MINISTRY OF HEALTH AND LONG-TERM CARE

Emergency Health Services

BACKGROUND

The provision of ambulance services in Ontario is governed by the *Ambulance Act*. Under the Act, the duties and powers of the Minister of Health and Long-Term Care include ensuring "the existence throughout Ontario of a balanced and integrated system of ambulance services and communication services used in dispatching ambulances." Central ambulance communication centres (CACCs) dispatch all land ambulances. Base hospitals train, certify and provide on-the-job medical direction to paramedics. Only ambulance services certified under the *Ambulance Act* may operate in the province.

On January 1, 1998, under Local Services Realignment, the province transferred the responsibility for funding land ambulances to municipalities. The responsibility for operating local land ambulance services was to be transferred from the province to municipalities by January 1, 2000. On March 23, 1999 the province announced it would now fund 50% of the approved costs of land ambulances, retroactive to January 1, 1999. The deadline for municipalities to assume responsibility for providing land ambulance services was extended to January 1, 2001. The *Ambulance Act* states that every municipality will "be responsible for ensuring the proper provision of land ambulance services in the municipality in accordance with the needs of persons in the municipality." At the time of our audit, five municipalities had already assumed responsibility for operating their ambulance systems.

The province will continue to pay the full cost of dispatching ambulances, land ambulance services for the First Nations and air ambulance services.

The Ministry will remain responsible for ensuring that minimum standards are met for all aspects of ambulance services. The provincial share of funding of ambulance services is provided through the Ministry's Population Health and Community Services Program. During the 1999/2000 fiscal year, Emergency Health Services' expenditures, prior to recoveries by the province from municipalities for their portion of the operating costs, were approximately $404 million.

AUDIT OBJECTIVES AND SCOPE

The objectives of our audit of Emergency Health Services were to assess whether:

- adequate procedures were in place to ensure compliance with legislation, policies and procedures and to measure and report on the effectiveness of ambulance services, including whether the realigned ambulance system will be balanced and integrated as required by the *Ambulance Act*; and
- resources were acquired and managed with due regard for economy and efficiency.

Our audit was performed in accordance with the standards for assurance engagements, encompassing value for money and compliance, established by the Canadian Institute of Chartered Accountants, and accordingly included such tests and other procedures as we considered necessary in the circumstances. Prior to the commencement of the audit, we identified the audit criteria we would use to address our audit objectives. These were reviewed and accepted by ministry senior management.

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Our audit focused on the activities at the Branch's head office as well as regional offices, CACCs and a sample of base hospitals. Our audit was substantially completed in March 2000. We reviewed and, where warranted, relied on work completed by the Ministry's Internal Audit Service.

OVERALL AUDIT CONCLUSIONS

The Ministry faces significant challenges, including potential service impairments, in ensuring that a municipally operated land ambulance system is balanced and integrated. These challenges include meeting the province's Local Services Realignment goal of improved accountability and better service at a lower cost to Ontario taxpayers, at a time when the provincially operated system was already not meeting response time requirements. We also noted that municipal representatives were concerned that the province should not be downloading services that were not meeting response time requirements. Our major concerns were as follows:

- In 1998, the last full year for which statistics were available, over 50% of land ambulance operators did not meet response times that were required by regulations under the Act, even though these requirements were based on their actual performance in 1996. The 1996 ambulance response times varied widely. The Ministry estimated that an additional $40 million annually and $11.6 million in one-time funding would be needed to meet the current response time requirements.
- The Emergency Services Working Group reported that, for the period it surveyed, hospitals requested redirect consideration or critical care bypass even though 36% of the time their emergency departments were not at full capacity.

  In addition, during 1999, one region experienced approximately 1,900 instances where patients in serious but stable condition or in life or limb threatening condition waited from 15 to 45 minutes in the ambulance outside hospitals before the hospitals accepted them.

Incidents like those cited above increase the risk of poor ambulance response times for subsequent patients.

- Municipal boundaries may impair the seamlessness of the delivery of ambulance services.
- The Ministry estimated that, due primarily to the transfer of land ambulance services to municipalities, the cost of providing the existing level of service would increase by approximately $53 million in the year 2000. One municipality that assumed responsibility for its land ambulance services stated that providing the same level of service will cost approximately $2 million more than the provincially operated system.
- One-time costs of realignment include an estimated $25 million in compensation to land ambulance operators and $39 million in other costs.
- The Ministry had not defined which municipal land ambulance costs would qualify as approved costs for provincial funding.

In addition, to improve the management of resources, the Ministry needed to ensure that:

- ambulance service providers, central ambulance communication centres and base hospitals are meeting ministry standards;
- it works with municipalities to implement standards for transporting patients using the most appropriate and cost-effective method; and
- where applicable, air ambulance patients are equitably billed on a timely basis, and amounts owing to the Ministry are collected.

DETAILED AUDIT OBSERVATIONS

LAND AMBULANCE

LOCAL SERVICES REALIGNMENT

The Province of Ontario's *1998/99 Annual Report* stated that "the goal of Local Services Realignment is to improve accountability, reduce waste and duplication, and provide better government services at a lower cost to Ontario taxpayers. Provincial and municipal services are being realigned in order to provide the best possible services at the lowest possible cost."

