



2022 Operational Review

CHATHAM-KENT EMS

Prepared for: **Municipality of Chatham-Kent**

Prepared by: **Medavie Health Services**

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For over a decade, Medavie EMS Chatham-Kent Ontario Ltd. (MEMSCKO), a wholly owned subsidiary of Medavie Health Services (MHS), has proudly delivered Paramedic Services to residents and visitors of Chatham-Kent, in partnership with the Municipality and other key stakeholders.

A Partner that Understands Pre-Hospital and Integrated Care in Chatham-Kent

Our team has gained a deep understanding of the core services, as well as the administrative and operational requirements of our partnership and remain fully committed to the provision and evolution of these services.

As health care partners since 2012, we have achieved much together in developing and managing an integrated service delivery system that complies with the Ontario Ambulance Act.

Examples of our key accomplishments in Chatham-Kent include:

1. Implementing clinical equipment and procedures to align with clinical best practices
2. Launching a Mobile Integrated Health (MIH) program
3. Expanding various employee mental health supports and resources
4. Developing and maintaining many key system partnerships



A Common Vision for Modernization

We share a local and provincial vision to evolve from a transport-based system to a patient-centred system, following multiple care pathways in alignment with Chatham-Kent Ontario Health Team and Ontario Health strategic priorities. Our key areas of focus include:

- Reducing health inequities
- Transforming care with the person at the centre
- Enhancing clinical care and service excellence
- Maximizing system value by applying evidence
- Strengthening Ontario Health's ability to lead

Extensive Team Experience

MEMSCKO is part of MHS, a national leader in primary health care solutions and the largest contracted provider of emergency management services in Canada. MHS is part of Medavie, a not-for-profit health solutions partner focused on improving the wellbeing of all Canadians. The organization represents over 100 years of combined experience in the Paramedic Services field with systems design to meet unique client and patient needs.

In addition to our corporate experience, we have a dedicated local leadership team committed to providing the required day-to-day operational, administrative and clinical oversight, as well as stakeholder relationship management. We have the ability to leverage the broader Medavie organization to engage our in-house subject matter experts nation-wide to share lessons learned and best practices, as well as to have team members support modernization projects.

Additional Value for Chatham-Kent

MEMSCKO brings tangible additional benefits to the current and future partnership with the Municipality. Some examples include:

- Synergies with other local and regional health system partners
- Organizational breadth, including experience in shared services models to support new projects and initiatives and day-to-day operations
- Corporate strategic focus on safety to enhance patient, public and health care provider experience
- The Medavie Foundation, which supports grassroots, community-based initiatives to address pressing health care challenges

Current Out-of-Hospital System Configuration

Currently, the Municipality provides ambulances staffed with two (2) Primary Care Paramedics 24-7 in bases located in Chatham, Wallaceburg, Ridgeway, Tilbury, Thamesville and Blenheim. The chart below is reflective of deployment changes effective July 2022.

Ambulance Staffing Patterns Chatham-Kent

Paramedic Station	Clinical Designation	Shift Pattern
Chatham 7 days per week	PCP Transport	06:00 – 18:00 18:00 - 06:00
Chatham 7 days per week	PCP Transport	07:00 – 19:00 19:00 - 07:00
Chatham 7 days per week	PCP Transport (Peak 12 hrs)	09:00 – 21:00
Chatham 7 days per week	PCP Transport (Peak 12 hrs)	12:00 – 00:00
Tilbury 7 days per week	PCP Transport	07:00 – 19:00 19:00 – 07:00
Wallaceburg 7 days per week	PCP Transport	06:00 – 18:00 18:00 - 06:00
Thamesville 7 days per week	PCP Transport	06:00 – 18:00 18:00 – 06:00
Ridgeway 7 days per week	PCP Transport	06:00 – 18:00 18:00 – 06:00
Blenheim 7 days per week	PCP Transport	07:00 – 19:00 19:00 – 07:00

Mobile Integrated Health Staffing Patterns Chatham-Kent

Paramedic Station	Clinical Designation	Shift Pattern
Chatham 5 days per week	Community Paramedic	08:00 – 16:00
Chatham 7 days per week	Community Paramedic x2	08:00 – 20:00

Operational Support Staffing Pattern Chatham-Kent

Paramedic Station	Clinical Designation	Shift Pattern
Chatham 7 days per week	Operations Supervisor/SOP	06:00 – 18:00 18:00 - 06:00

Clinical and Operational Improvements

To successfully modernize Paramedic Services, we continue to monitor and evaluate workforce implications at both strategic and tactical levels. With the provincial and federal governments investing in health care, there is an opportunity to build the workforce for the future.

