Background

Hospital emergency departments provide medical treatment for a broad spectrum of illnesses and injuries to patients who arrive either in person or by ambulance. In the 2008/09 fiscal year, there were about 5.4 million visits to the province’s 160 hospital emergency departments, at a cost of approximately $960 million. The number of emergency-department visits increased about 6% from 2004/05 through 2008/09, while costs increased 28%.

The quality and efficient delivery of patient care in emergency departments depend on a variety of interrelated elements, such as prompt offloading of ambulance patients, quick and accurate triage (that is, the process of prioritizing patients according to the urgency of their illness or injury), nurse and/or physician assessment, diagnostic and laboratory services, consultations with specialists, and treatment. As Figure 1 shows, a patient’s length of stay in the emergency department depends on the timeliness of each part of the process, as well as on the ready availability of further care, such as an in-patient hospital bed if the patient needs to be admitted.

Timely and accurate triage in emergency departments is critical to ensure that patients with urgent, life-threatening conditions are treated as quickly as possible. In Ontario emergency departments, triage nurses assess and classify patients based on the Canadian Triage and Acuity Scale (CTAS). CTAS is a five-point scale, with level 1 being the most acute and level 5 the least acute. Figure 2 provides descriptions and examples of patient symptoms and distribution of emergency-department visits, at each CTAS level, showing that “less urgent” and “non-urgent” visits to emergency departments constituted nearly half of all visits in the 2008/09 fiscal year.

Each hospital in Ontario reports to one of 14 Local Health Integration Networks (LHINs), which, under the Local Health System Integration Act, 2006, are responsible for prioritizing, planning, and funding certain health-care services. The LHINs, in turn, are accountable to the Ministry of Health and Long-Term Care.

Audit Objective and Scope

The objective of our audit was to assess whether selected emergency departments had adequate systems and procedures in place to ensure that:

- services were managed and co-ordinated efficiently to meet patients’ needs;
- services were delivered in compliance with applicable legislation and policies in a cost-effective manner; and
Figure 1: Patient Flow through an Emergency Department
Prepared by the Office of the Auditor General of Ontario

ARRIVAL

- patient arrives by ambulance
- patient walks in

EMERGENCY DEPARTMENT

1. triage and registration
2. nurse assessment
3. physician assessment
4. treatment
5. disposition
6. diagnostic and laboratory services (e.g., blood work, ultrasound, CT scan)
7. consultation services (e.g., urology, cardiology)

DEPARTURE

- patient discharged home
- patient admitted to hospital
- patient transferred to another hospital

usually occurs
sometimes occurs
performance was reliably measured and reported.

We conducted our audit work at three hospitals of different sizes that provide services to a variety of communities: Hamilton General Hospital, Scarborough General Hospital, and Southlake Regional Health Centre, located in Newmarket. To obtain additional information from a representative sample of emergency departments across all 14 of the province’s LHINs, we sent a survey to 40 hospitals of varying sizes. About two-thirds of these hospitals responded. We also surveyed all 14 ambulance Emergency Medical Services (EMS) providers that had received funding from the Ministry of Health and Long-Term Care (Ministry) specifically targeted to help reduce emergency-department wait times. Ten of these EMS providers responded.

In conducting our audit, we reviewed relevant files and administrative policies and procedures; interviewed appropriate hospital and ministry staff; reviewed relevant research, literature, and best practices in other jurisdictions; and met with representatives from the EMS providers that serve the catchment areas of the three hospitals we visited. We also reviewed information from the Ministry’s Wait Time Strategy and interviewed staff from Cancer Care Ontario, which is responsible for managing data on emergency-department wait times. In addition, we engaged on an advisory basis the services of independent consultants with expert knowledge in emergency-department operations.

We did not rely on the Ministry’s internal audit service team to reduce the extent of our audit work because it had not recently conducted any audit work on hospital emergency departments.

**Summary**

Overcrowding and long waits in hospital emergency departments have been common complaints for a number of years. Both impact the quality of patient care.

<table>
<thead>
<tr>
<th>Level</th>
<th>Acuity</th>
<th>Patient Symptoms</th>
<th>% of Emergency Dept. Visits</th>
</tr>
</thead>
</table>
| 1     | resuscitation | • cardiac and/or pulmonary arrest  
• major trauma  
(severe injury and burns)  
• unconscious | 0.6 |
| 2     | emergent  | • chest pain with cardiac features  
• stroke  
• serious infections | 12.9 |
| 3     | urgent   | • moderate abdominal pain  
• moderate trauma  
(fractures, dislocations)  
• moderate asthma | 39.0 |
| 4     | less urgent | • constipation with mild pain  
• ear ache  
• chronic back pain | 39.0 |
| 5     | non-urgent | • medication request or dressing change  
• sore throat  
• minor trauma  
(sprains, minor lacerations) | 8.5 |

Our work at the three hospitals we visited, as well as the responses from the hospitals we surveyed, indicated that addressing emergency wait times has become a major focus at many Ontario hospitals. The public suspects that the main underlying causes are the inappropriate use of emergency departments by walk-in patients with minor medical ailments, and poor management by hospitals, including understaffing. Although these are contributing factors, our research indicated that the lack of available in-patient beds at the hospitals, requiring admitted patients to be housed...
in the emergency departments, may well have an even greater impact on overcrowding and long wait times. This lack of available in-patient beds is influenced by two main factors: hospital beds being occupied by patients who are awaiting alternative care in a community-based setting, and less-than-optimal practices by hospitals in managing and freeing up in-patient beds.

The Ministry of Health and Long-Term Care is also well aware of the problem of long wait times in emergency departments and has sponsored expert panels and other initiatives to address this. As well, additional funding of $200 million has been provided over the last two fiscal years ($109 million in 2008/09 and $82 million in 2009/10) to address the wait-time issue. However, significant province-wide progress has not yet been made in reducing emergency-department wait times.

Our visits to the three selected hospitals, survey of other hospitals, and review of literature and best practices also indicated that although hospitals are clearly seized with addressing the wait-time issue, there are steps that hospitals can take to better assess patient needs and improve patient flow.

Some of our most significant observations were as follows:

- Since April 2008, the Ministry has been publishing emergency-department length-of-stay data. At the time of our audit, emergency-department wait times had not yet shown a significant improvement and did not yet meet provincial targets. Although the length of time patients with minor conditions waiting in emergency departments almost met the four-hour target, emergency-department length of stay for patients with more serious conditions could be up to 12 hours, which was still significantly over the eight-hour target. According to a survey published by the Ontario Health Quality Council, in 2007, 47% of the people surveyed in Ontario waited more than two hours for treatment, about the same as the rest of Canada but far more than Australia, the United Kingdom, the United States, and New Zealand and almost five times more than in Germany or the Netherlands.
- The Canadian Triage and Acuity Scale (CTAS) guidelines recommend that patients be triaged within 10 to 15 minutes of arrival at the emergency department, yet in all three hospitals we visited, some patients waited more than an hour to be triaged. We also noted that in about one-half of the files that were reassessed by the hospital nurse educators, the CTAS levels originally assigned by triage nurses were incorrect. Of these, the majority was under- triaged: in other words, triage nurses underestimated the severity of the patient’s injury or illness.
- There were inconsistencies between the way EMS paramedics and emergency departments applied the CTAS guidelines, due in part to outdated training for paramedics. The discrepancies in applying the guidelines could impact which hospitals the ambulances should transport their patients to. Paramedics told us that they have been raising this issue with the Ministry for some time.
- The higher the triage acuity level, the sooner nurses and physicians should assess the patient and the sooner treatment should commence. Our review of files at the three hospitals indicated that high-acuity patients sometimes waited for over six hours after triage before being seen by nurses or physicians. The CTAS guidelines recommend maximum wait times before physician assessment. Prov- incially, actual times to physician assessment did not meet the CTAS-recommended times by a wide margin, especially for high-acuity patients in CTAS levels 2 and 3: only 10% to 15% of the patients in these levels were seen by physicians within the recommended timelines. The CTAS guidelines also prescribe when nurses should reassess a patient’s condition, to confirm that there has been no deterioration. We noted that these timelines were often not recorded or adhered to.
The effectiveness of emergency departments is heavily dependent on other hospital departments and specialists. At the three hospitals we visited, the timeliness of accessing specialist consultations and diagnostic services was having an impact on emergency patient flow. Also, over three-quarters of the hospitals that responded to our survey indicated that limited hours and types of specialists and diagnostic services available on-site were key barriers to efficient patient flow.

Not being able to move patients requiring admission into beds in an in-patient unit is one of the key causes of delays in treating emergency-department patients. Across the province, from April 2008 to February 2010, time to in-patient bed did not improve significantly. At the time of our audit, emergency-department patients admitted to in-patient units spent on average about 10 hours waiting in emergency departments for in-patient beds, but some waited as long as 26 hours or more. We noted that delays in transferring patients from emergency departments to hospital beds frequently occurred because empty beds had not been identified or hospital rooms cleaned on a timely basis.

