2023

Report of the Auditor General to the Nova Scotia House of Assembly

Ground Ambulance Services: Department of Health and Wellness and Emergency Medical Care Inc.

Office of the Auditor General of Nova Scotia

Performance Audit

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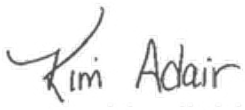
September 26, 2023

Honourable Keith Bain
Speaker
House of Assembly
Province of Nova Scotia

Dear Sir:

I have the honour to submit herewith my Report to the House of Assembly under Section 18(2) of the Auditor General Act, to be laid before the House in accordance with Section 18(4) of the Auditor General Act.

Respectfully,



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Ground Ambulance Services
Department of Health and Wellness and Emergency Medical Care Inc.

Key Messages

- Ground ambulance service is in critical state primarily due to:
  - Patient offload delays at hospitals
  - Increase in 911 calls requiring an ambulance
  - Paramedic staffing shortages
  - Emergency department closures
- Without new government initiatives introduced in 2022-23 (new vehicles, transport operators), state of system would be worse.
- Gains resulting from new 2022 transfer system outpaced by other pressures.
- Department not holding Nova Scotia Health accountable for its role in offload delays.
- Department not holding Emergency Medical Care Inc. accountable for poor ambulance response times.
- Emergency Medical Care Inc. implementing working condition improvements; however, paramedics are operating in an unsustainable work environment.
- System is extremely complex with many interrelated parts.

Why We Did This Audit

- Ambulances provide an essential service to sick and injured Nova Scotians.
- Ambulance response and offload times have been significantly increasing since 2017.
- The cost to deliver ground ambulance services in 2022-23 was over $147 million.
- The ground ambulance system is experiencing significant paramedic staffing challenges.

Ground Ambulance System in a Critical State

- In 2022, province-wide average ambulance response time increased 79% (from 14 minutes to 25 minutes).
- In 2022, on average, paramedics spent one quarter of working hours waiting at emergency departments to offload patients at an estimated cost of over $12 million.
- Significant response time pressures on Halifax and surrounding areas.
- In 2022, Queen Elizabeth II Health Sciences Centre – Halifax Infirmary average offload delay was over three hours.
- In the last five years, calls requiring an ambulance have increased by 17%.
- Emergency department closures contributing to longer response and offload times.
- Emergency Medical Care Inc. was unable to staff 23% of daily scheduled ambulances in 2022.

Department of Health and Wellness Not Effectively Tracking Key Performance Indicators in Contract with Emergency Medical Care Inc.

- Department of Health and Wellness not holding Emergency Medical Care Inc. accountable for poor response times.
- Emergency Medical Care Inc. not meeting its contractual obligations including providing certain ambulance patient care record details to the Department of Health and Wellness.
- The ground ambulance contract does not include financial penalties for not meeting medical performance standards.

Department of Health and Wellness Not Holding Nova Scotia Health Accountable for Significant Offload Delays

- Department issued directives in 2019 and 2021 to Nova Scotia Health to improve offload times in emergency departments.
- Immediately after each directive, offload times improved.
- Accountability for enforcing and acting on directives not clear.

Paramedic Working Conditions Unsustainable, Indicate Crisis

- Many paramedics are leaving the ground ambulance system citing issues with work-life balance due to overtime, pay and high cost of benefits, and long hours spent waiting in emergency departments to offload patients.
- Number of new paramedic graduates not keeping pace with resignations.
- Cost of paramedic sick time, overtime and allowances for missed breaks and shift overruns has increased by almost $3 million over the last five years and was $11.8 million in 2022.

Public Reporting Improvement Needed on Ground Ambulance Dashboard Data

- Weekly public reporting of ambulance data good first step to improve transparency of the ground ambulance system.
- Manual recording by paramedics of patient care transfer to hospital staff creating incomplete and inaccurate data.
- Ambulance data lacks context for Nova Scotians and does not address key pressures on the ground ambulance system.

New Contract Cost Effective as Long as Controls over EMCI Management Fee and Audit Clause Utilized

- EMCI retained half of surpluses in previous contract; new contract better protects province as EMCI must return surpluses to the Department.
- Department is not utilizing audit clause to effectively monitor Emergency Medical Care Inc.

Reference Guide – Key Findings and Observations

Paragraph	Key Findings and Observations
Ground Ambulance System in a Critical State	
26	Increasingly longer ground ambulance response times across the province
29	Poor response times a symptom of strains on the ground ambulance system
30	Significant response time pressures on Halifax and surrounding area
31	Patient offload delays significantly impacting ground ambulance operations
36	In 2022, province-wide average hospital offload time increased by 50%
39	In 2022, Nova Scotia hospitals offloaded patients within 30-minute standard only 23% of the time
40	In 2022, paramedics spent a quarter of working hours waiting in emergency departments to transfer care of patients
42	Calls requiring an ambulance response up 17% since 2018
45	Almost one quarter of scheduled ambulances were unstaffed in 2022
49	Significant hours of emergency department closures between April 2020 and July 2022
52	Emergency department closures are resulting in longer ambulance response times
57	The Department made significant system changes to improve response times
59	New transfer service significantly reduced number of paramedics and ambulances required for patient transfers between facilities
62	Ambulance vehicles and paramedics added to system to address demand
Department of Health and Wellness Not Effectively Tracking Key Performance Indicators in Contract with Emergency Medical Care Inc.	
63	Awarding of ambulance contract not recorded on government procurement website
64	Sole-source contract contains terms and conditions to protect Nova Scotians
66	Performance Standards Committee responsible for oversight
68	Department not effectively monitoring performance of EMCI
73	Department not holding EMCI accountable for contractual response times
77	Offload delays so severe Department ceased monitoring of ground ambulance response times in August 2022
80	No financial penalties imposed should EMCI fail to meet medical performance standards
Department of Health and Wellness Not Holding Nova Scotia Health Accountable for Significant Offload Delays	
83	Accountability for directives not clear
Paramedic Working Conditions Unsustainable, Indicate Crisis	
96	Five major challenges identified by paramedics
98	Significant increases in paramedic overtime between 2018 and 2022
101	Allowances paid to paramedics for missed breaks and shift overruns rose by 71% over the past five years
104	Paramedic paid sick time increasing
107	Combined cost of overtime, sick time, and allowances reached $11.8 million in 2022
109	Paramedics on leave accounted for 70-90% of total vacancies over the past four years
111	Almost 70% of paramedics on leave are for medical reasons
116	Paramedics leaving profession earlier than expected
118	Number of new paramedic graduates not keeping pace with resignations

Recommendations and Responses

Recommendation	Department Response	
Recommendation 1.1 We recommend the Department of Health and Wellness monitor Emergency Medical Care Inc.'s timely implementation of the accepted recommendations from both Fitch and Associates reports. **See paragraph 1.25**	The DHW EHS team has a process in place to track the progress of implementation of the Fitch Reports. Each recommendation has been assigned an owner and is monitored as part of the Executive Forum meetings with EMCI. Meetings are held every two weeks and progress against the recommendations is documented.	Department Agrees **Target Date for Implementation:** Implemented
Recommendation 1.2 We recommend the Department of Health and Wellness perform its own quarterly assessment of Emergency Medical Care Inc.'s performance on all ground ambulance performance standards instead of relying on Emergency Medical Care Inc.'s self-assessment of performance. **See paragraph 1.72**	Prior to the audit period, a functional assessment of the DHW EHS division was completed. As a result of the review, during the audit period, additional resources were added to the EHS team with the required skillset to manage the assessment of performance standards. Development of plans and procedures to complete the quarterly assessments has commenced.	Department Agrees **Target Date for Implementation:** March 31, 2024
Recommendation 1.3 We recommend the Department of Health and Wellness define what conditions will be required to reinstate holding Emergency Medical Care Inc. accountable for response times, in addition to reestablishing accountability by: • Revising exemption criteria to hold Emergency Medical Care Inc. accountable for response times in the current environment of emergency department offload delays; • Requiring requested exemptions to be submitted monthly by Emergency Medical Care Inc.; • Reviewing and approving the exemptions submitted in a timely manner; and • Calculating the contractual response times and providing this information quarterly to the Performance Standards Committee. **See paragraph 1.79**	The Department of Health and Wellness will put processes in place to hold EMCI accountable for response times in the current environment of offload delays, require exemptions to be submitted monthly and calculate the contractual response times for review by the Performance Standards Committee. The Department is instituting a new position, clinical quality compliance officer (clinical paramedic and technical expertise), to support the review of exemptions. The First Watch System, which is a public safety technology system currently being used by EHS, can help with the management of exemption requests. It has specific functionality that will enable better reconciliation of exemption requests that will be implemented.	Department Agrees **Target Date for Implementation:** October 30, 2024
Recommendation 1.4 We recommend the Department of Health and Wellness introduce financial penalties for failing to meet medical performance standards relating to: • the completion and disclosure of electronic patient charts to hospitals receiving ambulance patients; and • providing all requested Clinical Quality Improvement records to the Department. **See paragraph 1.82**	The Department of Health and Wellness will work with EMCI and the EHS Medical Director to determine the appropriate processes and technology needed for the completion of patient care records and the disclosure of electronic patient charts to hospitals receiving ambulance patients. We will work with EMCI on defining when to issue penalties. Some records are currently provided, and the Department will work with EMCI to ensure that all of the records are provided to the Clinical Quality Improvement Committee.	Department Agrees **Target Date for Implementation:** September 30, 2024

Recommendations and Responses

Recommendation	Department Response	
Recommendation 1.5 We recommend the Department of Health and Wellness clearly define who is accountable for directives at both the Department and Nova Scotia Health relating to offload delays at emergency departments and continue to monitor Nova Scotia Health's compliance with the directives. **See paragraph 1.95**	Accountability is clearly established. Pursuant to the *Health Authorities Act*, the Minister of Health and Wellness is responsible for the health system, including the Department of Health and Wellness and Nova Scotia Health. Appointed by the Premier and under the Minister's direction, the Health Leadership Team (HLT) has responsibility for health system oversight, monitoring and performance, including the directives related to offload delays. HLT meets monthly, at a minimum, and works with system partners to get regular updates on key initiatives. They also liaise with other departments, including senior leadership at DHW and NSH/IWK, and committees that relate to their mandate. In addition to their regular meetings, they can organize sub-committees or work with consultants and advisers to assist in their work when deemed necessary.	Department Agrees **Target Date for Implementation:** Implemented
Recommendation 1.6 We recommend the Department of Health and Wellness require Emergency Medical Care Inc. to develop a staffing strategy that identifies the appropriate level of resources required to deliver the ground ambulance system. At a minimum, the plan should: • Evaluate the paramedic staffing demands of the current system; • Forecast the paramedic staffing demands of the future, considering historical data on sick time and paramedic time spent in offload; • Identify other system strains and factor into forecasting; • Work to address overtime and missed breaks; • Set goals for recruitment and retention of paramedics; • Identify whether there are additional locations where training programs could be offered. **See paragraph 1.130**	A comprehensive staffing model for ground ambulance was requested by the Department of Health and Wellness from EMCI in January 2023, with a due date of September 30, 2023. The deliverable will address the appropriate level of resources for the current and future ground ambulance system. The deliverable is being developed in collaboration with the Department, the Office of Health Care Professionals Recruitment, and other stakeholders.	Department Agrees **Target Date for Implementation:** January 31, 2024

Recommendations and Responses

Recommendation	Department Response	
Recommendation 1.7 We recommend Emergency Medical Care Inc. offer and document exit interviews to all departing paramedics in a timely manner and provide aggregate results to the Workforce Steering Committee and the Department of Health and Wellness to respond accordingly. **See paragraph 1.135**	Effective August 16, 2023, the automated Exit Interview Survey went live. Powered by Qualtrics and integrated with EMCI's Human Capital System (Workday), employees who leave their position at EMCI ('leavers') will automatically be invited to participate in the survey and will receive two scheduled reminders every 3 days from the initial email. Surveys can be manually uploaded for leavers if the exit needs to be launched sooner. EMCI's HR team can check the status at any stage. All information is date and time stamped. Once enough surveys are collected, exit interview dashboards are generated with a summary of results from which aggregate results can be provided by EMCI to the Workforce Steering Committee and the Department of Health and Wellness.	EMCI Agrees **Target Date for Implementation:** Implemented August 2023 and pending sufficient number of survey results are completed, first aggregate report could be available by end of 2023.
Recommendation 1.8 We recommend the Department of Health and Wellness require Nova Scotia Health to address inaccuracies in public dashboard ambulance system data. **See paragraph 1.142**	The Department of Health and Wellness will work with the Nova Scotia Health Performance Analytics Group to address inaccuracies that occurred due to an aggregation error in how provincial average data was reported.	Department Agrees **Target Date for Implementation:** March 31, 2024
Recommendation 1.9 We recommend the Department of Health and Wellness publicly report weekly ground ambulance response times by community and offload times by hospital. **See paragraph 1.142**	Reporting of ground ambulance response times will be done at the community category level to ensure patient privacy. Offload times will be reported for all level one and two facilities. The frequency of reporting will be reassessed and aligned with the data system capabilities.	Department Agrees **Target Date for Implementation:** June 30, 2024
Recommendation 1.10 We recommend the Department of Health and Wellness add additional indicators to their public reporting on ground ambulances to convey other pressures on the ground ambulance system such as emergency department closures. **See paragraph 1.142**	The Department of Health and Wellness EHS division will take direction from the Health Leadership Team and work with the NSH Performance Analytics Group to determine relevant measures that can be used to convey pressures on the ground ambulance system. Adding them to the public dashboard will be contingent upon usability of the necessary data to define the measures.	Department Agrees **Target Date for Implementation:** June 30, 2024
Recommendation 1.11 We recommend the Department of Health and Wellness require Emergency Medical Care Inc. to create and implement a new process that will result in a more accurate and reliable transfer of care time that is useful for decision-making purposes. **See paragraph 1.145**	The EHS Provincial Medical Director will work in collaboration with NSH, IWK and EMCI to conduct a review of the current processes for transfer of care, identify gaps and as appropriate, implement a new process to improve accuracy and reliability. This will involve a review of the clinical processes and any technological resources required to obtain data for decision-making purposes.	Department Agrees **Target Date for Implementation:** December 31, 2024

Recommendations and Responses

Recommendation	Department Response	
Recommendation 1.12 We recommend the Department of Health and Wellness formalize in the ground ambulance contract the costs, if any, that should be excluded from the calculation of the management fee paid to Emergency Medical Care Inc., particularly where there is no relationship to EMCI's management ability of the contract. **See paragraph 1.163**	The EHS Services Agreement covers the provision of ground and air ambulance services. The EHS Services agreement section 8.8 defines the management fee for ground ambulance services. Schedule A of the agreement defines the specific services that comprise ground ambulance services and Schedule F defines the baseline budget elements that are used to calculate the management fee. Any additions to the budget elements used to calculate the management fee would be subject to the Change Management Procedures outlined in Schedule T of the Services Agreement. Schedule B of the agreement defines the air ambulance services and relevant vendor, which are not included in the baseline budget elements in Schedule F, so not part of the management fee calculation. Section 8.8.2 of the contract also specifies the items that do not have management fees applied.	Department Agrees **Target Date for Implementation:** Implemented
Recommendation 1.13 We recommend the Department of Health and Wellness use the audit clause in the ground ambulance contract with Emergency Medical Care Inc. to begin conducting regular audits, with topics selected based on risk. **See paragraph 1.168**	Members of the Department of Health and Wellness EHS division met with the Provincial Internal Audit Executive Director and Director in May 2023 to discuss the development and implementation of a risk management plan. This will include defining, tracking, and monitoring risks and will inform the basis of an audit plan, and the specific resources required to enable it.	Department Agrees **Target Date for Implementation:** September 30, 2024
Recommendation 1.14 We recommend the Department of Health and Wellness design and implement a consistent and documented process for the Strategic Investment Fund that includes details on: • approvals for expenditures • reconciliation of actual cost against approved cost • quantity of items purchased, and • nature of purchases. **See paragraph 1.174**	Work is underway on a more defined process for the Strategic Investment Fund. A Request Form has been developed and is in use to ensure the necessary information is provided to support a request and the creation of a tracking document. Process documentation is being developed in conjunction with Finance and Treasury Board staff.	Department Agrees **Target Date for Implementation:** March 31, 2024

Questions Nova Scotians May Want to Ask

1. What is the Department of Health and Wellness doing to improve ground ambulance response times?
2. Will the Department of Health and Wellness hold Nova Scotia Health accountable for its role in the ground ambulance system?
3. Does the Department of Health and Wellness have a plan to add more ambulances and paramedics to address system pressures?
4. Does the Department of Health and Wellness have a plan to address increasing emergency department offload delays, especially in the Halifax Regional Municipality?

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1 Ground Ambulance Services

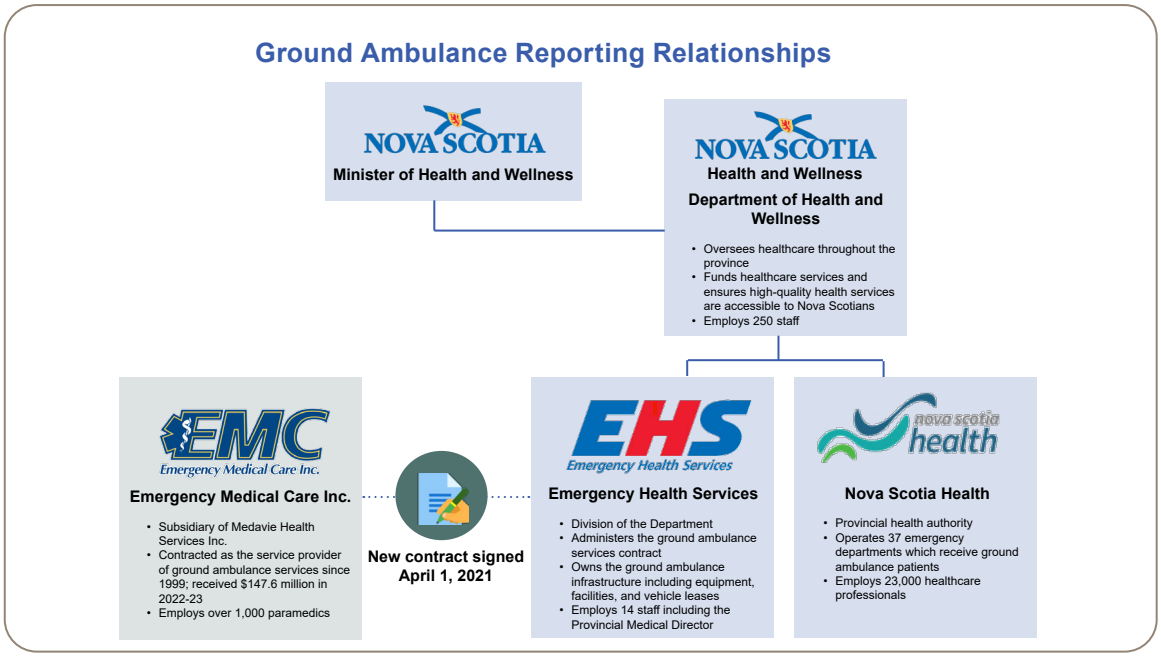
Background

1.1 In Nova Scotia, the Minister of Health and Wellness is responsible for the provision of emergency health services. Emergency health services are defined as the delivery of healthcare services provided by pre-hospital first responders and paramedics. This can include care that starts when the call is answered, care provided at the scene, care during transport to hospital, and transfers between facilities. Pre-hospital care plays a large role in short- and long-term patient outcomes and in the healthcare system at large. Our audit focuses on the ground ambulance component of emergency health services; we did not examine air ambulance services.

1.2 The Emergency Health Services (EHS) division of the Department of Health and Wellness (the Department) has responsibility to oversee the delivery of ground ambulance services. *The Emergency Health Services Act* gives the Minister of Health and Wellness the authority to contract with service providers for the provision of emergency health services.

1.3 Since 1999, Emergency Medical Care Incorporated (EMCI), a subsidiary of Medavie Health Services, has operated the ground ambulance system in Nova Scotia under long-term performance-based contracts. In April 2021, the Department of Health and Wellness entered a new five-year contract with EMCI for emergency health services. The contract carries the option for two renewals of two years each for a total of nine years. The most recent annual cost to provide ground ambulance services was $147.6 million (2022-23).

1.4 The EHS logo visible on emergency vehicles and staff uniforms is the brand logo for EHS and is owned by the province. While EMCI is the current provider of these services, the EHS branding would remain with the province should another provider subsequently take over the contract. In addition to branding, EHS owns or leases the equipment and facilities required to deliver ground ambulance services. The EHS fleet of 143 ambulances, as well as other emergency vehicles, is leased. However, EMCI is responsible for the maintenance of the emergency vehicles.