While challenging to look past current issues, rebuilding and retooling the workforce is critical to ensuring our team is prepared for the future.

CKEMS will continue to understand and monitor the changing dynamic of meeting the needs of who we serve. To date we have completed the following:

1. Dynamic Deployment Model

In 2012, a measurable deployment plan launched to help serve the community as a whole, with the main objective to reach a triad of homeostasis within the high-performance system. This involved continuous deployment efficiencies and resources to best meet the needs of the community based on geographical location, response to calls, patient care and taking care of our team. Since 2012, there have been various modifications to the deployment plan to adjust to call demand, evaluate new methods and dynamic approaches to resource movements and understand their impact on response times, while balancing Municipal emergency coverage.

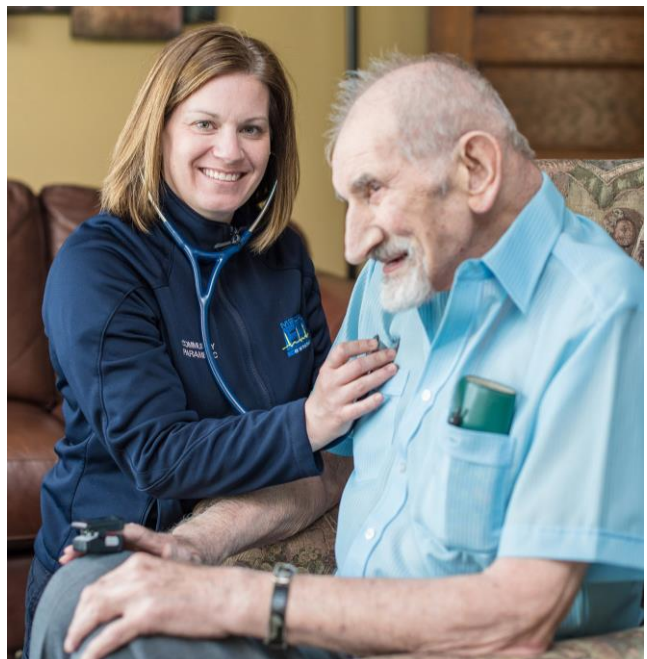
2. Implementation of Additional Unit Hours

In July 2022, in addition to enhanced unit hours, 60 additional unit hours per week were implemented into the system. These hours were added to existing peak unit hours to maximize efficiency with a limited financial request from the Municipality. This additional support has positively improved our overall response times and Code Red incidents.

3. Expansion of our Mobile Integrated Healthcare/ Community Paramedic Program

In August 2022, two (2) full-time Community Paramedics were added to our existing program. In 2015, MEMSCKO developed a partnership with Ontario Health and local health system partners, with a focus on identifying and case managing patients/clients in the community deemed as healthcare system high users. The Community Paramedic is a mobile integrated health resource to local Home and Community Care Support Services and Primary Care Agencies to help surveil and support identified clients. The main purpose and goal of the program is:

- Enhance patient care and the overall patient experience for a preselected patient population that requires additional care and support to keep them at home or in the community



- Provide an integration outlet for primary care physicians and community support programs already in the community
- Complement existing resources, such as infrastructure and technology, to implement community-based health solutions
- Leverage an innovative ecosystem with emerging partnerships within Home and Community Care
- Reduce pressure on EMS call volume demand, emergency departments and the broader health system by delivering health care services through the most appropriate and effective mechanism available
- Further strengthen emergency service and provider partnerships with the Municipality, Home and Community Care Services, hospitals and other partner organizations through a collaborative, community-based model of care

4. Plan – Do – Check – Act cycle of improvement

As a part of our Quality Improvement Program, MEMSCKO performs the following:

