

Ambulance Services— Land

Background

The provision of ambulance services in Ontario is governed by the *Ambulance Act* (Act). Under the Act, the Minister of Health and Long-Term Care must ensure “the existence throughout Ontario of a balanced and integrated system of ambulance services and communication services used in dispatching ambulances.”

On January 1, 2001, responsibility for providing land ambulance services was transferred from the province to the 40 upper-tier municipalities and 10 designated delivery agents in remote areas (municipalities). The 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.” The Ministry of Health and Long-Term Care (Ministry) funds 50% of approved eligible costs of municipal land ambulance services, and 100% of the approved costs of ambulance dispatch centres, ambulances for the First Nations and territories without municipal organization, and other related emergency services. In addition, the Ministry is responsible for ensuring that minimum standards are met for all aspects of ambulance services.

Across Ontario, land ambulances are dispatched by 22 dispatch centres, 11 of which are run by the province, seven by hospitals, three by municipalities, and one by a private operator. Twenty-one base hospitals train, certify, and provide on-the-job medical direction to paramedics. Only ambulance services certified under the Act may operate in the province.

The Emergency Health Services Branch (Branch), part of the Ministry’s Acute Services Division, administers the Ministry’s role and responsibilities under the Act. In the 2004/05 fiscal year, ministry expenditures on land ambulance services were approximately \$358 million, including \$241 million provided to municipalities for land ambulance services, as shown in Figure 1.

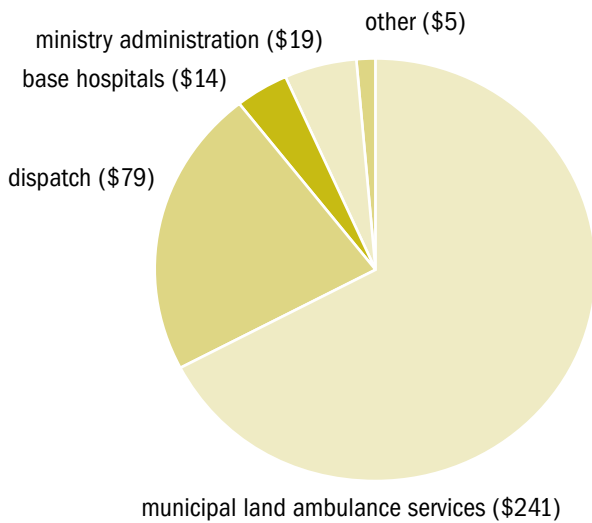
Audit Objective and Scope

The objective of our audit was to assess whether the Ministry had procedures in place to ensure that:

- its expectations for the delivery of land ambulance services, including compliance with applicable legislation and policies, were being met in a cost-effective manner; and

Figure 1: Ministry Land Ambulance Service Expenditures, 2004/05 (\$ million)

Source of data: Ministry of Health and Long-Term Care



- performance in delivering land ambulance services was properly measured and reported.

Our audit was conducted 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. The criteria used to conclude on our audit objective were discussed with and agreed to by senior ministry management.

Our audit primarily focused on activities at the Branch's head office and field offices, as well as a sample of dispatch centres and base hospitals. We also met with representatives of the Association of Municipal Emergency Medical Services of Ontario. We did not rely on the Ministry's Internal Audit Services to reduce the extent of our audit work because it had not recently conducted any audit work on land ambulance services.

Summary

We found that the Ministry needed to take additional action to address many of the challenges identified in our 2000 audit of Emergency Health Services and the related recommendations made subsequently by the Standing Committee on Public Accounts. Specifically, the Ministry had not ensured that municipally operated land ambulance services were providing integrated and balanced service across the province. In addition, two-thirds of land ambulance operators were not meeting their legislated response times, and the total cost of the program has increased by 94% over the last four years. In particular, we noted that:

- Municipal boundaries could have an impact on the delivery of health-care services. For example, as part of the Ontario Stroke Strategy, municipalities are required to transfer stroke patients to the nearest stroke centre. At the time of our audit, however, at least two municipalities were not participating in the Stroke Strategy and therefore not transferring stroke patients to the nearest centres unless they received additional ministry funding because the nearest centre was outside their respective boundaries.
- The Ministry was not determining whether transfers of patients between institutions were being handled in the most appropriate and cost-effective manner. Failure to transport patients in a timely and efficient way can impact patient care. For example, missed appointments for diagnostic tests can delay patient treatment and result in longer-than-necessary hospital stays.
- Even though the Ministry has provided about \$30 million in additional funding, ambulance response times increased in about 44% of municipalities between 2000 and 2004. In addition, 32 of 50, or 64% of, municipalities did not meet their legislated response times in 2004, even though the requirements were based on

meeting their actual 1996 response times. We made a similar observation in our 2000 audit of Emergency Health Services, where we noted that 50% to 60% of municipalities had not met their legislated response times in 1998 and the first half of 1999.

- Fifteen of the 18 dispatch centres that reported information did not dispatch ambulances within the time required by the Ministry. In addition, the Ministry had not obtained acceptance from one municipally run dispatch centre that it was agreeable to adhering to the Ministry's dispatch response times, and in fact the dispatch centre had been unable to meet the response-time standards.
- Total provincial and municipal costs of providing ambulance services increased by 94% over four years, from \$352 million in the 1999/2000 fiscal year to \$683 million in 2003/04. However, total ambulance calls involving patients have remained at about the same level.
- The current division of responsibilities and funding of land ambulance services can result in varying levels of service across the province for people with similar needs living in similar areas. Variations in service may result from, for example, differences in municipal tax bases.
- The Ontario Municipal Chief Administrative Officer's Benchmarking Initiative calculated that the cost per household of land ambulance services in 2003 ranged from \$57 to \$150 and averaged \$89 for the 12 municipalities that reported information. We noted that the Ministry had not assessed whether the significant differences in funding levels resulted in significant differences in service levels to patients.

In addition, action is still required by the Ministry to address the following issues, most of which were also noted in our 2000 audit report:

- Some municipalities experienced significant delays in hospitals accepting patients arriving by ambulance. For example, the City of

Toronto reported in 2004 that delays at hospitals cost an estimated \$4.5 million to \$5 million that year, much of it caused by increased overtime staff costs. In addition, for about 40% of all emergency and prompt ambulance calls province-wide, once the ambulance arrived at the hospital it took more than 40 minutes for the hospital to accept the patient.

- While we found that service reviews were generally conducted by the Ministry within the required three-year period, between 2002 and 2004 over 40% of ambulance operators failed to meet certification standards during service reviews, even though they received advance notice of the reviews. Furthermore, at least 50% of operators who did not meet certification standards had no follow-up inspection or service review within the following six months to ensure that serious deficiencies had been corrected.
- The Ministry has not established operational review and quality-assurance processes for all dispatch centres to ensure that ministry standards are met. In addition, although we recommended in our 2000 audit report that the Ministry conduct reviews of all dispatch centres within reasonable time frames and the Ministry agreed with the recommendation, there have not been periodic reviews of all dispatch-centre operations. The reason, we were informed, was that reviews would further disrupt operations, which were already coping with staffing problems, such as almost one ambulance dispatcher leaving for every two hired in a seven-month period, as well as the introduction of new technologies.

Regarding performance reporting, we noted that there was minimal annual measuring of and public reporting on the delivery of land ambulance services by the Ministry, although some municipalities were taking steps in this area. We observed that several other jurisdictions report publicly on

response times and other measures of land ambulance service performance.

Detailed Audit Observations

RESPONSIBILITY FOR LAND AMBULANCE SERVICES

By January 1, 2001, the province had transferred the responsibility for delivering land ambulance services to all municipalities as part of Ontario's Local Services Realignment (Realignment). In our audit of Emergency Health Services published in our *2000 Special Report on Accountability and Value for Money*, we expressed concern that the Realignment would not meet its stated goal of improving accountability, reducing waste and duplication, and providing better government services at a lower cost to Ontario taxpayers.

In particular, we were concerned that the realigned ambulance system would not provide a balanced and integrated service, as required under the *Ambulance Act*, and that it would actually be more costly to Ontario taxpayers. Various stakeholder groups, including the Ministry, the Provincial Base Hospital Advisory Group, the Ontario Hospital Association, and the Who Does What Panel, raised related concerns. For example, ministry consultants noted in 1999 that municipalities would likely attempt to gain cost efficiencies that might not be in the best interests of ambulance services province-wide. Also in 1999, the Ontario Hospital Association noted the tendency of separate segments to look after their own requirements, without considering the needs of the whole ambulance system.