Source: Office of the Auditor General of Nova Scotia

1.5 Paramedics providing ground ambulance services under the contract between EMCI and the Department are employees of EMCI. A collective agreement is in place between EMCI and the International Union of Operating Engineers, which represents paramedics. The College of Paramedics of Nova Scotia is the regulatory body for the practice of paramedicine in the province, and paramedics must be licensed annually to work. As of December 2022, EMCI is funded for 1,019 full time equivalent paramedic positions, in addition to paramedic supervisors and ground ambulance operations staff. EMCI employs four licensing levels of paramedics as detailed below.

Ground Ambulance Paramedics

Primary Care Paramedic (PCP)

- Requires 1-2 years of study; 651 PCPs with EMCI as of December 2022.

Intermediate Care Paramedic (ICP)

- Scope of practice is similar to the PCP; no new ICPs since early 2000s; 40 ICPs with EMCI as of December 2022.

Advanced Care Paramedic (ACP)

- Requires 1-2 years of study beyond the PCP Program; 351 ACPs with EMCI as of December 2022.

Critical Care Paramedic (CCP)

- Requires 8 months of part-time study beyond the ACP program; 8 CCPs with EMCI as of December 2022.

Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.

1.6 In addition to paramedics, there are other types of employees employed by EMCI involved in the delivery of ground ambulance services. These include medical communications centre staff (call-takers, dispatchers and the clinical support team) and transport operators.

1.7 The Department introduced transport operators in 2021, on the recommendation of Fitch and Associates, consultants hired to evaluate the province's emergency medical system. As of December 2022, there are 122 transport operators who respond to calls for patients who require a lower level of clinical support and who transport patients between healthcare facilities. Transport operators have training in first aid, vehicle operations and equipment, and work closely with paramedics.

1.8 In 2021, EMCI began adding more resources to the Medical Communications Centre (MCC) to manage call volume and non-life-threatening calls to allow paramedics to focus on the most significant emergencies. An on-site physician, clinical support paramedic, and nurse were added to the MCC to provide real-time clinical support for paramedics, healthcare providers, and patients. The goal of this initiative is to identify less serious situations that don't require a fully staffed ambulance and pathways of care other than paramedics attending a scene.

EMCI Employees Who Support Paramedics

Transport Operator

- A non-clinical first aid trained position paired with a paramedic in the patient transfer and medical transport services; 122 Transport Operators as of December 2022.

Communications Officer (call-takers and dispatchers)

- First contact at Medical Communications Centre for calls transferred from 911 centre; 68 Communications Officers as of December 2022.

Clinical Support Team

- Physicians, registered nurses, and clinical support paramedics in the Medical Communications Centre assess patients, plan treatment options, and provide medical advice to callers and paramedics.

Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.

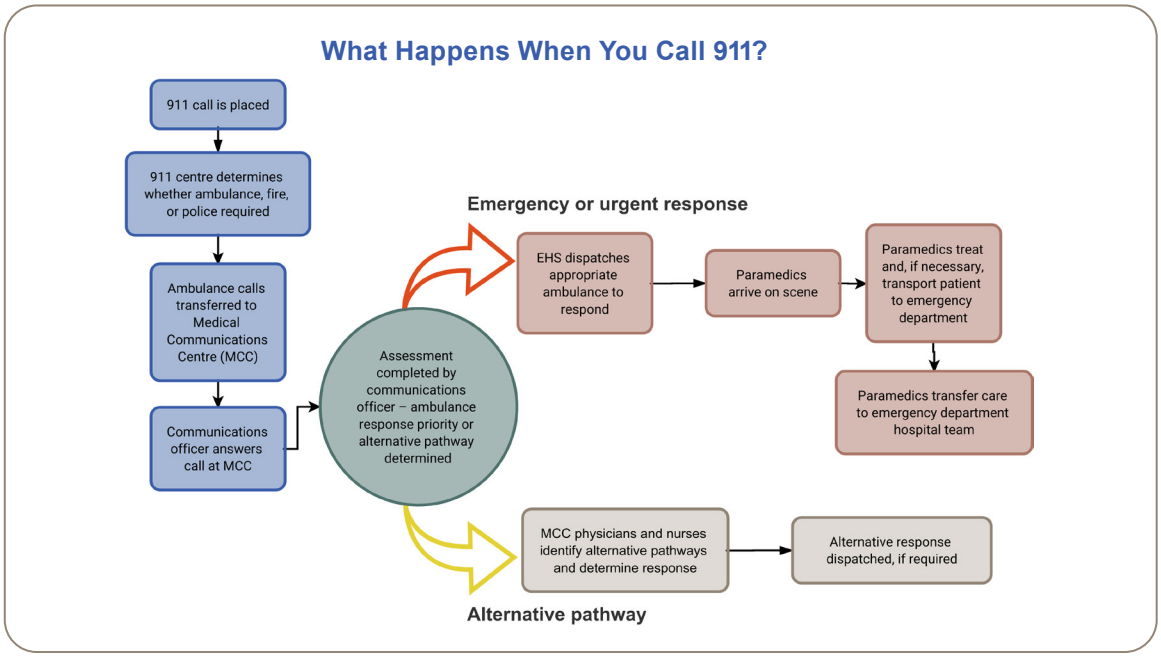
1.9 In Nova Scotia, an ambulance response is triggered by a citizen making a 911 call, which first goes to the provincial 911 centres and is then transferred to the MCC.

1.10 Calls are answered by a MCC call-taker in the order received. The call-taker will speak to the caller and process the emergency using industry standard advanced medical priority dispatch system (AMPDS) protocols, documenting patient condition information in the computer system. Some basic information such as name, contact number, and location are automatically populated by the 911 centre; however, this is verified by the call-taker. The call-taker assesses the call based on the caller's description of the medical condition or injury and will then determine what type of response to dispatch.

1.11 The dispatching of ambulances within the province is segmented into four geographic regions (Central, Eastern, Northern, and Western) and the MCC dispatcher responsible for the region will dispatch a ground ambulance or other type of vehicle as required. Typically, the closest unit

available to the call location is assigned, as long as the unit has a paramedic with the appropriate level of training required for the call. Despite the existence of regions, ambulances can be dispatched to respond to any location in the province as required.

1.12 The dispatcher monitors the unit as it responds to the call. If additional information is obtained by the call-taker or the caller's condition changes, the response priority level may change accordingly. The dispatcher could also assign another unit if one closer to the location becomes available during the response. The Department states they aim to provide the *"right resource to the right patient at the right time."*



Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.

1.13 In July 2022, the Department signed a 10-year agreement at a cost of $48.8 million with Tri-Star Industries, a company based in Yarmouth, Nova Scotia, to lease ambulance vehicles. Tri-Star also provides a fleet of patient transfer units and single-paramedic response units.

Types of Ambulances

Type of Vehicle	Staffing	Capability of Unit	Number of Units Provincially Including Spares
Ambulance 	Two paramedics	Transport of one patient on stretcher	143 units; operate throughout the province

Type of Vehicle	Staffing	Capability of Unit	Number of Units Provincially Including Spares
Patient Transfer Unit (PTU) 	One paramedic and one transport operator	Transport of one to two patients on stretchers depending on unit	15 units; operate primarily in Halifax Regional Municipality (HRM), Cape Breton Regional Municipality (CBRM) and along the HRM-CBRM corridor
Single Response Units 	One paramedic	Attend scene for least urgent calls, not able to transport patient to hospital	25 units; operate in Cape Breton, HRM, Truro and Kentville
Low Acuity Transfer Vehicles (LAT) (end of lease PTUs) 	Two transport operators	Transport of patients who may be on a stretcher but require no medical care	13 units; operate in HRM, Amherst, Antigonish, Coldbrook, Digby, Liverpool, Lunenburg, New Glasgow, Port Hawkesbury, Sydney, and Truro
Medical Transport Service (MTS) 	One transport operator	Transport of patients able to walk or use a wheelchair who do not require medical care	12 units; operate throughout the province from 6 am to 6 pm

Source: Office of the Auditor General of Nova Scotia; Department of Health and Wellness

1.14 Nova Scotia's ground ambulance system is provincial, and ambulances can be drawn from any part of the province as needed, regardless of their community assignments. EMCI uses a dynamic deployment model as a strategy to deploy ambulances across the province. When one ambulance is dispatched to a call, nearby ambulances are moved by a dispatcher to ensure coverage continues in all areas of the province as much as possible. Under a dynamic deployment model, when an ambulance departs for a call, any idle ambulances are redeployed to fill the coverage gap.

1.15 The execution of dynamic deployment is informed by the system status plan (SSP) which posts the 110 peak-of-day ambulances to approximately 70 stations throughout the province. The SSP is designed by EMCI to provide optimal coverage, based on the availability of ambulances in the system at any time, while ensuring compliance with contractual response times. When the number of ambulances operating at any given time is low, the geographical coverage per ambulance is greater and therefore response times for most calls will be longer.

1.16 The contract sets response times for ambulance calls as the time elapsed from the call taken to ambulance arrival on scene. Contractual response time expectations are based on the priority of the call and the community from which the call is placed.

1.17 The Department uses a two-level priority system – emergency and urgent. While both urgent and emergency calls are considered emergencies, only emergency responses involve the ambulance deploying its lights and sirens.

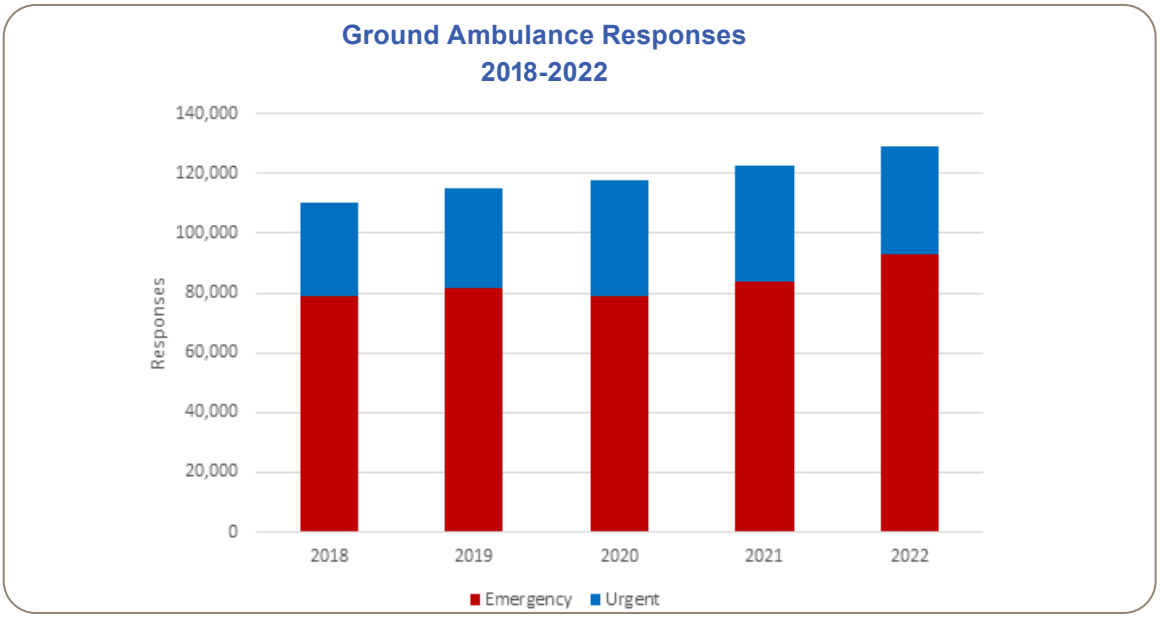
1.18 There are three contractually defined community category designations: Category 1 (urban communities), Category 2 (suburban communities) and Category 3 (rural communities). For example, Halifax, New Glasgow, and Kentville are all urban communities; while Hammonds Plains, Stellarton, and Wolfville are considered suburban communities under the contract. A complete list of urban and suburban communities can be found in Appendix II. Communities which are not designated as urban or suburban are considered rural communities. Under the contract, for both emergency and urgent calls, longer response times are permitted for suburban and rural communities as ambulances are required to travel greater distances to reach destinations than in urban communities.

Response Times Performance Standards

Community type	Standard	Target
Emergency calls		
Category 1 (Urban)	Arrive within 9 minutes	80% of the time
Category 2 (Suburban)	Arrive within 15 minutes	80% of the time
Category 3 (Rural)	Arrive within 30 minutes	80% of the time
Consolidated response time for Urban, Suburban, and Rural must be at or greater than 90%		
Urgent calls		
Category 1 (Urban)	Arrive within 15 minutes	80% of the time
Category 2 (Suburban)	Arrive within 20 minutes	80% of the time
Category 3 (Rural)	Arrive within 40 minutes	80% of the time
Consolidated response time for Urban, Suburban, and Rural must be at or greater than 90%		

Source: Emergency Health Services Contract

1.19 The number of calls requiring an ambulance response is increasing. Illustrated below is the annual total number of emergency and urgent responses for 2018 to 2022. The annual average indicates responses are growing between 2% and 5% annually.



Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.

1.20 In 2018, the Department contracted Fitch and Associates to review the ground ambulance services model and provide recommendations for long-term sustainable improvements. The report was completed in October 2019, and noted the following key system findings:

- Significant ambulance resources are spent in non-productive activities, specifically waiting in hospitals to offload patients in emergency departments;
- Paramedics do not feel that their pay is on par with other jurisdictions resulting in morale issues;
- Resources that could be dedicated to emergency responses are unnecessarily deployed to manage inter-facility transfers; and,
- The ground ambulance system does not take advantage of the medical sophistication that paramedics can provide.

1.21 The Department committed to accepting most of the report's recommendations and indicated this report helped inform many aspects of the 2021 contract signed with EMCI.

1.22 Although our audit was not designed to investigate the implementation of the Fitch and Associates recommendations, we considered these system findings when designing our audit objectives and criteria.

1.23 Fitch and Associates were contracted again in 2021, this time directly by EMCI, to conduct an operational review of the ground ambulance system, with a focus on system status, deployment, and staffing. This report was completed in September 2022, which is also when our audit got underway.

1.24 We reviewed the second consultant report as the themes were relevant to our work. Key system findings include:

- The overall emergency system is extremely strained;
- Longer emergency department patient offload delays tie up ambulances;
- Attrition rates of paramedics are outpacing hiring and impacting morale;
- The response model requires an adjustment to place the right resource with the right patient; and,
- Current exemptions for late response time reporting does not hold the correct party accountable.

1.25 There were also several recommendations from this report that relate to some of our work in this audit, including:

- Changes to ambulance staffing;
- Changes to the deployment management structure;
- Updating the 2005 System Status Plan deployment process to predictive deployment technology;
- Enhanced role of the Medical Communications Centre and medical support;
- Automating exemption request process; and
- Revising EMCI exemption criteria so that the service provider remains accountable for response times in the current environment of excessive emergency department offload delays and higher than normal call volumes.

Recommendation 1.1
We recommend the Department of Health and Wellness monitor Emergency Medical Care Inc.'s timely implementation of the accepted recommendations from both Fitch and Associates reports.

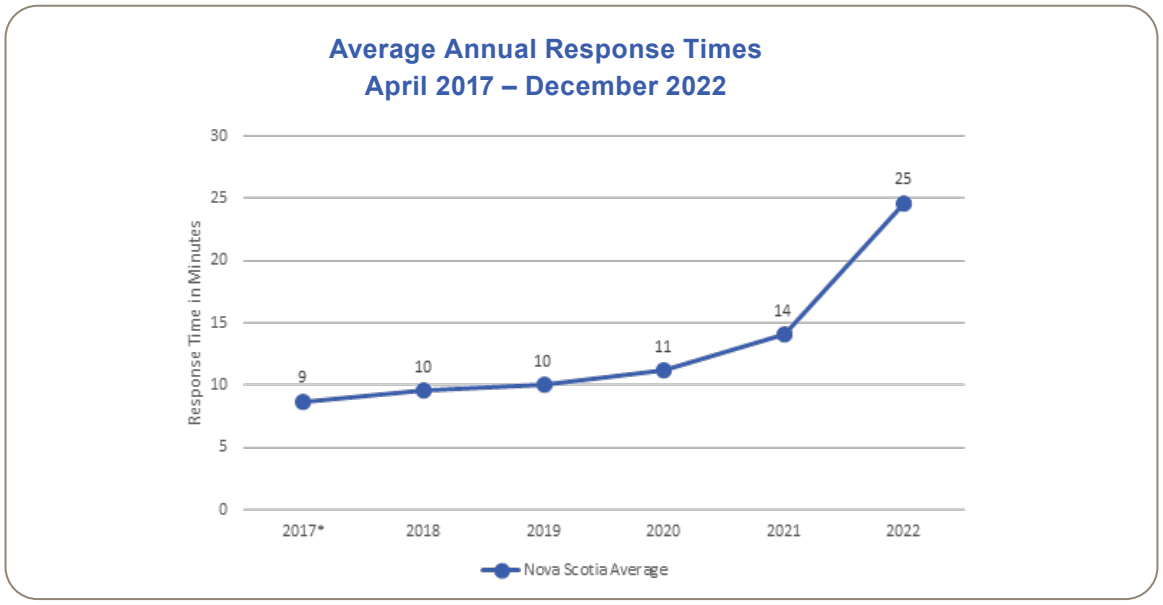
Health and Wellness Response: The DHW EHS team has a process in place to track the progress of implementation of the Fitch Reports. Each recommendation has been assigned an owner and is monitored as part of the Executive Forum meetings with EMCI. Meetings are held every two weeks and progress against the recommendations is documented. Target Date: Implemented

Ground Ambulance System in a Critical State

Increasingly longer ground ambulance response times across the province

1.26 While planning our audit we heard from the Department, EMCI, and paramedics that response times were increasing province wide, risking the health and safety of Nova Scotians. We also heard COVID-19 has been a significant factor impacting ground ambulance system performance over the last number of years. The ambulance data spans the period of April 2017 to December 2022. We chose April 1, 2017 as a starting point, as this date offered insight into the performance of the ground ambulance system prior to the COVID-19 pandemic.

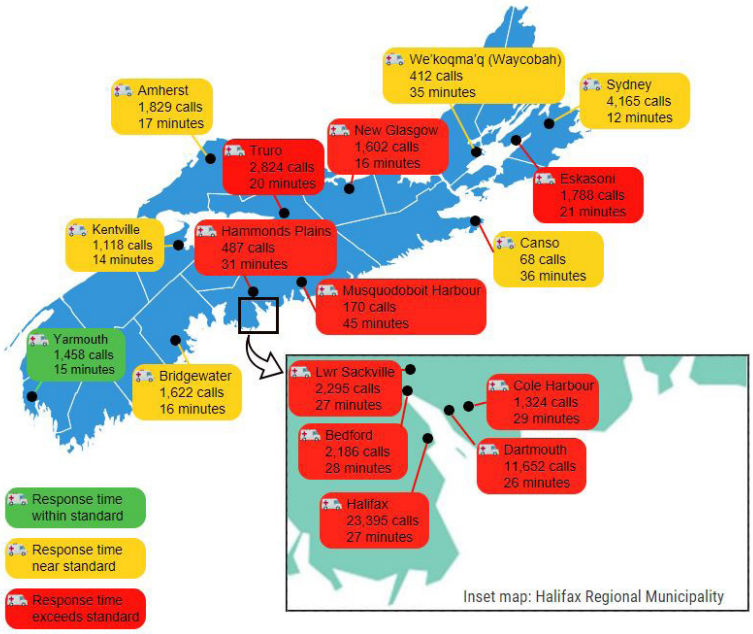
1.27 Our analysis found ground ambulance response times throughout the province are increasing. It is taking ambulances longer, on average, to respond to emergency and urgent calls, putting Nova Scotians at risk. This is true for ambulance responses in large urban areas such as Halifax and in the rural parts of the province as well. In 2022, it took paramedics in Nova Scotia on average 25 minutes to reach patients, including those suspected of having serious medical issues such as heart attacks, strokes, or breathing issues. Of particular concern is the rapid 79% increase in response times during 2022 (from 14 minutes in 2021 to 25 minutes in 2022).



Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.
** Data begins in April 2017*

1.28 In the chart below we highlight examples of response times and the associated call volume in communities across Nova Scotia. As noted above, there are three contractually defined community category designations: urban, suburban, and rural. Longer response times are permitted for suburban and rural communities as compared to urban. We report the average response time, meaning there are many calls that took less time and many that took more time. Note the colour coding indicates the extent by which ambulance response times are exceeding contract terms for the year 2022.

Average Ambulance Response Time: Selected Community Examples, 2022



Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.

Poor response times a symptom of strains on the ground ambulance system

1.29 We asked all parties involved what was causing poor response times. The following key system pressures were identified:

- Ambulance patient offload delays at hospitals;
- Increase in calls requiring an ambulance;
- Ambulance staffing challenges; and,
- Emergency department closures.