Several studies and reports have raised concerns that the realigned land ambulance system will not provide a balanced and integrated system of services, as required under the *Ambulance Act*, and will be more costly to Ontario taxpayers. For example, in September 1996, the Ministry raised concerns that differences in the quality of care and service may appear between municipalities and across the province due to differences in tax bases, organization and sophistication. In November 1996, the Sub-Panel on Emergency Services of the Who Does What Panel recommended that "the province should continue to fund and control ambulance services as part of the health care system. This would maintain a seamless system in the area of health care with a consistent level of care and service province-wide." The Panel had been appointed by the then Minister of Municipal Affairs and Housing to make recommendations on

how best to overhaul the delivery and funding of many provincial and municipal government services in Ontario.

In August 1998, the Land Ambulance Transition Task Force reported that increased municipal control over dispatch could benefit patients and taxpayers. In contrast, in 1998, the Provincial Base Hospital Advisory Group stated that downloading land ambulance services to municipalities "will raise borders that do not currently exist. These borders may lead to gaps in service and a mosaic of service provision throughout our province." In January 1999, consultants reported to the Ministry that devolving dispatch to a large number of independent municipalities rather than maintaining the current 19 CACCs "would likely result in a highly fragmented system with boundary service problems, little opportunity for efficiency gains and the potential for a negative impact on overall patient care throughout the province."

The consultants also stated that municipalities will likely attempt to gain cost efficiencies that may not be in the best interests of ambulance services province-wide. Similarly, in December 1999, the Ontario Hospital Association noted that separate segments tend to look after their own needs without considering the future needs of the whole ambulance system.

TRANSITION

In March 1997 the Ministry formed the Land Ambulance Transition Task Force to provide advice on the transfer of ambulance services to municipalities. The Task Force adopted, and the Ministry agreed to, five fundamental principles for the delivery of land ambulance services:

- Seamlessness: the closest available, appropriate ambulance should respond to a patient, at any time, in any jurisdiction, regardless of any boundaries.
- Accessibility: municipalities should ensure reasonable access to ambulance services and that ambulance services respond regardless of the location of the request.
- Accountability: ambulance services should be medically, operationally and financially accountable to the municipalities and the Ministry.
- Integration: emergency and transfer services should be integrated with other health care services.
- Responsiveness: ambulance services should be responsive to fluctuating health care, demographic, socioeconomic and medical demands.

In August 1998, the Task Force made recommendations for ensuring the continuation and enhancement of a patient-focused ambulance system. Key recommendations dealt with implementing a quality-assurance-based certification system for operators, reviewing ambulance dispatch and creating a committee to provide ongoing support and advice on maintaining a seamless ambulance system. Most of the Task Force's recommendations were accepted by the Ministry and, at the time of our audit, were in varying stages of implementation.

In early 1999, the Ministry and the Association of Municipalities of Ontario established the Land Ambulance Implementation Steering Committee (LAISC) whose terms of reference included identifying the information and implementing the tools needed to facilitate, monitor and evaluate the transfer. The LAISC is also responsible for making recommendations to the Minister concerning legislation, policies and procedures relating to municipal responsibility for land ambulance services.

At the time of our audit, agreements with municipalities that had already assumed responsibility for their ambulance services did not include funding arrangements. The Ministry also needed to develop performance measures and reporting requirements to ensure the existence of an integrated ambulance system that provides consistent accessibility and services to all Ontario residents.

Recommendation

The Ministry should ensure that after realignment has been completed, the land ambulance program in Ontario is seamless, accessible, accountable, integrated and responsive.

The Ministry should also take corrective action where necessary.

Ministry Response

Upon assumption of responsibility for land ambulance services, municipalities sign a Memorandum of Agreement with the Ministry. The* Ambulance Act *and Regulations clearly establish standards for ambulance operations.

The Ministry will monitor through operational reviews, inspections, investigations and central ambulance communication centres the transfer of responsibility.

In July 2001, the Ministry, through field offices of Emergency Health Services, will assess the impact of realignment.

Where necessary, corrective action will be taken.

RESPONSIBILITY FOR DISPATCH

The Ministry is responsible for the full cost of operating the 19 central ambulance communication centres (CACCs) in Ontario, which coordinate and direct the movement of all land ambulances. During the 1998/1999 fiscal year, CACC expenditures totalled approximately $29 million.

According to the Ministry, ambulance service in Ontario has historically been a seamless system that crosses all municipal boundaries without reference to residence or other demographic factors.

As part of the realignment, municipalities providing ambulance services outside their own boundaries can bill other municipalities for these services. Unless the municipalities agree on a rate, billings are based on each municipality's average cost per call. These costs can vary significantly. At the time of our audit, the Ministry was calculating and processing all such billings for municipalities.