We recommended in our 2000 audit report that after Realignment was completed, the Ministry should ensure that land ambulance services be provided according to the five fundamental principles to which the Ministry had committed:

- **Seamlessness:** the closest available and appropriate ambulance should respond to a patient at any time and in any jurisdiction, regardless of municipal boundaries.
- **Accessibility:** municipalities should ensure reasonable access to ambulance services, and ambulance services should 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, socio-economic, and medical demands.

In 2001, the Standing Committee on Public Accounts recommended that the Ministry's assessment of the Realignment of land ambulance services address issues such as the maintenance of standards, including response times; the financial impact on municipalities and the province; and a determination of whether Realignment is providing services according to the five fundamental principles above.

The Ministry and the Association of Municipalities of Ontario (AMO) established the Land Ambulance Implementation Steering Committee (LAISC) to facilitate, monitor, and evaluate the transfer of services. However, in June 2003, four years after LAISC's establishment, the AMO informed the Ministry that it was concerned about the lack of progress on key ambulance service issues and the role of LAISC, and stated that municipal participation in the process would be "discontinued until there is a real opportunity and willingness to resolve these critical issues in a more time-sensitive manner." The Ministry agreed that LAISC need no longer exist, but its reason was its belief that much of the work on issues of concern to municipalities,

such as response times, operational standards, and funding, had been completed. However, as noted below, many of these issues have not yet been adequately resolved.

Balanced and Integrated Service

According to the Ministry at the time of our 2000 audit, ambulance services in Ontario prior to Realignment operated within a seamless system that crossed all municipal boundaries and dispatched the closest ambulance, regardless of its home municipality. In 2001, the Standing Committee on Public Accounts recommended that the Ministry establish provincial standards governing ambulance dispatch practices and procedures to ensure seamless land ambulance services.

However, since Realignment, ministry documents have cited increasing claims that dispatch centres failed to send the closest available ambulance in non-emergencies, and that, at the request of municipalities, dispatch-centre boundaries were generally realigned to match municipal boundaries. The May 2004 Report of the Land Ambulance Acute Transfers Task Force, consisting primarily of ministry and base hospital representatives, also noted that in order to “improve local emergency ambulance service delivery, municipalities are resisting non-emergency inter-facility transfer requests, and ambulance calls that require their vehicles to cross municipal boundaries.” While dispatch centres determine which ambulances respond to each call, municipalities establish where their ambulances wait for the next call. Therefore, to minimize dispatches to bordering municipalities, ambulances may be positioned towards the centre of the municipality to reduce the likelihood of being dispatched outside its boundaries.

The increasing reluctance of municipalities to allow their ambulance fleets to cross municipal boundaries has also affected the integration of a number of specialized health initiatives, includ-

ing the Ontario Stroke Strategy. Introduced in 2003, the Strategy established regional and district stroke centres in certain hospitals to provide stroke patients with continuous access to specific equipment and neurologists. This was intended to help minimize the impact of a stroke by assessing, diagnosing, and treating the patient within a critical three-hour window. When an ambulance is called, the paramedic uses a protocol to determine if the patient should be transported to the closest stroke centre. However, the nearest stroke centre is sometimes outside municipal boundaries.

The Ministry informed us that as of May 2005, at least two municipalities were not participating in the stroke strategy and therefore not transferring stroke patients to the nearest centre because the nearest centre was beyond their boundaries, and they would not transfer the patients unless they received additional ministry funding. We were subsequently informed that one of these municipalities would be participating in the stroke strategy after a stroke centre was opened within its municipal boundaries. In addition, we were informed that municipalities felt transporting patients outside a municipality’s boundary could have a negative impact on the municipality’s ability to respond to subsequent emergencies within its own borders.

RECOMMENDATION

In order for the public to receive the best possible emergency care, the Ministry should assess what measures are required to ensure that land ambulance services are seamless, accessible, and integrated regardless of municipal boundaries.

MINISTRY RESPONSE

The existence of seamless, accessible, and integrated land ambulance services is a principle that the Ministry and the municipalities share through a Memorandum of Agreement, signed

at the time of the land ambulance transition, and endeavour to adhere to. In emergency situations, ambulance dispatchers always send the closest, most appropriate ambulance. This is consistent with the legislated responsibility of the municipalities to provide services in accordance with the needs of persons in the municipality. In non-emergency situations, time is not as important, and use of the closest ambulance is not as vital.

To date, after a stroke centre has been established and the stroke protocols have been implemented within a municipality, patients within that municipality are taken to a stroke centre. The Ministry continues to work with the stroke centres, municipalities, and dispatch centres to provide for seamlessness in regard to this program.

The Minister recently announced that land ambulance discussions between municipal and provincial officials would be convened to discuss a number of issues. Several of the issues related to this recommendation are expected to be discussed at these sessions.

Non-emergency Scheduled Institutional Transfers

Most scheduled non-emergency ambulance calls are for transfers of patients between health-care facilities—between hospitals, for example, or between a hospital and a nursing home. As noted in the May 2004 Report of the Land Ambulance Acute Transfers Task Force, requests for non-emergency institutional transfers have greatly increased, due in part to hospitals' increasing specialization in certain treatment areas. Failure to transfer patients in a timely and efficient way can adversely affect patient care. For example, missed appointments for diagnostic tests can delay patient treatment and result in longer-than-necessary hospital stays. Ministry

data indicated that in 2004, over 40% of scheduled calls were late by more than 20 minutes from the promised time.

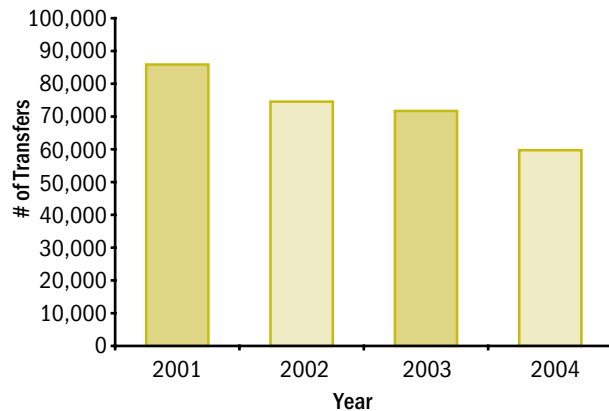
In 1997, the Ministry issued to hospitals a Guide to Choosing Appropriate Patient Transportation to clarify which patients should be transported by ambulance. The Guide stated that ambulances should be used if a physician determines that a patient is medically unstable, requires a medical escort, and needs a stretcher. The Guide did not prohibit the use of ambulances in other circumstances, but it did say that less costly alternatives, such as taxis, stretcher-capable private medical transport services, and volunteer agencies, should be considered.

Since June 2003, the Ministry has had access to some information on the number of inter-institutional patient transfers, and in the 2004/05 fiscal year, this information indicated that about 350,000 such transfers took place. However, we noted that the Ministry did not track or analyze the total number of scheduled transfers to institutions done by private medical transport services; the number that could safely be done by medical transport services but were actually being done by ambulances; or the number that should have been done by ambulances but were done by medical transport services. Without this information, the Ministry is unable to determine whether patient transfers meet the needs of patients in the most cost-effective manner. The Ministry informed us that it believed that the use of medical transport services has been increasing since the transfer of ambulance services to municipalities, which is consistent with the significant decrease in the number of scheduled institutional transfers by ambulances since 2001, illustrated in Figure 2.

Non-emergency calls might have declined further if not for the fact that hospitals must pay for private medical transport services but not for ambulances. Many hospitals still call ambulances for non-emergency transfers. In addition, since ambulances

Figure 2: Number of Scheduled Transfers to Institutions Performed by Ambulances

Source of data: Ministry of Health and Long-Term Care



must meet vehicle and staffing requirements prescribed by regulation, while medical transport services are not subject to any such standards, we acknowledge that hospitals may be choosing ambulances out of concern for patient safety.

In our 2000 audit report, we recommended that the Ministry and municipalities jointly develop and put in place standards to address passenger safety and encourage the use of the most cost-effective means of transferring non-emergency patients. The Land Ambulance Implementation Steering Committee also identified inter-institutional transfers as one of its highest priorities. In addition, a consultant's report commissioned by the Ministry on behalf of the Land Ambulance Implementation Steering Committee in 2002 recommended the regulation of medical transport services, and the use of ambulances predominantly for emergencies. The report also noted that most—but not all—members of the health-care community understand that medical transport services are to be used only for non-emergency, medically stable patients. The report found that some health-care providers were under the misapprehension that private medical transport services are regulated in the same way as ambulance operators.