Significant response time pressures on Halifax and surrounding area

1.30 The above map shows that in 2022, the Halifax area has been experiencing some of the longest average response times in the province. Amongst the communities of Halifax, Bedford, Cole Harbour, Dartmouth, and Lower Sackville, response times averaged between 26 and 29 minutes in 2022. We also found, as discussed later in the chapter, that the Halifax area is experiencing the longest offload delays in the province: 155 minutes at the Cobequid Community Health Centre, 170 minutes at the Dartmouth General Hospital, and 195 minutes, or over three hours, at the Queen Elizabeth II Health Sciences Centre – Halifax Infirmary. Nova Scotians living in the Halifax area, the most populated region of the province, are at the greatest risk of the ground ambulance system not meeting their needs.

Patient offload delays significantly impacting ground ambulance operations

1.31 Nova Scotia Health's role in the delivery of ground ambulance services is to receive patients in an emergency department, or in other areas of the hospital for patient transfers. The patient offload interval marks the time from ambulance arrival at the emergency department until hospital staff accept responsibility for patient care and paramedics can then depart. The patient offload interval widens when there are delays in the patient care transfer at the receiving hospital, forcing paramedics to wait with patients, often in a hallway of the emergency department. This results in fewer paramedics and ambulances available to respond to new incoming emergency calls.

1.32 EMCI measures patient offload times with its computer system. All ambulances are equipped with Global Positioning System (GPS) technology, which allows the computer system to detect when an ambulance arrives at an emergency department. This arrival starts the clock on the offload interval. The end of the offload interval occurs when care and custody of the patient is formally transferred to the emergency department team. This transfer time is manually recorded by paramedics in the electronic patient record. Later in the report, we discuss concerns we have with the manual nature of recording this transfer time.

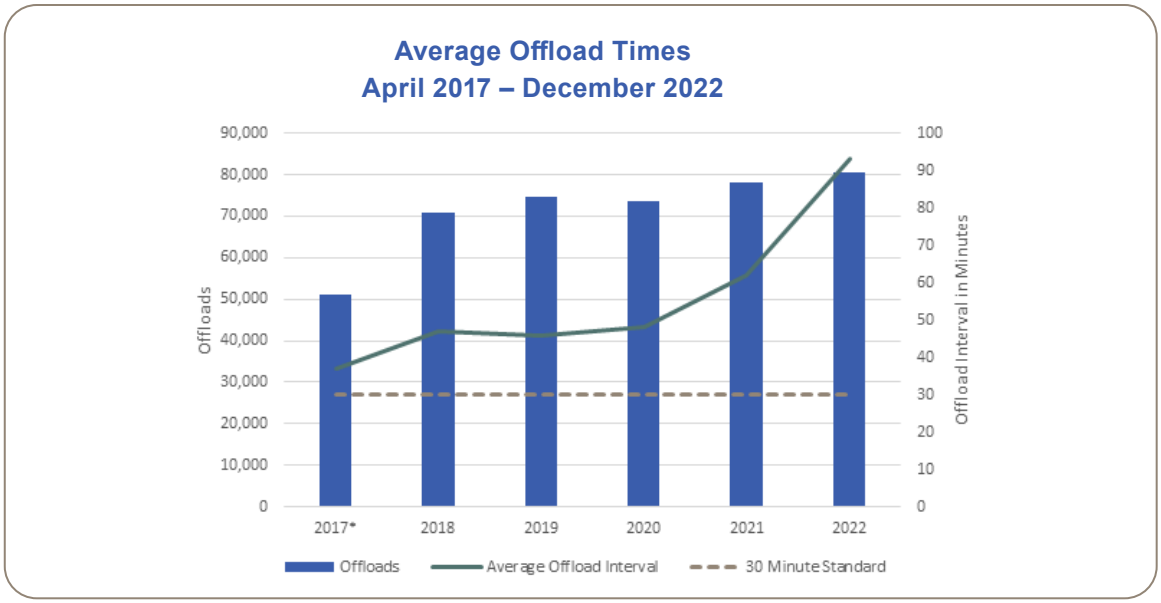
1.33 Paramedics waiting with patients during these offload intervals provide medical care for extended periods of time that should be the responsibility of the emergency department. This includes assessment, treatment, and movement of the patient within the hospital. We were told these extended waits in emergency departments contribute to low morale among paramedics as the job is different than what they expected.

1.34 Moreover, the Department informed us that the ground ambulance system is built to sustain a 20-minute offload interval. Managing offload interval is not a performance standard set for EMCI, as it is accepted by all parties as the responsibility of Nova Scotia Health and IWK Health Centre. However, offload delays have a significant impact on response times, as delays in transferring care of patients results in ambulances not being available to respond to new calls. Therefore, response times and offload delays cannot be discussed in isolation.

1.35 We heard from all parties involved that significant offload delays have become so prevalent in the healthcare system that they are the norm rather than the exception. If an emergency department does not accept the care of an ambulance patient in a timely fashion, paramedics are left with two options: wait and provide medical care within the emergency department hallway; or leave patients considered low risk in the emergency department waiting room if they meet certain criteria. Paramedics we spoke with indicated very few patients arriving by ambulance met the threshold to be left in the waiting room on their own.

In 2022, province-wide average hospital offload time increased by 50%

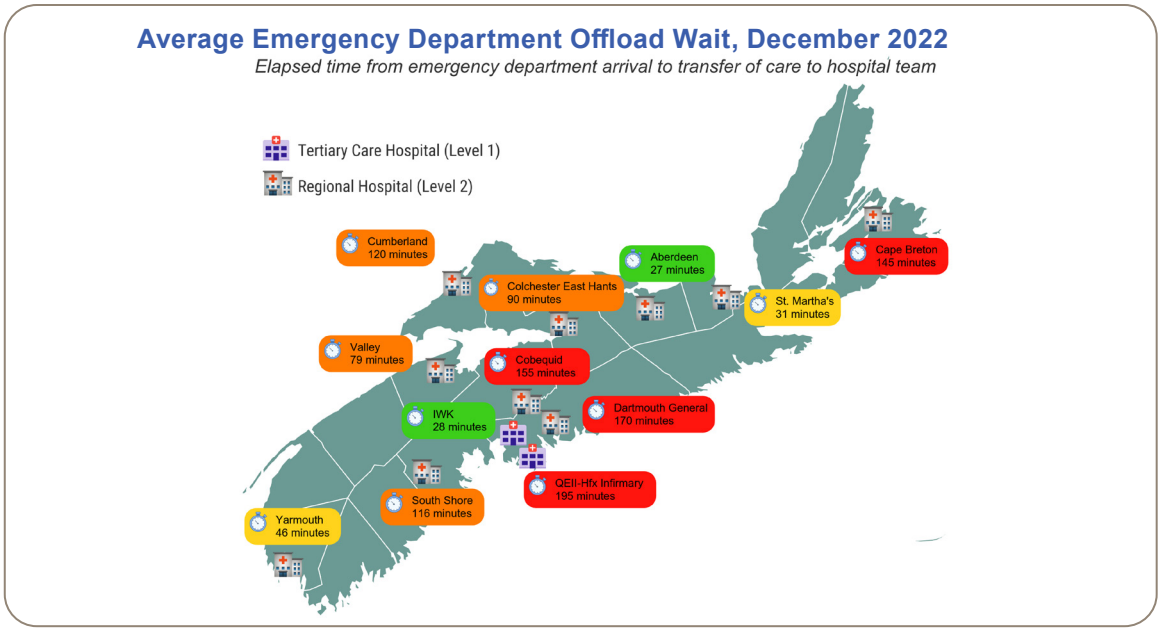
1.36 The following chart shows the trend in the patient offload interval from April 2017 to December 2022, and indicates an increase in both the number of patients transported to hospitals, and the offload delays. In 2021, Government set a new offload standard of 30 minutes for all ambulance patients arriving at emergency departments. It was not clear why the standard of 30 minutes was used instead of the original 20-minute offload interval. This new standard of 30 minutes was set by senior management at the Department as a result of directives issued to Nova Scotia Health by the Minister of Health and Wellness, which we discuss in more detail later in our report.



Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.
**Data begins on April 1, 2017*

1.37 Our analysis found offload delay was the longest in emergency departments in the Halifax and Sydney areas which include hospitals that receive the greatest number of patients. In fact, only two emergency departments, the Aberdeen in New Glasgow, and the IWK Health Centre in Halifax, met the 30-minute standard during December 2022. In the same month, offload delay ranged from almost 2.5 hours at Cape Breton Regional to over 3 hours at the Queen Elizabeth II Health Sciences Centre – Halifax Infirmary. These long offload intervals may pose a risk to patient health, if paramedics are required by hospitals to work outside their scope of practice while caring for patients in offload.

1.38 The following chart shows examples of offload times at some emergency departments across the province.



Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.

In 2022, Nova Scotia hospitals offloaded patients within 30-minute standard only 23% of the time

1.39 When examined over the course of an entire year (2022), none of the Nova Scotia emergency departments consistently met the 30-minute standard. In total, the 12 tertiary (see Appendix IV for definition) and regional hospitals in Nova Scotia offloaded patients within the 30-minute standard only 23% of the time in 2022.

Percentage of Tertiary and Regional Hospital Offload Intervals within 30-Minute Standard, 2022

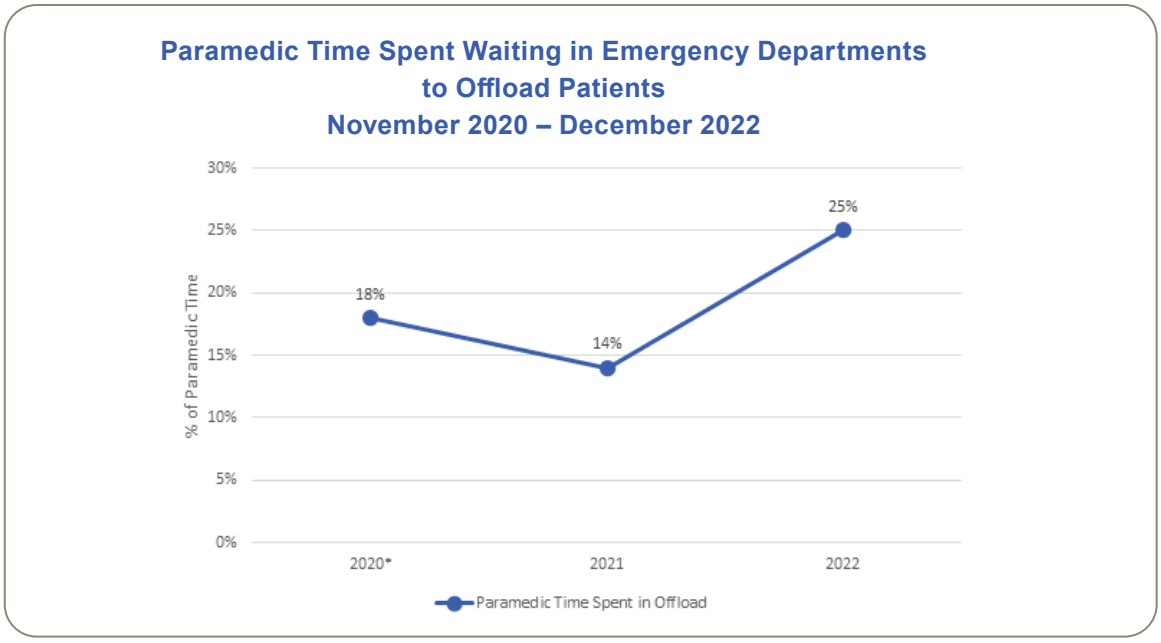
Emergency Department	Number of Offloads	Offloads within the 30-minute standard
St. Martha's Regional Hospital (Antigonish)	2,809	68%
Aberdeen Hospital (New Glasgow)	4,241	67%
IWK Health Centre* (Halifax)	1,155	63%
Yarmouth Regional Hospital	4,530	40%
Cumberland Regional Health Care Centre (Amherst)	3,159	33%
Valley Regional Hospital (Kentville)	6,851	26%
Cape Breton Regional Hospital (Sydney)	11,162	24%
South Shore Regional Hospital (Bridgewater)	4,751	20%
Colchester East Hants Health Centre (Truro)	6,420	15%
Queen Elizabeth II Health Sciences Centre – Halifax Infirmary	15,610	9%
Dartmouth General Hospital	8,936	8%
Cobequid Community Health Centre (Lower Sackville)	3,564	8%
Average	-	**23%**
Total	**73,188**	-

Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.
**IWK Health Centre data relates to patients 16 years and younger only*

In 2022, paramedics spent a quarter of working hours waiting in emergency departments to transfer care of patients

1.40 To appreciate the impact of offload delays on paramedics and the ground ambulance system as a whole, we compared the total hours worked by paramedics to the time spent waiting in emergency departments since November 2020. As the chart below details, paramedics are spending a considerable amount of time providing patient care in emergency department hallways.

1.41 Our analysis found that while the number of hours worked by paramedics decreased in 2022 relative to the prior year, the total hours spent in offload delay increased 63% from 2021 to 2022. In 2022, paramedics spent 25% of their working hours in emergency department hallways waiting to transfer care of patients to Nova Scotia Health. We asked EMCI to quantify the cost of paramedics waiting in emergency departments to transfer care of their patient. Based on information available, using an average of paramedic pay rates within the current collective agreement, EMCI estimated the cost of paramedic wages alone is over $12 million for 2022. The full cost may be greater when accounting for the cost of vehicles, equipment, maintenance, employee benefits, missed meals, etc. The following chart shows the percentage of total working time paramedics spent waiting in emergency departments to transfer care of their patients.



Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.
**Data begins in November 2020*

Year	Patient offloads	Hours worked by paramedics	Hours spent in offload delay by paramedics	Percent of time spent in offload delay
2020*	12,353	264,304	47,218	18%
2021	78,077	1,505,272	207,922	14%
2022	80,626	1,337,841	339,326	25%

Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.
**Data begins in November 2020*

Calls requiring an ambulance response up 17% since 2018

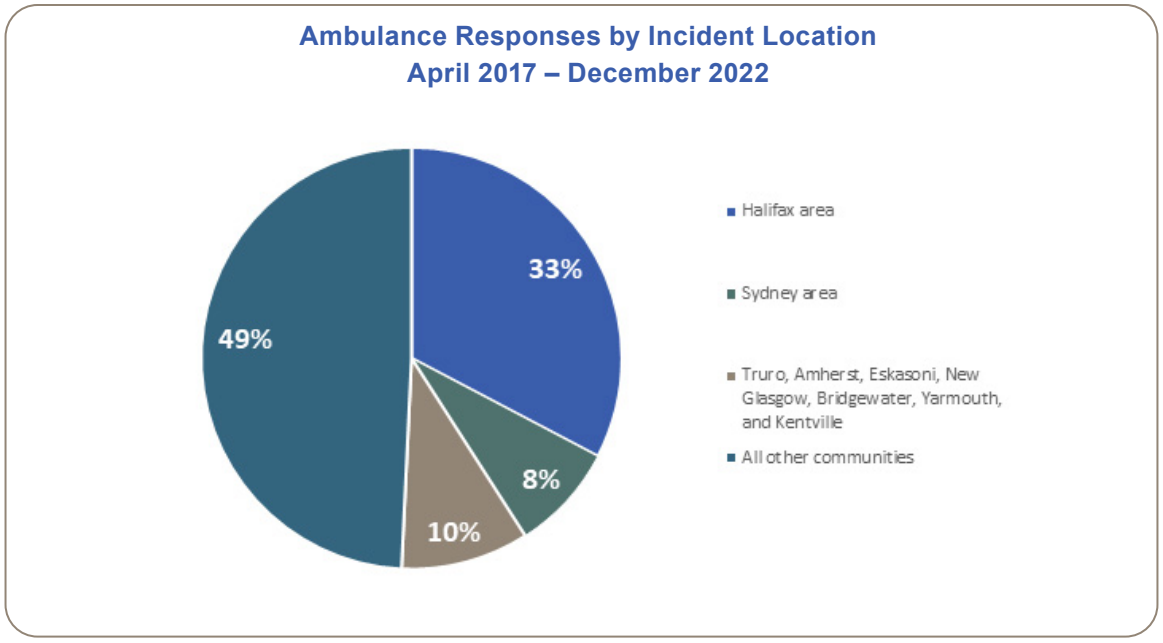
1.42 Our analysis found between April 2017 and December 2022, ambulance responses to both emergency and urgent calls increased. In 2018, ambulances responded to 110,425 calls. By 2022, this number increased 17% to 128,904. When call volume increases, there is a corresponding increase in pressure on the ground ambulance system. When the number of ambulances operating across the province at any given time decreases, the geographical distance travelled by each ambulance increases as they must be drawn from other areas. This results in longer response times.

Calls Requiring an Ambulance Response, April 2017 – December 2022			
Year	Emergency Responses	Urgent Responses	Total
2017*	56,149	22,496	78,645
2018	78,722	31,703	110,425
2019	81,780	33,431	115,211
2020	79,074	38,433	117,507
2021	83,824	39,012	122,836
2022	93,168	35,736	128,904

Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.
**Data begins in April 2017*

1.43 We analyzed where the greatest volume of calls originated and found 41% of calls during the period of April 2017 to December 2022 came from the Halifax and Sydney areas. Within the catchment of Halifax, we included Bedford, Cole Harbour, Dartmouth and Lower Sackville. Within Sydney we included Glace Bay, New Waterford, North Sydney and Sydney Mines.

1.44 As the chart below details, most calls to 911 come from the most populated areas in the province. When we combine calls from the most populated areas (Halifax and Sydney) and add the calls made from Truro, Amherst, Eskasoni, New Glasgow, Bridgewater, Yarmouth and Kentville, we find that more than half of the total responses originated from these nine locations. The remaining calls for ambulances are dispersed in both small and large rural areas throughout the province.



Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.

Ambulance Responses by Location, April 2017 – December 2022		
Community	**Responses**	**Percent of Responses**
Halifax area (includes Halifax, Bedford, Cole Harbour, Dartmouth and Lower Sackville)	220,148	33%
Sydney area (includes Sydney, Glace Bay, New Waterford, North Sydney and Sydney Mines)	55,397	8%
Truro	16,361	2%
Amherst	9,512	1%
Eskasoni	9,233	1%
New Glasgow	8,746	1%
Bridgewater	8,481	1%
Yarmouth	7,702	1%
Kentville	6,324	1%
All other communities	331,624	49%

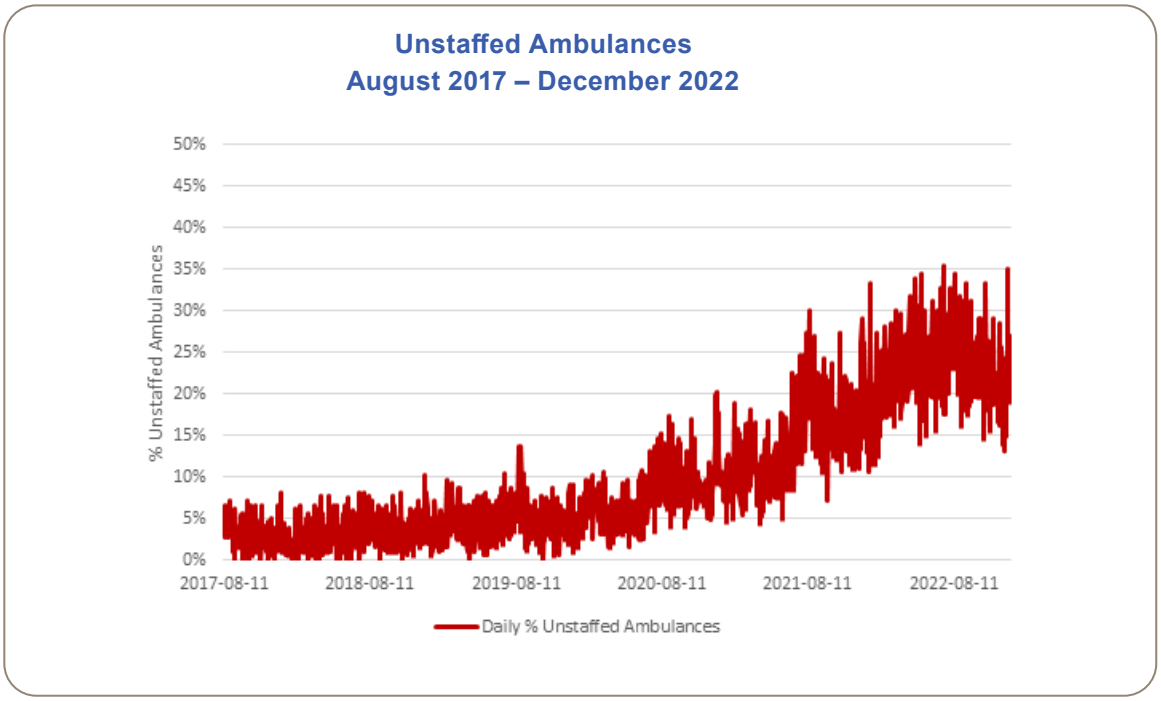
Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.
Sum of individual numbers does not add up to 100% due to rounding.

