Services (ORNGE). In addition to the skills that an ACP performs, the CCP practice includes:

- Transvenous pacing.
- Management of Pulmonary Artery lines
- Arterial line monitoring
- Central venous pressure (CVP) monitoring
- An extensive pharmacology scope.
- Administration of blood and blood products
- Umbilical venous catheter line insertion
- Foley catheter insertion
- Nasogastric tube insertion
- Computerized tomography (CT) - head scan interpretation
- Chest X-ray interpretation
- Multiple difficult airway maneuvers
- Mechanical ventilation, multiple modes
- Chest tube management
- Sengstaken-Blakemore tube management
- Lab value analysis
- Blood gas analysis
- Various medications with physician orders

1.4.3 Primary Care Paramedic – IV (PCP Plus)

Every one of the paramedic levels have the ability for a medical director to permit advancement of skills for all three levels. Haliburton County Paramedic Service (HCPS) employs PCP care that has evolved to contain a hybrid paramedic level between PCP and ACP care that is referred to as PCP Plus. The major advanced skill associated with this hybrid level is intravenous (IV) initiation. The establishment of an IV line greatly expands treatment options for many medical conditions. This hybrid position can provide treatment for cardiac angina/myocardial infarction with the delivery of Nitroglycerin for patients who have never taken it before. This IV initiation also allows for superior treatment for diabetics through the delivery dextrose using IV. Additionally, there are other medical conditions that can be treated through IV, such as nausea with Gravol, low blood pressure with a fluid bolus, pain management with Ketorolac and, opioid overdose reversals with Naloxone.

This hybrid level would appear to be the future in Ontario Paramedicine. It allows expansion of skill sets and treatment paths for municipalities with smaller emergency call volumes that don't support the requirements or cost of a full ACP program. HCPS should be commended for having the vison to start this program. The PCP Plus program will continue to evolve with new treatments over the next ten years and the goal for HCPS is to have every paramedic in their service at this level.

***Note:** The Haliburton PCP Plus paramedics treated 2,746 patients in 2017 and 3,661 patients in 2021; an increase of 33% in just four years (as per CEPCP)*

SECTION 2

Current Assessment

SECTION 2: CURRENT ASSESSMENT

2.1 HCPS Call Volumes

A paramedic's workload is unquestionably based on call volume. Paramedics report to work with daily uncertainty. They often take advantage of any idle time focussing on continuing education, station duties, or decompressing after calls. However, they must be ready to respond quickly when an alarm is initiated. A paramedic's career undoubtedly captures the phrase, "hurry up and wait".

There are two main datasets from which to obtain information from Paramedic calls; the CACC (Central Ambulance Communication Centre) derived Ambulance Dispatch Reporting System (ADRS) data, and the Paramedic derived iMedic Electronic Patient Care Report (EPCR) data. ADRS data comes from the MOH through data collected by the local CACCs. Obtaining this data has been a challenge for many years due to the MOH practice of "scrubbing" the data once it is obtained. In the past, if significant and pertinent information was not gathered correctly, the call could be abandoned and not show up in the system data. A great deal has changed over the years and while ADRS is still not 100% accurate, it is consistent in gathering information and can be used for planning purposes.

A key component of a paramedic's role is to produce a report for every patient that they encounter which is known as a patient care report (PCR). Traditionally, these PCRs were completed in quadruplicates on paper, however, in the early 2000's electronic charting became available and is being utilized throughout Ontario with the software iMedic. This software allows paramedics to record patient data during calls which will transfer over to the hospital once they are brought in by ambulance.

Data presented within this report has been retrieved from either ADRS, for geographical responses, as well as EPCR for patient related reports. Where possible, the most current data has been acquired. To understand different types of call volumes, it is important to understand a few key concepts in relation to paramedic response and patient acuity.

2.1.1 Dispatch Priority Codes

Every ambulance is dispatched based upon one of various Priority Codes. Currently, the Haliburton Paramedic Service is being dispatched by the Lindsay Central Ambulance Communication Centre (CACC). Every dispatched service call is labelled a dispatch priority code. These codes are based on the dispatch priority card index (DPCI) system which, through a series of algorithms, provides a response code based on the 9-1-1 callers' interpretation of the medical emergency.

The following are the codes and definitions that CACC can apply to a call:

- Code 1 - non urgent and deferable.
- Code 2 - scheduled i.e., diagnostic hospital interfacility transfer.
- Code 3 - prompt response.
- Code 4 - urgent lights and siren response.
- Code 8 - standby i.e., local paramedic response time coverage, land paramedic ambulance coverage for neighbouring municipality, local fire, or police situation.

Once the patient is assessed by the paramedics, they will denote a return patient priority when hey are prepared to leave the scene of the incident. They will use the same codes noted for CACC purposes; however, a Code 7 can be added if the patient is not being transported to the hospital.

2.1.2 Paramedic CTAS Codes

Once the paramedics arrive on scene, they can rapidly assess a patient and indicate their acuity based upon a widely used system known as the Canadian Triage Acuity Scale (CTAS).

The CTAS is the same scale used by doctors and nurses in hospitals to triage their patients based on need. Utilizing this same system allows for better communication and consistency amongst healthcare providers. This scale has five levels and is an essential part of the provincially legislated Response Time Standard. The five levels of response within the scale are:

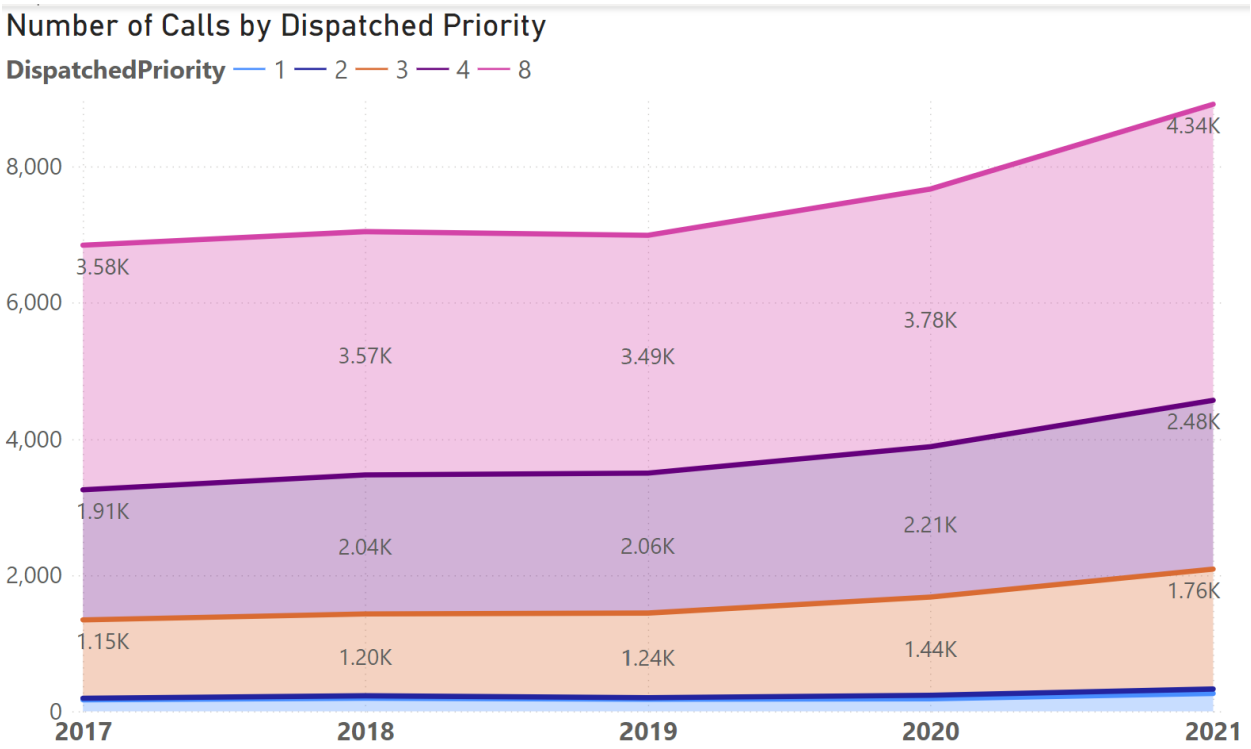
- CTAS 1 – Resuscitation (threats to life or limb or could deteriorate requiring aggressive treatment interventions).
    - Patients need to be seen by a physician immediately, 98% of the time.
- CTAS 2 – Emergent (conditions that are a potential life or limb threat).
    - Patients need to be seen by a physician within 15 minutes, 95% of the time.
- CTAS 3 – Urgent (conditions that could become serious).
    - Patients need to be seen by a physician within 30 minutes, 90% of the time.
- CTAS 4 – Less-Urgent (conditions that relate to age, distress, potential for deuteration or complications).
    - Patients need to be seen by a physician within 60 minutes, 85% of the time.
- CTAS 5 – Non-Urgent (minor complaints that do not pose any immediate risk to the patient).
    - Patients need to be seen by a physician within 120 minutes, 80 % of the time.

CTAS is collected at a variety of times during care with the patient to reflect the current condition of the patient. It is collected beginning with patient contact, leaving the scene, and upon arrival at the destination facility.

2.1.3 Total Call Volume

Call volumes for paramedic services in Ontario have been continually rising since provincial download in 2000. There has been only one abnormality, since 2000, regarding call volume progression which was in 2019. This data is valid for Haliburton County as well. For analysis purposes, this report will consider call volumes from 2017 to 2021 and will utilize data percentages right up to September 2022 where possible.

Figure #8 – Ambulance Dispatch Reporting System (ADRS)



2.1.4 Call Volume – Dispatch Priority

The HCPS deployment model requires balanced coverage. Frequently when an ambulance is sent on a priority call (Code-1, -2, -3, or -4) an additional ambulance is dispatched on standby (Code 8) to provide supplementary coverage. The data represents and documents that the code 8 responses account for approximately 50% of the dispatched call volume.

Figure #9 – ADRS by Priority

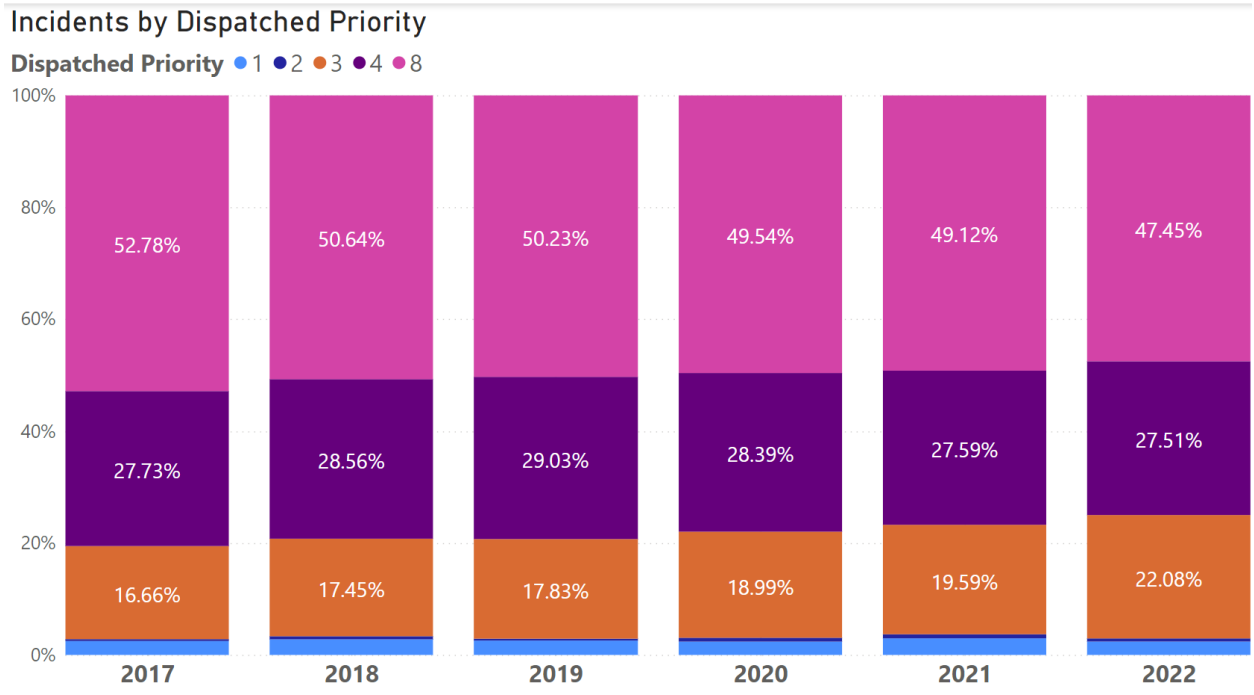
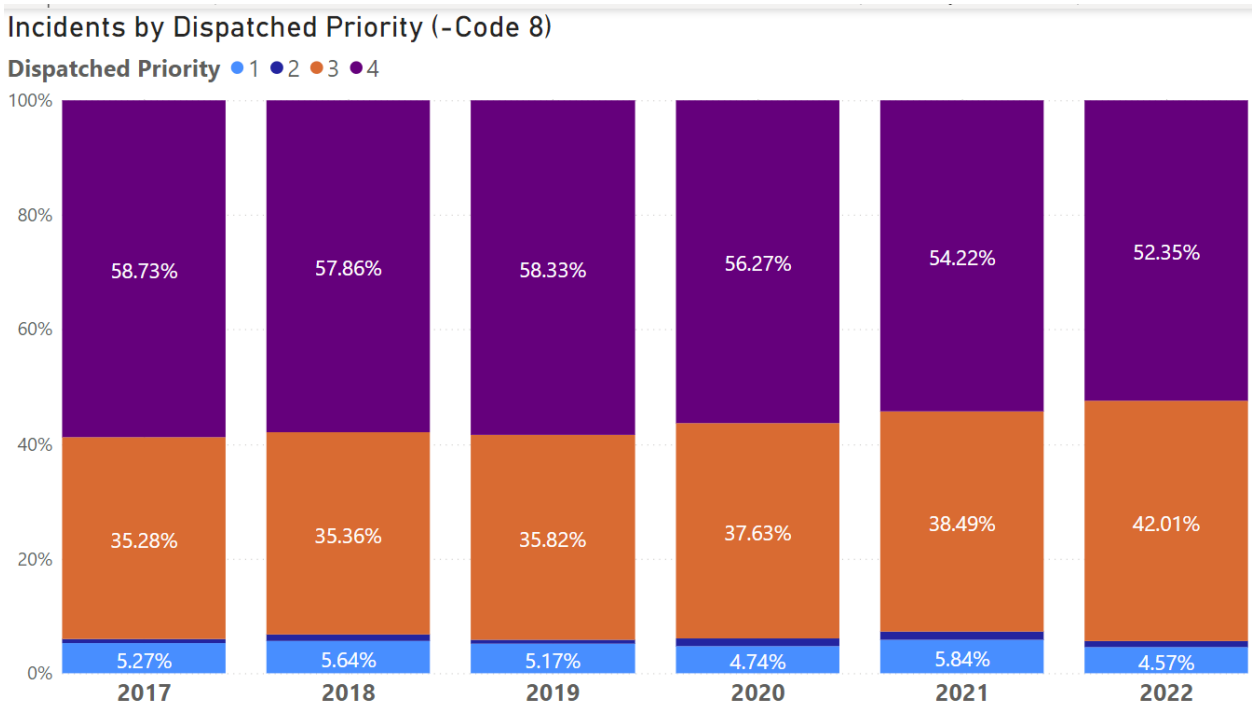


Figure #10 – ADRS by Priority



In Ontario, typically, code 4 calls account for most of the dispatched service calls. In Haliburton, however, code 4 calls are dispatched less frequently than in most other paramedic services and by percentage (not call volume) appears to be declining. This possibly can be attributed to the increased volume of urgent interfacility transfers that are being booked by the local hospitals.

While the dispatch priority code system investigates beyond the urgency of the call, it is strictly based upon the DPCI program as well as the information that the dispatcher acquired from the caller. For an assessment of patient acuity, the Canadian Triage Assessment Scale must be considered.

2.1.5 Call Volumes – CTAS

Once the paramedic arrives on scene of an incident, they perform a quick assessment and notify CACC of the patient contact and CTAS assessment. This gives a rank of the patient's acuity, or level of need to be transported to definitive care. It should be noted for response time purposes the CTAS 1 category is broken down to indicate the SCA (Sudden Cardiac Arrest) requirement of reporting. A patient in SCA is still technically considered a CTAS 1.

Additionally, CTAS 0 is noted when a patient has died prior to the paramedics' arrival, has end of life do not resuscitation orders, or is declared deceased during paramedic care. This ensures proper tracking of response times under the MOHLTC Standard.

In Ontario, most of the patients' that are encountered by paramedics are prioritized as CTAS 3. This indicates a level of urgency requiring care; however, it is not emergency nor requiring resuscitation. These patients are typically sick however their ailment is not immediately life threatening.

The changing acuity over time can be seen in the differences between 2017 through 2022. Percentage gains in the CTAS and 3, 4, and 5 are offset by percentage losses in CTAS 2 and CTAS 1 and 0 when those categories are combined. To someone who is not familiar with the paramedic system, this would seem to indicate that patients being transported by ambulance are less sick, however, we know that there has been a substantial increase in urgent interfacility transfers of non-critical patients adding to the CTAS 3 category over time.

Figure #11 – CTAS – Breakdown by Year

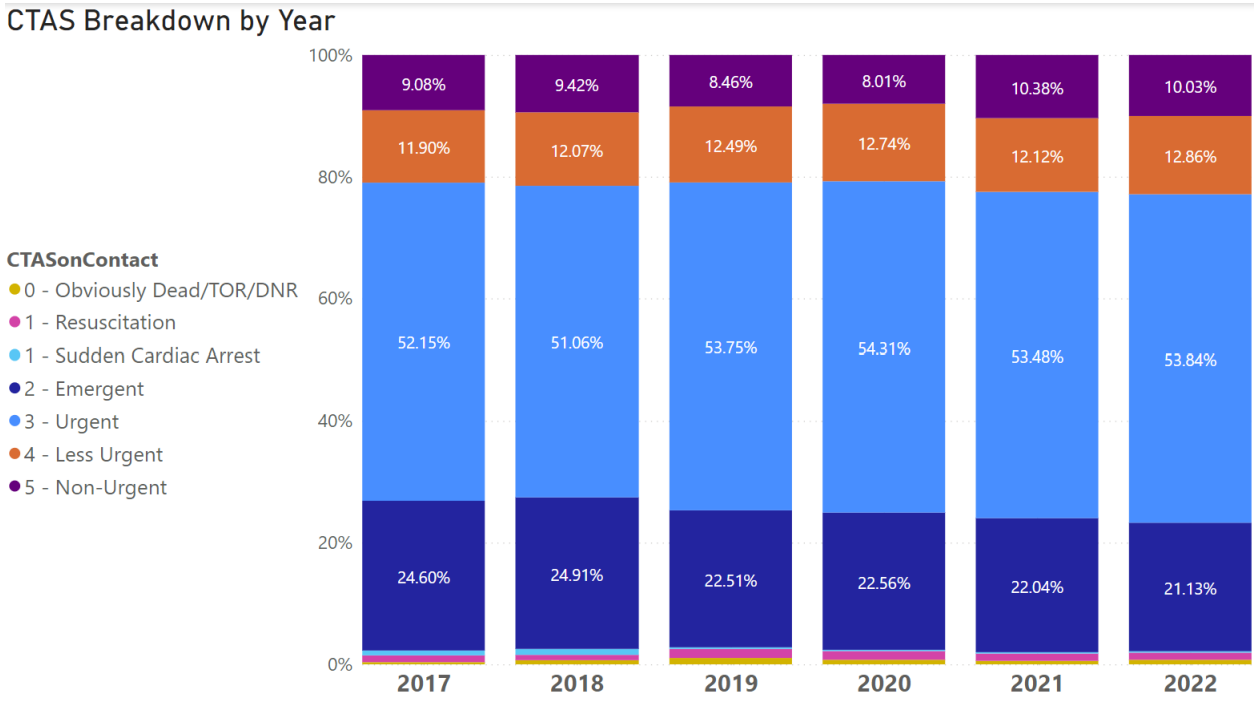


Figure #12 – CTAS – Call Count

CTAS 2017

CTAS on Contact	Count of Calls	% of Calls
0 - Obviously Dead/TOR/DNR	9	0.35%
1 - Resuscitation	28	1.10%
1 - Sudden Cardiac Arrest	21	0.83%
2 - Emergent	624	24.54%
3 - Urgent	1331	52.34%
4 - Less Urgent	300	11.80%
5 - Non-Urgent	230	9.04%

CTAS 2022

CTAS on Contact	Count of Calls	% of Calls
0 - Obviously Dead/TOR/DNR	24	0.77%
1 - Resuscitation	36	1.16%
1 - Sudden Cardiac Arrest	7	0.22%
2 - Emergent	661	21.23%
3 - Urgent	1669	53.61%
4 - Less Urgent	397	12.75%
5 - Non-Urgent	319	10.25%

2.1.6 New Definitions for Call Volumes

There are numerous facets to consider when reviewing the volume of calls, however, they are required to be defined. Understanding the deployment model for Haliburton County and the call volumes within the County can be broken down into three categories:

- Incidents
- Emergency Responses
- Patient Carried (Transports)

Incidents – the number of times a resource is dispatched to deploy. This includes 9-1-1 calls as well as the movement of vehicles to balance emergency coverage.

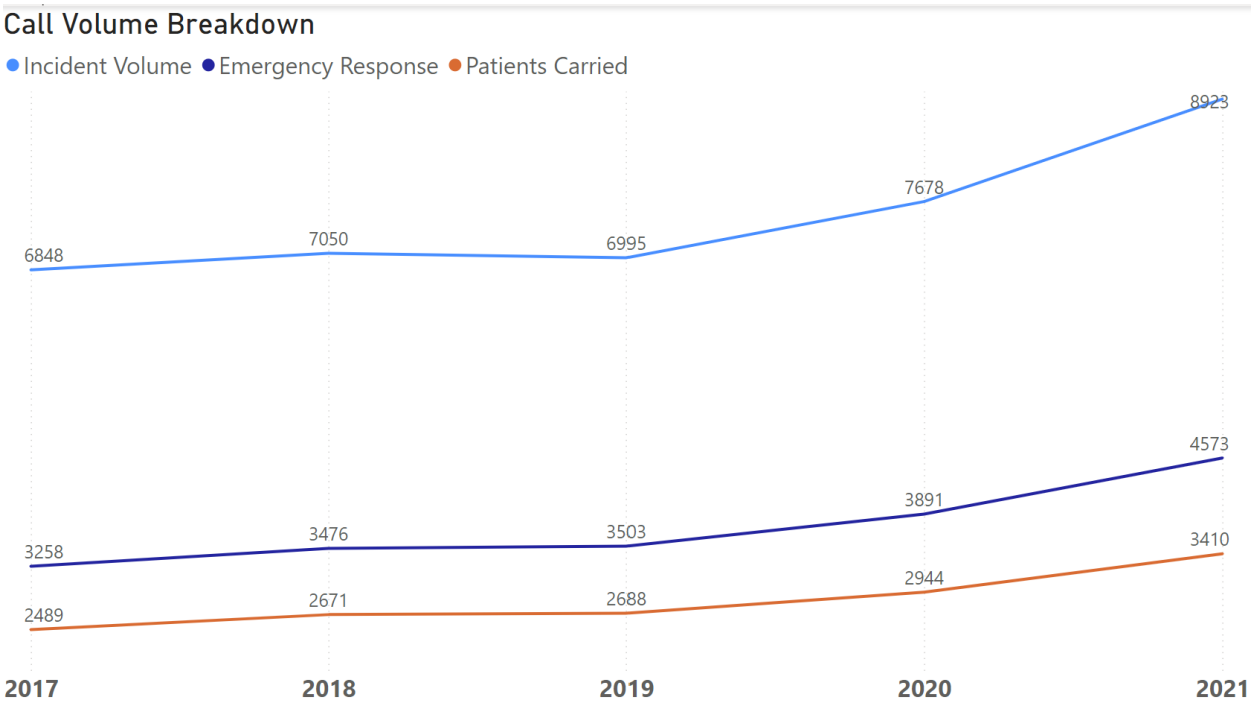
Ambulance deployment is discussed in further detail later within this report. HCPS utilizes a balanced emergency coverage approach wherein resources are sent to balance coverage when an emergency call takes another resource out of circulation. For example, when the Village of Haliburton ambulance takes an emergency call, the Tory Hill ambulance will redeploy to the Village of Haliburton to better cover an area more likely to receive another emergency call.

Emergency Responses –the amount of times resources are sent to a patient in need. This is what most paramedic services would refer to as "true" call volume.

Patient Carried (Transports)–represents every time a patient is transported (typically to a hospital).

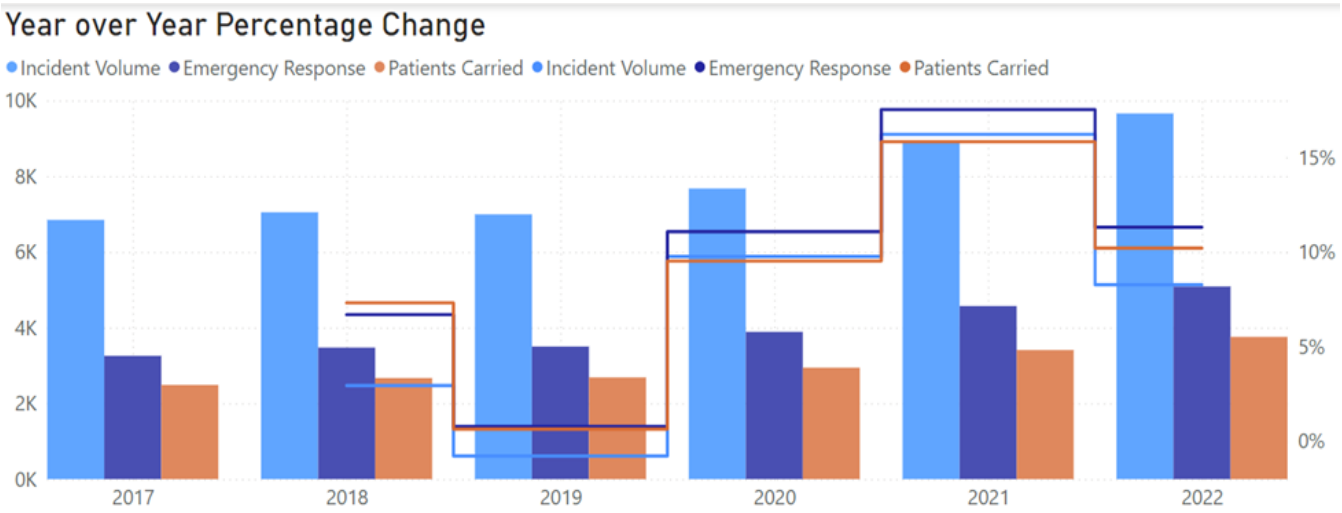
***Note:** Occasionally, a patient decides that they do not want to seek definitive care. This would be a considered both an incident and an emergency response but not a patient transport.*

Figure #13 – Call Volume Breakdown by Year



Overall, since 2017 call volume has risen significantly with incident volume increasing to 41.1%, emergency response has risen to 56.2%, and patients carried growing to 51.0%.

Figure #14 – Percentage Change by Year



Year	Incident Volume	Incident Volume % Change	Emergency Response	Emergency Response % Change	Patients Carried	Patients Carried % Change
2017	6848		3258		2489	
2018	7050	2.95%	3476	6.69%	2671	7.31%
2019	6995	-0.78%	3503	0.78%	2688	0.64%
2020	7678	9.76%	3891	11.08%	2944	9.52%
2021	8923	16.22%	4573	17.53%	3410	15.83%
2022	9661	8.27%	5090	11.31%	3758	10.21%
Total	**47155**	**25.77%**	**23791**	**27.22%**	**17960**	**26.46%**

2.1.7 Call Volume – Age

While past call volumes already factor in patient age, it is important to realize that continued growth in an aging population will intensify the increase in calls. As per the Ontario 2021- 2046 population projection, older adults currently make up for 17.6 percent of the province's population. Within the Haliburton area, currently the older adult population makes up for 35.7 percent[11]. The chart below reveals that the aging population, over the age of 65, makes up most of the call volume. The data also shows that call volumes are rising for both the 65 plus age group as well as the 15 - 64 age bracket.

[11] Ontario Population Projections, Ontario.ca, accessed January 2023, https://www.ontario.ca/page/ontario-population-projections

Figure #15 – Calls by Age and Year

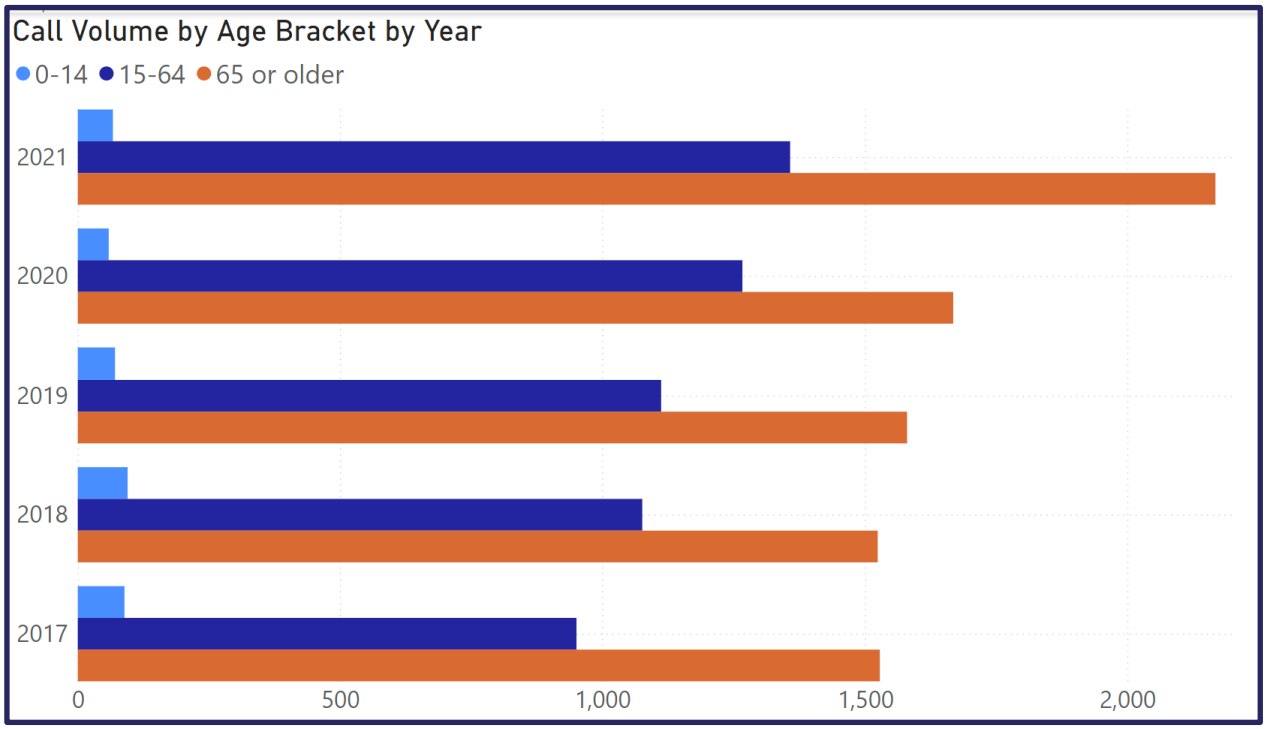
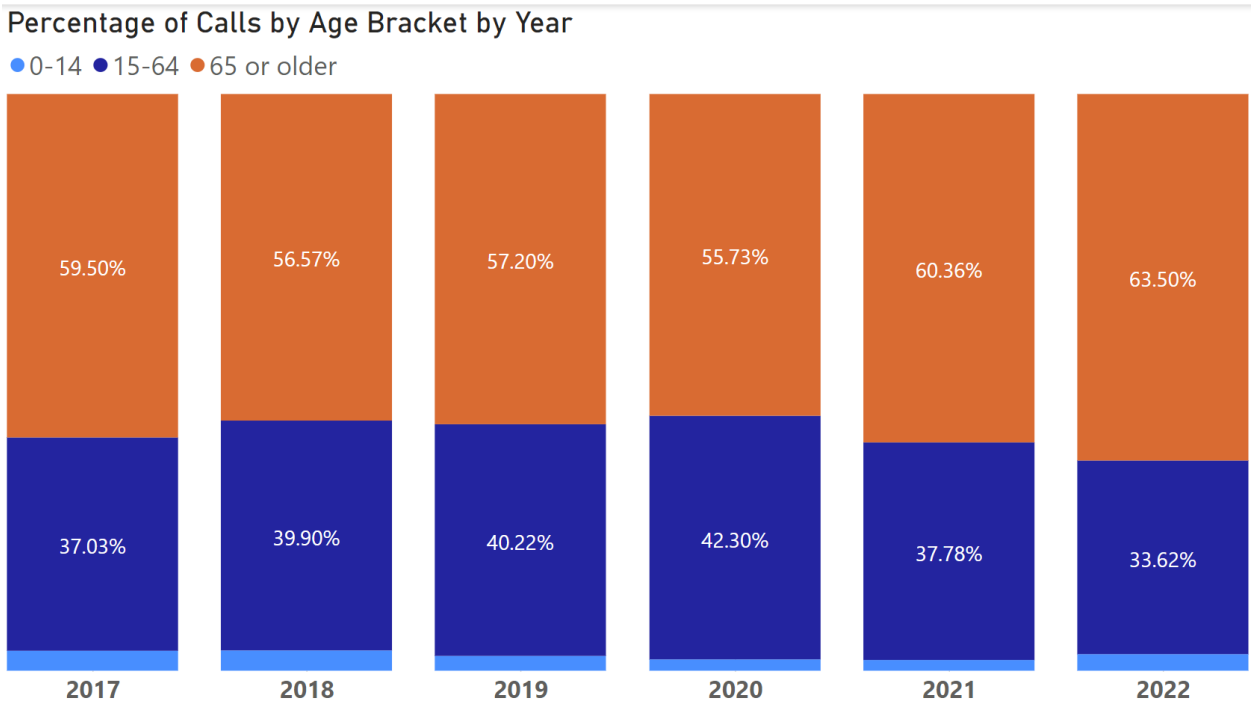
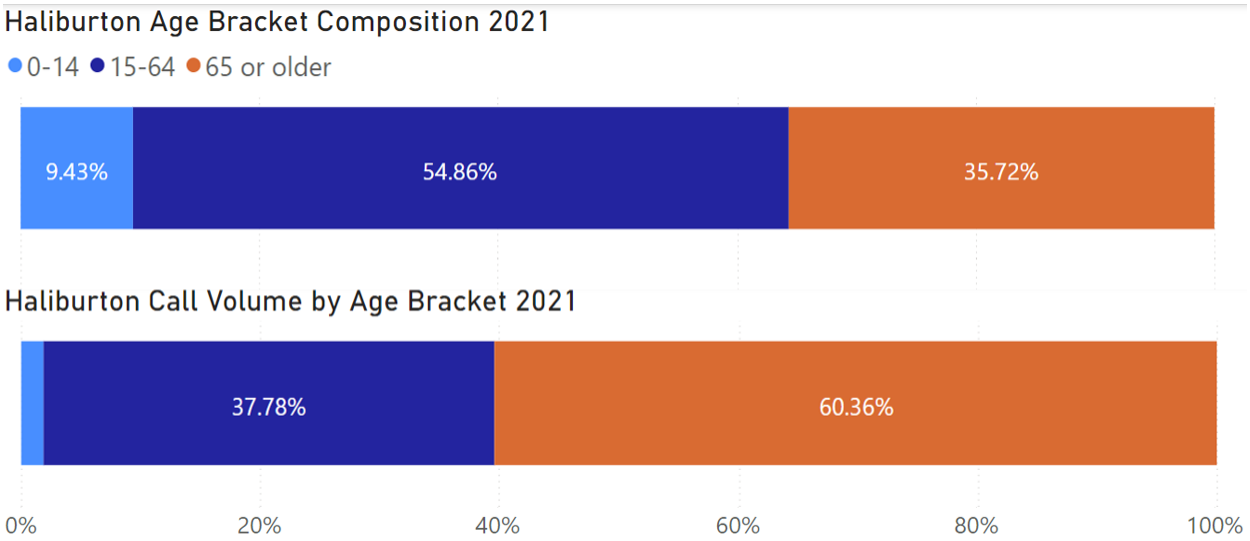


Figure #16 – Percentage of Calls by Age and Year



In 2021, 35.7% of the population of Haliburton was 65 years of age or older. Throughout 2021, those 65 years of age or older represented 60.35% of the call volume. This information must be a component of future planning as this statistic is not uncommon due to the older population requiring an increase in healthcare needs. Understanding this disproportionate requirement is key when looking at future population predications.

Figure #17 – Haliburton – Age Composition and Call Volume by Age



The above noted call volumes dealt with vehicle utilization and paramedic work, but they did not consider patient acuity. Patient acuity requires examining and analysing the call data to calculate a further patient driven focus.

2.1.8 Call Volumes Non-Permanent Residents

Assessing the number of HCPS calls that are provided for non-Haliburton residents is difficult to calculate with accuracy. Many seasonal residents and visitors have been known to use their seasonal addresses for iMedic reporting. Reviewing the iMedic report data for 2021, it was discovered that 931 calls had mailing addresses with postal codes that were not local to Haliburton County (K0M/K0L). Furthermore, there were 391 calls where the mailing addresses were not or could not be obtained.

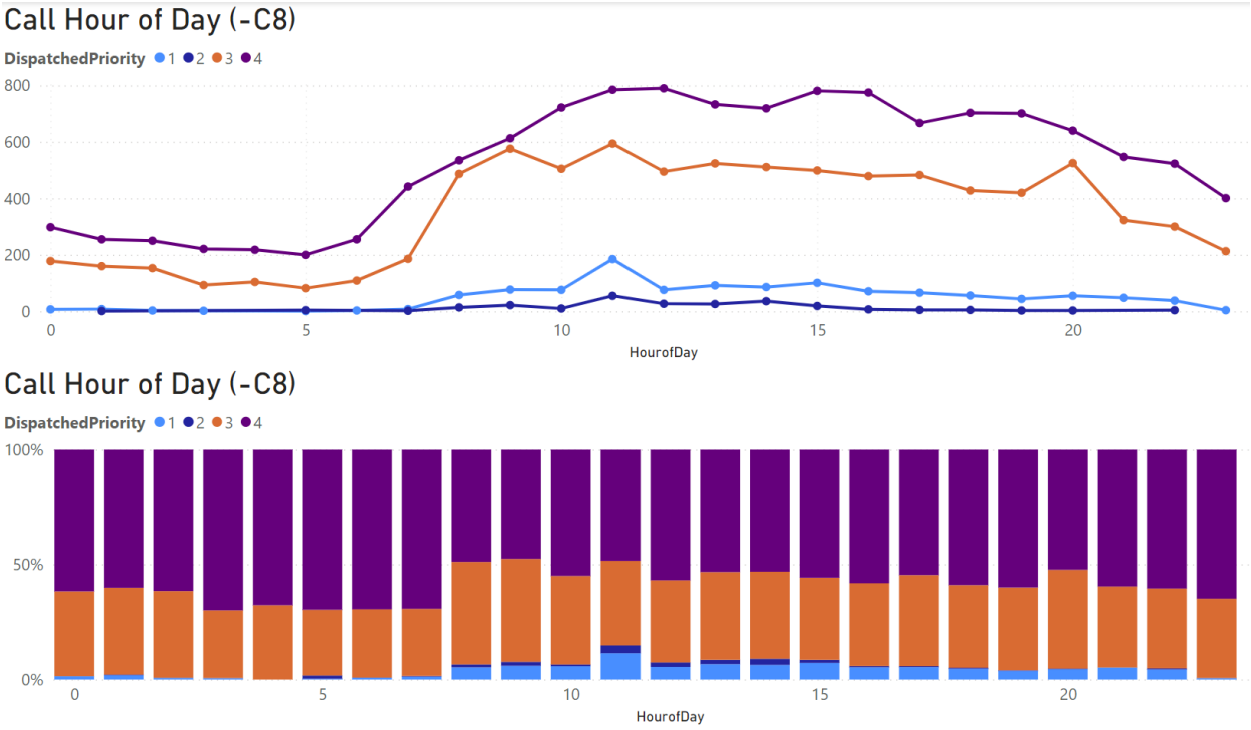
2.1.9 Call Volumes – Time of Day/Day of Week/Month of Year

When evaluating paramedic resource needs, it is important to note when there is an expected increase in services. Obtaining information to observe time of day, day of week, and month of year s will allow us to obtain an overall picture of increased activity in correlation to time.

Time of Day

It is important to note the time of day when establishing a start and an end time in relation to resources. Since the start of 2021 (most recent trend timing with appropriate data), 68.6% of calls occur between the hours of 08:00h – 20:00h (8 a.m. and 8 p.m.). This time aligns with the start and end times for two of the three 24-hours shifts. 82.1% of the calls occur between the hours of 08:00h – 23:00h (8 a.m. – 11 p.m.)

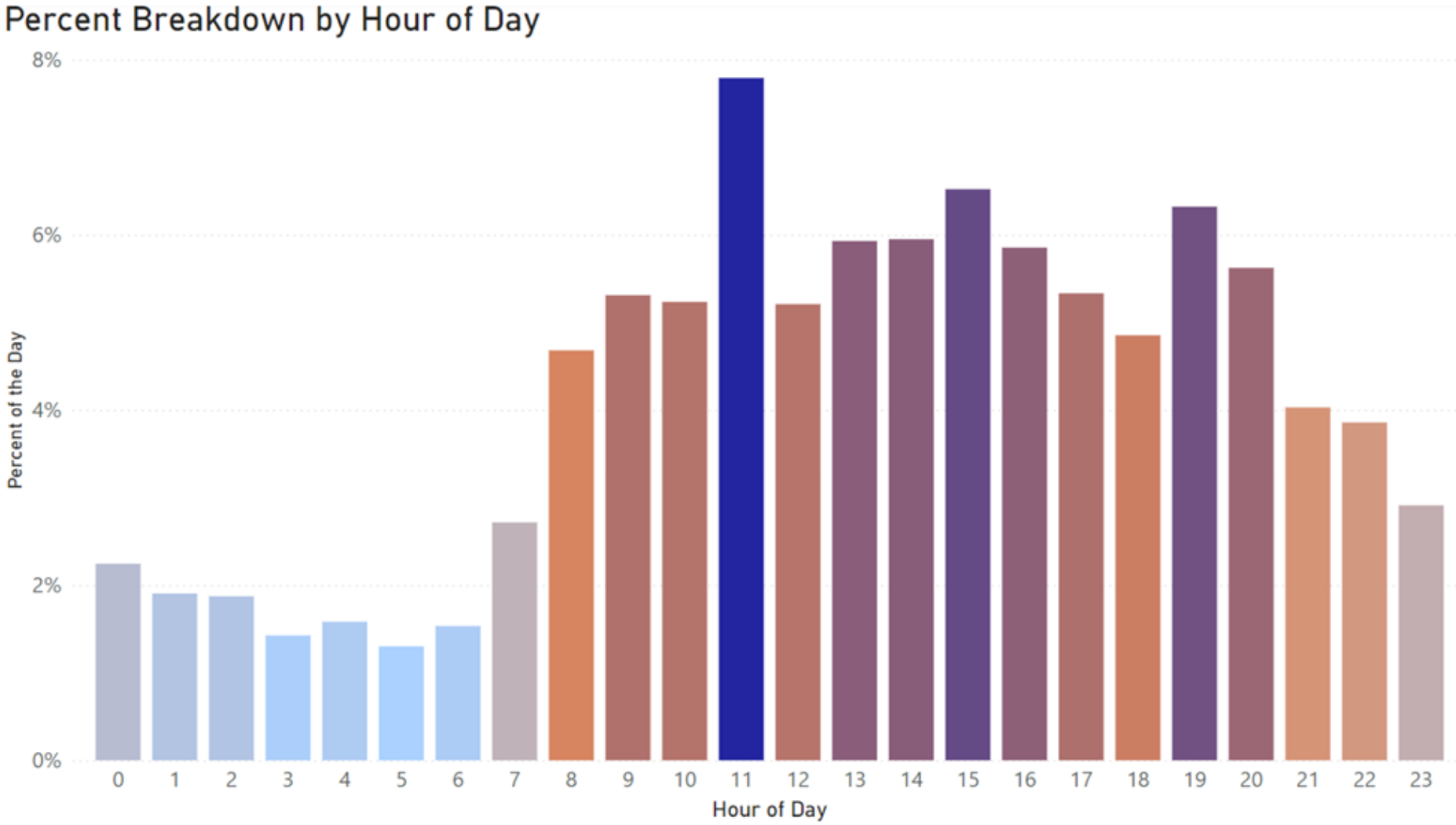
Figure #18 – 2021 – 2022 Number of Calls by Time of Day



Over the last 5 years, nearly 75% of calls occur between the hours of 07:00h through 20:00h (7 a.m. - 8 p.m.). This timing coincides with the start and end of shift times of the third 24-hour HCPS ambulance. The day shift (fourth ambulance), deploys from 11:00h to 23:00h (11 a.m. to 11 p.m.).