1. Conducts monthly and an annual statistical analysis of:
 - a. 90th percentile response time evaluation
 - b. Call volume evaluation including peak and low trending
 - c. CTAS percentile compared to targeted response times
 - d. Post to post movement of units within the Deployment Plan
 - e. Unit hour utilization (peak & non-peak periods)
 - f. Code zero occurrences and duration (interval when there are 3 or less ambulances available)
 - g. Time in hospital (off load delay monitoring)
 - h. Record feedback from the municipality in form of official or through environmental scanning
 - i. Record feedback from staff informal or otherwise
2. Develops monthly and annual strategy to ensure that we are maximizing our approach to best servicing the community, patients and our employees
3. Continues to meet monthly with the Central Ambulance Communications Center leadership team to review what is working well, and ways to improve or maintain a triad of homeostasis within deployment and unit utilization
4. Remains adaptive, learn from experiences, remain transparent with team members, create change based on doing things for the right reason and use the quality assurance and high-performance service model to help with the decision process

5. Clinical Initiatives

Since 2012, MEMSCKO has worked collaboratively with its clinical partners, Medical Oversight, and other healthcare partners to improve the expansion and implementation of new clinical initiatives that are patient centred. The objective for such initiatives is to improve patient outcomes and decrease morbidity and mortality rates. The following are examples of these initiatives:

1. Introduction of a Pain Management Medication (e.g., Ketorolac)
2. ST Elevated Myocardial Infarction bypass to Tertiary Care Centre (e.g., Windsor Regional and London Health Sciences Centre)
3. Implementation of 12-Lead ECG transmissions direct to Cardiologist
4. Paramedic Clients Referrals to Community Paramedic and Mental Health Services
5. Improved Acute Stroke Patient Management with CODE Stroke process and procedure
6. Doty Belt Lift Device implementation
7. Mega Mover Product Introduction
8. End-tidal CO2 detector
9. End-tidal CO2 nasal prongs



6. Paramedic Offload Program

Emergency Department (ED) crowding is an ongoing problem in Canada. Several performance metrics have been established to help benchmark different EDs to improve care. In June 2022, MEMSCKO introduced a Paramedic Offload Program to reduce paramedic time to offload ED patients. Our objective was to assess the impact of utilizing an Offload Paramedic on ED length of stay.

7. Employee Support

In 2016, MEMSCKO invested in improving the wellbeing of its paramedics with a focus on mental health awareness, prevention tactics and evidence-based approaches to trauma reduction. This best practice approach assists paramedics to develop personal strategies and coping mechanisms to manage the stress and cumulative effects of the many traumatic incidents they encounter.

MEMSCKO collaborated with the Mental Health Commission of Canada in delivering the Road to Mental Readiness (R2MR), a valuable mental health-training program for paramedics in our operations. The R2MR course has been adapted from its original format, developed by the Department of National Defence, to meet the needs of paramedic practitioners.

In early 2019, MEMSCKO established its inaugural Peer and Family Support team and program. Peer and Family Support Services is a voluntary program, providing support to Chatham-Kent EMS employees experiencing emotional distress as a result of exposure to traumatic calls, events and other related personal issues.

As well, Medavie offers many supports available to our teams and their families through our employee and family assistance programs. Our inConfidence Employee and Family Assistance Program is available toll free, 24 hours a day, seven days a week for immediate, confidential help. Medavie's Mind Beacon Program also provides access from anywhere, at anytime, to accredited therapist for counselling and education services. All of our employees and their immediate families have access to this resource at no cost – this includes full-time, part-time, term, casual union and non-union team members.



8. Professional Development Opportunities for Paramedics

We continuously strive to promote excellence in paramedic practice and leadership by offering and supporting professional development opportunities and lifelong learning within our operation. Over the last two (2) years, we have developed and implemented the following roles for paramedics:

Sessional Paramedic Educators - This role assists in the development of service paramedic educational programming, facilitating the delivery of educational content for paramedics, and completing individualized competency assessments.

Senior Operation Paramedics - This role is responsible for assisting with Operations. Major operational components of this position include demonstrating clinical leadership, facilitating service direction, and maintaining ongoing relationships with external stakeholders.