A Dispatch Sub-Committee of the Land Ambulance Implementation Steering Committee was established to consider options for governance, management and control of land ambulance

dispatch services, including the possible transfer to municipal management. In December 1999, the Sub-Committee agreed on a number of principles, including:

- The number one priority of dispatch is to ensure that ambulances are available to handle emergency calls in each jurisdiction and within the provincially mandated response times, recognizing that the dispatch system drives effectiveness.
- Municipalities should have the right to manage dispatch, but should not be forced to.
- Municipalities should control dispatch protocols, procedures or policies that will apply to their ambulance fleets, but the principles of an accessible, integrated, seamless, accountable and responsive system must be upheld.

However, the Ontario Hospital Association, also in December 1999, maintained that ambulance dispatch services should remain a provincial responsibility to ensure that both emergency and non-emergency ambulance services are coordinated and seamless to patients.

Recommendation

The Ministry and municipalities should work to ensure that municipal boundaries do not impair the delivery of ambulance services to patients or add significantly to costs.

Ministry Response

The Ministry, through field offices of Emergency Health Services, is now working with municipalities to address boundary issues. In addition, central ambulance communications centres have committees, which include municipal representation, that discuss the need for seamless ambulance service. As municipalities assume responsibility for land ambulance services, the Ministry agrees to work closely with them to manage this issue.

COSTS OF REALIGNMENT

A September 1998 consultants' report confirmed the Ministry's estimate that downloading land ambulance services to municipalities would increase the total annual cost of providing these services in the province by approximately $12 million in 1999 and an additional $53 million in 2000. This did not include estimates of the annual costs incurred by municipalities to hire staff to administer their ambulance services or increased wage rates resulting from competition for paramedics.

In January 1999, consultants reported to the Ministry that inter-municipal billing for services would add additional cost and complexity to the system with no added value in services.

The December 1999 minutes of the Land Ambulance Implementation Steering Committee (LAISC) indicated that one municipality, having conducted a request for proposals for its ambulance service, found that the least expensive option for maintaining the existing level of service will cost almost $2 million more than what the province paid to operate the service.

In addition, transferring the responsibility for land ambulance services to municipalities has resulted in one-time transition costs.

Since municipalities will be able to choose whether to continue with their current ambulance operators, an independent panel was established to determine the level of compensation the Ministry should pay to private operators for the loss of their business relationship with the Ministry. A consulting firm reported to the Minister that, in the past, private sales of ambulance operations were between 2.5 and 3.5 times the annual amount of the operator's management compensation plan. The management compensation plan was the amount each operator received for management and administrative services and was based on each operator's call volume.

The panel awarded each operator 5.5 times the management compensation plan amount based on their call volume in the 1998/99 fiscal year. This resulted in 67 operators being paid a total of approximately $25 million, or an average of about $370,000 per operator.

Other one-time costs include an estimated $15 million to be paid by the Ministry on behalf of ambulance operators as penalties for cancelling or settling leases and severance costs of $24 million for their employees.

FUNDING

Although the province announced in March 1999 that it will fund 50% of the approved costs of land ambulance services effective January 1, 1999, at the time of our audit, approved costs had not yet been defined. Until these costs are defined, the ability of the Ministry and municipalities to budget for future program costs is limited. However, before it determines what should comprise approved costs, the Ministry needs to compare and analyze the current costs for each ambulance service in relation to the level of service provided.

In November 1999, a LAISC Costing Sub-Committee was established to outline a process to be followed by the Ministry in determining approved costs. The Sub-Committee's terms of reference provided that the approach adopted exclude provincial micro-management or line-by-line budget reviews. However, the Ministry still needs to ensure that funding is reasonable when compared to the service being delivered.

In December 1999, the municipal members of the Sub-Committee proposed that a global budget funding model, using the previous year's budget (based on actual costs for the municipalities to deliver services), be used as the base budget. They also proposed additional funding based on the quality and quantity of the services as determined by an assessment of needs. Accordingly, only additional funding would be based on an assessment of needs on a municipality-by-municipality basis.

At the time of our audit, the Sub-Committee had not yet outlined a process for the Ministry to determined approved costs, and the Ministry and municipalities had not finalized the budgeting and budget review processes.

Recommendation

To help ensure that funding provided to municipalities is reasonable and equitable, the Ministry should:

- **develop a process that assesses relative need and ensures equitable funding across the province; and**
- **define which municipal costs will qualify for provincial funding.**

Ministry Response

The Ministry with the Land Ambulance Implementation Steering Committee has established a sub-committee to review and make recommendations on standards and costs.

The Ministry has now defined the basis for determining which municipal costs will qualify for provincial funding.

RESPONSE TIMES

Calls for ambulances are generally prioritized at the CACCs as follows:

Code 4	Urgent call	Life or limb threatening
Code 3	Prompt call	Serious but stable or under professional care
Code 2	Scheduled call	Inter-institutional transfer
Code 1	Deferrable call	Delays not detrimental to patient safety

Source: Ministry of Health and Long-Term Care

Fast responses with properly trained and equipped personnel are critical to the survival or well being of patients with certain types of illnesses or injuries. A swift response is especially critical for cardiac arrest victims. The Ministry's database of patient problems indicates that at least 11% of code 4 calls in 1998 related to heart attack patients.

