

2005

Understanding Emergency  
Department Wait Times

Who Is Using Emergency Departments and  
How Long Are They Waiting?



Canadian Institute  
for Health Information

Institut canadien  
d'information sur la santé

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# About the Canadian Institute for Health Information

The Canadian Institute for Health Information (CIHI) is an independent, pan-Canadian, not-for-profit organization working to improve the health of Canadians and the health care system by providing quality health information. CIHI's mandate, as established by Canada's health ministers, is to coordinate the development and maintenance of a common approach to health information for Canada. To this end, CIHI is responsible for providing accurate and timely information that is needed to establish sound health policies, manage the Canadian health system effectively and create public awareness of factors affecting good health.

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- **Dr. Brian Rowe**, Professor and Research Director, Department of Emergency Medicine, University of Alberta Hospital, Edmonton, Alberta
- **Dr. Michael Schull**, Scientist, Institute for Clinical Evaluative Sciences, Toronto, Ontario
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It should be noted that the analyses and conclusions in this report do not necessarily reflect those of the individual members of the Advisory Committee or their affiliated organizations.

The editorial committee for the report included Gustavo Saposnik, Kira Leeb, Greg Webster and Jennifer Zelmer. Akerke Baibergenova was the lead senior analyst for this report. Other core staff who made substantial contributions to the report included Jason Dang, Jennifer Froot, Debbie Gibson, Naomi Kasman, Kathleen Morris and Kevin Willison.

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# Highlights

- Each year, Canadians make over 14 million visits to emergency departments (EDs). According to Statistics Canada, one in eight Canadians aged 15 years and older were treated for their most recent injury or had their most recent contact with a health professional in an emergency department (ED) in 2003. In Ontario, one in five sought care from an ED for injuries or other reasons at least once between April 1, 2003, and March 31, 2004.
- ED visit rates were highest for the very young and the very old. Close to one out of every two infants (48%) visited an ED in Ontario in 2003–2004. For those over 85, 44% visited an ED. However, adults accounted for the largest absolute number of ED visits—61% of patients visiting the ED were between 16 and 64 years old.
- Patients were more likely to visit EDs between 8:00 a.m. and 8:00 p.m., with the morning being the peak arrival time. In pediatric hospitals, a second and higher peak in visit volumes was evident from 7:00 p.m. to 10:00 p.m.<sup>†</sup>
- Overall, 12% of ED patients arrived by ambulance in 2003–2004. Arrival by ambulance was more likely (52% of visits) among those older than 85 years. Although this age group accounted for only 2.9% of ED visits, they represented 14% of ED ambulance arrivals.<sup>†</sup>
- More than half (57%) of ED visits in 2003–2004 were for less urgent conditions (for example, chronic back pain or minor allergic reactions) or non-urgent conditions (for example, sore throat, menses, or isolated diarrhea) based on the Canadian Triage and Acuity Scale (CTAS).<sup>†</sup>
- Nearly one in five Canadian adults (18%) responding to an international survey on ED use in 2004 said they could have received their emergency department care from a regular physician in a non-ED setting. This compares to between 6 and 16% of adults who visited EDs in Australia, New Zealand, the UK and the U.S.
- Almost half of the patients visiting EDs completed their visit in two hours or less. The median length of stay in EDs—measured from the time of registration or triage to the time of ED discharge—was approximately 2 hours (128 minutes). However, 10% of patients spent 36 minutes or less (10th percentile) and 10% spent over six hours in the ED (90th percentile) in 2003–2004. The amount of time that patients spent in the ED varied according to the severity of their illness, the patients' age, how many other patients were being cared for and the time of the day the visit took place.<sup>†</sup>

<sup>†</sup> Based on data from the National Ambulatory Care Reporting System (NACRS), which includes demographic, diagnostic and procedural information from hospital EDs in Ontario and selected facilities in other parts of Canada (four from Nova Scotia, three from British Columbia and one from Prince Edward Island).