In the absence of the Supervisor, the general role of this position is to support the workforce in a positive manner and to lead by example. Integral to this role is a strong commitment to life-long learning and a desire to advance in a leadership role within the organization.

Health System Transformation through Partnerships

In recent years, the healthcare system has experienced significant changes accelerated by the COVID-19 pandemic. Shifts in healthcare delivery, regulation, and expectations of all providers, including paramedics, have created both opportunities and imperatives for innovative solutions through healthcare and non-health care system partnerships.

Over the last five (5) years, many local system partners have turned to MEMSCKO to help build new solutions and access new capabilities. Our ongoing successful strategic partnerships will provide a structure and process that enables access to care system resources, workflows, and systems. This ongoing approach will allow partners access to the insights they need to better understand a health care provider's operations and culture.

MEMSCKO is proud to have strong and vibrant partnerships with the following agencies

Municipality of Chatham-Kent	Thamesview Family Health Team
Chatham-Kent Public Health Unit	Tilbury and District Family Health Team
Chatham-Kent Health Alliance	Chatham-Kent Community Health Centre
Erie St. Clair Home and Community Care	CBI Health
Victorian Order of Nurses	Ontario Health
Bayshore Healthcare	Ministry of Health
Chatham-Kent Ontario Health Team	Ministry of Long-Term Care
Chatham-Kent Family Health Team	McMaster University
Arthur Health	St. Clair College
CKHA NLOT Program	

Over the last five years, we have been fortunate to implement and deliver some very successful program through partnerships. Examples include:

- Integrated Community Paramedic Program
- Mobile Integrated Healthcare Falls Prevention Team
- Healthcare Clinics within subsidized housing complexes
- Community Paramedic placed within a Family Health Team
- Mobile COVID-19 Testing Clinic (public clinic, workplace clinic, congregate care, homebound)
- COVID-19 Vaccine Administration (mass clinic, workplace clinic, congregate care, homebound)
- In-Home COVID-19 Anti-Viral Medication Administration
- Episodic Care Support within Long-Term Care and Retirement Home Sector

Additional MHS Operational Benefits to Chatham-Kent

The breadth of MHS’s organization structure brings benefits to Chatham-Kent in terms of opportunities to make operational improvements. There are a number of core issues and trends that affect the EMS industry across Canada. While there are specific nuances based on geography and other factors, we see tremendous value in bringing our team together to ideate and problem solve for the betterment of all of our operations. This collaboration can result in the establishment of new service standards and/or solutions based on best practices.

One area where this is highlighted is the creation and ongoing administration of multiple committees, which are led centrally by MHS and guided by formal Terms of Reference. These committees have representation from all applicable EMS operations within the MHS Group of Companies including MEMSOCK. Examples include:

Committee	Mandate
Patient Safety Working Group	The Patient Safety Working Group reviews and makes recommendations regarding the implementation and standardization of Patient Safety-related activities throughout MHS. The PSWG uses the guidelines from Accreditation Canada and the Canadian Patient Safety Institute as the basis for any plans and recommendations.
Health and Safety Committee	The Health & Safety Committee reviews and makes recommendations regarding the implementation and standardization of Health & Safety-related activities throughout MHS.
Privacy Committee	The Privacy Committee involves the Privacy Officer from each operation. It provides a forum to review legislative changes, as well as to discuss and collaborate on common issues.
Ad Hoc Committees	Ad hoc committees are also established as needed to address specific issues. During the COVID-19 pandemic, working groups were formed to focus on specific topics such as operations and procurement. The procurement group monitored the usage (including projections), inventory and supply of Personal Protective Equipment (PPE) to maintain stock at an appropriate level.