Upon review of the analysis of Code 3 data calls, there appears to be an incline at 09:00h, 11:00h, and at 20:00h (8 p.m.). Additionally, an analysis of the pick-up locations for Code 3 calls since 2017, reveals that nearly 55% occur at hospitals. There would appear to be a correlation between the increase in interfacility transfers with increase in Code 3 calls over time.

Figure #19 – Hour of Day Breakdown



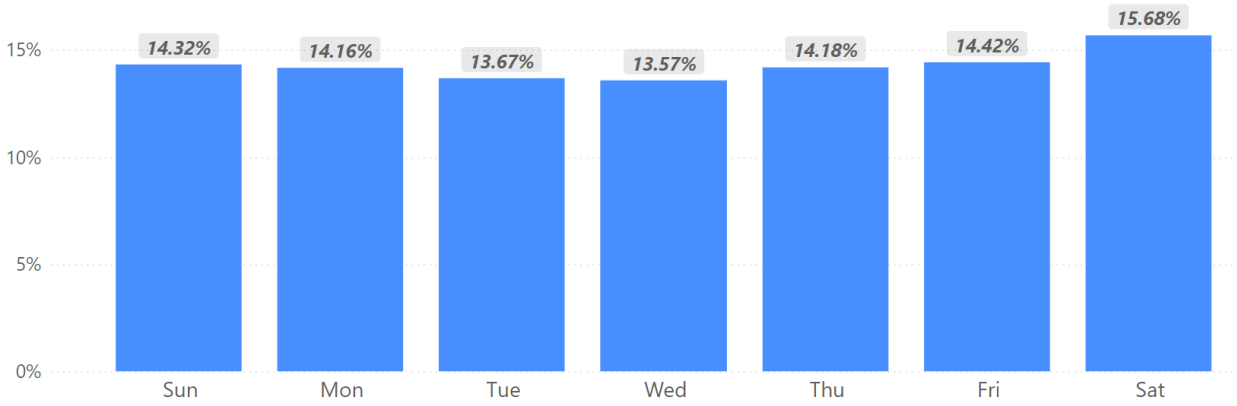
Day of the Week

Day of the week statistics are also significant when assessing the amounts of resources that are required throughout the week.

Figure #20 – Percentage of Calls vs. Days of the Week

Day of Week Breakdown

Year	Sun	Mon	Tue	Wed	Thu	Fri	Sat
2017	13.70%	14.63%	13.81%	13.57%	14.78%	14.49%	15.03%
2018	15.25%	15.19%	13.46%	13.48%	13.08%	14.24%	15.30%
2019	14.72%	13.62%	14.25%	13.57%	13.74%	14.40%	15.70%
2020	14.24%	14.17%	13.19%	13.55%	14.67%	13.97%	16.22%
2021	13.64%	13.90%	14.55%	13.58%	14.57%	14.67%	15.10%
2022	14.52%	13.55%	12.64%	13.70%	14.13%	14.71%	16.77%



As noted above in figure #21, the busiest day of the week is Saturday which is a full percentage greater than the second busiest day being Friday. The rest of the days are relatively close in the overall calls received per day.

Up until recently, there were upstaffing conditions at the Tory Hill location on weekends and day shifts. With data supporting the busiest days being Friday, Saturday and Sunday acquiring full staff for the weekends is a definite asset. Therefore, recently there was an increase in staffing at the Tory Hill station, providing this station the ability to function 24 hours a day 365 days a year. With Friday, Saturday and Sunday being the busiest days, this again speaks to the increase in the seasonal population on weekends.

Month of the Year

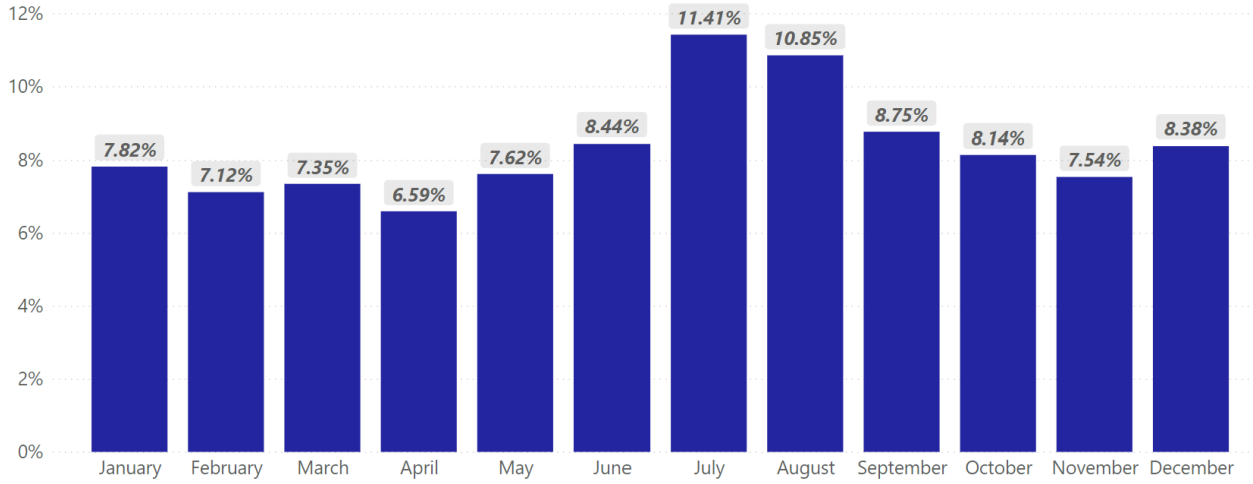
The month of year yields substantial findings for Haliburton County. For an area of the province with a high number of seasonal residents, it is essential to review the influx of population during specific months of the year. As expected, the busiest months of the year unquestionably are July and August followed by the months of September and June. The months of February throughout April are the least busy in the County. To maintain appropriate coverage and

ambulance availability for the duration of the summer months, the paramedic service would typically upstaff extra ambulances on weekends.

Figure #21 – Percentage of Calls vs. Time of the Month

Month of Year Breakdown

Year	January	February	March	April	May	June	July	August	September	October	November	December
2017	7.89%	7.32%	7.89%	7.58%	8.67%	7.89%	10.34%	10.11%	8.34%	7.94%	7.78%	8.27%
2018	7.63%	7.02%	7.28%	7.55%	7.48%	8.47%	11.26%	10.91%	7.87%	7.94%	7.77%	8.82%
2019	8.08%	7.12%	7.88%	5.85%	7.65%	8.15%	12.39%	10.74%	8.58%	8.69%	6.76%	8.12%
2020	7.70%	7.03%	6.45%	5.52%	6.77%	9.17%	11.62%	11.55%	10.09%	7.98%	7.80%	8.31%



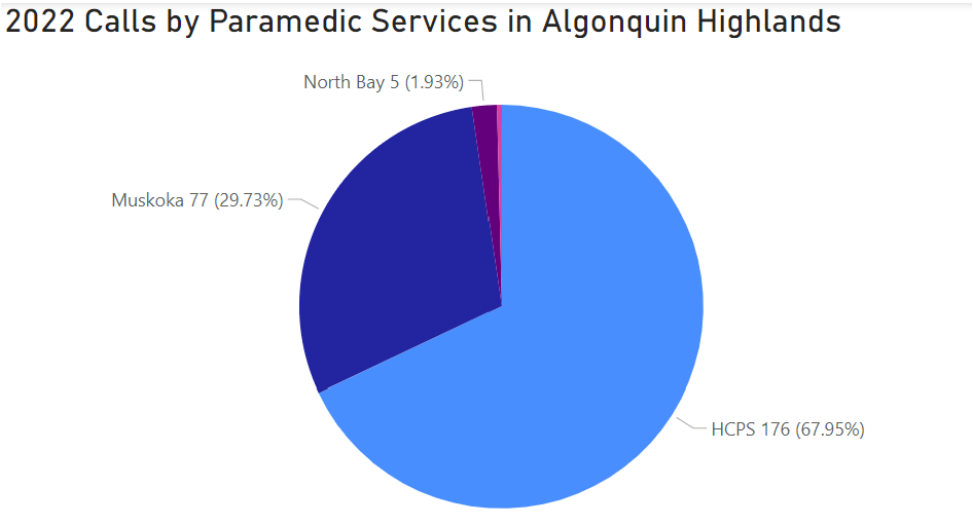
2.1.10 Assessment of Underserviced Areas

A review of deployment includes an assessment of emergency calls being performed by other jurisdictions in Haliburton County. In the Ontario system of "seamless coverage" the closest most appropriate ambulance will be dispatched to an emergency regardless of borders. Reviewing calls performed by other services details a challenge to respond within your own area.

Algonquin Highlands is the only area of the County without a regularly deployed Paramedic Station. Algonquin Highlands saw a population increase of 10.1% to 2588 people according to the 2021 Canadian Census (Dysart et al 14.4% [7182], Minden Hills 14.5% [6971], Highlands East 14.6% [3830]).

Currently, there is a Paramedic Post at the Stanhope Fire Station, however the ambulance is only present when all four-day shift ambulances are available. Below is a listing of calls performed within Algonquin Highlands for 2022 by HCPS and other neighbouring Paramedic Services.

Figure #22 – 2022 Calls by Paramedic Services in Algonquin Highlands

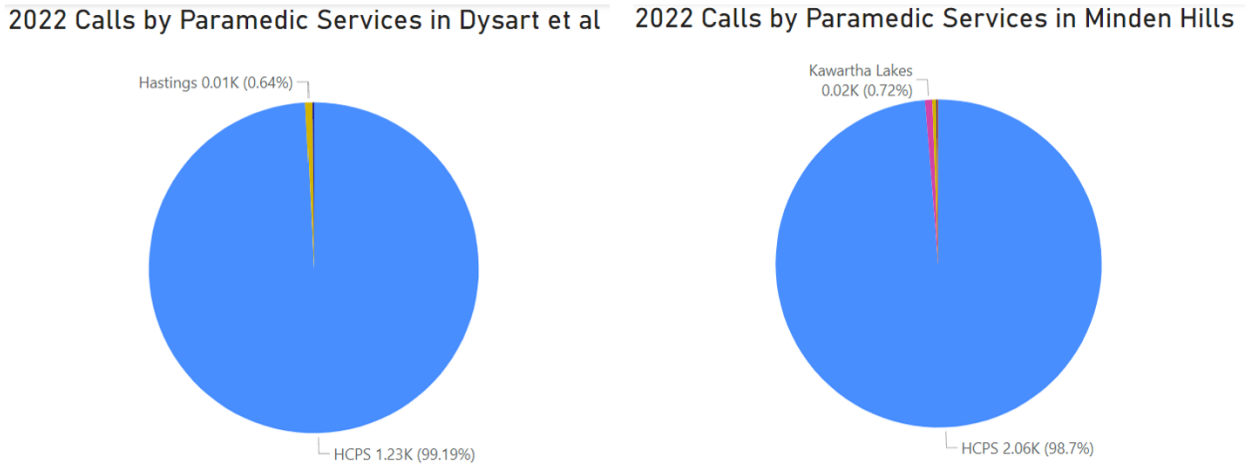


Responding From	# of Calls	% of Calls	Response Time (min)
Haliburton County EMS	176	67.95	20.28
Muskoka Paramedic Service	77	29.73	28.62
North Bay & District Ambulance Service	5	1.93	24.45
City of Kawartha Lakes EMS	1	0.39	41.00
Total	**259**	**100.00**	**22.92**

While 68% of the 9-1-1 emergency calls in Algonquin Highlands are being performed by HCPS, 32% are being performed by other services. The average response times for the calls being responded to by outside services is often 8 minutes longer than for HCPS. As funding and resources become available HCPS should consider a paramedic station and ambulance deployment within Algonquin Highlands.

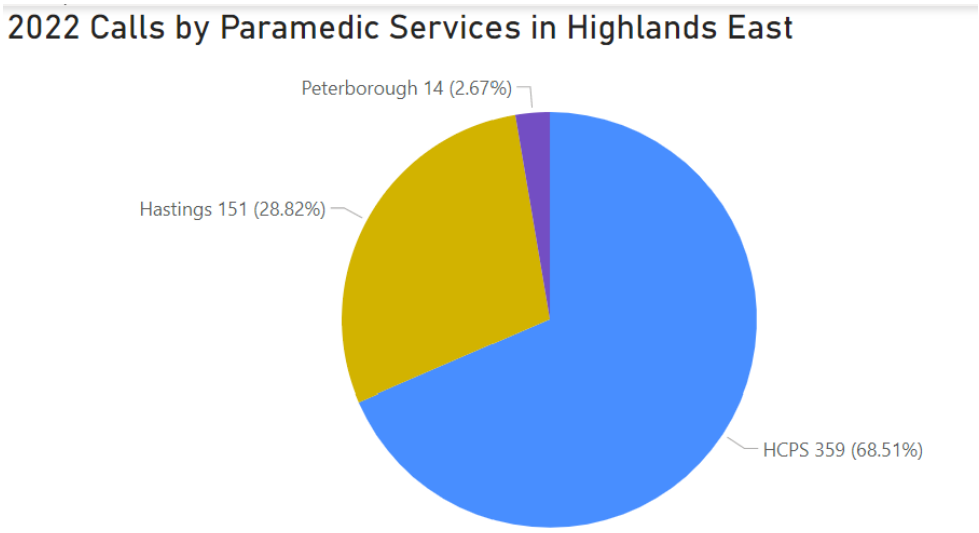
While Algonquin Highlands had a high percentage of emergency 9-1-1 calls being performed by other Services, Dysart et al and Minden Hills had nearly all calls performed by HCPS.

Figure #23 – 2022 Calls by Paramedic Service and Location



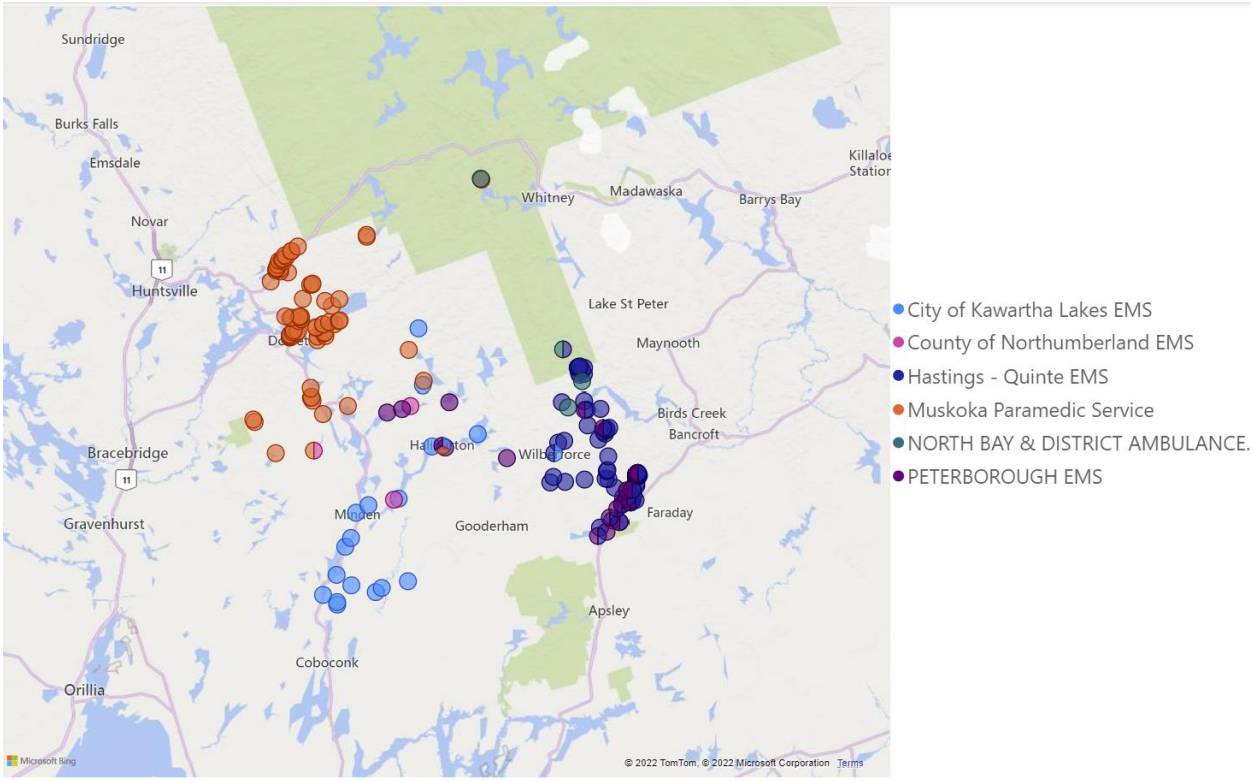
Highlands East has a large percentage of calls being performed by other Services even though there is a Paramedic Station within the municipality in Tory Hill. The primary reasons are the ambulance in Tory Hill is frequently redeployed when other paramedic resources are in use, and many calls is Cardiff are served by Hastings County which has an ambulance in Bancroft. Bancroft is utilized as it is only 17km to Cardiff whereas Tory Hill is 23km.

Figure #24 – 2022 Calls by Paramedic Services in Highlands East



Responding From	# of Calls	% of Calls	Response Time (min)
Haliburton County EMS	359	68.51	18.64
Hastings – Quinte EMS	151	28.82	16.86
Peterborough EMS	14	267	14.32
Total	**524**	**100.00**	**18.01**

Figure #25 – Haliburton County Calls



Looking at potential locations for an Algonquin Highlands Station, four areas (Carnarvon, Maple Lake, West Guilford and Stanhope) were considered and have been mapped with emergency response travel times. Considering travel time coverage and overlap with other stations, the two most viable options would appear to be Stanhope or Carnarvon.

Figure #26 - Proposed Carnarvon Station

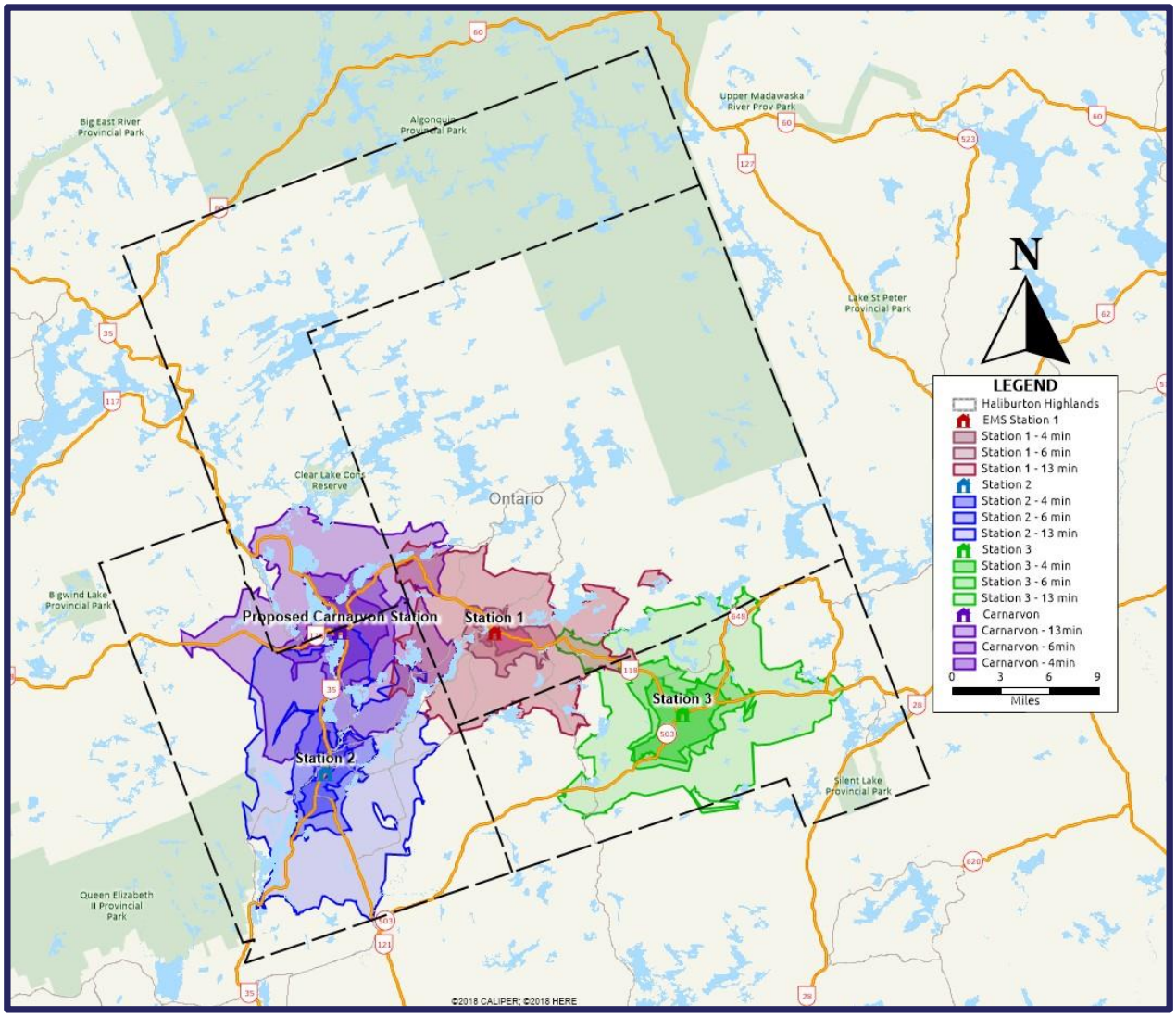


Figure #27 - Proposed Maple Lake Station

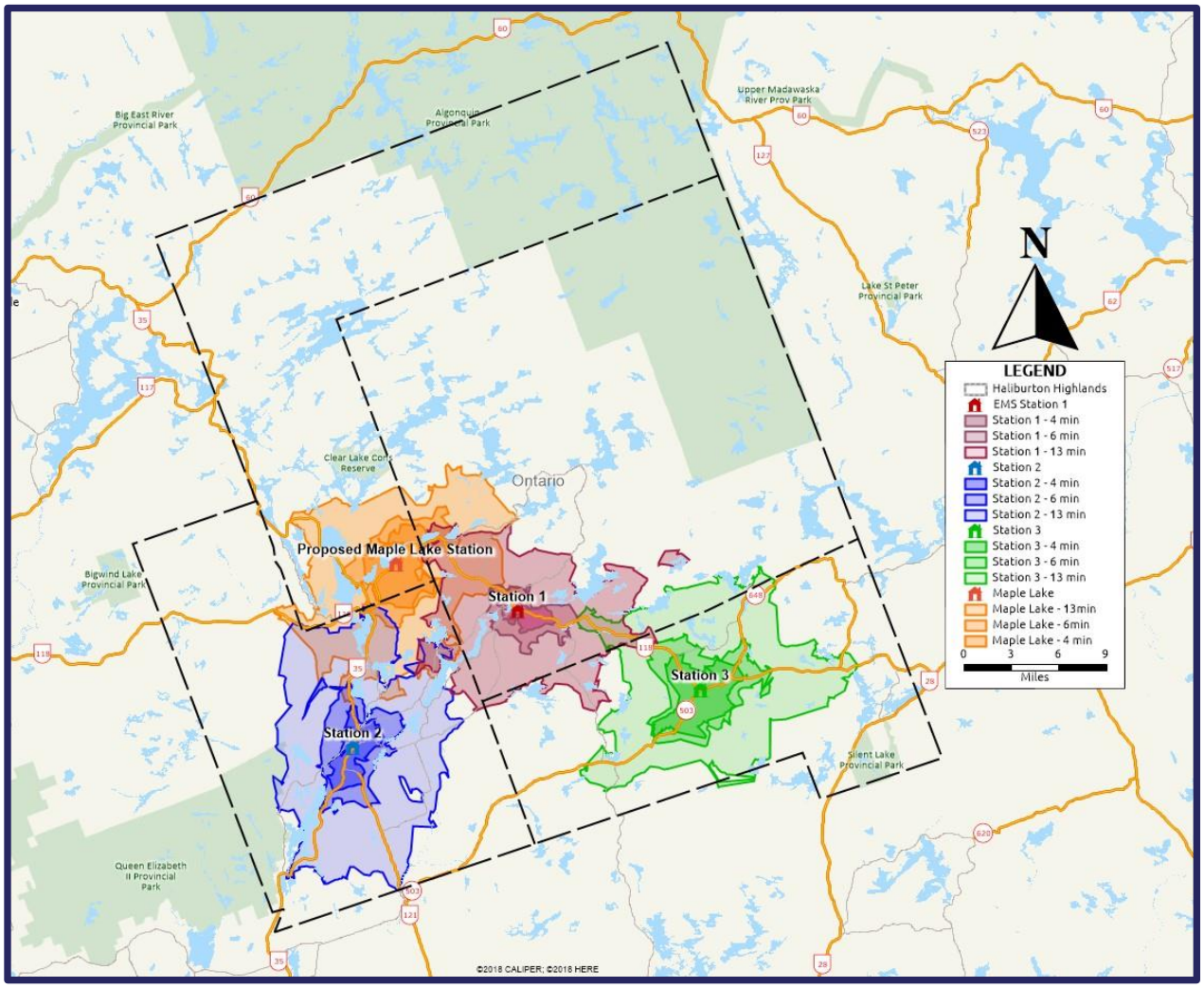


Figure #28 - Proposed Stanhope Station

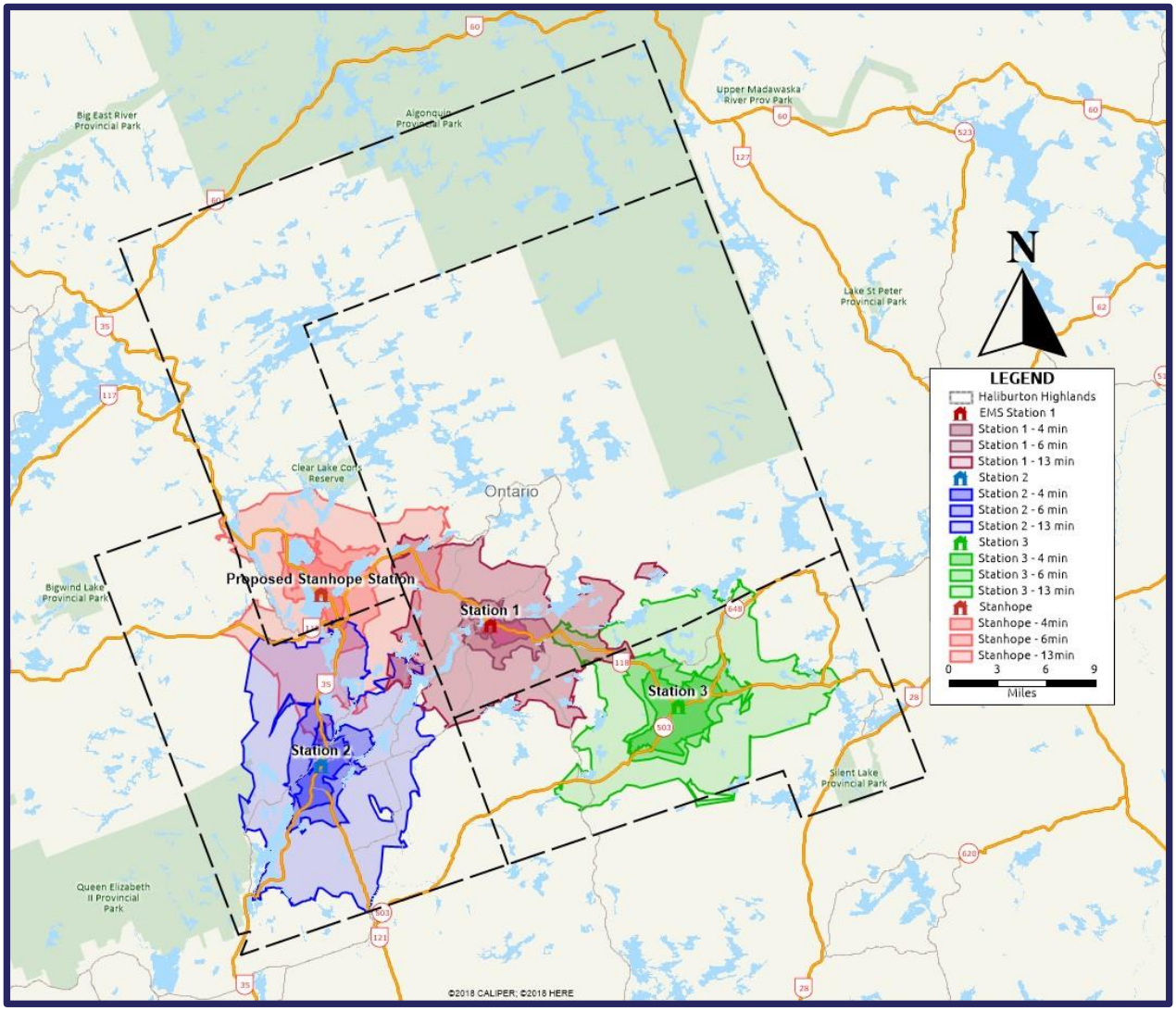
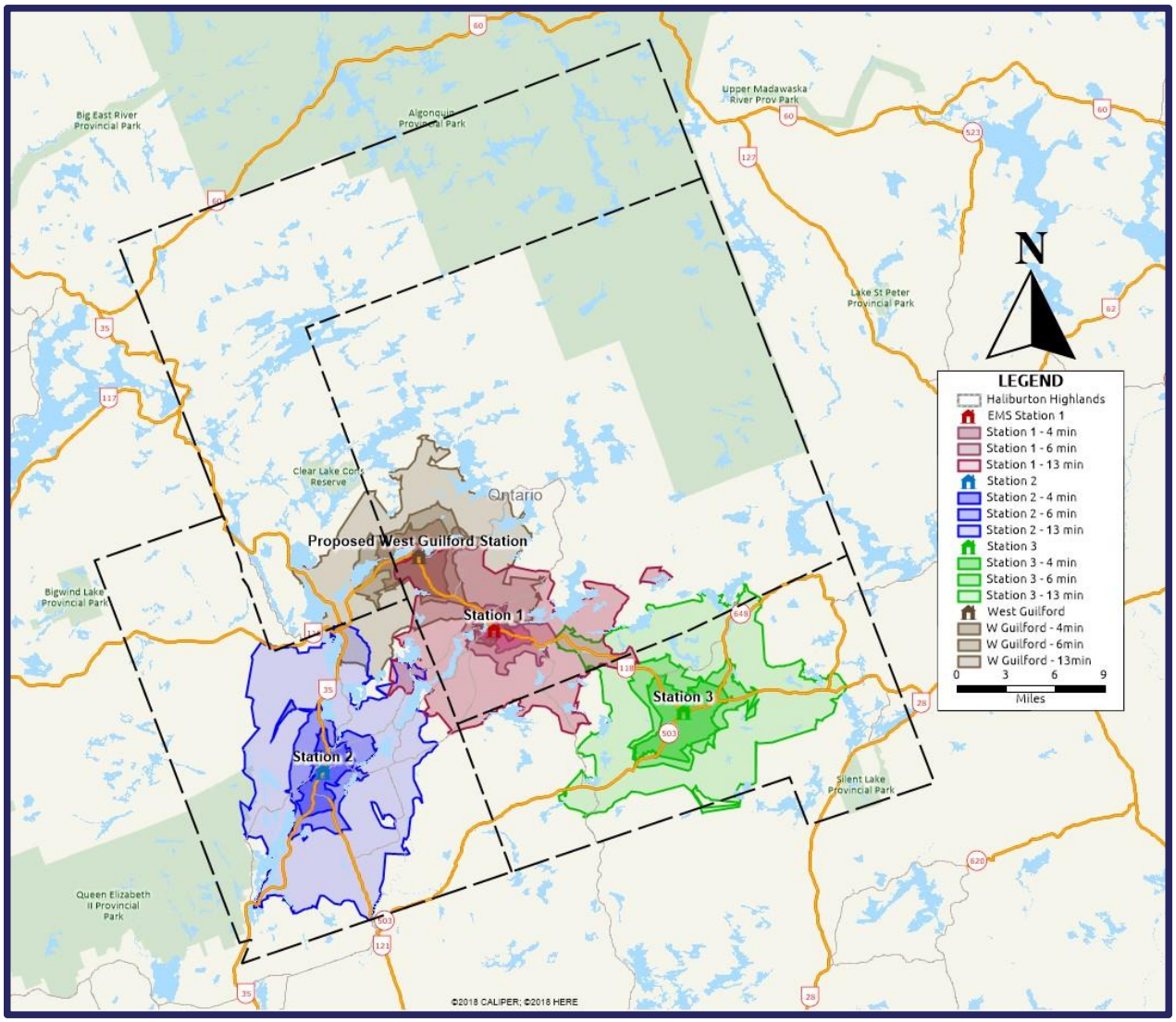


Figure #29 - Proposed West Guilford Station



2.2 Haliburton County Patient Acuity

CTAS is a true measure of patient acuity and determines the urgency of the patient's condition.

There are two data fields to review in relation to the purpose and cause of the patient requiring an ambulance. These data fields for review are dispatch problem codes and primary problem codes.

A dispatch problem code relates to a determination by CACC and what they interpret to be the issue as detailed by the 9-1-1 caller. The primary problem code is what the paramedic determines to be the general issue with the patient upon their examination. Dispatch problem codes are far less reliable as they depend on the information given by the caller, including the hospital on interfacility transfers. Where interfacility transfers are concerned, a correlation of both codes needs to be assessed. When paramedics are dispatched for an interfacility transfer, they may choose to code the primary issue or concern, or they may choose to use the patient's actual diagnosis (e.g., chest pain, respiratory, etc.). This is where the discrepancies within the two datasets will be found, and the appropriate dataset must be used for accurate intent.

The top patient primary problems, as recorded by the paramedics on the EPCR, are noted in the table below. Over the last three years, it is noted that most primary problems do not appear to represent critical emergencies. While there are 51 distinct generalized codes that paramedics have the ability to use for primary issues, the top ten primary problems make up 77.4% of all calls performed by paramedics with interfacility transfers being first (and increasing yearly).

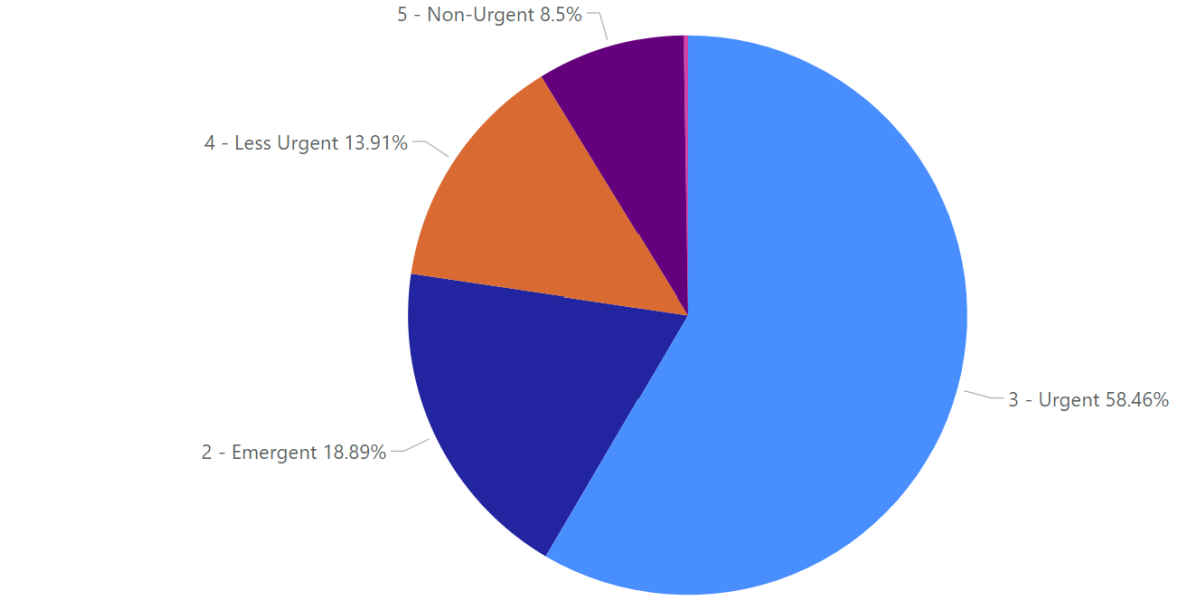
Table #5: Top Incidents – 2020-2022

Top Primary Problems Last 3 Years

PrimaryProblem (groups)	2020	2021	2022	Total
Inter-Facility Transfer-(90)	20.76%	25.69%	25.40%	**24.08%**
Weakness/Dizziness/Unwell	10.81%	9.96%	11.74%	**10.80%**
Musculoskeletal-(66)	9.88%	8.38%	8.03%	**8.72%**
Other Medical/Trauma(See Remarks)-(99)	6.29%	6.71%	6.67%	**6.57%**
Trauma/Injury-(67)	5.79%	6.41%	6.20%	**6.15%**
Respiratory	5.06%	5.85%	5.19%	**5.39%**
Abdominal/Pelvic/Perineal/Rectal Pain-(61)	5.66%	5.27%	4.06%	**5.00%**
Behaviour/Psychiatric-(45)	4.26%	3.38%	4.09%	**3.88%**
Lift Assist	3.46%	3.00%	5.00%	**3.79%**
Back Pain-(62)	2.63%	2.25%	2.14%	**2.33%**

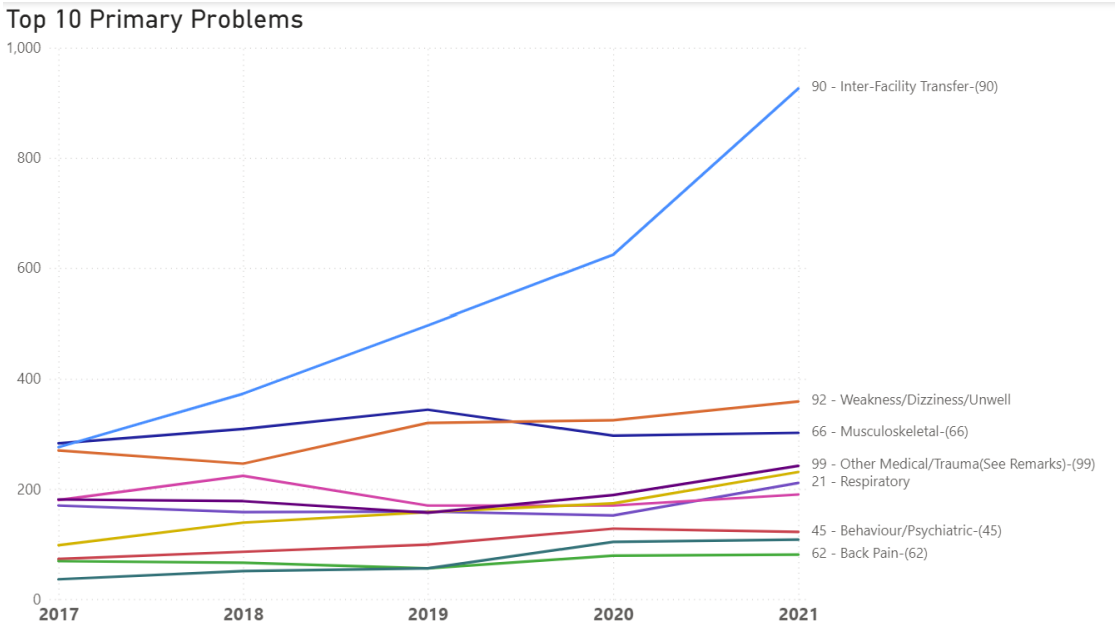
A review of patient acuity, using the data from CTAS, the top ten primary problems would confirm that these patients are in a less serious condition. As figure #23 shows, over 80% of the time a patient's acuity is CTAS 3 or lower. Emergent or resuscitative calls (CTAS 1 & 2) make up a small percentage of overall work at 15.7%.

Figure #30 – Top Incidents - Categorized by Acuity



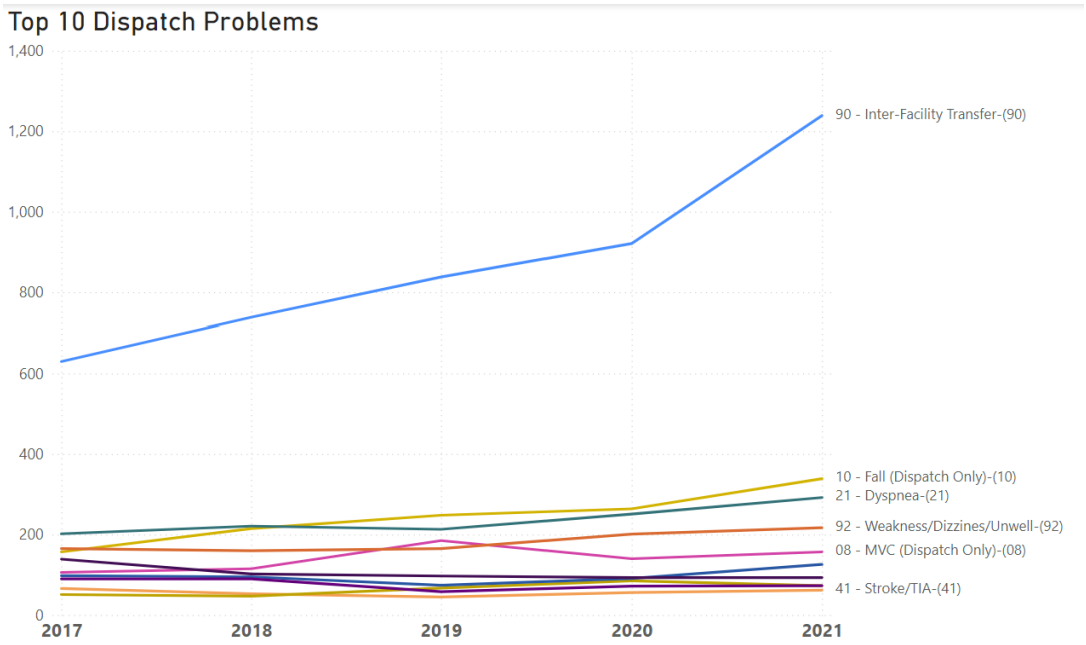
Additionally, trends in relation to primary patient problems can be noted. Over the last 5 years, interfacility transfers have grown in quantity and now is overwhelmingly the primary call performed by paramedics followed by weakness/dizziness/unwell, and musculoskeletal issues. As per ADRS data, the bulk of interfacility transfers now makes up over 30% of paramedics dispatched calls.