Two of the three hospitals we visited had difficulty finding staff to fill nursing schedules, especially at nights and during weekends and holidays. They often incurred extra costs to pay nurses overtime. We found that a number of emergency-department nurses consistently worked significant amounts of overtime or took extra shifts, not only leading to additional costs but also increasing the risk of staff burnout. In one hospital, one nurse’s annual overtime pay accounted for over half of her total earnings for nine consecutive years. For instance, in 2009/10, she earned $157,000, of which $90,000 was overtime pay. At another hospital, one nurse earned $193,000 in 2009/10, due to extra shifts and overtime payments.

Our review found that paramedics often had to stay in emergency departments for extended periods of time and care for their patients while they waited for an emergency-department bed or until emergency-department nurses could accept the patients. We noted cases where ambulance crews waited up to three hours for their patients to be attended to, resulting in fewer or on occasion no ambulances being available to respond to new emergency calls in the community.

The opinion of the 2006 expert panel on Improving Access to Emergency Care was that diverting low-acuity patients would only minimally reduce the demand for emergency departments and only minimally impact wait times. However, we noted that, province-wide, about half of emergency-department visits were made by patients with less urgent and non-urgent needs, who could have been supported by other alternatives such as walk-in clinics, family doctors, and urgent care centres. We estimated that such patients took up 30% of emergency-department physician time, which could have been spent on patients with more urgent conditions.

**SUMMARY OF HOSPITALS’ OVERALL RESPONSE**

Overall, hospitals generally agreed with our recommendations and felt that they reflected opportunities for improvement while recognizing the pressures and issues faced across the system.

**OVERALL MINISTRY RESPONSE**

The Ministry is committed to working with the LHINs, hospitals, and others on ways to improve the performance of emergency departments (EDs) across Ontario. Progress has been made, but more work is obviously needed.

The latest available information, from June 2010, indicated that 84% of patients with
In April 2008, the Ministry of Health and Long-Term Care (Ministry) announced that reducing emergency-department wait times would be an important priority over the next four years. The Ministry introduced several initiatives and incentives as part of its Wait Time Strategy by investing $109 million in 2008/09 and $82 million in 2009/10 to reduce the amount of time people spend in emergency departments. Two key initiatives were Public Reporting of Emergency Department Wait Times and the Pay-for-Results program.

Public Reporting of Wait Times in Emergency Departments

Our research indicated that outside Ontario, there has not been much public reporting of emergency-department data in Canada. However, the Ontario Health Quality Council published the results of the Commonwealth Fund International Health Policy Surveys in its annual reports in 2008 and 2009. These results provide for some comparison between jurisdictions:

- The 2009 report indicated that about 48% of Ontarians who spent time in emergency departments in 2008 waited for more than two hours, while in the rest of Canada, 39% of people who spent time in emergency departments waited this long.
- The 2008 report showed that Ontarians, like other Canadians, were far more likely to wait more than two hours in emergency departments than people surveyed in other comparable countries. In 2007, almost half of the people surveyed in Ontario waited more than two hours for treatment, about the same as the rest of Canada but far more than Australia, New Zealand, the United Kingdom,
and the United States—and almost five times more than in Germany or the Netherlands (Figure 3).

In April 2008, the Ministry introduced the Emergency Department Reporting System (System) to collect monthly emergency-department data from 128 hospitals. The System is administered for the Ministry by Cancer Care Ontario. In February 2009, the Ministry began publishing emergency-department data, from April 2008 onward, on a public website. As of the time of our audit, the Ministry was releasing the results of what is known as “emergency-department length of stay” (EDLOS), which measures the length of time a patient spends in the emergency department, beginning at the point when the patient sees a triage nurse and ending when the patient leaves the emergency department.

The Ministry has set two targets for the maximum length of time 90% of patients should spend in the emergency department (Figure 4). These targets were developed with the help of clinical experts and provide a goal for emergency departments to achieve. Given the adage that “you can’t manage what you can’t measure,” the Ministry’s decision to gather length-of-stay data and report it publicly is a good initiative.

We obtained data from the System and examined EDLOS trends. As Figure 5 indicates, from April 2008 to February 2010, there was no significant reduction in the EDLOS. Specifically:

- Ninety percent of patients with complex conditions could spend up to 12.2 hours in emergency departments in February 2010 versus 14 hours in emergency departments in April 2008, well above the target of eight hours.
- Ninety percent of patients with minor conditions could spend up to 4.7 hours in emergency departments in February 2010 versus 4.8 hours in April 2008, which, while showing no real improvement, is relatively close to the target of four hours.

We also noted that the EDLOS varied across the province, especially for patients with complex conditions. None of the LHINs met the eight-hour EDLOS target for high-acuity patients (Figure 6).

We noted a fundamental problem affecting emergency-department wait times for patients with complex conditions who needed to be admitted to hospital: many of these patients were “boarded” in emergency departments because inpatient beds were not available on a timely basis. The problem was partly due to the fact that about

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**Figure 4: Ontario’s Targets for Emergency-department Length of Stay (EDLOS) by Acuity Level**

<table>
<thead>
<tr>
<th>Acuity Level</th>
<th>Description</th>
<th>Target (hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>high¹</td>
<td>patients with complex conditions that require more time for treatment, diagnosis, or admission to a hospital bed</td>
<td>8</td>
</tr>
<tr>
<td>low²</td>
<td>patients with minor or uncomplicated conditions that require less time for treatment, diagnosis, or observation</td>
<td>4</td>
</tr>
</tbody>
</table>

1. High-acuity patients are specifically defined as those at all CTAS levels who have been admitted to an inpatient bed, and patients at CTAS 1, 2, and 3 who have not been admitted to an inpatient bed.

2. Low-acuity patients are specifically defined as patients at CTAS 4 and 5 who have not been admitted to an inpatient bed.
17% of in-patient beds were occupied by alternate-level-of-care patients, who no longer required hospital care but could not be discharged because of the lack of services and supports available in the community (see Section 3.02, Discharge of Hospital Patients, in this Annual Report). In recent years, the Ministry has implemented a number of initiatives to deal with the alternate-level-of-care issue by increasing community resources, although the impact has yet to be felt. All three emergency departments we visited and over three-quarters of the emergency departments we surveyed agreed that the alternate-level-of-care issue contributed to lengthy emergency-department waits because patients had to be boarded in the emergency department until an in-patient bed became available.

However, the alternate-level-of-care issue is but one factor affecting emergency-department waits; there are multiple factors throughout the hospital system. The solution to lengthy emergency-department wait times is not always the allocation of more resources: the removal of impediments to patient flow, which later sections of this report address, could also help to reduce the EDLOS.

**Pay-for-Results Program**

Pay-for-Results is an incentive program that provides funding to selected hospitals with high emergency-department volumes and significant emergency-department wait-time pressures. The hospitals were to be rewarded for meeting specific emergency-department wait-time-reduction targets set by the Ministry. The program provided...
$30 million to 23 hospitals in 2008/09 (Year 1) and $55 million to 48 hospitals in 2009/10 (Year 2).

Of the three hospitals we visited, one received funding in both years; the other two received funding only in Year 2. Although the hospitals were pleased that program funding did help relieve their emergency-department wait-time pressure, two of the hospitals we visited indicated that they did not receive the funding until the end of September, which was six months into the fiscal year. Such delays made it difficult for them to use the funding to implement their proposed initiatives in a cost-effective manner by the end of the fiscal year. To illustrate, one of the emergency departments received about $1.4 million in Year 1 funding, but $800,000 remained unspent as of March 31, 2009—the end of Year 1.

This delay in funding affected the effectiveness of the program and the rationale for funding allocations. The Ministry's evaluation of the hospitals' performance in Year 1 showed that the expected results had not been achieved. Specifically, of the 23 hospitals that received Year 1 funding, only three were able to meet the Ministry's targets; 15 showed some improvement but did not meet the targets; and five declined in performance. We noted that all Year 1 hospitals continued to receive funding in Year 2 regardless of their performance in Year 1. In fact, certain hospitals that did not meet the targets in Year 1 received even more funding in Year 2 than they did in Year 1. The worst-performing hospital in Year 1 received the greatest amount in Year 2. Of the three hospitals that met the targets in Year 1, two received less funding in Year 2 than in Year 1. This funding methodology seems somewhat inconsistent with the concept of "paying for results." The Ministry informed us that, although the hospitals' performance in Year 1 was
Triage is the process of prioritizing patients according to the urgency of their illness or injury. Triage is critical to effective emergency-department management because it identifies patients with urgent, life-threatening conditions so that resources can...
be allocated to them as quickly as possible. Upon arrival at emergency departments, patients are seen by a triage nurse, who assesses and classifies them based on the five-point Canadian Triage and Acuity Scale (CTAS), with level 1 being the most acute and level 5 the least acute. The intention of CTAS (which was developed and endorsed by the Canadian Association of Emergency Physicians, the National Emergency Nurses Affiliation of Canada, and l’Association des médecins d’urgence du Québec) is to establish a national standard for triage, improve patient safety, and increase triage reliability, consistency, and validity. Figure 2 provides descriptions and examples of patient symptoms at each CTAS level.