Current System Restraints

Chatham-Kent Aging Population

The primary age group that paramedics serve in Chatham-Kent is about to expand at an unprecedented rate over the next several years. This will have a direct impact on the ability to serve our communities health care needs. The 2021 Canadian Census reports within our municipality there were 28,910 citizens in the age group of 45-64, which is a slight decrease since the 2016 Census. During this same time, there were 24,535 citizens over the age of 65, which is a significant increase since 2016. This cohort has experienced an increase in population by 2.5 since 2016. The age group of 50 and above continues to account for over 70% of the calls for service we respond to on an annual basis. Evidence suggests this is related to an increase in emergency call volume in Chatham-Kent as experienced over the past six years. Ontario Health and Public Health data further reports poorer health in our residents in comparison to the rest of Ontario, such as a higher-than-average population suffering from Congestive Heart Failure (CHF) and Chronic Obstructive Pulmonary Disease (COPD). The provision of paramedic services is a critical element ensuring that our residents have access to specialized health care in surrounding high-level medical centers while maintaining the ability to respond to emergencies within our community. In order to respond to these epidemiological shifts, along with other system pressures, MEMSCKO must closely understand, review, plan, and react to ensure that the ever-changing health care needs of Chatham-Kent continue to be met.



Increasing Municipal Population

As housing and economic trends shift, Chatham-Kent has increased its population by over 2% since 2016. This increase in people coming to the region has been a factor in our call demand and impacted our forecasted requests for service compared to previous year projections.

Community Risk Assessment

As outlined in the June 2022 Municipality of Chatham-Kent Community Risk Assessment Report, there is a growing number of risks throughout the Municipality, including an increase in residential high-rise buildings, industrial facilities and workspaces, and overall population at large. These elements are important for community economic growth but are also contributing factors for increased requests for services, response times, and overall delivery of quality out-of-hospital care.

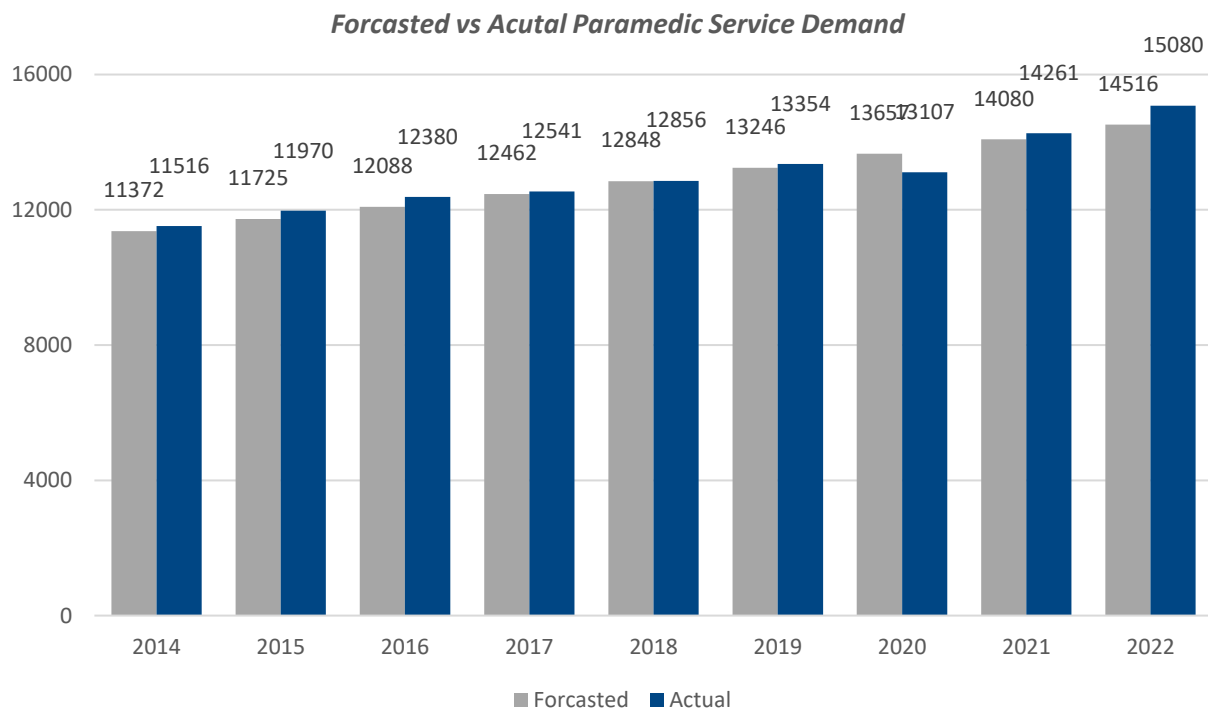
Patient Offload Delays

CKHA and CKEMS are experiencing a continuous trend in high call/patient volume and an increase in “offload delay” interval times. In addition, there is also an impact on staffing levels and patient flow barriers.