Almost one quarter of scheduled ambulances were unstaffed in 2022

1.45 As we discuss later in our report, EMCI is experiencing significant paramedic staffing challenges. Paramedic resignations and retirements are outpacing hiring. Paramedics are also resigning earlier in their career than is typical and sick time is increasing. These are some of the factors that can affect EMCI's ability to staff its scheduled ambulances.

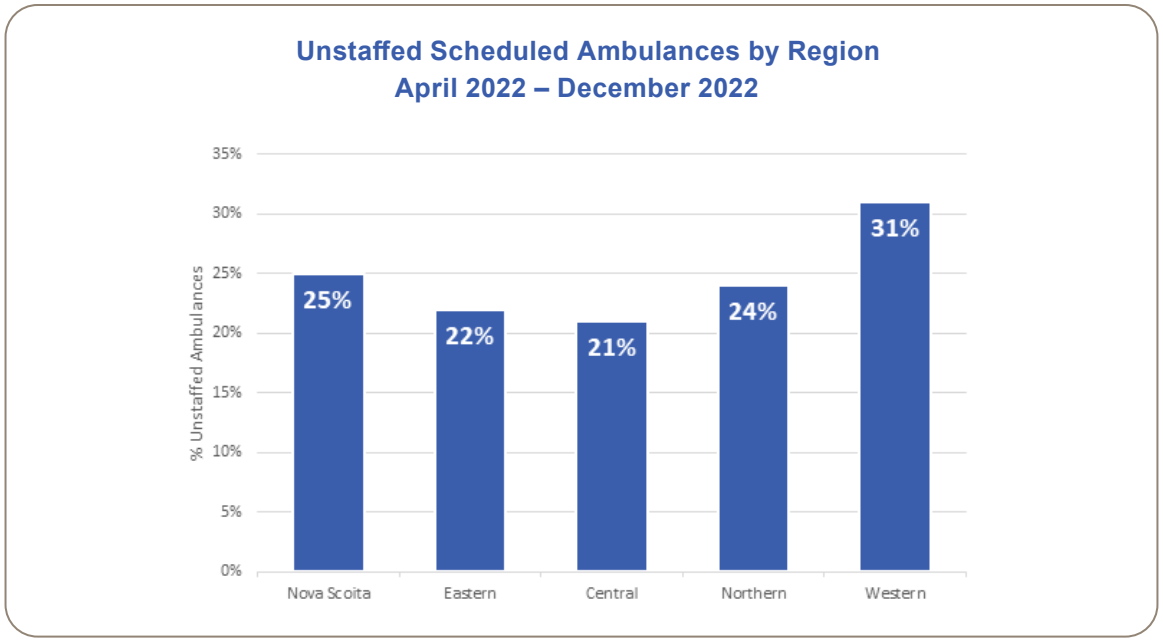
1.46 Paramedic staffing shortages were one of several issues identified by the International Union of Operating Engineers, which represents paramedics in Nova Scotia, during our preparation for this report. The Union drew attention to the growing problem of paramedic shortages and claimed the gap between the number of paramedics working versus the number required to meet demand was resulting in such mental and physical pressures that the remaining paramedics were not able to accept extra shifts.

1.47 We looked at the rate of unstaffed ambulances between August 2017 and December 2022 and found the number of ambulances that are unstaffed is increasing. In 2017, EMCI averaged 3% of scheduled ambulances unstaffed. By 2022, this number increased to 23%. That means on any given day or night in 2022, EMCI was on average without almost one quarter of its scheduled ambulances.



Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.

1.48 We looked at unstaffed ambulances during the 35-week period of April 25, 2022 to December 25, 2022 and found certain regions had higher rates of unstaffed ambulances than others. The chart below shows the western region of the province with the largest percentage of scheduled ambulances not being staffed at 31%. The Department confirmed they had significant staffing challenges in this area.



Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.

Significant hours of emergency department closures between April 2020 and July 2022

1.49 When an emergency department at a hospital is closed, paramedics must transport their patients to alternative hospitals that may be further away, resulting in longer travel times. This means paramedics are involved longer in each call which can result in a delayed availability for the next call. Additionally, the more patients diverted to larger hospitals, the more pressure put on that hospital's emergency department.

1.50 Within Nova Scotia, there are two tertiary care hospitals (Level 1), 10 regional hospitals (Level 2), and 26 community or collaborative (Level 3 and 4) care centres. Level 1 and 2, and most Level 3 and Level 4 emergency departments, operate on a 24 hour-per-day, seven day-per-week schedule; however, some Level 3 and 4 sites, which are typically found in smaller communities, may have modified hours with scheduled closures of their emergency departments. These sites can also experience more unscheduled closures, arising from temporary staff shortages of physicians and nurses. Unscheduled closures may occur at the last minute, for example, due to illness among staff. Between April 2020 and July 2022, there were 21 Level 3 and 4 emergency departments that experienced closures. During this time period, departments were closed 38% of the time for a total of 164,389 hours.

1.51 The level assigned to an emergency department corresponds with the services offered. The two Level 1 hospitals offer a full suite of services, such as cancer management, heart surgery, and radiology. Level 3 and 4 sites typically offer fewer services and may have significantly less staff. For this reason, paramedics generally transport patients to Level 1 or Level 2 emergency departments as those requiring ambulance transport generally require a higher level of care. For example, between April 2020 and July 2022, all 26 Level 3 and 4 emergency departments had a combined 21,358 patient offloads, while the Cape Breton Regional alone had 24,736 offloads during the same period.

Emergency department closures are resulting in longer ambulance response times

1.52 Based on the number of emergency department closures occurring across the province, we wanted to examine a particular area of the province – the western region – to determine if these closures had an effect on ambulance response times. For the period of April 1, 2021 to July 31, 2022, a 487-day period, we found approximately 22,300 hours where emergency departments were closed in this region which equates to almost 930 days of closures. Some closures lasted as little as one hour, while other emergency departments were closed for an entire 24-hour day. In one case, we found that the Annapolis Community Health Centre was closed for the full month of July 2022. Moreover, we learned that emergency departments typically stop accepting new patients at least one hour prior to each closure, which adds to the actual time of the shut-down.

Western Region Emergency Department Closure Hours, April 2021 – July 2022

Emergency Department	Hours Closed	Equivalent in Days
Annapolis Community Health Centre (Annapolis Royal)	2,685 hours	112 days
Digby General Hospital (Digby)	2,420 hours	101 days
Fishermen's Memorial Hospital (Lunenburg)	5,680 hours	237 days
Queens General Hospital (Liverpool)	2,002 hours	83 days
Roseway Hospital (Shelburne)	3,970 hours	165 days
Soldiers Memorial Hospital (Middleton)	5,555 hours	231 days

Source: Office of the Auditor General of Nova Scotia; Nova Scotia Health

1.53 There are three Level 2 emergency departments and six Level 3 and 4 emergency departments located in the western region of the province. Between April 2021 and July 2022, all six Level 3 and 4 emergency departments were closed 32% of the time in total, for both unscheduled and scheduled reasons.

1.54 During this period, callers in the western region waited, on average, 18 minutes for each ambulance response. Of the 178 days (out of 487) when response times averaged 18 minutes or more, the six emergency departments were closed on average 58 hours a day total. Compare that to the days where average response times were less than 18 minutes, the same emergency departments were closed on average only 39 hours a day total.

1.55 Moreover, when there are closures at community or collaborative hospitals, regional hospitals take on the additional demand. Our analysis found, for the same period of April 1, 2021 to July 31, 2022, the Level 2 emergency departments at South Shore Regional, Valley Regional, and Yarmouth Regional averaged an increase in offload times of between 7 to 15 minutes.

Western Zone Increases in Offload Delays During Emergency Department Closures, April 2021 – July 2022

Emergency Department	Offload interval on days when Level 3 and 4 emergency departments are open more than half the day	Offload interval on days when Level 3 and 4 emergency departments are closed more than half the day	Increases
South Shore Regional Hospital (Bridgewater)	55 minutes	65 minutes	10 minutes
Valley Regional Hospital (Kentville)	41 minutes	48 minutes	7 minutes
Yarmouth Regional Hospital	37 minutes	52 minutes	15 minutes

Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.

1.56 The frequent planned and unplanned emergency department closures are decisions ultimately made by Nova Scotia Health, while the ambulance system is operated by the Department and EMCI. While this information is shared with the public and the Department, the impacts are felt by Nova Scotians living in rural communities and are reflected in the increase in both offload delays at neighbouring hospitals and response times in the area. We discuss the relationship between the Department and Nova Scotia Health later in our report.

The Department made significant system changes to improve response times

1.57 In 2021, to reduce pressure on ambulances and paramedics, the Department added new vehicles to the fleet and hired transport operators to handle routine patient and client transfers. This was a key recommendation of Fitch and Associates who wrote *"resources that could be dedicated to emergency responses are unnecessarily deployed to the [transfer service] to meet the contract demands."*

1.58 Every year, EMCI completes roughly 55,000 patient and client transfers as a requirement of the contract. Transfers can be both inter-facility, where patients are transferred from hospital to hospital, and at the community level, where clients require medical transport to and from medical appointments.

Volume of Patient/Client Transfers, April 2017 – December 2022					
2017*	2018	2019	2020	2021	2022
46,181	61,171	56,259	52,518	51,337	53,125

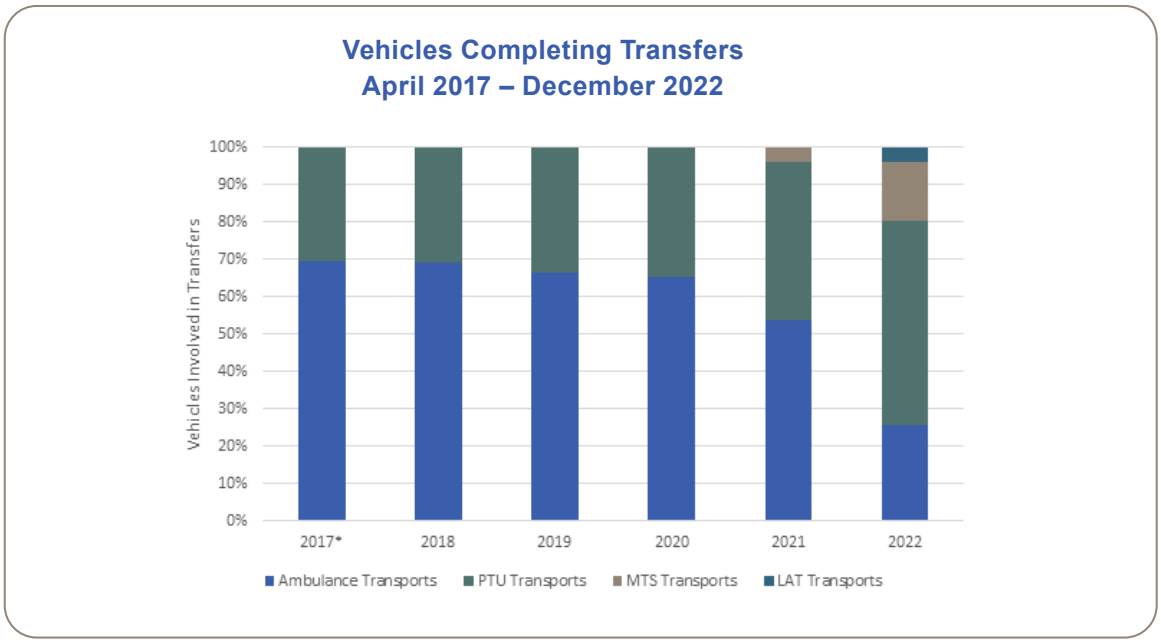
Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.
**Data begins in April 2017*

New transfer service significantly reduced number of paramedics and ambulances required for patient transfers between facilities

1.59 In April 2017, transfers were completed primarily by two types of vehicles: ambulances and patient transfer units (PTUs). Patient transfer units have a similar appearance to a typical ambulance, but with "Patient Transfer Unit" printed on the side instead of "Paramedics." Both types of vehicles were staffed by two paramedics. Fitch and Associates found paramedic time was not well spent transporting clients who required little to no medical treatment and outlined that this role would be better suited to a driver with First Aid and emergency services equipment training. In March 2021, the Department introduced medical transport service (MTS) vans to provide non-medical transport to and from healthcare facilities for clients who are able to walk or use a wheelchair. In August 2022, low acuity transfer (LAT) vehicles were also added to assist in the transport of patients on stretchers not requiring medical care during transport. As of 2022, all patient transfer units, MTS vans, and LAT vehicles are staffed with at least one transport operator rather than two paramedics. This has freed up both ambulances and paramedics to respond to calls for emergencies.

1.60 Our analysis found the new transfer service has resulted in a significant decrease in the number of ambulances and paramedics required for transfers between facilities. In 2017, ambulances were involved in approximately 70% of all transfers; however, by 2022, it was less than 30%. December 2022 shows the most improved month where the smallest number of ambulances were used for transfers to date. Of the 3,898 transfers that occurred, only 24% involved ambulances, with PTUs performing 52%, MTS 9%, and LAT 12%. The remaining were completed by other vehicles.

1.61 The blue shaded area in the chart below shows how the use of ambulance vehicles for transfers has been significantly reduced since the introduction of the new transfer service.



Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.
**Data begins in April 2017*

Ambulance vehicles and paramedics added to system to address demand

1.62 During the April 2017 to December 2022 period we analyzed, the Department made additions to the ground ambulance staffing and resources to try to meet the demands of the system. For instance, in April 2017, EMCI was approved for 997 full time equivalent paramedic positions by the Department. By December 2022, this number was 1,019. Over the same period, the Department procured five additional ambulances. This is in addition to the PTUs, MTS vans, and LATs vehicles described above. We note the Department informed us the cost to procure, staff, and stock each ambulance with equipment and supplies over the useful life of the ambulance is over $10.5 million. This significant figure highlights the importance of making thorough and supported decisions when adding new ambulances to the fleet.

Department of Health and Wellness Not Effectively Tracking Key Performance Indicators in Contract With Emergency Medical Care Inc.

Awarding of ambulance contract not recorded on government procurement website

1.63 The 2021 contract between the Department and EMCI was approved as a sole source negotiation, a form of alternative procurement permitted under the Public Procurement Act. Alternative procurement is permissable in circumstances when appropriate justification is met. We noted the contract award was not recorded on the Nova Scotia Government Procurement Portal, even though it is required by legislation, where the total value of the contract would be publicly available. In this case, alternative procurement was permitted due to an absence of competition for providers of emergency health services. The Department indicated the breadth of services required in the contract could not be expected of another service provider; however, the Department should be reporting all awards for significant contracts, as required by legislation.

Sole-source contract contains terms and conditions to protect Nova Scotians

1.64 Although the new contract was properly approved and contained most of the terms and conditions found in standard government contracts, we noted the contract does not include a conflict of interest clause. The intent of a conflict of interest clause is to protect both the Department and the service provider from any real, apparent, or perceived conflicts.

1.65 The contract outlines 65 performance standards including response times, of which 35 directly apply to the ground ambulance system. We found these performance standards were clear and measurable, and contained targets. We discuss assessment of performance against these standards further below.

Performance Standards Committee responsible for oversight

1.66 The contract included the creation of two main committees to provide oversight over EMCI's performance – the Executive Forum and the Performance Standards Committee. The Executive Forum is comprised of senior leaders from both the Department and EMCI. The Performance Standards Committee, which reports to the Executive Forum, is made up of key representatives from the Department and EMCI who are responsible for different performance standard categories.

1.67 The Performance Standards Committee is the primary function of oversight for the Department to assess EMCI's performance. Specifically, the committee evaluates EMCI's performance against targets, identifies performance that excels, determines strategies to improve performance, and makes recommendations to improve below standard performance.

Department not effectively monitoring performance of EMCI

1.68 Quarterly, EMCI provides the Performance Standards Committee ("the committee") with a self-assessed scorecard listing all performance standards and EMCI's performance on each. EMCI presents the scorecard at meetings for the committee to discuss. A key concern we heard from the Department was that there is no opportunity to read the document prior to meetings to prepare questions or challenge the assessment.

1.69 The committee is not exercising appropriate oversight over the performance of EMCI as no supporting documentation or data is requested to validate EMCI's self-assessment. We would have expected to see the committee, led by the Department, providing an independent assessment of performance rather than performance being self-assessed by the service provider. The committee essentially takes EMCI at its word on its own performance assessment.

1.70 When we reviewed the scorecard for December 2022, we found (according to EMCI's self-assessed performance), they were complying with only 23 of 35 performance standards relating to ground ambulance. For the 12 performance standards not met, four had no information provided on the scorecard, and the remaining eight were below target. We include this scorecard in Appendix III.

1.71 We learned from the Department that it disagreed at times with EMCI's self-assessment. For example, an ambulance safety performance standard requires EMCI to comply with the vehicle and equipment standards. While EMCI self-assessed this standard as compliant in December 2022, we reviewed evidence provided by the Department that suggested ambulances were not receiving preventative maintenance as required. Moreover, we learned from EMCI that a second performance standard, the number of adverse events reported to the Department, had been underreported for all of 2022. Adverse events are any incident where unnecessary harm could or

did reach a patient, such as a siren not functioning, or a patient receiving an incorrect medication. These two examples suggest the Department needs to strengthen its oversight.

1.72 Of concern were performance standards where data was not provided by EMCI. As of December 2022, EMCI was not reporting how often paramedics were providing electronic patient charts to hospitals receiving ambulance patients. A patient chart contains the record of the treatment and medication received by the patient from paramedics. Not providing this to the hospital team presents a safety risk to the patient as the hospital team may not have all the necessary information to continue the care of the patient appropriately. Moreover, the completion rate of the electronic patient chart for patients suspected of having serious medical issues was below the contract standard. A complete patient chart is one with all assessments and treatments documented. A patient experiencing a serious medical issue would require additional intervention by paramedics, thus additional charting. For example, EMCI reported on their self-assessment only 70% of patients diagnosed with a cardiac arrest in December 2022 had a complete patient chart. Lastly, the Department indicated EMCI was also not providing certain Clinical Quality Improvement records to the Department. The Department uses this important information to assess if paramedics are providing appropriate care to patients and to recommend potential changes in the medical practice guidelines.

Recommendation 1.2
We recommend the Department of Health and Wellness perform its own quarterly assessment of Emergency Medical Care Inc.'s performance on all ground ambulance performance standards instead of relying on Emergency Medical Care Inc.'s self-assessment of performance.

Health and Wellness Response: Prior to the audit period, a functional assessment of the DHW EHS division was completed. As a result of the review, during the audit period, additional resources were added to the EHS team with the required skillset to manage the assessment of performance standards. Development of plans and procedures to complete the quarterly assessments has commenced. Target Date: March 31, 2024

Department not holding EMCI accountable for contractual response times

1.73 Our report so far has discussed average response times, the actual length of time Nova Scotians wait for an emergency ambulance response after placing a call to 911. However, the ground ambulance contract contains response time performance standards. These standards are the times within which an ambulance is contractually expected to arrive at a scene, depending on the severity of the incident and the location/size of the community. In order to be in compliance with the contract, EMCI is required to meet each response time performance standard, emergency and urgent, 90% of the time after exempted calls are removed. Exemptions are discussed further below.

1.74 The Department and EMCI have reached an understanding that EMCI will not be held accountable for contractual response times standards due to system strain on the ground ambulance system. The Department specifically cited delays caused by Nova Scotia Health emergency department offload times.