**Timeliness of Triage Assessment**

According to CTAS guidelines, patients should be triaged within 10 to 15 minutes of arrival at the emergency department. However, at the three hospitals we visited, we noted that triage could often not be undertaken within this time frame. For this reason, patients’ length of stay in the emergency department (EDLOS) that is publicly reported has often been understated because it measures only from the time the patient is triaged until he or she leaves the emergency department: it does not include any wait time from arrival to triage. We found that the time from arrival—whether by ambulance or walk-in—until triage occurred could be lengthy.

For ambulance patients, the databases maintained separately by the paramedics and the emergency departments were not integrated to assist analysis of patient data. For instance, they did record the same time that ambulances arrived at the emergency departments so that this could be compared to the time the patient was accepted by the hospital. Our review of a sample of patient files at the three hospitals we visited indicated that the average time from ambulance arrival to triage was about 30 minutes, ranging from a few minutes to over an hour. The paramedics also informed us that the time from arrival until triage and acceptance of the patient by the hospital was often longer than desirable.

It was difficult to accurately capture the time walk-in patients spent between arrival and triage because their arrival times were unknown and the time they spent determining where to go, or waiting to be triaged, went unrecorded. In its Emergency Department Process Improvement Project in 2009, one hospital we visited identified the average time from the walk-in patient’s arrival until triage as more than 20 minutes. This delay presented a patient safety issue and caused staff and patient frustration.

To reduce the risk of triage delays, we noted a good practice at two of the hospitals we visited: they performed “pre-triage” on patients who could not be triaged immediately upon arrival. “Pre-triage” was the rapid assessment of patients to determine whether they needed to be seen more quickly. An operational review of one hospital we visited also noted that “quick assessments will facilitate the identification of very ill patients in line awaiting their triage assessment.”

**Quality or Accuracy of Triage Assessment**

Triage nurses assess the urgency of a patient’s condition on the basis of a combination of subjective and objective information, including the patient’s presenting symptoms and general appearance. Accurate and complete documentation of these details is critical to facilitate “triage audits,” which are retrospective reviews of triage records to validate the decisions made by triage nurses. All three hospitals we visited informed us that they performed triage audits to monitor whether patients were triaged accurately based on CTAS guidelines. Each of the hospitals had a nurse educator, who was responsible for keeping up to date on nursing practices, supporting nursing-staff competency, and conducting triage audits. However, we noted that triage audits were not performed on a consistent basis. One hospital had not completed any since
December 2006. Another hospital had stopped conducting them in June 2009 but reinstated them during our audit in February 2010. The third hospital told us that it performed them on a regular basis but was unable to provide any supporting documentation of any triage audits actually done.

To examine the quality of triage at the three hospitals we visited, we selected a sample of triage records at each hospital and asked each hospital’s nurse educator to perform triage audits of the sample files. The results of these triage audits indicated that the original CTAS levels assigned by the triage nurses were often different, sometimes significantly so, from the CTAS levels assigned by the nurse educators. Specifically:

- Documentation of patient assessment information, such as vital signs, allergy status, and visual presentation, was lacking for about 20% of the cases (see Figure 7). The nurse educators informed us that visual patient presentation is an essential element of assigning a CTAS level. Documentation of this element is necessary for nurse educators to be able to monitor the quality of triage assessment through triage audits.

- Of the cases where the file documentation was sufficient to enable a triage audit, the nurse educators in all three emergency departments would have assigned different CTAS levels about half the time. As Figure 7 shows, in these cases, the majority were under-triaged (that is, the severity of a patient’s illness had been underestimated). In some cases, patients were under-triaged by two levels: rather than being triaged at CTAS 4 (less urgent), they should have been triaged at CTAS 2 (emergent).

- Patients suspected of having a heart attack are supposed to be assigned as CTAS 1 or 2. However, we noted cases where such patients were triaged as CTAS 3 or 4. Our observation was consistent with a study published by the Institute for Clinical Evaluative Sciences in June 2009 that found that heart-attack patients were not prioritized properly in Ontario emergency departments. The report stated that 50% of patients who were ultimately found to be having heart attacks were under-triaged, leading to delays in initiating appropriate treatment.

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**Figure 7: Results of Triage Audits Conducted at Three Emergency Departments**

Prepared by the Office of the Auditor General of Ontario

- **appropriately triaged (37%)**
- **under-triaged¹ (38%)**
- **over-triaged² (6%)**
- **mis-triaged (44%)**
- **undetermined due to incomplete documentation (19%)**

1. under-triaged – underestimating the severity of a patient’s illness or injury
2. over-triaged – overestimating the severity of a patient’s illness or injury
Consistency of Triage Assessment by Paramedics and Hospitals

Based on discussions with EMS paramedics and the three hospitals we visited, we noted that there were inconsistencies between how the paramedics and the emergency departments applied the CTAS. In October 2001, the Ministry introduced a program called the Patient Priority System (PPS), under which both paramedics and hospital staff assess patients and communicate with each other using the five-level CTAS. Under PPS, ambulances are required to transport all high-acuity patients (CTAS 1 and 2) to the closest emergency department, with the exception of special services such as for stroke and trauma. However, paramedics informed us that the Canadian Association of Emergency Physicians revised the CTAS guidelines in 2004 and 2008. Hospitals have been using these updated guidelines, but the Ministry has only provided training for the paramedics based on the 2001 version of the guidelines, without the updates, resulting in discrepancies in the application of the CTAS. The paramedics told us that they raised this issue with the Ministry on numerous occasions but have not yet received updated training.

RECOMMENDATION 2

To ensure that triaging is done appropriately and consistently within the recommended time frame:

- hospitals should conduct periodic audits to monitor the quality and accuracy of triage and identify areas for improvements;
- hospitals should consider performing a quick “pre-triage” on patients who cannot be triaged immediately upon arrival at emergency departments;
- the Ministry of Health and Long-Term Care should work with the LHINs and with hospitals to assess whether the reported length of stay at emergency departments should include the time that patients wait for triage; and

- the Ministry should work with the Emergency Medical Services (EMS) to provide updated training for paramedics to ensure that hospitals and paramedics are using consistent triage practices.

RESPONSE FROM HOSPITALS

The hospitals agreed with this recommendation and supported standardization of triage tools. One hospital also suggested using the National Emergency Nurses Affiliation (NENA) to teach triage and optimize the use of the Canadian Triage and Acuity Scale (CTAS). Another hospital commented that the Ministry should reconvene an expert panel to evaluate CTAS in terms of its reliability and effectiveness and to review other possible tools to predict patient acuity.

MINISTRY RESPONSE

The Ministry agrees that the quality of triage is very important. It is the hospital’s responsibility to triage accurately and to monitor triage quality. As part of the Emergency Department Process Improvement and Pay-for-Results programs, hospitals have developed strategies for facilitating “pre-triage” to expedite assessment and start the patient’s care plan as soon as possible.

The Ministry supports exploring the feasibility and reliability of capturing data starting from the time of arrival of walk-in patients, and will develop an appropriate business case to enable a solution.

The Ministry is working with the Medical Advisory Committee, Regional Base Hospital Programs, and municipal EMS agencies to better align the definitions used in verbal and written communications between pre-hospital and in-hospital staff when describing a patient’s medical condition. The Ministry will explore avenues for providing updated training for paramedics.
ASSESSMENT AND TREATMENT

The higher the acuity level, the sooner the patient should be assessed by nurses and physicians and the sooner treatment should commence. CTAS guidelines recommend specific wait times for nurse assessment, physician assessment, and nurse reassessment for each CTAS level (Figure 8). Although these recommended times are “operating objectives” rather than standards, they are patient-focused and are based on the need for timely intervention to improve patient outcomes. In recognition of the fact that these objectives cannot always be achieved without unlimited resources, each CTAS level is given a target percentage, which describes how often the recommended time frame ought to be achieved. For example, the guidelines indicate that a CTAS 3 (urgent) patient should be seen by a physician within 30 minutes 90% of the time. Thus, under the guidelines, it would be reasonable that 10% of CTAS 3 patients are seen by a physician after more than 30 minutes.

Timeliness of Nurse Assessment

None of the three hospitals we visited tracked or monitored the average time from triage to nurse assessment against the time frames recommended in the CTAS guidelines, nor was such data collected in the Emergency Department Reporting System (System). To assess the timeliness of nurse assessment, we reviewed a sample of patient files at the hospitals we visited. Our samples focused on CTAS 2, 3, and 4 patients because they accounted for the largest percentage (90%) of all emergency-department visits. As Figure 9 indicates, average times from triage to nurse assessment varied between hospitals but were well in excess of the recommended time frames. Only one hospital was able to meet the recommended time frame for patients in the CTAS 4 category. There were cases where high-acuity patients (CTAS 2 or 3) had to wait up to six hours for their initial nurse assessment.