The May 2004 Report of the Land Ambulance Acute Transfers Task Force indicated that regulat-

ing medical transport services was the minimum required action to ensure patient safety. In addition, the report noted that in order to “improve local emergency ambulance service delivery, municipalities are resisting non-emergency inter-facility transfer requests and ambulance calls that require their vehicles to cross municipal boundaries.” The report observed that the current ambulance system did not respond to all needs; municipalities focused on meeting response-time standards for emergency calls, while hospital concerns included timely inter-institutional transfers to make the best use of available beds, diagnostic services, and other resources. The report's recommendations suggested that new provincial regulations on medical transport services were needed to ensure patient safety and operator accountability. At the time of our audit, no action had been taken to implement the report's recommendations. However, we were informed by ministry officials that the issues noted by the Task Force would be addressed as part of its broader Health Services Transformation Agenda.

RECOMMENDATION

As recommended in our previous audit of Emergency Health Services published in our 2000 *Special Report on Accountability and Value for Money*, the Ministry should work jointly with municipalities and the hospital community to:

- develop and put in place standards for non-ambulance medical transport services to address passenger safety; and
- take steps that will encourage the use of the most cost-effective resources for the scheduled transfer of non-emergency patients.

MINISTRY RESPONSE

In spring 2005, the Ministry appointed a lead for the transformation of medical transportation in the province. A working group has been established to make recommendations to the

Ministry on the future governance and delivery of non-ambulance medical transport services and on the use of appropriate transport services for inter-facility transfers.

RESPONSE TIMES

Ambulance Response Times

Patient-related calls for ambulances are generally prioritized by dispatch centres as shown in Figure 3.

A regulation under the *Ambulance Act* requires that operators meet criteria set out in the Ministry's Land Ambulance Certification Standards. These standards stipulate that ambulances must respond to 90% of code 4 emergency calls within the actual time that was achieved for 90% of such calls in 1996. Response time is measured from the time the ambulance dispatcher notifies the ambulance crew to the time the ambulance arrives at the scene.

In our 2000 audit report, we noted that 50% to 60% of municipalities had not met their 1996 response-time standards in 1998 and the first half of 1999, which were prior to Realignment. In addition, we recommended that the Ministry, together with the municipalities, take corrective action where specified response-time requirements had not been met. In 2001, the Standing Committee on Public Accounts also recommended that the Ministry "should ensure compliance with municipal response-time standards for all jurisdictions throughout the province. The results of the monitoring should be evaluated and reported on a regular basis ... Corrective action should be taken immediately in cases of non-compliance."

As noted in our 2000 audit report, the Ministry estimated that approximately \$52 million was required to meet 1996 response times, including \$40 million of ongoing annual funding. In 2001, the Ministry asked municipalities to submit strategies to achieve a reduction in response times. Muni-

Figure 3: Prioritization of Ambulance Calls

Source of data: Ministry of Health and Long-Term Care

code 4	urgent call	life or limb threatening
code 3	prompt call	serious but stable or under professional care
code 2	scheduled call	scheduled transfers to institutions
code 1	deferrable call	delays not detrimental to patient safety

palities indicated that implementation of such strategies would require \$156 million. To help decrease response times, the Ministry distributed \$10 million of one-time federal funding for new ambulances and replacement of other medical equipment in the 2001/02 fiscal year. In 2002/03, the Ministry also began funding municipalities an additional \$30 million if they matched the provincial money dollar for dollar, and committed to decreasing ambulance response times by an average of 10%. However, the Ministry's July 2004 Status Update on the Transfer of Land Ambulance Services Under Local Services Realignment indicated that worsening response times were one issue that had yet to be solved. While 36 municipalities' response times improved from 2003 to 2004, in 2004, 32 of the 50 municipalities still failed to meet their 1996 response times, while 22 had longer response times than in 2000. The Ministry acknowledged in 2005 that response-time improvement initiatives to date had achieved only mixed success.

Evidence-based Response Times

The response-time standards for emergency calls in Ontario vary significantly throughout the province. They are based on measurements of historical times, from dispatch of ambulance to arrival on scene, actually achieved across the province in 1996. In our 2000 audit report, we noted wide ranges in code 4 response-time requirements and inconsistencies in requirements within municipalities of similar geographic makeup. We recommended that the Ministry, together with

Figure 4: Range in Ontario’s Response Times¹ by Type of Geographic Area, 2004²

Source of data: Ministry of Health and Long-Term Care

Type of Geographic Area	Fastest (minutes ³)	Slowest (minutes ³)
urban	14	17
suburban	13	18
rural	15	30
northern	11	28

1. Response times are from call receipt to arrival on scene, 90% of the time.
2. Results exclude data for five municipalities for which the Ministry did not have information.
3. Results are rounded to the nearest minute.

municipalities, review the response-time requirements for reasonableness and consistency and, where necessary, make adjustments. The Ministry responded that it would review standards, including response times, with municipalities. In 2000, the Ministry also informed the Standing Committee on Public Accounts of a request by municipalities to consider developing evidence-based standards through the Standards Subcommittee of the Land Ambulance Implementation Steering Committee (LAISC). As previously noted, however, LAISC was disbanded in fall 2003, and no changes were made to response-time standards.

In other jurisdictions, response-time standards and/or guidelines, while usually not legislated, are often developed based on such factors as population density and geography. For example, British Columbia’s proposed response-time targets for emergency calls, from the time the call is received to the time on scene, is less than nine minutes, 90% of the time, in urban areas, and less than 15 minutes, 90% of the time, in rural areas. Nova Scotia has similar response-time goals for emergency calls, with urban areas being less than nine minutes, suburban areas less than 15 minutes, and rural areas less than 30 minutes, all 90% of the time. As mentioned previously, the Ministry normally measures response times from notification of the ambulance crew by the dispatcher to arrival on scene (as

opposed to measuring, as the above jurisdictions do, from the dispatch centre’s receipt of the call to arrival on scene). At our request, however, the Ministry produced reports of response times from call receipt to arrival on scene based on the ministry-developed categories of urban, suburban, rural, and northern areas, as illustrated in Figure 4.

England has a national response-time standard, from the time critical information has been received from the caller to when the emergency response vehicle arrives, of eight minutes or less, 75% of the time, for calls where an immediate threat to life has been identified. We noted that in Ontario, the actual comparable response time for emergency calls in 2004 was 10 minutes and 32 seconds, 75% of the time, or about two and a half minutes more than the standard in England.

Prompt responses are critical to the survival and well-being of patients with certain types of injuries or illnesses, particularly those experiencing cardiac arrest. In 1994, the Ministry funded the Ontario Pre-hospital Advanced Life Support study (OPALS) to support evidence-based decision-making in emergency medical services planning. The eight-year study involved 21 communities and about 10,000 patients experiencing cardiac arrest. In addition, the study investigated the relative value of rapid access to emergency care, early cardiopulmonary resuscitation (CPR), rapid defibrillation, and interventions by advanced-care paramedics to the survival of individuals who had suffered an out-of-hospital cardiac arrest.

In 2003, the OPALS researchers reported that according to their findings, a response time of six minutes from call receipt to on-scene arrival could have improved survival rates in the study communities by 3.6%, or 51 additional lives annually. As well, OPALS researchers cited a study on the use of public-access automatic external defibrillators in casinos, and noted a 74% survival rate when defibrillation began within three minutes of cardiac arrest.

In 2004, the OPALS researchers reported that lives were saved through a combination of CPR by on-scene citizens and rapid defibrillation responses. In many places in Ontario, fire and police services co-operated with ambulance services in providing emergency responses to cardiac arrest patients and other emergencies, as they can often arrive before the ambulance. These response arrangements are voluntary and vary by municipality. As well, the OPALS research noted that the strategic placement of automatic external defibrillators in public locations, such as shopping malls, could be beneficial. In addition, *The New England Journal of Medicine* reported in 2004 that training and equipping volunteers to attempt early defibrillation within a structured response system could increase the number of survivors of cardiac arrest in public places, and concluded that trained laypersons could use automatic external defibrillators safely and effectively. While the placement of defibrillators in all public places may not be reasonable given that OPALS researchers found that only about 15% of cardiac arrests occur in public locations, the OPALS researchers nevertheless recommended the strategic placement of defibrillators in such public places as casinos.

RECOMMENDATION

To help ensure that response times for emergencies, including cardiac arrest, meet the needs of patients throughout the province, the Ministry should:

- together with municipalities, review current response-time requirements for reasonableness and consistency and, where necessary, make adjustments;
- work closely with municipalities to help them meet the response-time requirements; and
- assess the costs and benefits of a fully co-ordinated emergency response system that

includes strategically placed publicly accessible automatic external defibrillators.

