

Emergency Medical Services

Statement of Purpose

Essex Windsor Emergency Medical Services is committed to providing the highest quality Emergency Medical Services to the citizens of the County of Essex, the City of Windsor and the Township of Pelee.

Fiscally responsible quality care is fostered through:

- Maintaining mutually supportive relationships with other emergency services and health care agencies in the community
- Participation in public education for prevention and awareness
- Programs of Continuous Quality Improvement to ensure the highest standards of patient care are achieved
- Supporting employees by providing them with the tools and methods to accomplish quality care

The department adheres to the five principles of Emergency Medical Services, which are to provide the community with an EMS system that is:

- Accessible
- Accountable
- Responsive
- Seamless
- Integrated

Service Description

The Emergency Medical Services Department is responsible for the operation of the public ambulance service for the County of Essex, the City of Windsor and the Township of Pelee. Essex Windsor EMS serves a population base of approximately 399,000 across 1,852 square kilometers. At maximum staffing, there are 27 vehicles in service with annual on-the-road staffing of approximately 184,400 hours for paramedics, exclusive of response time hours provided by Deputy Chiefs and/or District Chiefs.

The EMS department has a fleet of 38 front line ambulances, 12 Emergency Response Vehicles, 1 Logistics Vehicle, 1 Administration Vehicle, a Special Operations Trailer, a Hazmat Trailer and an Off Road transport vehicle.

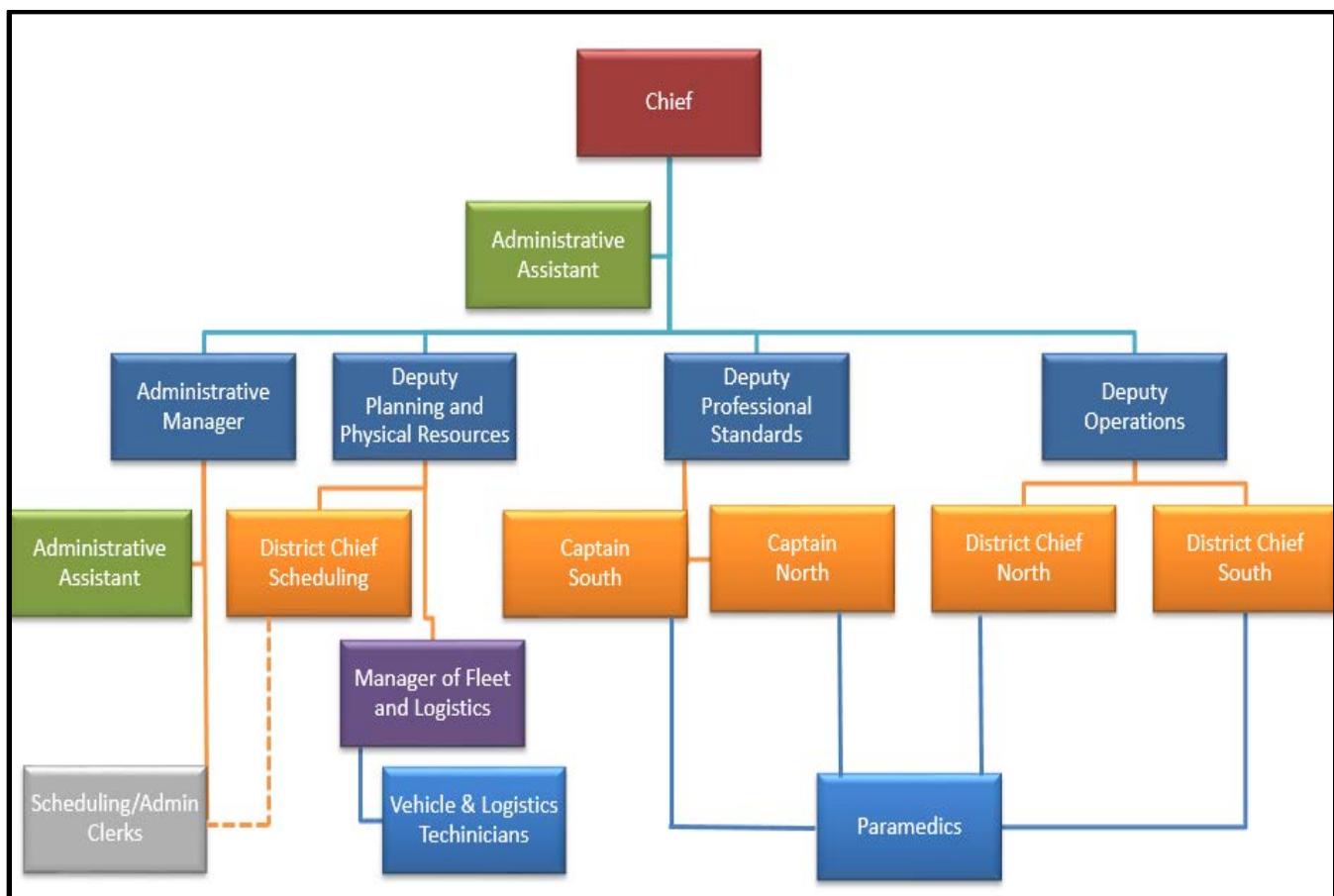
There are 12 ambulance stations located throughout the County of Essex, the City of Windsor and the Township of Pelee.

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Departmental Staffing

| Staffing | 2015 | 2016 | 2017 | 2018 | 2015 Actual (\$000) | 2016 Actual (\$000) | 2017 Budget (\$000) | 2017 Actual (\$000) | 2018 Budget (\$000) |
|---------------------------------------|------------|------------|------------|------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| Full-time paramedics | 164 | 168 | 168 | 191 | 12,585 | 12,930 | 15,252 | 13,441 | 17,480 |
| Part-time paramedics | 102 | 102 | 102 | 110 | 6,355 | 6,770 | 4,739 | 7,375 | 5,576 |
| Full-time Management & Administration | 28 | 28 | 28 | 28 | 2,652 | 2,748 | 2,998 | 2,788 | 3,058 |
| Total | 294 | 298 | 298 | 329 | 21,592 | 22,448 | 22,989 | 23,604 | 26,114 |

Organizational Chart



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Mandatory Programs

Essex Windsor Emergency Medical Services, as mandated by legislation, must:

- Obtain and continue to maintain a certificate from the Province of Ontario; licensing the County to operate a Land Ambulance Service.
- Develop a Deployment Plan outlining station locations, staffing patterns, emergency coverage patterns and plan;
- Respond to requests for emergency medical assistance in the community by sending the closest available resource;
- Provide emergency medical care to those in need and transport to the most appropriate medical facility;
- Develop and administer mandatory paramedic documentation and performance auditing processes to ensure quality of care and compliance with legislated patient care and documentation standards;
- Provide continuing education programs for paramedics to ensure compliance with legislation;
- Develop and administer strict ambulance vehicle maintenance schedule;
- Develop and administer strict medical and conveyance equipment maintenance schedule;
- Develop and administer mandatory medical supply inventory management;
- Develop an annual response time performance plan. Ensure that this plan is continually maintained, enforced and where necessary, updated. Provide each plan and each update to the Ministry and report to Ministry on the response time performance achieved under the previous year's plan.
- Participate in triennial audit and review (Service Review) in order to demonstrate compliance with all mandatory programs necessary for renewal of Provincial Certification.