Timeliness of Physician Assessment

According to CTAS guidelines, “The primary operational objective of the triage scale is related to the time to see a physician. This is because most decisions about investigation and initiation of treatment do not occur until the physician either sees the patient, or has the preliminary results of other tests needed to recommend a course of action.” Although data on times from triage to physician assessment were collected in the System, this information was not released on the public website. To assess the timeliness of physician assessment, we obtained and analyzed province-wide data from the System. The length of time that patients waited for physician assessment did not show any improvement from April 2008, when the System was first

<table>
<thead>
<tr>
<th>CTAS Level</th>
<th>Acuity</th>
<th>Time from Triage to Nurse Assessment</th>
<th>Time from Triage to Physician Assessment</th>
<th>Frequency of Nurse Reassessment</th>
<th>Response Time Target* (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>resuscitation</td>
<td>immediate</td>
<td>immediate</td>
<td>continuous care</td>
<td>98</td>
</tr>
<tr>
<td>2</td>
<td>emergent</td>
<td>immediate</td>
<td>≤ 15 minutes</td>
<td>every 15 minutes</td>
<td>95</td>
</tr>
<tr>
<td>3</td>
<td>urgent</td>
<td>≤ 30 minutes</td>
<td>≤ 30 minutes</td>
<td>every 30 minutes</td>
<td>90</td>
</tr>
<tr>
<td>4</td>
<td>less urgent</td>
<td>≤ 60 minutes</td>
<td>≤ 60 minutes</td>
<td>every 60 minutes</td>
<td>85</td>
</tr>
<tr>
<td>5</td>
<td>non-urgent</td>
<td>≤ 120 minutes</td>
<td>≤ 120 minutes</td>
<td>every 120 minutes</td>
<td>80</td>
</tr>
</tbody>
</table>

* The response time target rate is the percentage of times in which the standard can reasonably be expected to be met.
implemented, to the time of our audit in February 2010:

- High-acuity patients with complex conditions spent on average about two hours in emergency departments waiting for physician assessment, and some spent as long as four hours or more.
- Somewhat surprisingly, low-acuity patients with minor conditions spent less time—1.6 hours on average, although some spent as long as three hours or more—in emergency departments waiting for physician assessment.

We also calculated to what extent the average province-wide time to physician assessment met the CTAS guidelines' recommended timelines, according to acuity level, in April 2008 and February 2010. As Figure 10 shows, in both April 2008 and February 2010, the recommended time frames were met at none of the CTAS levels. Only in CTAS 4 was there slight improvement from April 2008 to February 2010; in CTAS 1, 2, 3 and 5, there was actually a decrease in performance against the CTAS guidelines. In February 2010, only 10% of CTAS 2 (emergent) and 15% of CTAS 3 (urgent) patients were seen by physicians within 15 minutes and 30 minutes, respectively, as compared to 95% and 90% recommended by the CTAS guidelines. In contrast, 76% of CTAS 5 (non-urgent) patients were seen by physicians within 120 minutes, which was very close to the 80% recommended by the CTAS guidelines. In summary, although wait times to physician assessment for patients with non-urgent conditions were almost meeting CTAS guidelines, wait times to physician assessment for patients with more serious conditions requiring urgent attention were significantly longer than the recommended time frames.

### Use of Medical Directives to Improve Timeliness of Assessments

One way hospitals could increase efficiencies and decrease emergency-department wait times is to put greater emphasis on the use of medical directives, which enable nurses to initiate investigations and treatments prior to physician assessment. Medical directives are a set of instructions by physicians to nurses that delegate the authority to carry out certain treatments, interventions, or procedures, such as requisitioning laboratory blood work and applying oxygen. Medical directives are intended to provide more timely, consistent, and appropriate treatment for patients, especially during periods when emergency departments are busy and physicians are not available for immediate assessment and treatment. They are not meant to replace physician attention when it is required immediately. The Ontario Hospital Association strongly advocates the use of medical directives and provides hospitals with implementation kits that include samples and suggestions.

In our audit, we noted that there was no consistent list of medical directives used throughout the
province. Of the three hospitals we visited and the hospitals we surveyed, some developed and used more directives than others. Many factors influence the implementation and use of medical directives, including physician support of nurses’ use of the directives, nurse confidence and willingness to assume responsibility, the amount of education and monitoring needed, and the additional paperwork required.

Two of the three hospitals we visited did not have information on how frequently they used medical directives. The third hospital had established three medical directives, which physicians used to delegate certain decisions to nurses about 30% of the time. Our discussions with hospitals indicated that medical directives were not used as often as might be possible, mainly owing to physicians’ concerns about delegating treatment decisions to nurses.

### Timeliness of Nurse Reassessment

CTAS guidelines specify not only the recommended time from triage to nurse and physician assessment, but also how frequently a nursing reassessment should occur to confirm that the patient’s status has not deteriorated. The guidelines state that “there should be a nursing reassessment on all patients at the time intervals recommended for physician assessment.” Thus, CTAS 1 patients should have continuous nursing care, CTAS 2 patients should be reassessed every 15 minutes, CTAS 3 every 30
minutes, CTAS 4 every 60 minutes, and CTAS 5 every 120 minutes. The CTAS guidelines also state that reassessment results should be documented. The importance of reassessment was also recognized by the CTAS National Working Group, which indicated that the focus on time-to-nurse and time-to-physician assessment should shift to the timely reassessment of patients waiting to be seen, to ensure that unavoidable delays do not jeopardize patient care.

The medical director of one hospital we visited indicated on his response to a patient complaint that “it is difficult to assess the quality of care patients are receiving during their waiting period if the reassessments are not recorded.” In our review of patient files at the three hospitals we visited, we noted a number of cases where the CTAS-recommended reassessment timelines were not adhered to or there were no records to indicate that patients were reassessed at the recommended time intervals. For example:

- A patient with chest pain was triaged at CTAS 2 and spent three hours waiting for an emergency-department bed, but the patient file did not include any reassessment record during this three-hour wait. Thirty minutes after obtaining an emergency-department bed, the patient experienced cardiac arrest and a doctor was called in to perform cardiopulmonary resuscitation.
- A patient with syncope (loss of consciousness) waited for six hours to be seen by a doctor, but was reassessed only once during this time—about 40 minutes prior to the doctor’s arrival.
- A patient with a history of cardiac problems had an electrocardiogram done within 11 minutes of his arrival at the emergency department. He then waited for three hours without being reassessed. Consequently, he decided to leave the hospital, but while he was walking to his car, his condition deteriorated. He immediately walked back to the emergency department and was eventually diagnosed with acute coronary syndrome.

A number of patients were not followed up on for as long as seven hours following triage. When reassessment attempts were made, the nurses found that many of these patients had already left. Some of them were high-acuity patients at CTAS 2 and 3.

**Timeliness of Treatment for Time-sensitive Illnesses**

Our discussions with hospital staff and our research indicate that the most common types of time-sensitive life-threatening illnesses being treated at emergency departments are heart attack, stroke, and sepsis (that is, a severe infection spreading through the bloodstream). We reviewed these three areas including patient files at the hospitals we visited, and noted the following:

- An electrocardiogram (ECG) is the most important diagnostic test for heart-attack patients when they arrive at emergency departments. ECG results affect the timeliness of initiating other cardiac procedures, such as angioplasty, which is the technique of widening a narrowed or obstructed blood vessel with a balloon. The Ministry has not established benchmarks for “door-to-ECG” and “door-to-balloon” times, but the three hospitals we visited indicated that the generally accepted benchmarks are 10 minutes and 90 minutes, respectively. Two of the hospitals we visited have cardiac labs that are capable of performing angioplasty. We noted that, in 2009, one of these hospitals met these benchmarks about half of the time; the second, about two-thirds of the time.

- An important factor that contributes to timely and quality stroke care is the rapid assessment of stroke patients in emergency departments. This includes access to a CT scan, which is often the first test scheduled before further treatment can be given. A CT scan of the head must be done before giving medicine to any patient who is having a stroke...
caused by a blood clot. One of the hospitals we visited had a dedicated stroke centre. It had an emergency-department stroke protocol that set benchmarks, including “door-to-doctor” time within 10 minutes and “door-to-CT-scan” time within 25 minutes. These benchmarks apply to those patients with stroke symptoms who are eligible to receive medicine to dissolve blood clots. The data provided by this hospital showed that it was able to meet the door-to-CT-scan benchmark about half the time.