Figure #31 – Primary Problems (Noted by Paramedics in EPCR)



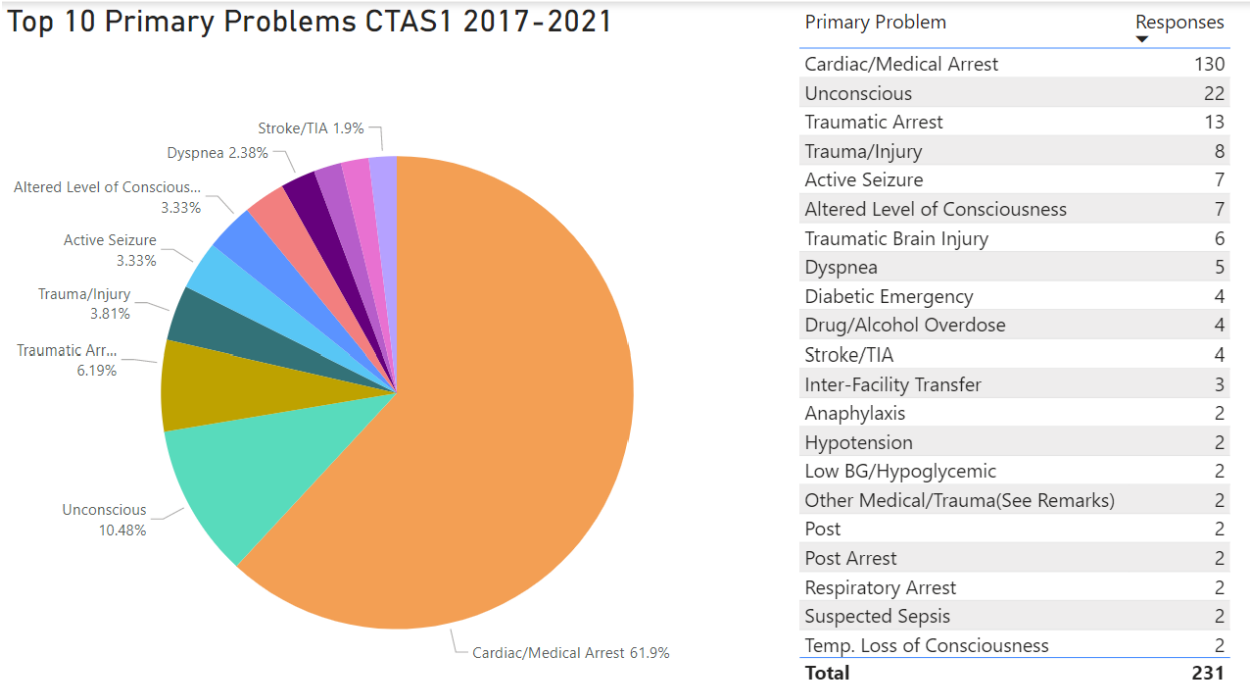
A review of dispatch problem codes over the same course of time reveals an even larger gap growing between interfacility transfers and other codes. As noted previously, a dispatch problem code noting interfacility transfers is generally more accurate than using primary problem codes.

Figure #32 – Dispatch Problems (Noted withing Dispatch ADRS Data)



The relationship between patient acuity and primary problem is noteworthy. Highly critical patient classifications are either SCA or CTAS1. Top call types falling within this category over the last 5 years are cardiac arrest (130), followed by unconsciousness (22) and traumatic arrest (13). It should be observed that there has only been approximately 231 CTAS 1 calls over the 5 years (average of 46 CTAS 1 calls per year/one every 8 days).

Figure #33 – CTAS1 - Primary Problems 2017-2021



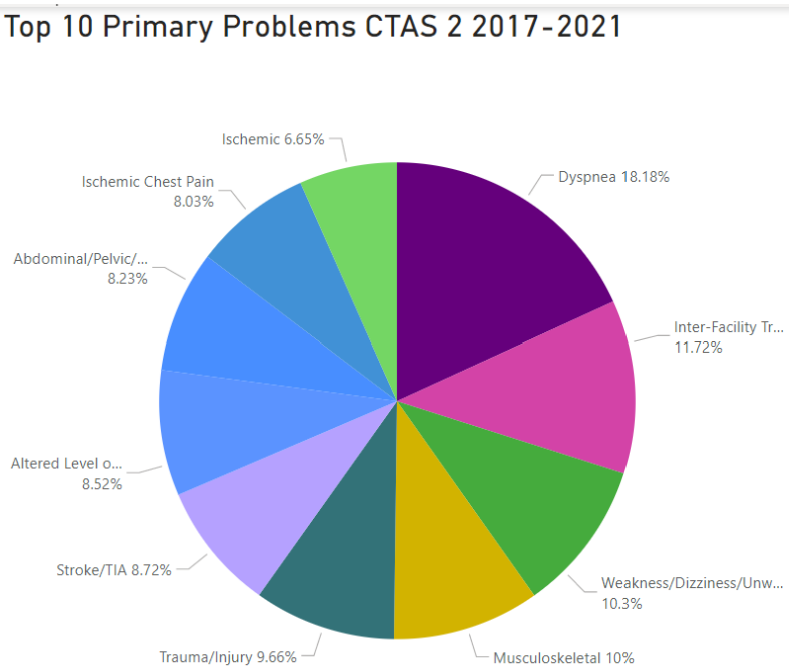
Primary Problem	Responses
Cardiac/Medical Arrest	130
Unconscious	22
Traumatic Arrest	13
Trauma/Injury	8
Active Seizure	7
Altered Level of Consciousness	7
Traumatic Brain Injury	6
Dyspnea	5
Diabetic Emergency	4
Drug/Alcohol Overdose	4
Stroke/TIA	4
Inter-Facility Transfer	3
Anaphylaxis	2
Hypotension	2
Low BG/Hypoglycemic	2
Other Medical/Trauma(See Remarks)	2
Post	2
Post Arrest	2
Respiratory Arrest	2
Suspected Sepsis	2
Temp. Loss of Consciousness	2
Total	**231**

Points for Consideration

Response time standards place a major focus on SCA and CTAS 1 calls although they only account for 1.67% of all calls over the last 5 years. Patients in sudden cardiac arrest and those classified as CTAS 1 are truly the individuals in need of the greatest care. The outcomes for those patients are generally not optimistic and often rely on bystander actions for a greater chance of success. In the case of SCA, bystander CPR, ease of access to defibrillators, as well as proximity to a definitive medical centre are critical to a favourable outcome. The challenge of SCA and CTAS 1 in any rural environment is the distance and related response time.

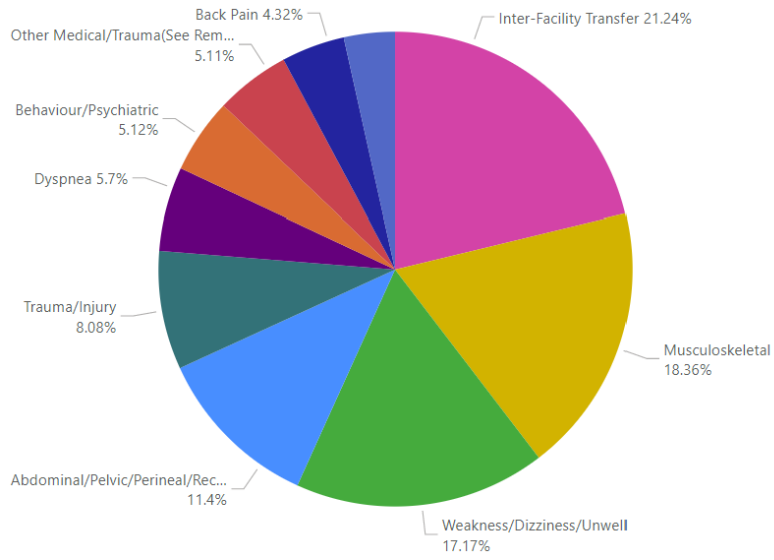
A review of CTAS 2,3,4 and 5 levels show the prevalence of Interfacility transfers at or near the top of each category. This data is based upon paramedic entry into the EPCR which can underreport the value of interfacility transfers since primary problems are noted as patient condition.

Figure #34 – CTAS 2 – Primary Problems 2017 - 2021



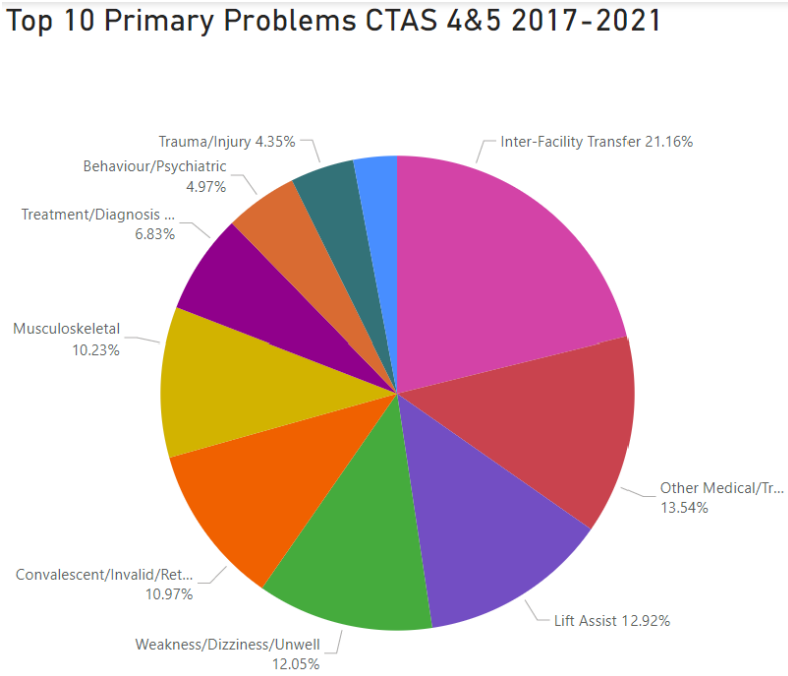
Primary Problem	Responses
Dyspnea	369
Inter-Facility Transfer	238
Weakness/Dizziness/Unwell	209
Musculoskeletal	203
Trauma/Injury	196
Stroke/TIA	177
Altered Level of Consciousness	173
Abdominal/Pelvic/Perineal/Rectal Pain	167
Ischemic Chest Pain	163
Ischemic	135
Post	90
Temp. Loss of Consciousness	84
Confusion/Disorientation	71
Diabetic Emergency	71
Drug/Alcohol Overdose	66
Other Medical/Trauma(See Remarks)	66
Non-Ischemic Chest Pain	64
Behaviour/Psychiatric	63
Hypotension	57
Palpitations	54
Total	**2716**

Figure #35 - CTAS 3 – Primary Problems 2017 - 2021



Primary Problem	Responses
Inter-Facility Transfer	1248
Musculoskeletal	1079
Weakness/Dizziness/Unwell	1009
Abdominal/Pelvic/Perineal/Rectal Pain	670
Trauma/Injury	475
Dyspnea	335
Behaviour/Psychiatric	301
Other Medical/Trauma(See Remarks)	300
Back Pain	254
Nausea/Vomiting/Diarrhea	205
Temp. Loss of Consciousness	164
Headache	138
Treatment/Diagnosis & Return	134
Confusion/Disorientation	130
Non-Ischemic Chest Pain	103
Hemorrhage	101
Post	79
Altered Level of Consciousness	58
Drug/Alcohol Overdose	56
Hemorrhage Minor (31.2)	53
Total	**6892**

Figure #36 - CTAS 4&5 – Primary Problems 2017 - 2021

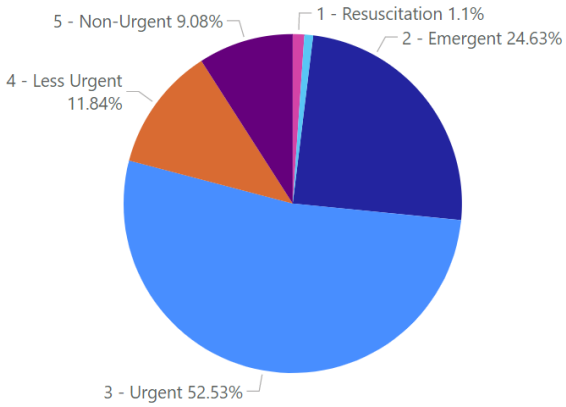


Primary Problem	Responses
Inter-Facility Transfer	511
Other Medical/Trauma(See Remarks)	327
Lift Assist	312
Weakness/Dizziness/Unwell	291
Convalescent/Invalid/Return Home	265
Musculoskeletal	247
Treatment/Diagnosis & Return	165
Behaviour/Psychiatric	120
Trauma/Injury	105
Abdominal/Pelvic/Perineal/Rectal Pain	72
Back Pain	53
Dyspnea	48
Failure to Cope	36
Headache	36
Nausea/Vomiting/Diarrhea	29
Soft Tissue Problem (non-traumatic)	29
Confusion/Disorientation	28
MVC (Dispatch Only)	23
Hemorrhage	22
Environmental Emergency	21
Total	**2740**

Patient CTAS can be analyzed throughout the past years to assess whether patients are becoming sicker and the most prevalent types of calls. Only focusing on community emergency calls, over the past 5 years the overall order of CTAS has not changed, however, the percentage breakdown has slightly. In 2017, 26.82% of patients required immediate life saving care (SCA, CTAS 1 & CTAS 2) and in 2022 that percentage fell to 23.28%. Conversely, patients who were in less serious conditions (CTAS 3, 4, 5) increased from 73.18% in 2017, to 76.72% in 2022. Therefore, percentage wise, although serious emergencies have increased, patients that paramedics had encountered in 2022 are not as ill than the patients faced in 2017.

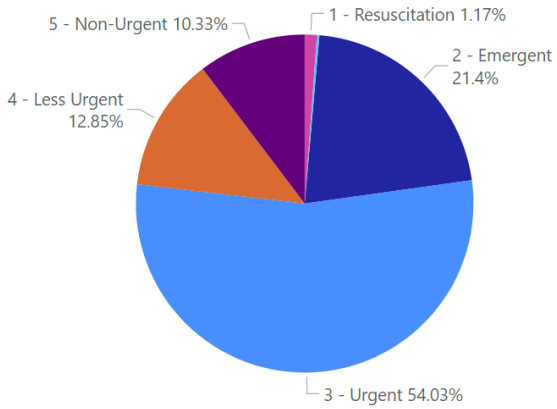
Figure #37 – 2017 and 2022 – CTAS on Contact

2017 CTAS on Contact



CTASonContact	Year	Count of Call Num	%
3 - Urgent	2017	1331	52.53%
2 - Emergent	2017	624	24.63%
4 - Less Urgent	2017	300	11.84%
5 - Non-Urgent	2017	230	9.08%
1 - Resuscitation	2017	28	1.10%
1 - Sudden Cardiac Arrest	2017	21	0.83%

2022 CTAS on Contact



CTASonContact	Year	Count of Call Num	%
3 - Urgent	2022	1669	54.03%
2 - Emergent	2022	661	21.40%
4 - Less Urgent	2022	397	12.85%
5 - Non-Urgent	2022	319	10.33%
1 - Resuscitation	2022	36	1.17%
1 - Sudden Cardiac Arrest	2022	7	0.23%

2.3 Response Times

The most reviewed and scrutinized metric in the paramedic service is response time. Someone experiencing a medical emergency for a few minutes will feel like hours for both the patient and family. Therefore, it is not surprising that a large area of concern is over paramedic response times. In the past the *Ambulance Act* required each service provider to publicly report yearly response times, but things have changed with this legislation over the years.

Prior to the provincial download and until 2010, the response time standard was based upon dispatch priority Code 4 calls and the calculation of a 90th percentile measured against the 1996 response data. This measure was outdated, not based on patient outcome, and did not accurately reflect what performance-based services were focusing on.

In 2011, a new response time standard was legislated; one that took patient acuity into account utilizing the CTAS score. While this was a marked improvement over the previous response time standard, there were still concerns being overlooked in the separation of other emergency call factors, and regarding the focus of the new standard on an overwhelming minority of calls. In Haliburton County, the response time criteria were based on less than 2% of the calls.

2.3.1 New Response Time Standard

Utilizing the CTAS scale, the current response time standard is laid out into six categories. Under the *Ambulance Act Regulation 257/00* paramedic services must report:

1. Sudden Cardiac Arrest (SCA) Patients – the percentage of time that any person with a defibrillator provides defibrillation within 6 minutes.

2. CTAS 1 Patients – the percentage of time that a paramedic arrives to a patient deemed to be in SCA or classified as CTAS 1 in 8 minutes.

3. CTAS 2, 3, 4 & 5 – the percentage of time that a paramedic arrives to a patient classified in CTAS 2, 3, 4 or 5 within a municipally directed time limit.

There are many things to note about this standard, including that a patient that is in cardiac arrest counts for two of these response times. A cardiac arrest situation generally makes up less than 2% of all calls to which a paramedic service will respond. This is considered a low volume/high acuity call in that it is not a frequent event, however, when it does occur, it is very serious.

Response time figures for the vast majority of calls (CTAS 2, 3, 4 and 5) contain a double variable. Paramedic services not only determine the percent of time, but the service is also able to determine the timeframe. This double variable makes it extremely hard for services to compare against each other, however, it does allow for each service to customize their times based upon their needs.

Haliburton County Paramedic Service has maintained their response time standard within the same parameters since 2017, as detailed below.

Sudden Cardiac Arrest

20% of the time, within 6 minutes from crew being notified, Haliburton County Paramedic Service will endeavor to have a responder equipped with an AED at the location of a patient that is believed to be in sudden cardiac arrest.

CTAS 1

30% of the time, within 8 minutes from crew being notified, Haliburton County Paramedic Service will endeavor to have paramedics as defined by the *Ambulance Act* and duly equipped at the location of the patient considered to be CTAS 1.

CTAS 2

65% of the time, within 15 minutes from crew being notified, Haliburton County Paramedic Service will endeavor to have paramedics as defined by the *Ambulance Act* and duly equipped at the location of the patient defined to be CTAS 2.

CTAS 3

65% of the time, within 20 minutes from crew being notified, Haliburton County Paramedic Service will endeavor to have paramedics as defined by the *Ambulance Act* and duly equipped at the location of the patient considered to be CTAS 3.

CTAS 4

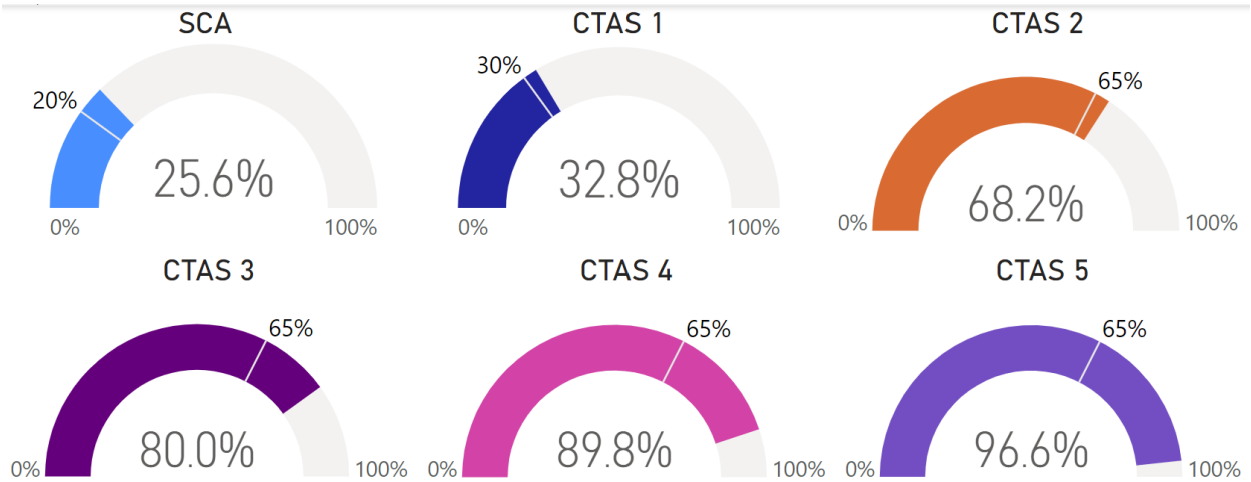
65% of the time, within 25 minutes from crew being notified, Haliburton County Paramedic Service will endeavor to have paramedics as defined by the *Ambulance Act* and duly equipped at the location of the patient determined to be CTAS 4.

CTAS 5

65% of the time, within 30 minutes from crew being notified, Haliburton County Paramedic Service will endeavor to have paramedics as defined by the *Ambulance Act* and duly equipped at the location of the patient defined to be CTAS 5.

Over the last 5 years, with maintaining the same targets, we can review a 5-year average of percentage achievements. The 5-year average on all accounts has been above the set targets.

Figure #38 – 5 Year Targets based on CTAS



In the past years, HCPS has met or exceeded the standard with the exception of 2020. This was due to the CTAS 1 target which was unobtainable by 9% and the CTAS 2 target by less than 1%.

The MOHLTC is committed to reporting key performance indicators (KPIs) within the ground ambulance system in Ontario, not just for the paramedic services but also the performance of the CACCs.

Listed below are the longest average response times within Ontario for emergency (Priority 4) calls. It is important to note geographical features such as size and population density when considering the ability of services to have a favourable response time. Less dense, more geographically sparse areas are more likely to experience longer response times due to the distance an ambulance must travel.

Figure #39 – Ontario Average Response Time for Priority 4 Calls

Ontario Average Response Time for Emergency (Priority 4) Calls

Community	Land Area (km)	Pop. Density	Average Response Time
Rainy River District	15,484.83	1.35	15 min 3 sec
Kenora	406,833.81	0.16	14 min 34 sec
Manitoulin-Sudbury	43,312.52	0.82	14 min 17 sec
Parry Sound District	9,322.80	4.83	13 min 39 sec
Haliburton	4,071.86	4.78	13 min 12 sec
Prince Edward County	1,050.45	24.19	13 min 1 sec
Algoma District	48,587.42	0.89	11 min 34 sec
Beausoleil	52.22	12.83	11 min 24 sec
Bruce County	4,092.94	17.85	11 min 20 sec
Renfrew	7,440.81	14.34	11 min 19 sec
Lennox and Addington	2,841.10	15.72	11 min 0 sec
Six Nations	187.94	36.77	10 min 54 sec
Cornwall	3,308.84	35.70	10 min 29 sec
Hastings	6,103.48	23.82	10 min 18 sec
Kawartha Lakes	3,083.06	26.12	10 min 13 sec
Muskoka Lakes	3,937.76	16.83	10 min 12 sec
Leeds & Grenville	3,383.92	30.95	10 min 8 sec
Thunder Bay District	103,719.51	1.46	9 min 50 sec
Haldimand	1,256.65	40.00	9 min 49 sec
Lanark	3,033.82	24.02	9 min 48 sec
Timiskaming District	13,299.92	2.48	9 min 47 sec
Huron	3,399.63	18.43	9 min 46 sec

2.3.2 Station Response Time Maps

In a review of station response times, there are many factors that must be considered. To completely understand the ability of response, a review of drive-time maps can be utilized. It must also be understood that there is an allowable reaction time of 2 minutes (noted within the Deployment Plan). This reaction time, also known as chute time or turnout time, is the amount of time it takes from the alarm bell to the paramedics responding in the ambulance. The two-minute standard is acceptable to the MOHLTC and considers that paramedics must safely finish their tasks at hand prior to proceeding to the ambulance to respond. The following maps detail

some of the above noted response times with the reaction time removed. These maps represent the distances that can be travelled at speed limits without consideration of weather, traffic, road closures/construction and intersection signals.

The three maps reveal that the SCA 6-minute response time (minus a 2-minute reaction time = 4-minute travel time) is highly aggressive and very difficult to achieve for the HCPS. It is important to note, however, that the SCA time is for a responder with a defibrillator to arrive, not necessarily a paramedic. A responder could be a firefighter, police officer, lifeguard, workplace first aider, or civilian with an AED prepared to provide CPR and use the AED.

The 8-minute CTAS1 response time (minus a 2-minute reaction time = 6-minute travel time) is more attainable on a regular basis. The goal of station placement is to be positioned in the best possible location to respond to the most calls for service within expected and published timeframes.

The 15-minute CTAS2 response time (minus a 2-minute reaction time = 13-minute travel time) covers a wider area of the county.

The Haliburton station map reveals a minor challenge responding westward in a quick manner. The position of the station is on the far east side of town so when responding to the west side the ambulance is required to travel through the busier areas within the village. This is reflective in the 4- and 6-minute drive time maps. Within the 13-minute drive time map, it is evident that the most populated areas of Dysert et al are well covered.

Figure #40 – Station #1 - 4-, 6- and 13-minute Drive Time

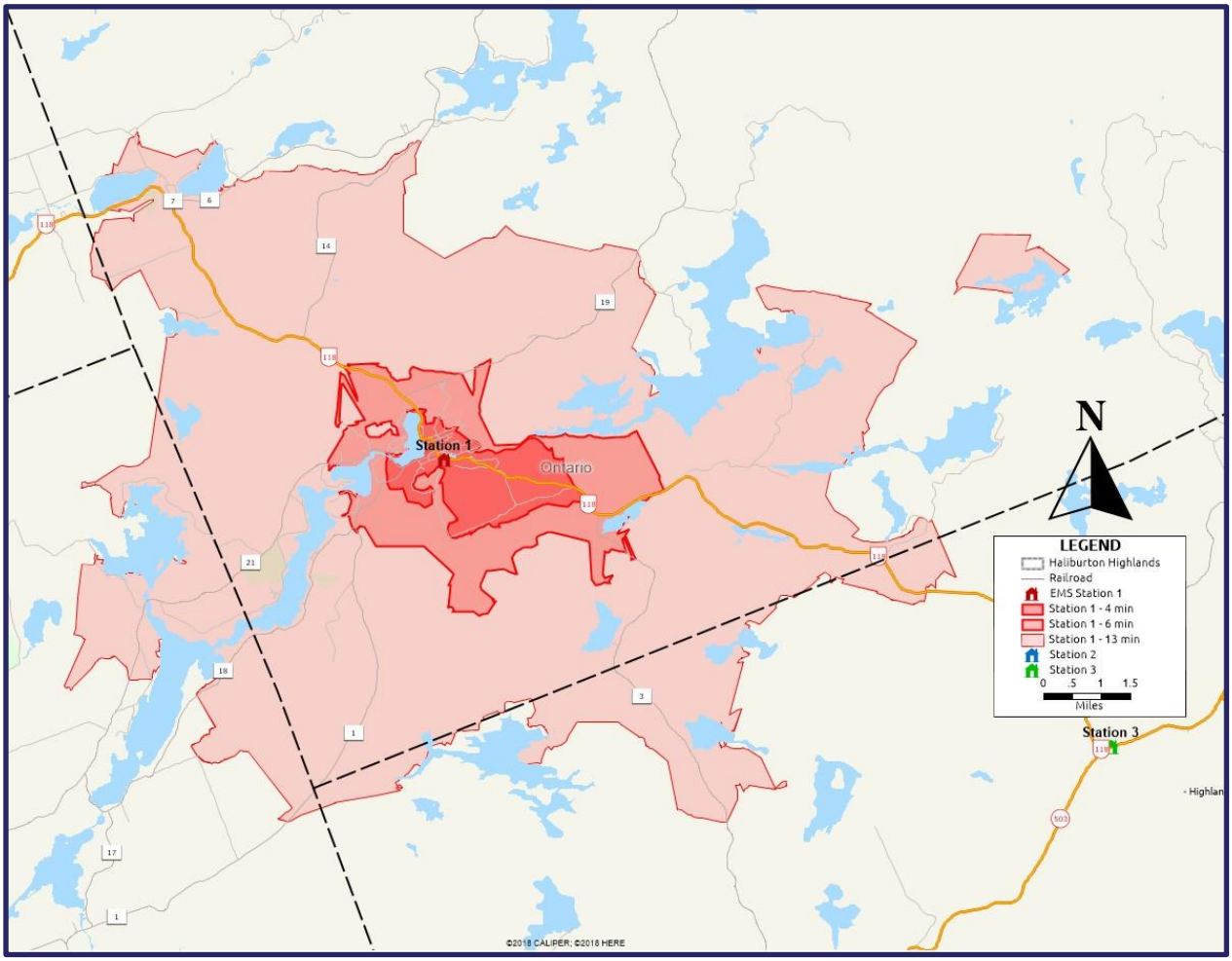
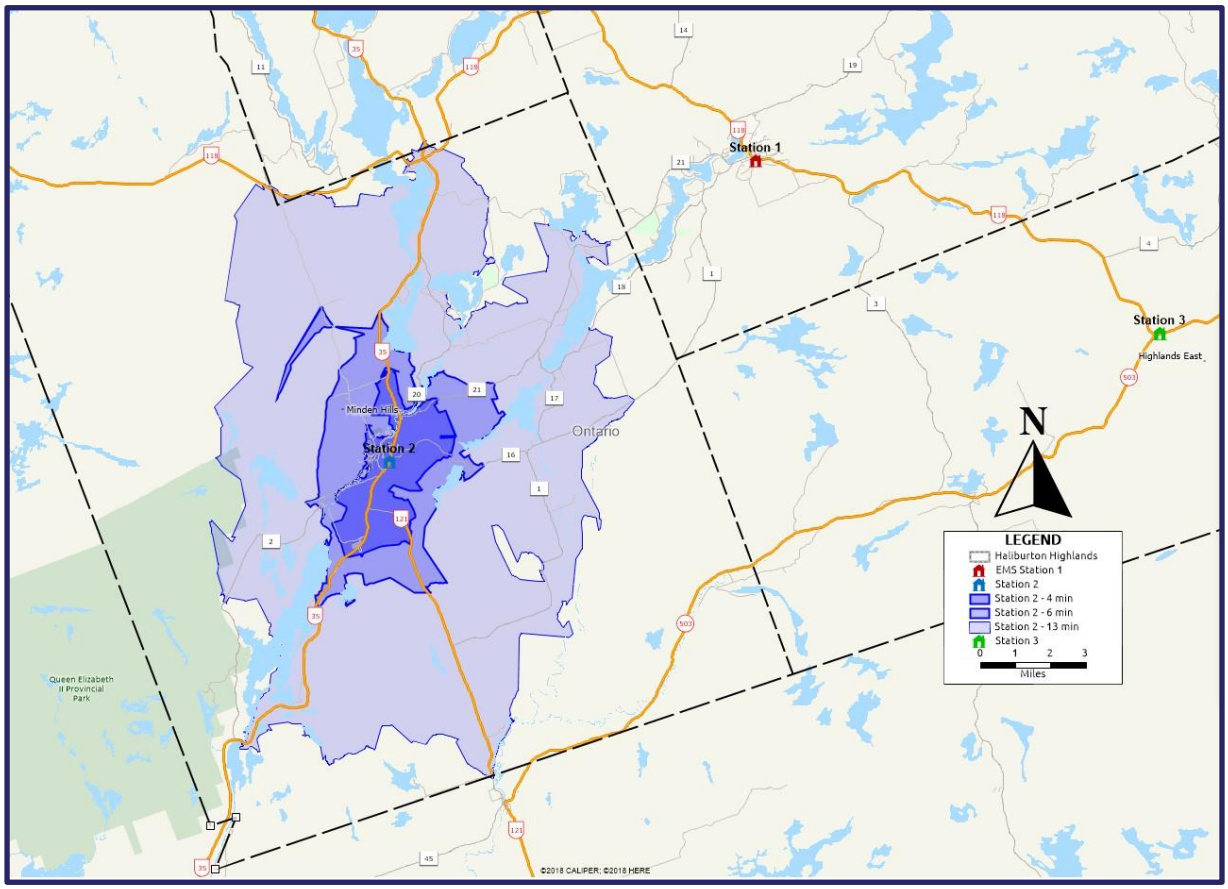
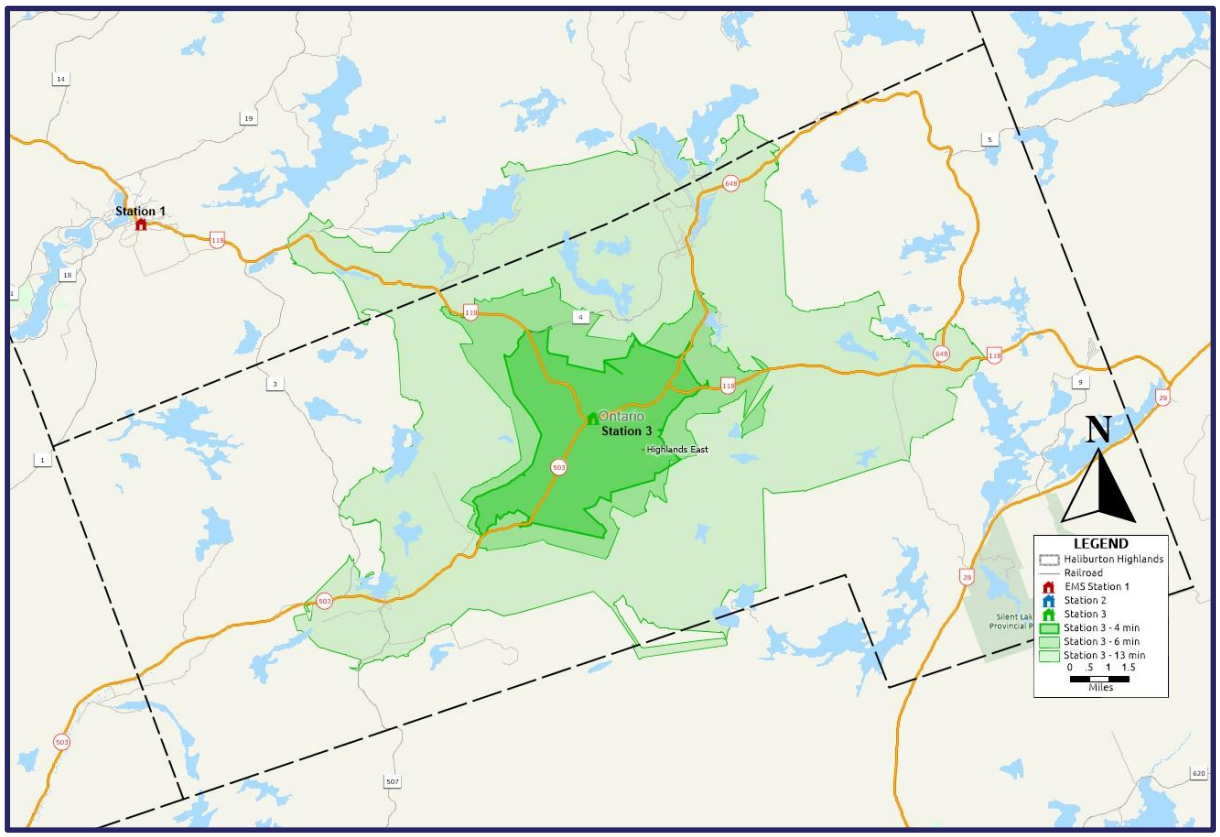


Figure #41 – Station #2 – 4-, 6-and 13-minute Drive Time



Upon review of the Minden Station, it is apparent that Highway 35 allows for prompt response. Within 4-minutes, most of the town can be responded to, under optimal driving conditions, while practically the entire municipality can be reached within 13-minutes. The location of the Minden Station is optimal considering the population centres and the geographical position.

Figure #42 – Station #3 – 4-, 6-, 13-minute Drive Time



A review of the Tory Hill Station reveals that the station is also well situated being adjacent to Highway 118. Travel along main roads and highways are always the best option as they are usually well maintained throughout all seasons and generally allow for quicker speeds. This station is geographically centred within the Municipality of Highlands East and has excellent access in all directions. The ability to respond quickly due to the road system is evident in the 4-minute travel time which has extensive range. Being in a central location is of paramount importance when population is highly distributed.

2.4 Deployment Strategy

2.4.1 Deployment Plan

Annually, every paramedic service in Ontario is responsible for submitting a service deployment plan to the MOH. These deployment plans serve to direct the CACCs on how to deploy the resources under their control. The four paramedic services primarily dispatched by Lindsay CACC have come together to produce a single Deployment Plan for the ambulance communications officers (ACOs) to follow. As noted in the plan,

> *"It is the intention of the above noted land ambulance service providers to incorporate certain policies that provide rapid out of hospital care to citizens in need of medical care and to ensure a more effective and efficient delivery of service within the Lindsay Central Ambulance Communications Centre (CACC) catchment area. This plan will permit the necessary latitude to the Communications Officers in order to ensure balanced emergency coverage accordingly with the available resources and applicable legislation."*

While each paramedic service maintains their own operational requirements, the singular plan lays concepts out in a similar and consistent approach which creates ease of implementation. There are many operational policies dictated within the plan including sections on staffing levels, shift patterns, emergency coverage reinstatement, standby coverage, management notification, offload delays, excessive overtime/end of shift management, meal breaks as well as inclement weather.

The formation of the four-service deployment plan creates a simplified comparison amongst the services regarding the emergency coverage reinstatement. Haliburton County has a listed critical - minimum emergency vehicle count (C-MEC) of one vehicle between 07:00h – 23:00h (7 a.m.-11 p.m.) and zero vehicles from 23:00h – 07:00h (11 p.m. to 7 a.m.) for up to 60-minutes before mitigation strategies are put in place. The other services maintain two to three ambulances, as per the C-MEC statement. Additionally, the deployment plan for Haliburton does not allow for any public delay for lower priority calls when in C-MEC, whereas the other services allow for a 30-minute delay for less serious calls.

The decision to only communicate a C-MEC 0 to management after 60-minutes was based on the significant workload the managers face as well as frequently being called after-hours.

Table #6: Emergency Coverage Reinstatement (C-MEC & Response Delays)

Emergency Coverage Reinstatement				
Critical – Minimum Emergency Coverage (C-MEC) is a trigger that recognizes that the level of available ambulance resources cannot sustain/maintain the EMS service's "Minimum Emergency Coverage" level.				
Critical – Minimum Emergency Coverage and Response delays for:				
Service	**CMEC Vehicle Count**	**Community Delay**	**Inter facility Transfer**	**Other UTM**
HALIBURTON	**1 vehicle** (07:00-23:00) **0 vehicle** (2300-0700)	**No delay**	Up to 60 Minutes	60 Minutes
CITY OF KAWARTHA LAKES	**2** Vehicles (after 21:00 to 07:00 drops to 0)	30 MINUTES	Up to 60 Minutes	60 Minutes
NORTHUMBERLAND	3 VEHICLES	30 Minutes	Up to 60 Minutes	60 minutes
PETERBOROUGH	2 VEHICLES	30 MINUTES	Up to 60 Minutes	60 Minutes

In comparison with the other local services, Haliburton, due to its low population density has the least number of ambulances available at any given time.

Table #7: Deployment Numbers by Location

Service	Minimum Deployment	Maximum Deployment
Haliburton	3	4
Kawartha Lakes	5	7
Northumberland	6	9
Peterborough	7	10

Many factors are reviewed when determining the resource allocation including call volume, geographic area, response times, and risk tolerance.

For comparison purposes, the following information has been gathered from the three services under Lindsay CACC in addition to other provincial neighbours[12].

Figure #43 – Neighbouring Response Times for Priority 4 Calls

Neighbour Average Response Time for Emergency (Priority 4) Calls

Community	Land Area (km)	Pop. Density	Average Response Time
Haliburton	4,071.86	4.78	13 min 12 sec
Nipissing District	17,103.52	5.08	8 min 48 sec
Muskoka Lakes	3,937.76	16.83	10 min 12 sec
Hastings	6,103.48	23.82	10 min 18 sec
Kawartha Lakes	3,083.06	26.12	10 min 13 sec
Peterborough	3,847.77	38.44	8 min 37 sec
Northumberland	1,905.34	47.26	9 min 27 sec

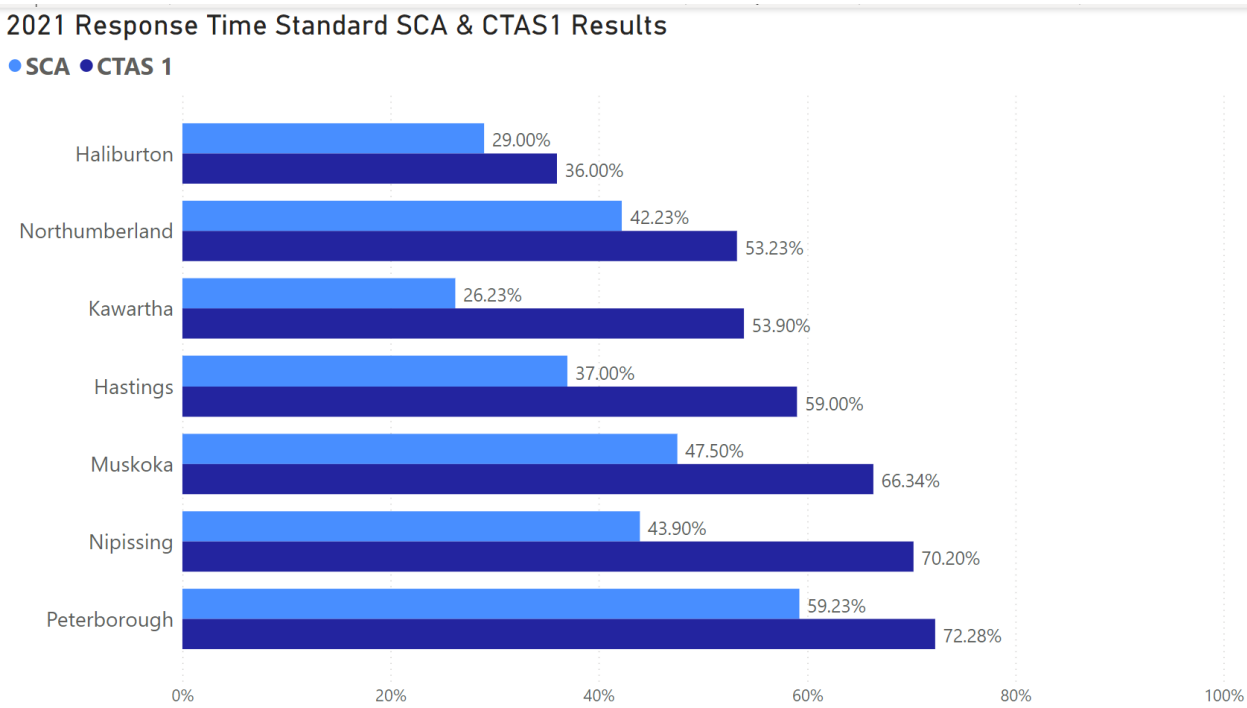
The average response time in the County of Haliburton is nearly three minutes longer than any of its neighbours.