Discretionary Programs

- Development and maintenance of a Vulnerable Patient Navigator (VPN) Program;
- Develop and administer a public relations program to provide education related to public safety initiatives, use of EMS and 911 and to promote the EMS Department;
- Provision and coordination of a regional Public Access Defibrillation Program, including oversight of training and program quality assurance;
- Coordinate the MOHLTC funded Dedicated Ambulance Offload Nurse program in conjunction with area hospital emergency departments;
- Participation and cooperation in patient referral programs such as Community Referral by EMS (CREMS), Community Outreach and Support Team (COAST), Mental Health Response Unit (MHRU) and research in Community Paramedic Remote Patient Monitoring (CPRPM)
- Participation in the development and coordination of local Health Link initiatives.

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Prior Year Performance

In 2017, net departmental operations are anticipated to end the year \$92,270 over budget (County of Essex share).

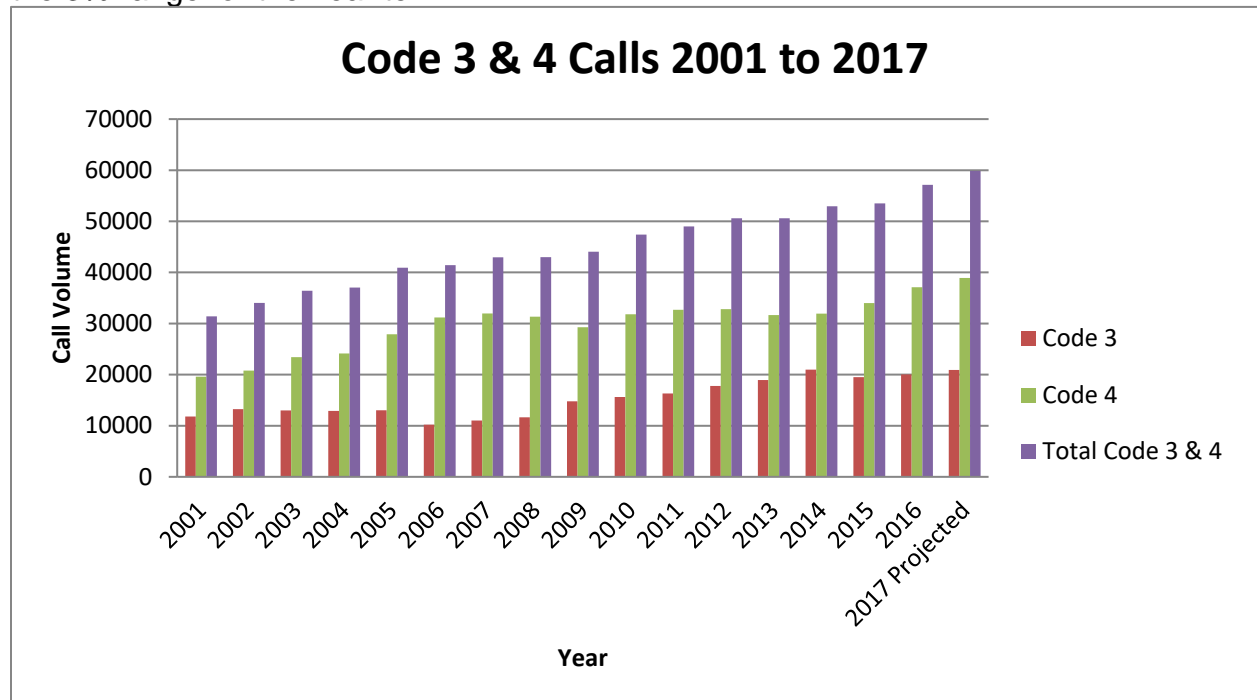
The significant factors leading to the budget variance included wage, benefit and operational costs as follows:

- Modified work assignments (for WSIB / pregnancy / injury).
- Additional staff resources to address increased call volumes, ongoing off-load delays and changes to deployment in neighbouring Chatham-Kent
- Increased missed/late lunch claims
- Lower than historical WSIB NEER costs.
- Lower vehicle repair and maintenance costs realized due to cyclical replacement of the fleet.

Performance Metrics

The 2017 call volume, Code 1 through 4 and 8 is projected to be 113,044. This is an 8.4% increase in overall call volume compared to 2016. Low priority transfers increased by 2% and coverage standbys increased by 11%. Prompt and Urgent responses (Code 3 & 4) increased 4.5% compared to 2016.