- Half of all patients waited 51 minutes or less to be seen by a physician. For 10% of patients, this time was 10 minutes or less (10th percentile), and for another 10%, the wait was 165 minutes or longer (90th percentile).<sup>†</sup>
- On average, physicians assessed patients with more urgent conditions more quickly than patients with less urgent conditions. For the most severely ill patients (CTAS I), the median wait time to see a physician was five minutes in 2003–2004. Median wait times to see a physician for other patients grouped by level of severity ranged from 36 to 60 minutes.<sup>†</sup>
- Patients waited longer to be assessed by a physician when ED volumes were highest. For example, the median wait time for a physician's first assessment in the daytime when the ED was typically busiest (for example, at 11:00 a.m.) was 58 minutes. In the early morning hours (for example, 4:00 a.m.) when ED volumes were at their lowest, the median time to a physician's initial assessment was 38 minutes.<sup>†</sup>
- On average, it tended to take longer for patients to be seen by a physician in EDs that treated more patients. Overall, teaching hospitals and high-volume EDs had median wait times of between 6 and 70 minutes to see a physician, depending on the patients' severity of illness. For low-volume EDs, the range in overall median wait times to see a physician was 1 to 25 minutes.<sup>†</sup>
- 76% of those visiting EDs in 2003–2004 completed their visit in less than four hours.<sup>†</sup> This is comparable to the U.S. (72%), but less than in England (96%).
- While approximately 11% of ED patients were admitted to a hospital bed in 2003–2004,<sup>†</sup> overall, more than half of all hospital admissions (excluding maternal conditions) came through the ED (53%) in that year. However, hospital admission rates through the ED varied across the country.\* For example, the Northwest Territories had the highest admission rate through EDs (97/1,000 population). Ontario had the lowest (38/1,000 population).
- More than 80% of patients assessed in EDs in 2003–2004 were discharged to their place of residence; 3% of patients left without being seen.<sup>†</sup>

<sup>†</sup> Based on data from the National Ambulatory Care Reporting System (NACRS), which includes demographic, diagnostic and procedural information from hospital EDs in Ontario and selected facilities in other parts of Canada (four from Nova Scotia, three from British Columbia and one from Prince Edward Island).

\* Comparable data for Quebec and Manitoba are not available.

# About This Report

Poll after poll shows that timely access to care is a high priority for patients, health care providers and the public at large. Waiting for emergency care—particularly in peak periods—has also been in the headlines for a number of years in Canada and many other countries. Despite this, little information exists about waiting for care in emergency departments (EDs), including how long people wait and how wait times vary by patient and system characteristics.

This is the first in a series of three reports aimed at shedding light on some of the key issues regarding wait times in EDs. It focuses on who is accessing emergency departments, when and where, as well as how long they are waiting to see a physician and how long their visits take. Other reports in the series will build on the information contained in this report, but will focus on:

- ED care and waits for patients with specific health concerns (scheduled for release in the fall of 2005); and
- factors that affect waiting times in emergency departments (scheduled for release in the spring of 2006).

For the purpose of these reports, the term “emergency department” refers to comprehensive EDs open 24 hours a day, seven days a week, which provide acute care to patients arriving either by ambulance or by other means. Urgent care facilities (UCF), such as walk-in clinics, are not included in the analyses. Typically, UCFs are not open 24 hours a day, seven days a week, and they generally do not care for patients arriving by ambulance. These facilities also tend to receive higher rates of non-emergent patients.

The primary source of data for this report was the 2003–2004 National Ambulatory Care Reporting System (NACRS); these data are collected by CIHI. The data include patient-specific information from 163 Ontario facilities providing care in emergency departments, as well as data from a few participating sites located in Nova Scotia (no. = 4), British Columbia (no. = 3) and Prince Edward Island (no. = 1).<sup>‡</sup> Where possible, we have included additional data to provide a pan-Canadian or international perspective. However, as Ontario is the only province to provide comprehensive emergency department data to CIHI’s NACRS database, results based on this data set may not be generalizable to other parts of Canada.

<sup>‡</sup> Data from outside Ontario represent approximately 2% of the NACRS data holdings.