CKHA and CKEMS have had a long-standing relationship to evaluate short-term and long-term strategies to improve patient flow and decrease offload times. Recently, both organizations developed operational models to help improve offload times and paramedic unit availability in the community.

Service Demand Forecast

In 2013, MEMSCKO performed a data analysis to develop a projected Paramedic Service demand to grow annually at a rate of approximately 3.1% year over year. This rate is due to the combined impact of the “Silver Tsunami” of aging baby boomers, complexity of chronic disease and health concerns within the region, and an increasing likelihood of future aged residents to require acute healthcare interventions. **Each year since 2020, the Paramedic Service has exceeded the forecasted demand increase by an additional 1.3%**



Paramedic Service Data

Code 1 - Unscheduled Transfer | **Code 2** - Scheduled Transfer

Code 3 - Prompt (Non-Lights and Siren) | **Code 4** - Urgent (Lights and Siren)

2019 Call Volume (iMedic Data):

Base Location	Code 1	Code 2	Code 3	Code 4
Chatham	29	13	2056	4544
Tilbury	0	1	308	755
Wallaceburg	14	4	730	1290
Thamesville	5	0	347	794
Ridgetown	4	0	343	838
Blenheim	1	0	357	922
Total	53	18	4141	9142
Grand Total				13,354

2020 Call Volume (iMedic Data):

Base Location	Code 1	Code 2	Code 3	Code 4
Chatham	22	6	2092	4597
Tilbury	1	0	315	683
Wallaceburg	7	2	769	1325
Thamesville	1	0	330	766
Ridgetown	0	1	305	704
Blenheim	2	2	355	822
Total	33	11	4166	8897
Grand Total				13,107

2021 Call Volume (iMedic Data):

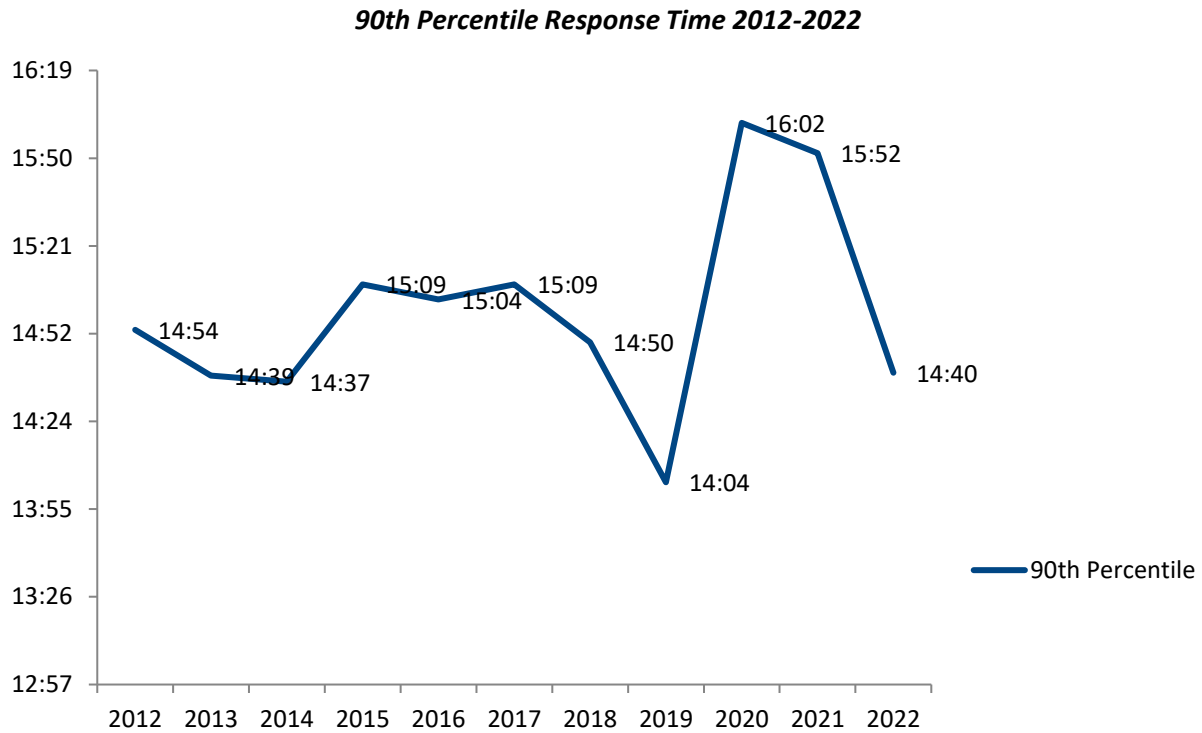
Base Location	Code 1	Code 2	Code 3	Code 4
Chatham	23	27	2313	4861
Tilbury	2	0	309	773
Wallaceburg	9	2	791	1538
Thamesville	1	0	429	810
Ridgetown	1	1	347	762
Blenheim	0	3	383	902
Total	36	33	4572	9646
Grand Total				14,287