MINISTRY RESPONSE

The Minister recently announced that land ambulance discussions between provincial and municipal officials would be convened to discuss a number of issues. Reponse-time standards and response-time performance are expected to be among the items discussed at this forum.

On August 11, 2005, the Ontario Health Technology Advisory Committee (OHTAC) requested that the Medical Advisory Secretariat of the Ministry conduct a Health Technology Assessment and Policy Analysis of the various components of a co-ordinated emergency first-response system. This assessment includes response times and the use of automated external defibrillators (AEDs) to improve survival in the event of a cardiac arrest. The assessment will be reported back to OHTAC by mid-December. At the completion of this review, OHTAC will make recommendations to the Deputy Minister and the health-care system on the settings in which AEDs are cost effective. This is expected to assist in future planning for the distribution of AEDs in Ontario.

Dispatch Response Times

Dispatch response-time standards for code 4 emergency calls are set out, for ministry-operated centres, in the Dispatch Centre Manual and in contracts with dispatch centres operated by hospitals, municipalities, and a private operator. According to these documents, a call taker must obtain patient information necessary to accurately prioritize a call and assign it to a dispatcher within 45 seconds, 90% of the time. The dispatcher must select and notify the land ambulance crew within 75 seconds, 90% of

the time. In total, the dispatch centre must select and notify the ambulance crew within two minutes of call receipt. There are no standard response times for code 3 or other types of calls.

In our 2000 audit report, we found that dispatch response-time standards were not being met by most dispatch centres. We recommended ministry monitoring to ensure that response-time standards were being met, so that timely corrective action could be taken where necessary. As discussed in more detail in the Reviews of Dispatch Centres section, dispatch centres used varying quality-assurance processes, although the Ministry informed us that it was piloting a standardized quality-assurance process. However, the Ministry had not conducted any service reviews of dispatch centres since our last audit. Furthermore, we noted that 15 of the 18 dispatch centres that tracked response times in 2004 did not notify the ambulance crew within two minutes of receiving a call. Four centres exceeded the two-minute standard by more than 30 seconds. During our current audit, we noted that the Ministry had not signed a performance agreement with the largest dispatch centre in Ontario to formalize its commitment to the response-time standards, and, in fact, this dispatch centre exceeded the dispatch response-time standard by about 110 seconds in 2004.

Automatic Vehicle Locator (AVL) technology uses global positioning satellites and land-based transmitters to identify the geographic location of vehicles in real time on a map. The Ministry of Transportation uses such technology to identify the location of all of its winter snow and maintenance vehicles (both those owned by the Ministry and those of contractors) so that it can respond to calls and weather incidents in the most cost-effective manner. For health emergencies, AVL technology can assist dispatchers in identifying the closest ambulance to a patient.

The Ministry informed us that it did not implement AVL in conjunction with the new computer-

aided dispatch system, which the Ministry began implementing in dispatch centres in 2002, because it considered AVL to be an emerging technology at that time. However, in a bid to reduce dispatch response times, the Ministry spent about \$3.4 million, beginning in the 2003/04 fiscal year, to acquire AVL technology. In addition, one municipally run dispatch centre that implemented AVL technology prior to the Ministry's current initiatives has a system that is incompatible with other systems in the province. Consequently, its ambulances are not visible on any other dispatch centre's AVL system. At the end of our fieldwork, the Ministry had commenced a project to integrate AVL technology with the computer-aided dispatch systems. We will follow up on the integration of the AVL technology during our next audit of Emergency Health Services.

RECOMMENDATION

To ensure that dispatch centres meet the required ambulance dispatch response times, the Ministry should monitor dispatch-centre performance throughout the province and take timely corrective action where necessary.

MINISTRY RESPONSE

The call-processing-time performance of dispatch centres is now being monitored throughout the province on a quarterly basis. In those instances where call-processing times are not meeting the standard, an assessment is undertaken to determine the cause of the deficiency. Once a deficiency is identified, measures are instituted (for example, staff training and requests for additional resources) to implement the steps necessary to improve the performance.

Ambulance Time Spent at Hospitals

In our 2000 audit report, we noted that some ambulances experienced delays due to:

- their not being permitted to take a patient to the closest hospital; and
- delays in hospitals accepting ambulance patients.

These delays usually occurred because hospitals reported that their emergency rooms were full. To address these delays, the Ministry introduced the Patient Priority System in 2001. The system required patients to be screened using the Canadian Triage and Acuity Scale, an internationally recognized system used for many years in hospital emergency rooms. Under this system, the most urgent cases are taken to the nearest hospital. The Institute for Clinical Evaluative Sciences is conducting ongoing research on the Scale with respect to patient outcomes and health-care resource utilization.

We were informed by the Ministry that the Patient Priority System has generally ensured that code 4 and code 3 patients are, when appropriate, transferred to the nearest hospital. However, the Patient Priority System did not address situations where ambulances had to wait extended periods until a hospital was ready to accept a patient. These delays increase the risk of poor response times for other patients, as the ambulance is not available to respond to another call while it waits until a hospital accepts a patient. In December 2004, the City of Toronto estimated that delays at hospitals cost between \$4.5 million and \$5 million in 2004, much of it in overtime staffing. It further reported that these delays were growing in volume and duration and were the principal barrier to Toronto meeting its response-time standard.

At our request, the Ministry calculated for 2004 how long it took for an ambulance to deliver a patient once it arrived at a hospital. It found that, while times varied significantly across the province, for about 40% of the total code 4 and code 3 calls, delivery of the patient after arriving at a hospital

took more than 40 minutes. In addition, data for two municipalities indicated times of more than 90 minutes for 10% of their calls.

In winter 2005, the Ministry established a Hospital Emergency Department and Ambulance Effectiveness Working Group to provide advice on a number of areas, including the management of transfer of patient-care responsibility from ambulance services to hospital emergency departments. The final report was scheduled for completion by March 31, 2005, but we were informed that, as of May 2005, it had not been finalized and no draft could be provided to us.

RECOMMENDATION

To help ensure the efficient use of emergency health services and enhance emergency patient care, the Ministry, in conjunction with municipalities and hospitals, should take appropriate action to minimize situations where patients are waiting for extended periods of time in an ambulance before being accepted by a hospital.

MINISTRY RESPONSE

The Minister established the Hospital Emergency Department and Ambulance Effectiveness Working Group in February 2005. The Ministry will be reviewing the recommendations from this group and will be working with the hospital and land ambulance sector to implement measures to reduce the impacts of delays in hospitals accepting ambulance patients.