There is no guaranteed method of analysis regarding population density, land area and response times. Areas such as Nipissing, while large in area, have distinct population centres (North Bay) contributing to much of the call volumes, therefore response times can be lower as resources are focused on the call demand centre. Areas like Muskoka, comparable in size to Haliburton, have a far greater population density, which would suggest more calls for service so response times may increase.

Comparing results for response times for SCA and CTAS1 can be done relatively easily as the time variables are the same as noted above six minutes for SCA and eight minutes for CTAS1. Response percentage goals, are determined by each service based upon risk tolerance, funding resources, population densities, community goals, and approved by Council.

[12] Emergency Health Services, Land Ambulance Program, Ministry of Health and Long-Term Care, accessed January 2023, https://health.gov.on.ca/en/pro/programs/emergency_health/land/responsetime.aspx

Figure #44 – 2021 Response Time Standard – SCA and CTAS1 Results



Haliburton County achieves the lowest response time of an eight-minute CTAS1 event with a result of only 36%. Haliburton County also attains the second lowest response time of time of a defibrillator response of only 29% for a patient in sudden cardiac arrest.

Standby Coverage

According to the four-service deployment plan,

"…stand-by coverage for other UTM's will be completed from the County stations unless the other Municipality is at 0 coverage in which case Stand-by will be completed at the County boundary in order to ensure appropriate coverage to the rest of the County."

Internally, it is important to note the deployment plan balanced coverage statement for HCPS. This section refers to 'internal' standbys whereby HCPS resources are redeployed based upon set criteria relating to the number of units available. Order of coverage would be noted as:

1. Haliburton (due to volumes and being centrally located within the County)
2. Minden (due to volumes and location)
3. Tory Hill
4. Algonquin Highlands at Stanhope

Table #8: Staffing Levels by Location

Staffing Level	Standby Location	Coverage by	Readiness Time
	Algonquin Highlands	Algonquin Highlands	0 minutes
4 Ambulances	Haliburton	Haliburton	0 Min
	Minden	Minden	0 Min
	Tory Hill	Tory Hill	0 Min
3 Ambulances	Haliburton	Haliburton	0 Min
	Minden	Minden	0 Min
	Tory Hill	Tory Hill	0 Min
2 Ambulances	Haliburton	Tory Hill/Minden	15Min/20 Min
	Minden	Haliburton/Minden	20 Min/0 Min
0 Ambulance CMEC 2300 – 0700 – Notify Duty Manager if longer than one (1) hour	KLPS	Kinmount	
	Muskoka	Vankoughnet / Carnarvon	
	ACO to start movement of closest most appropriate vehicle for coverage		

- When at CMEC 1 and the remaining vehicle does not have relief, the Duty Manager will be notified 30 minutes prior to EOS to avoid CMEC 0 when all other crews are out of the County and/or CMEC 0 is anticipated for an extended period.
- Algonquin Highlands should be covered from 1115-1515 by the 11-23 vehicle and from 1530-1900 by the 08-20 vehicle when possible.
- Algonquin Highlands vehicle will be the first option for Emergency Coverage in Minden
- During weekend and summer night up staff, Algonquin Highlands will be covered from 1915-2215 by the 11-23 vehicle.

Emergency Coverage Statement

A current situation of increasing concern, within the Ontario ambulance services, also presents the greatest threat. Critical-Minimum Emergency Coverage (C-MEC) is a concept which has become prominent in relation to the current pressures of the healthcare system. Within provincial deployment plans, the paramedic services signify critical levels of ambulance coverage with steps required when those thresholds are met. The issue has gained media attention in major centres where hospital pressures are forcing patients to remain on paramedic stretchers due to lack of beds in the hospitals. Not having any ambulances available in the county, nor any standing by at the county border will result in extended response times in the event of an emergency.

Interfacility Transfers

Within the four-service deployment plan, there are varying procedures for dealing with interfacility transfers. The repatriation or returning of patients to their home community is noted for three of the services. Haliburton is once again the most lenient on this matter as they will wait up to 60 minutes at the receiving facility (out of the County) to determine whether the patient can return. This contrasts with Northumberland waiting 30 minutes and Kawartha Lakes and Peterborough not waiting at all.

The four-service deployment plan states, *"A medical escort is required for all Urgent – Code 4 & Prompt – Code 3 interfacility transfers except Stroke & STEMI protocols",* however in the section for Haliburton there is an exception stating *"a medical escort is not required for all emergency interfacility transfers".*

Requiring a medical escort to accompany a patient serves two objectives.

1. During transportation the patient remains an inpatient of the sending facility. This essentially means that the patient is under the care of the originating or sending hospital.

By taking a patient without a medical escort the paramedics are taking full responsibility for the hospital's patient. Paramedics, however, are not employees of the hospital and may not have the ability to tend to the patients advanced medical needs (i.e., giving prescribed medications). Having a medical escort ensures that there is a representative of the facility responsible for their care.

2. With an escort accompanying the patient the paramedic crew could leave the destination facility should the need arise to return to their home community due to emergency response pressures or C-MEC situations.

Without a medical escort the patient cannot be left alone as the receiving facility will not take responsibility for their care. All services allow for non-urgent interfacility transfers; however, they all minimize the ability to perform these under only the highest of deployment times when resources are at their fullest.

Management Notification

There are many circumstances where management is notified by the CACC in all four-service deployment plan, with some specific situations for each service. C-EMC situations are an example of when CACC notifies the local paramedic service management. HCPS indicates notification at C-MEC 0 between the hours of 23:00h and 07:00h (11 p.m. and 7 a.m.) only if it lasts longer than one hour. This notification delay is an internal decision due to the significant workload on the management team after-hours.

Additionally, the other three services have after-hour management notification if their ambulances are transferring a patient outside of the County. However, this is not part of the Haliburton deployment plan.

Tiered Response (Fire)

The tiered response section of the deployment plan is standard though it is worth noting herein.

"A tiered response will be requested within one (1) minute of EMS dispatch, and in conjunction with the response reference chart, for the following emergency requests for service:

1. *Vital Signs Absent (VSA)*
2. *Unconsciousness*
3. *Airway Compromise (Airway Obstruction, Absence of Breathing)*
4. *Chest Pain*
5. *All Code 4 (Life Threatening Emergency) calls with Paramedic Services, ETA greater than 20 min.*
6. *All Motor Vehicle Collisions (MVC's) with Paramedic Services responding Code 4"*

These conditions are in addition to regular situations where the fire department would be sent in an allied response situation. Tiered responses do not apply to medical or correctional facilities.

Patient Destination Agreements (Bypass)

There are three areas to note for HCPS:

- Stroke Bypass status
- STEMI Bypass status
- Hospital Consideration status

Typically, an ambulance will bring a patient to the closest most appropriate hospital, which in a rural setting is almost always the closest hospital. Recently, in cases where a specialized treatment would provide life preserving care, the MOHLTC has allowed paramedic services to bypass the closest hospital. Two cases would be for patients suffering from a stroke or experiencing a certain type of myocardial infarction (heart attack).

Definitive care for patients suffering from an ischemic stroke is the act of dissolving a clot, known as thrombolysis. There are drugs that can assist in certain circumstances, however, due to the different causes of a stroke, a stroke caused by a bleed could prove thrombolysis to be fatal.

To determine what type of stroke a patient is having requires a CT scan. There have been hospital stroke centres designated by the MOH where patients can be brought to receive care. Time is vitally important for the thrombolytic (fibrinolytic drugs) to be successful from the time of symptom onset. If all conditions are met, the paramedic may bypass a local facility and bring the patient to a stroke centre, typically Peterborough or Huntsville locations.

In the case of an ST-Elevation Myocardial Infarction (STEMI) definitive care is an angioplasty. A person suffering from a STEMI or heart attack will be experiencing chest pain brought on by the heart receiving insufficient blood flow or a blocked artery. Inserting a stent via angioplasty will open of the blockage to allow blood flow to the affected area of the heart. To perform this, a hospital must have a catheterization lab and a cardiologist on-site to perform this procedure. Time is important for this procedure. The time from patient contact to the STEMI Centre must be 90 minutes or less. The only regional STEMI Centre is located in Peterborough.

Lastly, a unique feature in Haliburton is a process called Hospital consideration status. This status was created by HCPS and approved by the MOH field office. This includes instances where the HHHS Emergency Department physician needs to accompany a patient to another hospital for care in the back of an ambulance. This leaves the originating facility without a physician until they return or until a replacement physician is called. When this occurs ambulances will bypass the local facility and proceed to the next closest. This situation, albeit rare, can occur.

It should be noted that in cases where patients are brought to facilities outside of the County there is an inevitable delay in getting the ambulance back into service within the County due to the distances having to travel.

2.4.2 Community Paramedic Program

The Community Paramedic Program is a non-traditional program that takes paramedics out of their normal emergency 9-1-1 response role and moves them into a proactive healthcare role with the aim of keeping people out of the 9-1-1 response and hospital emergency department.

In 2014, the provincial government detailed $6M in funding to expand community paramedic programs throughout the province. In 2017, based upon the success of the programs, the government announced base funding for these programs to be distributed through the community LHINS at the time.

The focal point of community paramedicine is medical outreach rather than the emergency treatment/transportation role that ambulance paramedics have traditionally played in Ontario. Many smaller rural communities, such as Haliburton County, are lacking in the primary care provided by family physicians or walk in clinics. Additionally, many of the vulnerable or frail seniors in Haliburton County lack transportation to access medical care for their chronic disease management. If left on their own, these individuals can "fall through the cracks" of the health care system and, inevitably, become patients in an emergency department. This only serves to add stress to the already overworked paramedic and hospital systems.

Paramedics, being well trained emergency medical caregivers greatly experienced in communicating with patients, have been able to use their experience and education to help many individuals live longer and healthier within their own homes. In Ontario, we see many community paramedic programs address the unique needs of their community by designing specialized mobile 'patient-centred' programs. These programs are designed on a local level allowing for the customization required to serve the unique aspects of each municipality. Haliburton County is a rural community with an aging population and the Community Paramedic Program was designed to look after vulnerable frail seniors.

"The true measure of a society can be found in how it treats its most vulnerable members."

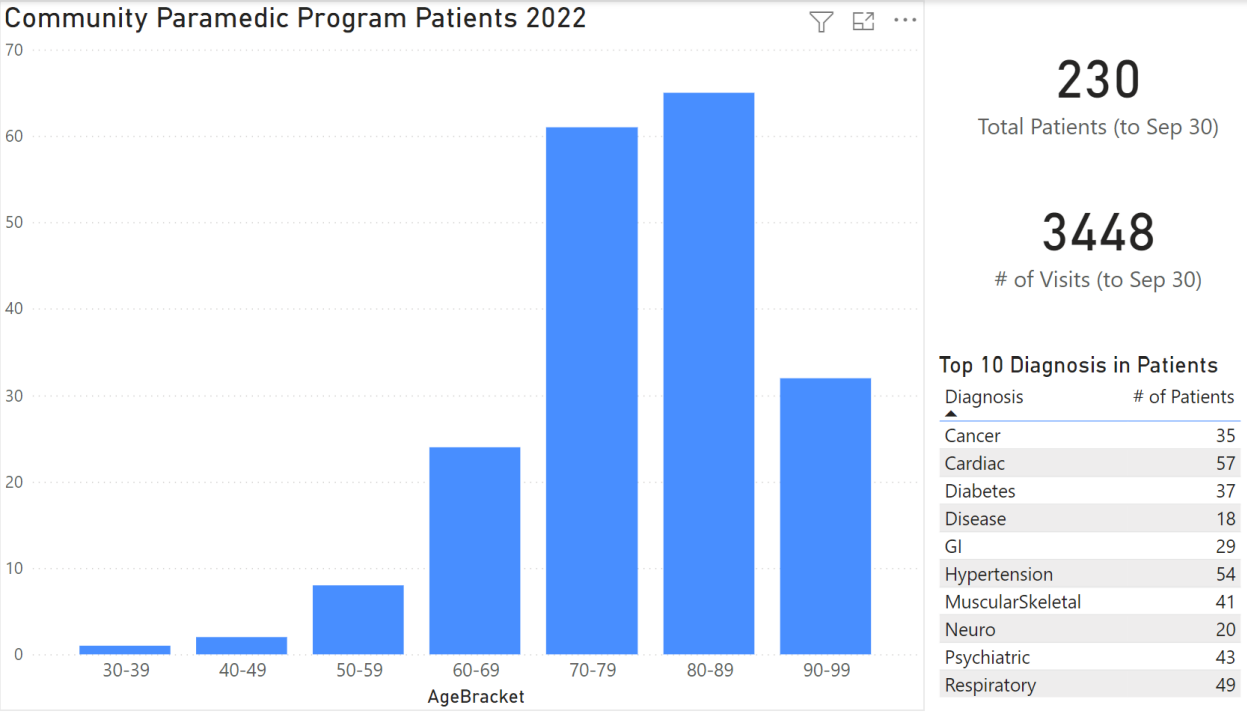
-Mahatma Gandhi

The HCPS Community Paramedic Program has two focuses that are similar in their core nature due to the funding sources:

1. The initial program was associated with the Geriatric Assessment and Integration Network (GAIN). The program was funded by the Central East LHIN (now under Ontario Health East Region).
    - Its focus is those living in geographical isolation and in need of assisted living. In 2016, it was identified that 1,418 frail seniors were living in Haliburton County.
    - This initial program required approximately 100 different patients annually with 25 patients on the roster at any given time. HCPS conducted approximately 35-40 visits a week equating to nearly 2,000 visits for the year.
2. The second source of funding is directed from the MOHLTC with a similar focus of keeping people out long-term care and safe at home to age in place.
    - Today, the program interacts with approximately 300 patients per year in Haliburton. Routinely, three new referrals occur every week. Patients may be in the program for several weeks or months as their specific needs require.
    - In August 2022, the Community Paramedic Program saw 400 patients in one month within both programs.

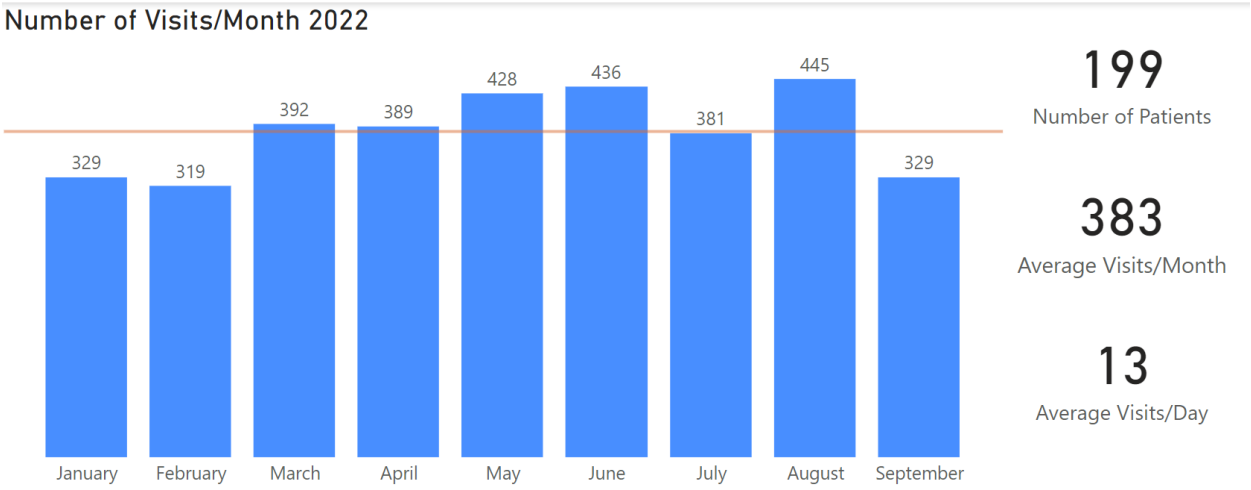
Data for 2022 reveals a robust program that is positively affecting the lives of many vulnerable citizens within the County.

Figure #45 – CPP Patients 2022



***Note: Many of these patients are seen multiple times over a month or year. For 2022, the volume of appointments was impressive. Community paramedics making on average 383 visits per month (over 13 visits/day) to their rostered patients.*

Figure #46 – Number of Visits per Month (2022)



When interviewing the commander of clinical programs, who currently oversees the Community Paramedic Program, it became very apparent that not many mobile resources exist in Haliburton County to help frail seniors with chronic disease management.

Community paramedics make house calls which eliminates the need for transportation to medical appointments. The paramedics visit the patient's home, thus making it easier for them and their families to access ongoing medical care. These paramedics access, evaluate and update both their medical director and the medical community of the patient interactions. The paramedics also become a much-needed social link for the patient. They see the same patients regularly and, therefore, create very strong rapport with both the patients and their families, which is providing and supporting more than just physical health care.

Going hand in hand with physical wellness, mental wellness comes by providing a positive state of health. Supporting seniors and families by giving them someone to rely on, talk to, confide in and trust. Paramedics help them to understand and better manage their chronic medical conditions (i.e., time spent making their home safer to avoid a fall or educating them on the proper use of their medication etc.). Confidence in the community paramedic brings about discussions concerning new healthcare matters and even sometimes social welfare needs such as food insecurity or the stress of paying the heat or electricity bill. The HCPS community paramedics and caregivers have learned how to navigate the social networks that are unique to Haliburton County and therefore ensure the wellness and quality of life of their patients.

Many community paramedic programs in Ontario focus on homelessness. In the case of Haliburton County, homelessness may not be a visible issue, but the community paramedic commander conveyed that 'couch-surfing' is frequently occurring and that many people in Haliburton County are living in poverty. This vulnerable sector of society is also being supported

by community paramedics who are navigating social welfare programs to keep these people healthy. This includes mental health needs.

The future of this extremely well received program depends on a variety of factors including:

- Long term sustainable funding to meet an aging population.
- Expanding the scope of practice for these paramedics in the use of pain medications (palliative care), antibiotics, extensive wound care, substance abuse awareness and mental health awareness and support.
- Public education focused on community preparedness and call reduction on certain call types (i.e., how, and when to call 9-1-1, cardiopulmonary resuscitation (CPR), automated external defibrillation (AED), opioid overdose recognition, naloxone use, fall prevention, heart attack / stroke awareness, diabetic clinics, water safety, safe recreational vehicle use etc.), which should be based on CTAS data.

2.4.3 Public Access Defibrillation Program

Haliburton County Paramedic Service manages the community automatic external defibrillator (AED) program. Over 40 AEDs have been placed in high-risk sites for sudden cardiac arrest (SCA). Locations like arenas, curling rinks, community centers, libraries, county, and municipal buildings are just a sampling of the locations the service has addressed for better preparedness in the event of a serious life-threatening medical situation.

SCA or sudden death affects about 35,000 Canadians a year. HCPS responds to approximately 35 SCAs per year and most of these occur in the home. SCA is more than a paramedic service issue, it is a community issue. Citizen cardiopulmonary resuscitation (CPR) education, placing defibrillators in all emergency service vehicles (i.e., police, fire and paramedic vehicles), as well as a coordinated effort to place AEDs in public spaces is a researched recommendation by the Canadian Heart and Stroke Foundation. This program includes a few loaner AEDs that can be used if devices require repair (e.g., battery replacement), and a replacement is immediately needed. Haliburton County Paramedic Service has done an excellent job in managing the public AED program for the County and continue to maintain these devices.

2.5 Assets

2.5.1 Vehicles

Haliburton County has an asset management program (AMP) last updated in 2019. At that point it was noted that,

> *"…the County's Land Ambulance Services department maintains a fleet of seven ambulances and three support vehicles. An ambulance is replaced every year with two*

ambulances being replaced in the sixth year. This ensures that the ambulance fleet is always less than six years old and that vehicles are replaced before the odometer surpasses 300,000 km. Usage of ambulances is rotated in order to ensure usage is distributed evenly among vehicles. Support vehicles are considered for replacement at eight years of age depending on odometer reading and general condition."

The replacement plan for an ambulance within the County is set to every 72 months or 300,000km. This plan is not overly aggressive and falls within a normal range for rural paramedic services. Some more urban services have replacement plans at 60 months.

The service has a recognized preventative maintenance program for all vehicles that requires mechanical inspections based upon kilometers driven since last inspection. The current vehicle maintenance program guidelines are:

- 'A' Inspection: Every 7,000 km +/- 25%
- 'B' Inspection: Every 14,000 km +/- 25%
- 'C' Inspection: Every 28,000 km +/- 25%
- 'D' Inspection: Every 84,000 km +/- 25%
- 'E' Inspection: Every 135,000 km +/- 25%

A vehicle requiring regular maintenance will be out of commission for varying time ranging from 6 hours for an 'A' Inspection to a maximum of two days for an 'E' Inspection. These times do not factor in time to schedule and transport vehicles to the service centre.

When the AMP was drafted, there was an expected population growth for Haliburton of 4500 people by 2036. Understatedly, the latest Canadian census data, for Haliburton County, shows an increase in population of 2,509 people from 2016 to 2021. Additionally, the Ontario Ministry of Finance produces population predictions for planning purposes and the most recent estimate produced in the summer of 2022 estimated a population increase to 23,056 in 2036. With the growing population, and in conjunction with corresponding call volume being increased, an additional vehicle (ambulance) will be required shortly to ensure timely maintenance and vehicle rotation.

Another item to note is the supply chain issues that most consumers are faced within the current marketplace. Due to the COVID-19 pandemic, there has been a massive automotive parts supply shortage also affecting the maintenance of ambulances. There is a shortage of chassis, on which the ambulance boxes are placed upon, which has caused unprecedented delays in receiving ambulance orders. Wait times to take possession of an ambulance used to take approximately 6 months with the current wait time being over a year.

Table #9: Replacement Schedule

Type	Vehicle Number	Year	Make	Km	Notes
Ambulance	4917	2016	Ford CTV	330,194	Due for replacement spring 2022, expecting delivery February 2023.
	4916	2016		332,715	Due for replacement spring 2022, expecting delivery February 2023.
	4929	2017		304,857	
	4930	2017		266,495	
	4939	2019	Chev ETV	268,981	
	4279	2020		143,924	
	4904	2021		155,663	
ERV	4378	2013	Ford Explorer	114,219	RFP issued for replacement, utilized by Deputy Chief of Quality Assurance.
	4377	2015	Chev Silverado	97,622	Pick-up truck, utilized by Deputy Chief of Operations.
	4397	2022	Ford Explorer	3,837	Previously Chief vehicle but being utilized for Community Paramedicine.
	4292	2022	Ford Explorer	3,454	Community Paramedic vehicle
As of August 2022					

2.5.2 Stations

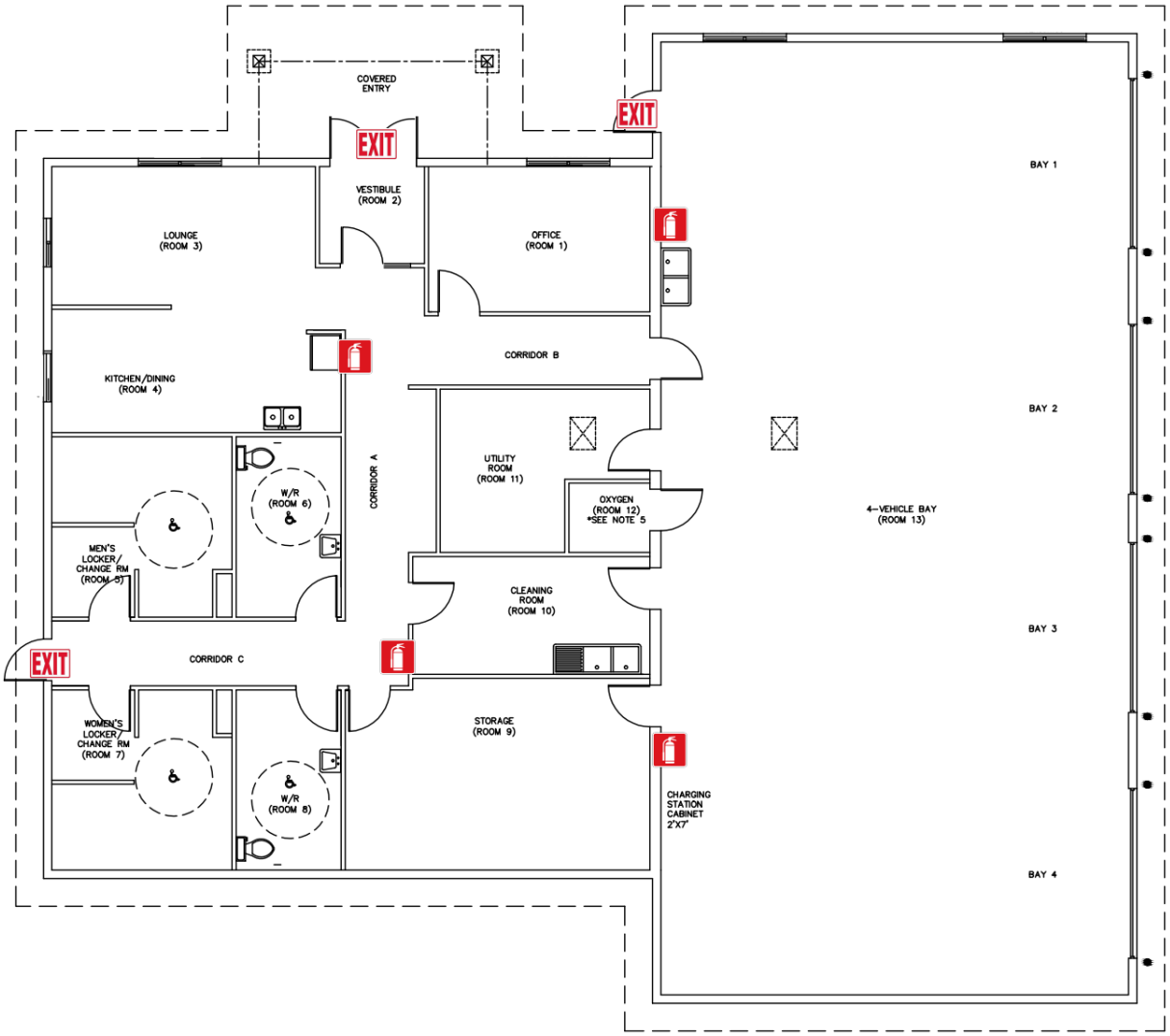
Haliburton County has a total of 14 structures. Of these, the HCPS has three paramedic deployment stations located in Haliburton, Minden, and Tory Hill, and one post in Stanhope. While paramedic stations make up 21% of the County building stock, these three stations make up one third of replacement value costs.

For the purposes of this report, commercial building inspections were performed to assess safety and maintenance issues. The inspections did not contain recommendations regarding usage as paramedic stations nor current or future space requirements.

Minden Paramedic Station

The Minden Paramedic Station was built in 2015 as a purpose-built paramedic station. It contains four garage bays capable of holding four ambulances within a climate-controlled environment. Ensuring climate-control for the vehicles can be crucial for patients comfort as well as keeping the medications and the fluids onboard at controlled temperatures to keep their stability. This is an expectation of the MOHLTC which is noted within ambulance service reviews.

Figure #47 – Minden Paramedic Station Floorplan

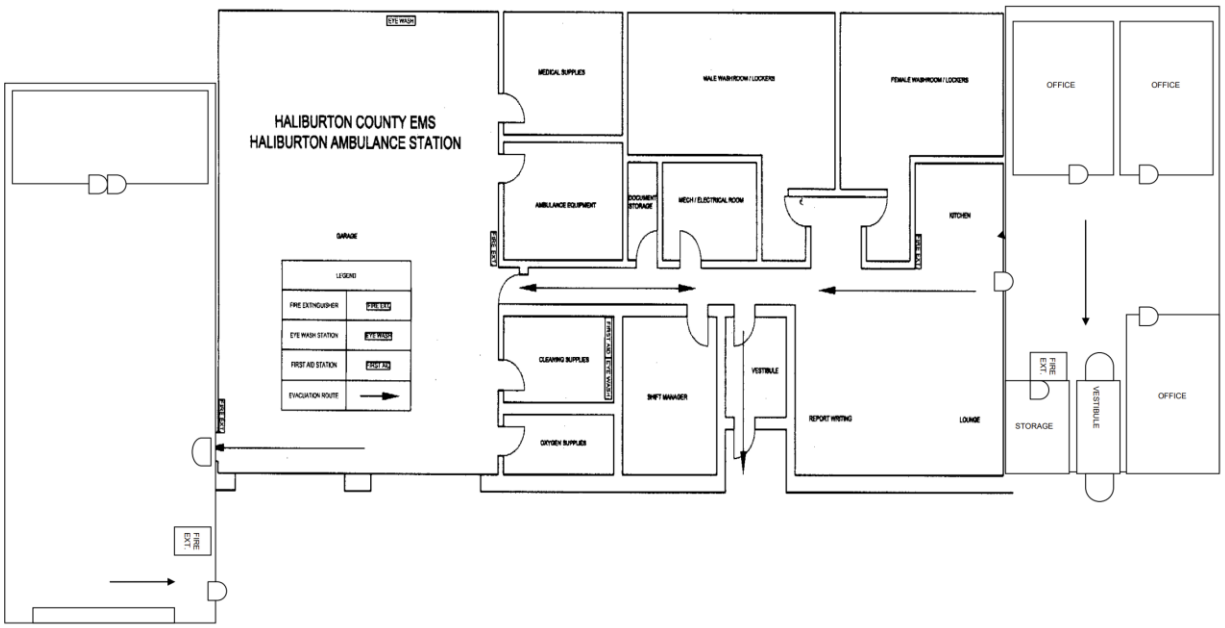


The completed commercial building inspection noted that there is not any serious structural or system conditions at this time. There are some minor maintenance items noted which are presented in Appendix 'B' and can be addressed as soon as practicable.

Haliburton Paramedic Station

The Haliburton Paramedic Station was built in 1994. It was expanded by the addition of another garage bay in 2006. It currently contains three garage bays that can protect three of the ambulances from weather. The station can be considered headquarters as it houses the management offices. The station is undersized for its purpose of both a response station and administrative offices.

Figure #48 – Haliburton Paramedic Station Floorplan

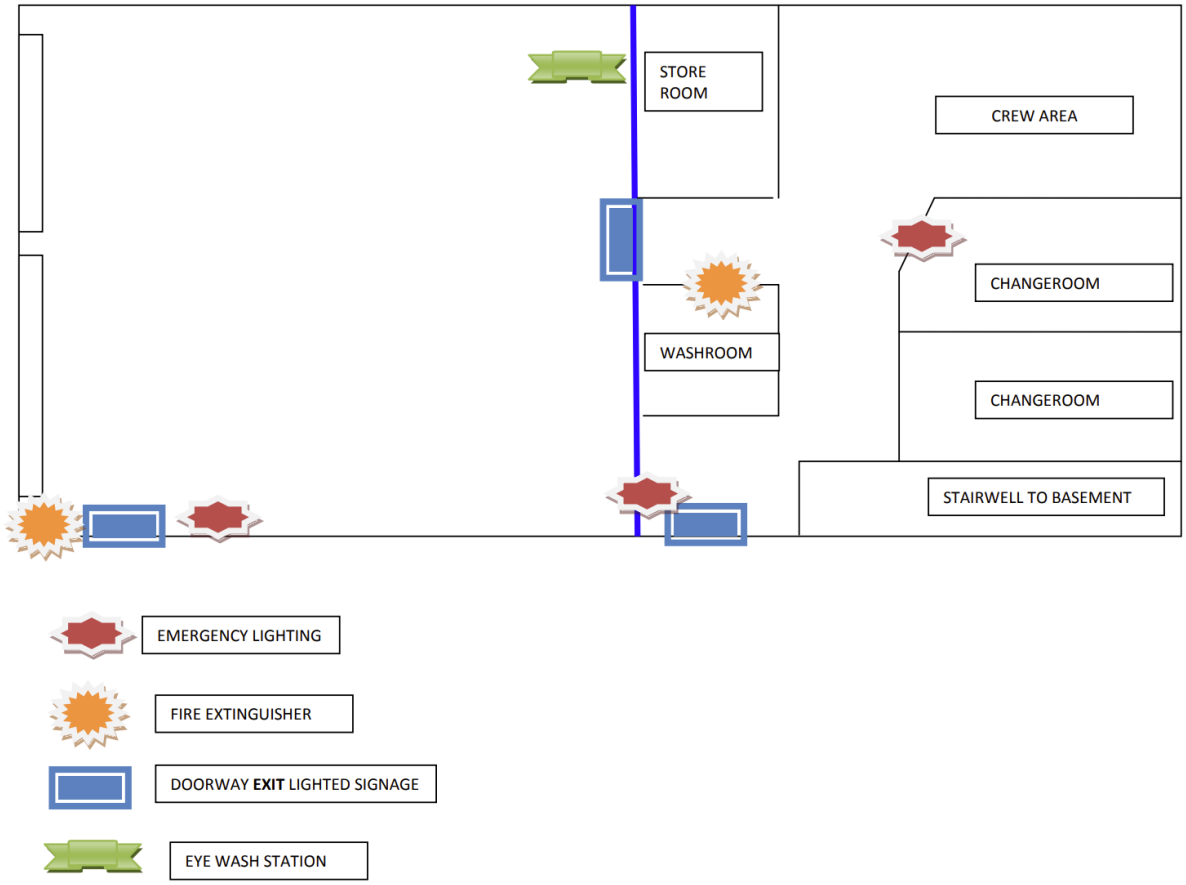


The completed commercial building inspection noted that there is not any serious structural or system conditions at this time. There were some important safety issues with electrical systems and some doors that require replacement. Other issues deal with exterior lot drainage and should be addressed as soon as practicable.

Tory Hill Paramedic Station

The Tory Hill Paramedic Station was built in 2012 as a Paramedic Station. It contains two garage bays that can keep two ambulances out of the weather and is a modest size for just one crew. Only one washroom is available which is inadequate for a station staffing an entire team of emergency responders.

Figure #49 – Tory Hill Paramedic Station Floorplan



The completed commercial building inspection noted that there is not any serious structural or system conditions at this time. There is an important safety issue that does require attention; the eye wash station and minor maintenance issues surrounding heating and plumbing. There are many areas that have evidence of biological growth which need to be remedied and the shower stalls should be replaced. Other noted issues involve repairing the driveway.

2.6 Internal Stakeholder Consultation

To better understand the expectations of various parties for this project, interviews were held with Haliburton County CAO, Haliburton County Council, Paramedic Service Management team and the Paramedic Union Executive. An online voluntary survey was also sent to the frontline Paramedics. Lastly, community consultation was completed using Haliburton County survey software. Telephone calls and various discussions took place throughout the process.

2.6.1 Common Internal Stakeholder Themes

All internal stakeholders identified that Haliburton Highlands Hospital (HHHS) diagnostic transfer volume was severely challenging their paramedic system. Concern was expressed by all groups involving the 9-1-1 response times. Concerns were also conveyed regarding both paramedics and management staff as they are feeling fatigued attempting to balance the needs of HHHS, while trying to ensure public safety. This issue was expressed as the number one concern by most internal stakeholders.

Internal stakeholders want to strive to have a high-performance paramedic structure, focused on providing the best emergency medical care. The provision of future education, based on community and patient needs, was an expectation for all the groups interviewed.

The Community Paramedic Program was a point of pride for the internal stakeholders with many describing the positive impacts the program has made in the community. It was mentioned that this program was serving the local vulnerable seniors with care and compassion while aiding with food insecurities and lack of heating sources. The Community Paramedic Program has become a larger program that not only looks after medical needs of the community of Haliburton, but also has found the paramedics advocating for those living in poverty.

2.6.2 CAO/Council

Another area of concern was the shortage of funding for resources despite the increase in the aging population. The increase in population within the area has also been contributed to by residents relocating to the area to work from home or retiring individuals converting their seasonal residences to permanent homes. The CAO and Council are mindful, that due of the

population influx, the paramedic service workload would naturally increase. This component is part of the justification for this ten-year Master Plan. The ultimate objective is to ensure that the County can meet future demands and can continue to deliver optimum emergency care for the citizens.

The level of care provided by the paramedics (emergency and community), must continue to meet the needs of the municipality (ongoing evaluation and commitment).

It was noted that HCPS must continue to work collaboratively with local municipal fire services, OPP and HHHS to ensure peak services levels as well as emergency preparedness and planning for major events/incidents.

2.6.3 Management/Union Executive

Both management and the union executive discussed the need for improved frontline supervision. This upgraded supervision is being requested to manage the frequent system stressors such as:

- Deployment challenges
- HHHS (Haliburton Highlands Health Services) transfers that compromise response.
- Working with Lindsay CACC – in real-time
- Providing on scene leadership for dynamic patient scenarios, etc.

In a well performing system, there is a clear division between the roles of administrative managers and front-line supervisors. It is highly unproductive for proactive long-term planners to deal with reactive front-line issues. Presently, the chief and deputy chiefs, deal with ongoing deployment and paramedic needs while performing their core management, planning and administration duties. Therefore, this creates delays in being proactive and, in turn, causes these managers to be reactive.

Modern day paramedicine is very fluid and is in constant motion. A major challenge is working with and managing the HHHS interfacility transfers in real time. Working with hospital staff will ensure management of the interfacility transfers while ensuring 9-1-1 response is not compromised. Currently, afterhours supervision is provided by the chief and/or deputy chief on call. With restrictions in notification, this method of providing offsite leadership to the paramedic system appears to inefficient to meet the current needs.

Points for Consideration

Beginning to manage any deployment challenges or serious medical emergencies from the patients' home is stressful for both the paramedics and the managers. This is a reactive way to deal with issues and does not serve any benefit to the county. Additionally, this model is not very desirable for potential future managers and will create future succession issues. This is a key issue that must be addressed to provide everyone a healthy work life balance.

2.6.4 Management / Administration:

The most thorough and comprehensive interview with the stakeholders occurred with the management/administration team. The meeting was held at Haliburton headquarters and included the chief, deputy chief and commander of clinical programs. . The position of deputy chief of quality assurance was vacant at the time of interview.

A great concern that was brought forward and observed was the appearance of an overworked team in serious need of assistance. There was a remarkable amount of dignity that the team displayed regarding the community, positions as well as responsibilities. While they would not admit to being overwhelmed, it was quite evident that management structure was overextended. Adding frontline supervision would benefit the chief and the deputies in managing immediate challenges and assist in ensuring that the quality assurance is frequently reviewed and monitored (Paramedic Service Standard in neighbouring counties). The addition of administration staff is also necessary for the added reporting requirements included with the Community Paramedic Program.

Currently, paramedic recruitment and retention are a genuine concern. It was noted that many of the new hires are employed from other areas and either do not have access to local housing or are reluctant to relocate. This again is not a unique situation for the paramedic service as many industries within Haliburton are experiencing the same difficulties. Numerous hours are spent recruiting, interviewing, and placing new employees into the certification process. However, once the new recruits gain some experience, they are relocating to the larger Paramedic Services in the greater Toronto area. Although housing is a contributing factor, the other issue revolves around the call types and the volume of calls that the County receives. The eager and enthusiastic recruits crave the excitement and the exhilaration of a larger service with a larger call volume and varying call types.

Paramedic services collect an immense amount of data through patient reports and CACC ADRS information, but in Haliburton County the minimum legislative requirement is being reported regularly. This is mainly due to the lack of staff time to organize, develop and regularly report on data. Reportable data and key performance indicators (KPI) are required to inform the Chief, CAO and Council on future municipality needs and budgeting. High performance paramedic

services throughout the province can collect and review the data to ensure their system keeps up and meets future demands.

2.6.5 Union Executive

An important stakeholder within the paramedic service is the union executive . The union representatives, being paramedics themselves, were clearly a passionate and committed group who focused on the best interests of the paramedics as well as enhancing their service. Their primary concern, as well the leading cause of paramedic frustration and exhaustion, was related to the hospital transfer volumes. There is awareness when it comes to the requirement for interfacility transfers; however, they want to see a resolution allowing more resources to remain in the County to respond to emergencies.

Another issue noted by the union was the aging infrastructure. They note stations as well as the vehicles, are not currently meeting the needs of the paramedics or the serving communities. They bring forth the example of the newer constructed Minden Paramedic Station, has already been outgrown due to the expanding Community Paramedic Program, which requires additional vehicles and office space.

The Stanhope post located within the fire station is seen by the union as an unsuitable deployment site due to its size and current use. The Tory Hill Paramedic Station was noted as an improvement to Stanhope but still needs replacement. Additionally, they felt that the geographic location of Stanhope did not maximize the quickest routes to move quickly throughout the County. Lastly, the union noted that the Haliburton Station was outdated, small and did not meet the requirements of either a paramedic deployment location or as administration headquarters.

2.6.6. Voluntary Paramedic Survey

The viewpoint of the employees providing the frontline work is critical. A survey was conducted to ascertain the issues that have been concerning and impacting the paramedics. A voluntary online survey was provided to all 56 paramedics and was completed by 17. The following are the common themes communicated through their responses:

- The leading staff concern was compromised 9-1-1 coverage due to the number of Haliburton Highlands Health Services (HHHS) diagnostic transfers (classed as urgent transports).
    - Numerous deployment challenges were noted by staff, not due to 9-1-1 call volume, but rather the number of interfacility transfers from HHHS.

    - Many noted that frequently, back-to-back urgent transfers from HHHS would occur before ambulance resources were re-allocated to ensure public safety for 9-1-1 response.

- Management staff were praised for minimizing the cutback of ambulances due to sudden paramedic absenteeism.

- Paramedic respondents felt management needs frontline supervision to provide continuous leadership to the paramedic system and improve the relationship between management and the frontline paramedics.

    - The paramedics expressed the need for someone whom they see regularly observing their work life and being their support and advocate through stressful situations.

- Paramedics expressed a concern that HHHS transfers can compromise response times.

- The purpose of the Community Paramedic Program is misunderstood by some of the staff.

    - Many paramedics either skipped this question, stated the program was adequate or wanted a better definition of its role.

- Relationships with HHHS and Central Ambulance Communication Centre (CACC) were found by many to need improvement. The Central East Prehospital Care Program (Base Hospital) was considered good by most.

    - The medical directives used by the paramedics were seen as sufficient but a need for expanded pain management was expressed by several respondents.

- Infrastructure: the facilities were noted as overcrowded, in poor condition and in need of replacement or significant upgrades. The only exception to this was the Minden Base.

- Vehicles were assessed by half of the respondents as good and the other half as poor.

    - Common complaints included vehicle age, visible rust, and seats in need of repair/replacement.

- The County Mental Health program was another area of mixed reviews. Most respondents reported this as an area in need of significant improvement for paramedics that are in a role where mental health trauma and PTDS is real.