In 1994, the Ministry initiated the Ontario Pre-Hospital Advanced Life Support (OPALS) study to assess the impact on survival rates of cardiac patients receiving defibrillation within 8 minutes of call receipt and other advanced life support interventions within 11 minutes of call receipt. The study is being conducted from 1994 to 2002 in 20 communities in Ontario. Interim results indicated that rapid defibrillation has led to a 33% increase in patient survival (from 3.9% to 5.2%).

The U.S. National Institute of Health recommends that a first responder should arrive at the scene less than 5 minutes from the time of dispatch 90% of the time and that advanced life support should arrive within 9 minutes. According to the American Heart Association, very few resuscitation attempts are successful as little as 10 minutes after a heart attack.

The OPALS study also plans to evaluate survival compared to the optimal time for defibrillation. That is, whether the optimal standard from call receipt to defibrillation should be

8 minutes for 90% of the patients, or whether the time frame should be shortened to 7 or fewer minutes in order to increase survival rates.

AMBULANCE RESPONSE TIMES

At the time of our audit, regulations under the *Ambulance Act* prescribed land ambulance response times (from call receipt by land ambulance operator to arrival at the scene) for code 4 calls based on actual response times achieved in 1996. The regulations required that each land ambulance operator "shall ensure that, in 90 per cent of the priority 4 (emergency) calls received in a 12-month period, the response time performance of the operator's ambulance service is equal to the response time performance set by the person who operated the service in 1996." Response times for other types of calls were not covered by regulations under the Act.

We found that there were wide ranges in code 4 response time requirements throughout the province. As well, there were inconsistent requirements within municipalities where there was more than one operator.

In December 1999, the LAISC stated that 1996 response times might not be the ideal standard. Its Costing Sub-Committee also noted that service and response times in similar jurisdictions were uneven across the province. For example, one municipality was concerned that its 1996 response times were 50% longer than those of a similar-sized jurisdiction.

According to the Ministry's data, in 1998 over 50% of the operators had not met their required response times. Data from the first half of 1999 indicated that over 60% of the operators were not meeting their required response times. Municipal representatives on the Costing Sub-Committee expressed concerns that the province should not be downloading services that were not meeting code 4 response time requirements when the province was operating the system.

The Ministry estimated that it would cost approximately $40 million in additional annual operating costs and $11.6 million in one-time costs for all services to meet the 1996 response time requirements.

Effective May 1, 2000, new regulations made under the *Ambulance Act* no longer specify response time requirements for ambulance operators. However, under the new regulations, operators must meet the criteria set out in the Ministry's Land Ambulance Certification Standards, which currently require operators to meet requirements based on 1996 response times.

Recommendation

To help ensure that ambulance response times for emergencies meet the needs of patients throughout the province, the Ministry, together with the municipalities, should:

- **review current response time requirements for reasonableness and consistency and, where necessary, make adjustments; and**
- **take appropriate corrective action where specified response time requirements are not met**.

Ministry Response

The Ministry and municipalities will jointly review standards, including response times, and make recommendations if changes are in order.

To assist municipalities in determining whether response time requirements are being met, the Ministry has conducted a comprehensive review of response times and is now providing municipalities with access to statistical data.

DISPATCH RESPONSE TIMES

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At the time of our audit, call taker and dispatcher response times for code 4 calls were established in regulations under the *Ambulance Act*. The call taker was required to obtain the necessary patient information to accurately prioritize the call and assign it to a dispatcher within 45 seconds. The dispatcher must accurately select and alert the land ambulance crew within one minute and 15 seconds. There were no legislated requirements for other types of calls and there were varying time limits in responding to them.

We noted that in 1998, which was the most recent information available at the time of our audit, none of the 17 CACCs where the Ministry tracked the time from call receipt to assignment to a dispatcher met the 45 seconds timeframe. Fifteen of the CACCs had exceeded the 45 seconds timeframe by more than 25%. Of the 18 CACCs where the Ministry tracked the time for the dispatcher to alert the ambulance crew, 11 did not meet the one minute and 15 seconds requirement. Five of the CACCs exceeded the one minute and 15 seconds requirement by more than 25%. Although there was no overall requirement, of the 17 CACCs for which times were available, only three contacted the ambulance operator within two minutes of receiving the call, while 11 exceeded the requirement by more than 25%.

Although the Ministry was aware that the dispatch response time requirements were generally not being met, we saw minimal evidence of corrective action being taken.

Effective May 1, 2000, new regulations made under the *Ambulance Act* no longer specify response time requirements for dispatch.

Recommendation

To better meet the needs of patients, the Ministry should:

- **establish dispatch response time standards;**
- **monitor whether these standards are being met; and**
- **take timely corrective action where necessary.**

Ministry Response

In recognition of red tape reduction, dispatch standards were removed from the* Ambulance Act *and will be incorporated into a performance agreement to be entered into by each dispatch centre and the Ministry of Health.

Adherence to the performance agreement standards will be closely monitored and corrective action will be taken. Considerable extra resources, including training and technical staff, will be implemented in each dispatch centre to assist with standard compliance. In addition a technical group is working on a review of the Priority Card Index and a new computer-aided dispatch system will be implemented over the next four years.

Subject to agreement, corrective action will be taken, as necessary.