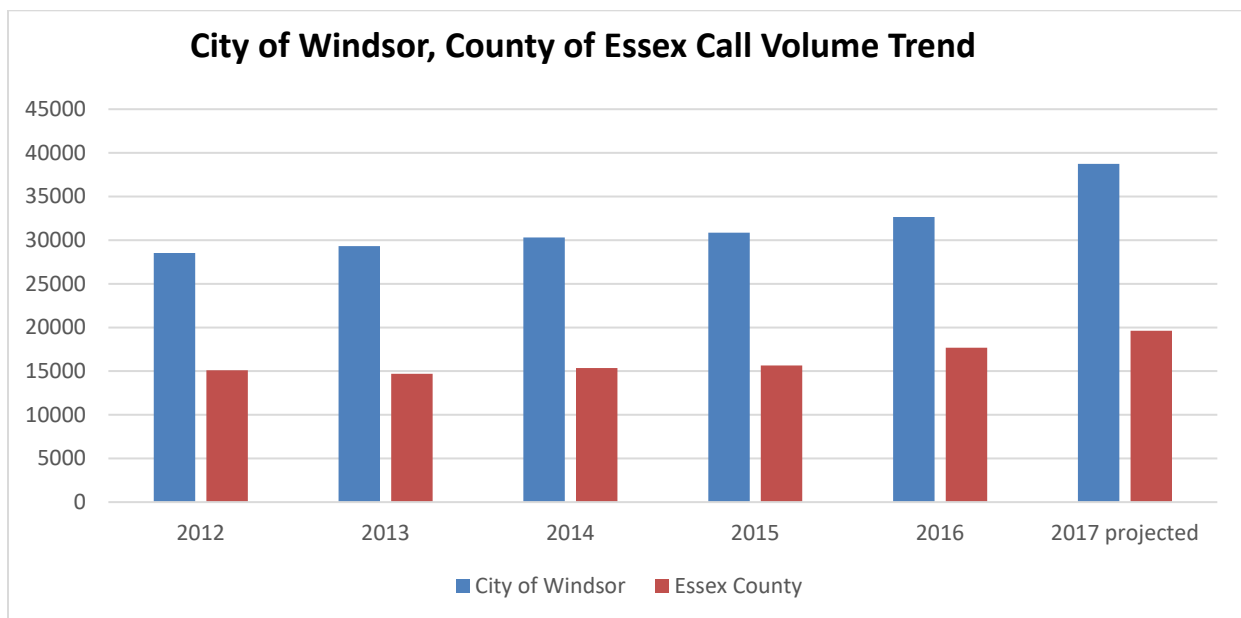
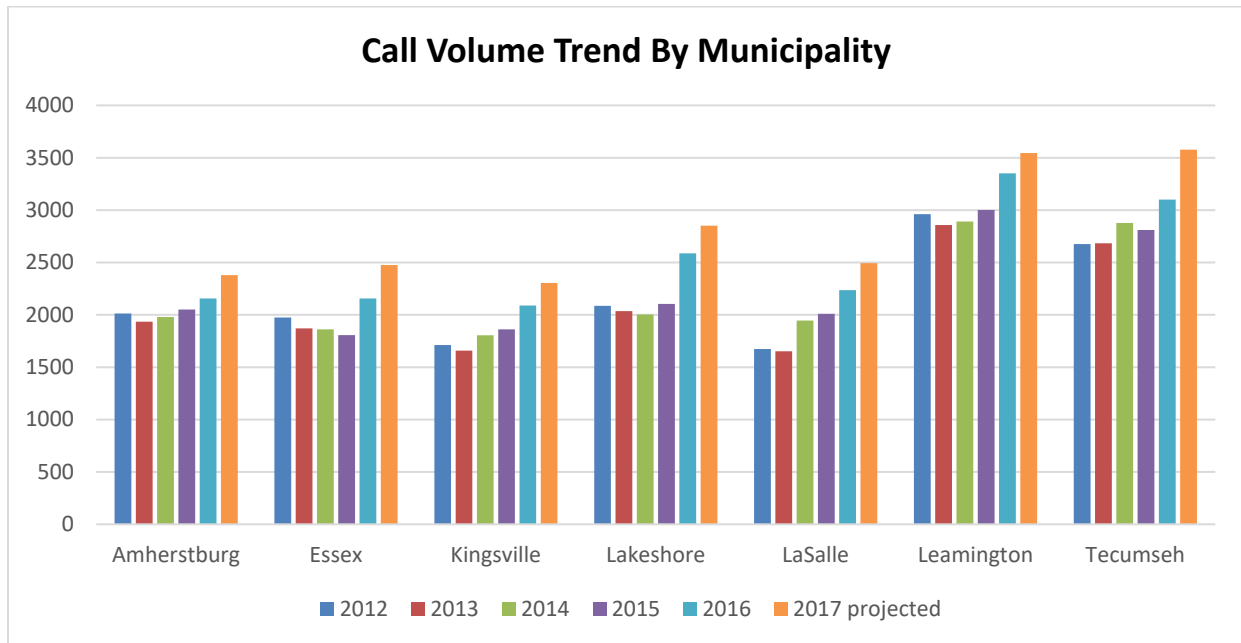
Between 2013 and 2017, Code 1 to 4 call volumes increased on average by 3% annually. Acknowledging the aging population and the expected increased demand of EMS services, anticipated annual increase of code 1 to 4 calls will remain consistent in the 3% range for the near term.



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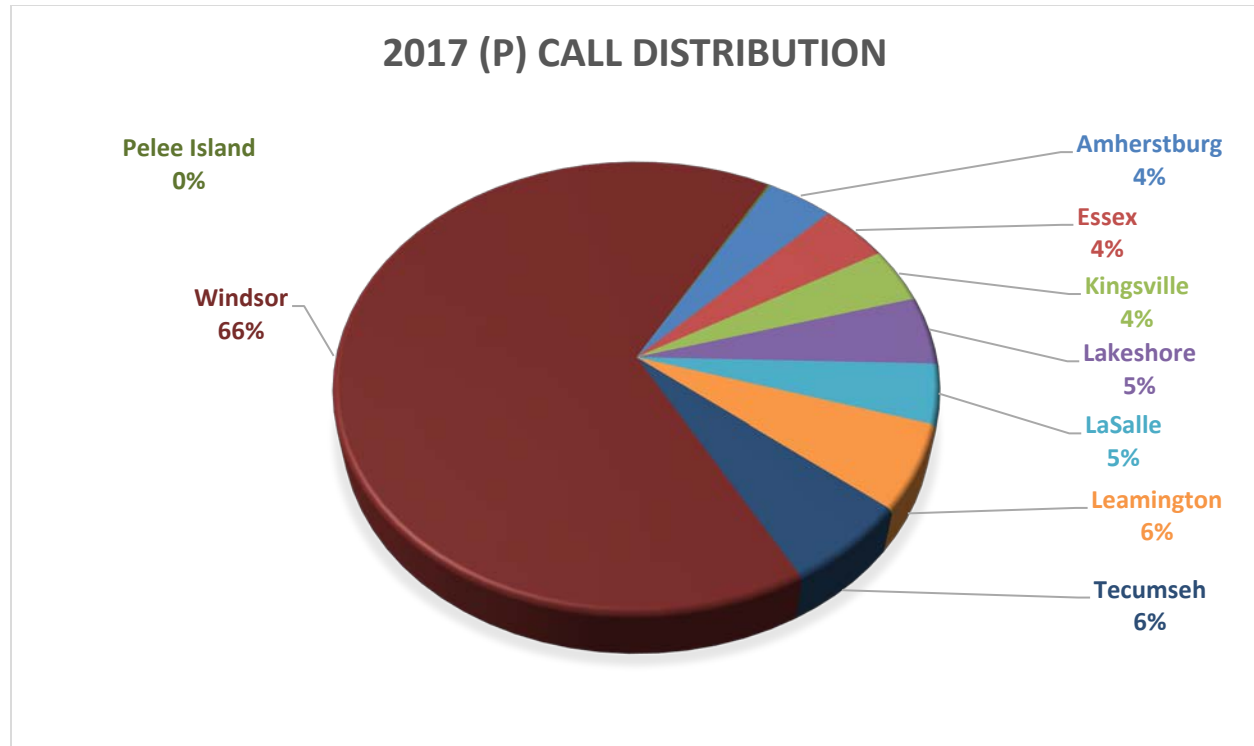
Municipal Call Volumes

For reference purposes, the charts below highlight the patient contact call volume trend by County municipality and the City of Windsor for the period of 2012 to 2017 (P) (Codes 1 to 4) by origin of call.



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The following chart illustrates the 2017 call volume distribution by municipal pickup.



Response Times

The steady increase in call volume and the continual off load delays has impacted response times year-over-year. Essex Windsor EMS has reviewed and modified deployment plans, monitored and changed staffing hours, but response times continue to increase.