***Note:** This survey summary represents 30% the paramedics on staff who participated in the survey. It is included to help understand the impressions of those working directly within the structure (i.e., frontline paramedics). Occasionally respondents use evaluations or surveys as an opportunity to voice personal criticisms regarding management and the organization. This is not an appropriate venue for such complaints; therefore, these comments have not been included in this survey summary.*

2.6.7. Voluntary Community Survey

An online community survey was posted for nearly one month on the County's website and 22 citizens responded (survey responses located in Appendix 'A'). While this is a small response to the survey, the respondents must be taken into consideration as these are citizens who have encountered Haliburton County Paramedic Service (HCPS) personally or know a family member or neighbour who have.

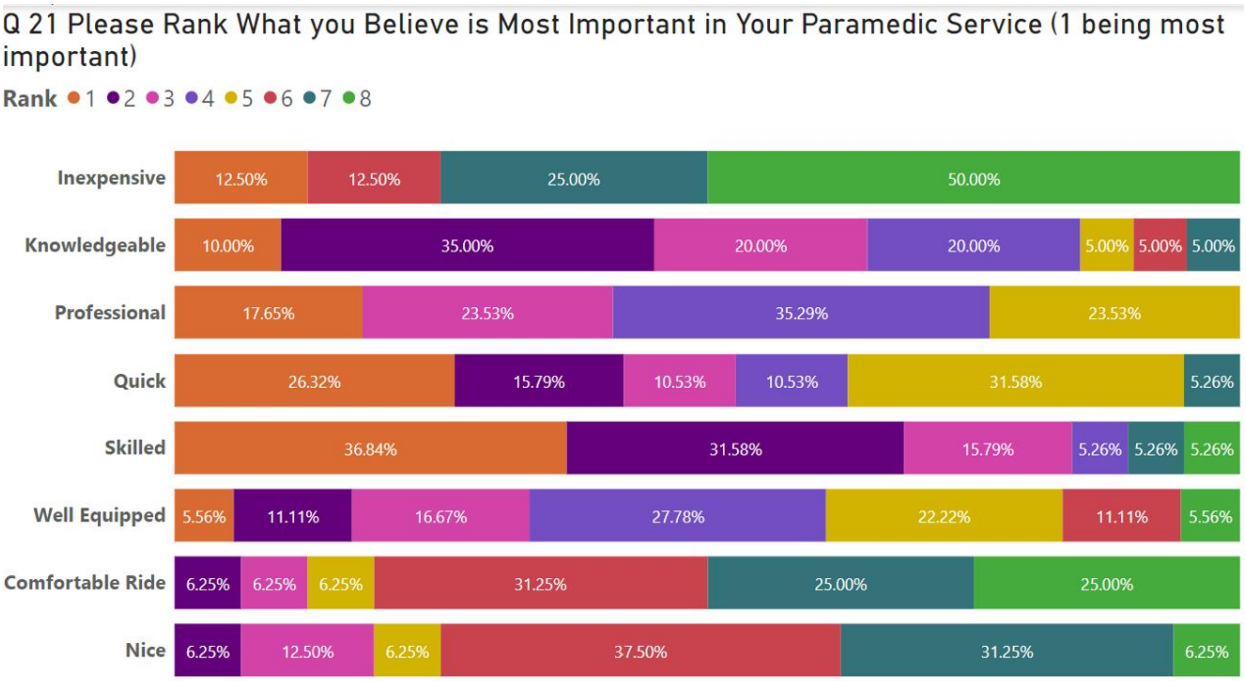
The primary age group of the respondents was 60-69, followed closely by those aged 30-39. Many of the responses were from residents with knowledge of the challenges faced by the health care system in Ontario, including many of the urban paramedic challenges (i.e., hospital offload delay and Code 0 or ambulances availability).

One respondent was fully aware of the health care challenges affecting Haliburton County Paramedic Service (HCPS) deployment (i.e., Haliburton Highlands Health Service interfacility transfer volume). When asked about the difference between 9-1-1 response and community paramedics, the majority of the people understood the difference and supported both initiatives. In fact, majority of the respondent felt paramedics were and integral part of the Ontario Health Care system. Specifically, most of the respondents felt the local paramedics were caring, kind and compassionate to the needs of their patients.

The foremost respondent areas for improvement:

- 36.84% of the respondents placed skill level for Haliburton County paramedics as most important and knowledge as second most important.
- 50% of the respondents placed inexpensive service as the least important.

Figure #50 – Community Survey Results

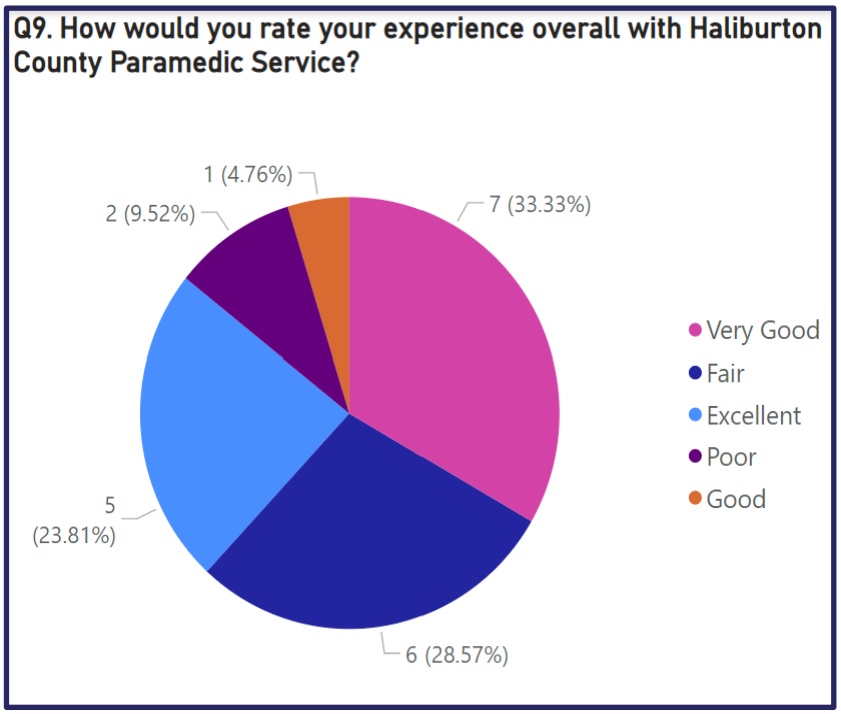


- The need for Advance Care Paramedics (ACP) was a leading theme for numerous respondents.
    - A few of the respondents gave specific firsthand cases concerning lack of pain relief for fractures and the lack of paramedic ability to control seizures in a pediatric case (ACP skill set). In both cases, it should be noted that these people may have experienced paramedic care in an area that offers ACP care.
    - It is important to remember that people coming to the community i.e., visitors, cottagers or people from the larger urban who are retiring to the Haliburton County, will expect similar care to what they have experienced in the past.
- Response time for 9-1-1 calls was of concern to many respondents. There were a few people who talked about the current long response times and expected improvement.
- Paramedic skillset / education was also seen as crucial to be kept at a high standard.
- Vehicles and equipment were seen as being required to be top notch.
    - It is worth noting that some respondents referred to rust on vehicles and stretchers that did not load well into an ambulance. These personal accounts need to be considered and a review for the fleet and equipment must be

articulated in an annual report detailing ongoing maintenance as well as paramedic skill practice.

- 59% (13) of the respondents were interested in courses designed on prevention and preparedness like CPR, first aid, fall prevention etc.
- Over 93% (14) of respondents were either satisfied or very satisfied with the patient care they received from HCPS however over 50% (7) were neutral or dissatisfied with the equipment and vehicle they encountered. This would seem to indicate a need to review the state of assets.
- Over 57% (12) of respondents rated their overall experience with HCPS as excellent or very good with 9.5% (2) rating their experience as poor. Many indicated in their comments that the Paramedics themselves were professional, prompt, and welcoming.

Figure #51 – Survey Results Q9



2.7 External Stakeholder Consultations

In developing this report, interviews were held with three major stakeholders to get their thoughts and reactions of HCPS. Meetings were held with members of Central East Prehospital program (CEPCP), Lindsay Central Ambulance Communication Centre (CACC) and the Haliburton Highlands Health Services (HHHS). The objective was to assess their perception of current, as well as future operations and challenges within Haliburton County Paramedic

Service. Many common subjects were documented which have helped to produce the focus of this report.

2.7.1 Central East Prehospital Care Program (CEPCP)

Every paramedic service in the province must have medical supervision in the form of an entity called the base hospital. Within each base hospital there is a medical director under whose license the paramedics deliver authorized medical actions. However, there is a team of educators that assist, provide direction, and training as required by the MOH in conjunction with the needs of the local area.

The manager of CEPCP advised that the working relationship between the CEPCP Base Hospital and the team at HCPS continues to be extremely good. The ongoing education for HCPS paramedics as well as the continuous monitoring of medical direction/delegation/compliance was found to be equal to their direct peer groups. The Regions of Durham and York and the Counties of Haliburton, Kawartha Lakes, Peterborough, Northumberland Counties are all provided medical direction under the legislated supports of the CEPCP.

The manager believed the PCP Plus program was a complete hybrid emergency medical care model for the County. Training to this level is entirely voluntary, however the current plan is to have every paramedic at the hybrid enhanced level within the next few years.

The CEPCP manager also advised that more medications, such as various controlled substances to better manage sedation and pain, are close to becoming a reality for the PCP Plus prehospital caregiver. The *Controlled Drugs and Substances Act* has recently changed, and an opportunity for the program to expand its present care abilities now exists.

According to the CEPCP, the leading challenge for HCPS is paramedic recruitment and retention. Due to the proximity of other paramedic services a paramedic certified by a base hospital can easily work part time in multiple services. It is common for new staff from other communities to leave once they get a position in the GTA. This not only creates staffing issues but leads to a cycle of countless lost hours for recruitment, interviews and arranging certification processes within the CEPCP.

2.7.2 Lindsay Central Ambulance Communication Centre (LCACC)

In 2000, the municipal download approach enabled the province control over dispatching ambulance services mostly through Central Ambulance Communications Centres. All CACCs in Ontario are funded 100% by the MOHLTC and most of them are also directly managed. The current Lindsay CACC Operations Manager has a direct understanding of the HCPS deployment plan. The operations manager was able to highlight the major challenge for HCPS as the urgent

medical transfer volume (Code 3 CTAS 3). With the high volumes of transfers they perform, the HCPS response time to 9-1-1 medical calls is being compromised. These frequent transfers cause stress to the HPCS team as they attempt to manage core business need simultaneously.

Unlike the three other paramedic services dispatched by Lindsay CACC (Kawartha Lakes, Peterborough, and Northumberland Counties), HPCS does not have a frontline paramedic supervisor. Most Ontario paramedic services today employ frontline supervisors to manage deployment issues and challenges. This absence of HCPS supervision leads to delays in decision making and challenges to deployment.

Neighbouring paramedic services provide emergency standby coverage for Haliburton County. While those neighbouring services are assisting, they must also maintain a position that allows them to respond quickly to their municipality. Ultimately, response times for other paramedic services responding into the County can be more than 30 minutes in these situations.

Medical Priority Dispatching System (MPDS) is a dispatch system being adopted within the Ontario CACCS that provides an enhanced triaging system which aims to ensure the sickest patients get help first and implements delays in servicing minor ailment patients. This new process is designed to ensures that resources are not fully exhausted. The MOH decided to pilot this new system at the Mississauga CACC which is the busiest location within the province to work out any errors and assess implementation throughout the province.

The COVID-19 pandemic has delayed implementation and the latest information obtained from Peel Region Paramedic Chief, suggests that launch would be December 2022. Currently, the MPDS system is operating in both Toronto and Niagara Paramedic systems as those services directly dispatch their own ambulances. Currently the Lindsay CACC is in the process of implementing the dispatching ambulances with this method, however, does not have a timeline for when MPDS will be put into place for the HCPS. The potential change when dispatching ambulances to an urgent patient hospital transfer, for diagnostic purposes, currently notes MPDS would triage a Code 3 CTAS 3 as a lower priority code than a Code 4 or Code 3 who are patients currently not in medical care.

Points for Consideration

Many paramedic systems are battling with hospital challenges such as interfacility transports and offload delays which are created by overcrowded emergency departments. The County should start a discussion concerning the priorities of the Paramedic Service, whether they are there to serve the public, 9-1-1 callers who are not under medical care, or whether they are to serve the hospital patients, who already are under the care of medical personnel.

2.7.3 Haliburton Highlands Health Services (HHHS)

Within Haliburton County, there is currently one hospital organization, the Haliburton Highlands Health Services which operates two hospital locations: one in the village of Haliburton and one in Minden Hills. The Haliburton location has a small number of inpatient beds, while the Minden location only is comprised of an emergency department. Both locations house long term care facilities. The Haliburton Highlands Hospital CEO advised that the working relationships between HHHS and HCPS team was excellent. The CEO stated there was terrific collaboration during the initial COVID-19 outbreak. The two services worked very diligently together and simultaneously developed a plan for safely managing resuscitation patients. Furthermore, they were very pleased with the community outreach that the HCPS was performing through their Community Paramedic Program. They felt this program was allowing vulnerable seniors to live independently at home longer, which was keeping these seniors out of the emergency department and long-term care.

Joint challenges were discussed, and recruitment/retention of staff was identified as a major issue effecting both services. The challenge of maintaining nurses at HHHS is like maintaining paramedics within the County. The other issue identified was that HHHS relied on HCPS to move their patients for diagnostic imaging to places like Ross Memorial Hospital Lindsay, as well as the South Muskoka Regional Health Centre in Bracebridge and the Peterborough Regional Health Centre.

In recent years, diagnostic imaging has gone from being discretionary to becoming the standard of care for physicians to determine treatment options. Without the benefit of diagnostic imaging machines (i.e., MRI machine, computerized tomography (CT) scanner) within the County, patients must be transported to receive these essential diagnostic tests. The high volume of diagnostic patient transfers was discussed, and the CEO seemed to be receptive to working with Haliburton County and the HCPS to formulate interim and long-term solutions to this concern (i.e., lobbying the MOHLTC or Ontario Health East for special funding to assist with the medical transfer costs like funding for offload delay nurses). It was suggested that seeking out other areas of the province where similar hospitals also lack diagnostic imaging to assist and provide solutions for the current situation in Haliburton.

2.8 Additional Pertinent Documents

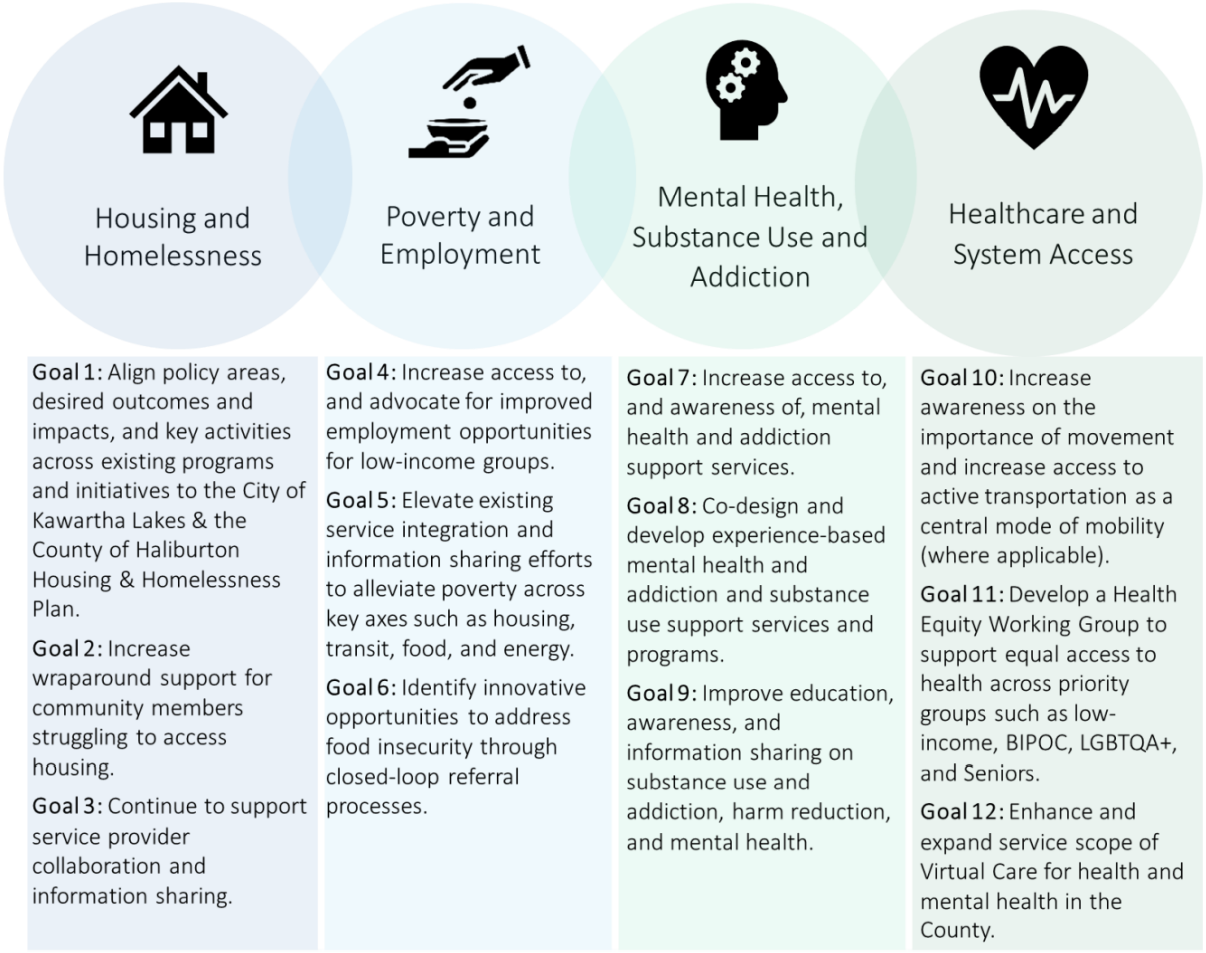
2.8.1 Community Safety & Wellbeing

Community safety and wellbeing is an essential priority for the provincial government. The comprehensive *Police Services Act* legislatively requires every municipality to develop a plan with specific conditions. The Solicitor General defines community safety and well-being as

"…the ideal state of a sustainable community where everyone is safe, has a sense of belonging, opportunities to participate and where individuals and families are able to meet their needs for education, health care, food, housing, income, social and cultural expression."

With this comprehensive definition in mind, it is required that these plans be developed with a varied cross-section of municipal, service, and policing members who represent different sectors of the community. The legislation is not very prescriptive regarding the areas of concern and leaves it highly customizable to the needs of the individual communities. Therefore, the plans for the various areas will appear to be unique based on the area of impact. The four municipalities within Haliburton County requested that the County coordinate the construction of this plan.

Over the course of many years and much consultation the Community Safety and Wellbeing Plan (CSWB) was established. This plan, while not directly involving HCPS, directly involves much of what HCPS is currently accomplishing through both emergency response and the Community Paramedic program. The CSWB Plan has identified four priorities and 12 goals, as depicted below.



The Community Paramedic Program is directly noted within goal 11 as well as goal 12, however, a review of the goals would suggest that there are other areas where HCPS can assist.

2.8.2 Review of Eastern Ontario Paramedic Services

In 2019 the Eastern Ontario Wardens Caucus (EOWC) commissioned an assessment and review of the Eastern Ontario Paramedic Services. Subtitled "Situation Overview" this report was competed in November 2019. This report contained a review of data and statistics concerning the 13 Eastern Ontario Paramedic Services (land ambulance) between 2014 and 2018. The main findings of the report were:

- Eastern Ontario has a rapid aging population.
    - According to this report, people over age 65 represented 22.3% of the population but accounted for 55% of all the paramedic calls for service. The report forecasted that citizens over 65 would grow to 26.9% of the Eastern Ontario population by 2024.

***Note: 2021 Census data reveals that Haliburton already has a population 65 years of age or older of 35.72% 65 making up over 60% of all Ambulance calls*

- There is an increased need and role for Paramedic Services directly linked to the Ontario Aging at Home Strategy
    - Provincial health care decision that has led to the need for Community Paramedic Programs that are reliable and mobile to better serve this vulnerable senior population.
- Paramedics spending increased amount of time in external jurisdictions performing patient transports or cross boundary services.
    - Specifically, for Haliburton County Paramedic Service, the primary driver for this is the work / time being allocated for the two campuses of the Haliburton Highlands Hospitals (HHHS) to move their urgent patients for diagnostic imaging that does not exist in their two hospitals.
- Increased levels of offload delay.
    - This generally is an issue for Ross Memorial Hospital and the Peterborough Regional Health Centre, but Haliburton County Paramedic Service gets caught up in this due to the urgent diagnostic transfer volume moving from the HHHS campuses to these other hospitals that are facing the offload challenges.
- Increased costs associated with post traumatic stress disorder (PTSD) and mental health supports.
- CACC current triage system prioritizes responses as medical emergencies and ultimately overcommits resources.
    - Ontario has committed to upgrade their CACCs to the "Advanced Medical Priority Dispatching System (AMPDS)" but the first expansion outside of Toronto and Niagara CACCs (pilot groups) has still not been realized.
    - Continued strain on resource availability over commitment will continue for Paramedic Services until this provincial responsibility is addressed.

Haliburton County Specific Facts within Report:

- Haliburton County Paramedic Service (HCPS) was the only Primary Care Paramedic (PCP) service in Eastern Ontario
    - That has changed with the PCP IV or PCP plus program (intravenous therapy matched IV medication and expanded scope of practice).
- Smallest response volume (i.e., 2% of the total for Eastern Ontario).
- Second longest call durations i.e., response, scene time and transport time.
- This would be due to the large geographical area for Haliburton County and the fact that 33% of the paramedic service resources are serving hospital urgent diagnostic transfer volume for diagnostic imaging. The time for an urgent diagnostic imaging

transfer ranges from 3.5 to 5 hours depending on wait times and the patient returning to HHHS facility. This is unique to Haliburton County as the other 12 paramedic services have hospitals with diagnostic imaging capabilities in their municipalities.

2.8.3 Other Paramedic Master Plans

Paramedic Master Plans are gaining popularity within Ontario. Many municipalities within the province have completed reviews of their Paramedic Master Plans Their respective master reports were completed between 2014 and 2021 and were designed to be ten-year forecasts for their corresponding Ontario municipality. Numerous common themes were reported that are similar challenges for Haliburton County. These include:

- Aging population - All the reports discussed the rapid aging of the citizens of their municipalities. Presently people over age 65 represented 25-35% of the population but accounted for 45-55% of the paramedic calls for service. In fact, some of the reports were predicting 50-100% call volume increase by 2031.
- CACC upgrade to the AMPDS – The reports discuss the long delay of the MOHLTC's CACCs upgrading to the AMPDS communication system. This system will better manage municipal emergency responses and improve availability of paramedic ambulance resources. This new system should reduce needless lights and siren responses and keep the paramedics and citizens safer. The technical infrastructure upgrade should also improve messaging and reduce human error.
- Community Paramedicine and alternative routes to traditional paramedic approach - Each report discussed new approaches to the traditional paramedic ambulance regarding response, treatment, and transport programs of the past.

  New concepts like proactive community paramedics could better protect the vulnerable and keep them in good health at home. Performing routine visits aids in keeping citizens out of the rotating door of emergency health care. The role of a community paramedic is to prevent and maintain patients from going to the hospital. Alternative pathways are presently being looked at by linking paramedic services with other community supports so that patients can be treated by paramedics and safely left at home with follow ups conducted by community nursing / paramedics.
- Public Education - The citizens of Ontario and Haliburton County have learned and are accustomed to dialling 9-1-1 for a medical emergency. Many of these citizens may need urgent care but data suggests few require critical or emergency care. Public education is needed to instruct and educate residents on the appropriate occasions to call 9-1-1 and use the local emergency department.

- Covid Pandemic (Public / Paramedic Service) - Many citizens now can work from home as the result of the pandemic. As such many citizens are no longer required to work within a reasonable commute of their worksite. This remote working allows citizens the opportunity to relocate their residence to a municipality of their choice. This could directly affect rural Ontario due to their more desirable lifestyle. Areas like Haliburton County may experience a larger than expected growth in their population. The other lesson learned is preparedness of the paramedic service for the next possible outbreak. Ongoing education, protective equipment supply, and mitigation strategies for maintain staffing continuity need to be considered and invested in.

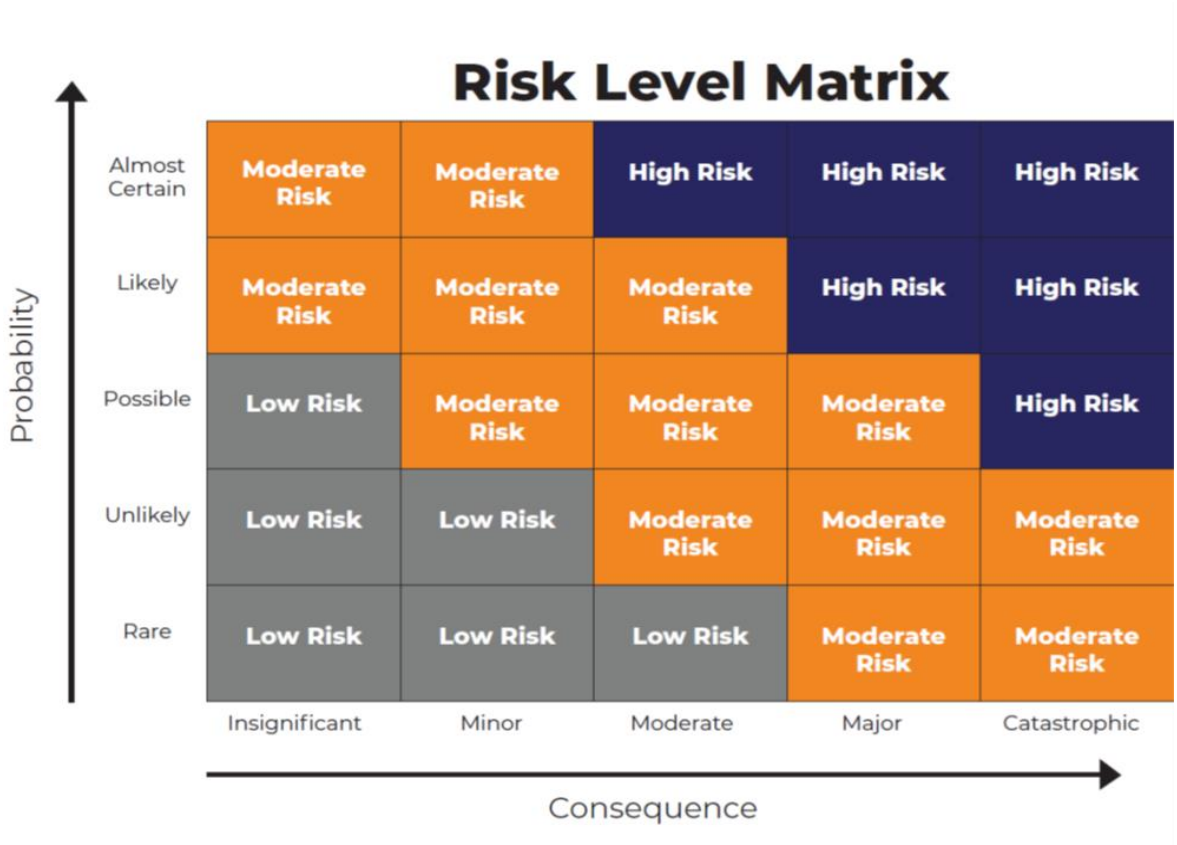
2.8.4 County Community Risk Assessment

Ontario Regulation 378/18 under the *Fire Protection and Prevention Act* requires all municipalities to complete a Community Risk Assessment (CRA) by July 2024. CRAs must then be assessed every year thereafter with a full redo every 5 years. CRAs are designed to inform and advise the municipality on the risks associated with their community. With this information, the municipality can make informed decisions about their emergency protection services.

The CRA for Haliburton County was completed during this assessment; as well as for the four Haliburton municipalities for their fire departments. The County CRA is an important document to refer to within this Master Plan.

It is important to understand that risk measures the probability, as well as the possibility, that an event will adversely affect the health, property, organization, environment, and community. The CRA indicates that County Council is responsible to determine, with input from the paramedic chief, an acceptable level of risk to manage within the community based on its needs and balanced with the circumstances to deliver the services.

Figure #52 – Risk Level Matrix



Much of the County CRA was dedicated to HCPS but critical infrastructure, systems, and emergency management were also covered within that report. Here are some highlights that were observed in relation to HCPS:

- The risk of persons becoming injured in forested areas requires HCPS to request a fire department and have UTVs attend the call to transport patient(s) out of the forest.
- HCPS members may be required to travel on a boat at any time to pick up, treat, and transport patients from remote locations. They should have a good understanding of marine rules and safety equipment and consider acquiring their Pleasure Craft Operators Card, which is available online.
- As the number of residential occupancies increases in Haliburton County, so will the demand for service from HCPS.
- This change in residency is being missed in the MPAC occupancy classification data and results in lost revenue for the Municipalities and the County.
- Each of the four communities in Haliburton County has also experienced a double-digit percentile increase in population over the past five years.
- With each census, the average and median ages raise higher and there is a significant increase in the senior demographic.

- Increase of permanent residents due to individuals relocating to their seasonal property and making it a year-round residence. Many are older and choosing to retire in the County.
- Haliburton County is susceptible to significant weather events causing high dollar loss and injuries, such as flooding, windstorms, and tornadoes.
    - There is a history of flooding in the spring, causing widespread damage in the County.
- HCPS should take advantage of collaborative training opportunities with allied agencies and partnering with local businesses and service clubs to aid in the delivery of personal and medical care messaging.
- Monitor the age demographic that uses HCPS at a higher rate and investigate programs that could be delivered by the Community Paramedic Program to reduce the number of calls.

Once the CRA is reviewed and acknowledged, the following phase should be developing a Community Risk Reduction Plan (CRRP). A CRRP coordinates emergency operations with community outreach and response efforts throughout the community. Having HCPS involved is critical for gathering local risk data and performing activities necessary to implement the CRRP. A CRRP can positively impact the paramedic service by improving paramedics' safety and occupational health, reducing burnout of staff, and helping with retention issues. Utilization of a CRRP is another tool in the prevention toolbox.

SECTION 3

Current and Future Challenges

SECTION 3: CURRENT AND FUTURE CHALLENGES

3.1 Interfacility Transfers

Interfacility transportation is the movement of patients from one medical facility to another, typically between hospitals or hospitals and long-term care homes. These patient transfers can be classified as critical, emergent, urgent, or non urgent depending on patient condition. Using the Ontario DPCI system, most of these transfers are booked as a Code 2 (scheduled) transfers throughout the province, however in Haliburton most of these transfers are classified as Code 3 (urgent) transfers. The correlation between dispatched priority code and the CTAS can be summarized as follows:

- Code 1/2 (non urgent/deferable/scheduled) patients classified as CTAS 4 or 5 transport typically booked Code 2 when prescheduled due to a scheduled appointment i.e., cancer treatment, or Code 1 when not prescheduled (note that Paramedics are only sent a facility Code 2 but transport the patient Code 1).
- Code 3 (prompt response) patients classified as CTAS 2 or 3 rarely utilizing lights and sirens but can be considered.
- Code 4 (urgent lights and siren response) patients are classified as CTAS 1 or 2 utilizing lights and sirens for transport.

When considering interfacility transportation t is important to note the definition of what an ambulance is under the Ontario Ambulance Act. Ontario Ambulance Act Part 1 Section 1 (1) defines:

"Ambulance means a conveyance used or intended to be used for the transportation of persons who,

> *(a) have suffered a trauma or an acute onset of illness either of which could endanger their life, limb or function, or*
>
> *(b) have been judged by a physician or a health care provider designated by a physician to be in an unstable medical condition and to require, while being transported, the care of a physician, nurse, other health care provider, emergency medical attendant or paramedic, and the use of a stretcher; ("ambulance")*

In many cases the requirement to urgently transfer a patient to another facility would fall under the first section of the definition. The acute onset of illness is typically related to a neurological ailment that requires the diagnostic imaging of a computerized tomography (CT) scan. In many cases a CT scan has become the standard of care required by physicians to determine the

proper care for a patient. Currently there are no diagnostic imaging capabilities within Haliburton County.

As we have seen earlier in this report interfacility transfers are the largest call type for the HCPS. From January 2021 through and including September 2022 (21 months), interfacility transfers is the top call type accounting for 33.66% of dispatch problem codes and 25.58% of noted primary problem.

Figure #53 – Dispatch Problem Call Times (2021-2022)

Top 10 Dispatch Problem Call Times 2021-2022

Dispatch Problem	Count of Responses	% of Responses	Avg Call Time	% of Call Time
90 - Inter-Facility Transfer-(90)	2275	33.66%	109.14	49.30%
10 - Fall (Dispatch Only)-(10)	662	9.79%	53.72	7.15%
21 - Dyspnea-(21)	526	7.78%	58.37	6.13%
92 - Weakness/Dizzines/Unwell-(92)	431	6.38%	57.14	4.96%
08 - MVC (Dispatch Only)-(08)	285	4.22%	54.42	3.18%
51 - Ischemic-(51)	225	3.33%	62.14	2.78%
61 - Abdominal/Pelvic/Perineal/Rectal Pain-(61)	208	3.08%	60.70	2.51%
66 - Musculoskeletal-(66)	178	2.63%	57.01	2.05%
45 - Behaviour/Psychiatric-(45)	165	2.44%	59.25	1.95%
89 - Lift Assist-(89)	165	2.44%	40.67	1.34%

Figure #54 – Primary Problem Call Times (2021-2022)

Top 10 Primary Problem Call Times 2021-2022

Primary Problem	Count of Responses	% of Responses	Avg Call Time	% of Call Time
90 - Inter-Facility Transfer-(90)	1729	25.58%	107.59	36.96%
92 - Weakness/Dizziness/Unwell	731	10.82%	62.85	9.25%
66 - Musculoskeletal-(66)	555	8.21%	63.48	7.24%
99 - Other Medical/Trauma(See Remarks)-(99)	451	6.67%	52.58	4.87%
67 - Trauma/Injury-(67)	427	6.32%	67.14	6.10%
21 - Respiratory	374	5.53%	70.86	5.33%
61 - Abdominal/Pelvic/Perineal/Rectal Pain-(61)	319	4.72%	80.56	5.14%
89 - Lift Assist	266	3.94%	35.50	1.89%
45 - Behaviour/Psychiatric-(45)	248	3.67%	60.72	3.07%
62 - Back Pain-(62)	149	2.20%	56.29	1.67%

The dispatch problem codes are determined by the CACC based on the information provided to them. The primary problem is determined by the paramedics upon their assessment of the patient. The discrepancy between the two can be attributed to inconsistent documentation by the paramedics whereby most note a dispatched transfer as the primary problem however some note the primary problem as how the patient is presenting. In the case of interfacility transfers the dispatch problem code appears to be more accurate in assessing volume as 586 dispatched transfers had differing primary problems even though it was a facility-to-facility call. Conversely, only 31 calls were noted as interfacility transfers in the primary problem code where the dispatched problem code was not interfacility transfer.

***Note: For every patient encounter a paramedic collects the patient information and is required to enter this data in over 60 data fields. With that volume of data required there are definite errors in data entry. While most of the data is correct and valid there can be some inconsistencies in totals where averages are concerned.*

For example, there was on call for service where the date was transcribed backwards resulting in a response time of over 400,000 minutes. That call was eliminated from the average call times.

While interfacility transfer volume is the principal call type, a greater review into average call times can reveal the total impact that they have on the deployment of resources. Interfacility transfers are the lengthiest call type to complete, taking on average 44% longer an average call. Since most interfacility transfers are out of the County, this is an expectation.

It is important to note that the majority of these interfacility transports do not have an HHHS medical escort. From a medical-legal perspective these transfer patients are the responsibility of the sending hospital. Many of the paramedic surveys stated that some of these patients receive pain medication prior to transportation. This practice needs to be reviewed, as not having a medical escort creates a high-risk situation for the Haliburton County paramedic caregiver.

Figure #55 – Average Call Length for Out of County

Out of County Average Length (Time) of Transfer 2021-Sept 30 2022

Sending Hospital	Receiving Facility Name	# of Responses	Avg Call Length (min)
Haliburton Hospital	Ross Memorial Hospital	331	130.56
HHHS Minden Hospital	Ross Memorial Hospital	312	122.70
Haliburton Hospital	Peterborough Regional Health Centre	251	148.12
HHHS Minden Hospital	Peterborough Regional Health Centre	155	138.14
UNDOCUMENTED	Ross Memorial Hospital	134	125.81
UNDOCUMENTED	Peterborough Regional Health Centre	89	137.40
Haliburton Hospital	South Muskoka Hosp	24	137.15
Haliburton Hospital	Hyland Crest Senior Citizens Home	8	55.65
UNDOCUMENTED	South Muskoka Hosp	8	113.15
Haliburton Hospital	Huntsville District Memorial Hosp	6	136.91
HHHS Minden Hospital	SUNNYBROOK HEALTH SCIENCE CENTRE	6	150.36
Total		**1324**	**132.50**

***Note: Greater than five calls.*

***Note: UNDOCUMENTED sending facility details where no sending facility was recorded, however the pickup location type was noted as hospital.*

***Note: The above data does not include the time to return the County without a patient as those trips are not recorded. Over the last 21 months only 1405 recorded out-of-County patent transfers with 614 transfers returning.*

Figure #56 – County Average Time of Transfer

Into County Average Length (Time) of Transfer 2021- Sept 30 2022

Sending Hospital	Receiving Facility Name	# of Responses	Avg Call Length (min)
Ross Memorial Hospital	Haliburton Hospital	188	96.19
HHHS Minden Hospital	Haliburton Hospital	97	54.94
UNDOCUMENTED	Haliburton Hospital	80	88.40
Peterborough Regional Health Centre	Haliburton Hospital	64	108.44
Ross Memorial Hospital	HHHS Minden Hospital	59	74.25
Haliburton Hospital	Haliburton Hospital	43	100.11
UNDOCUMENTED	HHHS Minden Hospital	29	65.37
HHHS Minden Hospital	HHHS Minden Hospital	15	82.53
	Haliburton Hospital	12	52.09
EXTENDICARE/HALIBURTON	Haliburton Hospital	8	30.93
Peterborough Regional Health Centre	HHHS Minden Hospital	7	77.36
Total		**602**	**84.20**

The Deployment Plan states that," no County vehicles will be sent empty to repatriate a patient in another Upper Tier Municipality (UTM)". It is expected that of all the 614 transfers returning into the County were a result of either waiting for the transferred patient at the receiving hospital (according to the Deployment Plan up to 1 hour) or returning a patient back to HHHS who was sent out of out-of-County testing/treatment. Of the 570 transfers back into the County (HHHS) they were coded as either Code 1 or Code 3 which indicates that they were not prescheduled for transfer and most likely patients who paramedics had waited for.

Figure #57 –Average Time of Transfer

Average Length (Time) of Transfer 2021- Sept 30 2022

Sending Hospital	# of Responses	Avg Call Length (min)
Haliburton Hospital	938	111.38
HHHS Minden Hospital	654	109.68
Ross Memorial Hospital	250	90.79
Peterborough Regional Health Centre	76	104.83
EXTENDICARE/HALIBURTON	11	57.35
Scarborough Centenary	4	291.60
HOME	2	90.52
General Campus-The Scarborough Hospital	1	58.63
Hamilton General ER	1	74.27
Huntsville District Memorial Hosp	1	95.00
Hyland Crest Senior Citizens Home	1	88.47
QHC North Hastings - Bancroft	1	39.07
Total	**1940**	**107.88**

While interfacility transfers account for approximately 33% of total calls for service over the last 21 months those same transfers account for nearly 49% of total workload time. Which therefore presents that interfacility assignments have a lengthier completion time than conventional 9-1-1 community calls.

Figure #58 – Responses - Interfacility Transfer vs Calls (2017-2022)

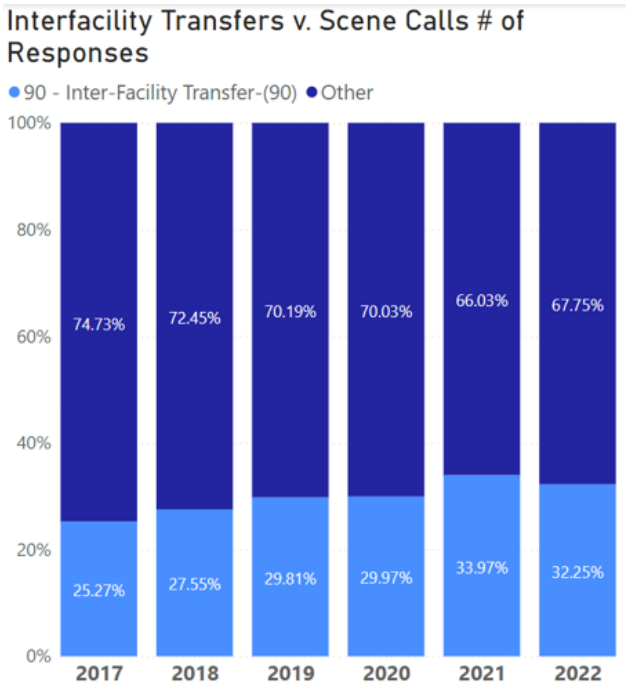


Figure #59 – Time - Interfacility Transfers vs Calls

Paramedics are high functioning, highly trained professionals whose skills are sharpened for quality emergency response. Having a third of their operations designated as interfacility medical transports is unreasonable.

While ambulance services are the responsibility of the municipal government, healthcare is the responsibility of the province. The demand within the County for this high volume of transfers is due to a lack of investment in local healthcare, more specifically the lack of diagnostic imaging services. With 32% of the work being attributed to hospital needs, 32% of the operating budget for the HCPS is also going towards hospital needs.

The actual number of diagnostic transfers from Haliburton Highlands Health Services (HHHS) is difficult to determine as this specific data was not being collected by HHHS or CACC. Haliburton County Paramedic Service (HCPS) was requested in the fall of 2021 to provide HHHS information pertaining to CT transfers. The HCPS Paramedic Chief manually reviewed the completed HHHS transfers.

Table #10: Haliburton Highlands Hospital - CT Transfers

	2019	2020	2021
CT Transfers	218	252	357
% Increase from 2019		13.5%	39%

This increasing number is a significant issue that is clearly unsustainable and needs to be resolved. The accuracy of the above noted data provided is subject to paramedics recording "CT Transfer" on the patient report. While the reported number should be close to the actual number completed, the subjectivity needs to be discussed as the actual number is most likely higher. To better track this information in the future the HCPS should work with iMedic to create a tracking system for diagnostic transfer problem codes, in addition to noting repatriation transfers within their electronic data base. This would then enable HCPS to report on this specific call types (i.e., diagnostic transfer or repatriation transfer) with improved accuracy. This in turn can be corelated to cost and time in provision of this service to HHHS.

In short, the lack of Provincial funding is compromising the HCPS 9-1-1 response time and creating continuity issues with the frontline paramedics. Both the union executive and several frontline Paramedics expressed the concern that their background and education surpass their current responsibilities as a patient transfer unit. They feel ambulance deployment for 9-1-1 response has been compromised due to the interfacility transfer volume.