• With regard to sepsis, according to a report published by the Canadian Institute for Health Information in 2009, a study of 12 Canadian hospital critical-care units found that the mortality rate for patients with severe sepsis was just over 38%. Recognizing and treating sepsis is a time-critical process. According to an article published by the Society of Critical Care Medicine in 2008, a group of international experts recommended beginning intravenous antibiotics as early as possible and always within the first hour of recognizing sepsis. Lengthy wait times at emergency departments could result in delays in recognizing sepsis and applying antibiotics on a timely basis. All three hospitals we visited agreed that “door-to-antibiotics” time is an important quality measure, but none of them have tracked it. Based on our review of patient files, we noted that door-to-antibiotics time could be very lengthy and varied significantly, ranging from 27 minutes to 10 hours. As well, only one of the three hospitals we visited has developed emergency-department protocols and standardized orders to ensure early identification and treatment of sepsis.

**RECOMMENDATION 3**

To ensure that patients receive timely assessment and treatment and an appropriate level of care at emergency departments:

- hospitals should work with the respective LHINs to develop, document, and implement procedures for monitoring and reassessing the status of patients in the time interval between triage and treatment in accordance with their assigned triage level; and
- the Ministry of Health and Long-Term Care should encourage hospitals to track critical quality-of-care measures with respect to the most serious time-sensitive illnesses commonly seen in emergency departments and consider the applicability of protocols or best-practice guidelines for those illnesses on a system-wide basis.

**RESPONSE FROM HOSPITALS**

The hospitals agreed with this recommendation. One hospital is currently developing a process-flow map and tool to ensure that patients are reassessed and that their status is monitored from the time of triage to the time of treatment. This hospital has also worked with its LHIN to develop quality-of-care measures, including those for the most serious and time-sensitive illnesses.

**MINISTRY RESPONSE**

Hospitals that receive funding as part of the Pay-for-Results program are already required to ensure that information on quality of care in the emergency department of each designated hospital is reviewed regularly by its Board Quality Committee.

The Ministry also has an established process called “Stocktake” for continuously adding relevant key performance indicators through regular quarterly meetings between the LHINs and the Ministry. Examples of indicators include time to decision to admit or discharge the patient; time to initial assessment by physician, nurse, or other appropriate professional; time to in-patient bed; and percentage of hospital in-patient discharges before 11:00 a.m.
CO-ORDINATION WITH OTHER HOSPITAL DEPARTMENTS

The smooth functioning of any emergency department is highly dependent on good working relationships with other hospital departments. At the three emergency departments we visited, we noted that access to specialists, diagnostic services, and equipment has a direct impact on patient flow within the emergency departments.

Access to Specialist Services

Emergency cases often demand prompt access to specialists in various specialties such as urology and cardiology, who interact with the emergency departments to confirm diagnoses. The key indicator of the timeliness of consultation services is "consult-response time," which measures the time from when the emergency department requests consultation services to the consultant’s arrival. The three hospitals we visited and the hospitals we surveyed indicated that long consult-response time can be a significant impediment to efficient patient flow. Specifically:

- Two of the three hospitals were able to provide us with their consult-response times. One emergency department has been tracking this time component since April 2007; the other collected this data in 2009 as part of its Emergency Department Process Improvement Project. We noted that their consult-response times were lengthy, ranging from two hours to almost four hours. At the third hospital, which did not routinely track consult-response times, we reviewed patient files and found that, of those files with consult-response times recorded, the average was about three hours.

- Over three-quarters of the hospitals that responded to our survey indicated that limited hours and types of consultation available onsite were key barriers to patient flow, but most of them did not collect and monitor data on consult-response times.

Access to Diagnostic Services

Emergency departments rely on diagnostic services to assist physicians in performing comprehensive assessments of patients. Prompt requests for and reporting of diagnostic results are important to speed up decision-making, which is crucial for emergency-department patients. The key indicator of the timeliness of diagnostic services is “diagnostic-turnaround time,” which measures the time from the emergency department ordering diagnostic tests to the results becoming available. The three hospitals we visited and the hospitals we surveyed indicated the following:

- One hospital we visited identified improving diagnostic-turnaround time as an opportunity to improve patient flow. A time-study this hospital conducted on 30 patients found the average diagnostic-turnaround time was 139 minutes. A closer analysis of this time noted that the actual diagnostic test took, on average, only about 20 minutes; the additional time was due to other factors, including limited hours of service for ultrasound, competing demands for diagnostic services from hospital in-patients and out-patients, delays in transferring patients from the emergency department to the diagnostic-test room, and delays in alerting the emergency department when the test results became available.

- The most common types of diagnostic services ordered by emergency departments are x-rays, ultrasounds, and CT scans. All three hospitals we visited co-ordinated with their diagnostic imaging departments to ensure timely access to emergency-department patients and arranged on-call services for emergency after-hours access. However, access to ultrasounds and CT scans was limited at night and during weekends and holidays. Turnaround times for ultrasounds and CT scans at the three hospitals we visited ranged from 1.5 hours to 2.5 hours. Two hospitals we visited had specific concerns about their access to CT scanners.
One indicated that the CT scanner was not located in close proximity to the emergency department, which affected the timeliness and safe transport of acutely ill patients needing diagnostic tests.

- Over three-quarters of the hospitals that responded to our survey also confirmed that limited hours and types of diagnostic testing available on-site were key barriers to efficient patient flow.

**Emergency-department Equipment Management**

The three hospitals we visited all acknowledged concerns about the amount of time emergency-department staff spent searching for equipment. We noted the following:

- Emergency-department equipment was often misplaced for various reasons, such as equipment not being returned to its assigned location, emergency-department layout or space constraints, and patients taking portable equipment with them when going to different parts of the hospital.
- Emergency-department equipment for which staff spent the most time searching included ECG machines, ultrasound machines, vital-sign monitors, blood pressure cuffs, and thermometers.

The hospitals we visited had not quantified the actual time spent in searching for equipment and the impact such time away from the bedside had upon patient care. However, a study published by the Ontario Health Quality Council in 2008 confirmed that emergency-department nurses and doctors often spent a significant amount of time searching for equipment.

**RECOMMENDATION 4**

To better allow hospitals to assess the impact that timely specialist consultation and diagnostic services have on patient care, especially for high-acuity patients, hospitals should track targeted and actual wait times for specialist consultation and diagnostic services for emergency patients, so that the impact of these wait times on providing timely and appropriate patient care can be periodically assessed.

**RESPONSE FROM HOSPITALS**

The hospitals agreed with this recommendation. One hospital commented that, although timely access to consultation and diagnostic services was important, the development of new and innovative diagnostic supports would also support overall efficiency and timely access to quality care for emergency-department patients.

**MINISTRY RESPONSE**

The Ministry is continuously reviewing best practices and learning new ways to improve data collection and reporting. The Ministry anticipates that by next year it will have a standardized process for capturing and reporting the time to specialist consultations and the time to diagnostic services.

**PATIENT DEPARTURE FROM THE EMERGENCY DEPARTMENT**

**Access to In-patient Beds for Admitted Emergency-department Patients**

“Time-to-in-patient-bed” measures the time from an emergency-department physician deciding to admit the patient to the hospital’s in-patient area to the patient’s actual departure from the emergency department. Although the System has collected data since April 2008 on the time it takes for an emergency patient to be admitted to an in-patient bed, as of the time of our audit, this information had not been publicly released on the Ministry’s website and no provincial target had been established. The Physician Hospital Care Committee—a
tripartite committee of the Ministry, the Ontario Medical Association, and the Ontario Hospital Association—recommended in 2006 that “emergency department time to admission” be a performance target “established at one hour.”

To assess the timeliness of access to in-patient beds for admitted patients, we obtained data from the System. The most recent data available during our audit showed that, in February 2010, emergency-department patients admitted to in-patient units spent on average about 10 hours waiting in emergency departments for in-patient beds, and some waited as long as 26 hours or more. The average times from admission to in-patient bed did not improve significantly from April 2008 to February 2010, fluctuating from eight hours to 11 hours on a monthly basis. The Canadian Association of Emergency Physicians and the National Emergency Nurses Affiliation have both stated that patients requiring hospital admission should not be held in emergency departments, hallways, or waiting rooms for more than six hours because, for longer durations, these are not safe or humane conditions for sick people.

A monthly survey conducted by the Ontario Hospital Association also indicated that, from November 2008 to October 2009, at any point in time there were about 700 patients across the province waiting in emergency departments, hallways, or other hospital public space for in-patient beds. The three hospitals we visited indicated that getting emergency patients into in-patient beds on a timely basis could have a significant impact on the smooth operation of their emergency departments. For example:

- One hospital received a complaint in 2009 that a cancer patient had waited for three days in the emergency department for an in-patient bed. After investigation, the hospital found that the emergency department had been holding 24 admitted patients during that period, but there were actually 18 empty beds available in various in-patient units. We also noted that on about 60% of all days in 2008 and 2009, there were more than 16 patients waiting for in-patient beds in this hospital, and the majority of them were waiting in the emergency department.
- Another hospital noted that there were too many “admits to no beds”—admissions made when, in fact, in-patient beds were unavailable—leading to increased length of stay and interruption of patient flow through the emergency department. This situation was caused by delays in portering, delays in bed cleaning, and unclear communication from the in-patient units that beds were ready.