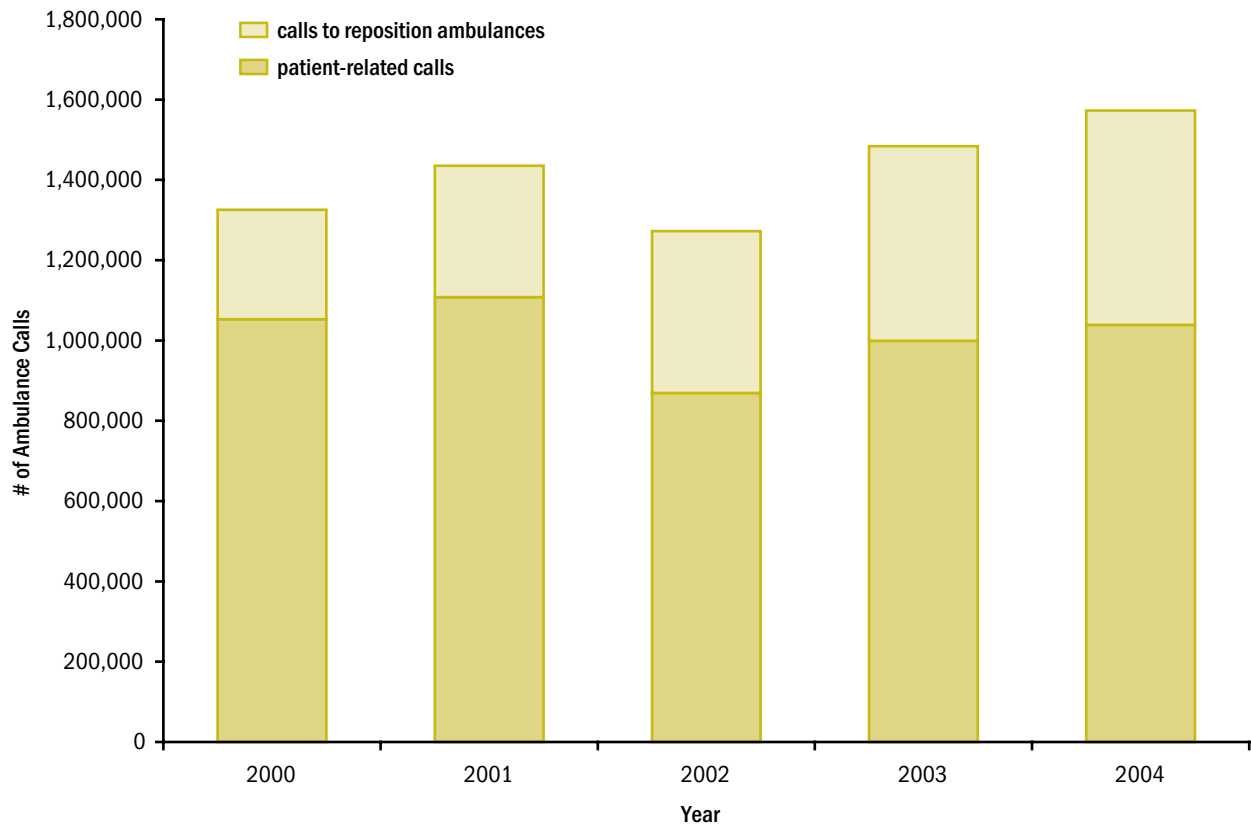
FUNDING

Ministry-funded Costs

The Standing Committee on Public Accounts recommended in 2001 that the Ministry assess Realignment, including the financial impact on municipalities and the province.

Figure 5: Total Ambulance Calls, 2000–04

Source of data: Ministry of Health and Long-Term Care



We noted that the total cost of providing emergency health services in Ontario has increased by 94% over the last four years, from \$352 million in the 1999/2000 fiscal year to an estimated \$683 million in 2003/04. Ministry documents indicated that the increased costs were due primarily to three factors:

- Paramedic wages have increased. Since wages constitute about 85% of the total costs of land ambulance services, wage increases can have a significant impact on program costs.
- The number of paramedics has increased—we noted a rise of 18% between 2001 and 2004.
- The number of ambulances has increased.

Increases in the numbers of paramedics and ambulances were the result of increased calls for ambulances and of efforts to reduce response times. The overall number of calls for ambulances increased by about 19% since 2000. However, this

number includes all calls to reposition ambulances waiting for the next patient call. We noted that, once these repositioning calls are excluded, the total number of patient-related calls has remained at about the same level, as shown in Figure 5.

We recommended in our 2000 audit report that the Ministry develop a process to assess relative need, ensure reasonable and equitable funding across the province, and define which municipal costs qualify for provincial funding. In addition, the Standing Committee on Public Accounts recommended in 2001 that the Ministry determine the immediate and long-term municipal costs associated with providing emergency health services and undertake to ensure that provincial funding is reasonable and equitable.

Although, as we noted in our 2000 audit report, the Ministry itself raised concerns that differences in the quality of care and services may appear

between municipalities and across the province (due to, for example, differences in municipal tax bases), the Ministry has not ensured that service levels are comparable across similar jurisdictions in Ontario. In fact, the Ministry informed us that varying service levels are expected, due to the varying resources of municipalities. As for comparability of costs for services, the Ontario Municipal Chief Administrative Officer's Benchmarking Initiative, comprising 17 municipalities in Ontario that identify and share performance statistics and operational best practices, calculated that in 2003, the cost per household of municipally run land ambulance services for the 12 municipalities that reported information ranged from \$57 to \$150 and averaged \$89 among the participating municipalities.

The Ministry had not recently assessed the actual costs of meeting the 1996 response-time standards or determined whether available ministry funding to municipalities was reasonable and equitable in order to better achieve the existence throughout Ontario of a balanced and integrated system of land ambulance services. Rather, the Ministry has generally funded municipalities for 50% of approved eligible costs, based on a funding formula template developed by the Ministry in conjunction with the Land Ambulance Implementation Steering Committee and based on available ministry funding. Approved eligible costs are largely based on the service levels and costs that existed prior to 2001, when municipalities took over responsibility for ambulance services from the province with additional funding for negotiated adjustments and other initiatives such as response-time funding.

The funding formula indicated that the Ministry would consider additional funding for special circumstances, provided that a municipality made a business case for it. Ministry documents indicated that most municipalities did so, but additional Ministry funding was unavailable to address the spe-

cific areas identified. Moreover, the \$30 million in Response Time Improvement Initiative funding was allocated based not on the relative needs of each municipality, but rather on municipal proposals to reduce response times. The funding allocation was also impacted because the Ministry would only provide funding if a municipality matched it dollar for dollar.

Ministry funding is therefore below 50% of total expenditures reported by municipalities. For example, Ministry documents indicate that the estimated cost-sharing of land ambulance services in 2003 was 47% provincial and 53% municipal; however, some municipalities bore over 60% of the cost. In addition, the Ministry estimated that actual costs will be between \$72 million and \$103 million higher than approved eligible costs in 2005, due primarily to paramedic wage increases, some of which were determined by a government-appointed arbitrator (the Ministry only funds up to 1% of approved eligible costs relating to wage increases, and municipalities fund the rest). Also in this regard, the Association of Municipal Emergency Medical Services of Ontario, representing land ambulance operators in Ontario, estimated that Ministry funding in 2005 would only cover between 28% and 45% of total municipally reported land ambulance costs.

RECOMMENDATION

The Ministry, in conjunction with the municipalities, should develop a process to better achieve the existence throughout Ontario of a balanced and integrated system of land ambulance services.

MINISTRY RESPONSE

The Minister recently announced that land ambulance discussions between municipal and provincial officials would be convened to discuss a number of issues. Recommendations arising

from the discussions are expected to promote the existence of a balanced and integrated system of land ambulance services.

Ministry Monitoring of Costs

As noted earlier, the Ministry provides grants to municipalities of up to 50% of approved eligible land ambulance costs. Each municipality sends the Ministry a signed statement of its annual gross operating costs, which the Ministry relies on to confirm eligible costs. However, the Ministry does not require any additional third-party assurance on the validity or existence of the stated expenditures and does not otherwise monitor municipalities to ensure that funding was spent for the intended purpose (except for some monitoring of the Response Time Improvement Initiative). The Ministry estimates that 85% of ministry-approved eligible costs relate to wages, and it funds a maximum of 1% of any wage increases annually. Other costs are generally funded at the same rate as the prior year.

The Ministry's definition of eligible costs includes municipal reserve funds to offset future land ambulance service costs. Municipalities are permitted to maintain severance, ambulance replacement, and "other" reserves, and the total additions to, reductions of, and final balances of these reserves are reported annually to the Ministry. However, generally no details on the intended use of the "other" reserves or how any of the reserves are ultimately spent were requested by or provided to the Ministry. According to the signed cost statements submitted by municipalities, total cumulative reserves for emergency health services at December 31, 2003 were \$47 million. This consisted of \$10 million for severance reserves, \$16 million for vehicle reserves, and \$21 million for "other" reserves. We noted that the Ministry did not place limits on the amount of provincial funding that municipalities could put into

reserve funds. Furthermore, we noted that the Ministry funded one municipality at least \$4.7 million in 2003 for reserve funds. We believe that the Ministry should reassess its position on allowing municipalities to build up large reserve funds and consider whether third-party or internal-audit assurance on costs claimed by municipalities is warranted—especially for the larger municipalities. For example, the Ministry may want to consider having its Internal Audit Services conduct risk-based audits of municipal costs claimed.

RECOMMENDATION

To better ensure the cost effectiveness of funding for land ambulance services, the Ministry should reassess its position on the size of municipal reserve funds allowed and consider obtaining third-party or internal-audit assurance on costs claimed by municipalities where warranted.

MINISTRY RESPONSE

The Ministry currently monitors municipal spending, including reserves, to ensure that municipalities report that all related ministry funding is spent on land ambulance services. Based upon the funds required to address the future costs of such items as vehicles, equipment, and severance, the Ministry's position is that the accumulated reserves for most municipalities are reasonable. If a municipality accumulates large reserves, the Ministry contacts the municipality to obtain information on the expected disposition of these reserves. The Ministry will conduct further follow-up where necessary to ensure the reasonableness of municipal reserves.