2022 Call Volume (iMedic Data):

Base Location	Code 1	Code 2	Code 3	Code 4
Chatham	21	6	2610	5267
Tilbury	1	0	333	834
Wallaceburg	5	3	814	1414
Thamesville	0	1	447	807
Ridgetown	1	1	326	789
Blenheim	2	3	442	953
Total	30	14	4972	10060
Grand Total				15,080

90th Percentile Response Time

Prior to 2013, the Ministry of Health and Long-Term Care/Emergency Health Services Branch (MOHLTC/EHSB) 90th Percentile Response Time target for Chatham Kent was **14 minutes and 34 seconds**. The MOHLTC/EHSB replaced the response time requirements to a CTAS Response Time performance plans. CKEMS still monitors 90th Percentile Response Time for Emergency Requests for Service (Code 4)



Paramedic Unit Movements for Balanced Emergency Coverage

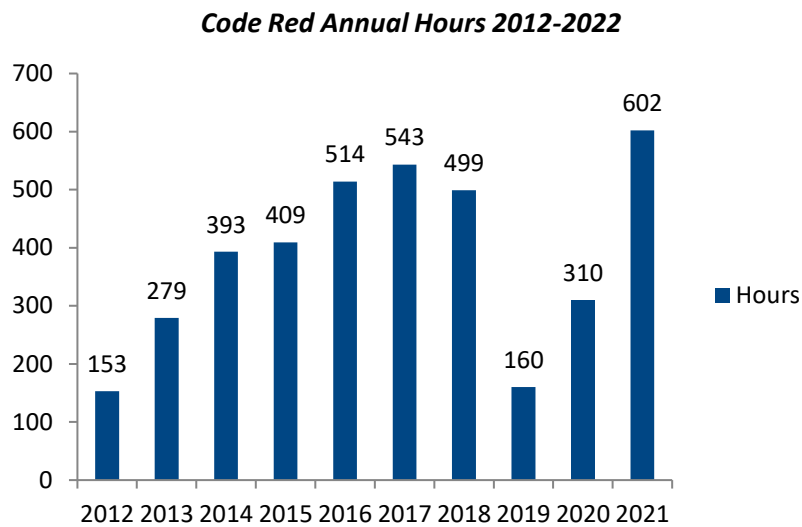
As part of the dynamic deployment plan, Paramedic Units are moved strategically throughout the Municipality as requests for Paramedic Service increase. The goal of vehicle movement is to provide balanced coverage throughout the entire Municipality when the number of available Paramedic Units decreases due to call assignments. Each vehicle movement is categorized as a “Code 8”.