We noted that such delays were often caused by lengthy periods of time during which in-patient beds were empty—commonly referred to as “bed-empty time”:

- One hospital recognized the importance of this issue and specifically used three systems to track bed-empty time: the housekeeping department’s system monitored bed-cleaning times; the emergency-department system tracked patient movement in the emergency department; and the in-patient unit’s bed-tracking board monitored bed availability. Although this approach provided useful information, better integration was required to ensure that bed cleaning was initiated soon after a bed became available and that, once the cleaned bed was ready, the next patient was admitted in a timely manner. We found the average bed-empty time in this hospital to be about 5.5 hours.
- The other two hospitals did not monitor the extent of their bed-empty times. One did not have the necessary systems to analyze the entire process; the other had the required systems but had not integrated them. As a result, while they acknowledged this was an issue, they could not identify the specific sources of any delays.
- About two-thirds of the hospitals we surveyed indicated that they did not have the capacity or infrastructure in place to measure the extent of their bed-empty times.
RECOMMENDATION 5

To ensure that vacant in-patient beds are identified, cleaned, and made available on a timely basis to admitted patients waiting in emergency departments:

- hospitals should have an effective process in place to identify vacant beds and communicate their availability between in-patient units and emergency departments; and
- the Ministry of Health and Long-Term Care should work with the LHINs and with hospitals to identify and disseminate best practices that enable hospitals to reduce unnecessarily long stays of admitted patients in emergency departments.

RESPONSE FROM HOSPITALS

The hospitals concurred with this recommendation. One hospital has begun exploring the use of technology to identify and track the current status for patients and beds, and to allow real-time direct communication across hospital departments. Another hospital commented that using best practices to address the complex issue of ensuring timely access to in-patient beds for emergency-department patients is a top priority of its senior management team.

MINISTRY RESPONSE

The Ministry has undertaken numerous activities to facilitate knowledge transfer and timely dissemination of best practices across the system. It is also working closely with the LHINs and hospitals on a range of initiatives to reduce unnecessarily long stays in emergency departments and to ensure that vacant in-patient beds are made available on a timely basis.

The Ministry’s Emergency Department Process Improvement Program (ED PIP) trains staff on best practices related to in-patient bed turnover, and supports hospitals in improving patient flow from admission to the emergency department to discharge from an in-patient unit. Improved bed-empty times and admission processes have been identified by more than 80% of ED PIP sites.

The accountability agreement between the Ministry and LHINs includes LHIN-specific targets for three emergency-department wait-time indicators. The Ministry and the LHINs meet quarterly to discuss the performance reports submitted by LHINs, including progress made and challenges encountered in meeting targets.

STAFFING

Appropriate staffing levels are essential to the efficient and effective operation of emergency departments; inadequate staffing can clearly contribute to emergency-department wait times. There are no provincial standards for determining emergency-department staffing requirements. Each emergency department makes staffing decisions based on its patient numbers and average levels of patient acuity.

Emergency-department Nurse Scheduling

Two of the three hospitals we visited had difficulty scheduling staff to fill emergency-department nursing schedules. We reviewed these schedules on a sample of days in the 2008/09 fiscal year and found that one hospital was unable to schedule enough staff each day to fill about 15% of its emergency department’s nursing hours. As a result, the emergency-department manager had to call upon other nurses to work extra shifts in order to meet the workload requirement. Management at two of the hospitals we visited told us that scheduling nurses was difficult for emergency departments for a variety of reasons. Nurses tended to stick to their preferred schedules; some were able to negotiate a favourable schedule and only worked certain shifts when they were specifically recruited. All three hospitals had to follow the terms of collective...
agreements, especially in scheduling staff during holiday seasons.

The three hospitals we visited often incurred extra costs by having emergency-department nurses work extra shifts for which they received premium and overtime pay. According to the hospitals’ collective agreements with the nurses, such extra pay is to be offered only after all opportunities to pay at regular-time rates have been exhausted. We identified a number of emergency-department nurses whose overtime payments accounted for a significant portion of their total earnings. For example:

- At one hospital we visited, one nurse’s annual overtime pay accounted for over half of her total earnings for nine consecutive years. In the 2009/10 fiscal year, her total earnings were $157,000, of which 57% or $90,000 was overtime pay. The hospital’s finance department told us that it had informed emergency-department management about this situation over several years, but the issue still had not been resolved.
- At another hospital, one nurse’s total earnings in 2009/10 were $193,000, which included payments for extra shifts and overtime. This was almost three times the average salary of nursing staff at that hospital.

The emergency department is a busy, demanding environment in which staff work under considerable pressure. Nurses’ consistently working overtime and/or handling extra shifts can lead not only to additional costs for the hospital but also to staff burnout and errors, with an attendant negative impact on the quality of patient care. Although overtime costs cannot be eliminated, hospitals need to adequately oversee this area through regular report-backs on overtime levels and through use of alternative staffing approaches, such as hiring additional staff and using contract nursing staff where permitted under the collective agreements.

![Figure 11: Number of People per Emergency-department Physician, by LHIN, 2008](source-url)
Emergency-department Physician Capacity and Distribution

The Ontario Physician Human Resources Data Centre (Centre) maintains a registry of all physicians practising in Ontario. The most recent data show that, in 2008, the province had about 1,000 emergency-department physicians. However, there have been no comprehensive studies to determine the province’s current and projected needs for emergency-department physicians. HealthForceOntario—the provincial strategy to ensure that Ontarians have access to the right number and mix of qualified health-care providers—published a report in November 2009, which stated that “to understand what the ‘right’ capacity is in delivering access and quality of care to residents, a provincial study should be conducted to understand emergency department resourcing and distribution needs across the province.”

Data provided by the Centre show that the ratio of emergency-department physicians to population varied among the province’s 14 LHINs from 1:8,000 people to 1:27,000 people, indicating the uneven distribution of emergency-department physicians across the province and possible shortages in certain regions (Figure 11).

The uneven distribution of emergency-department physicians has resulted in shortages in certain regions of the province, which has resulted in some emergency departments engaging the services of emergency-department physicians from a staffing agency. Two of the hospitals we visited and about 40% of the emergency departments we surveyed had used agency physicians. The information they provided indicated that:

- Using agency that physicians was expensive. In addition to paying agency physicians for the shifts worked, the emergency departments had to pay various non-clinical fees such as out-of-town travel and accommodation costs, a one-time implementation fee ($5,000 to $7,500), and an administration fee (about $300 per shift).
- The quality of agency physicians varied, and the emergency department had no control over their level of skill and commitment.

An independent study commissioned by the Ministry in 2006 recommended that “hospitals should work as aggressively as possible to eliminate the use of agency physicians in staffing their emergency departments.” At the time of our audit, based on information provided by the staffing agency, there were about 20 hospitals still using agency physicians to staff their emergency departments.

RECOMMENDATION 6

To ensure that emergency departments are operating cost-effectively with adequate nurses and physicians:

- hospitals should deal with chronic overtime by setting targets for reducing overtime costs to acceptable levels and implementing effective measures for achieving these targets; and
- the Ministry of Health and Long-Term Care should work with the LHINs and with hospitals to conduct studies to assess the requirements, availability, and regional distribution of emergency physicians across the province in order to develop a sustainable human resources strategy that will ultimately eliminate the use of agency physicians.

RESPONSE FROM HOSPITALS

For the most part, the hospitals agreed with this recommendation. One hospital commented that the use of contract nursing staff to solve the nurse-scheduling problem was not a feasible and cost-effective long-term solution. Another hospital suggested that a sustainable human resources strategy should include ways to support unexpected increased emergency-department physician coverage needs caused by seasonal closures of other, alternative urgent-health-care facilities.
The Ministry is working with various delivery partners to ensure that emergency departments are operating cost-effectively by applying best practices and lessons learned from others who have experience and demonstrated improvements. These initiatives include:

- the Emergency Department Coverage Demonstration Project, which provides urgent coverage as an interim measure to designated hospitals that are facing significant challenges covering emergency-department shifts;
- the ED Staffing Reference Guide, which helps hospital leaders and LHINs understand and access government programs and incentives that may assist emergency departments;
- a two-day Emergency Medicine Primer for Family Physicians, offered by the Ontario College of Family Physicians in collaboration with the Ministry; and
- a Ministry-funded proposal for a “Supplemental Emergency Medicine Experience,” a pilot project that would create an intensive program in emergency medicine for family physicians (the Ministry received the proposal in March 2010 and it is under review).

The Auditor’s report recognizes that hiring additional nursing staff in emergency departments can reduce overtime costs. The 9000 Nurses Commitment supports the implementation of newly committed, full-time, permanent nursing positions. Movement toward 70% full-time employment may also reduce the burden of overtime costs and promote better continuity of care, leading to improved patient outcomes and a more sustainable workforce.