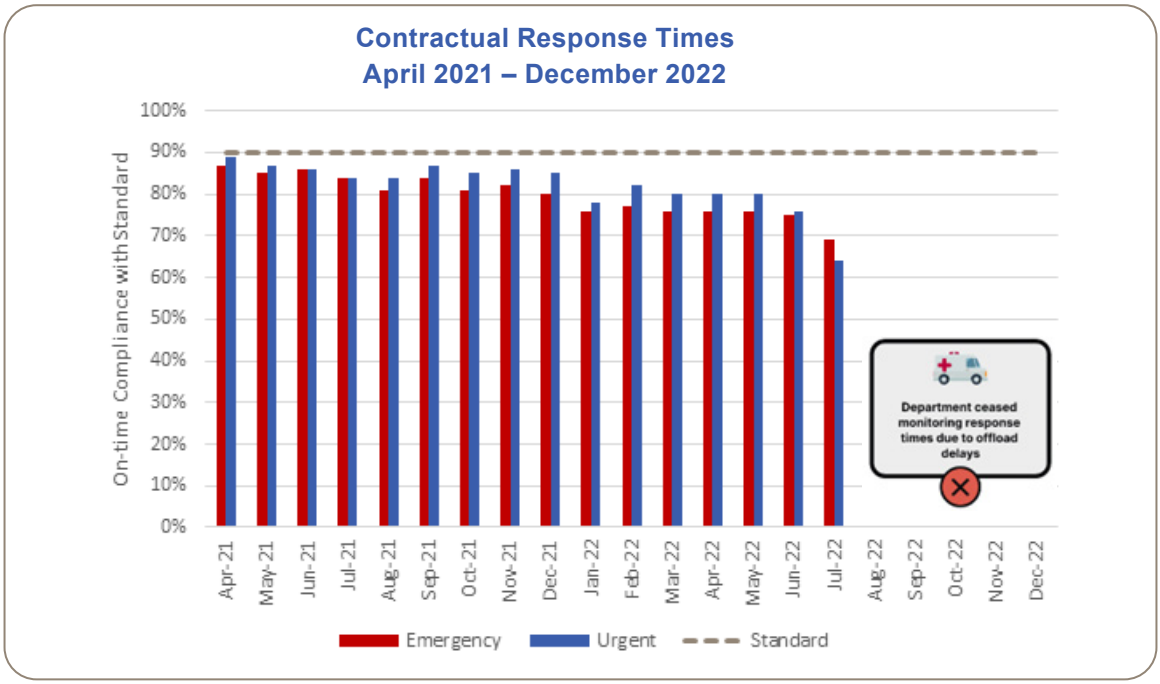
1.75 The contract lays out response time penalties for the Department to impose should EMCI not achieve the monthly response time performance standards. If, following two written warnings, EMCI does not achieve a response time standard, the Department may impose a fine of $10,000 per month, which increases by $1,000 for every future month the standard is not achieved. The Department confirmed no such fines have been imposed despite unmet contractual response times since the new contract was signed.

1.76 To calculate the contractual response times, any calls where an ambulance is unable to respond within the prescribed timeframe due to circumstances outside of EMCI's control can be exempt. These circumstances include severe weather conditions, disasters such as hurricanes or mass casualty events, certain communication or technology failures, and in times when the ground ambulance system is operating at peak capacity. Peak capacity occurs when all ambulances are already involved in a call or have no ambulances available to respond to new calls because all are held up at hospitals waiting to transfer care of patients.

Offload delays so severe Department ceased monitoring of ground ambulance response times in August 2022

1.77 EMCI submits a monthly exemption report to the Department, which lists the specific calls where on-time performance was not met due to circumstances outside of its control. At this point, the Department is supposed to review the submitted exemptions to determine if it agrees with those claimed. We reviewed all exemptions submitted since the contract was signed in April 2021, and found all 45,604 exemptions were attributed to peak capacity by EMCI. The Department and EMCI both indicated offload delay was the only reason for the need to submit exemptions. When discussed further, the Department indicated that the exemptions submitted by EMCI were no longer reviewed by staff and were automatically approved, because of the mutual agreement that EMCI will not be held accountable for response times in the current strained system.

1.78 We note the Department's own calculations indicate EMCI has not met the response time performance standard for any month since the 2021 contract came into effect. The graph below indicates a downward trend in on-time performance. In July 2022, EMCI was meeting the contractual response time performance standard only 69% of the time for emergency calls and 64% of the time for urgent calls. Notably, as of August 2022, the Department ceased all monitoring of the contractual response times due to the mutual agreement between the Department and EMCI that EMCI would not be held responsible for response time compliance because of the impact of offload delays.



Source: Office of the Auditor General of Nova Scotia; Department of Health and Wellness; unaudited

1.79 As discussed previously, there are certain external pressures on the ground ambulance system contributing to EMCI not meeting contractual response time requirements, including offload times which are beyond EMCI's control. However, this does not absolve the Department from providing appropriate oversight over response times. The Department should at the very least calculate the contractual response times and provide this information to the Performance Standards Committee. Doing so would help confirm whether system changes being made, aside from those related to offload delays, are having an impact on response times.

Recommendation 1.3
We recommend the Department of Health and Wellness define what conditions will be required to reinstate holding Emergency Medical Care Inc. accountable for response times, in addition to reestablishing accountability by:

- Revising exemption criteria to hold Emergency Medical Care Inc. accountable for response times in the current environment of emergency department offload delays;
- Requiring requested exemptions to be submitted monthly by Emergency Medical Care Inc.;
- Reviewing and approving the exemptions submitted in a timely manner; and
- Calculating the contractual response times and providing this information quarterly to the Performance Standards Committee.

Health and Wellness Response: The Department of Health and Wellness will put processes in place to hold EMCI accountable for response times in the current environment of offload delays, require exemptions to be submitted monthly and calculate the contractual response times for review by the Performance Standards Committee.

The Department is instituting a new position, clinical quality compliance officer (clinical paramedic and technical expertise), to support the review of exemptions.

The First Watch System, which is a public safety technology system currently being used by EHS, can help with the management of exemption requests. It has specific functionality that will enable better reconciliation of exemption requests that will be implemented. Target Date: October 30, 2024

No financial penalties imposed should EMCI fail to meet medical performance standards

1.80 The Department stated during negotiations of the 2021 contract, there was a specific focus on strengthening medical performance standards, a key recommendation from Fitch and Associates. Fitch wrote, referring to the previous contract, *"the current system focus on response time performance does not necessarily incorporate patient outcomes. As medical tracking systems advance, more emphasis needs to be given to the [medical] perspectives and less to response time metrics."* The Department indicated this additional accountability focused on the medical aspect of the system was required to align contractual performance expectations with improved patient outcomes.

1.81 We note the new contract did not include financial penalties for failing to meet medical performance standards. When we asked the Department why this was the case, we were not provided with a clear response.

1.82 The EHS division of the Department noted there are increased risks to the health and safety of patients when certain performance standards are not enforced. For example, the are no financial repercussions if the electronic patient chart is not shared with hospitals when patients are brought in by ambulance. As already noted, this is crucial information for hospital staff when taking over care of a patient from paramedics as it includes complete documentation on what care or treatment

the patient has already received from paramedics. EHS division staff explained this concern was shared by Nova Scotia Health and the IWK Health Centre.

Recommendation 1.4
We recommend the Department of Health and Wellness introduce financial penalties for failing to meet medical performance standards. Specifically, penalties should be imposed if Emergency Medical Care Inc. fails to achieve performance standards relating to:

- the completion and disclosure of electronic patient charts to hospitals receiving ambulance patients; and
- providing all requested Clinical Quality Improvement records to the Department.

Health and Wellness Response: The Department of Health and Wellness will work with EMCI and the EHS Medical Director to determine the appropriate processes and technology needed for the completion of patient care records and the disclosure of electronic patient charts to hospitals receiving ambulance patients.

We will work with EMCI on defining when to issue penalties.

Some records are currently provided, and the Department will work with EMCI to ensure that all of the records are provided to the Clinical Quality Improvement Committee. Target Date: September 30, 2024

Department of Health and Wellness Not Holding Nova Scotia Health Accountable for Significant Offload Delays

Accountability for directives not clear

1.83 The *Health Authorities Act* gives the Minister of Health and Wellness the authority to issue binding directives to Nova Scotia Health. Binding directives hold the full force of the law.

1.84 The Ministers of Health and Wellness in 2019 and 2021 issued two separate directives to Nova Scotia Health in relation to offload times at emergency departments.

1.85 The first directive issued in 2019 required:

- the development of a provincial policy requiring patients arriving by ambulance to emergency departments to be accepted into the care of the receiving hospital within a reasonable timeframe. The timeframe was not defined but instead indicated it should be *"one that meets standard best practice or is otherwise determined by the Minister"*;

- the policy was to be implemented first at the Queen Elizabeth II Health Sciences Centre – Halifax Infirmary, the Dartmouth General, Colchester East Hants Health Centre, Cape Breton Regional and Valley Regional Hospitals, which are the hospitals in Nova Scotia with the greatest number of offloads. The policy was to be subsequently implemented in other hospitals in the province as required;

- Nova Scotia Health to put in place provisions to allow for the timely transfer of patients from paramedics to the hospital team, which would allow paramedics to depart to respond to other calls; and

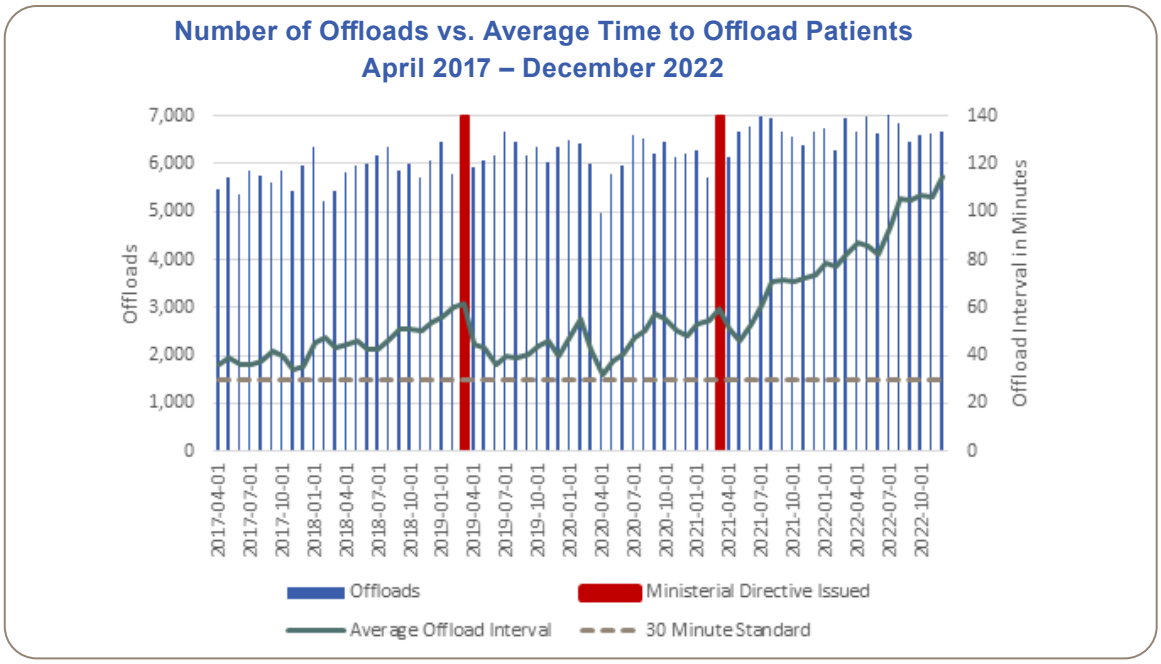
- the policy to be supported by rapid assessment zones and transition teams in emergency departments.

1.86 The second directive, issued in 2021, was more detailed in its requirements including that Nova Scotia Health will:

- strive to meet the target of transferring care of patients to the hospital within 30 minutes, allowing paramedics to depart to respond to other calls;
- strive to the meet the target of patients being either discharged from the emergency department or transferred to an inpatient bed within 12 hours;
- comply with the policy created in relation to the 2019 directive, using best practices such as rapid assessment zones, transition teams or discharge waiting lounges; and
- report on progress to be made by the President and CEO of Nova Scotia Health to the Deputy Minister of Health and Wellness monthly beginning April 1, 2021, and for every month thereafter.

1.87 The end date for the first directive was May 31, 2019, however there was no end date for the second directive, which indicates it remains in effect until it is formally rescinded. Based on the increase of average ambulance offload times to almost two hours by December 2022, it is clear a significant issue remains with how long it takes to transfer care of patients to the emergency departments upon arrival via ambulance.

1.88 The chart below shows the average offload time from April 2017 to December 2022 as compared to the number of offloads.



Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.

1.89 The vertical red lines on the chart indicate the points in time when the directives were issued. The chart shows that offload times improved immediately following the issuance of the first directive for approximately two to three months. After three months, offload times began to worsen again. The chart then shows the offload times improving once again immediately after the second directive was issued. While there are many variables at play and perhaps the initiatives put in place to improve offload times were not sustainable, it does show a potential correlation between the issuance of each directive and the improvements in offload times.

1.90 While Nova Scotia Health may operate with a relatively high degree of autonomy, the Minister of Health and Wellness, as per the *Health Authorities Act*, has the ultimate authority to set priorities and the strategic direction of the health system. It is incumbent on the Minister of Health and Wellness to ensure that all parties in the health system are doing their part to deliver important healthcare services in Nova Scotia such as ground ambulance services.

1.91 We spoke with some emergency department physicians who indicated they were frustrated with the system and how the emergency departments are forced to bear the brunt of overcapacity in the health system. One consistent theme in our discussions was the desire for more accountability in how emergency departments are overseen. We were told there is a lack of culture of accountability in Nova Scotia Health, in the sense that senior management is not taking a front-line approach to hold emergency department staff, and all hospital staff, accountable for their roles in offload delays.

1.92 The pressures within emergency departments in Nova Scotia are part of the larger problems within the healthcare system that are being experienced across the country. Increasing offload times are not solely related to delays within emergency departments. The backlog in emergency departments can also be linked to a lack of availability of inpatient beds, which is linked to a lack of long-term care beds. Nova Scotia also has an aging population with increased healthcare needs and many citizens are without family doctors resulting in more visits to emergency departments for primary care. What is important is that all parties within the healthcare system are held accountable for their roles in the various segments of the system including ground ambulance service.

1.93 While we did not audit Nova Scotia Health, we spoke with Nova Scotia Health staff to determine what was put in place after each of these directives were issued and to understand if the initiatives were sustainable or were intended to be temporary. Some of the initiatives included transition teams and a “direct to chairs” policy where patients who met certain criteria could wait unattended in the emergency department waiting room. Transition teams are staff placed in emergency departments who receive and care for patients arriving by ambulance until the core emergency department staff can take over. We were told by a number of Nova Scotia Health staff that it was difficult to staff the transition teams full time due to the strains on staffing in hospitals in general. It was also noted that the culture within a hospital can have an impact on offload times, where in some locations the paramedics are treated as part of the hospital team and the hospital team works diligently to transfer care of patients from the paramedics. While staffing is clearly a significant issue in all areas of healthcare, Government should be reexamining initiatives that previously coincided with a positive impact on offload times.

1.94 For several months after the second directive was issued, Nova Scotia Health provided comprehensive reports showing its progress on compliance with the directive to the Department. In September 2021, Nova Scotia Health suggested to the Department that the process for reporting on the 2021 directive be discussed at the next Health Leadership Team meeting. The Health Leadership Team includes the Deputy Minister of Health and Wellness, the CEO of Nova Scotia Health, the Administrator of Nova Scotia Health and the CEO of the Office of Health Care Professionals Recruitment. The Health Leadership Team decided that, beginning in January

2022, information on the 2021 directive would be included in monthly reports provided to them by Nova Scotia Health.

1.95 We spoke with a number of senior staff from the Department as well as Nova Scotia Health to determine who has overall accountability for the directives at the management level. It was unclear who held accountability at this level in both organizations. While we can see the Health Leadership Team taking accountability for the directives at a high level, there should also be clear accountability within senior management of the Department and Nova Scotia Health for these directives and without this, it may be difficult to motivate and encourage staff on the front lines to work toward the standards identified in the directives.

Recommendation 1.5
We recommend the Department of Health and Wellness clearly define who is accountable for directives at both the Department and Nova Scotia Health relating to offload delays at emergency departments and continue to monitor Nova Scotia Health's compliance with the directives.

Health and Wellness Response: Accountability is clearly established. Pursuant to the *Health Authorities Act*, the Minister of Health and Wellness is responsible for the health system, including the Department of Health and Wellness and Nova Scotia Health.

Appointed by the Premier and under the Minister's direction, the Health Leadership Team (HLT) has responsibility for health system oversight, monitoring and performance, including the directives related to offload delays.

HLT meets monthly, at a minimum, and works with system partners to get regular updates on key initiatives. They also liaise with other departments, including senior leadership at DHW and NSH/IWK, and committees that relate to their mandate. In addition to their regular meetings, they can organize sub-committees or work with consultants and advisers to assist in their work when deemed necessary.
Target Date: Implemented

Paramedic Working Conditions Unsustainable, Indicate Crisis

Five major challenges identified by paramedics

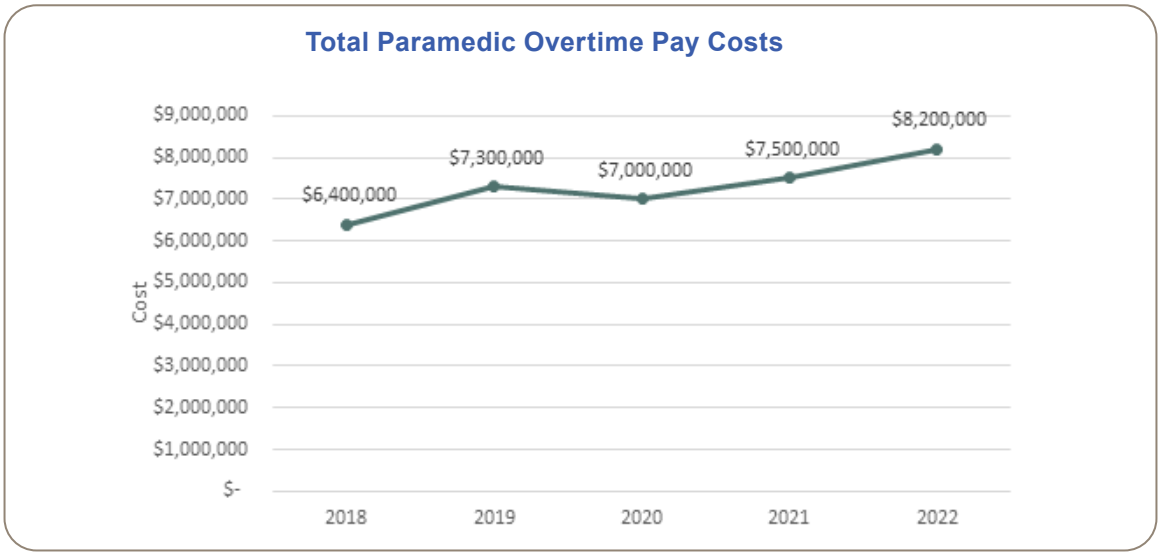
1.96 As part of our audit planning work, we reached out by letter to EMCI employees throughout the province, including paramedics, supervisors, transport operators, call-takers, and dispatchers. Of the 1,044 individuals reached, we received over 240 responses detailing the real-world challenges faced by staff and their suggestions for change. We identified five reoccurring themes which included:

- Paramedics frequently not able to take breaks
- Staff frequently required to work overtime due to calls assigned to paramedics near the end of their shift
- Low rate of pay and the high cost of benefits
- Frequent denial of vacation requests by EMCI
- Long periods of time waiting at emergency departments to transfer care of patients

1.97 We included work in our audit around the concerns noted above. Our work in this section of the report relates to the first four bullets and is outlined below, while the fifth concern, long periods in emergency department offload, is discussed earlier.

Significant increases in paramedic overtime between 2018 and 2022

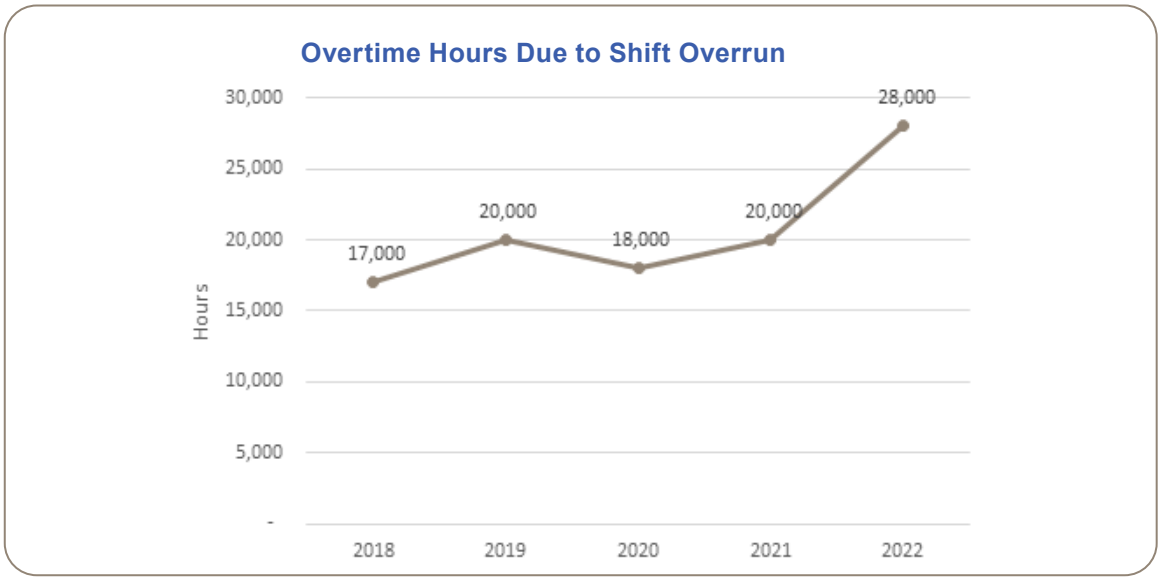
1.98 Between 2018 and 2022, paramedic overtime hours ranged from a low of 186,000 to a high of 211,000 annually. The cost of overtime pay increased by 28% from approximately $6.4 million in 2018 to $8.2 million in 2022 and has exceeded $6 million annually since 2018.



Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.

1.99 Overtime can be caused by paramedics taking on additional shifts but can also be caused by shift overruns, which is when a paramedic does not finish their shift at the scheduled time. This is often due to paramedics getting assigned to calls near the end of their shift, and also having to drive to their home base after a shift, which could be a fairly significant distance. Overtime due to shift overruns increased by 11,000 hours between 2018 and 2022, the equivalent to 917 12-hour shifts.

1.100 Total number of hours due to shift overruns went from 17,000 hours in 2018 to 28,000 hours in 2022, an increase of 65%. The chart below shows the increase, including the most significant jump from 2021 to 2022. Large quantities of overtime, especially when it is not due to the paramedic taking on additional shifts by choice, can lead to fatigue and burnout.

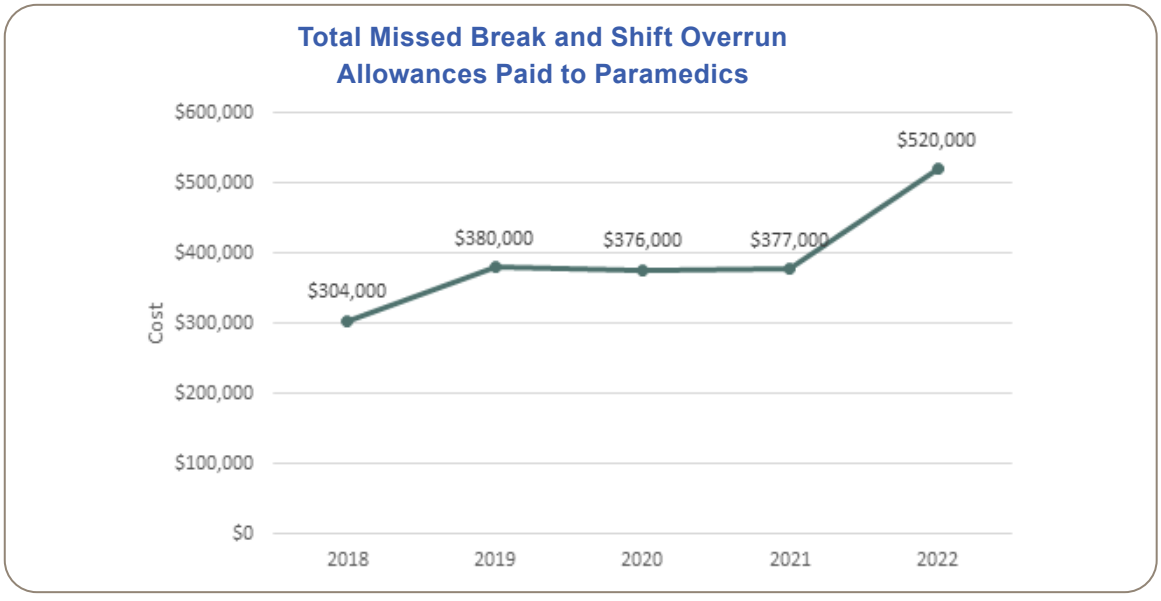


Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.

Allowances paid to paramedics for missed breaks and shift overruns rose by 71% over the past five years

1.101 The current collective agreement entitles paramedics to one paid 30-minute uninterrupted break during each shift. When paramedics do not receive an appropriate break during their shift, they receive an allowance of $12 to compensate for the missed break. An allowance of $10 is paid if a paramedic shift goes beyond the scheduled finish time by 3 hours or more. This allowance is in addition to the overtime pay rate. Allowances paid for missed breaks and shift overrun are one measurement of the strain on the ambulance system and contribute to a more unsustainable work environment for paramedics.

1.102 The total cost of allowances paid has increased 71% over the past five years, rising from $304,000 to $520,000.



Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.

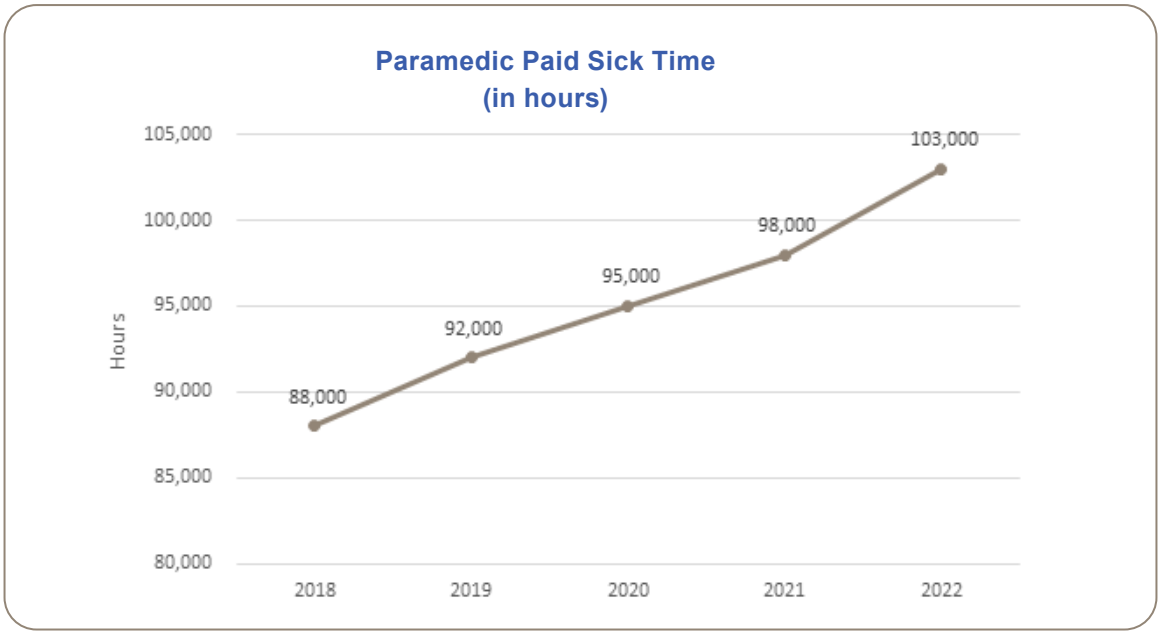
1.103 The increasing allowances paid to paramedics is a concerning indicator of the strains on the system. In paramedics' high stress working environment, taking breaks throughout the day and finishing work on time can be essential to manage burnout and sick time. We discuss the increase in sick time below.

Paramedic paid sick time increasing

1.104 The field of paramedicine is high stress and due to the nature of the profession and types of situations paramedics face, they are known to be at higher risk of developing conditions such as Post Traumatic Stress Disorder (PTSD), depression and anxiety. Taking adequate breaks and vacation time, both of which we discuss in this section, can help reduce the risk of these serious mental health conditions.

1.105 The number of paid sick hours increased steadily year over year from 88,000 hours in 2018 to 103,000 hours in 2022. The increase in missed breaks and overtime over the same five-year period may be contributing factors to the increase in sick time. The annual cost of paid sick time has increased accordingly, from $2.4 million in 2018, to $3.1 million in 2022.

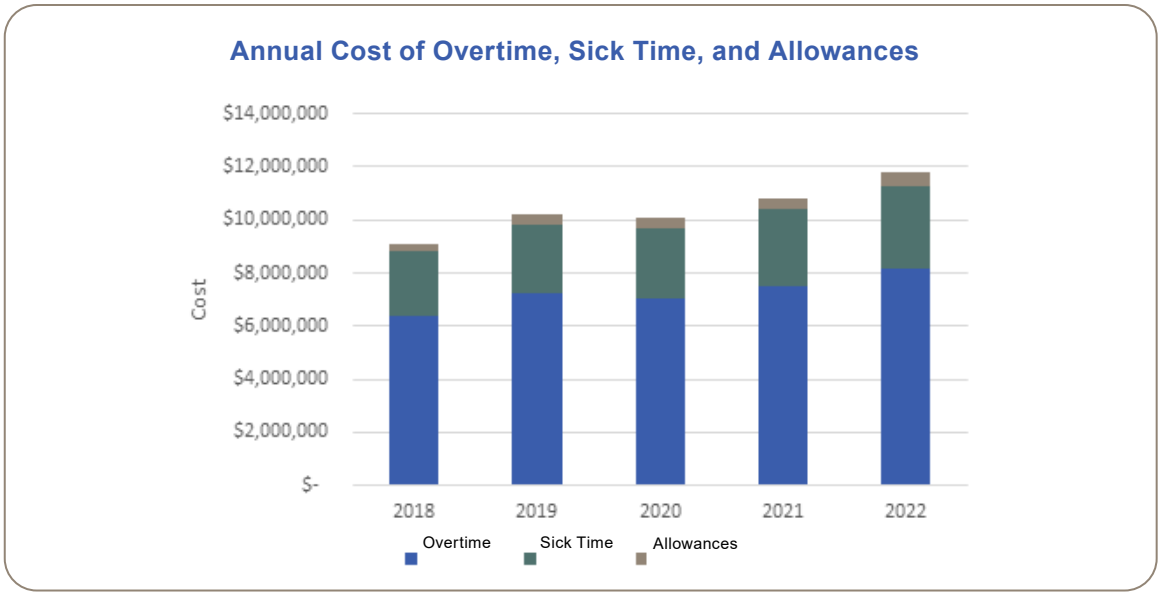
1.106 The following chart shows the increase in hours of paramedic sick time provincially over the past five years.



Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.

Combined cost of overtime, sick time, and allowances reached $11.8 million in 2022

1.107 The combined cost of overtime, paid sick time, and allowances has grown annually from $9.1 million in 2018 to $11.8 million in 2022.



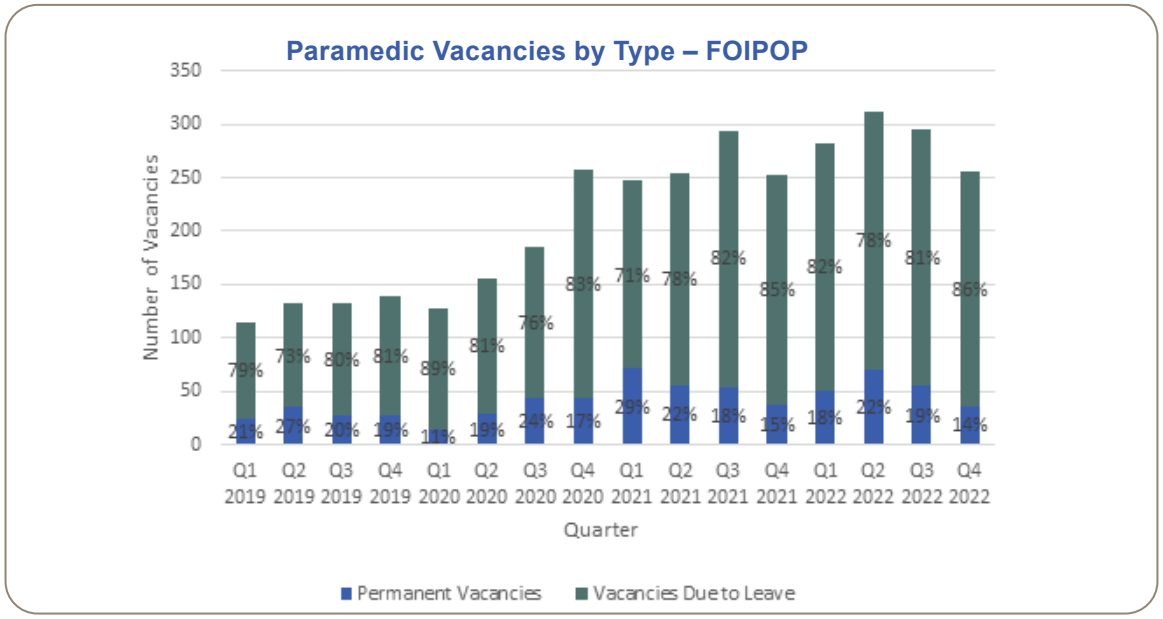
Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.

1.108 The increases in missed breaks, overtime, and sick time for paramedics over the past five years are concerning. As previously stated, excessive overtime and missed breaks may lead to fatigue and burnout, which in turn can lead to sick time or short/long-term disability.

Paramedics on leave accounted for 70-90% of total vacancies over the past four years

1.109 A 2023 Freedom of Information and Protection of Privacy (FOIPOP) request made by a member of the public showed quarterly paramedic vacancy totals for 2019 through 2022. The FOIPOP report indicated that total paramedic vacancies ranged from a low of 114 in the first quarter of 2019, to a high of 312 in the second quarter of 2022. Throughout 2022, at least 250 paramedics were on leave.

1.110 Vacancies due to leave accounted for between 70% and 90% of total vacancies each quarter, meaning staffing issues are not necessarily due to permanent vacancies but rather medical or other types of leave. Types of medical leave can include sick leave and short- and long-term disability. Other types of leave can include maternity leave, unpaid leave or study leave.



Source: Office of the Auditor General of Nova Scotia; Public Freedom of Information and Protection of Privacy Request; unaudited

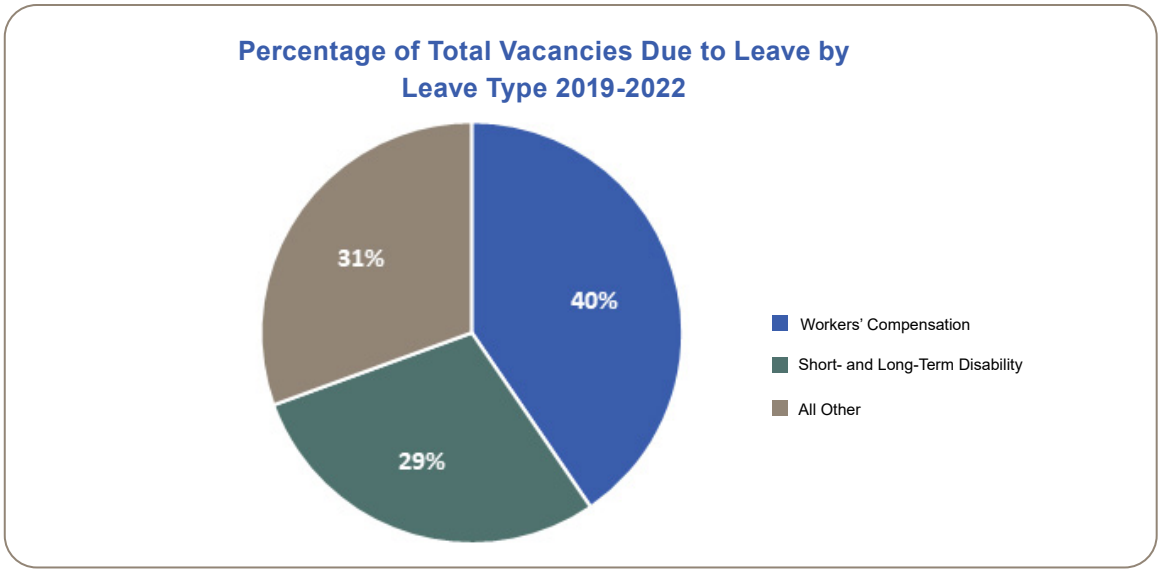
Almost 70% of paramedics on leave are for medical reasons

1.111 The Paramedic Workforce Working Group, discussed below, noted that 15% of the provincial paramedic workforce is on leave at any given time, while the norm for the industry is 10%.

1.112 EMCI noted the average length of medical leave for paramedics in Nova Scotia is 52 weeks. The Paramedic Workforce Working Group meeting minutes indicated paramedics on medical leave due to PTSD are off work for an average of 64 weeks. PTSD in first responders is so prevalent that the *Workers' Compensation for Emergency Responders with Post-traumatic Stress Disorder Act* in Nova Scotia states that the diagnosis of any emergency responder with PTSD is presumed to be related to their line of work and allows them to obtain workers' compensation benefits.

1.113 We obtained quarterly data for vacancies due to leave for 2019 through 2022 from EMCI. We found that staff off work on short- or long-term disability, as well as leaves related to Workers' Compensation (WCB), accounted for almost 70% of all vacancies due to leave.

1.114 Given that 15% of EMCI's workforce is on leave as mentioned above and that the average medical leave spans one year, this is undoubtably contributing to EMCI being unable to staff all of the scheduled ambulances as well as impacting EMCI's ability to grant vacation requests. The following chart shows the proportion of leaves related to Workers' Compensation and short- and long-term disability.



Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.

1.115 If missed breaks, overtime and sick time continue to increase, additional challenges may be created, such as more paramedic resignations.

Paramedics leaving profession earlier than expected

1.116 A total of 211 paramedics resigned or retired from EMCI in the three years between April 1, 2019 and March 31, 2022. Of the 211 departures, 89% were attributable to resignations, with the remaining 11% due to retirements. A total of 2,140 years' worth of paramedical knowledge and experience has been lost through these departures.

1.117 EMCI indicated the average length of service for paramedics is 11.9 years, however we found paramedics who resigned between 2019 and 2022 served an average of only eight years which means paramedics are leaving the profession earlier than expected. The total number of resignations in the last three years is concerning, doubling between 2020-21 and 2021-22.

Average Years of Experience Lost From Paramedic Resignations			
Year	**Number of Resignations**	**Total Years of Experience**	**Average Years of Experience Lost per Resignation**
2019-20	45	392	9
2020-21	48	283	6
2021-22	95	867	9
Total	**188**	**1542**	**8**

Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.

Number of new paramedic graduates not keeping pace with resignations

1.118 Medavie HealthEd, which like EMCI, is a subsidiary of Medavie Health Services, is the only provider of paramedic training in Nova Scotia. Medavie HealthEd's main campus in Nova Scotia is located in Dartmouth, and there is also a satellite campus in Sydney. In January 2023, Medavie HealthEd announced paramedic training would be offered in additional satellite campuses in Stellarton and

Yarmouth. We noted the Medavie HealthEd website listed five primary care paramedic programs set to start in the province between May 1, 2023 and October 16, 2023.

1.119 According to Medavie HealthEd, 281 individuals graduated from the primary care paramedic training program in Nova Scotia between 2018 and 2022. Medavie HealthEd noted that approximately 70% of graduates apply to EMCI for employment, and 98% of these are hired. This would equate to approximately 197 applicants and 193 hires between 2018 and 2022. While EMCI can also hire from outside of the province, it is concerning that resignations over the past three years almost equal new graduate hires for the past five years.

1.120 EMCI indicated a number of initiatives were put in place by Medavie HealthEd to increase enrollment in the primary care paramedic program including:

- Alternative admissions path for those without prerequisite courses
- In-person and virtual open houses
- Streamlined the admission process
- Additional satellite campuses
- Flexible payment options and expansion of scholarship and bursary programs

1.121 We were informed of initiatives put in place by Medavie HealthEd to increase the success rate of students in the primary care paramedic program. These included:

- Extending the classroom learning portion of the program
- Changing evaluation methods from multiple choice exams to a combination of tests, projects, participation and hands-on work.

Paramedic vacation terms generally in line with nurses and other healthcare roles

1.122 Vacation for paramedics employed by EMCI is guided by the terms of the collective agreement. We compared the vacation terms of the collective agreement for paramedics to the collective agreement for nurses in Nova Scotia, and to the collective agreement for employees under the Nova Scotia Council of Health Care Unions. The vacation terms of these collective agreements were comparable in the following areas:

- Vacation entitlements start at three weeks per year and increase based on years of service up to six weeks per year
- Requests for vacation must be made in advance
- Vacation scheduling is based on seniority
- A portion of vacation can be carried over to the following year

1.123 The vacation terms for paramedics are different from those of nurses and employees under the Nova Scotia Council of Health Care Unions in the following ways:

- Paramedics who have used a minimum of three weeks of vacation can choose to have the remaining vacation time paid out. Employees under the other collective agreements can accumulate vacation, but cannot have it paid out, and lose the time if it is not used within a specified period. While it is important to take time away from work, the option to have vacation paid out may be viewed as a benefit by some paramedics.

- Paramedic vacation is scheduled by site based on seniority. However, paramedics with seniority only get preference for two weeks of vacation until less senior paramedics have had an opportunity to schedule up to two weeks of vacation. Scheduling preference by seniority is for four weeks under the other collective agreements.