Annual Paramedic Unit Movements 2012-2022

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total	6,930	8,022	7,587	8,577	10,099	13,183	13,656	15,412	11,221	12,503	12,652

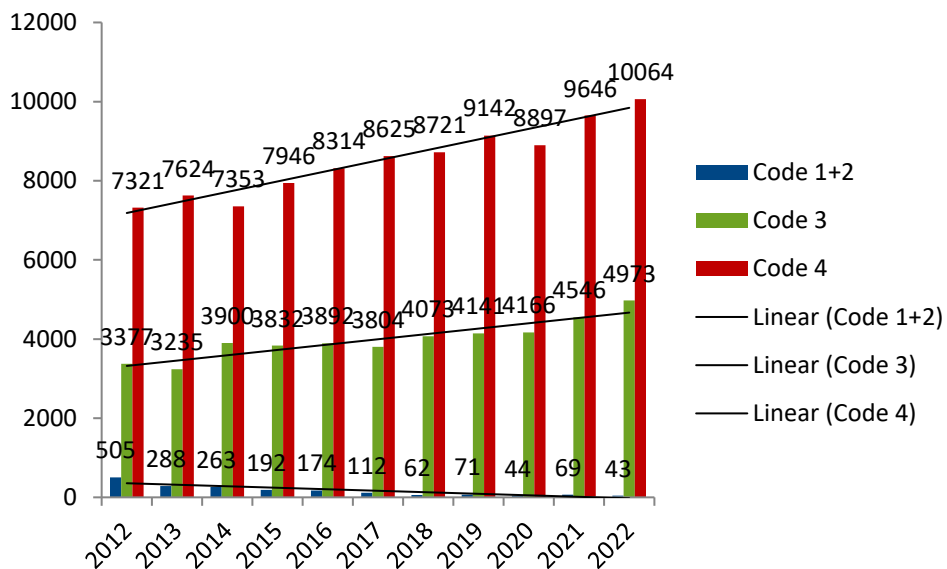
Code Red Resource Events

A “Code Red” event is a term used to identify a time interval when three (3) or less transport ambulances are available to respond to an emergency call assignment.



Paramedic Demand Analysis

Below is the call demand volume over an eleven- (11) year period (2012-2022)



- Code 1-** Unscheduled Transfer
- Code 2-** Scheduled Transfer
- Code 3-** Prompt (Non-Lights and Siren)
- Code 4-** Urgent (Lights and Siren)

Paramedic Demand Analysis Summary

1. Urgent call volume (Code 4) has **increased 38% since 2012 (3.4% yearly average increase)**.
2. Prompt call volume (Code 3) has **increased by 47% since 2012. (4.2% yearly average increase)**.
3. Inter-facility Transfer volume (Code 1-2) has **decreased by 91% since 2012**.
4. Unit/Staff hours added to the system **increased by 12% since 2012 (23% less in comparison to call volume increase over same time period)**.
5. “Code Red” Yearly Hours (when there are 3 or fewer ambulances available to respond to a 9-1-1 calls in the municipality still **remains at a significant level annually with a daily average of 1.65 hours**).
6. Paramedic vehicle movements have **increased 83% since 2012 (7.54% annual average increase)**. This increased has a negative effect on vehicle “wear and tear”, fuel consumption, maintenance costs, and paramedic fatigue/patient safety.
7. 90th Percentile response times (the time it takes from notification of emergency (code 4) call to ambulance on-scene arrival 9 times out of 10) still remains above the target of 14mins 34secs.

Service Level Recommendations

This report is to inform the Municipality the current state of the demand and utilization of the Paramedic Units and the trends determined by various data sets. Based on the data presented in this report MEMSCKO would recommend that the Municipality of Chatham-Kent consider the following:

- Evaluate the possibility in the implementation of an additional 12 unit hours per day. As requests for service continues to exceed forecasted data, these additional hours will impact the maintenance of response times, staff fatigue, and overall quality of pre-hospital care.
- Evaluate the possibility to adjust the “Level of Service” and introduce Advanced Care Paramedics into the out-of-hospital system. This role could bring a new level of skill set and care for our communities. An business proof of concept could be initialed to evaluated the performance and impact of this new model within Chatham-Kent/
- Evaluate the possibility of utilizing existing Municipal facilities and station a Paramedic Unit in the north part of the City of Chatham during peak demand hours of each day. Incorporating this into our current deployment plan will optimize the use of current resources and improve response times for requests for service in that geographic zone.

Our Mission

To improve the wellbeing of Canadians

Our Vision

A leading health solutions partner

We excel by living our Values

Caring

Accountable

Responsive

Innovative

Community-minded



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