# Data Sources

- **CIHI's National Ambulatory Care Reporting System (NACRS)** contains demographic, diagnostic and procedural information from all hospitals in Ontario and some other facilities in Canada (four from Nova Scotia, three from British Columbia and one from Prince Edward Island). Overall, 171 of the 188 facilities providing emergency care data to CIHI were included in this report (see flow chart in Appendix A). Selected analyses of urgent care facilities (seven), which do not provide services 24 hours a day, seven days a week, are included in the appendix tables. Mental health care facilities were excluded from this report. In general, only unplanned emergency department visits were included (only in British Columbia and Nova Scotia was it not possible to determine whether a visit was planned or unplanned). Also excluded from this study were day surgery, outpatient clinics, community-based clinics and home care services data.

## Interpretive Cautions—NACRS Database

The results presented in this report provide important new information on ED use and associated ED wait times that can be used in conjunction with other sources of information to inform decision-making related to EDs. Four major issues related to the National Ambulatory Care Reporting System (NACRS) should be considered when interpreting the findings.

1. NACRS data on ED visits are available comprehensively for the province of Ontario only. Data from participating hospitals outside of Ontario include sites located in Nova Scotia, British Columbia and Prince Edward Island. Overall, non-Ontario data account for less than 2% of all NACRS records.
2. NACRS data are primarily collected for administrative rather than clinical or research purposes. As such, not all data elements are mandatory for reporting (for example, some socio-demographic characteristics, such as living arrangements, level of education and having a family physician, are optional). Optional variables may have high percentages of missing values, rendering them unavailable for comprehensive analyses.
3. In the majority of the hospitals, times reported during the process of care are recorded manually and as such may be subject to human error. This, coupled with other times not recorded (for example, time spent waiting for an inpatient bed or time spent in ED waiting rooms) may limit the cause-effect interpretation of waiting times in EDs.
4. Data from eight emergency departments were excluded from the analyses in this report due to data quality issues with the reported time of discharge. Likewise, the time of a physician's first assessment was not reported for approximately 25% of ED visits. Some proportion of missing values is expected. For example, if a patient left the ED prior to being seen by a physician, or if a health care provider other than a physician evaluated a patient, no time would be recorded. However, not all missing values could be explained. Investigations of the differences in visits with and without a reported time of physician first assessment did not reveal systematic bias, but the possibility of undetected bias may still exist.

CIHI has an extensive data quality initiative underway to continuously improve the quality of CIHI's data holdings. For further information about this initiative, including information related to our data quality framework, see our Web site ([www.cihi.ca](http://www.cihi.ca)).

- **CIHI's Discharge Abstract Database (DAD)** contains demographic, administrative and clinical data for hospital discharges (inpatient acute, chronic, rehabilitation) and day surgeries in Canada.
- **Statistics Canada census data** were used to provide population estimates for the calculation of utilization rates of EDs in Ontario. Data from their **Canadian Community Health Survey**, including the **Health Services Access Survey** component, were also used to provide a population-based view of who is using EDs in Canada and how.
- The **Commonwealth Fund** recently commissioned a survey of adults (15 years and older) in five countries (Australia, Canada, New Zealand, the United Kingdom and the United States) regarding primary health care access, including the use of EDs, between 2001 and 2003. Further information about this survey can be obtained from its Web site ([www.cmwf.org](http://www.cmwf.org)).

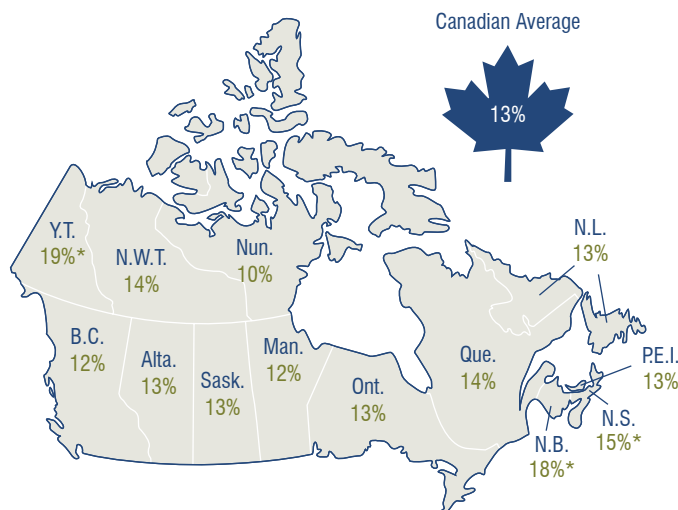
# Introduction

In the spring of 2005, Dylan, a nine-year-old boy, was having fun riding on the back of his friend's bike at dusk. But when his friend shifted on the seat of the bike, Dylan fell off, hitting his right hand hard on the cement.