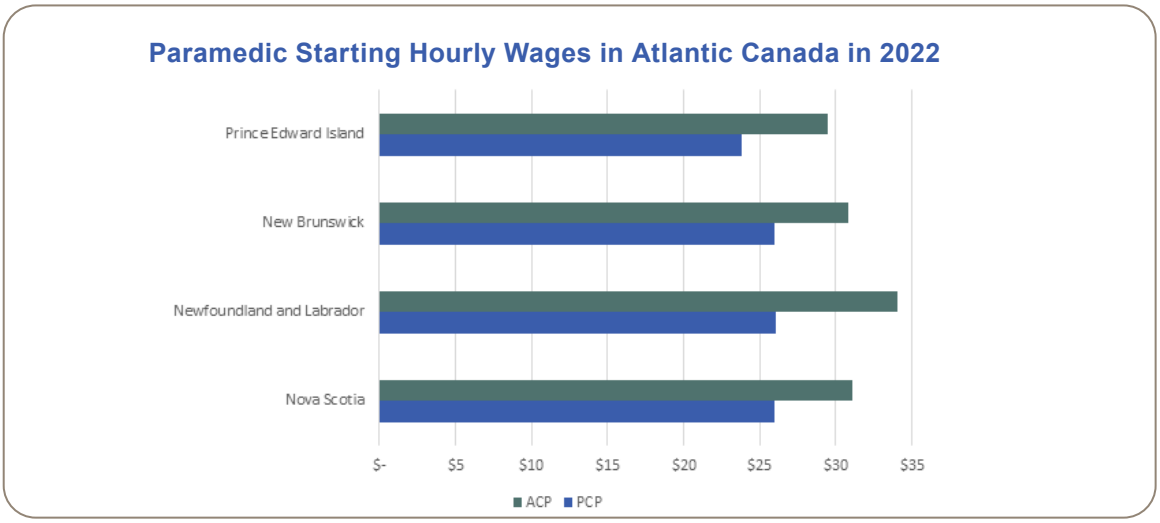
Paramedics noted vacation requests frequently denied

1.124 We heard from paramedics that vacations were frequently denied by EMCI. EMCI noted that there are no vacation blackout dates, but there is a maximum percentage of the paramedic workforce that can be off on any given day. EMCI noted that 25% is the maximum portion of the paramedic workforce that can be off without negatively impacting operations. If 25% of EMCI's paramedic workforce is booked off on a particular date, no more vacation will be approved for that date. EMCI noted this most often occurs for dates in July and August, as well as in late December. Given the essential nature of ground ambulance services, this practice is not unreasonable. However, due to vacation scheduling based on seniority, paramedics with less seniority are more likely to have requests for vacation in these popular time periods denied. This, coupled with the challenges of the number of unstaffed ambulances as discussed earlier in our report, may be making it difficult for paramedics to receive approval for their requested vacation time.

2022 paramedic wages in Nova Scotia were comparable within Atlantic Canada

1.125 The starting hourly wage in Nova Scotia in 2022 was $26.00 for a primary care paramedic and $31.06 for an advanced care paramedic. We compared the Nova Scotia 2022 starting hourly wages to the 2022 starting hourly wages noted in the collective agreements of the other three Atlantic provinces and found Nova Scotia provided the second highest starting wage for both Primary Care Paramedics (PCPs) and Advanced Care Paramedics (ACPs). Newfoundland and Labrador had the highest rates, while Prince Edward Island had the lowest. The starting wages in Atlantic Canada in 2022 ranged from $23.83 to $26.02 for a PCP, and from $29.47 to $34.05 for an ACP.

1.126 The following chart compares the starting hourly wages for PCPs and ACPs:



Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.; Publicly Available Provincial Collective Agreements

Multiple committees working on paramedic staffing issues

1.127 EMCI has a number of active internal committees governing human resources and employee engagements. These internal committees report to the EMCI Workforce Steering Committee, whose role is to review, monitor, and make recommendations on strategy, processes, and policy related to human resources. We reviewed the meeting minutes for the Workforce Steering Committee, and found they include updates around initiatives for recruitment, retention, staffing, and utilization.

1.128 The Executive Forum, discussed earlier, is responsible for the administration and management of the contract for emergency health services and includes senior members from both EMCI and the Department. The majority of the meeting minutes we reviewed included continued discussion of staffing and human resourcing issues. Updates around staffing became a standing agenda item at the February 2022 meeting.

1.129 EMCI provided us with a list of retention, recruitment and staffing plans which are either completed, in process, or being considered. Some of the initiatives included:

- a temporary increase to overtime pay rates
- EMCI paying for short-term disability premiums instead of paramedics
- a safe return-to-work program for when paramedics are returning to work after being on medical leave
- the addition of non-paramedic transport operators to reduce the number of paramedic-operated ambulances being used for routine transfers of patients not requiring medical care during transport
- an increase to casual employee wages as many paramedics expressed interest in casual positions for flexibility, and
- front-line focus groups with paramedic participation

1.130 The Paramedic Workforce Working Group includes members from EMCI, the Department, Medavie HealthEd, the College of Paramedics of Nova Scotia, and the paramedic union. The sole purpose of the group was to develop a provincial paramedic workforce plan over the course of three meetings occurring between January and June 2022. We found that as of November 2022, meetings were ongoing, and the plan is not complete.

Recommendation 1.6
We recommend the Department of Health and Wellness require Emergency Medical Care Inc. to develop a staffing strategy that identifies the appropriate level of resources required to deliver the ground ambulance system. At a minimum, the plan should:

- Evaluate the paramedic staffing demands of the current system;
- Forecast the paramedic staffing demands of the future, considering historical data on sick time and paramedic time spent in offload;
- Identify other system strains and factor into forecasting;
- Work to address overtime and missed breaks;
- Set goals for recruitment and retention of paramedics; and
- Identify whether there are additional locations where training programs could be offered.

Health and Wellness Response: A comprehensive staffing model for ground ambulance was requested by the Department of Health and Wellness from EMCI in January 2023, with a due date of September 30, 2023. The deliverable will address the appropriate level of resources for the current and future ground ambulance system.

The deliverable is being developed in collaboration with the Department, the Office of Health Care Professionals Recruitment, and other stakeholders. Target Date: January 31, 2024

Improved exit interview process needed to guide provincial workforce plan

1.131 Exit interviews are a key means for employers to gather information about why employees are resigning from an organization and to learn what improvements could be made to improve retention. EMCI management indicated they typically request a one-hour interview prior to a departing paramedic's last day of employment.

1.132 However, we found EMCI does not have a formal documented process in place to specify which departing paramedics should be offered an exit interview, timelines to conduct exit interviews, and how results should be used. We did find they had an exit interview template with pre-defined questions.

1.133 Ten of the 15 exit interviews tested were not completed and there was no evidence for these 10 to support that an exit interview was offered to the departing paramedic.

1.134 Of the five exit interviews conducted, three were not documented on the standard exit interview template. As a result, there was no response to the standard questions and no date to confirm when the interview took place, which meant we were unable to determine whether the interviews were completed in a timely manner.

1.135 We saw evidence of exit interview results presented to the EMCI Workforce Steering Committee and the Paramedic Workforce Working Group on three occasions. However, because there was no evidence exit interviews were always offered to departing paramedics, and standard questions

were not always asked, EMCI and workforce committees may not be receiving complete information of why paramedics are leaving. It is important to document exit interviews consistently for all departing paramedics who agree to one, as the information gathered can help guide the provincial paramedic workforce plan and the selection of appropriate initiatives for retention and recruitment.

Recommendation 1.7
We recommend Emergency Medical Care Inc. offer and document exit interviews to all departing paramedics in a timely manner and provide aggregate results to the Workforce Steering Committee and the Department of Health and Wellness.

EMCI Response: Effective August 16, 2023, the automated Exit Interview Survey went live. Powered by Qualtrics and integrated with EMCI's Human Capital System (Workday), employees who leave their position at EMCI ('leavers') will automatically be invited to participate in the survey and will receive two scheduled reminders every 3 days from the initial email. Surveys can be manually uploaded for leavers if the exit needs to be launched sooner.

EMCI's HR team can check the status at any stage. All information is date and time stamped. Once enough surveys are collected, exit interview dashboards are generated with a summary of results from which aggregate results can be provided by EMCI to the Workforce Steering Committee and the Department of Health and Wellness. Target Date: Implemented August 2023 and pending sufficient number of survey results are completed, first aggregate report could be available by end of 2023.

Public Reporting Improvement Needed on Ground Ambulance Dashboard Data

Government introduced public reporting on healthcare in 2022

1.136 In April 2022, government launched Action for Health, a four-year strategic plan for healthcare in the province. Action for Health details the investments in people, tools, technology, and infrastructure required to meet short- and long-term goals and create transformative change to healthcare. In 2022, Action for Health was adopted by Nova Scotia Health as its new strategic plan, replacing the previous plan that was set to expire. Nova Scotia Health management explained adopting this plan made sense to align their work with government priorities.

1.137 In addition to Action for Health, the Action for Health – Public Reporting (Daily Dashboard) went live in June 2022, providing an interactive data dashboard on healthcare and health services information for public consumption. The Daily Dashboard is owned by Nova Scotia Health and includes menu options such as hospital capacity, surgery volumes, continuing care wait times, and statistics on the waitlist for family physicians. Nova Scotia Health management informed us the Daily Dashboard is not intended to measure contractor performance, or to be used by the public when making individual healthcare decisions, such as which emergency department to visit. Instead, the Daily Dashboard provides transparency and accountability of each day, week, month, or year of the healthcare system. Included as indicators related to the ground ambulance system are weekly data on the volume of ambulance responses across the province, average response times, and average hospital offload times.

Inaccuracies found in ground ambulance data published on Dashboard

1.138 The ground ambulance data published on the Daily Dashboard comes from EMCI. Unaudited data is received from EMCI into a government data warehouse where it is pushed to Nova Scotia Health. The Performance Analytics Group of Nova Scotia Health is notified when the data is available, which typically lags by one to two weeks, and prepares the data for publishing to the Daily Dashboard. This includes removing certain records that are perceived to be errors in the data. As an example, any ambulance responses that exceed a certain length of time are removed from the population as they are considered outliers.

1.139 We reviewed the weekly ground ambulance data publicly available on the Daily Dashboard for the period of June 19, 2022 to December 31, 2022. As this was the same data we reviewed earlier in our report, we expected to see identical results. However, we found differences between the data published on the Daily Dashboard and what we had obtained and analyzed for our work. These included:

- Ground ambulance responses on the Daily Dashboard were under-reported by 726 records,
- Average ground ambulance response times on the Daily Dashboard were under-reported on average by two minutes, and
- Average hospital offload times on the Daily Dashboard were under-reported on average by 20 minutes.

1.140 We spoke with the Performance Analytics Group at Nova Scotia Health who explained that the variance we identified was due to an aggregation error in how data was reported. Specifically, data was initially aggregated by Nova Scotia Health zone (i.e. Central, East, North, and West) and then rolled up into a provincial average. This method essentially created an average of the four health zones rather than a provincial average and accounted for the variance. As Nova Scotia Health was not a formal auditee of our audit, we did not perform further work on this.

Ambulance data lacks context

1.141 While public reporting is a good first step in improving transparency of the ground ambulance system, and there is no best practice within Canada, we found the data publicly available on the Daily Dashboard lacks context. Data is reported provincially and by Nova Scotia Health zone, thereby blending large areas and hospitals within the province with smaller communities. This results in masking poor performing areas. For example, hospitals with favourable hospital offload times are combined with hospitals with far worse offload times. Reporting hospital offload times by individual hospitals would provide more timely and relevant information to Nova Scotians.

1.142 The data available also does not include several of the pressures on the ground ambulance system we analyzed earlier in our report, such as emergency department closures, which, as we have shown, can have a significant and negative impact on response times.

Recommendation 1.8
We recommend the Department of Health and Wellness require Nova Scotia Health to address inaccuracies in public dashboard ambulance system data.

Health and Wellness Response: The Department of Health and Wellness will work with the Nova Scotia Health Performance Analytics Group to address inaccuracies that occurred due to an aggregation error in how provincial average data was reported. Target Date: March 31, 2024

Recommendation 1.9
We recommend the Department of Health and Wellness publicly report weekly ground ambulance response times by community and offload times by hospital.

Health and Wellness Response: Reporting of ground ambulance response times will be done at the community category level to ensure patient privacy. Offload times will be reported for all level one and two facilities. The frequency of reporting will be reassessed and aligned with the data system capabilities. Target Date: June 30, 2024

Recommendation 1.10
We recommend the Department of Health and Wellness add additional indicators to their public reporting on ground ambulances to convey other pressures on the ground ambulance system such as emergency department closures.

Health and Wellness Response: The Department of Health and Wellness EHS division will take direction from the Health Leadership Team and work with the NSH Performance Analytics Group to determine relevant measures that can be used to convey pressures on the ground ambulance system. Adding them to the public dashboard will be contingent upon usability of the necessary data to define the measures. Target Date: June 30, 2024

Inconsistent manual process for recording time of transfer of patient care from paramedics to hospitals resulting in data errors

1.143 During our audit, we found inconsistencies in how the point-in-time paramedic's transfer care of a patient to a hospital was recorded in the computer system. As noted earlier in the report, transfer of care is manually recorded in the electronic patient chart by paramedics and is the end point of the offload interval. We heard from EMCI that transfer of care is only sometimes recorded in the electronic patient chart prior to the physical transfer of patient care to the hospital, is at times recorded after patient care has been transferred or is not recorded at all.

1.144 EMCI also informed us that any offload interval shorter than two minutes and longer than 12 hours is excluded from reporting as these records are considered errors by management. While it may be reasonable to remove these, it demonstrates that there are records within the system that are not being included in offload times. We note that the offload time data we report earlier in the report, as well as the offload interval data publicly reported on the Daily Dashboard, omitted these same records for consistency.

1.145 Between April 2017 and December 2022, we reviewed 429,328 emergency department patient offload records and found 16,230 (3.8%) did not have a transfer of care documented, 7,598 (1.8%) records had an offload time of less than 2 minutes, and 1,863 (0.4%) records had an offload interval longer than 12 hours. This error rate of 6%, combined with the inconsistent recording of the transfer of care in the electronic patient chart, reduces our confidence in the accuracy of the offload times.

Recommendation 1.11
We recommend the Department of Health and Wellness require Emergency Medical Care Inc. to create and implement a new process that will result in a more accurate and reliable transfer of care time that is useful for decision-making purposes.

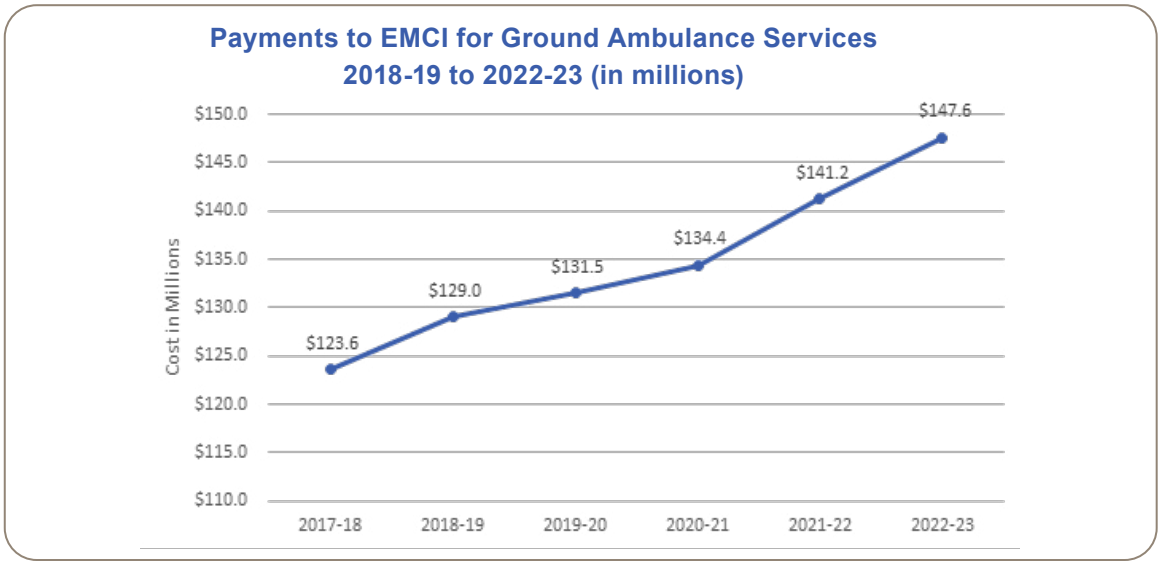
Health and Wellness Response: The EHS Provincial Medical Director will work in collaboration with NSH, IWK and EMCI to conduct a review of the current processes for transfer of care, identify gaps and as appropriate, implement a new process to improve accuracy and reliability.

This will involve a review of the clinical processes and any technological resources required to obtain data for decision-making purposes. Target Date: December 31, 2024

New Contract Cost Effective as Long as Controls Over EMCI Management Fee and Audit Clause Utilized

1.146 The previous contract between the Department and EMCI was effective April 1, 2009. The initial term ended in March 2016 and was temporarily extended to 2020 while negotiations were ongoing for a new contract. In April 2021, an updated five-year contract came into effect, with an option to renew twice for up to two years each time, for a total of no more than nine years. The compensation structure of the new contract is actual costs plus a 5% management fee to EMCI (previously 3%).

1.147 The chart below illustrates payments made to EMCI for ground ambulance services over the past five years.



Source: Office of the Auditor General of Nova Scotia; Department of Health and Wellness

1.148 Under the previous contract, when EMCI's actual costs were less than budgeted costs for the year, this surplus would be split equally between two funds – the Operational Stabilization Fund and the Strategic Investment Fund. Both funds were held by EMCI.

1.149 The Operational Stabilization Fund was not only held by EMCI, but expenditures could be made at EMCI's discretion with no approval required from the Department. While the Strategic investment Fund was also held by EMCI, the contract states any expenditures from the fund need to be approved by the Department and were to be used only for unanticipated costs relating to enhancement of the EHS system.

1.150 The risk of having the Operational Stabilization Fund under the prior agreement was the potential motivation for EMCI to inappropriately benefit from certain surpluses and subsequent contribution to the Operational Stabilization Fund that EMCI could use as it chose. For example, surpluses generated from vacant positions.

1.151 EMCI often had a surplus under this previous contract as shown in the below chart.

EMCI Surpluses/Deficits for Past Five Years

	Previous contract			Current contract	
	2017-18	**2018-19**	**2019-20**	**2020-21**	**2021-22**
Surplus (deficit)	$4,723,150	$8,214,936	$6,993,346	$(6,120,404)[1]	$4,745,182

Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.
1. Largely due to retroactive paramedic collective agreement settlement

1.152 Under the new contract, the Operational Stabilization Fund no longer exists but the Strategic Investment Fund remains with the same structure.

1.153 Any surpluses generated by EMCI are now required to be returned to the province at year end. The Department can also choose to allocate some or all of the surplus to the Strategic Investment Fund. If EMCI incurs a deficit during the year, the Department will fund it.

1.154 The deficit in 2020-21 was due to a renegotiated collective agreement for paramedics which included a retroactive payment for an unanticipated increase in wages.

1.155 The Department indicated the surplus for 2021-22 was due to staffing vacancies. The Department made the decision to have $2 million of this surplus returned to the province and the remaining $2.7 million reallocated to the Strategic Investment Fund for future use.

1.156 Removing the Operational Stabilization Fund from the new contract reduced the risk to the province of the service provider inappropriately benefiting from the surplus (of which they would keep half). EMCI negotiated an increase in its management fee from 3% to 5%. Not only did it reduce risk to the province, but the arrangement also provided EMCI with a more stable and consistent income as the amount it maintained as profit no longer depended on the surplus. We do have concerns with the calculation of the management fee, which we will discuss later in this section.

1.157 The following table compares the key financial features of the previous contract versus the current contract:

Feature	Previous contract	Current contract
Surplus	EMCI keeps 1/2 of surplus	All surplus returned to province
Management fee	3% of costs	5% of costs
Risks to Province	Risk of reduction of expenses to inflate surplus while providing lesser quality service	Risk of inflating expenses to increase management fee

Source: Office of the Auditor General of Nova Scotia

Over $31.7 million in compensation to EMCI over past five years

1.158 In our view, the changes made in the new contract are a more cost-effective approach to funding the ground ambulance system as long as the management fee is calculated on clearly defined and appropriate costs.

1.159 The chart below details the $31.7 million that EMCI has received from the Operational Stabilization Fund and management fees over the past five years. The chart shows that from 2021-22 onwards (when the new contract came into effect), EMCI only received 5% management fee from the province, which was similar to or less than the previous 3% management fee plus the Operational Stabilization fund contribution that used to be given to EMCI under the previous contract.