The Essex Windsor EMS Response Time Standard Plan performance for 2017 is as follows:

| CTAS | Time Min. | Target | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 YTD |
|-----------------------|-----------|--------|-------------|-------------|-------------|-------------|----------|
| Sudden Cardiac Arrest | 6 | 55% | 60% | 59% | 53% | 61% | 59% |
| CTAS 1 | 8 | 75% | 80% | 75% | 76% | 78% | 77% |
| CTAS 2 | 10 | 90% | 87% | 85% | 86% | 84% | 85% |
| CTAS 3 | 12 | 90% | 88% | 86% | 87% | 87% | 87% |
| CTAS 4 | 14 | 90% | 93% | 90% | 92% | 91% | 91% |
| CTAS 5 | 14 | 90% | 93% | 91% | 91% | 90% | 90% |

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The locally developed targets for the 2018 Response Time Standard Plan remain the same as 2017, as approved by Essex County Council (see discussion under *Proposed Budget* section).

Municipal Benchmarking Network Canada

Essex Windsor Emergency Medical Service continues to participate in the Municipal Benchmarking Network Canada (MBNC), formerly Ontario Municipal Benchmarking Initiative (OMBI) program, along with 11 other EMS services from across Ontario and Canada. Through MNBC, and other initiatives, administrations provide comparable data to allow municipalities to assess best practices and make informed decisions on service performance, quantity and cost. In reviewing statistical data, such as MBNC, care must be exercised to recognize the unique characteristics related to each community's socio-demographics, geographic location, population density and other influencing factors. The benefits of comparisons are to provide enhanced information for decision making, identification of innovative ideas for service improvement and ultimately more efficient and effective service to the citizens served.

According to the latest report (2016), the Essex Windsor area "cost to provide one hour of ambulance service" is slightly higher than the median (\$217 per hour) of the control group at \$219 per hour. This is below the Regions of York, Halton and Toronto and slightly above Hamilton and the Region of Durham. Hours refer to only the hours that vehicles are available for service. Costs include paramedics, administration, medical supplies, building, operating costs, supervision and overhead.

Fig. 8.4 EMS Total Cost per Weighted Vehicle In-Service Hour

'In-Service Hour' refers to only the hours that vehicles are available for service. Costs include paramedic, administrative, medical supply, building, operating, supervision and overhead.



Source: EMDS306T (Efficiency)

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Comparatively, the 2016 Essex Windsor area weighted vehicle in-service hour per 1,000 population is above the median at 422. The Essex Windsor Region is higher than the Regions of York, Halton, Toronto, Hamilton and Durham.

Fig. 8.3 EMS Weighted Vehicle In-Service Hours per 1,000 Population

'In-Service Hours' refers to only the hours that vehicles are available for service.



Source: EMDS226 (Service Level)

The fact that EWEMS weighted in service hours per 1,000 is higher than the median (422/370) and the cost per weighted vehicle in service hour is slightly higher than the median (219/217), it is rationalized that service delivery is completed fiscally effectively and efficiently, as it relates to the MBNC comparators.

EMS Stations

In 2014, the County of Essex commenced the process of purchasing the EMS Station located at 2620 Dougall Avenue in Windsor from the Province of Ontario, with the intent of constructing a new facility on the site in 2017. Preliminary planning began in the fall of 2015 for the scheduled build of the new station. Due to unforeseen complications during construction, the build is projected to be completed by late December, 2017.

Special Events

The department continues to staff Special Events that occur throughout the County and City which require the presence of EMS resources. In 2017, Essex Windsor EMS attended over 50 Special Events, with these events requiring EMS staff and vehicles at a cost to the system. To every extent possible, the events were managed by utilizing the support of volunteer paramedics, the use of in-service resources, dependent on

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emergency coverage and call demand and personal volunteer attendance. Examples of events where EMS services are provided include a variety of local fairs, outdoor concerts, and various marathons.

For some of the larger events, which impose entrance fees to the public and create a financial and operational expense to the service, fee for service are recouped in accordance with the Corporation's Fees and Charges By-Law # 02-2015.

Further, Essex Windsor EMS enters into a Service Agreement with any organization or agency which is paying for the service, as per the EWEMS Special Events Service Agreement By-Law # 48-2014. The largest cost recovery events covered during 2017 were the Windsor Spitfires and the FINA Diving World Series.

Proposed Budget – Current Year

The budget for 2018 represents a total expenditure level of \$43,272,850, with significant recoveries including: \$19,180,330 from the Province, \$12,109,780 from the City of Windsor and the Township of Pelee. The estimated net levy allocation for the County is \$11,940,100 (19.88%).

The 2018 Emergency Medical Services budget reflects the projected costs of operating a public service based on the actual experience of 2017 and historical trends.

Senior EMS Management continues to review statistical information specific to a number of service delivery metrics. A review of call volumes, the Response Time Targets and patient off load pressures has identified the requirement for increased vigilance in patient flow and patient transport diversion protocols. Collaboration between EWEMS, Windsor Regional Hospital, Hotel Dieu Grace Health Care, Erie Shores Health Care (formerly Leamington District Memorial Hospital) and various community partners continue and protocol and procedural changes are implemented to assist with mitigating the demands of off load and with the focus of decreasing response times.

Essex Windsor EMS remains committed to continual analysis of performance and seeks system improvement opportunities, however, operating conditions and trends suggest that the current response time targets are unattainable with current deployment plans and resources. As a consequence of the continued off load delays, the volatility of possible increased response times, historical trend of increased call volume, aging demographics, retiree recruitment and increased development in the region, the department is proposing an enhancement of 34,420 staffing hours, to be phased-in throughout 2018. The proposed enhancement is projected to reduce response times across the region, mitigate costs for overtime, meal claims, vehicle fuel and maintenance.

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While benefits of economies of scale continue to be realized in many operational areas, a number of uncontrollable costs and the proposed staffing enhancement have contributed to an increase in County Responsibility of \$1,980,010. Other factors impacting the 2018 Budget, include:

- Less than 50% (approximately 44%) funding from the Province.
- US exchange rate
- Inflationary increases to supplies and services.
- Shift in Regional cost sharing proportions
- Increases in standard health insurance premiums
- Training cost for mental wellness education and peer support training
- Master Plan service delivery review

Cost allocation for the 2018 budget planning has been based on estimated 2018 regional weighted assessment; subject to finalization of MPAC assessment data and County and City tax policy decisions.

| Municipal Share % Allocation | <i>ACTUAL 2017 Wgt Assess</i> | <i>EST 2018 Wgt Assess</i> |
|---|--|---------------------------------------|
| City of Windsor | 51.153% | 50.753% |
| Township of Pelee | 0.286% | 0.286% |
| Total recovery-service partners | 51.439% | 51.039% |
| County Responsibility | 48.561% | 48.961% |

The 2018 Budget includes a draw from reserves (\$1,892,670) for vehicles and equipment. Amortization of vehicles, equipment and stations is included in the annual expenditures (transferred to reserve) and the cost of replacement assets is drawn from these reserves.