In accordance with the *Municipal Affairs Act*, only the Ministry of Municipal Affairs and Housing may conduct an audit of a municipality. Under the *Municipal Act*, municipalities are required to have an annual audit and to

file annual audited financial statements with the Ministry of Municipal Affairs and Housing. If considered necessary, the Ministry will work with the Ministry of Municipal Affairs and Housing to obtain additional assurance on costs claimed by municipalities.

Cross-boundary Billings

To compensate municipalities for providing ambulance services outside their own boundaries, a municipality may bill another municipality for a cross-boundary ambulance trip. A regulation under the *Ambulance Act* defines what can be billed, based on “total costs” and “total number of calls”; it does not, however, provide sufficient clarification for either component. For example, the regulation did not indicate whether:

- “total costs” were net of provincial funding, or the extent to which overhead or capital items, such as the construction of ambulance bases where operators park and maintain fleets, were to be considered in calculating total costs; and
- “total number of calls” included all instances when an ambulance was dispatched, or only those calls where a patient was actually transported.

In fall 2002, the municipal members of the Cross-Border Billings Working Group, comprising municipal and ministry representatives, asked the Ministry to clearly define the amount municipalities could charge each other for cross-boundary calls. In February 2003, the Ministry provided a formal definition that partially clarified “total costs” and “total number of calls.”

The Ministry’s July 2004 Status Update on the Transfer of Land Ambulance Services Under Local Services Realignment observed that the cross-boundary billing issue was still an unresolved problem of Realignment. In late 2004, the Ministry was informed that municipal representatives were

developing a proposal to address cross-boundary charges, but the Ministry had received no formal details on this proposal by May 2005. As well, municipalities had expressed concerns over a lack of timely access to accurate data on calls made outside their municipal boundaries—data that were required for billing purposes. In April 2005, the Association of Municipal Emergency Medical Services of Ontario surveyed its members and found that 35 of 39 survey respondents had neither charged nor paid other municipalities for cross-boundary services since 2001.

RECOMMENDATION

To encourage the quickest response time regardless of municipal boundaries, the Ministry should work with municipalities to help facilitate inter-municipal billing, including:

- clearly defining the chargeable amount when an ambulance crosses a municipal boundary; and
- ensuring that municipalities have timely access to accurate data for billing purposes.

MINISTRY RESPONSE

The Minister recently announced that land ambulance discussions between provincial and municipal officials would be convened to discuss a number of issues. It is expected that a review of the measures necessary to fulfill this recommendation will be discussed at that forum.

In addition, the Ministry is working with municipalities to provide them with timely access to the ambulance data required for billing purposes.

DISPATCH OPERATIONS

Dispatch centres co-ordinate and direct the movement of all land ambulances in Ontario. As of

May 2005, there were 18 computer-aided dispatch centres: 11 operated by the Ministry, four by hospitals, and three by municipalities. The remaining dispatch centres did not use computer-aided dispatch systems. The Ministry is responsible for funding dispatch centres, which had total expenditures of \$79 million in the 2004/05 fiscal year.

Dispatch Priority

An effective dispatch protocol assists dispatch centres to rapidly identify patient problems, assign priority codes (as shown in Figure 3), and provide instructions to callers. Under-prioritizing a call may jeopardize patient safety; consistently over-prioritizing calls, however, places stress on the system and may result in increased response times for the most serious code 4 calls.

In our 2000 audit report, we noted concerns with the dispatch protocol then in use and recommended that the Ministry ensure that dispatch centres appropriately assess and prioritize patient needs. The Ministry indicated at that time that a working group was reviewing the Dispatch Priority Card Index, which is the protocol used by most dispatch centres. In 2000, the working group determined that the Index was “an outdated tool that no longer served its purpose well.” The working group concluded that the Index needed to become more medically based and offer more meaningful pre-arrival instructions.

In 2001, the Standing Committee on Public Accounts recommended that the Ministry review whether dispatch centres properly assessed and prioritized patient needs once new initiatives, such as a dispatch protocol, had been in operation for one year. However, the Ministry informed us that a new dispatch protocol Index was being reviewed but had not been implemented because it could not be integrated with the computer-aided system then in use by most dispatch centres. Consequently, at the time of our audit, the original Index was still being

used by most dispatch centres, with some modifications in April 2004 to incorporate choking hazards and CPR. No other significant changes were made to address problems identified in 2000 by the working group.

In September 2004, a coroner’s inquest recommended that the Index be replaced with an internationally used dispatch protocol, which is continuously updated and improved based on the experiences of the system’s users. The coroner’s inquest also noted that this system’s “precise protocol minimizes judgement on the side of the call takers and dispatchers.”

As of May 2005, 12 dispatch centres had implemented a new computer-aided dispatch system, with the remainder expected to implement the system by 2006. The Ministry informed us that this system is compatible with a revised dispatch protocol Index that it planned to introduce once the new computer-aided dispatch system was fully implemented. The Ministry also informed us that it planned to conduct an operational and medical quality review of other dispatch protocols, including the internationally used protocol referred to in the coroner’s inquest, to determine which was best for Ontario.

RECOMMENDATION

To help dispatch centres better respond to each patient’s needs, the Ministry should expedite a decision on its choice of dispatch protocols.

MINISTRY RESPONSE

The Ministry is evaluating one of many internationally used dispatch protocols as part of the Niagara Ambulance Communication Service pilot project and will use this evaluation to expedite a decision on the choice of dispatch protocols.

Responsibility for Dispatch

The appropriate organization and management of ambulance dispatch centres is necessary for effective and efficient management of ambulance system resources. In our 2000 audit report, we noted there were differences of opinion concerning the governance and management of dispatch centres. The Dispatch Subcommittee of the Land Ambulance Implementation Steering Committee stated that municipalities should have the right to manage ambulance dispatch, but they should not be forced into it. The Ontario Hospital Association, meanwhile, maintained that ambulance dispatch services should remain a provincial responsibility to ensure that both emergency and non-emergency services are co-ordinated and seamless to patients.

In addition, consultants engaged by the Ministry in September 1998 to consider various options for the future of land ambulance dispatch said that dividing the responsibility for ambulances and dispatch “creates significant limitations in the ability to design and implement a more efficient and effective overall system.” They also reported that consolidation of existing dispatch centres would improve co-ordination of resources across a wider area and better enable patient access to emergency services. As well, Ministry documents in 2003 indicated an international trend towards a reduction in the number of dispatch centres. We also noted that a number of other jurisdictions were consolidating dispatch centres at the time of our audit. For example, New Zealand’s strategic review on ambulance dispatch operations, expected to be fully implemented by late 2006, recommended cutting the number of dispatch centres by more than half and having these centres jointly governed by the ambulance services in that area. While the Ministry has considered the impacts, including cost, of increasing or decreasing the number of dispatch centres, it has not formally evaluated the appropriateness of either the number or the location of

dispatch centres across the province since our last audit.

Since 2000, when there were two municipally run dispatch centres in the province, the Ministry has assigned management responsibility for operation of one more dispatch centre to a third municipality and, despite the previously mentioned trends, approved the creation of an additional dispatch centre, which will be evaluated in a five-year pilot project to determine the feasibility of municipalities operating their own dispatch centres. This centre was scheduled to open in June 2005 and will be run by another municipality, whose dispatch boundaries will be primarily the same as its municipal boundaries. The Ministry plans to evaluate the pilot project to determine if individually operated municipal dispatch centres can demonstrate any improvement over centralized dispatch. Given the trend of municipalities being increasingly resistant to having their ambulances respond to calls outside of their municipal boundaries, the impact of municipally run dispatch centres on a seamless emergency response system will need to be carefully assessed.

RECOMMENDATION

To help ensure that ambulance services are integrated, balanced, and efficient, the Ministry should expedite its evaluation of the pilot project, particularly with respect to the issue of municipal versus centralized dispatch, and incorporate best practices and research from other jurisdictions in its determination of the appropriate number, location, and management of ambulance dispatch centres.

MINISTRY RESPONSE

The Ministry is committed to evaluating the pilot project in a timely manner.

Dispatch Staffing

In 2001, the Ministry commissioned an external review to investigate the operations of one ministry-run dispatch centre and recommend changes to enhance the dispatch system. The review noted that it is important to ensure that centres are appropriately staffed in order to dispatch ambulances as quickly and efficiently as possible. In addition, the review observed that many ambulance dispatchers had left to join municipal fire and police dispatch centres. The review recommended more competitive wages to reduce high turnover and attract qualified candidates to ambulance centres. It also recommended a reduction in the ratio of calls to dispatcher, from the then-current 5,500 calls annually per full-time staff dispatcher to about 4,200 calls, which more closely approximates the workloads of other jurisdictions. As a result, the Ministry approved wage increases in 2002 and again in 2004 and introduced policy changes to reduce the ratio to 4,200 calls per full-time staff dispatcher. At the time of our audit, however, some dispatch centres had been unable to meet the new target ratio.