REDIRECT CONSIDERATION AND CRITICAL CARE BYPASS

In municipalities with more than one hospital emergency department, a hospital may:

- instruct CACCs to redirect non-critical patients to an alternate hospital (redirect consideration); or
- notify the CACC that it is unsafe for the hospital to accept any new ambulance patients as patient care will be compromised (critical care bypass).

Reaching another hospital because of redirect consideration or critical care bypass usually increases travel time and may delay treatment. We were informed that the Ministry had not analyzed the impact of redirect consideration and critical care bypass on travel time or the delays in reaching the next patient.

In April 1998, the Emergency Services Working Group, with representation from the Ontario Hospital Association and the Ministry, reported that hospitals were requesting redirect consideration and critical care bypass at different occupancy levels and for different reasons and that there were no standard, monitored criteria. For example, the Working Group reported that, during the period it surveyed, hospital emergency departments were not at full capacity 36% of the time when redirect consideration or critical care bypass was declared.

In February 1999, the Ministry issued Standards for Ontario Hospital Emergency Units Providing Ambulance Access. The standards state that "ambulance diversion should not result in ambulance travel time beyond 15 minutes and in ambulance travel distance beyond 20-25 km." If all hospitals within a given area are on critical care bypass, patients should be taken to the closest hospital.

One region experienced approximately 1,900 instances during 1999 where code 3 and 4 patients waited from 15 to 45 minutes in an ambulance outside the hospital until the patient was accepted by the hospital. In some cases the delay was up to two hours.

Recommendation

The Ministry should analyze the impact of redirect consideration and critical care bypass on ambulance services, including response times for subsequent patients, and, where necessary, take appropriate corrective action.

Ministry Response

The Ministry addressed the impact upon the Toronto Ambulance Service through a ten-point plan implemented in 1999. Components of the plan are being considered for implementation in other areas of the province where redirect consideration and critical care bypass are extensively utilized.

The Ministry has now established a new working group to review redirect consideration and critical care bypass, including its impact on ambulance services.

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DISPATCH PRIORITY

An effective dispatch protocol enables call takers and dispatchers to rapidly identify patient problems, assign priority codes, select an ambulance to respond and provide instructions to callers. When a call is received at a CACC, the call taker uses a dispatch protocol to obtain critical information needed to assess patient priority.

To accomplish this, approximately 15 years ago the Ministry developed the Dispatch Priority Card Index. Since then, base hospitals and CACCs have updated the Index. As a result, different versions were in use at the time of our audit, and one CACC was using a commercially available dispatch protocol.

When using the Index, the call taker documents the nature of the patient problem in a database. However, we noted that in the 1998 database, 30% of the code 4 calls and 49% of the code 3 calls listed patient problems as "unknown." We noted that, while calls were recorded, there was no overall regular monitoring of call-taker compliance with the Index's protocols.

We were informed that the Index's questions often do not trigger the correct priority response. While under-prioritizing may jeopardize patient safety, over-prioritizing places stress on the ambulance system and may affect overall response times.

In February 1999, a base hospital advised the Ministry that, from a 10-month review, it found that call takers using the Index did not identify cardiac arrest in 20% of known cardiac cases. The base hospital stated that the Index "has not been validated in the same way that other commercially available dispatch and call-taking algorithms have been." In May 1999, the Provincial Base Hospital Advisory Group recommended that the Ministry commit resources to replace the Index.

The Ministry has established a working group whose terms of reference, drafted in early 2000, included recommending changes to improve the effectiveness, efficiency and outcome accuracy of the Index. In March and April 2000, workshops were held to update dispatch questions. We were informed that changes resulting from these workshops would be implemented over the next few years in conjunction with a new dispatch computer system. The Ministry plans to implement the system starting in the fall of 2000, with all dispatch centres converted by 2003.

Recommendation

The Ministry should ensure that central ambulance communication centres appropriately assess and prioritize patient needs.

Ministry Response

The addition of 10 dispatch training coordinators across the province will assist with refinement of prioritization of calls. In addition, as was mentioned earlier, a technical group is working on a review of the Priority Card Index and a new computer-aided dispatch system will be implemented over the next four years.

PERFORMANCE MONITORING

The evaluation of ambulance services involves the examination of many clinical conditions and outcomes, including death, disability and discomfort. With respect to performance monitoring, it would be reasonable to expect that:

- the cost effectiveness of ambulance services is evaluated;
- new treatments and services are implemented only after their effects have been demonstrated; and
- performance is compared with operators in other parts of the province of similar size, geography and demographics.

Information on operator performance and the impact of ambulance services will become even more important as responsibility for land ambulances is transferred to the municipalities. The Ministry will need this information to help ensure the effectiveness of Ontario's ambulance system. With the exception of communities participating in the OPALS study, which primarily focuses on performance targets for cardiac patients, the Ministry does not obtain and analyze data on the impact of ambulance services on patient outcomes. To facilitate data collection, a system is needed that integrates information from emergency services and other health care providers.

Recommendation

To help ensure that the land ambulance system effectively meets patient needs, the Ministry should:

- **research systems to analyze operator performance, including its impact on patient outcomes; and**
- **take corrective action where necessary.**

Ministry Response

The Ministry has now developed a certification process that focuses primarily on patient care provided by operators. The impact on patient outcomes requires extensive scientific studies such as the Ontario Pre-hospital Advanced Life Support study.