When examining the 13 municipal land ambulance paramedic services in eastern Ontario, it is noted that Haliburton is the only County not to have an internal diagnostic imaging available to for the residents. This is an environment that does not currently exist in the rest of the eastern Ontario region. There are many programs throughout the province that aim to reduce hospital pressures on the paramedic services. Many of these municipalities and counties receive offload nurse funding from the MOHLTC to provide nurses in the local emergency departments that assist with watching patients being offloaded by the ambulance. Additionally, many of the municipality and counties fund low acuity interfacility transfers. Haliburton County, HCPS and HHHS need to investigate and create a report that specifically outlines these unique challenges to both the MOHLTC and Ontario Health East to request funding.

3.2 Critical Medical Emergency Coverage & Ambulance Offload Delays

Two major challenges to Paramedic Services within the Province are the concepts of critical minimum emergency coverage (CMEC) and ambulance offload delay (AOD). Within provincial deployment plans (as noted earlier within this report), paramedic services denote critical levels of ambulance coverage with steps required when those thresholds are met. As defined within the Service Deployment plan CMEC is, "a trigger that recognizes that the level of available

ambulance resources cannot sustain/maintain the EMS service's "Minimum Emergency Coverage" level. The paramedic provider's deployment plan strategy for CMEC is to delay response to Code 3 calls except for Haliburton who do not delay response to calls in the community".

CMEC 0 mean that there are zero ambulances available within the entire County. A CMEC 1 means that there is only one ambulance remaining for the entire county.

An ambulance offload delay (AOD) is the term that is used to explain the wait time that the paramedics experience in the emergency department for a hospital staff to assume responsibility of the patient. An AOD causes the ambulance to be removed from deployment. The aging population, sicker patients, and staffing difficulties are overwhelming previously inundated emergency departments, reducing the capacity to accept incoming patients in a timely manner. While the delayed patients wait on the ambulance stretchers, the community is without an emergency response unit or resource. In many larger centres, these AODs have caused great issues where at times communities are left without any ambulances that are accessible to respond to the next 9-1-1 call.

3.2.1 Critical Minimum Emergency Coverage – 0 (CMEC 0)

Using resources to capacity and many times beyond has resulted in daily occurrences of Critical Minimum Emergency Coverage (CMEC). In Haliburton County, the CMEC 0 is generally the direct result of the quantity of interfacility transfers and emergency calls that are being completed simultaneously within the County.

Tracking the CMEC count is particularly challenging which often relies on manually tracking the number of times the CACC advises a Superintendent of low vehicle counts.

Utilizing the ADRS data, a detailed breakdown of each ambulance call can be made. The system can calculate the number of calls that were in progress and determine the number of simultaneous calls. This process, however, is providing only a portion of the data. The remaining information to determine is the number of resources that were deployed at a particular time. Due to HCPS utilizing an active deployment, it is extremely difficult to calculate the number of times that CMEC 0 was attained.

Data was reviewed for the last three years (2020-2022). The following is a table that indicates the number of simultaneous calls in minutes.

Table #11: Number of Simultaneous Calls in Minutes (2020 – 2022)

	Number of Calls Occurring at the Same Time in Minutes						
Year	2 Calls	3 Calls	4 Calls	5 Calls	6 Calls	7 Calls	8 Calls
2020	41544	10832	2314	461	203	20	1
2021	54743	15904	2933	624	194	23	0
2022	59410	16464	3279	520	174	7	8

There are a varied number of deployed resources at any given time. Generally, there are four ambulances deployed during the hours of 11:00h - 23:00h (11:00 a.m. – 11:00 p.m.) and three deployed between 23:00h – 11:00h (11:00 p.m. – 11:00 a.m.).

***Note**: Within the County's Deployment Plan, the HCPS regards a serious and critical situation when there is only one unit available between 11:00h – 23:00h (11:00 a.m. – 11:00 p.m.) and zero units available between 23:00h – 11:00h (11: p.m. – 11:00 a.m.).*

Whenever four calls occur simultaneously, there would be no ambulances available in the county at peak day-time staffing. Based on the data provided in table #11, in 2020 four calls occurred simultaneously for a total of 38 hours and 34 minutes. In 2021, that total was 48 hours and 53 minutes and in 2022, the total hours were 54 hours and 39 minutes.

Based on the above data, there is a significant number of instances where there are more than four calls occurring concurrently. With only four ambulances deployed at a maximum, these are calls that account for the community paramedics, within the paramedic response units, responding as well as any upstaffed ambulances (summer long weekends, community events, etc.). In 2022, there was a severe instance when there were eight calls occurring at the same time. This incident was reviewed and there was a simultaneous utilization of resources.

Data also provided evidence on the total amount of time an ambulance is out of County waiting for patient diagnostic testing to be completed at a regional health centre. This data does not consider the travel time back into the County after completion. There is a lack of ADRS data to support returning to base empty. Taking this into consideration, the CMEC numbers should be considered as understated. The true amount of time listed above will be greater than reported.

The issue of critical ambulance coverage is undeniably present within Haliburton County. Therefore, the current Deployment Plan should be reviewed and modified to adapt to best practices as seen in other services. While each Deployment Plan is based upon the individuality of the community, having zero ambulances accessible for operation is unacceptable.

3.2.2 Ambulance Offload Delays (AODs)

In Haliburton County, Ambulance Offload Delays (AODs) concerns are not as substantial as they are in major Ontario cities. They do, however, occur in the County hospital sites at a reduced level. It should be noted that not only have the number of AODs been rising over the last five years but the average time delay is also increasing quite considerably (almost 34% increase in the last 5 years).

Table #12: Ambulance Offload Delays (2017-2021)

2017-2021 Highest Number of Ambulance Offload Delays (at least 5)

Destination Location	# of Calls	Average of AOD (Sec)
Ross Memorial Lindsay	1674	3239.43
Peterborough Regional Health	1309	3186.55
HHH Haliburton	703	1739.47
HHH Minden	298	1766.98
Qunite Bancroft	122	2102.97
MAHC Huntsville District Memorial	77	2498.47
MAHC Bracebridge South Muskoka	39	2785.10
South Muskoka Memorial	33	2767.03
Extendicare Haliburton	16	1500.63
Orillia Soldiers Memorial	12	2680.50
South Lake Newmarket	6	3898.83
Hospital for Sick Children	5	7933.00
Total	**4294**	**2820.57**

2017 AOD Count	2017 Avg AOD (sec)
686	2345
2018 AOD Count	2018 Avg AOD (sec)
769	2518
2019 AOD Count	2019 Avg AOD (sec)
737	2707
2020 AOD Count	2020 Avg AOD (sec)
752	2710
2021 AOD Count	2021 Avg AOD (sec)
875	3133

The four-service deployment plan details the levels at which the services are willing to let the resources be depleted and indicates mitigation delay measures that should be applied in those cases. This is done with the Emergency Coverage Reinstatement table.

3.3 Lean Management Structure

Haliburton County Paramedic Service's (HCPS) management and administration staff is extremely lean when compared to their direct peer group (Kawartha Lakes, Peterborough, Northumberland, and Muskoka Paramedic Services). This leads to many challenges when ensuring that they are meeting their core responsibilities (see job description responsibilities found in the appendix of this document for chief, deputy chief operations, and deputy chief quality assurance). Attempting to be a frontline supervisor, on top of performing core job responsibilities, creates a situation where both functions can not be completed effectively. This results in an extra amount of time being spent on immediate needs, leaving some tasks incomplete which can contribute to future challenges.

3.3.1 Frontline Supervision within the Paramedic Service

Presently, the chief and the two deputies alternate in managing the supervision of frontline paramedics. This is being accomplished during work hours as well as after hours from their homes. This method of frontline supervision has proved ineffective, based on several established issues, including:

- Currently, management of deployment resources is reactive and not proactive.
    - Many times, issues occur without an attempt at a mitigation strategy because the senior department manager is undertaking other necessary job functions and the senior manager is alerted only after paramedic resources are depleted. (i.e., Lindsay CACC and the HHHS hospitals are moving interfacility patient transports).
- Limited time for effective communication with staff creating morale challenges as paramedics feel uninformed about service issues.
- Paramedic staff and outside agencies have noted concerns of inadequate management resources.

***Note:** Paramedic Service operation is a 24/7/365 operation. Work/life balance for the chief and two deputy chiefs is hampered due to being tied to the immediate supervision role after hours. Their direct peers in other counties are on call, but as a resource role since those departments have a frontline superintendent/supervisor to deal with immediate needs.*

3.3.2 Administration

Currently, many tasks are provided to the executive assistant; however, the most important assignment is paramedic scheduling. These administrative tasks can be exceptionally overwhelming from scheduling to compiling daily ADRS and iMedic data. Other administrative tasks include but are not limited to:

- Payroll
- Paramedic expense management (e.g., meal receipts)
- Reviewing departmental gas/credit card statements
- Maintaining HR files for paramedics as legislated (i.e., tracking driver licence or CPR expiry, flu/covid vaccination status etc.).
- Data entry for County reconciliation (i.e., vehicle fuel consumption).
- Creating processes for sudden needs (i.e., public mobile vaccine clinics, forms required by Community Paramedics patient interactions when challenges occurred with electronic patient form).

For a comprehensive list of the executive assistants responsibilities, please see the job description on the County's website. Tasks that are not deemed as time sensitive may go unmanaged when the executive assistant is absent. This leads to an intensifying workload upon return to the office.

3.3.3 Supervisor Rationale

The purpose of frontline supervision would be to manage the paramedic system in Haliburton County in real time. Dealing with leadership of the paramedics in both emergency and non-emergency situations creates relationships with the frontline workers. With dedicated frontline supervision, paramedics will feel that they have an advocate and decision support within the department.

A dedicated frontline supervisor would make a difference in the following areas:

- HCPS leader at dynamic scenes ensuring paramedic health and safety, assisting with paramedic needs to manage their patient(s), and paramedics' wellbeing post response.

- Awareness of stressful situations that are presented to paramedics and ensuring that staff are aware of mental wellness supports.

- Providing praise and gratitude to those performing above and beyond in real time, and conversely performing investigations and providing discipline where warranted.

- Providing Paramedic response when ambulances are delayed or not available.
- County representative at multi-agency scenes can provide a different perspective than front line paramedics at a major response; where liaising with others (police and fire) is essential to minimize negative impact on the community and its citizens.
- Handling deployment challenges prior to them occurring by monitoring paramedic deployment and regularly communicating with Lindsay CACC allows issues to be handled effectively and efficiently.
- Similarly, regular communication with both HHHS facilities will allow the supervisor to be aware of challenges before they occur. Regular visits to the emergency department will also build relationships with the lead nurses and physicians, which aids with any future aimed at mitigating the impact of interfacility transfers.
- Additionally better relationships and communication will allow the supervisor to adjust and:
    - ensure 9-1-1 emergency response,
    - reduce HCPS overtime by ensuring paramedics get off work on time, and
    - ensure paramedics are getting proper meal breaks.
- Maintaining paramedic certification allows the on-duty supervisor to be another medical response resource in times of depleted resources. This can reduce the number of delayed responses due to no ambulances immediately available and help improve response time performance.

Neighbouring paramedic services (City of Kawartha Lakes, Peterborough, and Northumberland Counties) follow a best practice standard and ensure one supervisor for up to 20 paramedics. Currently, Haliburton County has 56 paramedics on staff which should equate to employing three supervisors. The role of a paramedic supervisor (known as a superintendent in the Ontario paramedic environment) is what has already been stated above in addition to:

- Monitoring / mentoring paramedics in their work environment (quality assurance and quality improvement in real time i.e., patient's who call 9-1-1 and refuse to go to the hospital can be reviewed in real time to ensure the counties legal risk of leaving these patients has been greatly reduced)
- Providing a link (as well as a buffer) between the senior management team and the paramedics.

- Investigate complaints of the paramedics under their command immediately.

As noted previously, the lack of front-line supervision has been observed as challenging throughout the consultation process. The paramedic union also noted that they would welcome the addition of a superintendent. Everyone thrives on positive reinforcement and paramedics are not any different, the current management structure does not allow for the luxury of providing such.

There needs to be a clear division in role between front-line and administrative manager. The superintendent manages downwards to the paramedics. Their main focus is on the paramedics and providing all they need to perform effectively and efficiently. The chief and deputies should focus on the accountability, to Council and CAO, for the strategic direction of the community service. When the line between front line and senior managers becomes obscured, so does the delivery of the service.

Overall, the addition of a paramedic superintendent (supervisor) role would increase the confidence of the paramedics as well as increase effectiveness of the HCPS deployment plan. This addition would also decrease legal risk to the County, provide support for the paramedics as well as the paramedic system and provide the chief and deputies updates on work done by the frontline.

3.4 Aging Infrastructure

There are three major areas of infrastructure that need to be referred to in long term planning:

1. Stations
2. Vehicles
3. Equipment

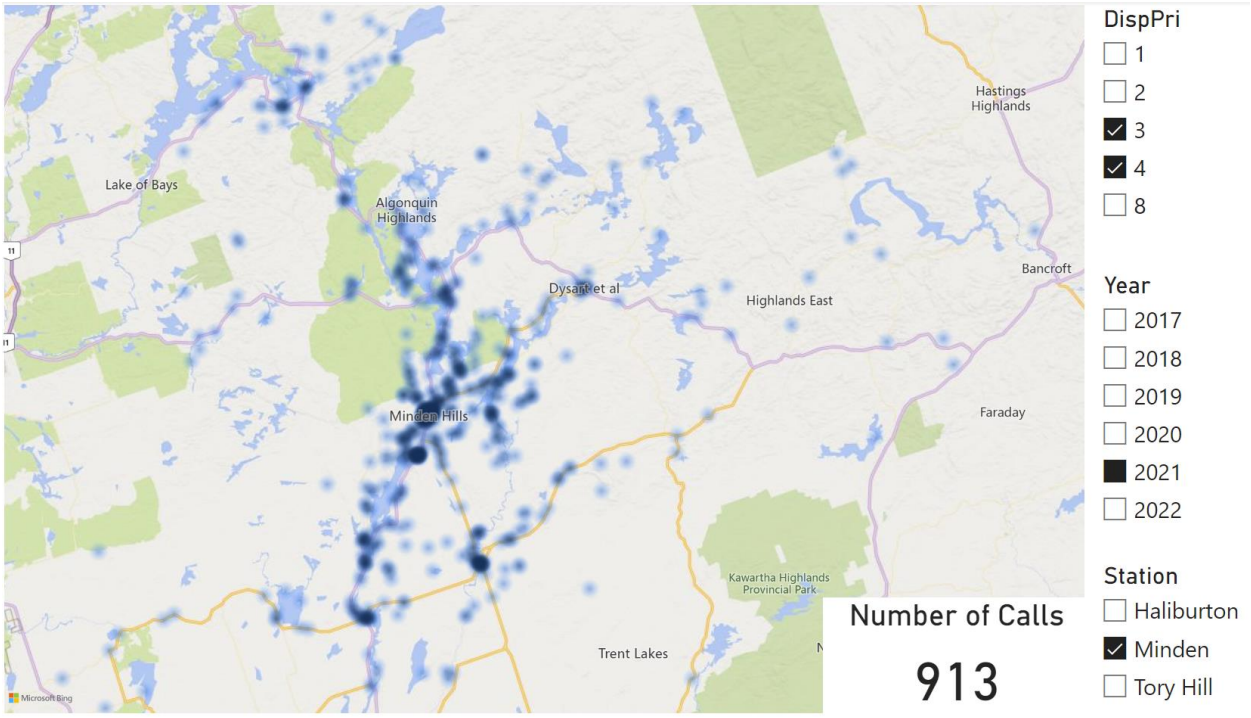
3.4.1. Stations

There are four stations that the paramedics work from, one of which is out of control of the County, as it is a municipal fire station in the community of Stanhope. Being the largest investment for any paramedic service, it is of utmost importance that stations are planned properly for both now and future considerations. Fundamentally, only the Minden station was built as such.

The Minden station is the most modern (2014) and has been customized specific areas, including purpose built changerooms and stock rooms. It is well positioned on Highway 35, which is a major route within the County. This location allows for quick deployment in any required direction. The garage bays are also of proper size for modern ambulances, which are much larger than ambulances of 20 years ago. Built for the use of a single deployed crew at any given time, the base functioned well, and space was utilized properly until recently. The Community Paramedic Program is operated out of the Minden base which has now made the accommodations tighter. The commander of community paramedicine has assumed the office in the Minden base, relegating the crews to performing paperwork in the crew lounge. With the additional vehicles of the Community Paramedicine Program, the garage bays have become overly crowded as staff squeeze SUVs in between ambulances to keep them out of the weather.

Minden Station had the least emergency community (non-hospital) responses, with 913 calls in 2021. As noted on the map below, most calls occurred along Highway 35 and over towards Haliburton along County Road 21. The location of the station is appropriate as it is located along a major roadway and, by the map below, appears central to the call volumes.

Figure #60 – Minden Station – Call Cluster (2021)

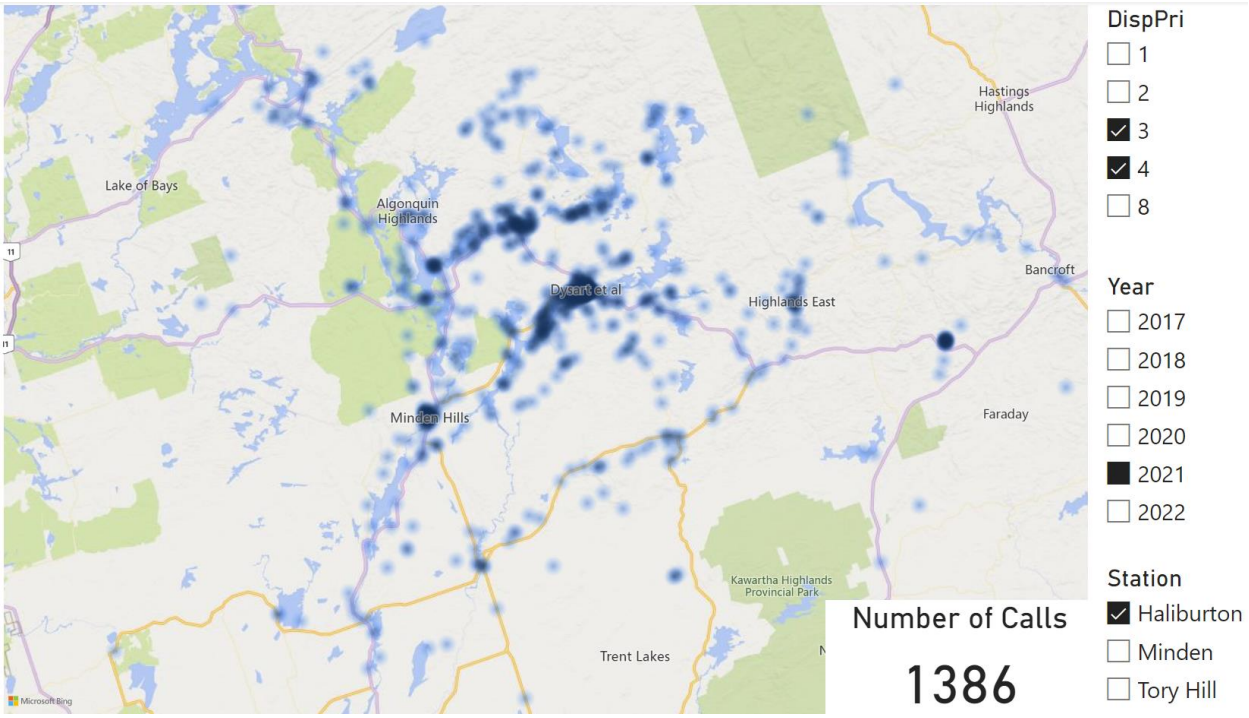


The Haliburton Paramedic Station is no longer adequate for current needs. This location provides the paramedic service headquarters and is also an area where management offices are stationed. There is a lack of usable space for storing files, ambulances, as well as equipment. There is not adequate separation between top level management and front-line staff, which results in a lack of privacy when dealing with human resource concerns or discipline. While it is appropriate to have management offices within the deployment station, there needs to be sufficient separation to allow for staff to unwind and decompress. Currently, there are many shared facilities including washrooms, kitchen and garage areas that do not allow for the proper division of staff.

The current location of the Haliburton station is in the southwest corner behind the arena and fire station. It is not centrally located within the community nor is egress to a major route to the other side of the community easily accessible. The Paramedics are required to travel through busier downtown traffic to access areas to the west of the community.

The Haliburton station was the busiest of the three stations in 2021 with 1386 community (non-hospital) calls. This station reach is quite a distance however, it must be noted that Haliburton is the only double deployed station on day shift, with a second ambulance located there from 11 :00h -23:00h (11:00 a.m. – 11:00 p.m.). This ambulance, if all others are not on calls will deploy to the community of Stanhope, and will also deploy to Minden or Tory Hill if their ambulance is deployed. Due to this, the map data for Haliburton resembles a County wide response.

Figure #61 – Haliburton Station - Call Cluster



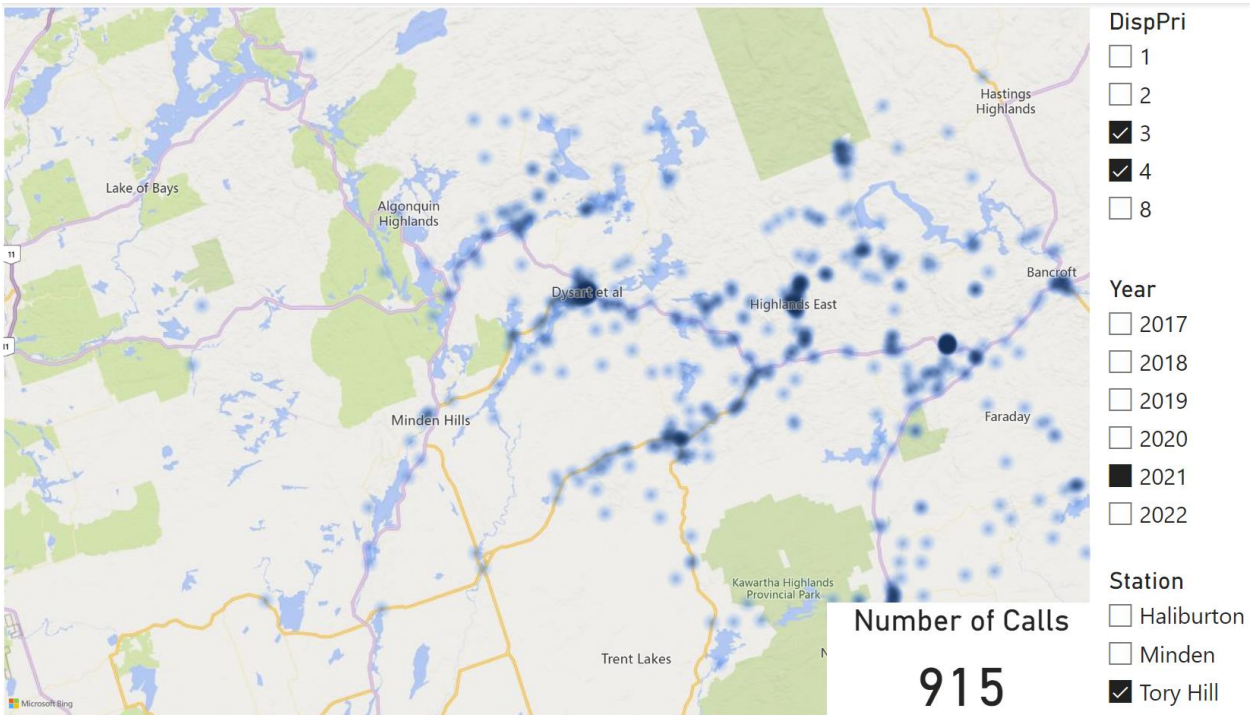
The Tory Hill station is a small station containing a single ambulance crew. 14 of 17 respondents on the Paramedic survey rated the Tory Hill station as either poor or very poor. The Tory Hill station responds to the second most calls in the County at 915. Within the last year, the Tory Hill location became permanently a 24-hour station meaning that staffing there is constant. The most noted concerns were regarding the lack of space, lack of privacy and poor ambulance radio reception. The garage space is small for the current ambulances. There is a lack of space within the base for their equipment and supplies which, some mentioned, have led to supply shortages.

With only one washroom for up to four paramedics, privacy is an issue at shift change. There is no dedicated space for study or continuing education which can lead to frustrations amongst partners. It is essential to understand that paramedics work 12 hour shifts together, often many days in a row. As in any other workplace, there are personality differences and habits between partners. It is important in a work environment to foster good working relationships which occasionally requires personal space. An absence of personal space within the Tory Hill station is a major concern. With the station now being staffed 24 hours a day, it is important to have an area where paramedics can decompress and relax between calls. It was observed that the only area to sit at the station are two office chairs. Most modern paramedic facilities note the importance of downtime due to the stress of the profession and support the frontline staff with accommodations that are appropriate. While a desk chair is appropriate for computer work

and continuing education, it is not the best choice for rest when all duties have been completed.

As would be expected, a lot of the calls for the Tory Hill station were in the eastern part of the County and within the larger community of Bancroft in neighbouring Hastings County.

Figure #62 – Tory Hill Station – Call Cluster



Lastly, paramedics will periodically be dispatched at the Stanhope Firehall. This is the posting location for the 11:00h – 23:00h (11:00 a.m. – 11:00 p.m.) if they are not in use and occurs only when the other three stations have ambulances located within. This location aims to serve the northwest portion of the County. Paramedics can use the facilities when not in use by firefighters and to use the washroom facilities when needed. 11 out of 17 respondents noted the location as poor or very poor. Main concerns brought forward are the uncertainty of availability due to firefighter usage, no dedicated indoor parking and poor CACC radio reception within the station. It is noted that some paramedic crews prefer to sit in the ambulance in the parking lot rather than wait in the station.

3.4.2. Vehicles

HCPS deploys seven ambulances and four emergency response vehicles (ERVs). When all ambulances are available two are deployed from Minden and Tory Hill allowing each shift (day shift / night shift) to utilize a separate vehicle with three being deployed from Haliburton (all

shifts). The practice of alternating vehicles between shifts is a practical one that allows for the cross shift to be ready even if their opposing shift is on a shift extension. If there is only one vehicle per station that unit would have to be deployed 24/7 which means if a crew is on a shift extension there would be no ambulance available for the new shift-start paramedics to deploy in. Currently, managers do their best to ensure a spare ambulance is available for all incoming shifts.

In todays post covid environment, there are great shortages in replacement parts as well as used and new vehicles. There is a great possibility that once an ambulance requires parts based on service needs or breakage, it may be out or service for a greater period of time.

Of the four ERVs, two are deployed within the Community Paramedic Program and the others are utilized by the deputy chiefs. The chief formally had a vehicle to utilize during his duties but it is now part of the community paramedic fleet. HCPS has ordered a fifth ERV to ensure adequate vehicles are available.

The vehicle fleet overall is lean. If staffing resources are increased additional vehicles will be required to ensure proper fleet deployment.

Nine of 17 paramedic survey respondents indicated they feel the vehicles and equipment is either poor or very poor with seven noting as either adequate or good. Most common complaints on vehicles related to older higher mileage vehicles that have visible signs of age (rust, worn out seats, etc.). Due to supply chain issues management has advised delays in obtaining new ambulances which has resulted in the current fleet being extended past its normal replacement plan.

3.4.3. Equipment

In the field of paramedicine there are constant advancements in equipment from both a patient needs and a paramedic safety perspective. Recent advancements in equipment include power stretchers, power extrication equipment, and advanced monitoring equipment. Currently, major equipment in use by the HCPS includes:

- Seven (7) Stryker Power Cots
- Ten (10) Physio-Control Lifepack15 defibrillator/monitors
- Automatic Vehicle Locator (AVL) Systems, located in each response vehicle.
- Panasonic Toughbook Computers

The current replacement plan is to replace as required. The AMP notes an amortization period of five years. Without a planned replacement cycle, the replacement costs associated with these major pieces of equipment can become extreme in any given year.

When it came to the equipment the paramedics use, the voluntary paramedic survey revealed a few common themes. Many respondents noted the lack of the power load stretcher system as a major deficiency within the service. While it is impossible for paramedic services to get to a zero-lift environment due to the nature of on scene response, the power load system works in tandem with the power lift stretchers to eliminate the heaviest of lifting that paramedics must endure. The power lift system lifts the stretcher up and down from the ground to transport height and the power load system attaches to the ambulances and takes all the weight of the patient and equipment while the wheel rise upon entering the vehicle. Many services throughout the province have adopted both the power lift and power load systems within their fleet and the paramedics in Haliburton are aware. There is much research on the effects of the full no lift stretcher system for paramedics with services detailing reductions in strain related WSIB injuries. HCPS may wish to consider adding power load stretcher systems as part of each new ambulance purchase.

Another area of note was lack of full functioning GPS mapping systems within the ambulances. Most services within the province have adopted alternate GPS systems to allow their paramedics to map the quickest route to an emergency call. HCPS should review the effectiveness of the current GPS mapping systems.

3.5 Growing and Aging Population

It has been abundantly clear for years that the population in Ontario is aging at a great rate. While the Province is bracing for the senior population to grow, Haliburton already has experienced an increase in the aged population. Additionally, the recent pandemic has altered the way to we work allowing for more opportunity to work from home which makes a more rural community like Haliburton a more desired location to live. This has been substantiated by the largest population increase in the province and fourth largest in the country was in Haliburton, within the last five years. This combination of growth and aging presents a unique challenge to the County when it comes to delivery of services, the least of which being healthcare.

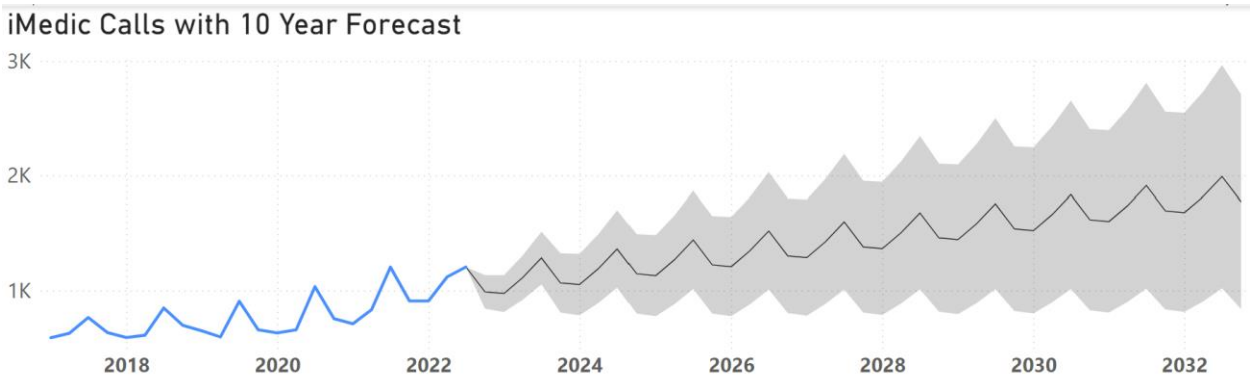
Planning for future services requires a combination of analysis of demographics and history.

3.5.1 Call Volume – Forecasting

Utilizing the forecasting function within Microsoft PowerBI based upon ADRS Emergency Response data, the following chart has been produced showing upper and lower bands as well

as anticipated growth in call volumes. This forecast only considers history and does not include the growing and aging demographics. It is evident that call volumes will continue to rise.

Figure #63 – Ten Year Forecast - iMedic Calls



3.5.2 Ontario Demographic Projections

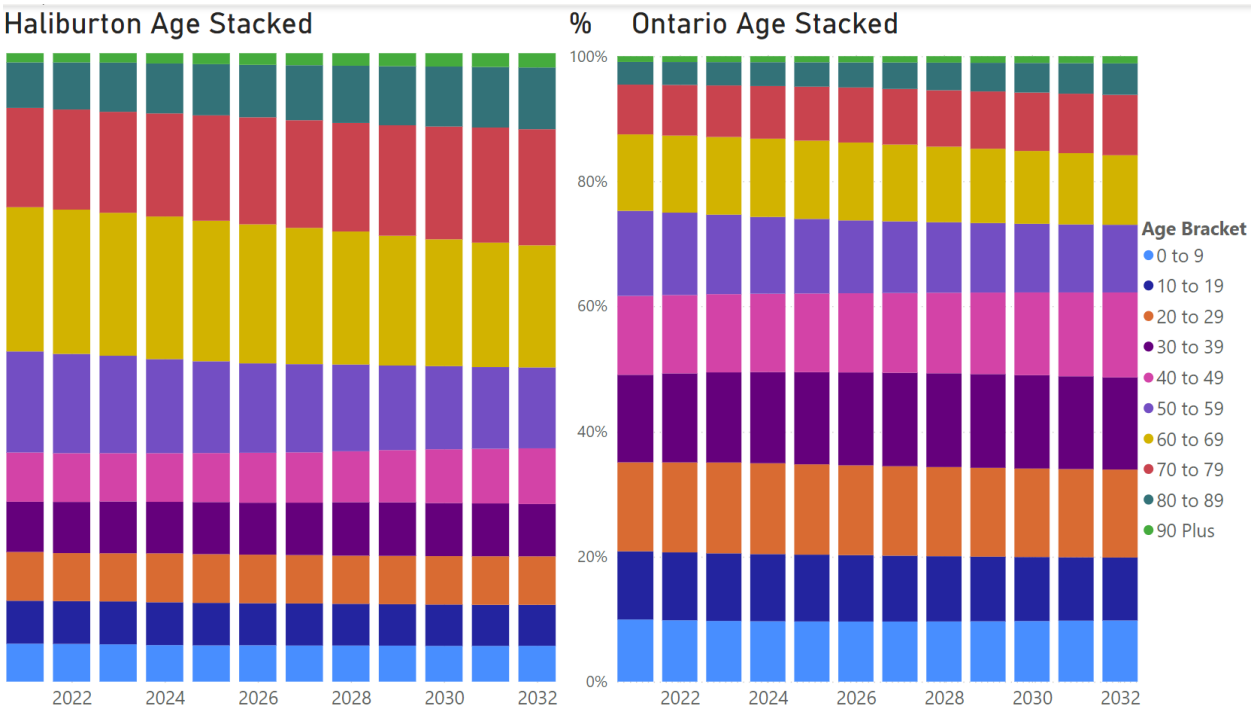
Looking at age demographics, the Ministry of Finance produces annual projections for population growth. The latest publication produced during the summer of 2022 highlighted the following:

- Ontario's population is projected to increase by 37.7%, or almost 5.6 million, over the next 25 years, from an estimated 14.8 million on July 1, 2021, to over 20.4 million by July 1, 2046.
- The number of seniors aged 65 and over is projected to increase significantly from 2.7 million, or 18.1% of population, in 2021 to 4.4 million, or 21.8%, by 2046. Rapid growth in the share and number of seniors will continue over the 2021–2031 period as the last cohorts of baby boomers turn age 65. After 2031, the growth in the number of seniors slows significantly.
- The number of Ontarians aged 15–64 is projected to increase from 9.9 million in 2021 to 12.9 million by 2046. This age group is projected to decline as a share of total population for most of the projection period, from 66.6% in 2021 to 63.2% by 2040, and to increase slowly thereafter to reach 63.3% by 2046. As baby boomers continue to turn age 65, the growth in population aged 15–64 slows until 2027–28 and then accelerates over the remainder of the projection period.
- In 2021, the share of seniors aged 65 and over in regional population ranged from a low of 15.9% in the GTA to a high of 22.9% in the Northeast. Among census divisions, it ranged from 14.1% in Peel to 35.7% in Haliburton.
- By 2046, the share of seniors in regions is projected to range from 19.7% in the GTA to 27.9% in the Northeast. Among census divisions, it is projected to range from 17.4% in Peel to 40.2% in Haliburton.

- In 2021, the highest share of children [aged 0-14] was found in Kenora at 21.5% and the lowest share in Haliburton at 9.4%. By 2046, Kenora is projected to still have the highest share of children at 19.4%, while Haliburton is projected to continue to have the lowest at 9.1%.
- The highest share of people aged 15–64 in 2021 was in Toronto (70.6%) while the lowest was in Haliburton (54.9%).[13]

Looking deeper at the statistics from the MOF, the breakdown of age over the next ten years within Haliburton. Ontario reveals a substantial difference in age composition. Haliburton is projected to continue this trend over the next ten years albeit with a lesser increase as compared to Ontario as a whole. Haliburton County currently has an aging population of 60 or older at 47.5% whereas the entire province was 24.8%. In 2032, it is projected that Haliburton will have 49.9% of its population aged 60, while Ontario will be at 27%.

Figure #64 – Population by Age – Haliburton vs. Ontario



As detailed previously in this report, older citizens utilize a unbalanced amount of healthcare. In Haliburton those over the age of 60 represent 47.5% of the population but they account for 68.2%% of ambulance calls. A greater review reveals that those aged 70 and above are projected to increase in overall population percentage in a large way from 24.5% in 2021 to

[13] Ontario Population Projections, Ontario.ca, accessed November 2022, https://www.ontario.ca/page/ontario-population-projections#:~:text=Ontario%E2%80%99s%20population%20is%20projected%20to%20increase%20by%2037.7,to%20over%2020.4%20million%20by%20July%201%2C%202046.

30.6% in 2032. Which indicates, those aged 70 and above utilized 51.4% of ambulance services in 2021.

Figure #65 – Percentage of Calls by Age

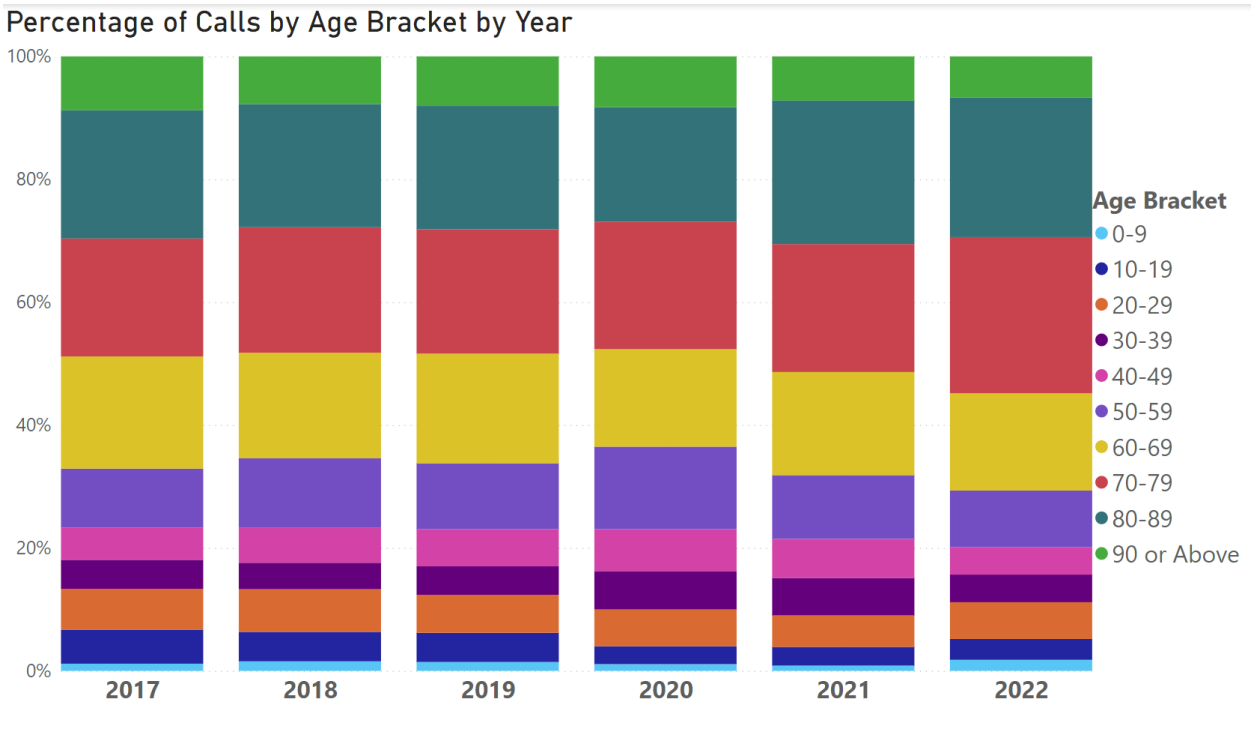
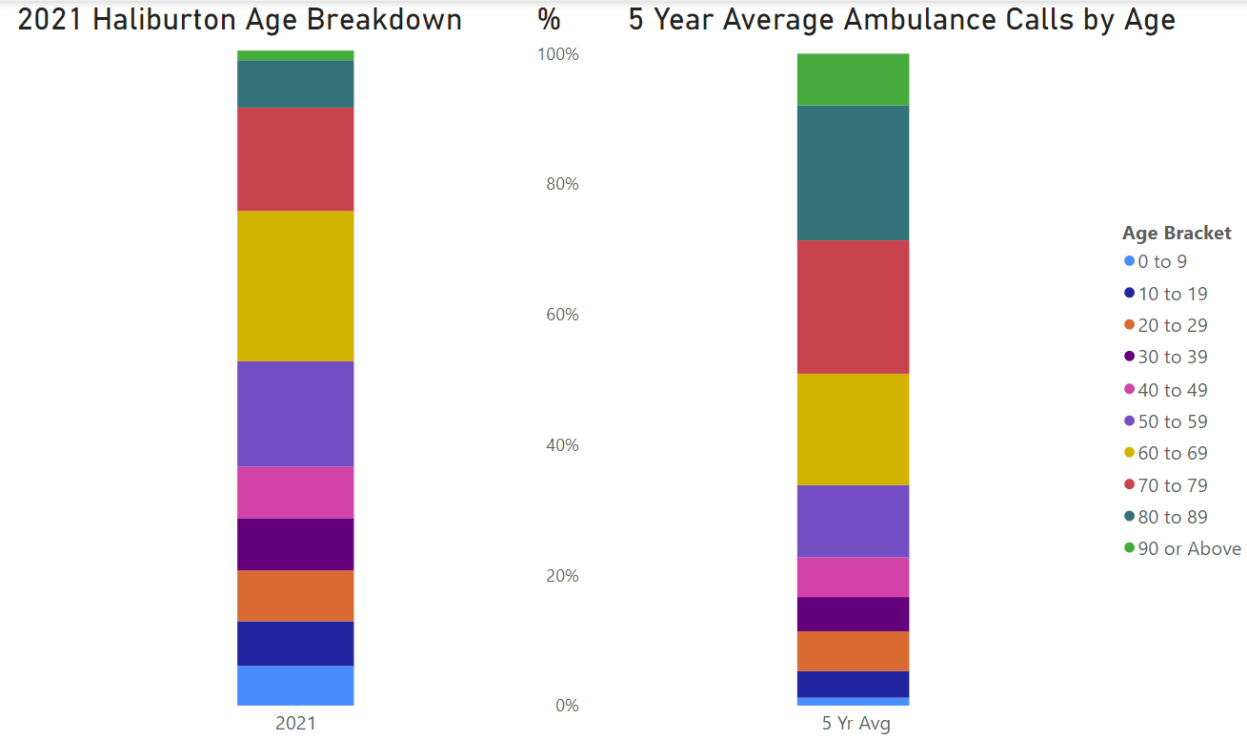


Figure #66 – Haliburton Age Breakdown vs Calls by Age



Understanding this, combined with MOF projections indicating the population will continue to age, it is essential that healthcare is ready to respond. Based upon current projections, and if ambulance utilization continues, there is the possibility of an increase in call volume of over 26% over the next ten years. That kind of percent increase will require increases in staffing and changes in deployment.