Challenging Issues 2018

The cost of operating an EMS system is directly correlated to factors that are systemic MOHLTC issues which are beyond the control or influence of the Essex Windsor EMS Service. Staffing and funding for Hospitals, Long Term Care Facilities, Community Services and the Local Health Integration Network (formerly the Community Care Access Centres) coupled with the lack of specialists in the Essex Windsor area place an increased burden on the municipal share of providing Emergency Medical Services. This concept is demonstrated by the current and potential future increases in cost associated with the continued inability to unload patients at regional hospital emergency rooms and Provincial Patients First Action Plan (age in place initiative).

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Call Volume trend and forecast

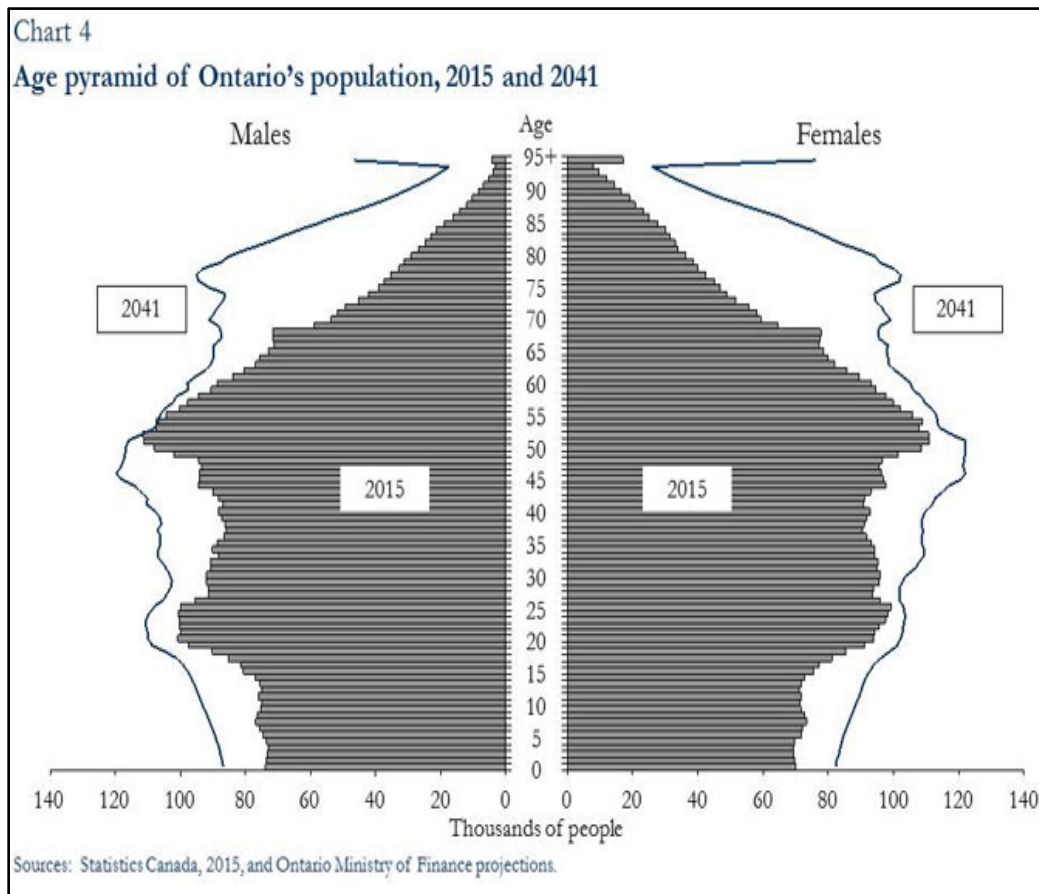
Aging Population

The effects of an aging population and Provincial initiatives to have people age in place rather than placement in a Long Term Care facility are placing increased demand on the services of EMS in the Essex Windsor area. The Patients First Action Plan is one such initiative. Although the MOHLTC is providing more funding to other agencies for in-home services, there is a direct impact on the demand for services of EMS as patients are being transported to the Emergency Departments for services such as blood work, general checkups and dehydration.

As seniors age at home, in general, their medical needs become more complex and more frequent, leading to more calls for EMS. As a result of these factors, call volumes increase each year and impact service and response times negatively.

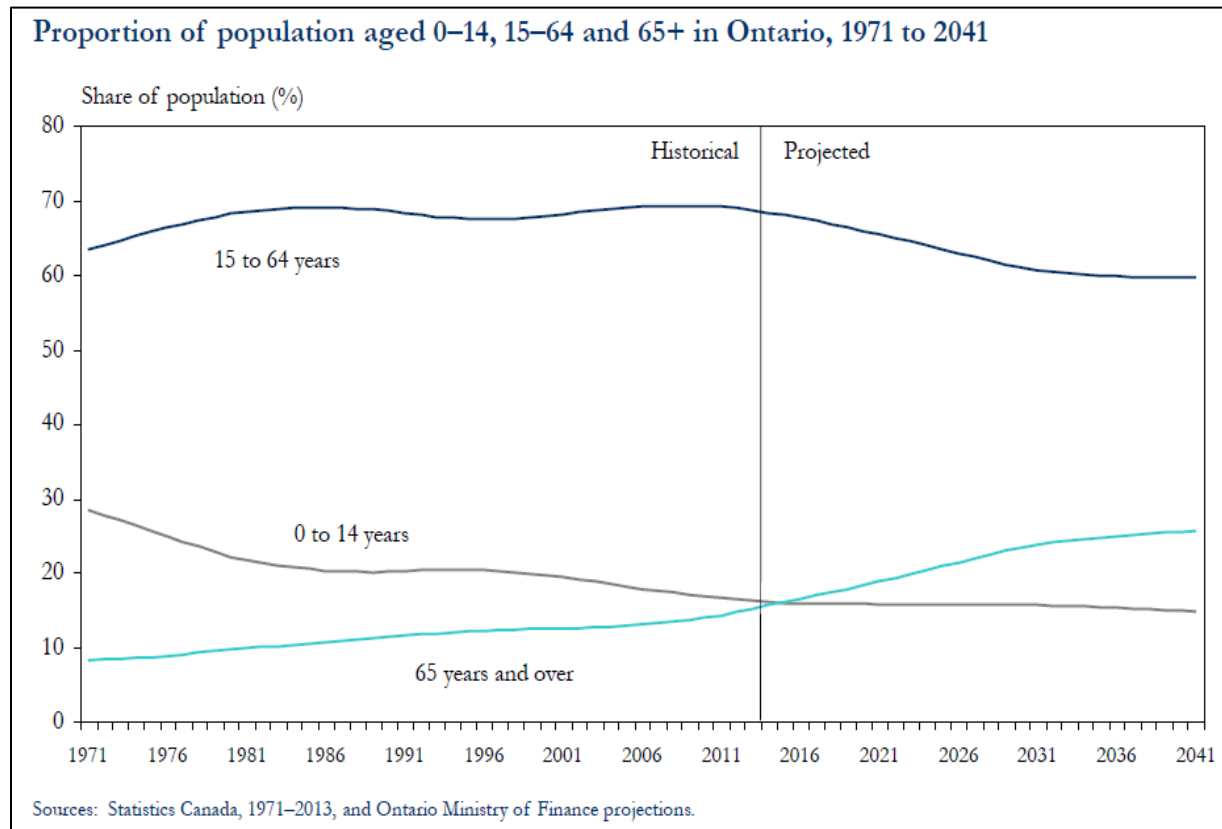
In addition to the current Provincial initiatives, recent reports have recommended the development and expansion of Community Paramedicine programs across Ontario as a support to the aging at home strategies.