The certification process for ambulance operators under the* Ambulance Act *provides for action where a contravention of standards has occurred.

SERVICE REVIEWS

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Ambulance Operator Service Reviews

In 1993, the Ministry initiated a process for reviewing operational and administrative activities of ambulance operators. The goal was for all ambulance operators in Ontario to be reviewed within five years. The first cycle of the service reviews was completed by the end of 1999.

Operators are notified 90 days before the review is conducted, and are sent an information package on the scope of the review. We noted that in one Canadian province, 25% of certification inspections are performed without prior notice.

Ministry policies for reviews require follow-up visits to ensure that corrective action was taken where necessary; however, the policies do not specify when the follow-up should occur. We noted that the Ministry did not track the timing or results of follow-ups and that few were conducted prior to 1999. Of the 61 operators that were followed up in 1999:

- approximately 60% were for reviews that had occurred more than three years before; and
- 26% of these operators required further follow-up.

Approximately 60% of the follow-ups that we reviewed did not ensure that all previously identified problems were corrected; for example, some recommendations were recorded as being not applicable or were deleted without explanation.

Service reviews often directed the operator to arrange for follow-up through the Ministry's regional office. The majority of ministry regional managers we surveyed indicated that their responsibilities included ensuring that recommendations were addressed. We were informed this was generally done through informal discussions.

Ministry policy states that if noted deficiencies cannot be satisfactorily resolved, the Ministry's investigations unit may be called and punitive action may follow. However, there were no criteria identifying when an operator should be referred to the investigations unit or when an operator's licence should be revoked.

Effective May 1, 2000, regulations under the *Ambulance Act* require that all ambulance operators be certified at least once every three years. The certification process will have many of the same requirements as, and replaces, the service review and licensing process.

Recommendation

To help ensure that ambulance operators meet ministry requirements, the Ministry should:

- **consider performing certification reviews without advance notice to increase assurance of consistent quality of practice by operators;**
- **have a coordinated follow-up of all deficiencies identified during certification reviews on a timely basis; and**
- **clarify the circumstances when a formal investigation of an operator is required and when a certificate should be revoked.**

Ministry Response

The concept of certification was based upon allowing adequate notice for operations to prepare for the review. However, the Ministry is institutionalizing an inspection process based upon random inspections without notice.

Deficiencies will be followed up by Emergency Health Services field offices and the Ministry Inspections Group.

The Ministry reviews every complaint received by the Ministry with the intent of ensuring that ministry and legislative requirements are being met. Where there is substantial evidence that requirements are not being met, a formal investigation will be conducted. If a complaint falls under some other jurisdiction, it will be referred to the proper authority. Certificates will be revoked where a contravention of the* Ambulance Act *standards has occurred.

Central Ambulance Communication Centre and Base Hospital Reviews

We were informed that, as of December 1999, all CACCs and base hospitals were to be reviewed once every three years. While no policy previously existed for the frequency of CACC reviews, base hospitals previously required reviews every five years.

We noted that 37% of the CACCs had been reviewed between 1996 and 1998. In all cases improvements were necessary. Two of these CACCs were found to be seriously deficient in meeting dispatch requirements, such as rarely using the Dispatch Priority Card Index system. This could result in incorrect patient and dispatching prioritization. Only one of these two reviews was followed up to ensure the recommendations were met. The follow-up did not occur until one year later.

Only two of the 21 base hospitals had been reviewed: one in 1995 and one in 1999. While the 1999 review raised no major issues, the 1995 review concluded that there was a failure of effective communication among the base hospital, emergency medical attendants and the service operators. There was no formal follow-up of this review.

Effective January 1, 2001, regulations under the *Ambulance Act* require communication (dispatch) services not operated by the Ministry and base hospitals to enter into an agreement with the Ministry for the provision of services. We were advised that the ministry-run CACCs will be subject to similar performance requirements.

Recommendation

To help ensure that emergency patient needs are being effectively and consistently addressed, the Ministry should:

- **review central ambulance communication centres and base hospitals within reasonable timeframes; and**
- **resolve all identified deficiencies on a timely basis.**

Ministry Response

The Ministry will develop schedules to ensure that operational reviews are conducted within reasonable timeframes. In addition, continual review of central ambulance communication centres will take place through field offices and inspections.

Identified deficiencies are discussed with the operators/managers and corrective action plans are developed. Corrective action taken will be monitored.

COMPLAINTS

Complaints received by the Ministry's investigations unit are generally logged and assigned to an investigator. We were informed that approximately 100 investigations are conducted annually. We found that investigations were generally completed on a timely basis. Once completed, investigation reports are usually forwarded to senior management and the appropriate regional office.

Our review found that, while files indicated that investigations were generally thorough, certain key information was not consistently tracked in the complaint log. This included whether an investigation was undertaken and the outcome.