It must be reiterated that Haliburton had the highest percentage increase in population in Ontario since 2016. This was clearly not expected as the most recent MOF projection for Haliburton for 2021 was 19,719. The actual census data showed a population of 20,571. According to MOF projections Haliburton wound not reach that population until 2025. Utilizing data to determine whether this population shift is due to the recent pandemic or lifestyle changes within society will be key in establishing these statistics for formulation and preparation.

3.5.2 Being Prepared

Regardless of the whether projections are understated, accurate or overinflated, the County must be prepared. Following an Emergency Management philosophy can be beneficial.

The first step within the emergency management phase of a disaster is prevention and mitigation. Prevention of population growth would not only be ineffective but also detrimental to growth of a community. Therefore, mitigation strategies must be pursued. Many mitigation strategies, regarding the challenge of population and aging community, can be found within current programs and reports such as the Community Paramedic Program and the County Community Safety & Wellbeing Plan. Being part of different committees and community groups can play an essential part in being prepared. Paramedics are trained to respond. Response is the easiest part of this cycle for emergency services. A coordinated response is essential, and the relationships built during mitigation and preparedness efforts go a long way in creating an efficient and effective response. Recovery, for purposes of this master plan is a review and evaluation of efforts in the first three stages.

The benefits of the Community Paramedic Program have been noted previously within this report. It is important to continue to monitor its accomplishments and track its achievements.

The Community Safety & Wellbeing Plan has been noted previously within this report however it is essential that HCPS be highly involved in planning and responding within the guidelines of the CSWP. While HCPS is noted within the plan in relation to the Community Paramedic Program, the program can be more involved in the plan. Paramedics are experts in home medical care and are very accustomed to meeting a patient and their needs within a home setting. A community paramedic involvement within the CSWP benefits the community. There needs to be a greater coordination of services to ensure that efforts are not only in alignment with each other but also not duplicated.

The CSWP has 12 goals, with the Community Paramedic Program being directly noted goal 11 and 12.

Goal 1: Align policy priorities.

Align policy priorities and activities across existing programs and initiatives to the 2020-2029 City of Kawartha Lakes & the County of Haliburton Housing and Homelessness Plan

Goal 2: Develop wraparound support.

Develop wraparound support for community members struggling to access housing through greater service integration, communications, and outreach.

Goal 3: Support service provider collaboration.

Continue to support housing service provider collaboration and information sharing to improve wraparound services, system navigation, and greater recipient autonomy and agency.

Goal 4: Reduce barriers to employment access.

Reduce existing barriers to access, and advocate for improved employment opportunities for low-income groups.

Goal 5: Elevate service integration and information sharing.

Elevate and amplify existing service integration and information sharing efforts to alleviate poverty across key focus areas such as housing, transit, food, education, early learning, children's services, and energy. Poverty is an inherently interconnected issue that is both a cause and consequence of the other identified priority areas.

Goal 6: Innovate to address food insecurity.

Identify innovative opportunities to address food insecurity through closed loop referral processes.

Goal 7: Improve access to mental health and addiction support services.

Increase access to, and awareness of, mental health and addiction support services.

Goal 8: Co-design mental health and addiction services.

Co-design and develop experience-based mental health and addiction and substance use support services and programs.

Goal 9: Improve education on substance use and addiction.

Improve education, awareness, and information sharing on substance use and addiction, harm reduction, and mental health.

Goal 10: Increase awareness on benefits of health and physical activity.

Increase awareness on the importance of physical movement and increase access to active transportation as a central mode of mobility (where applicable).

Goal 11: Develop a Health Equity Working Group.

Develop a Health Equity Working Group to support equal access to health across priority groups such as low-income, BIPOC, LGBTQIA+, and Seniors.

Goal 12: Enhance Virtual Health and Mental Health Care.

Enhance and expand service scope of Virtual Care for health and mental health in the County.

Upon closer review of the CSWP, the Community Paramedic Program could be involved on a greater scale. In addition to goals 11 and 12, the community paramedics could also play a role in goals 3, 5, 6, 7, 8, 9 and 10 as many of these goals relate to referrals and education. There is a referral system already in place within the Community Paramedic Program and it would not be unconceivable that a paramedic could provide education to patients on healthy living. Playing a larger role in the CSWP would be a benefit to the community.

3.6 Paramedic Recruitment & Retention

3.6.1 Recruitment

Many hours are dedicated to paramedic recruitment for HCPS by the various management and administration teams. Frequently, many of the new paramedic recruits leave once they secure a hometown or GTA paramedic position. This cost to Haliburton County is significant in lost time and effort of its recruitment process. This also has an impact on the job satisfaction/stress level of those recruiting, educating, equipping, and preparing recruits for job readiness only to have those recruits move on to other services. Here are few ideas to consider in trying to stabilize the recruitment process:

- Career days at the local high school in the vocation of health care
    - i.e., consider having both Haliburton Highlands Hospital and Haliburton County Paramedic Service work together to showcase well paying careers for students that can be found in their home community.

- Approach local high school regarding first aid, CPR & AED education (Scouts Canada Ventures program) to develop interest in becoming a paramedic.
- Investigate possible involvement in high school health sciences courses.
- Consider high school coop placements that don't involve patient interactions.
- Bursary programs for high school students entering the paramedic program.
- Recruitment Fairs at local colleges that offer the paramedic program i.e., Fleming, Georgian, Durham etc.,
- Signing bonus for local applicants (local home-grown paramedics will more than likely stay).
- Consider a recruitment of seasoned GTA paramedics who are looking for a lifestyle change.

Recently, the province has introduced the Learn & Stay program for nursing, paramedic, and medical support careers in priority communities where staffing is a challenge. This program provides free tuition including fees, books, and other educational costs, in exchange for the participants agreeing to learn and work in the region where they study. HCPS should work closely with the eligible paramedic programs to promote the Learn & Stay program in Haliburton.

3.6.2 Retention

Paramedics are like any other employee in society today. They are looking for competitive compensation, work-life balance, supportive leadership, and an inclusive culture.

Paramedics choose their desired field to provide emergency medical care. If a significant portion of their work hours is performing interfacility transports or sitting on offload delay at a hospital, the paramedics are bound to feel that this is not the job they had envisioned. Pre-emptively informing paramedic candidates of the reality of the position will ensure you have an informed employee. This may work to entice more seasoned paramedics who are looking for a different work assignment or slower pace from urban services.

Recommendations

SECTION 4: RECOMMENDATIONS

The following recommendations present the best-case scenario to assist in moving forward. They are based upon best research on the challenges of the HCPS. While they present the best solutions for the service, they are not the only available solutions. These recommendations attempt to make the greatest impact in the most effective and efficient manner based upon industry standards. While they are presented in a numerical order, items may be skipped and the path may be altered depending on continued risk tolerance, desire to change and willingness to consider financial challenges. Some of the recommendations are part of a progression within a certain program and that must be understood so that the effectiveness of a certain change may not have full impact if steps are skipped.

***Note:** all cost estimates are based upon best current day information. Future costs would need to be estimated based upon County expectations.*

The following chart provides definitions and time frames for the recommendations chart to follow.

Recommendation	Time Frame	Definition
Immediate	(Present - 1 year)	These recommendations will have the most impactful outcome on the immediate future of Haliburton County Paramedic Service (HCPS). They are noted as immediate recommendations either because they can be implemented relatively easily or because they are so crucial to the continued operation of the Service. In cases of increased costs, there needs to be consideration for in year reconfiguration of budget lines or an analysis of potential cost savings in other areas due to the increased costs.
Short-Term	(1 - 3 years)	The following short-term recommendations can be achievable with a focused direction and support.

Recommendation	Time Frame	Definition
Mid-Term	(4 - 7 years)	When considering a ten-year plan there is great importance in reconciling progress to date. Yearly however at or around 5-year it is beneficial to review the validity of all the recommendations as long-term plans can require revision.
Long-Term	(8 - 10 years)	Long term recommendation are more than 7 years. These are either larger capital projects, difficult and comprehensive or require review later. Future predicting is very difficult when it comes to municipal and health services. However, there must be direction to assist and guide services in the right direction.

4.1 Immediate Recommendations (Present – 1 year)

IMMEDIATE (PRESENT – 1 YEAR)	
Recommendation #1	**#1 - Create an interfacility transfer working group. (In progress at time of release of this Master Plan)**
	Consisting of Haliburton County, HCPS and HHHS (at a minimum) a working group must be established with the aim of looking at solutions that meet the needs of all parties. The utilization of ambulances for interfacility transfers has been noted as a major challenge within this report. This working group will help establish clear guidelines to ensure the appropriate balance of resources to patient needs and ensure urgent interfacility transfers are truly code 3 CTAS 3 and are not compromising 9-1-1 paramedic response. Additionally, this group must be the leaders working towards a solution to the core need of diagnostic imaging. Through this working group the County should explore the requirement for a patient escort on interfacility transfers that are not directly admitted to other facilities. If not directly admitted during the transfer the patient remains the responsibility of Haliburton Highlands Health Service (HHHS). The receiving facility, where the patient is receiving treatment/diagnostic imaging, does not assume care and responsibility for the patient. This responsibility remains that of the sending facility and HCPS are assuming that responsibility in the absence of an escort. The County should consult with others and/or seek legal advice on the matter of liability when transporting in-patients of a hospital. HHHS needs to maintain responsibility for their patients and provide a qualified escort to accompany their patient for legal and medical reasons (i.e., proper care, pain management and medical liability). The Interfacility Working Group lobby the local MPP, MOHLTC and Ontario Health East for funding a solution to the number of interfacility transfers. The County is in a unique position in that there are no advanced diagnostic imaging services located within. There are different solutions to the volume of interfacility transfers (i.e., transfer vehicle, diagnostic imaging HHHS hospitals, etc.) however this is a provincial healthcare issue that is negatively affecting County Paramedic response to 9-1-1 calls. Any solution will require an investment of funding.

IMMEDIATE (PRESENT – 1 YEAR)

Benefits

Joint discussions along with an increase in communication on focused goals will lead to a greater understanding of all parties' requirements, which will work towards a united on a solution. Discussions will help assist the HHHS in the understanding that HCPS is an extension of their emergency department. HCPS primary purpose is for patients who are not yet in medical care as opposed to a transportation service for patients requiring diagnostic imaging in another facility.

The focus of the HCPS must be emergency first response. Emergency response is the primary legislative responsibility and is the service that is expected to be monitored with yearly reporting requirements. Creating a plan to minimize interfacility transportation out of the County will ensure more appropriate use of highly trained paramedic staffed ambulances.

Minimizing out of County interfacility transportation will improve response times to those patients in greatest need. Current response time goals have not been set at a very aggressive level that promotes active improvement, since the service is handcuffed by the volume of interfacility transfers which are booked by physicians as a part of their standard of care. Core goals of this working group from the County perspective must revolve around:

- Booking interfacility transfers that consider not only HHHS needs but respects HCPS 9-1-1 response.
- Assisting HHHS in lobbying Ontario Health East for funding for their unique interfacility requests due to not having onsite diagnostic imaging.
- Exploring the option of HHHS sending a qualified escort to manage their patient medical needs. There is a medical liability concern for the County. The patient is the responsibility of the hospital and County Paramedics are assuming direct care for long periods of time without the ability to properly care for the needs of the patient.
    - Additionally, with an escort in care of the patient, HCPS may be able to leave the patient and escort at the receiving facility therefore returning to Haliburton County if deployment is suffering. This safeguard is essential for improved deployment. The requirement for an escort falls in line with HCPS neighbours in the four County Deployment Plan and many other Services in the Province.

IMMEDIATE (PRESENT – 1 YEAR)

- The funding of non-urgent and repatriation interfacility transports from the Provincial Government instead of the County tax base.
    - Securing funding from the proper sources will ensure that current funding is being utilized appropriately. Currently the municipal tax base is funding and supplying the solution to a deficiency in local provincial healthcare. A collaborative approach ensures that all parties are fully aware of their responsibilities and the challenges of others. Using resources from Haliburton County, HCPS and HHHS to draft reports, make presentations and business cases to solve the funding issue (i.e., transfer ambulance or HHHS onsite diagnostic imaging) will help balance the workload ensure that all effected parties have a part in the solution.
- Collaboration on any required business cases leading towards obtaining Diagnostic Imaging within the County

Disadvantages

The disadvantages of starting a working group revolve around added workload for an already understaffed management team. Continuing under the current system is not sustainable.

Cost

Minimal - The cost is time of salaried employees working for the County and the Service.

Consequences of Inaction

Collaboration is often the best method of conflict resolution. Without the formation of a working group the matter of interfacility transfers will either continue to grow or one party will determine the future on their own. It is essential that this issue be resolved as quick as possible since a large proportion of current Paramedic "work" is not being devoted to community emergency medical response, which is the core responsibility of the Service. Doing nothing will just cause the situation to persist with a continual increase of interfacility transfer volumes furthering undue stress on HCPS management and paramedics

IMMEDIATE (PRESENT – 1 YEAR)

Recommendation #2

#2 – Re-evaluate/update HCPS deployment plan to support recommendations.

System Status Management (SSM) or dynamic deployment of paramedic resources is predicting call volumes based on historical data. Many urban paramedic systems use this method to move ambulances and paramedic response units (PRU) into locations where data would support the most likely location for next 9-1-1 call. Human behaviour in emergency medical care is predictable. An example would be the fluctuation of seasonal population. SSM may also be used by an on-duty superintendent to manage deployment and provide adequate rest time to paramedic crews who have been busy.

Concepts from SSM can be applied to, or should be re-evaluated regularly for effectiveness, a rural municipality like Haliburton County such as:

- Managing HHHS interfacility transfer volume, so they don't compromise 9-1-1 response.
- Ensuring that rested paramedic crews are assigned long distance diagnostic transfers (mitigating shift overrun to not only decrease overtime but to safeguard paramedic well being). Currently using 11-23 Ambulance
- Having HHHS provide a qualified escort to go with their patient's so HCPS ambulances can return to the County to provide emergency coverage.
- As ambulances are committed to 9-1-1 response, other ambulances / PRUs move to geographical locations based on the most likely next response.
- Increase deployment based on historical data that supports call volume increases i.e., summertime long weekends, community events like fairs / festivals, forecasted severe weather events, local hospital surge exceeding capacity etc.
- HCPS has been actively taking some of these measures. The deployment plan should be updated to reflect the needs of the community as well as the actions being taken and presented to Council for formal approval.

Benefits

Being proactive and updating the deployment plan to support modern approaches to paramedic service delivery will better serve the citizens and visitors of Haliburton County as well as the HCPS workforce.

IMMEDIATE (PRESENT – 1 YEAR)	
	Disadvantages
	There would be significant time required to updating the deployment plan, reviewing the circumstances continually and making decisions based on the information. The current management workload would prohibit this being used in a constant and timely manner.
	Cost
	The cost to revise the plan would be dedicated management time. Once implemented there may be deployment costs such as increased staffing for severe weather events.
	Consequences of Inaction
	Not updating the deployment plan in an everchanging environment adds to a stressed system potentially increasing CMEC-0 events and increases the workload on Paramedics during the predictable call volume increases. These could lead to delayed emergency response, staff burnout and consequences related to recruitment and retention.

IMMEDIATE (PRESENT – 1 YEAR)

Recommendation #3

#3 – Development of key performance indicators (KPIs).

The Ministry of Health requires certain benchmarking based on response times for various patient types. That information is currently being reported as legislatively required, but there are several other performance-based criteria that should be collected on a regular basis. Best practice would suggest reporting quarterly (at a minimum), as this information will help to direct community needs (preparedness), assess level of care (meeting patient needs), and identify stressors affecting HCPS deployment (9-1-1 vs. HHHS transfer volume). Regular reporting will help the County stay well-informed of any issues and enable the service to address emerging issues as they begin.

Paramedic services have an abundance of data; however, the issue is data processing and analysis. There are many software solutions available such as business intelligence systems, but they require some knowledge or training to build the appropriate dashboards. Once created these dashboards are often self completing and require only minimal maintenance to continue to produce accurate and poignant reports.

To start, analysis of patient CTAS can help provide a base of data upon which to build. Examples of some areas of focus utilizing CTAS upon Paramedic arrival include:

CTAS 1

a) Response time and location (public space resuscitation calls need to consider preparedness i.e., CPR/First Aid education, AED placement, naloxone kit [latter based on true need]).
b) Patient age and sex (age and sex helps focus people most likely to focus on for recognizing when to call 911).
c) Presenting cardiac rhythm (determines if defibrillation [key paramedic intervention] would be completed and an average should be kept of successful defibrillation patients).
d) Patient pulse at hospital (to be followed up for survival [emergency department vs discharge]).
e) Patient pre-existing disease (futile resuscitation i.e., age, presenting rhythm not appropriate for defibrillation and significant pre-existing disease).

IMMEDIATE (PRESENT – 1 YEAR)

CTAS 2

a) Response time and location (public space resuscitation calls need to consider preparedness i.e., CPR/First Aid education, AED placement, naloxone kit [latter based on true need]).
b) Patient age and sex (age and sex helps focus people most likely to focus on for recognizing when to call 9-1-1).
c) Patient presenting problem (drives paramedic care i.e., does it meet the patients needs?).
d) Patient condition upon arrival at hospital (similar cases (iv, did paramedic care make a difference in the patient's condition upon arrivals at hospital, public education campaign based on recognition of similar complaints i.e., water safety accidents etc.).

CTAS 3

Follow similar outline to CTAS 2. Patients over 65 who seem to have a mobility or chronic health issue should be referred for follow up by Community Paramedic Program to keep them out of the 9-1-1 / ambulance / hospital cycle.

CTAS 4 and CTAS 5

Consider referral or follow-up by Community Paramedic Program to find out needs of the patient and get them out of the 9-1-1/ ambulance / hospital cycle.

CMEC

In terms of deployment challenges tracking CMEC Zero is essential. Actively tracking the number of times, the county is at one or zero ambulances and correlating such with a reason i.e., 9-1-1 call volume, multi causality incident (MCI), allied agency scene (police or fire standby, hospital transfer volume or combination of a few listed items). This is difficult to do because no inherent ADRs nor iMedic method currently exists in the correlation and calculation of this data.

IMMEDIATE (PRESENT – 1 YEAR)

Hospital Challenges

In terms of hospital challenges tracking offload delays and details of all interfacility transfers (hospital name, transfer transport priority and reason) is important. Current data correlation exists within the Paramedic iMedic data. A business intelligence solution can pull this data automatically once set up and the information can be displayed on a dashboard as immediately as at time of call completion.

Benefits

The increased ability to track predict impending challenges will ensure that there are minimal surprises for the future. Staying on top of issues and being proactive instead of reactive is the greatest benefit of establishing KPIs. The ability to plan and advise the CAO and Council of current and future needs (i.e., expansion of paramedic care like some ACP procedures (i.e., pain relief) or a complete ACP program once a need is established. Focused community outreach and expansion of Community Paramedic Program based on true need).

Disadvantages

Although automated, they system will require administrative time to monitor and analyse.

Cost

Costs could be varied but staff time is critical to the success of an improved data program. This time will involve both training and research into developing appropriate KPIs for the County needs. There may be an upfront cost to software solutions (however the County already has access to business intelligence software), and developer time to create the proper ongoing KPIs.

Consequences of Inaction

Data is essential to the development of successful future solutions. Without an enhanced data program or KPIs it will be difficult to improve upon what is currently happening.

IMMEDIATE (PRESENT – 1 YEAR)	
Recommendation #4	**#4 - Become more involved with the county community safety & wellbeing plan. (In progress at time of release of this Master Plan)**
	Creation of a community safety and wellbeing plan (CSWP) is a legislated responsibility for each municipality. The four municipalities have deferred to the County for the coordination and creation of the CSWP. To meet the requirements of the CSWP, many stakeholders must be involved. The current CSWP refers to the Community Paramedic Program on two of 12 priorities however there is no direct paramedic service involvement on any CSWP committee or working group. HCPS should be more directly involved, and steps are currently being implemented to ensure this occurs.
	Benefits
	Becoming more involved on CSWP committees and working groups will allow the Plan to flourish. As noted previously collaboration is the key to success on any community plan. Working together the committees will have full knowledge of the capabilities and responsibilities of HCPS and especially the Community Paramedic Program. This will lead to better service to the community members in need and less duplication of effort. Additionally, having the addition of medical first responders working on the CSWP will provide a varied perspective which again can lead to better outcomes. Greater teamwork also works the other way in that the HCPS member will learn more about what other community services are capable of and available to its citizens.
	Disadvantages
	Committees and working groups that are too large can suffer from lengthy decision-making processes and longer meetings. Sometimes broad general groups can also lack in creativity due to the extremely high-level topics of discussion. It would be best to have smaller group that can identify true issues and action plans to deal with them.
	Cost
	Minimal - Costs would revolve around local travel. No accommodations should be required. The primary cost is time of salaried employees working for the County and the service. Many costs can be averted by utilizing online meetings with others however face to face interaction is essential at times.

IMMEDIATE (PRESENT – 1 YEAR)	
	Consequences of Inaction
	The absence of collaboration leads to assumptions. Also, a lack of communication can place unknown responsibility on different parties. Closed communication can promote ignorance and can lead to inefficient/ineffective solutions. When considering the needs of the community members it is of utmost importance that the best programs are produced that can positively affect the most.
Recommendation #5	**#5 – Expand the current annual report.**
	This annual review of data should drive community requirements/needs based on actual HCPS patient information not only for 9-1-1 (emergency) response, but also community paramedic (prevention/preparedness) programs aimed at frequent and low acuity users. The current annual report details high level information based primarily upon legislatively required metrics. An expanded report would aid not only the Service in assessing needs but will also aim to advise Council and the community at large on progress and enhancements in Service.
	Benefits
	• Exploring the possibility of increasing the level of emergency (9-1-1) care provided by the existing PCP Plus (IV) program based upon true patient need. For example, a review of potential need for enhanced pain management due to cases of traumatic injury and great travel distances within the County. • Assessing the merits of moving towards a full advanced care paramedic program based upon true local patient need from annual data. • Development of prevention/preparedness programs based on data collected from KPIs Examples include public AED placement, CPR/First Aid education in high-risk areas of the community, falls prevention for seniors at risk, water/ATV/snowmobile/helmet safety, etc. across the County. • Community Paramedic Program expansion based on community need from KPI data collected from patients with chronic conditions as well as frequent low acuity calls. The focus should be on improved management of these patient types to keep them out of the 9-1-1/ambulance/hospital cycle.

IMMEDIATE (PRESENT – 1 YEAR)	
	Disadvantages
	• Reporting must be done in a consistent fashion to lead to effective change, and it is hard to be consistent in an everchanging environment. • Changing how/what is reported requires education on new features which takes time. • Altering standard reporting should necessitate the needs to review past performance data and that will require time and effort
	Cost
	The cost is time of the senior management and administration team to collect, review and write a report on the findings. Implementing programs based on findings would cost money and need to have a business case that is supported by the budget process (capital or operational).
	Consequences of Inaction
	Doing nothing will lead to not meeting community needs and HCPS falling behind provincial counterparts.
Recommendation #6	#6 – Explore synergies on future capital expenditures.
	There can be success in joining in with other community organizations when it comes to capital expenditures such as buildings and equipment. While building stations is not being considered in the immediate stage, there is a need for more space. It would be advantageous to begin exploring potential possibilities of growth with other community organizations. Many municipalities have been successful in building joint/combined stations with police and fire services, community centres, low-income housing, and private commercial space. Exploratory discussions should take place with other groups to assess if there are similar needs for the future. Additionally, in the past there has been success in seeking standardized pricing for supplies and equipment. In the years post municipal download some larger Services were able to secure fixed pricing for supplies and vehicles for any other Service wishing to join in. It is worth the effort to have discussions amongst neighbours and colleagues to assess the opportunity for standardized pricing.

IMMEDIATE (PRESENT – 1 YEAR)	
	Benefits
	Combined Services facilities share costs both on a capital front and operationally. For example, some joint facilities have multi-use rooms such as kitchens or training/board rooms where all tenants can share. Doing this clearly reduces the overall footprint for any one entity and the use of shared spaces creates monetary efficiencies.
	Disadvantages
	Different funding streams can often make this complicated. Additionally, competing interests can sometimes present barriers to success.
	Cost (current day estimate)
	No costs to explore opportunities. Ultimately the goal is cost containment.
	Consequences of Inaction
	Greater costs going alone as opposed to working with others.

4.2 Short Term Achievable Recommendations (1-3 years)

The following short-term recommendations can be achievable with a focused direction and support.

SHORT TERM (1-3 YEARS)	
Recommendation #1	**#1 – Assist in the development of a business case for local diagnostic imaging. (Underway at time of release of report).**
	The best solution for the issue of high interfacility transfer volume is to remove the need for the transfer. In many cases these interfacility transfer occur due to the need for diagnostic imaging. All parties need to participate in the creation of a business case to seek the implementation and funding of a local diagnostic imaging solution, or more specifically a CT scanner. Having a CT Scanner at one HHHS site will allow the ability for the emergency room physician to have immediate access to a standard of care diagnostic tool.
	Benefits
	The benefits of a CT scanner within the County are not only related to HCPS and HHH. Local diagnostic imaging is beneficial to the patient who does not have to travel for essential testing. The establishment of more diagnostic imaging capabilities in the province will help to reduce wait times all around as more supply of services helps minimize the impact of demand. Benefits to HCPS include less interfacility transfers out of the County which positively affects deployment (as noted previously). Benefits to HHHS include more timely care due to more timely diagnostic capabilities. Having Diagnostic imaging available within the facility will also be advantageous to physicians which can help in recruitment and retention.
	Disadvantages
	The disadvantage to local diagnostic imaging is cost; both capital and operational. There are capital costs for the actual machine as well as the facility (expansion / renovation) to host the specialized equipment, and operational costs surrounding maintenance/staffing required to operate the machinery.

SHORT TERM (1-3 YEARS)	
	Cost
	No cost to the County as this is a provincial healthcare issue.
	Consequences of Inaction
	Deployment remains compromised. Patients must continue to travel outside the County for diagnostic imaging.
Recommendation #2	**#2 - Hire an administration assistant.**
	Currently HCPS has one executive assistant whose role is essential to the operations of the service. The list of duties of the current executive assistant is as follows: • Scheduling and backfilling of shifts as required using scheduling software. • Verify time sheets with schedule and submit to County Payroll Department on a bi-weekly basis. • Co-ordinate, complete, and monitor all vehicle related matters including license plate renewals, insurance permits, vehicle readiness, preventative maintenance schedule, all repairs, accident reports, monthly/quarterly reports as required by the Ministry, loss of equipment forms and vehicle check forms • Maintain an adequate supply of inventory and equipment for the vehicles and bases and advise the director when additional inventory is required. • Code and submit invoices to the treasurer for payment based on approved budget lines. • Prepare correspondence for signature by chief/director of deputy chiefs. • Attend as required, meetings for the purpose of recording minutes. • Filing of records and correspondence as required by the chief/director • Provide clerical support for the maintenance and updates to the County Emergency Plan. • Assist chief/director as required with public events.

SHORT TERM (1-3 YEARS)
• Assist deputy chief, quality assurance with clerical components of the quality assurance and health and safety responsibilities. • Maintain internal department personnel records and ensure relevant information copied to the human resources co-ordinator. • Assist the deputy chief, quality assurance with the documentation and upkeep of the Quality Assurance Program for the Public Access Defibrillator Program and personnel documentation. *The current executive assistant has seen an increase in workload with the creation of the Community Paramedic Program and associated administrative requirements.*
Benefits
Additional administrative support allows others to perform their responsibilities more effectively. Relieving the two deputy chiefs from administration responsibilities affords them more time to perform the necessary role of supervisor with less interruption during Monday – Friday office hours (splitting of the role between the two). Additional administration office hours will also improve data collection, interpretation, and presentation for both the Community Paramedic and traditional Paramedic programs. Paramedic services have robust data requirements both from a MOH and Internal reporting perspective. This additional support will in turn provide the chief and deputy chiefs with information to better direct the service's needs and inform the CAO and Council of challenges in a timely fashion. The hiring of an administrative assistant provides redundancy in the executive assistant position and allows for cross training of responsibilities. It can be said that taking vacation does not pay off when you are in a position with no coverage during times not at work. Having a second administrative support position helps ensure that there can always be someone in the office with that skill and knowledge during vacation and time off. Lastly, the hiring of additional administrative support will not only reduce the workload of the current executive assistant and management team but will also help the administrative responsibilities for the commander of clinical programs.

SHORT TERM (1-3 YEARS)	
	Disadvantages
	• Ongoing operational costs need to be realized including wages/benefits, office requirements (i.e., desk, computer, etc.), and office space. • Current headquarters has a lack of administrative space.
	Costs
	Capital • Computer Equipment • Office Space **Operational** Full Time Salary $65,000 + 30% Benefits Costs co-shared with MOHLTC EHS.
	Consequences of Inaction
	The current administrative team of HCPS will continue working status quo. Many of the other recommendations may be compromised due to lack of management / administrative capacity.
Recommendation #3	**#3 - Hire two full time front-line supervisors/superintendents.**
	Front line supervision is essential in emergency services. Generally, within Ontario, frontline supervisors in paramedic services are titled superintendents. While a paramedic superintendent is not always directly alongside their staff while they work, the nature of the job may involve responding to emergencies along, creating a greater than normal element of danger, health & safety concerns, legislative compliance and, critical decision making. It is essential to have some element of dedicated frontline supervision. The lack of dedicated frontline supervision has been noted on all fronts as one of the greatest challenges effecting the operations on HCPS.

SHORT TERM (1-3 YEARS)

Drawing upon job descriptions from other paramedic services across Ontario including neighbouring counties, a paramedic superintendent is generally responsible for oversight of the ongoing daily shift operations and deployment. They are to ensure safe, effective, efficient quality services are achieved in part by ensuring that structures, programs, systems, and processes comply with all requirements set out in legislation, policy and procedure, and standards for paramedic services.

They provide leadership and mentorship to front lines crews and will additionally perform administrative, logistical, and program tasks as required. Some level of dedicated frontline supervision is the standard within Ontario Paramedic Services. More specific job requirements could include:

- Conducting daily supervision of staff.
- Monitoring and ensuring paramedic compliance with Basic/Advanced Life Support Patient Care Standards; accomplished through direct observation and review of documentation & patient care on a shift-by-shift basis.
- Monitoring and ensuring paramedic compliance with all policies, procedures and regulations established by the County, the Paramedic Service, Ontario Ministry of Health and Long-Term Care, Regional Paramedic Program of Eastern Ontario and other various pieces of legislation that may relate to the paramedics' daily duties and obligations.
- Maintaining certification as a primary care paramedic to enable the ability to respond to calls when a delayed ambulance response is anticipated.
- Monitoring the central ambulance communication center (CACC) radio system to ensure overall effective deployment enabling the ability to respond to calls, assist crews and provide onsite supervision where required.
- Working cooperatively and effectively communicating with Lindsay Central CACC and Haliburton Highland Hospital (HHH) daily to ensure compliance of the established and approved Service deployment plan. This includes managing interfacility transfers that can compromise deployment.

SHORT TERM (1-3 YEARS)	
	• Protecting personal health and safety and that of others by adopting safe work practices and reporting and taking appropriate action with unsafe conditions. • Investigating accidents, WSIB claims, public complaints, etc. and providing written investigation reports to senior managers and County administration. • Assisting with the scheduling of paramedics on both short- and long-term timelines. • Conducting annual performance reviews and evaluations of staff, assisting with staff development, and delivering training programs to meet the educational requirements of the service/County. • Responding as designated site coordinator at multi-casualty incidents, acting as liaison between on scene paramedics, CACC, management and/or allied agencies. • Coordinating all aspects of supplies, fleet and equipment including ensuring distribution, preventative maintenance, inspections, repair of defective equipment and vehicles to ensure operational readiness and compliance with standards and health and safety legislation. • Conducting research and analysis as assigned. • Participating in the strategic and operational planning for the service, making recommendations for policies, procedures, and service improvements. • Promoting and assisting with Service/County communication plans, public relations activities, and community awareness programs. • Working as primary duty officer as required. • Maintaining a high level of confidentiality for the organization and its employees, as per the *Municipal Freedom of Information and Protection and Privacy Act (MFIPPA),* the *Ambulance Act*, the *Personal Health Information Privacy Act (PHIPA)*, the *Labour Relations Act*, and the Ontario Ministry of Health and Long-Term Care regulations.

SHORT TERM (1-3 YEARS)

- Making recommendations for improvements to the deployment plan.
- Listening and acting upon system feedback suggestions from paramedics.
- Collaborating in "people management" involving mentorship, coaching, and fostering a collective team approach to achieve optimal employee performance and satisfaction in addition to enhancing the overall profile of the service and County as a whole.
- Participating in committees and initiatives to promote a respectful working environment, fostering effective communication, and inspiring the delivery of high-quality service and teamwork with a focus on a consistent approach.

Benefits

The benefits of creating a frontline supervisor program are significant including, but not limited to:

- Improving frontline supervision as listed above.
- Providing for at least one medical response resource (superintendent paramedic response unit PRU) in the County when at CMEC 0.
- Removing the need for frontline on call for chief and deputies and improving their work/life balance.
- Ensuring the Service/County legislative and legal responsibilities.
- Managing hospital diagnostic transfers to guarantee resources for 9-1-1 ambulance/paramedic response.

Disadvantages

The disadvantages of any staffing increase are primarily cost related. These costs must be weighed against the benefits. Cost for a paramedic Superintendent must include office space, ERV, response equipment, training, uniforms, wages, and benefits.

SHORT TERM (1-3 YEARS)

Cost

Capital

- Emergency response vehicle cost $90,000 (based on present models used by HCPS – to be amortized over the life span of the vehicle according to the AMP to be under 6 years or 300,000km).
- Equipment for response vehicle $40,000 (non perishable to be amortized over item lifespan i.e., monitor / defibrillator, etc.).
- Office space, office equipment and computing devices $10,000.

Operational

- The salary of one full time paramedic superintendent would be approximately $98,000 + 30% benefits (would need to be evaluated by human resources as no current positions exists). Total cost approximately $255,000 annually.
- Uniform
- Costs co-shared with MOHLTC EHS.
- Annual costs to maintenance/insurance/fuel/repair costs are estimated to be in the range of $20,000-$22,000 per year.

Phased in Approach

To provide 24/7 superintendent coverage would require four full time staff. To reduce the immediate costs, it is recommended to hire two Superintendents. The mid-term (years 4-6) would see the hiring of one additional superintendents, and a fourth position in the long-term (years 7-10) to complete the 24/7 coverage.

Consequences of Inaction

The current administrative team of HCPS will continue working status quo. The managers will continue to work well beyond their normal workday and staff will continue to have a delayed response to critical issues. An effective means of providing extra paramedic response unit (PRU) will not be achieved. Issues with deployment will continue to be reviewed not in real time after the most beneficial results could be achieved.

SHORT TERM (1-3 YEARS)

Recommendation #4

#4 - Acting supervisor/superintendent program.

During full time Superintendent vacation, statutory holidays, and sick time the position must be maintained to ensure consistent leadership of the paramedics and the operations in which they work. This can be accomplished by either hiring part time superintendents or creating a unionized acting superintendent. Hiring part time superintendents typically involves the hiring of staff from another Service to work part time. This could include either unionized paramedics or management superintendents from other services. The more common approach however is to hire paramedics from within the Service to assume the role of superintendent when the full time superintendent is away from work. There would need to be consultation with the Union on this role. Regardless, once the superintendent program is instituted, there needs to be a full-time commitment to always maintain this position due to its overall reliance and importance.

Benefits

The benefits of creating a frontline supervisor program are immense and have been discussed previously. The benefits of the acting superintendent program revolve around continuity of the position.

Disadvantages

The disadvantages of any staffing increases are primarily cost related.

Cost

Capital

- None as the expenses are accounted for within the full-time program.

Operational

- $40,000 for vacation, statutory holiday and sick time backfill.
- Costs co-shared with MOHLTC EHS.

Consequences of Inaction

Not creating an acting supervisor program alongside the full-time program will result in inconsistency in span of control. HCPS paramedics, local police / fire services, CACC dispatchers, HHHS and neighbouring paramedic service superintendents require certainty of appropriate leadership in a continuum for HCPS.

SHORT TERM (1-3 YEARS)	
Recommendations #5	**#5 - Consider no longer certifying senior management.**
	Currently, the chief and deputy chiefs are certified as paramedics. While on the surface this appears to be a good idea, it places unneeded stress and extra requirements on the senior managers. The role of senior managers is to manage the big picture and direct operations. The chief is responsible to the CAO and County Council and should be concerned with maintaining budgets, operations, administration, and planning. MOHLTC through the base hospital maintains a standard that paramedics are required to assess and treat a certain number of patients annually. This is extremely difficult for the chief and deputy chief to do to their management focus and workload. Immediate life saving skills such as defibrillation and CPR and the administration of epinephrine in anaphylactic shock and narcan in opioid overdose should remain as part of the senior managers scope of practice. Equipment and medications can continue to be stocked in the managers ERVs and the base hospital can support these skills and ensure that these minimums are met with yearly training.
	Benefits
	Senior managers can focus on moving the service forward and the core requirements of their positions.
	Disadvantages
	Fewer certified Paramedics within the system although they do not respond to calls on a normal basis.
	Cost
	No costs
	Consequences of Inaction
	Continuing to have Senior Managers certified will continue the current workload and need to recertify.

SHORT TERM (1-3 YEARS)

Recommendation #6

#6 - Add another ambulance to deployment.

Add one 12-hour ambulance, 7 days a week with shift hours based around historical call patterns.

Benefits

- Increased emergency coverage for the County and in particular Algonquin Highlands.
- Reduced number of times emergency coverage is compromised when ambulances are outside of the County.
- Improved response times.
- Keeps HCPS resources inline with the increasing and aging population.

Disadvantages

Costs

Cost (current day estimate)

Capital

- One ambulance vehicle (amortized over vehicle life span) = $200,000
- Equipment for ambulance (non perishable amortized over items lifespan) i.e., monitor / defibrillator, stretcher, lifting tools etc. $50,000.

Operational

- Four paramedic salaries and benefits based on a 42 - hour work week equates to approximately $500,000 (inclusive of benefits).
- Costs for part-time replacement for time off and training.
- Uniforms and safety gear.
- Costs co-shared with MOHLTC EHS.

Consequences of Inaction

Failure to maintain pace with demands on ambulance deployment, allowing 9-1-1 response times to increase.

SHORT TERM (1-3 YEARS)

Recommendation #7

#7 - Evaluate and plan for the future of the community paramedic program.

The present Haliburton County Community Paramedic Program was created to assist underserviced frail and geographically isolated seniors (rural and without transportation). Community paramedics are part of the "Geriatric Assessment and Integration Network (GAIN)'. Funding for this initiative comes from two separate sources: the Ministry of Health and Long-Term Care as well as Ontario Health East (formerly the Central East LHIN).

One of the greatest features of Ontario Community Paramedic Programs are their ability to focus on the specific needs of the municipalities they serve, typically with an end goal of reducing needless 9-1-1 medical calls. This in turn should aid in the overcrowding of Emergency Departments and Hospitals. In Haliburton County, the focus of the Community Paramedic program is on frail elderly, chronic illness, and isolation from continuing health care. Other municipalities may have a focus on homelessness or opioid overdose prevention. This creates many questions as to various focuses and funding for the future due to vastly diffident Ontario models.

It is recommended that Haliburton County defines what it is they want their Community Paramedic program to be and where it should expand. Once defined and documented information gathering, and reporting must focus on the defined goals. There needs to be the inclusion of benchmarking and key performance indicators (KPIs) as well so evidence of program worth can be easily realized.

Benefits

Working with other Haliburton County health care and social service agencies, a focus to manage community healthcare and mental health outreach programs can be sought and completed collaboratively (i.e., reducing duplication). This can also be accomplished through involvement in the Community Safety & Wellbeing Plan.
Seniors are staying at home longer and have a reduced demand on the hospital and long-term care services.

SHORT TERM (1-3 YEARS)	
	Disadvantages
	• The Central Ambulance Communication Center (CACC) is not set up to divert 9-1-1 calls that are not urgent to the Community Paramedic Program. • Permanent funding for the Community Paramedic Programs around the Province is uncertain. The importance and benefits of any provincially funded program must continually be promoted.
	Cost
	Presently Community Paramedic Programs are funded 100% by provincial health care sources and this must be maintained as health care is a provincial responsibility.
	Consequences of Inaction
	Without long-term program focus and funding, the Community Paramedic Program could be jeopardized.
Recommendation #8	**#8 - Perform detailed facility needs analysis.**
	As noted within the Asset Management Plan, the County is planning on engaging a consultant to review County owned facilities. This is to include a needs analysis along with assessments on valuation and replacement costs. A detailed facility needs analysis will assist the County in assessing current and future needs when it comes to Paramedic stations. HCPS has outgrown the Haliburton station and will require a new headquarters facility. Further, HCPS needs to be considering the addition of a paramedic station in Algonquin Highlands. Identifying proper sizing for management space, community paramedicine operations, crew areas, equipment rooms, and maintenance facilities will drive the new headquarter requirements.

SHORT TERM (1-3 YEARS)

In paramedic station design there has been increased focus on the prevention of contagious diseases including negative pressure rooms/garages and enhanced filtration systems. Any facility needs analysis should also include considerations for AODA.

New builds will often have a focus on reduced carbon footprints and green technology.

Benefits

- Identifies true requirements and needs and prioritizes them appropriately.
- Sets goals for future asset development

Disadvantages

Costs

Cost

No costs estimated.

Consequences of Inaction

Overcrowding will be compounded as the service grows to meet the needs of the community.

4.3 Mid-Term Recommendations (4-6 years)

MID TERM RECOMMENDATIONS (4-6 YRS)	
Recommendation #1	# 1 - Hire a third superintendent.
	The progress towards 100% full time supervision (24/7) can be instituted slowly after the first 2 are hired. Hiring a third Superintendent will greatly expand the hours of on-site coverage.
	Benefits
	All the benefits listed in the first Superintendent recommendation only with more hours thus consistency.
	Disadvantages
	Costs
	Cost
	Capital • No cost - the first Superintendent recommendation involved the purchase of a response vehicle. Operational • The salary of one full time Paramedic Superintendent would be approximately $98,000 + 30% Benefits. • Uniform • Costs co-shared with MOHLTC EHS.
	Consequences of Inaction
	No progress towards full time frontline supervision.

MID TERM RECOMMENDATIONS (4-6 YRS)	
Recommendation #2	**#2 - Add power load to all new ambulance purchases.**
	As paramedic services evolve the health & safety of paramedics is of critical. Over the years, improvements to equipment continue and one of the most beneficial improvements ever is the introduction of power equipment that takes the strain of lifting away from the paramedics. Stretchers are used on nearly every patient call and within the last ten years power stretchers have become the standard for equipment. Many reports have been made on the benefits of these stretchers with a documented decrease in work-related injuries. HCPS utilizes power stretchers but there is a second component to a "zero" lift system and that is a power "load" system. While the current stretchers operate up and down by battery power, without a system to take the weight of the patient and stretcher while loading in, the Paramedic still needs to bear that weight while rolling the stretcher in. Many Services have utilized the full power lift/load system with success. Adding the cost of the power load system, which is mounted within the ambulance, to the cost of all new ambulances allows this improvement to made through attrition over time. Additionally, the power load system can last the lifespan of two ambulances ensuring all future purchases adhere to the requirement for a power load system can reduce costs.
	Benefits
	The core benefit to adding the power load component is to maintain a low rate of paramedic injuries. Adding this component to power equipment is part of the evolution in the care of the employee's wellbeing. Adding the power load component to all new ambulance purchases allows the capital purchase to align with the largest purchase made on a regular basis and budgets can be adjusted to reflect such. Understanding that the power load system can span multiple vehicle lifespans the added cost to the ambulances will only be once every couple purchase cycles.
	Disadvantages
	Added costs, however many services have pointed to Paramedic injury cost avoidance to make this purchase justifiable.