It is projected that by 2041 there will be more people in every age group in Ontario compared to 2015. Further, it is projected there will be a sharp increase in seniors, age 65 years of age and older.



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The number of seniors in Ontario is projected to more than double from about 2.1 million in 2013 to over 4.5 million by 2041. In 2015, for the first time, seniors now account for a larger share of the population than children age 0-14 years of age.



An aging population has an impact on the Health Care system which has an impact on the EMS system. For example, an initiative is underway marketing the area as a retirement destination. While the benefits to the local economy are promoted, an increase of retirees in the area will have a direct impact on demand for EMS services as described above.

In 2016, EWEMS instituted the Vulnerable Patient Navigator (VPN) program. In August 2017, the VPN program celebrated its one year anniversary. The goals of VPN is to reduce the EMS patient transfers to the emergency rooms, reduce off load delays, reduce response times and connect or provide the necessary treatment or health care services to the patients in their homes. The goals are achieved with:

- a reduction of 911 responses by 60% for enrolled VPN patients
- 911 response reduction translates into a cost avoidance of \$1,327 per patient
- 911 reduction reallocates 400 hours into unit service utilization
- 911 response reduction equates to 246 fewer Emergency Department visits
- Emergency Department reduction equates to a \$13,333 per patient savings to the health care system

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VPN has also strengthened the current Paramedic Referral Program, which connects EMS patients to other community partners with a 90% increase of paramedic referrals in the field. VPN works in conjunction with the Community Paramedic Remote Patient Monitoring (CPRPM) project. CPRPM focuses on the same demographic and instead monitors patients remotely, via electronic devices.

This project has reduced EMS response and Emergency Department visits of the targeted population by approximately 53%. Together, VPN and CPRPM addresses a patient population that accounts for approximately 25% of the EWEMS call volume and has been historically over the age of 65.

Essex Windsor EMS is committed to growing and fostering our partnerships with agencies such as Erie St. Clair LHIN, Community Health Links, Primary Care providers, Hospice and other community health care or support agencies to ensure that the residents are provided the right care, at the right time and at the right place. The Vulnerable Patient Navigator Program is a key component to providing this care.

Emergency Calls per Population

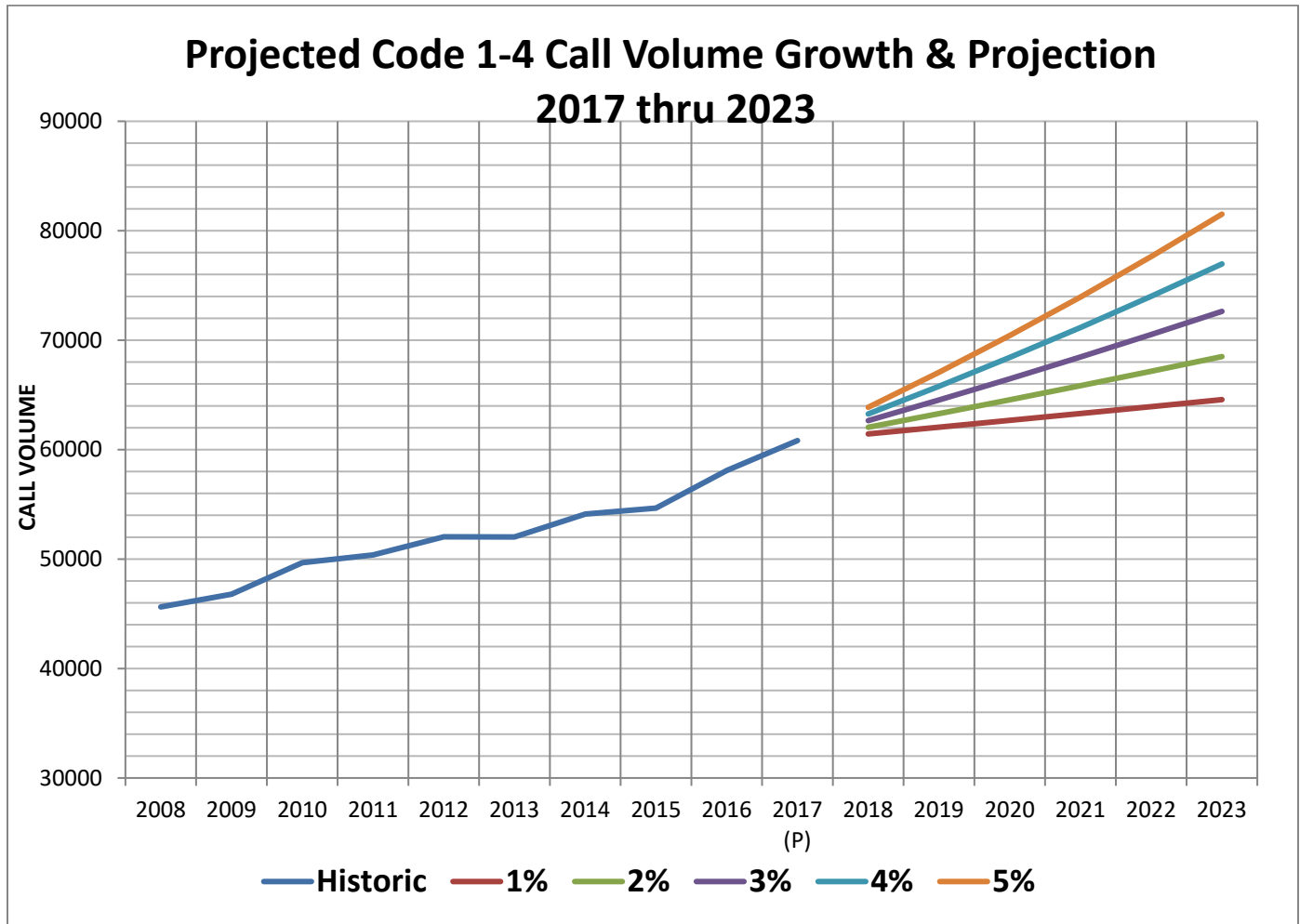
As discussed under Prior Year Performance, the Essex Windsor area continues to experience one of the highest rates of EMS response per population in the Province of Ontario at 153 calls per 1,000 population (Interdev electronic patient care records) as compared to the 2016 median rate of 117 calls per 1,000 for the comparator group of MBNC. Further, Essex Windsor's call volume per vehicle or per unit hour of service continues to be one of the highest in the Province. Historical data and population projections suggest that the call volumes will continue to increase given demographic conditions and development projections in the City of Windsor and Essex County.