The Ministry observed in 2003 that, despite these policy changes, recruiting and retaining staff at dispatch centres continued to be difficult, and the Ministry found that almost one dispatcher left for every two hired for the first seven months of 2003. While the Ministry informed us that it is reviewing turnover rates, information was not readily available on the total number of dispatchers who left in 2004. In addition, the Ministry informed us that recent contract negotiations have resulted in ministry dispatchers being paid a wage more competitive with municipal dispatchers, including fire and police dispatchers. We will follow up on the status of dispatcher turnover rates at the time of our next audit.

REVIEWS

Reviews of Land Ambulance Operators

Starting in 2000, the *Ambulance Act* required the certification of all land ambulance service operators at least once every three years. Service reviews conducted by ministry-led peer review teams determine if operators are meeting certification standards. These reviews include an evaluation of the level and type of ambulance service provided, the qualifications of patient-care providers, maintenance of vehicles and equipment in accordance with standards, compliance with response-time standards, and measures taken to ensure proper patient care. The Ministry considered operators to be meeting certification standards if their only deficiency was failure to meet response-time standards.

Reports on whether certification standards are met, along with any recommendations, are forwarded to the service operator. Follow-up inspections, or follow-up service reviews for operators with more significant issues, are conducted by the Ministry to ensure that recommendations are implemented. Under the *Ambulance Act*, the Ministry may also issue a Director's Order to operators requiring that changes be made within a specified time if the operators have failed to meet certification standards.

In our 2000 audit report, we recommended that the Ministry consider unannounced certification reviews to ensure consistent quality of practice by operators. We noted in our current audit, however, that ambulance operators continued to receive 90 days' advance warning of a service review. The Ministry also generally gave advance notice of follow-up inspections and follow-up service reviews.

We found that service reviews were generally conducted within the required three-year period. However, based on ministry records, we calculated that between 2002 and 2004, 43% of operators did not meet the certification standards during their service review. In our 2000 audit report, we

recommended that the Ministry ensure a timely, co-ordinated follow-up of all deficiencies identified during service reviews. At the time of our current audit, however, ministry policies did not require a follow-up service review or inspection until at least 60 days after the Ministry received the operator's response to the service review report. Furthermore, at least 50% of operators who did not meet certification standards in 2003 and 2004 had no follow-up inspection or service review within six months.

In addition, some of the files we reviewed indicated that, between 2002 and 2004, ambulance operators did not meet certification standards but were still recertified, without any documentation to support the decision. For example, one operator we reviewed continued to provide ambulance services despite repeated instances of non-compliance with certification standards between 2001 and 2004. Examples of the operator's non-compliance included improperly completed Ambulance Call Reports (including details of patient examination and status), inadequate securing of patient-care equipment in ambulances, and failing to document whether paramedics had completed core training or been immunized against communicable diseases.

We also recommended in our 2000 audit report that the Ministry clarify those circumstances when operator certification should be revoked. Such a policy had not been developed at the time of our current audit, and no service providers have had their certification revoked since the province began certifying operators in 2000.

The Ministry noted that Director's Orders were often more effective than service review reports in achieving timely compliance with service review recommendations because they were also addressed to municipal councils. We were informed that Director's Orders were issued based on the professional judgment of senior ministry personnel. We noted, however, that Director's Orders were not consistently issued based on service review results. For example, a Director's Order was issued to one

service provider who did not pass a service review in 2004, while others who also failed to pass—and in fact received lower overall evaluations—did not receive a Director's Order.

RECOMMENDATION

To better ensure that land ambulance service operators meet certification standards, the Ministry should:

- conduct, based on risk, a reasonable number of service reviews on an unannounced basis to increase assurance of consistent quality of practice by operators;
- where operators do not meet certification standards, conduct the required follow-up service reviews and inspections on a more timely basis; and
- clarify when Director's Orders should be issued and under what circumstances formal consideration of revoking an operator's certification should be undertaken.

MINISTRY RESPONSE

In accordance with the certification standards, service reviews of ambulance operators are announced in advance. Since service reviews require a significant commitment of ambulance operator time and resources while the review team is on-site, conducting these reviews without warning and proper planning on the part of both parties might present a serious risk of disrupting the ambulance operator's delivery of land ambulance services. In concert with municipal representatives, the Ministry will review the certification standards and assess the appropriateness of unannounced service reviews.

The standard is to send the draft service review report to the service provider within 60 days following the conclusion of the review visit. The service provider is given 60 days within which to respond to the review findings.

Follow-up visits are scheduled for 60 to 90 days following receipt of the operator's response to the draft service review report. In concert with municipal representatives, the Ministry will review this standard to determine the reasonableness of conducting follow-up reviews on a more timely basis.

Director's Orders are reserved for infractions that have a direct bearing on patient care or public safety (for example, use of unqualified staff or unsafe equipment) or when a municipality is seen to be consistently failing to comply with the legislation or failing to follow up on the recommendations of a service review. To date, compliance has been achieved without the need for revocation of a certificate. The Ministry will review when Director's Orders or revocation of an operator's certificate should be considered.

Reviews of Dispatch Centres

Operational reviews of dispatch centres are intended to ensure compliance with ministry requirements, including policies on staff qualifications, appropriate provision of service, and proper procedures for responding to emergency calls. In our 2000 audit report, we noted that the Ministry had conducted operational reviews on only 37% of dispatch centres. We recommended that the Ministry review all dispatch centres within reasonable time frames and resolve all identified deficiencies on a timely basis. In 2001, the Standing Committee on Public Accounts also recommended that the Ministry document the findings and timing of its operational reviews of dispatch centres to ensure timely checks, reporting, and corrective action.

Although the Ministry indicated that it would develop schedules to ensure that operational reviews were conducted within reasonable time frames, it had conducted only one review of a dispatch centre since our 2000 audit, and the review

results had not been finalized at the time of our audit fieldwork. The Ministry informed us that reviews were generally not conducted because it believed that such reviews would disrupt the operational integrity of dispatch centres and create a public safety risk, due to the previously cited staffing problems and other pressures, including the introduction of new technologies. The Ministry expected greater staffing and technology stability at dispatch centres upon full implementation in 2006 of the new computer-aided dispatch system discussed in the Dispatch Priority section of this report. The Ministry also informed us that it was redeveloping its operational review process for dispatch centres and expected to have it implemented in fall 2005.

While ministry-performed reviews were generally not done, an external review of one dispatch centre, conducted at the request of municipalities concerned with that dispatch centre's operations, recommended that the Ministry introduce a well-defined and active internal quality-assurance program to:

- routinely monitor and assess the dispatch centre's overall operational performance, and the performance of individual dispatchers;
- identify and implement corrective actions when warranted; and
- follow up and evaluate the effectiveness of these actions.

The report noted that quality-assurance programs covering dispatch protocols were in place in other jurisdictions. Such programs track and evaluate how well dispatchers perform their duties, including how quickly they assess calls. We further noted that the agreement with one municipality required a rigorous quality-assurance process involving the review of a sample of calls to ensure that proper policies and protocols were followed for call receipt and ambulance dispatch. Our review of the quality-assurance process results indicated that this process has contributed to improvements in

the dispatch centre's operations, such as improvements in the dispatcher's obtaining of required information on the patient's condition from callers. Although the Ministry informed us that it was piloting a standardized internal quality-assurance process with the objective of implementing it in the other dispatch centres, at the time of our audit dispatch centres used varying quality-assurance processes.

RECOMMENDATION

To help ensure that land ambulance dispatch centres are effective and comply with ministry standards, the Ministry should:

- perform periodic reviews of the dispatch centres' operations, including a review of a sample of calls to determine whether they are appropriately handled and prioritized; and
- implement a standardized quality-assurance process to monitor and assess the overall operational performance of all dispatch centres and the individual performance of dispatchers.

MINISTRY RESPONSE

Dispatch-centre staffing has recently been stabilized, and a prototype service review has been piloted. A regular review of dispatch centres is scheduled to commence in fall 2005 with a view to reviewing six or seven dispatch centres per year. The review process for dispatch centres contains a call-sampling tool for use in reviewing call priority and management by call takers and dispatchers.

A standardized quality-assurance process for dispatch centres has been developed, and a pilot has been in progress in four dispatch centres in Eastern Ontario since spring 2005. The final quality-assurance program will be implemented in all dispatch centres by March 2006.