MID TERM RECOMMENDATIONS (4-6 YRS)	
	Cost
	Capital • $36,000 (7-year life span) added to each new ambulance purchase.
Recommendation #3	**#3 - New headquarters in Haliburton.**
	The current paramedic base and headquarters in Haliburton no longer meets the needs of the HCPS. There is inadequate garage space for the fleet, a lack of administrative space for the management team, and the paramedic crew space does not meet their current requirements. Much needed increases for an executive assistant, superintendents and dedicated Community Paramedic Program creates further space challenges. A new station would appropriately house a response station, central warehouse for equipment/supplies, community paramedic offices and management offices. Collaborating with other community groups and allied agencies including other county departments, could be explored as part of a multi-partnered project.
	Benefits
	• Adequate space to meet the current and future demands. • Modern health & safety enhancements. • Reduced carbon footprint and green technology.
	Disadvantages
	Costs
	Cost
	Unknown due to needs of the facility and the increasing price to build commercially per square foot.

MID TERM RECOMMENDATIONS (4-6 YRS)	
	Consequences of Inaction
	Current facilities are overextended. Growing demands will continue to put pressure on the current facilities.
Recommendation #4	**#4 - Assess the need for a dedicated resource in Algonquin Highlands.**
	In the northwest area of the County, there is currently a Paramedic post in the community of Stanhope. This location is the last one provided with direct coverage and that only occurs when all four ambulances on day shift are available and not on calls. As this is a fire station the crews are given access to use the facilities. It is reported that frequently the paramedics remain in the ambulance and only use the fire station for washroom facilities. Over the course of the last 3 years 7% of HCPS 9-1-1 community calls (not hospital interfacility transfers) came from Algonquin Highlands. It is important to note that the concept of "seamless coverage" still exists in Ontario and that means that there are no borders when it comes to paramedic services. The closest most appropriate ambulance will always be dispatched to the emergency call. That said, reviewing all 9-1-1 calls within Haliburton County (including other county paramedic services), Algonquin Highlands accounts for 9.7% of calls. That difference equates to approximately 34% of calls in Algonquin Highlands being serviced by other Paramedic Services. With a growing and aging population, the demand for paramedic service will increase in this area. Based on call trends HCPS should analyse call data to ensure the area is receiving appropriate coverage.
	Benefits
	Improve response times within Algonquin Highlands and the County.
	Disadvantages
	• Costs • Potential requirement for a paramedic station.

MID TERM RECOMMENDATIONS (4-6 YRS)

Cost

Capital

- One ambulance vehicle (amortized over vehicle life span) = $200,000
- Equipment for ambulance (non perishable amortized over items lifespan) i.e., monitor / defibrillator, stretcher, lifting tools etc. $50,000.
- Rental or construction of a paramedic station (no cost estimate).

Operational

- One 12-hour shift equates to four paramedic salaries and benefits based on a 42 - hour work week approximately $500,000 (inclusive of benefits) for four full time Paramedics.
- Uniforms and safety gear.
- Costs co-shared with MOHLTC EHS.

Consequences of Inaction

- Reliance of other Services to provide response in the northern area of the County will continue.
- Failure to maintain pace with demands on ambulance deployment, allowing 9-1-1 response times to increase.

Recommendation #5

#5 - Assess progress on the master plan and re-evaluate where necessary.

It is of utmost importance to assess progress on any guiding document and this Master Plan requires attention. Instituting the recommendations earlier in this timeline for enhanced systems and programs will allow for faster and simpler assessment of needs going forward. Any long-term plan requires regular updating and doing so at the mid point of the ten-year plan is prudent.

MID TERM RECOMMENDATIONS (4-6 YRS)	
	Benefits
	Allows for measurement of successes of previously implemented recommendations and assesses whether longer term recommendations remain valid. In the ever-evolving world of healthcare it is important to stay on top of issues and trends and doing so as recommended and assessing at the mid point will ensure that efforts are placed appropriately.
	Disadvantages
	It takes time and effort to reassess and re-evaluate what has already been stated. Taking a deep look at performance can yield unexpected results both positive and negative. Negative outcomes must be rectified.
	Cost
	If a review is completed internally the only costs would be in staff time and effort. Hiring external sources could require an RFP and unknown amount of funding.
	Consequences of Inaction
	Not stopping to review past performance and future goals that were established years earlier will not allow the Master Plan to address the real needs of the communities served.

4.4 Long-Term Recommendations (7 – 10 years)

LONG-TERM (7-10 YRS)	
Recommendation #1	#1 - Hire a fourth superintendent.
	The progress towards 100% full time supervision (24/7) can be instituted slowly after the first two are hired. Hiring a fourth superintendent will greatly expand the hours of on-site coverage.
	Benefits
	All the benefits listed in the first Superintendent recommendation only with more hours thus consistency.
	Disadvantages
	Costs.
	Cost
	Capital • None, as the first Superintendent recommendation involved the purchase of a response vehicle. Operational • The salary of one full time Paramedic Superintendent would be approximately $98,000 + 30% Benefits (would need to be evaluated by Human Resources as no current positions exists). • Uniform • Costs co-shared with MOHLTC EHS.
	Consequences of Inaction
	No progress towards full time frontline supervision.

Appendices

Appendix 'A' – Haliburton Paramedic Survey
Appendix 'B' – Haliburton Paramedic Deployment Plan
Appendix 'C' – Paramedic Station Reviews

Appendix 'A'

Haliburton Paramedic Survey

APPENDIX 'A': HCPS SURVEY QUESTIONS

To provide clarification of any challenges and gratifications within the HCPS a recent survey was sent out and completed via SurveyMonkey. This survey was released on November 04, 2022 and was closed on December 1, 2022. The survey was completed anonymously and had a completion rate of 88%. The following questions were presented.

Tell us what HCPS currently excels at?

1. Tell us a few points where you feel improvement is required?
2. Does your present deployment plan work? (good points / challenges)
3. Supervision:
    - does it presently meet the needs of the paramedics and the EMS system?
    - What would you like to see in the future?
4. Does the present Paramedic workforce meet the needs of your patients?

- i.e., response time, patient presentation for CTAS 1-5 transports?

5. Community paramedic program:

- Define the role?
- Does it meet the needs of the community?
- Future role?

6. Haliburton Highlands Hospital (HHH) - Minden and Haliburton Campus:

- How is the relationship between the paramedics and the medical staff?
- How is the management relationship between HHH & HCPS?
- HHH challenges to HCPS?

7. What s the HCPS relationship like with Lindsay Central Ambulance Communication?
8. Does the present CACC dispatch algorithm (priority card index) meet your community needs?
9. Suggest changes for CACC in the future?

10. HCPS and Central East Prehospital Centre (CEPCP) education:

    - does it meet your needs today?

    - ideas for the future?

11. CEPCP medical direction.

- Does it meet your patient needs?
- Ideas for the future?

12. Does HCPS infrastructure (buildings) meet the paramedic needs today?

    - List each station separately.

13. Does HCPS vehicles (ERU / ambulance) & equipment meet the paramedic needs?

    - Suggest changes required for future.

    14. Does your management / administration team meet the paramedic needs?

    - Please expand on both positive and negative answers

    15. Paramedic well being and mental health programs:

    - What exists today?
    - What would you like to see in the future?

Appendix 'B'

Haliburton Paramedic Deployment Plan

Deployment Plan

For

Haliburton County Paramedic Service

Version 2022-Fall

Table of Contents

Table of Contents

Deployment Plan
For Haliburton County Paramedic Service

Deployment Plan
For Haliburton County Paramedic Service

PURPOSE

It is the intention of the above noted Land Ambulance Service providers to incorporate certain policies that provide rapid out of hospital care to citizens in need of medical care and to ensure a more effective and efficient delivery of service within the Lindsay Central Ambulance Communications Centre (CACC) catchment area.

This plan will permit the necessary latitude to the Communications Officers in order to ensure balanced emergency coverage accordingly with the available resources and applicable legislation.

The Deployment Plan is a guide and our Manager on Call can override this document as long as it follows current legislation from the MOH. CACC Supervisors and ACOs must realize that potentially unforeseen issues could arise, causing our Manager on Call to alter the written plan based on their experience, knowledge and consultation with Senior Paramedic Service Command. In other words, our Manager on Call is in charge of the Deployment Plan.

Further to the above statement, a working on-scene Manager on Call (regardless of UTM) is responsible for Paramedic Command until the UTM with the emergency response Manager on Call arrives on scene and assumes Command.

Deployment Plan
For Haliburton County Paramedic Service

ADMINISTRATION

Haliburton County Administration Office **(705) 457-1616**

Amy Brohm, Executive Assistant

Tim Waite, Chief/Director Cell: (705) 457-8728

Jim Young, Deputy Chief/Operations Cell: (705) 457-0802

David Dasti Deputy Chief/QA & Education Cell: (705) 457-0248

Chris Parish Commander Clinical Programs Cell: (705) 935-1222

Fax # 705-457-1203

Haliburton Base **(705) 457-2181**
Minden Base **(705) 286-2424**
Tory Hill Base **(705) 448-3472**
Community Paramedic Desk **1(833)809 0440**
(705)809-0440

Manager on Call: 1-866-749-6428

STAFFING LEVELS & SHIFT PATTERNS

Base	Staffing Pattern	Scheduling
Haliburton 709-00	1 crew 24/7	08:00-20:00-08:00
Haliburton 709-00	1 crew 12/7	11:00-23:00
Tory Hill 709-02	1 crew 24/7	07:00-19:00-07:00
Minden 709-01	1 crew 24/7	08:00-20:00

EMERGENCY COVERAGE REINSTATEMENT

"Critical – Minimum Emergency Coverage" (C-MEC) is a trigger that recognizes that the level of available ambulance resources cannot sustain/maintain the EMS service's "Minimum Emergency Coverage" level. The Paramedic provider's deployment plan strategy for C-MEC is to delay response to **Code 3** calls except for Haliburton who do not delay response to calls in the community.

Critical-Minimum Emergency Coverage **(C-MEC)** and Response Delays for:

Service	CMEC Vehicle Count	Community Delay	Inter facility Transfer	Other UTM
HALIBURTON	**1 vehicle** (07:00-23:00) **0 vehicle** (2300-0700)	**No delay**	Up to 60 Minutes	60 Minutes
CITY OF KAWARTHA LAKES	**2** Vehicles (after 21:00 to 07:00 drops to 0)	30 MINUTES	Up to 60 Minutes	60 Minutes
NORTHUMBERLAND	3 VEHICLES	30 Minutes	Up to 60 Minutes	60 minutes
PETERBOROUGH	2 VEHICLES	30 MINUTES	Up to 60 Minutes	60 Minutes

This criteria applies at all times, regardless of Service status (C-MEC / no C-MEC)

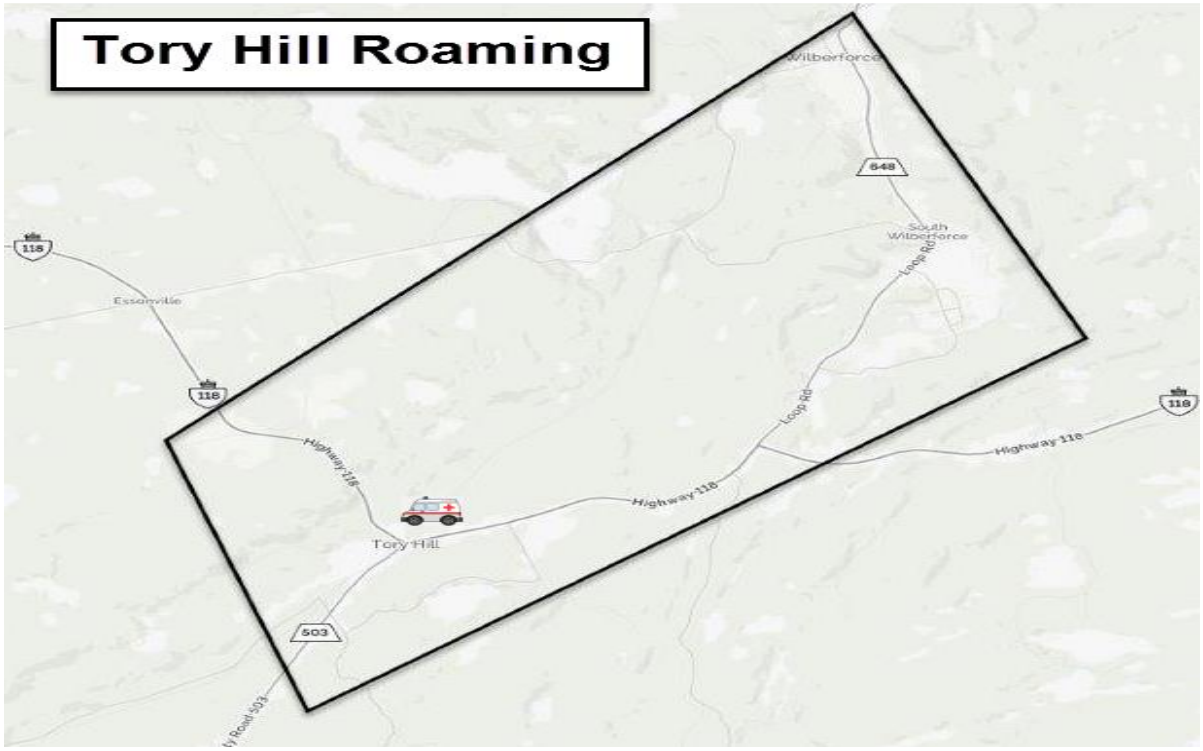
Code 3 CACC assignments are the responsibility of the municipal paramedic service in which the call originates. Neighboring paramedic ambulances in another county or region will only be assigned by CACC to a Code 3 if the Code 3 hold time has been exceeded.

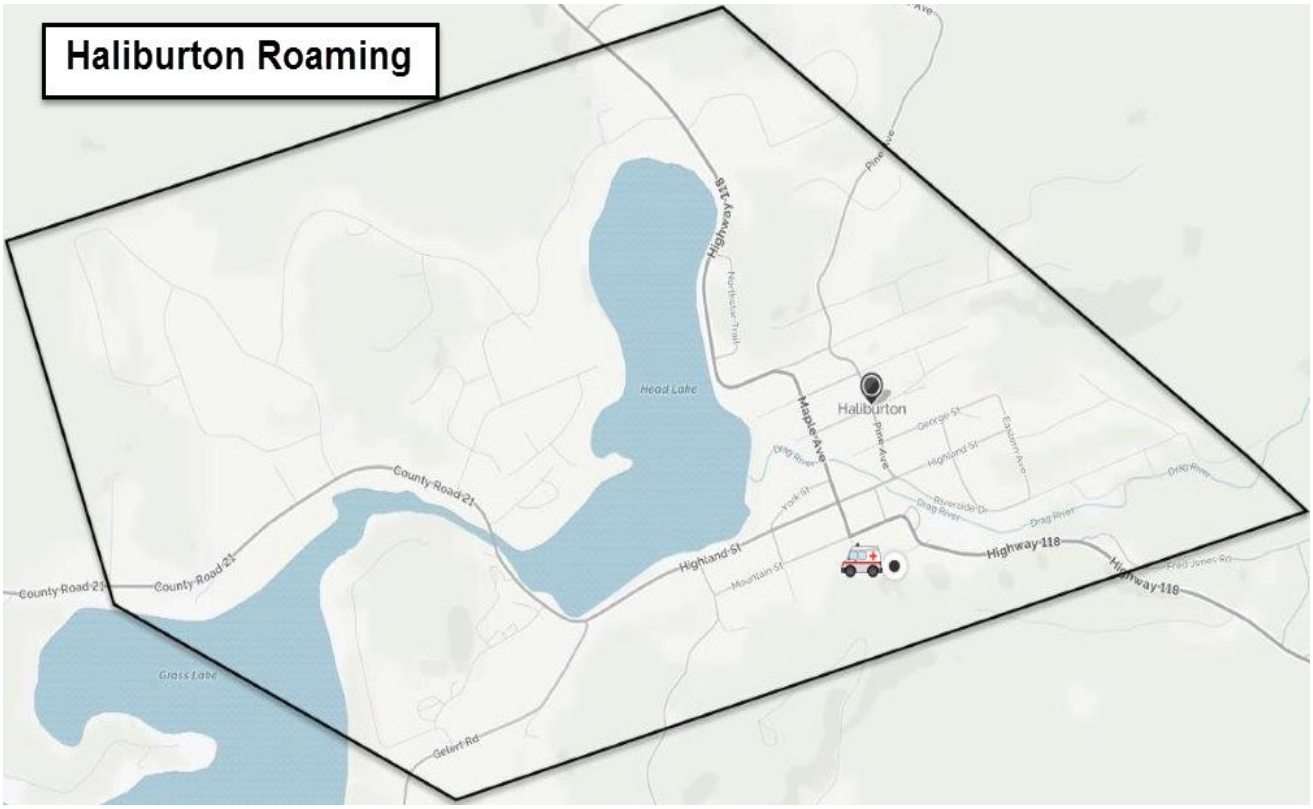
Deployment Plan
For Haliburton County Paramedic Service

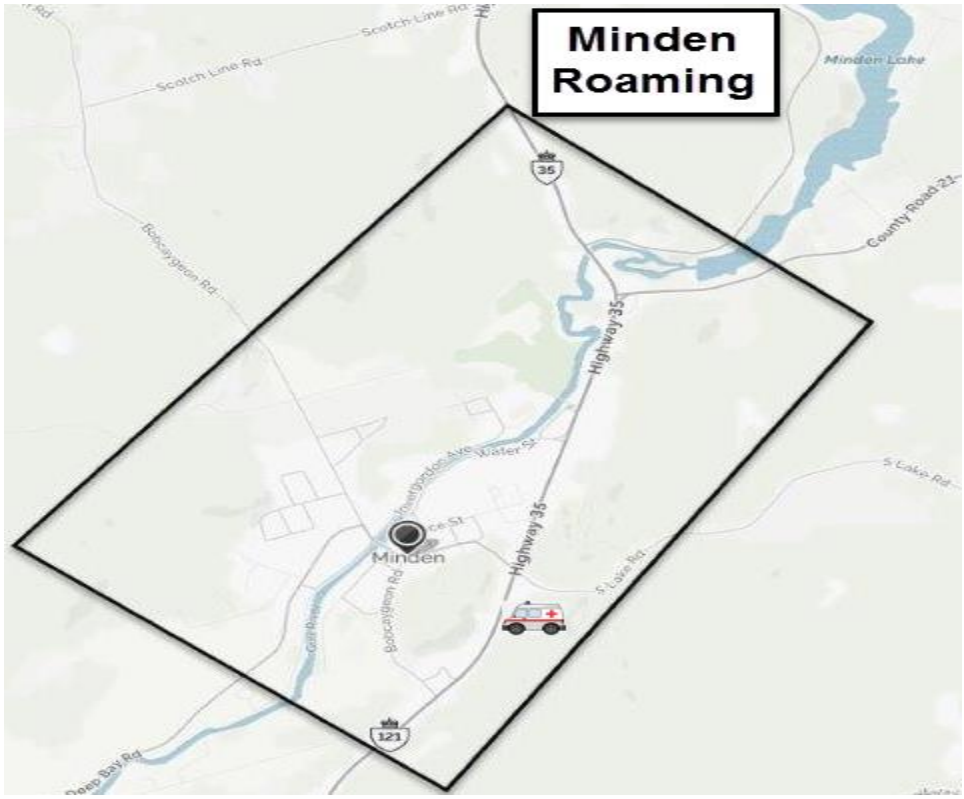
Staffing Level	Standby Location	Coverage by	Readiness Time
4 Ambulances	Algonquin Highlands	Algonquin Highlands	0 minutes
	Haliburton	Haliburton	0 Min
	Minden	Minden	0 Min
	Tory Hill	Tory Hill	0 Min
3 Ambulances	Haliburton	Haliburton	0 Min
	Minden	Minden	0 Min
	Tory Hill	Tory Hill	0 Min
2 Ambulances	Haliburton	Tory Hill/Minden	15Min/20 Min
	Minden	Haliburton/Minden	20 Min/0 Min
0 Ambulance CMEC 2300 – 0700 – Notify Duty Manager if longer than one (1) hour	KLPS	Kinmount	
	Muskoka	Vankoughnet / Carnarvon	
	ACO to start movement of closest most appropriate vehicle for coverage		

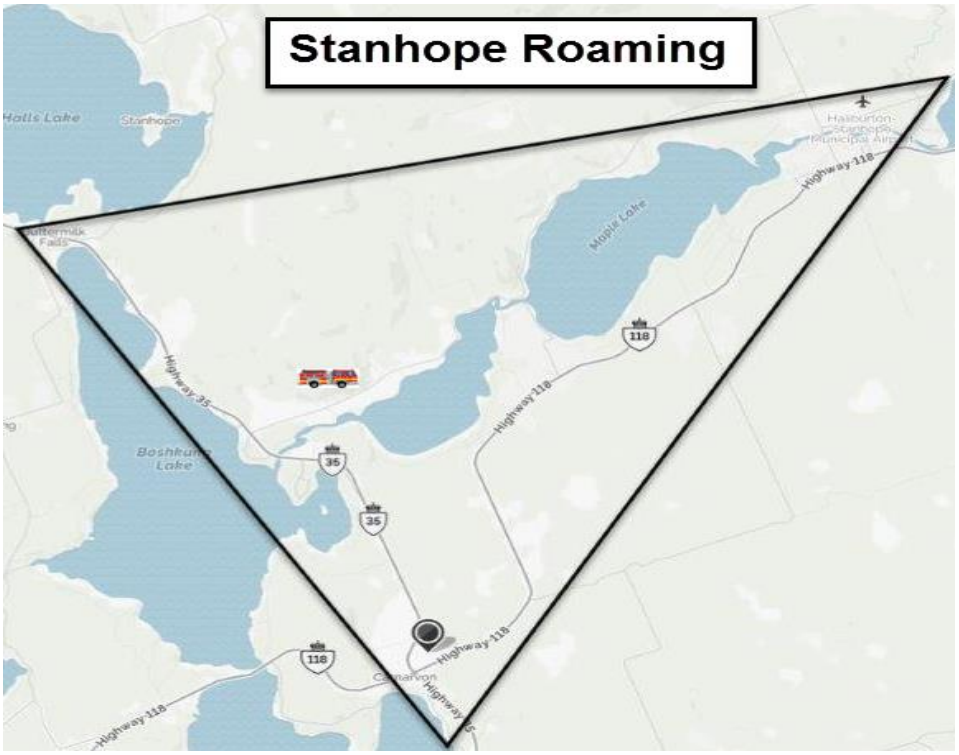
- When at CMEC 1 and the remaining vehicle does not have relief, the Duty Manager will be notified 30 minutes prior to EOS to avoid CMEC 0 when all other crews are out of the County and/or CMEC 0 is anticipated for an extended period.
- Algonquin Highlands should be covered from 1115-1515 by the 11-23 vehicle and from 1530-1900 by the 08-20 vehicle when possible.
- Algonquin Highlands vehicle will be the first option for Emergency Coverage in Minden
- During weekend and summer night up staff, Algonquin Highlands will be covered from 1915-2215 by the 11-23 vehicle.

.When Paramedics are mobile, the acceptable Roaming Zones are displayed in the maps below.


Tory Hill Roaming
Wilberforce
648
South Wilberforce
Loop Rd
115
Essonville
118
Highway 118
Loop Rd
Highway 118
Tory Hill
503


Haliburton Roaming
Highway 118
Head Lake
Haliburton
Maple Ave
County Road 21
Highland St
Highway 118
Grass Lake
Gelert Rd


Minden
Roaming
Minden
Minden Lake
Scotch Line Rd
Bobcaygeon Rd
Highway 35
County Road 21
Water St
Lake Rd
Deep Bay Rd
35
121


Stanhope
Roaming
Halls Lake
Stanhope
Maple Lake
Highway 118
Highway 35
Boshkung Lake
Carnarvon
35
118

RESPONSE

Crew Reaction Time

The normal reaction time of staffed ambulance from receipt of the call information to proceed on a Code 3, 4 and 8 calls will be a maximum of 2 minutes. In the event a crew's reaction time exceeds the above noted 2 minutes, the CACC will report same to the Service.

ACO Direction of Paramedics and Ambulance Movement

Paramedics are not permitted to refuse any direction given by an ACO unless such direction places the immediate health/safety/welfare of the crew in jeopardy as defined in the Occupational Health and Safety Act.

In the event that a dispute arises with respect to the application of any Paramedic Service policy (inclusive of this deployment plan) and the direction given by an ACO, the crew is to proceed with following CACC direction and contact Paramedic Service Management for further clarification.

Inter-Facility Transfer

REPATRIATION OF PATIENTS

No County vehicles will be sent empty to repatriate a patient in another UTM.

Patients that meet the criteria in existing repatriation agreements (example: Stroke Protocol) will be repatriated according to the terms of the applicable agreement.

The Paramedic crew will wait at the receiving hospital as per existing policy (maximum 60 minutes), to determine if the patient will be admitted at the receiving hospital or returned to a local facility.

NON-EMERGENCY INTER-FACILITY TRANSFERS (Code 1 & 2)

Vehicles providing temporary up-staffing to meet deployment needs, or special event coverage, shall not be considered as part of the County when determining availability of vehicles for non-urgent transfers.

Assigning Code 1 and 2 Low Priority Transfers

Non-urgent low priority transfers (Code 1 & 2) will be assigned from:

- 07:00-23:00 if 3 vehicles are available and the transfer is within Haliburton County
- 11:00-19:00 if 4 vehicles are available and the transfer is outside of Haliburton County
- No Code 1 and 2 transfers are to be assigned from 23:00-07:00
- Paramedic Crews will respond to all calls up to the end of their shift. With the exception of out of town inter facility transfers where excessive overtime will be occurred (Re: Section 9 Excessive Overtime).
- Palliative transfers may be done with less than the required resources available if approved by Duty Officer/Shift Superintendent

If a patient is stable and able to wait (Code 3), utilize the 11-23 ambulance for all inter-facility transfers starting at 1800. This is to reduce shift overrun for the day units. This applies to both Minden and Haliburton Hospital sites

- **MVC's > MULTI- PATIENT INCIDENTS**

- ERU/ERV's logged on will be deployed to the unconfirmed Multiple Patient Incidents and will be tracked as a responding unit.

- ERU/ERV's not logged on will be monitored in the notes/comments section of the CAD and therefore will not be registered as a responding unit

- Calls where the possible number of patients is unknown, a second unit is to be dispatched Priority 8 (available for priority calls), and will respond with emergency systems activated. The first unit on scene will update CACC if a second unit is required and the response priority.

- **Bariatric Response**

- Haliburton Paramedics Duty Manager will be notified if a crew has a patient that is more than their current stretcher capacity. Direction in how to proceed will come from the Duty Manager

ALS BACK-UP

*Under **NO** circumstances is the transport of the patient to be delayed awaiting the arrival of an ACP crew. If the patient is packaged and ready for transport to hospital, transport is to be initiated by the PCP crew immediately.*

ACP back up will not be denied unless the service would be placed into CMEC or the PCP transport time to hospital is less than 10 minutes (PCP Crew ETA to hospital). Transfer of care (on scene or rendezvous) will not exceed 10 minutes and one of the two ambulances (PCP or ACP) will become available to LCACC to respond within 10 minutes of the ACP rendezvous. Deviation from this will require Shift Superintendent/Duty Manager notification.

COMMUNITY PARAMEDICINE

- Community Paramedics will book on and off with CACC at the start and end of their shift.
- Community Paramedics will be rostered into CAD with the CAV (Conditional Availability) of "AD" (Administrative Duties) for health and safety reasons (To track the unit & 10-2000 alarms).
- Community Paramedics are unavailable for call assignment of any priority.
- Community Paramedics may advise CACC that they are responding to a call if they choose to do so.

DEDICATED INCIDENT STANDBYS:

If a dedicated standby is requested, then the allied service is expecting the potential for patients. The crew will notify CACC that they are to be placed on an extended code three and will set up a staging area to receive patients. At this point the crew will work cooperatively with the allied agency commander and designate an area for receiving patients in a triage system. Vehicle(s) assigned to a Dedicated Incident Standby shall not be reassigned to another call until the vehicle(s) has been cleared by the Incident Commander/Superintendent/Management person in charge. Incident Standbys will be performed by the UTMs that the incident resides in.

Police Incidents

Police incidents will be assigned Code 8 unless there is a confirmed patient

Standby unit may respond to these calls on an urgent basis with emergency systems activated if the situation warrants an urgent response or as per local policy and procedure.

For calls where police are requesting staging away from the scene and where call details cannot be broadcasted over the radio, the ACO will dispatch the crew to the standby location and request that the crew phone the ACO. The ACO will then provide all call information via phone conversation.

All call information will be given over the Fleet Net radio system and not by cellular phone **except for tactical responses.** The ACO will then provide call information via cell phone to the responding unit.

Fire Incidents

Fire Scene incidents will be assigned Code 8 unless there is a confirmed patient. The responding crew is to report to Incident Command for direction re: safe vehicle placement and update of the situation including possible hazard identification. If the crew makes patient contact, a second vehicle will be dispatched for the incident standby. The crew on scene will make the determination if they will transport or if the responding unit will transport based on patient(s) condition.

Standby unit may respond to these calls on an urgent basis with emergency systems activated if the situation warrants an urgent response or as per local policy and procedure.

Special Response Requests

Dual deployment/response of ambulances will not occur unless initial information indicates the necessity of more than one vehicle.

A PRU/RRV/ERU/ERV is not considered as part of the Dual Deployment/Response

MANAGER ON CALL NOTIFICATION

1. **Compromise in Service Delivery**:
    a. Communication failure
    b. CMEC-07:00-23:00 / greater than one (1) hour – 23:00-07:00 only
    c. Offload delays of more than 45 minutes
    d. Multiple hospital transfers
    e. Transfer relays
    f. Up-staffing or extended crew shift is required to maintain emergency coverage
    g. Down-staffing (mechanical failure, not full complement of crew, etc.)
    h. Vehicles are not tracking on AVL
    i. Complaint received or initiated by CACC concerning paramedic service delivery
    j. Paramedic response time greater than 2 minutes
    k. All MCI or potential MCI situations
    l. Deploying an ambulance code 8 for another UTM (County Border)
    m. Call assignment (any priority) which originates outside the service municipality
2. **Patient or Paramedic Health and Safety**
    a. Inter Facility transfers that may be delayed due to Inclement weather or excessive overtime (>3 hours) for the paramedic crew
    b. Any paramedic(s) whose shift reaches 14 hours in length
    c. An incident that involves a delay to patient contact by staging for any reason
    d. An incident involving a Paramedic Service vehicle or an injury involving an ambulance crew, patient/citizen as the result of a Paramedic Service response
    e. When crews are required to wear enhanced PPE (full Isolation suits) for calls such as Chemo-therapy patients, drug overdoses, infectious diseases
    f. An incident involving hazardous materials (HazMat) or CBRNE (Chemical, Biological, Radiological, Nuclear or Explosive) materials;
    g. Police incident which involves bomb threats, hostage taking or use of weapons
3. **Other Situations**
    a. A Public Access Defibrillator (PAD) is activated.
    b. An urgent request of another allied agency (i.e. Incident Standby)
    c. Construction or Industrial accident
    d. Any fatality caused by MVC, other accident or unnatural causes (including suicide) and all paediatric deaths.
    e. Paramedic crew request for ORNGE (scene or modified) and accepted by OCC.
    f. Rail or Air incident
    g. Remote access (ATV, Boat, Snowmobile, Trail, etc…)
    h. Bariatric patient response
    i. A Haliburton County Hospital is on Consideration or Time Consideration

21. When at CMEC 1 and the remaining vehicle does not have relief, the Duty Manager will be notified 30 minutes prior to EOS to avoid CMEC 0 when all other crews are out of the County and/or CMEC 0 is anticipated for an extended period.

STANDBY COVERAGE

STANDBY WITHIN UTM

- Duty Manager reserves the right to modify standby coverage.
- Emergency Coverage within the County will be done by our service to the limit of our resources.
- Standby coverage protocols shall be applied uniformly on a 24-hour basis throughout the County.
- Paramedic Crews will respond to all calls up to the end of their shift. With the exception of out of town inter-facility transfers where excessive overtime will be incurred (Excessive Overtime pg.13). If a Paramedic crew is on a stand by, they may proceed back to their home station 30 min prior to the end of their shift, or when a relief paramedic crew has booked on with CACC.

STANDBY FOR ANOTHER UTM

- Stand-by coverage for other UTM's will be completed from the County stations unless the other Municipality is at 0 coverage in which case Stand-by will be completed at the County boundary in order to ensure appropriate coverage to the rest of the County.
- Emergency Coverage for or by other UTM's are to last a maximum of 90 minutes. In the event Emergency Coverage will be required over the 90 minutes maximum, the Duty Manager/Shift Superintendent of the UTM needing coverage will be advised to notify the Duty Manager/Shift Superintendent of the responding UTM.
- Standbys for another county or region are to provide the emergency coverage and do not change the CMEC status for the UTM requiring assistance. The standby resource should only be sent to Code 4s or Code 3s when the delayed response time has been exceeded.

The four services have agreed to send their closest most available ambulance to the edge of their county to better serve their neighbour when a UTM/DDA is at zero ambulances. CACC should choose the Paramedic Service system that can best assist the UTM/DDA without causing CMEC for that Paramedic Service system.

OFFLOAD DELAY, END OF SHIFT/EXCESSIVE OVERTIME

EXCESSIVE OVERTIME

In cases where an inter facility transfer may result in the responding crew incurring more than three hours overtime, the Service may decide to delay the transfer. If (in the best judgment of the ACO) there is a strong possibility that the call may exceed the guideline, CACC will inform the sending facility at the time of call receipt and request that the sending facility contact the Superintendent / Manager on Call.

OFF-LOAD DELAY

An off-load delay is when an ambulance arrives at a hospital with a patient and their stretcher cannot be cleared within 20 minutes of arrival. The crew is to notify CACC when they are on an off-load delay along with the assigned CTAS Level. CACC will log pertinent off-load delay information for each call and provide same to this Service.

VEHICLE READINESS

Upon arrival at a hospital, crews will have 20 minutes to notify CACC and prepare their vehicle for reassignment. Failure to provide information within 20 minutes will deem the vehicle available for reassignment.

Upon arrival at a destination that is not a hospital, unless a crew advises of extenuating circumstances (i.e. extended cleanup or disinfection) once the vehicle's stretcher has been cleared the unit will be considered for response to another call.

END OF SHIFT PROCEDURE

All ambulances (Up staff, 12 or 24 hour units) will automatically be booked off and removed from the CAD at the end of their scheduled shift (or upon arrival at their destination) when the call has extended past the end of their shift time. On the 24hr cars the replacement crew must have signed on in an ambulance. Any variance from the end of shift policy requires the approval from the Manager On Call prior to call assignment with the exception of during an MCI that is or has the potential to exhaust available resources. For the purposes of safety, crews shall keep their radios on until they return to base. CACC to communicate a change in status to each crew.

* Any crew EOS outside of the Lindsay CACC Catchment area will contact their Manager on Call. The Manager on Call will contact Lindsay CACC to request Lindsay CACC notify the controlling CACC to place the unit on EOS

INCLEMENT WEATHER

In cases where severe weather is active, the Shift Superintendent/Duty Manager may implement the Inclement Weather Protocol. The inclement weather protocol is as follows:

- *All non-urgent transfers (Code 1 and Code 2) will be delayed until the Shift Superintendent/Duty Manager lifts the Inclement Weather Protocol.*

- *All prompt (Code 3) inter-facility transfers will be delayed until the Shift Superintendent/Duty Manager lifts the Inclement Weather Protocol or approves the transfer with CACC informing the sending facility of said delay at the time of booking.*

- *Stanhope/Algonquin Highlands coverage will continue as the crews have a Fire Hall to take shelter in with a well maintained road for travel..*

ADDENDUM A TIRED RESPONSE

A tiered response will be requested within one (1) minute of EMS dispatch, and in conjunction with the response reference chart, for the following emergency requests for service:

1. Vital Signs Absent (VSA)
2. Unconsciousness
3. Airway Compromise (Airway Obstruction, Absence of Breathing)
4. Chest Pain
5. All Code 4 (Life Threatening Emergency) calls with Paramedic Services, ETA greater than **20** min.
6. All Motor Vehicle Collisions (MVC's) with Paramedic Services, responding Code 4

NOTES:

- These criteria for medical tiered response are in addition to the usual incidents requiring Fire Services response under their fire suppression, rescue and/or Hazardous Materials Spills mandate where CACC notification of fire departments is automatic.
- Once a tiered response has been initiated, it shall only be cancelled if the request for service is cancelled by the call originator and/or Paramedic resource(s) have arrived on scene and made patient contact.
- Fire services will **NOT** be tiered to Long-Term Care Facilities, Correctional Facilities, and Hospitals.

ADDENDUM B PATIENT DESTINATION AGREEMENTS

STEMI BYPASS DIRECTIVE

If patient meets STEMI Bypass Protocols then the unit can bypass the local hospital and proceed to the nearest STEMI center.

ACUTE STROKE PROTOCOL

All patients that meet the current Acute Stroke Protocol can bypass the closest facility and transport directly to the closest stroke facility:

- Peterborough Regional Health
- Lakeridge Health - Oshawa
- Belleville General Hospital
- Huntsville District Hospital
- Royal Victoria Hospital - Barrie

PATIENT PRIORITY SYSTEM FOR HALIBURTON COUNTY EMERGENCY DEPARTMENTS

Criteria for Hospital Consideration Status (CTAS Level 3-5 Only)

The decision by an ED to request “Consideration” will be triggered by situations where, due to lack of available resources, an ED faces a significant deviation from key patient care benchmarks, such as:

- Time to initial triage
- Resource constraints including;
    - Nursing or physician overload
    - ED equipment
    - Bed overload

Criteria for Hospital Time Consideration Status (All CTAS Levels)

The decision by an ED to request “Time Consideration” will be triggered by situations where, due to lack of available resources, an ED faces a situation where there is no physician on site

PATIENT DISTRIBUTION PROCESS

NORMAL STATUS

1. **CTAS Level 1 and 2 patients** will be transported to the closest medical facility, regardless of municipality or residential address, with the exception of patients requiring essential medical services as outlined in Point 3 below.
2. **CTAS Level 3-5 patients** will be transported to the nearest medical facility unless;
    a. There is extensive or relevant history at one facility or;
    b. Patient preference (Patient preference will **not** outweigh system needs.)
    The patient may request and be transported to a specific County ED.

The Paramedic, upon departing the scene will advise the Communications Officer (ACO) that the patient has met one of the criteria (2.a or b) and has requested the facility. If PPS criteria 1 or 2 have not been met, the ACO will direct the Paramedic to the closest hospital that is in Normal Status regardless of distance.

3. Ambulances will bypass local hospitals when transporting patients who meet current Acute Stroke Bypass Protocols and proceed directly to either Peterborough Regional Health Center or Huntsville Hospital as per current policies.

CONSIDERATION STATUS

1. **CTAS Level 1 and 2 patients** will be transported to the closest medical facility, regardless of municipality or residential address, with the exception of patients requiring essential medical services as outlined in Point 4 below.
2. **CTAS Level 3-5 patients** will be transported to the alternate County ED if on NORMAL status
3. **CTAS Level 3-5 patients** will be transported to the closest hospital if both County ED's are on CONSIDERATION
4. Ambulances will bypass local hospitals when transporting patients who meet current Acute Stroke Bypass Protocols (Appendix 2) and proceed directly to either Peterborough Regional Health Center or Huntsville Hospital as per current policies.

TIME CONSIDERATION STATUS

1. Ambulances transporting **CTAS Level 1 or 2 patients** will bypass the local facility that is on Time Consideration, and will proceed to the next closest hospital ED.
2. **CTAS Level 3-5 patients** will be transported to the alternate County ED if on NORMAL status
3. **CTAS Level 3-5 patients** will be transported to the closest hospital if both County ED's are on CONSIDERATION
4. Ambulances will bypass local hospitals when transporting patients who meet current Acute Stroke Bypass Protocols (Appendix 2) and proceed directly to either Peterborough Regional Health Center or Huntsville Hospital as per current policies.

EXCEPTIONS TO THE AGREEMENT

This Local Agreement does not apply to the following situations:

- Inter-hospital transfers
- In the event of a major disaster, relevant disaster plans will be followed.
- In the event of a biological, chemical or nuclear incident all CTAS Level 1 patients will be taken to the closest appropriate medical facility having the equipment necessary to accommodate those affected patients. All CTAS Level 2-5 patients will be directed away from the contaminated site unless access is required for essential medical service.

PROCESS

1. The Emergency Physician in consultation with HHHS management will agree that the criteria for CONSIDERATION or TIME CONSIDERATION have been met.
2. Lindsay Dispatch will be contacted and advised of the need for Consideration or Time Consideration and the reason(s).
3. Lindsay Dispatch will notify the Manager on Call of the Hospital request for Consideration or Time Consideration
4. The Emergency Room Charge Nurse in consultation with HHHS management will complete and sign a Consideration Request Report Form. The completed form will be faxed to Lindsay Dispatch who will notify the Manager on Call of Haliburton County Paramedic Service of the Hospital Consideration or Time Consideration Request.
5. HHHS will conduct a regular review of the decision to remain on Consideration or Time Consideration.
6. Lindsay Dispatch will be immediately notified by fax of any change to status including return to NORMAL status.

Deployment Plan
For Haliburton County Paramedic Service

CONSIDERATION REQUEST REPORT FORM

EMERGENCY DEPARTMENT

CONSIDERATION or TIME CONSIDERATION REQUEST

Date: _____ **Time:** _____

Location: **Haliburton:** _____ **Minden:** ____

REQUEST:

Type of Request	Time Implemented	Time Terminated
Consideration		
Time Consideration		

Authorization:

Emergency Physician: _____
Name

Emergency Charge Nurse: _____
Name

HHHS Management: Notified: _____ _____
Name Time

Reason(s) for requesting **Consideration** or **Time Consideration**:

Lindsay Dispatch FAX Number: 1-705-324-1679

Activation Notice: Verbal: _____ FAX Copy time: _____

Termination Notice: Verbal: _____ FAX Copy time: _____

Appendix 'C'

Paramedic Station Reviews

APPENDIX 'C': PARAMEDIC STATION REVIEWS

The following reviews have been completed by Done Right Commercial Inspections, on behalf of Emergency Management Group inc. The three paramedic stations that were evaluated were:

- Minden Hills – 12410 Highway 35
- Tory Hill – 18721 Highway 118
- Haliburton – 6 South Street

Please see the accompanying attachments for the applicable evaluations.