Between 2008 and 2017 (10 year average), Code 1 to 4 call volumes grew on average by 2.7% annually. From 2013 to 2017 (5 year average) the Code 1 to 4 call volume will have increased by approximately 3.05% per annum.

With the aging population and forecasted increased use of EMS services, it is anticipated that the annual increase of code 1 to 4 calls will remain in the 3% range.

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Based on the historical percentage increase and forecasting to 2023, Code 1 to 4 Call Volume will in the range of 68,000 to 72,000, based on 2%-3% growth.



Long Distance Transfers

The EMS system continues to regularly transport patients from the Essex Windsor area to hospitals in London and Detroit. Trips to London place Essex Windsor ambulances out of service for a minimum of 5.5 hours, while Detroit trips place ambulances out of service in excess of one hour per trip. With the expansion of Windsor Regional Hospital's Cardiac Care Services (Cardiac Catheterization Unit) in the fall of 2015, cardiac transfers have decreased, but not eliminated. Many patients are required to go to London to receive medical treatment for services unavailable in Essex Windsor (such as Cardiac By-Pass Surgery).

The current Health Care system in Ontario relies heavily on the ability of MOHLTC to guide the patient to the right hospital for the most appropriate care in the quickest manner. The MOHLTC utilizes Criticall to ensure that patients in Ontario are directed to the most appropriate facility for care.

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Therefore, every Hospital must contact Criticall if the care requirements of a patient in their facility cannot be sufficiently met. In these instances, the patient may be transferred long distances to another facility.

Criticall will make all the arrangements, but in many cases EWEMS is not notified until a team from another area arrives in the local jurisdiction, requiring EMS transport back to the receiving facility. In the Essex Windsor area, the service is transporting sick pediatric patients to London or Toronto on very short notice and usually at hours when vehicle staffing is limited and therefore compromising the availability of existing resources.

These long term transfers create a strain on the system and, in many instances, Essex Windsor EMS is required to up-staff to accommodate the needs of local citizens, imposing a significant burden on the department's budget.

Offload Delay (OLD) - Dedicated Emergency Room Nurses

Essex Windsor EMS continues to deal with the inability to unload patients in the emergency rooms (Offload Delay). Commencing in 2008, the Ministry of Health and Long Term Care (MOHLTC) provided temporary funding for Dedicated Emergency Room Nurses to be put in place in the local hospitals to receive and off-load ambulance patients. Essex Windsor EMS was instrumental in advancing this initiative and, as a result, the MOHLTC provided \$250,000 to the County to implement the Dedicated Emergency Room Nurse Program.

While the Off Load Nurse Program has provided some relief, the Province has announced that the funding for the 2018/2019 fiscal year program will be based on "Pay for Performance". This simply means that if the Hospital does not off load promptly, their base funding may be in jeopardy.

EWEMS continues to experience increased offload delay hours, frequency and duration. Although process and procedural changes have occurred within the hospital and EMS system, call volume increase and specifically the low acuity of patients transferred and increased number of mental health patients are the main contributors to offload delays.

Combining home health care initiatives and plans, lack of mental health capacity and ongoing occupancy rates in excess of 100% for both Windsor Regional Hospital's Met and Ouellette Campuses, coupled with increased call volume across the region, offload delays will continue to be an ongoing issue. It should be noted that Leamington District Memorial Hospital is not immune to OLD and is experiencing increased offload delays as well.

The following chart reflects the 2016 OLD pressures experiences by the MBNC comparator group. Essex/Windsor is above the median, at 21.4%.

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Fig. 8.2 Percent of Ambulance Time Lost to Hospital Turnaround

Time spent in hospital includes the time it takes to transfer a patient, delays in transfer care due to lack of hospital resources (off-load delay), paperwork and other activities. The more time paramedics spend in the hospital process equates to less time they are available to respond to calls.



Source: EMDS150 (Community Impact)

Although the Off Load Delay funding will cease in 2018, it is expected that the amendments to the Ambulance Act will assist EWEMS in transporting and referring patients to the right care, at the right time and at the right place. It is anticipated that the Ambulance Act and practice changes will assist in decreasing the Off Load Delay impacts.

2018 proposed staffing enhancement and EMS master plan

As discussed at the Essex County Council meeting of November 2, 2017, under Administrative Report 2017-R007-EMS-1018-BK, Essex Windsor EMS has proposed a staffing enhancement of 34,420 vehicle staffing hours and applicable resources that include the enhancement of one (1) ambulance and one (1) ERV in the 2018 Budget. Administration understands and appreciates the complexity and financial obligation of such an enhancement. The 2018 Budget outlines a phased-in, strategic and scheduled approach to completing the staffing enhancement while maintaining operations and continuing to be fiscally responsible.

A ten (10) year EMS Master Plan was discussed in Administrative Report 2017-R007-EMS-1018-BK. The 2018 proposed budget includes a \$150,000 allocation for the completion of a service delivery master plan. The plan would become the guiding principle and document for the future of EWEMS.

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The plan will consider future staffing, staff scheduling, station locations, resource deployment, program development and other EMS indicators.

The plan would be developed utilizing current and projected population counts, development projects, recruitment initiatives, hospital operations and other key indicators. Although the Master Plan would be drafted in 2018, it would have the ability to be amended as a result of fluctuations in the guiding indicators.

The 2018 proposed budget includes the staffing enhancement and ten year master plan.

Central Ambulance Communications Centre (CACC)

It is important to note that the County does not control how vehicles are dispatched; this is controlled by the Province of Ontario through the Central Ambulance Communications Centre (CACC). EWEMS administration is responsible for developing deployment plans but how the deployment plans are implemented is based on how the CACC dispatches the vehicles. EWEMS administration is accountable for EMS service delivery, but has no control or authority over vehicle dispatch.

In June 2017, the Minister of Health and Long Term Care announced that changes will be forthcoming to the Ambulance Communications dispatch triage tool. These changes were confirmed when the Ontario Improving Transparency in Health Care announcement was released on September 27, 2017. The role of the CACC is to receive ambulance requests, triage those requests and transfer that information to EWEMS resources.

There has been a longstanding issue that the current triage tool is outdated, not based on medical evidence and is found to over prioritize ambulance responses. This over prioritization leads to resources being deployed in an urgent manner when the problem may only require a prompt response or delayed response. The current practice leads to over utilization of resources.