Operational Stabilization Fund and Management Fees Paid to EMCI from 2017-18 to 2021-22 (millions)

	2017-18	2018-19	2019-20	2020-21	2021-22	Total
Operation Stabilization Fund (share of surplus)	$2.4	$4.1	$3.5	N/A*	N/A	$10.0
Management fee %	3%	3%	3%	3%	5%	
Management fee	$3.7	$4.0	$3.7	$3.8	$6.5	$21.7
Total EMCI compensation	$6.1	$8.1	$7.2	$3.8	$6.5	$31.7

Source: Office of the Auditor General of Nova Scotia; Department of Health and Wellness; Emergency Medical Care Inc.
**2020-21 was an extension of the previous contract, and an amendment was made stating there would be no contributions to the Operation Stabilization Fund or Strategic Investment Fund until the new contract was finalized.*

Risk of actual costs being inflated to increase management fee

1.160 The contract between the Department and EMCI stipulates a management fee is to be applied to the actual costs associated with ground ambulance services.

1.161 The management fee is initially calculated based on the budgeted expenses at the start of the year and included in the biweekly payments made to EMCI. At the end of the year, there is a reconciliation to determine the actual costs for the year. The management fee is recalculated based on this.

1.162 The risk of embedding the management fee within the contract is that the service provider may be motivated to keep costs high, which would result in higher management fee revenue.

1.163 There is also a risk that EMCI may be receiving a management fee on costs for which it may not have any ability to influence or add value. For example, in 2023, the Department announced a tuition reimbursement initiative for paramedics. The money for this initiative was to be provided by the Department to EMCI who would then reimburse paramedics and account for it as an expense. At the time of our work, we questioned the appropriateness of a management fee being paid on a flow through expense such as this, where there is no relationship to EMCI's management ability of the contract.

Recommendation 1.12
We recommend the Department of Health and Wellness formalize in the ground ambulance contract the costs, if any, that should be excluded from the calculation of the management fee paid to Emergency Medical Care Inc., particularly where there is no relationship to EMCI's management ability of the contract.

Health and Wellness Response: The EHS Services Agreement covers the provision of ground and air ambulance services.

The EHS Services agreement section 8.8 defines the management fee for ground ambulance services. Schedule A of the agreement defines the specific services that comprise ground ambulance services and Schedule F defines the baseline budget elements that are used to calculate the management fee. Any additions to the budget elements used to calculate the management fee would be subject to the Change Management Procedures outlined in Schedule T of the Services Agreement.

Schedule B of the agreement defines the air ambulance services and relevant vendor, which are not included in the baseline budget elements in Schedule F, so not part of the management fee calculation. Section 8.8.2 of the contract also specifies the items that do not have management fees applied. Target Date: Implemented

Department not utilizing audit clause in contract to assess EMCI costs

1.164 The ground ambulance contract gives the Department the authority to perform audits at EMCI. The Department is not using this clause.

1.165 Performing audits at EMCI would allow the Department to investigate various parts of the ground ambulance function of the organization to ensure they are comprehensively assessing activities. Audits could be of a financial nature or to investigate reasonability of costs. One example is to assess the reasonability of the cost to maintain, operate and fuel ambulance vehicles.

Department has not identified financial risks related to the contract

1.166 With any major government contract, the financial risks to the province should be assessed with any necessary mitigating controls put in place.

1.167 Examples of financial risks in the ground ambulance contract could include, but are not limited to:

- Actual costs not being valid and accurate
- Actual costs being inflated to increase management fee
- Salaries and benefits of paramedics are being paid at inappropriate rates
- Fuel and maintenance costs of ambulances being inaccurate
- Inappropriate bonuses paid to EMCI management

1.168 The Department has not completed an analysis to identify the financial risks the government faces with this contract.

Recommendation 1.13
We recommend the Department of Health and Wellness use the audit clause in the ground ambulance contract with Emergency Medical Care Inc. to begin conducting regular audits, with topics selected based on risk.

Health and Wellness Response: Members of the Department of Health and Wellness EHS division met with the Provincial Internal Audit Executive Director and Director in May 2023 to discuss the development and implementation of a risk management plan. This will include defining, tracking, and monitoring risks and will inform the basis of an audit plan, and the specific resources required to enable it. Target Date: September 30, 2024

The Department does not have a clear process for administering and monitoring the Strategic Investment Fund

1.169 The purpose of the Strategic Investment Fund is for EMCI to have access to money quickly when there is a need for one-off equipment spending, without going through the typically lengthy process to request more money from government. Examples of expenditures made using these funds have included encrypted radios, power stretchers and website upgrades.

1.170 EMCI holds this fund, but any expenditures from it must be jointly approved by EMCI and the Department. All assets purchased using these funds are owned by the Department.

1.171 The balance of this fund in EMCI's financial statements as at March 31, 2022 was $7 million.

1.172 To request an expenditure, EMCI prepares supporting information that is submitted to the Department and is discussed at the Conjoint Financial Committee, which is a committee that includes representation from both the Department and EMCI. If approved, the request is signed by the Executive Director in the EHS division of the Department.

1.173 We tested five expenditures from the fund and found issues in all sampled expenses as follows:

- No evidence of approval for two expenditures
- Inappropriate levels of approval for two expenditures (not Executive Director)
- Unreconcilable difference between the approved and actual amount paid for one expenditure

1.174 The significant expenditures made from this fund underscore the importance of ensuring necessary financial controls are in place to ensure all spending is appropriate.

Strategic Investment Fund Expenditures – 5 years					
2017-18	2018-19	2019-20	2020-21	2021-22	Total
$1,895,348	$1,980,760	$6,177,010	$3,046,356	$873,853	$13,973,327

Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.

Recommendation 1.14
We recommend the Department of Health and Wellness design and implement a consistent and documented process for the Strategic Investment Fund that includes details on:
- approvals for expenditures
- reconciliation of actual cost against approved cost
- quantity of items purchased, and
- nature of purchases.

Health and Wellness Response: Work is underway on a more defined process for the Strategic Investment Fund. A Request Form has been developed and is in use to ensure the necessary information is provided to support a request and the creation of a tracking document. Process documentation is being developed in conjunction with Finance and Treasury Board staff. Target Date: March 31, 2024

Bonuses paid to EMCI staff were reasonable

1.175 EMCI pays bonuses to non-unionized personnel including key management positions. The compensation structure includes bonuses based on performance that are included as part of the budgeted operational costs funded by the province.

1.176 Bonuses paid in 2022 of varying amounts totaled approximately $660,000 for 175 employees, including key management positions.

1.177 We compared salaries and bonuses of EMCI's key management positions to comparable positions within government and concluded amounts were reasonable.

Appendix I

Reasonable Assurance Engagement Description and Conclusions

In Fall 2023, we completed an independent assurance report of Ground Ambulances Services at the Department of Health and Wellness and Emergency Medical Care Inc. The purpose of this performance audit was to determine if ground ambulance services are meeting the needs of Nova Scotians in a cost-effective manner.

It is our role to independently express a conclusion about whether ground ambulance services comply in all significant respects with the applicable criteria. Management at the Department of Health and Wellness and Emergency Medical Care Inc. have acknowledged their responsibility for ground ambulance services in Nova Scotia.

This audit was performed to a reasonable level of assurance in accordance with the Canadian Standard on Assurance Engagements (CSAE) 3001—Direct Engagements set out by the Chartered Professional Accountants of Canada; and sections 18 and 21 of the Auditor General Act.

We apply the Canadian Standard on Quality Management 1, which requires the Office to design, implement and operate a system of quality management, including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

In conducting the audit work, we have complied with the independence and other ethical requirements of the Code of Professional Conduct of Chartered Professional Accountants of Nova Scotia as well as those outlined in Nova Scotia's Code of Conduct for public servants.

The objectives and criteria used in the audit are below:

Objective: To determine if the Department of Health and Wellness is effectively monitoring the performance of Emergency Medical Care Inc. to deliver ground ambulance services as required in the contract.

Criteria:

1. The ground ambulance contract between the Department of Health and Wellness and Emergency Medical Care Inc. should include clearly defined and measurable performance targets.
2. The Department of Health and Wellness should be monitoring performance of Emergency Medical Care Inc. against targets.
3. The ground ambulance contract between the Department of Health and Wellness and Emergency Medical Care Inc. should have a compensation model designed to influence high performance.
4. The Department of Health and Wellness should be overseeing and following up on directives issued to Nova Scotia Health regarding offload delays at emergency departments.

Objective: To determine if Emergency Medical Care Inc. is adequately managing human resource needs for the delivery of ground ambulance services.

Criteria:

1. Emergency Medical Care Inc. should have a strategy for their human resourcing needs related to ground ambulance services and the plan should include aspects of both recruitment and retention.

Objective: To determine if the Department of Health and Wellness is reporting relevant, timely and accurate information on the performance of the ground ambulance system.

Criteria:

1. Public reporting on the ground ambulance system should be accurate and reliable.
2. Public reporting on the ground ambulance system should include information to increase public awareness about the challenges and successes of the ground ambulance system.

Generally accepted criteria consistent with the objectives of the audit did not exist. Audit criteria were developed specifically for this engagement. Criteria were accepted as appropriate by senior management at the Department of Health and Wellness and Emergency Medical Care Inc.

Our audit approach consisted of interviews with management and staff of the Department of Health and Wellness and Emergency Medical Care Inc., reviewing policy, examining processes for ground ambulance services and detailed file review. We examined relevant processes, plans, reports and other supporting documentation. Our audit period covered April 1, 2020 to March 31, 2022. We examined documentation outside of that period as necessary.

We obtained sufficient and appropriate audit evidence on which to base our conclusions on August 17, 2023, in Halifax, Nova Scotia.

Based on the reasonable assurance procedures performed and evidence obtained we have formed the following conclusions:

- The Department of Health and Wellness is not effectively monitoring the performance of Emergency Medical Care Inc. to deliver ground ambulance services.
- Emergency Medical Care Inc. is creating initiatives to retain and recruit paramedics and improve working conditions; however, more needs to be done to effectively manage human resources.
- The Department of Health and Wellness is not providing the public with relevant information on the performance of the ground ambulance system.

Appendix II

Ground Ambulance Response Time Community Categories

Geographic region	Category 1 (urban)	Category 2 (suburban)	Category 3 (rural)
Central	Halifax	Eastern Passage	All remaining communities not categorized as urban or suburban
	Dartmouth	Westphal	
	Bedford	Hammonds Plains	
	Lower Sackville	Upper Tantallon	
	Cole Harbour	Enfield	
Eastern	Sydney	Sydney River	
	North Sydney	Dominion	
	Sydney Mines	Eskasoni	
	New Waterford	Port Hawkesbury	
	Glace Bay		
North	Truro	Bible Hill	
	New Glasgow	Springhill	
		Amherst	
		Pictou	
		Stellarton	
		Westville	
		Antigonish	
Western	Kentville	Bridgewater	
		Lunenburg	
		Liverpool	
		Yarmouth	
		Digby	
		Berwick	
		New Minas	
		Wolfville	
		Windsor	

Source: Emergency Health Services Contract

Appendix III

EMCI Quarterly Performance Standards Scorecard, December 2022

Scorecard prepared by EMCI, representing standalone third quarter for 2022-23

Standard	Target	EMCI Self-Assessment
Time sensitive cases reported to EHS	Reporting compliant	Compliant
Time sensitive cases reported to EHS – EPSO (Emergency Preparedness and Special Operations)	Reporting compliant	Compliant
Report cases to EHS for IHP (Integrated Health Program) calls	Reporting compliant	Compliant
Transfer of care documented	92%	88.4%
Patient chart completed	97%	99.5%
Patient chart disclosed to healthcare facility	75% to 85%	Standard on hold *See Note 1*
CQI (Continuous Quality Improvement) meeting	Compliant with meeting held	Compliant
CQI prep meeting	Compliant with meeting held	Compliant
CQI data transfer to EHS	Reporting compliant	Not assessed *See Note 2*
MFR (Medical First Responder) management committee meeting	Compliant with meeting held	Compliant
MFR stakeholder meetings	Compliant with meeting held	Compliant
Near miss reporting to EHS	Reporting compliant	Compliant
Adverse event reporting to EHS	Reporting compliant	Compliant
Sentinel event reporting to EHS	Reporting compliant	Compliant
Issue management case sharing to EHS	Reporting compliant	Compliant
Customer service inquires	Addressed within 15 business days	Not assessed
Response time on-performance	90%	Not assessed
Paramedics per responding units reporting to EHS	Reporting compliant	Compliant
Notification of cardiac arrests to MFR agencies	90%	99%
Compliance with the vehicle and equipment standards	90%	Compliant *See Note 3*
Staffing levels compared to plan reporting to EHS	Reporting compliant	Compliant
Code 2 response	Reporting compliant	Compliant
Code 2 transports	Reporting compliant	Compliant
Pediatrics weight documentation	90%	95%
Pediatrics respiratory assessment	90%	99%
Pediatrics respiratory care	90%	84%
Cardiac arrest record completion	90%	70%
Cardiac arrest post-return of circulation care	90%	Below 90%
Acute coronary syndrome record completion	90%	Below 90%
Acute coronary syndrome care treatment	90%	Below 90%
Major trauma	90%	Below 90%

Standard	Target	EMCI Self-Assessment
Stroke care record completion	90%	Below 90%
Airway management	80%	99%
Paramedics per responding IHP units reporting to EHS	Reporting Compliant	Compliant
EPSO unit availability	Reporting Compliant	Compliant

Source: Emergency Medical Care Inc.; unaudited
Note 1: The Department indicates that patient chart disclosure has begun for certain time-sensitive conditions
Note 2: The Department indicates that CQI data transfer is non-compliant, rather than not assessed
Note 3: The Department disagrees with EMCI's self-assessment

Appendix IV

Definitions

Tertiary hospital: a hospital that provides a higher level of specialty care, treatment, and service, than small local hospitals may be able to provide. A tertiary hospital also has the specialized equipment required to provide these services. An example of a tertiary hospital in Nova Scotia is the Queen Elizabeth II Health Sciences Centre – Halifax Infirmary.

Paramedicine: the emergency treatment by paramedics of people in crisis before the patient reaches the hospital.

Low acuity: a level of injury or illness of a less critical nature. A low acuity patient, per the ground ambulance contract, is one that does not require an emergency or urgent ambulance response or transport at the time of dispatch.

Surplus: occurs when actual costs of the ground ambulance system are less than original budgeted costs.

Deficit: occurs when actual costs of the ground ambulance system are higher than original budgeted costs.

Appendix V

Average Ambulance Response Times (communities with 100 or more responses, January 1, 2022 to December 31, 2022)

Information in this appendix should not be used to make medical decisions.

Community	Community size	Number of responses	Response time in minutes
Halifax	Urban	23,395	27
Dartmouth	Urban	11,652	26
Sydney	Urban	4,165	12
Glace Bay	Urban	3,001	15
Truro	Urban	2,824	20
Lower Sackville	Urban	2,295	27
Bedford	Urban	2,186	28
Amherst	Suburban	1,829	17
Eskasoni	Suburban	1,788	21
Bridgewater	Suburban	1,622	16
New Glasgow	Urban	1,602	16
North Sydney	Urban	1,542	13
Yarmouth	Suburban	1,458	15
Sydney Mines	Urban	1,329	15
Cole Harbour	Urban	1,324	29
Kentville	Urban	1,118	14
New Waterford	Urban	1,042	14
New Minas	Suburban	926	17
Antigonish	Suburban	897	12
Windsor	Suburban	884	24
Middle Sackville	Rural	875	28
Bible Hill	Suburban	873	25
Eastern Passage	Suburban	815	34
Springhill	Suburban	704	22
Sydney River	Suburban	676	11
Pictou	Suburban	672	23
Wolfville	Suburban	668	22
Berwick	Suburban	630	24
Port Hawkesbury	Suburban	613	20
Enfield	Suburban	520	37
Stellarton	Suburban	517	17
Digby	Suburban	512	22
Kingston	Rural	506	22
Timberlea	Rural	488	32
Hammonds Plains	Suburban	487	31

Average Ambulance Response Times (communities with 100 or more responses, January 1, 2022 to December 31, 2022) (continued)

Community	Community size	Number of responses	Response time in minutes
Middleton	Rural	486	19
Beaver Bank	Rural	472	29
Grand Lake Road	Rural	461	12
North Kentville	Rural	455	15
Liverpool	Suburban	441	24
Lunenburg	Suburban	427	28
Westville	Suburban	426	18
Waycobah First Nation	Rural	412	35
Westphal	Suburban	395	31
Greenwood	Rural	390	25
Indian Brook	Rural	379	38
Membertou	Rural	361	9
Lawrencetown	Rural	355	35
Trenton	Rural	349	19
Dominion	Suburban	339	13
Chester	Rural	334	26
Fall River	Rural	327	28
Millbrook First Nation	Rural	324	16
Parrsboro	Rural	311	29
Goffs	Rural	303	28
Cambridge	Rural	299	19
Barrington Passage	Rural	294	15
Shelburne	Rural	291	29
Lantz	Rural	280	38
Stewiacke	Rural	277	27
Mahone Bay	Rural	277	18
Wilmot	Rural	276	20
Westmount	Rural	272	13
Upper Tantallon	Suburban	262	30
Riverton	Rural	259	29
Brooklyn	Rural	257	23
Lake Echo	Rural	252	33
Oxford	Rural	251	29
Porters Lake	Rural	250	39
Elmsdale	Rural	249	27
Mira Road	Rural	243	9
Valley	Rural	241	22
Reserve Mines	Rural	239	12

Average Ambulance Response Times (communities with 100 or more responses, January 1, 2022 to December 31, 2022) (continued)

Community	Community size	Number of responses	Response time in minutes
Coldbrook	Rural	234	17
Antigonish Landing	Rural	227	16
Scotchtown	Rural	217	12
Baddeck	Rural	216	13
Paqtnkek First Nation	Rural	211	24
Salmon River	Rural	208	29
Milton	Rural	205	19
Howie Centre	Rural	204	15
Florence	Rural	200	15
Meteghan	Rural	199	19
Truro Heights	Rural	199	17
Coxheath	Rural	196	14
Tatamagouche	Rural	192	36
Falmouth	Rural	189	26
St. Peter's	Rural	187	27
Centreville	Rural	181	22
Shubenacadie	Rural	176	26
Mount Uniacke	Rural	175	36
Debert	Rural	175	23
Inverness	Rural	173	14
Chester Basin	Rural	172	23
Brookfield	Rural	172	20
Musquodoboit Harbour	Rural	170	45
Pugwash	Rural	170	30
Bridgetown	Rural	169	28
Waterville	Rural	166	20
Albert Bridge	Rural	166	20
Annapolis Royal	Rural	160	28
Lucasville	Rural	158	34
Aylesford	Rural	158	22
Wagmatcook	Rural	156	21
Hantsport	Rural	155	25
Herring Cove	Rural	151	30
Greenwich	Rural	145	24
Hilden	Rural	145	21
Sheet Harbour	Rural	142	42
Sandy Point	Rural	142	34
Milford	Rural	139	29

Average Ambulance Response Times (communities with 100 or more responses, January 1, 2022 to December 31, 2022) (continued)

Community	Community size	Number of responses	Response time in minutes
Louisdale	Rural	139	12
Waverley	Rural	137	35
Garlands Crossing	Rural	137	28
Lockeport	Rural	135	47
Clark's Harbour	Rural	135	31
East Preston	Rural	135	29
Wileville	Rural	135	17
Plymouth	Rural	134	20
River Ryan	Rural	132	12
Nictaux	Rural	130	19
Hubley	Rural	129	38
Dayton	Rural	128	23
New Germany	Rural	127	31
North River	Rural	127	27
Harrietsfield	Rural	126	35
Port Williams	Rural	126	19
Meadowvale	Rural	123	23
Lakeside	Rural	122	29
Lower Truro	Rural	122	14
New Victoria	Rural	121	27
Westville Road	Rural	121	17
Chapel Island	Rural	118	30
Lingan Road	Rural	117	17
Morristown	Rural	114	27
Cookville	Rural	112	23
Conway	Rural	112	22
Nine Mile River	Rural	111	33
Arichat	Rural	111	23
Simms Settlement	Rural	110	41
Bridgetown North	Rural	109	29
Stillwater Lake	Rural	107	30
Meteghan River	Rural	106	30
East Chester	Rural	106	27
South Berwick	Rural	106	24
Maitland	Rural	105	43
Western Shore	Rural	105	22
North Preston	Rural	104	46
Hatchet Lake	Rural	104	34

Average Ambulance Response Times (communities with 100 or more responses, January 1, 2022 to December 31, 2022) (continued)

Community	Community size	Number of responses	Response time in minutes
Williamswood	Rural	103	44
Brass Hill	Rural	103	34
Lake Loon	Rural	103	28
Pictou Landing First Nation	Rural	103	26
Upper Sackville	Rural	103	24
Middle Musquodoboit	Rural	101	44
Pleasant Valley	Rural	100	24
Arcadia	Rural	100	12

Source: Office of the Auditor General of Nova Scotia; Emergency Medical Care Inc.

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