Follow-ups enable the Ministry to ensure that noted deficiencies are corrected and requirements are being met. Ministry policy does not adequately describe who is responsible for following up deficiencies noted in investigation reports, the extent of regional office involvement or the timing of the follow-ups. In addition, there is no requirement to send follow-up results to the investigations unit.

Recommendation

To better enable it to assess whether complaints are satisfactorily resolved, the Ministry should:

- **establish clear lines of responsibility for following up on deficiencies identified in investigation reports; and**
- **ensure that follow-ups are completed and documented.**

Ministry Response

A process for investigating complaints received by, or referred to, another jurisdiction relating to land ambulances has now been developed for presentation to the Land Ambulance Implementation Steering Committee.

Follow-ups will be completed and documented.

NON-EMERGENCY INTER-INSTITUTIONAL TRANSFERS

Most non-emergency calls are for transfers of patients between health care facilities such as hospitals, nursing homes and homes for the aged. Transfers are only performed when ambulances are not required for emergency calls.

In 1995 the Ministry of Transportation issued a report on the potential for more effective use of ambulances. The report noted that, due to emergency calls, ambulances were not able to meet the demand for non-emergency transportation.

In March 1997, the Ministry of Health issued a transportation guide to hospitals noting that ambulances should be used for non-emergencies if a medical practitioner decides a patient is medically unstable, requires a medical escort and needs a stretcher. Otherwise, less costly alternatives such as taxis, stretcher-capable private medical transport services and volunteer agencies should be considered.

In December 1999, the Ontario Hospital Association reported an increased use of unregulated patient transportation services in larger urban areas. Although draft guidelines on alternative medical transportation services were prepared for municipalities jointly by the ministries of Transportation and Health and Long-Term Care, we were advised that there were no plans to issue these guidelines because, under the *Highway Traffic Act*, non-ambulance medical transportation is a municipal responsibility.

Recommendation

The Ministry and municipalities should jointly develop and ensure standards are in place that address passenger safety and encourage the use of the most cost-effective resources for transferring non-emergency patients.

Ministry Response

Land ambulance non-emergency and inter-institutional transfers are the responsibility of municipalities to administer and ensure cost-effectiveness. Emergency Health Services field offices will work with municipalities to assist in their decisions in this area. Existing vehicle standards for ambulances were designed to address patient and crew safety and will be used to provide guidance.

AIR AMBULANCE PROGRAM

3.09

The air ambulance program was established in 1977 to transport patients who were inaccessible by land ambulance or where transport by land ambulance was too time-consuming. Air ambulances are also used to transfer medical teams and organs for transplants. The Ministry contracts with private operators of helicopters and airplanes to provide air ambulance services through three different arrangements:

- Dedicated contracts require the air carrier to provide the aircraft and pilots, and the Ministry provides the paramedics and air bases, including the aircraft hangar and crew facilities.
- Preferred provider contracts require the air carrier to provide all services, including paramedics and air bases.
- Standing offer agreements require carriers to provide all services; however, these carriers may decline a request for an air ambulance and are used to supplement the dedicated and preferred services.

For the 1998/99 fiscal year, ministry expenditures for the air ambulance program totalled approximately $37 million.

USE AND SELECTION OF AIRCRAFT

The Ministry has established a process for assessing the need for an air ambulance. Once the need is determined, the dispatcher prioritizes available aircraft based on flight time and estimated cost, and then determines which aircraft to use based on patient need.

Air dispatch policies and procedures require that, where the recommended aircraft is not available, the next most appropriate aircraft be used and the selection process documented. The prioritized list of possible aircraft is to be printed and retained.

While the Ministry has developed criteria for selecting an air ambulance over a land ambulance, we found that the reason was generally not documented and documentation was lacking to support the aircraft selected. In addition, the prioritized list of possible aircraft, although required, was not printed. Without this information, the Ministry cannot ensure an air ambulance was used appropriately and that the aircraft selected met the patient's needs in the most economical manner.

Recommendation

The Ministry needs to better demonstrate through proper documentation that air ambulances are used appropriately and that the aircraft selected meet patient needs in the most economical manner.

Ministry Response

The Emergency Health Services Branch has developed a new system, including a new software application, that will capture and provide the necessary documentation for the selection of appropriate air ambulance services best suited to the patients' needs in the most economical manner available.

RESPONSE TIMES

Air ambulances are primarily dispatched through a central air dispatch centre. At the dispatch centre, the call taker determines whether the call is an emergency and transfers the call to the appropriate dispatcher.

We noted that there were no response time standards for either the call taker to transfer the call to the dispatcher or for the dispatcher to contact the air carrier. Although a computer system is used to capture patient and flight information, the time when the call taker received a call was generally not tracked. In addition, we found that the time the dispatcher contacted the air carrier to arrange a flight was recorded only 26% of the time. Since these times are not tracked, the Ministry cannot monitor the reasonableness of the air dispatch centre's response times.

Response time requirements were included in each air carrier's contract. All contracts allowed for delays due to extenuating circumstances such as poor weather conditions. There were no penalties if response times were not met.

The following table shows the response times for each type of contract and how often those response times were met for code 4 calls.