### IMPACT OF EMERGENCY-DEPARTMENT WAIT TIMES ON AMBULANCE EMERGENCY MEDICAL SERVICES (EMS)

In the 2008/09 fiscal year, ambulances delivered about 700,000 patients to emergency departments, accounting for about 13% of all emergency-department visits. Over 80% of them were high-acuity patients in CTAS 1, 2, and 3. Ambulances carrying patients often queued at emergency departments, and could not immediately offload patients due to emergency-department overcrowding or lack of beds. Such delays have significant implications for the Emergency Medical Service (EMS) providers across Ontario. Responsibility for providing land ambulance services rests with the 40 upper-tier municipalities (regions, counties, and cities) and 10 designated delivery agents in remote areas. The Ministry is responsible for setting standards and funding 50% of approved eligible costs of municipal land ambulance services. The balance of funding and actual delivery of service is the responsibility of the municipalities and designated delivery agents.

### Offload Delays

Paramedics stay with and continue to care for their patients who have been delivered to the emergency department by ambulance until emergency-department nurses can accept the patient and there is an emergency-department bed available. A delay in transferring a patient’s care from the paramedics to the emergency department is known as an “off-load delay.” Our review of patient files at the three hospitals we visited and information we received from EMS providers indicated that ambulance crews often had to wait for over an hour—and in some cases up to three hours—for their patients to be attended to by the emergency department.

We sent a survey to all 14 EMS providers that received ministry funding for the Offload Nurse Program (discussed in a following section), which
was specifically targeted to reduce emergency-department wait times; 10 of them responded. All of them expressed frustration with long offload delays, which diminished available ambulance resources, resulting in fewer or even no ambulances being available to respond to new emergency calls. Most of the respondents complained that offload delays increased EMS providers’ operating costs and adversely affected staff morale because the paramedics frequently incurred overtime and were unable to finish their shifts on time. In addition, they commented that offload delays could have implications for quality of patient care because paramedics were being requested to perform procedures outside their skill sets and to render ongoing nursing care until the patient was accepted by the emergency department, during which time there was the increased risk of the patient’s condition deteriorating.

**Ambulance Offload Time**

Delay in offloading ambulance patients is an important indicator of the accessibility and effectiveness of emergency departments. The key performance indicator is “ambulance offload time,” which is defined as the time from the arrival of the ambulance until the patient has been removed from the EMS stretcher and care transferred from the paramedic to hospital staff. Ambulance offload times vary throughout the province and are notably longer in urban areas. In 2005, the province established the Hospital Emergency Department and Ambulance Effectiveness Working Group to study emergency services. The group issued a report, which advised that ambulance offload time “must be improved immediately” and recommended the implementation of a benchmark ambulance offload time of 30 minutes, 90% of the time. (In other words, it would be acceptable for the ambulance offload time to exceed 30 minutes 10% of the time). The report also recommended that “hospitals improve their ambulance offload time by 10% per month from baseline until the benchmark is reached.” Although the Emergency Department Reporting System (System) has collected ambulance offload times since October 2008, they were not published on the public website or measured against the 30-minute benchmark.

To assess the extent of offload delays, we obtained ambulance offload times from the System to review the trends and regional variations in the province. Ambulance offload times decreased in the first few months after the introduction of the Offload Nurse Program (see next section) in late 2008, but by February 2010 were higher than they had been in October 2008. On average, every month about 20% of patients arriving by ambulance at emergency departments still exceeded the 30-minute benchmark, compared to the 10% target noted earlier.

Our review indicated that ambulance offload times could be understated at some hospitals. The data one of the hospitals we visited had provided to the System indicated that its average ambulance offload time from October 2008 to August 2009 was very short—only eight minutes—yet the data maintained by the EMS provider serving this hospital indicated it to be 82 minutes. We requested raw data from the hospital and recalculated the ambulance offload time, determining that it was actually 33 minutes. The discrepancy between the hospital’s ambulance offload time and that of the EMS provider came from two sources. First, the EMS provider informed us that paramedics often did not record ambulance offload times for all ambulance patients, with the compliance rate for this provider being about 60%. Second, hospital staff confirmed that an error had been made in the original data submitted to the System, resulting in the ambulance offload time being understated. Although the offload time of only eight minutes seems significantly low, Cancer Care Ontario, which is responsible for managing the System, did not question these data. It informed us that it has been working closely with EMS providers across the province to improve the quality of data submitted by emergency departments.
Offload Nurse Program

To alleviate offload delays, in May 2008, the Ministry began funding the Offload Nurse Program (Program), intended to improve teamwork and co-ordination between emergency medical services and hospitals. The Ministry provided $4.5 million in 2008/09 and $5 million in 2009/10 to 14 EMS providers in Ontario to reimburse hospitals for the cost of providing offload nurses, who are dedicated solely to assuming care of EMS patients. By taking care of patients when they arrive, the offload nurses are intended to free up ambulances and paramedics to respond to other calls. The 14 selected EMS providers entered into agreements with specific hospitals to purchase the services of offload nurses. Although the offload nurses were employed by the hospitals, the Ministry provided funding directly to the EMS providers rather than the hospitals to ensure that the money was used specifically for offload nurses and not merely to increase overall staffing in emergency departments.

All three hospitals we visited welcomed the additional resources given. However, they indicated that offload nurses provided only short-term relief. In fact, one hospital questioned the effectiveness of having offload nurses. It commented that the Program was not a good use of resources because dedicated offload nurses were not integrated well into the whole system of operating emergency departments. At times when other areas of emergency-department operations had more urgent needs, the hospitals were not allowed to assign offload nurses to those areas: offload nurses could only take care of ambulance patients.

Because the Ministry had not formally evaluated the Program, we contacted all 14 EMS providers that received funding to obtain their feedback; 10 of them responded. In general, they told us that although the additional funding had helped improve offload time, more work will be required to sustain these short-term results. Specifically:

- Most EMS providers acknowledged that the Program reduced ambulance offload times, freed up ambulances, and brought emergency departments and EMS providers together to improve offload delays. However, additional longer-term data would be required to confirm the sustainability of these initial positive results. Although the Program was not intended to solve the overall systemic issue of emergency-department wait times, it did provide a short-term relief. For this Program to have long-term success, the hospitals would concurrently have to make other long-term process improvements to emergency-department flow. Therefore, it would be important for the Ministry, hospitals, and EMS providers to continue to monitor the impact of the Program and other initiatives intended to alleviate emergency-department wait times.

- Some of the EMS providers told us that the Program had limited focus and did not significantly improve ambulance offload times. In certain regions, offload delays continued to increase because of two main problems. First, staffing shortages precluded the offload nurse position being staffed at all times to optimize the Program’s benefits. Second, funding and offload nurse coverage hours were far below the levels needed to have any significant impact.

**RECOMMENDATION 7**

To ensure the efficient use of the ambulance Emergency Medical Services (EMS) and to enhance co-ordination between EMS providers and emergency departments, the Ministry of Health and Long-Term Care should:

- determine whether the recommendation in the 2005 expert panel’s report on ambulance effectiveness of a benchmark ambulance offload time of 30 minutes 90% of the time should be accepted as a province-wide target;

- work with hospitals, EMS providers, and Cancer Care Ontario to improve the validity and reliability of ambulance offload data and
to ensure that such data are standardized, consistent, and comparable; and

- work with hospitals and EMS providers to evaluate on a province-wide basis the effectiveness of the Offload Nurse Program in reducing offload delays and improving patient flow within emergency departments.

RESPONSE FROM HOSPITALS

The hospitals supported initiatives to improve the quality of ambulance offload data across Ontario. They appreciated receiving the support of the Offload Nurse Program to improve ambulance offload time. One hospital indicated that, ideally, the time of the patient’s transfer of care needed by the hospital and that of the EMS should be identical.

MINISTRY RESPONSE

The Ministry has been providing tools and programs to reduce ambulance offload times since 2008, and continues to do so. Hospitals that receive Pay-for-Results funding are required to submit valid ambulance offload data reports that allow their progress toward the 30-minute ambulance offload standard to be tracked.

The Ministry, Cancer Care Ontario, and EMS providers will also continue to work together to improve the validity and reliability of the ambulance offload data.

Although the hospitals audited have not yet seen improvements in ambulance offload times, other hospitals, particularly in the Toronto area, have shown significant improvement. The Ministry continues to work with municipal stakeholders and receives in-year performance reports to ensure that the Offload Nurse Program is effective in reducing ambulance offload delays.

PERFORMANCE MONITORING

Complaint Process and Incident Reporting

Each of the three hospitals we visited had different processes in place to resolve complaints and review serious incidents that occur in their emergency departments. Our audit indicated that:

- All three hospitals have complaint policies or processes that set out the ways of handling complaints and indicate that complaints need to be resolved within two to three weeks. At the time of our audit, one hospital had complaints related to its emergency department that had been outstanding for two months. Another hospital had closed complaint files without issuing a response or taking action; at the time of our audit in March 2010, we noted that there were a number of complaints received as far back as July 2009 that were still open.