BASE HOSPITALS

Base hospitals are ministry-designated hospitals that train, certify, and provide on-the-job medical direction to paramedics. They also monitor and evaluate the care provided by paramedics by reviewing Ambulance Call Reports, the medical record used by paramedics to document each call. There are 21 base hospitals across the province.

In 2002, the Ministry asked the Ontario Base Hospital Group Executive, representing base hospitals, to review base hospital operations. One objective of the review was a rationalization of services.

The review also included:

- identifying core business activities;
- examining the changing responsibilities of paramedics;
- determining whether core activities could be delivered more effectively; and
- determining whether resources could be applied more effectively.

The Executive reported in 2002 that there was a lack of consistency, standardization, and benchmarking among base hospitals. It maintained that an effective standardized provincial approach to base hospital performance agreements, medical directives, and continuing medical education for paramedics would produce better results and more timely quality-assurance data. The Executive further noted that medical directives providing direction to paramedics were not being updated on a timely basis. The Ministry informed us that it did not accept the Executive's report and recommendations because the Executive's review had not fulfilled its assigned mandate—for example, it did not outline the core activities of base hospitals.

We noted that the base hospital performance agreements had not been revised to reflect the new relationship between municipalities and base hospitals arising from Realignment. In addition, we noted that, since 2000, the Ministry had not approved any new medical directives, which are used by paramedics to treat patients.

In 2003, the Ministry established a working group, consisting of ministry and base hospital representatives, to review the organization of base hospitals in order to provide options for a more efficient, effective, and sustainable base hospital system and to enhance program accountability for base hospitals. This working group's recommendations included:

- establishing a regional structure for base hospitals to ensure a more consistent application of provincial standards, including medical delegation, and an equitable distribution of resources;
- setting a target for the minimum number of paramedics under each regional program to enable specialization and promotion of efficiency, maximization of available program staff, and reduction of duplication; and
- realigning provincial funding of base hospitals to ensure that it reflects the rationalization.

The Ministry indicated to us that, despite the fact that there were ministry representatives in the working group, it did not accept the working group's recommendations, for reasons similar to those it had for not accepting the Executive's 2002 report and recommendations.

At the time of our audit, with the exception of the recent voluntary amalgamation of two base hospitals, no further rationalization of the 21 base hospitals had taken place. The Ministry indicated that a physician had been appointed in spring 2005 with the lead responsibility for defining the future structure of the base hospital program.

Base Hospital Reporting

Base hospitals are required to submit annual reports to the Ministry on a variety of operational and quality-of-care issues. A ministry analysis of annual reports for the 2003/04 fiscal year noted many areas where base hospital practices and reporting were inconsistent and where funding of

base hospitals was not equitable. The analysis indicated that:

- Fourteen percent of base hospitals did not report the number of patient-care errors and omissions (that is, paramedics not providing patient treatment in accordance with established standards), while the others reported a total of 1,170 errors and omissions.
- Despite a requirement to do so, only 55% of the base hospitals said that they monitored 100% of the Ambulance Call Reports (ACRs) involving paramedics' use of advanced life-support techniques, such as non-automated external cardiac defibrillation and monitoring. For example, one base hospital was required to have monitored almost 8,000 ACRs but monitored only about 4,800.
- Based on budgeted funding, the cost of providing base hospital support to paramedics ranged from \$1,600 to \$3,000 per paramedic.

We also reviewed a sample of base hospital annual reports and identified similar issues regarding the lack of consistency and completeness of reported information. For example, despite a requirement to do so, none of the base hospital reports included any summary of the overall results of quality-assurance activities regarding patient-care skills, such as the success rates of certain paramedic interventions.

The Ministry conducts service reviews of base hospitals every three years or so, which includes evaluating whether the base hospitals meet the requirements set out in their performance agreements with the Ministry. One requirement stipulates a consistent and equitable process for identifying, recertifying, and decertifying paramedics who have breached medical standards of practice. Another calls for chart audits involving ambulance calls where certain procedures may have been required but were not performed. We further noted that, based on service reviews conducted by the Ministry between 2001 and 2004, 23% of base hospitals did

not meet, or only partially met, ministry requirements. In addition, although the Ministry informed us that it regularly followed up to ensure that deficiencies were corrected, it was generally unable to provide us with supporting documentation.

RECOMMENDATION

To better ensure that paramedics provide quality patient care, the Ministry should determine the optimal number and distribution of base hospitals (since such hospitals train, certify, and provide medical direction to paramedics) and ensure that base hospitals adhere to consistent standards regarding areas such as quality assurance and the continuing medical education of paramedics.

MINISTRY RESPONSE

The lead for the transformation of medical transportation for the province, appointed in spring 2005, has been charged with the responsibility to review the delivery of base hospital program services and to recommend the optimal number and distribution of base hospital programs. The Ministry is expecting a report from the lead in fall 2005.

COMPLAINTS AND INCIDENTS

The *Ambulance Act* states that the Minister has the duty and power to investigate complaints about ambulance services. Ministry records indicate that the Ministry conducts approximately 80 such investigations each year.

In our 2000 audit report, we recommended that the Ministry establish clear lines of responsibility for following up on deficiencies identified in complaint investigation reports. We also recommended that it ensure that follow-ups were completed and documented to better enable it to assess whether

complaints were satisfactorily resolved. In our current audit, we found that the Ministry generally logged, assigned, and investigated the complaints it received in a timely manner. Furthermore, the Ministry was generally following up on deficiencies identified.

However, most complaints about ambulance services are made not to the Ministry but to the service provider. For example, one municipality reported receiving about 300 complaints in 2004. Ministry policy requires service providers to complete incident reports for each complaint, each investigation they conduct, and every unusual occurrence (including delays in accessing a patient or an excessive amount of time on the scene). However, there is no requirement to forward incident reports to the Ministry unless they relate to an unusual occurrence. Furthermore, ministry policy does not specifically define what constitutes an “unusual” occurrence with respect to response times or other delays; rather, this is left up to each service provider. However, municipalities may voluntarily forward other incident reports to the Ministry.

RECOMMENDATION

To help ensure that recurring potential problems are identified as early as possible, the Ministry and the municipalities should jointly develop and implement a process to ensure that the Ministry receives adequate information on the nature and resolution of the more serious complaints made about land ambulance services.

MINISTRY RESPONSE

Ministry staff have agreed with municipal officials on an investigations protocol that addresses the operational practices on the part of both parties when handling complaints about service delivery. Further consultation will be held with the municipal representatives to

improve compliance with the reporting requirements in the legislation and the protocol.

Ministry staff have been tracking investigations and their follow-up and assessing the type, nature, and frequency of each type of complaint. This process will continue.

PERFORMANCE MEASUREMENT AND REPORTING

Effective accountability requires that patients and their families, the Legislature, and the general public be provided with timely and reliable information about the performance of land ambulance services. As well, performance information is needed to enable the Ministry to make funding decisions, and evaluate the extent to which the system is providing integrated and seamless service, and quality care.

In our 2000 audit report, we recommended that the Ministry research systems for analyzing operator performance and its impact on patient outcomes to help ensure that the land ambulance system effectively meets patient needs.

Subsequent to our audit, the Standing Committee on Public Accounts recommended in 2001 that the Ministry should ensure compliance with municipal response-time standards throughout the province. The Committee also recommended that the results of the monitoring be evaluated and made public on a regular basis. This would provide public disclosure, transparency, and accountability for achievement of land ambulance response-time standards in all Ontario jurisdictions.

We found that the Ministry monitored dispatch-centre and municipal ambulance service response times on a regular basis but was not making its findings public. We noted that some jurisdictions outside Ontario reported annually on response times. In addition, as previously mentioned in this report, the Ministry conducted service reviews of land ambulance operators, including elements of

operator performance, such as patient-care management. These reviews are to be done once every three years. However, the results of the reviews are not made public.

We also found that other jurisdictions used additional performance indicators, including survival rates for cardiac arrests, patient satisfaction, and appropriate administration of acetylsalicylic acid (Aspirin) for suspected coronary artery disease (heart attack). They reported publicly on these indicators and stated that they were planning to implement others.

RECOMMENDATION

To help ensure that ambulance services are accountable and to support continuous improvement in services, the Ministry and municipalities should jointly establish pertinent performance measures such as response times and report publicly and regularly on these land ambulance service performance measures.

MINISTRY RESPONSE

The Minister recently announced that land ambulance discussions between municipal and provincial officials would be convened to discuss a number of issues. It is anticipated that a discussion relating to this recommendation will be included at that forum.