Response Requirement and Compliance for Code 4 Calls, by Contract Type, 1999

Contract Type	Response Requirement	Compliance Rate
Dedicated	En route within 10 minutes of accepting flight	44% *
Preferred	En route within 10 minutes of accepting flight	68% *
Standing Offer Agreement	Accept/decline within 10 minutes of Ministry's request	46% **
	En route within 30 minutes of Ministry's request	<60% **

** Ministry data*

*** Office of the Provincial Auditor estimate based on available data*

As expected, we found that response times for code 3 calls were even longer.

Recommendation

To help ensure that air ambulance dispatch and response times meet the needs of patients, the Ministry should:

- **develop, track and monitor air ambulance dispatch response time standards;**
- **track and monitor contracted air carrier response times and take corrective action when necessary; and**
- **ensure air carrier contracts contain appropriate penalties for not meeting required response times.**

Ministry Response

The Emergency Health Services Branch has now implemented an incident reporting requirement with all carriers when response times exceed contract requirements.

The Branch will more closely monitor compliance by air carriers with response time requirements.

The Branch will meet with carriers to consider possible changes to agreements related to response times.

INSPECTING SERVICE PROVIDERS

The air ambulance policies and procedures manual requires that all air ambulance providers be inspected annually. Areas inspected include aircraft maintenance, crew training, communications systems, safety, medical equipment and airbase facilities.

We found that annual inspections were not being completed. Dedicated airplanes and helicopters under multi-year contracts were last inspected in 1994 and 1995 respectively. For standing offer agreements covering the period October 1, 1998 to September 30, 1999, only 9% of the airbases in our sample were inspected. Where inspections had been completed, there was no evidence of follow-up to ensure that noted deficiencies, such as the cleanliness of medical equipment and the aircraft, had been corrected.

Information on air carrier use and performance is required in order to evaluate the appropriateness of the cost and services supplied. The Ministry received monthly and annual reports from dedicated air ambulance bases; however, for air carriers that provide services under the preferred provider contract or standing offer agreements, reports were not received or produced by the Ministry on their use and performance.

We reviewed the two-year contract extensions for the dedicated helicopter and airplane services, whose initial five-year terms expired in March and September 1999 respectively. The contract extensions were contingent on annual program evaluations. These evaluations were required to forecast program activity as well as review the previous year's service quality, contract cost, aircraft type, maintenance and appropriateness of base locations. However, the Ministry renewed both contracts without conducting program evaluations.

Recommendation

To help ensure that the air ambulance program is providing safe and quality services at an appropriate cost, the Ministry should:

- **conduct inspections and evaluations of air ambulance providers in accordance with ministry policies and procedures;**
- **track and analyze air ambulance use and performance data; and**
- **take corrective action when necessary.**

Ministry Response

As with land ambulance operators, the air ambulance providers will be required to re-certify every three years through a standard quality review process. The Ministry is in the process of increasing the number of inspectors and investigators to address aviation-related matters.

The previously mentioned new computer-aided dispatch system and the additional resources that are being engaged in the Medical Air Transport Centre will allow for analysis of air ambulance use and performance data.

***Corrective action will be taken subject to the terms of the relevant agreement with a carrier and be subject to the certification standards under the* Ambulance Act.**

PATIENT BILLINGS

Individuals are invoiced for the cost of their air ambulance trip if they are not covered under OHIP or when the trip is not medically necessary. After an air ambulance trip has been completed, the hospital determines if the flight is billable by the Ministry and forwards applicable documentation.

Standing offer agreement carriers forward information to the Ministry on all of their flights. However, hospitals are the sole source of information for flights taken on dedicated and preferred provider aircraft.

We noted that the Ministry did not have a process in place to ensure hospitals forwarded information on all billable patients in a timely manner and therefore could not ensure all patients who should have been billed were invoiced. At the time of our audit, no billing documents had been received from hospitals for preferred provider flights, which commenced operations in September 1999.

The Ministry is responsible for determining flight costs and issuing invoices. Patients travelling on standing offer agreement aircraft were invoiced for the actual cost of the trip, which averaged $3,400. However, billings for flights on dedicated aircraft were based only on the time the patient was on board the aircraft, and averaged $650. The Ministry had not established a billing practice for preferred provider flights.

In the 1998/99 fiscal year, 98 invoices were issued totalling approximately $273,000, of which approximately $140,000 was collected. Of the invoices we sampled, 56% were issued more than two months after the flight.

There was no process in place for following up on outstanding accounts. Generally, there was no correspondence with the patient after the initial invoice was sent. Uncollected accounts were not forwarded to the province's Collection Management Unit, which pursues overdue accounts.

Recommendation

To help ensure that, where applicable, all patients are billed equitably and outstanding amounts are collected, the Ministry should establish effective procedures to:

- **ensure that all patients who should be billed are identified and invoiced in a timely manner for the total cost of the service provided, regardless of the air carrier used; and**
- **collect outstanding accounts on a timely basis.**

Ministry Response

The patient billing criteria and system is currently under review with the intention to develop a more equitable billing system based on actual costs incurred.

The Ministry is currently setting up a new aging system to help monitor the accounts receivables more closely and incorporate the services of the province's Collection Management Unit as necessary to ensure effective collection of outstanding patient billings.