- All three hospitals we visited had an incident reporting system or process in place to record events that caused harm to a patient. Our analysis indicated that two of the hospitals had under-reported adverse events that had occurred in their emergency departments. We also noted that critical incidents were often captured not by the incident-reporting systems but through other channels, such as patient complaints and word of mouth. We also noted that, when incidents were reported, there was generally a lack of documentation of the investigation results and any corrective actions taken.

Unscheduled Return Visits to Emergency Departments within 72 hours

Our research indicated that the rate of unscheduled return visits to emergency departments provides a measure of the quality of emergency care. Returning within 72 hours could indicate that the reason for the patient’s initial visit was not handled adequately and appropriately. Patients could have
received wrong diagnoses during their first visit, or diagnosis was delayed, resulting in their return. The medical directors at all three hospitals we visited informed us that, although they were able to provide data related to return visits, the only return-visit cases they usually reviewed were those where deaths had occurred.

We reviewed patient files related to return-visit cases in the three hospitals we visited and found instances where patients were discharged inappropriately from emergency departments with no proper tests, such as ECGs or blood work, done during their initial visits to emergency departments. Some of those patients who had revisited the emergency departments shortly after being discharged were admitted for emergency surgery or, in a few cases, had even died subsequently. Clearly, medical decisions involve a high degree of judgment, and medical staff will not make the right decision 100% of the time. From the perspective of accountability, oversight, and learning, it is important that return visits, particularly those that result in death, be investigated. However, in virtually all the return-visit cases we reviewed where the patient died and the initial decisions may not have been appropriate, either no formal death review was completed or, if it was, no supporting evidence was available documenting the review. In three of these cases, the emergency department agreed that the patients should not have been discharged on their initial visits and that death reviews should have been conducted. In another case, we were told that, because the discharge was determined to be the wrong decision, a formal review would not provide any additional value.

Our review showed that death review processes varied among hospitals. One hospital did not have a formal process to review all deaths occurring in its emergency department; the emergency department’s medical director told us that review results or recommendations were not documented but were shared with physicians verbally. Another hospital had a formal process involving a Death Review Committee. The Committee noted that documentation was a major concern and needed to be improved; it indicated that it was difficult to align the review results with recommendations and to follow up on the recommendations it had made.

The third hospital required quarterly reviews of all deaths that occurred in its emergency department and that the results be reported to its Quality and Patient Safety Committee. However, we noted that no such reviews had been done since July 2008.

Patients Who Left without Being Seen or Left against Medical Advice

The rate at which patients leave the emergency department without being seen by physicians or without having completed treatment is a recognized indicator of emergency-department performance and quality. Although there is currently no provincial standard, our research shows that the industry standard rate of patients who leave without being seen or treated is 2% to 3%. At each of the three hospitals we visited, the rate was about 6%, reaching as much as 8% during some months. Patients leave before being seen or completing treatment mainly due to prolonged waiting. According to the Ontario Hospital Association, all hospitals should have a documented process in place to follow up with those patients who leave without being seen or treated. Our review of patient files showed that one of the three emergency departments we visited generally did attempt to follow up with these patients, especially if they left against medical advice. However, at the other two hospitals, there were instances where no follow-up occurred with patients who were triaged as high as CTAS 2 and 3 but who had left the emergency department without being seen or against medical advice.

**RECOMMENDATION 8**

To ensure that emergency departments are providing high-quality emergency care to all patients, hospitals should:
Alternatives to Emergency-Department Services

The opinion of the Physician Hospital Care Committee in its 2006 report on Improving Access to Emergency Care was that diverting low-acuity patients would only minimally reduce demand for emergency departments and only minimally impact wait times. However, we noted that in 2008/09, 2.5 million emergency-department visits—about half of all emergency-department visits in Ontario—were made by patients with less urgent (CTAS 4) and non-urgent needs (CTAS 5), who could have been supported by other medical alternatives, such as walk-in clinics, family doctors, and urgent care centres.

Low-acuity Patients

Although low-acuity patients (CTAS 4 and 5) arriving at emergency departments with minor conditions can usually be treated and discharged quickly, over three-quarters of the emergency departments we surveyed stated that low-acuity patients definitely had a detrimental impact on emergency-department overcrowding and patient flow. We also noted that:

- In July 2009, the Canadian Journal of Emergency Medicine published the Predictors of Workload in the Emergency Room (POWER) study, which found that there was marked variation in the amount of time required by emergency-department physicians to assess and treat patients in each CTAS level. (The average time was 73.6 minutes for CTAS 1; 38.9 minutes for CTAS 2; 26.3 minutes for CTAS 3; 15.0 minutes for CTAS 4; and 10.9 minutes for CTAS 5.) Using the results from the POWER study and the volume of emergency-department visits in 2008/09, we estimated that about 30% of all emergency-department physician time was spent on CTAS 4 and 5 patients in Ontario.
• Patients without family doctors or patients who are unable to get in to see their family doctors often end up in emergency departments. We noted that, in 2008/09, of those low-acuity patients (CTAS 4 and 5) who visited emergency departments, about 14% (349,000) had no family doctor. All three hospitals we visited and over 80% of the hospitals we surveyed expressed concern about “people with untimely access to or no family doctors” frequently visiting emergency departments.

• There were many frequent visitors to emergency departments who made at least one visit per month. In 2008/09, about 100 patients made 1,600 visits in total to the three emergency departments we visited. Many of these visits were related to minor symptoms. For example, one patient made 43 visits in 22 months with such non-emergent conditions as back pain, headache, dizziness, or flu-like symptoms. The patient was instructed on several occasions to follow up with the family doctor.

• At one emergency department we visited, we were told that emergency departments are no longer a place for “emergencies ” because they are inundated with patients who believe that they can obtain faster access to specialists and lab tests at emergency departments instead of waiting for referrals from family doctors. The manager of the diagnostic imaging department at another hospital also informed us that many patients visit emergency departments simply because they are unable to have their diagnostic tests completed quickly through other channels.

Urgent Care Centres

At the time of our audit, there were 15 urgent care centres in Ontario, established to serve patients who need treatment for illnesses or injuries that cannot wait but that are not life-threatening. Urgent care centres remain open during the day, in the evening, and on weekends to provide diagnosis and such treatments as casts, eye care, stitches, and x-rays. (They do not provide surgery.) Emergency departments and paramedics informed us that urgent care centres have the potential to relieve pressure at emergency departments by reducing the number of low-acuity patients visiting emergency departments. However, the following factors have prevented urgent care centres from functioning as effectively as possible:

• The public has not been educated sufficiently to be able to make the decision whether their condition requires treatment in an emergency department or can be handled appropriately by an urgent care centre. One emergency department informed us that, although there has been a Ministry-sponsored TV advertisement aimed at educating the public on where to seek medical care, much more needs to be done. Another emergency department told us that it is important to provide ongoing education and send clear messages to the public on appropriate use of urgent care centres and emergency departments, because it is often mistakenly believed that urgent care centres are staffed and equipped like emergency departments to provide resuscitation, when, in fact, high-acuity patients need to go to a full-service emergency department.

• EMS paramedics told us that they had transferred a number of patients from urgent care centres to emergency departments when the patients’ conditions were such that they should have gone directly to an emergency department. On the other hand, one urgent care centre told us that only about 4% of its patients were transferred to emergency departments for treatment. As well, emergency-department management at one hospital also told us that the transfer rate to emergency departments was less than 5% for most urgent care centres.
RECOMMENDATION 9

To ensure that the needs of patients are met appropriately, the Ministry of Health and Long-Term Care should:

- work with hospitals to conduct further research on the impact of low-acuity patients on emergency services and on what province-wide initiatives can be undertaken to encourage people to seek the right treatment from the right medical provider; and
- assess and promote the availability and public awareness of health-care alternatives to emergency departments on a regional basis, including walk-in clinics, urgent care centres, family physicians, and other community-based supports, to optimize the right care in the right environment.

RESPONSE FROM HOSPITALS

The hospitals supported this recommendation. One hospital reiterated that seasonal closures of alternatives to emergency departments often put extra pressure on emergency departments. As a result, it was important to have a sustainable human resources strategy for emergency-department physicians that includes opportunities to support seasonal and unexpected physician coverage needs.

MINISTRY RESPONSE

In February 2009, the Ministry introduced a website called Your Health Care Options, which lists alternative access points, including walk-in clinics and urgent care centres. The Ministry has implemented extensive TV and media advertising over the past two years aimed at promoting the website and raising public awareness of alternatives to hospital emergency departments. As well, pamphlets have been mailed to primary-care offices for public dissemination.

Additionally, since 2008, the Ministry has funded 14 Nurse-led Outreach Teams, which travel to long-term-care facilities to proactively assess the health-care needs of residents and deliver services in order to reduce emergency-department visits by providing the required care at the long-term-care facility.

The Ministry is also working closely with the LHINs to assess changes in volumes of emergency-department visits by low-acuity patients as well as potential local initiatives to continue to divert these visits to other appropriate care settings, including Family Health Teams.