Although the announcement for the new triage tool was announced in 2017, it is not expected that the entire Provincial CACC system will be changed over in 2018 and Windsor CACC was not announced as one of the first implementation sites.

In 2011, the MOHLTC concluded a review of the Niagara and Ottawa Dispatch Centres which are currently being operated on a pilot basis by the local EMS system, utilizing an alternate Medical Priority Dispatch System. Following up on this analysis, MOHLTC is expected to recommend the preferred delivery model for CACC's. While the analysis of the effectiveness of the pilot project has been concluded, the MOHLTC has yet to publicly release the results and recommendations.

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Mental Wellness

In 2016, the Province passed Bill 163, Supporting Ontario's First Responders. This Act is very important for paramedic well-being, support and overall service well-being. EWEMS has been a longtime supporter of mental wellness of the staff, with a retained psychologist, employee assistance programs, health benefits, counselling and the development of a Peer Support Program.

Peer Support is a group of volunteer, front line paramedics who are trained in communicating with those first responders during a time of need. Such need can range from being involved in a tragic incident or just the need to talk. In 2017, EWEMS increased the compliment of trained Paramedics to approximately twenty (20) Peer Supporters and their utilization has increased each month. This is an excellent sign, as the more people talk, the better they can receive the proper help they require.

Education in mental wellness, the signs and symptoms and paths for recovery are important for any responder. Essex Windsor EMS partnered with the Windsor Essex Health Unit, WE CMHA, the local hospitals and local emergency services to apply for Ministry of Labour funding for a regional mental health approach. The Health Unit is the lead in the application and is awaiting any announcement. The goal of the application is to provide a regional and unified approach to mental wellness prevention, education and service to all providers and emergency response.

Essex Windsor EMS has developed a comprehensive mental wellness plan which is proactive, preventative and reactive. In 2017, EWEMS developed a cognitive awareness program for those individuals returning to work in a graduated, scheduled and supervised fashion, to ensure a safe and early return to the pre-injury condition. As with physical injuries, mental wellness can be just as debilitating. The action plan addresses those injuries which are unseen but as with the investments in preventing lifting injuries, EWEMS is investing in mental health preparedness.

The 2018 proposed budget continues to have funds allocated to mental wellness education, prevention and reaction.

Technological Advances

Defibrillators/Monitors

For every patient contact and for the majority of inter-facility transfers, Essex Windsor EMS Paramedics utilize a defibrillator/monitor to capture the person's vital signs and to deliver a lifesaving shock to restart a heart. The current defibrillator/monitor has the capability to monitor heart rate, oxygen saturation within the blood, blood pressure, electrical rhythms of the heart, provide CPR performance feedback, transmits data to the ambulance call report and to deliver data to the hospital and physicians. The defibrillator/monitor is not just a simple tool, but a complex device that is focused on patient care and positive patient outcomes.

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Essex Windsor EMS placed the current defibrillators/monitors into service in 2009. The current devices have served the patients and paramedics exceptionally over the past eight (8) years. EWEMS successful patient experience, such as cardiac arrest save rates, have improved year after year. The progress, improvement and innovation of the cardiac care program, stroke program and general medical practice can be directly attributed to the defibrillator/monitor and the functionality of those devices.

The defibrillators/monitors are due for replacement in 2018 and the proposed budget addresses the replacement plan and funding requirements to continue the patient focused successes of these important tools.

Electronic Ambulance Call Reports (eACR)

Essex Windsor EMS implemented an Electronic Ambulance Call Report (eACR) system in 2011, becoming fully operational in 2012. In order to support this technology a number of hardware and software installations have been required to ensure connectivity, security and transfers of electronic data.

In 2014, all of Essex Windsor EMS ambulances and ERU's became Wi-Fi hotspots. This achievement allows for critical patient data to be sent to the hospitals as soon as reasonably possible. The data sent is found to be crucial for physician treatment both in the Emergency Department as well as the other supporting departments, such as the cardiac catheterization lab.

In 2017, Essex Windsor EMS finalized the Business Proof of Concept (BPOC) for live sharing of eACR and CACC data. The objective of the project is for the timely and accurate sharing of data during a call to reduce the amount of time that a Paramedic requires to complete documentation, thereby reducing the time to return resources to an available status. Results and feedback have identified that the BPOC has met and exceeded the objective.

In conjunction with the BPOC, Essex Windsor EMS began utilizing the shared CACC data for the real time viewing of ambulance movement, call engagement and time on task and for accurate and reliable routing or mapping. Routing and mapping has begun and receiving excellent feedback and results. All initiatives will allow EWEMS to provide the best possible care to our residents and to monitor the status of our resources in real time to assist in mitigation of any off load or delay in response issues.

These technological advancements continue to place an increasing burden on the Information Technology staff and the cost of providing additional support is addressed in this budget.

Power Stretchers and Power Loads Devices

In 2013, Essex Windsor EMS introduced Power Stretchers to the ambulance fleet. Along with the Power Stretchers, Power Load lifting devices were installed in the new ambulances from 2013 through to 2017. To date, EWEMS has a total of twenty six (26) Power Load lift devices operational and another seven (7) are proposed within the 2018 Budget.

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Essex Windsor EMS continues to experience a reduction in lower back and shoulder over exertion injuries. These reductions are reflective of a reduction in loss time injuries of the and thus lowering the WSIB injury experience. Between 2013 and 2017 overexertion lost time hours attributed to stretcher use has been lowered by approximately 84%. This continued reduction of injuries can be attributed directly to the implementation of Power Stretchers and Power Load lifting devices and will have:

- a positive impact on the EWEMS WSIB experience over time; and
- sets achievable standards that build on Essex-Windsor EMS' strong overall performance.

Electronic tracking of hard equipment assets

Every ambulance and early response vehicle (ERV) contains hard equipment assets that are mobile, moved from vehicle to vehicle, are required to be maintained/inspected and have the ability to be misplaced. Examples of such items are stretchers, defibrillators, response bags, radios, cellular phones, computer tablets, oxygen systems, automated CPR devices (Lucas) and other assorted pieces of equipment.

When an item is misplaced it can take a large amount of time and manpower to back track, search and locate the piece of equipment. When a piece of equipment is required to be inspection, a large amount of human resource time is spent tracking, locating and delivering the piece of equipment to the inspection site.

Essex Windsor EMS has found technology that locates, identifies and reminds staff of equipment location, how it is being utilized and when it is required to be inspected. The implementation of such technology will reduce human resources hours and expense in tracking and locating, mitigate the possibility of lost or misplaced equipment and track and monitor the function of the valuable tools of EWEMS.

The 2018 Budget is proposing the introduction of equipment tracking hardware and software to ensure the efficient use, security and maintenance of EWEMS hard equipment assets and patient care delivery devices.

Conclusion

Essex Windsor EMS remains committed to providing quality and timely care to the residents of Essex Windsor along with continual analysis of performance and system improvements.