Initially, the injury looked minor, but hours later Dylan's hand was swollen and bruised. A quick call to the boy's pediatrician confirmed the need for a visit to the emergency department. It was 9:30 at night.

## 1 Use of EDs in Canada

Statistics Canada asked adult Canadians (15 years and older) about seeking care in 2003. Across Canada, 13% said they had had their most recent contact with a health care professional or had received treatment for their most recent injury in an ED. Rates varied between 10% in Nunavut and 19% in the Yukon.



\* Significantly different from estimate for Canada ( $p < 0.05$ ).

Source: Carriere, G. "Use of Hospital Emergency Rooms." *Health Reports* 16, 1 (2004): pp. 35-39.

Canada's emergency departments care for millions of people each year. While some require immediate attention for life-threatening conditions or trauma, most, like Dylan, require less urgent care.

Statistics Canada reported that, in 2003, 3.3 million Canadians, or one in eight individuals, aged 15 or older were treated for their most recent injury or had their most recent contact with a health professional in an emergency department. The total number of visits would be even higher, as this estimate does not include all visits to EDs.<sup>1</sup>



An international survey<sup>2</sup> asked adults in five countries—Australia, Canada, New Zealand, the UK and the U.S.—about seeking care in EDs between 2001 and 2003. Thirty-eight percent of Canadian adults said that they had visited an ED in the previous two years, a higher rate than in other countries. Canadians were also more likely to say that they had waited two hours or more to be treated and to indicate that they could have received care by a regular doctor instead of going to the ED.

## 2 Five Countries Report on ED Use

In 2004, the Commonwealth Fund asked adults in five countries about their experiences with primary health care, including their use of emergency departments for care. Canada had the highest reported use of emergency departments, as well as the highest percentage of adults who said that they waited more than two hours to be treated.

|   | Australia<br>(No. = 1,400)<br>% | Canada<br>(No. = 1,410)<br>% | New Zealand<br>(No. = 1,400)<br>% | UK<br>(No. = 3,061)<br>% | U.S.<br>(No. = 1,401)<br>% |
|---|---------------------------------|------------------------------|-----------------------------------|--------------------------|----------------------------|
| <b>Went to the ED in the last 2 years</b>   | 29*                             | 38                           | 27*                               | 29*                      | 34*                        |
| <b>Reported waiting &gt;2 hours before being treated</b>  | 29*                             | 48                           | 27*                               | 36*                      | 34*                        |
| <b>Went to the ED, but felt they could have been treated by regular doctor if available</b>       | 9*                              | 18                           | 7*                                | 6*                       | 16                         |
| <b>Regular doctor informed and updated about the plan for follow-up after the hospitalization</b> | 74*                             | 70                           | 68                                | 70                       | 77*                        |

\* Statistically significant differences from Canada (chi square:  $p < .05$ ).

Source: Schoen C., R. Osborn, P. T. Huynh, M. Doty, K. Davis, K. Zapert, J. Peugh. "Primary Care and Health System Performance: Adults' Experiences in Five Countries." *Health Affairs*, Web Exclusive (2004), pp. W4-487-503.

While some researchers suggest that the demand for ED services has the potential to rise both in Canada<sup>3</sup> and elsewhere,<sup>4</sup> data from the majority of Canadian provinces and territories<sup>5</sup> suggest that the number of visits remained stable from 1999–2000 to 2002–2003, at around 14 million visits annually.<sup>5</sup>

More detailed data on ED use are available for a handful of provinces. For example, according to data collected in Ontario, approximately 2.7 million individuals of all ages visited emergency departments at least once in the province in 2003–2004. This represents approximately one in five Ontarians. Most of these individuals (65%) visited EDs only once in the year. A small proportion (0.3%) visited EDs 12 times or more.

Although adults (aged 16 to 64 years) accounted for the highest proportion of ED visits, rates of ED use were higher for the very young and the very old. For example, almost one in two infants (48%) under the age of 1 and 44% of those over the age of 85 visited an ED in Ontario in 2003–2004.

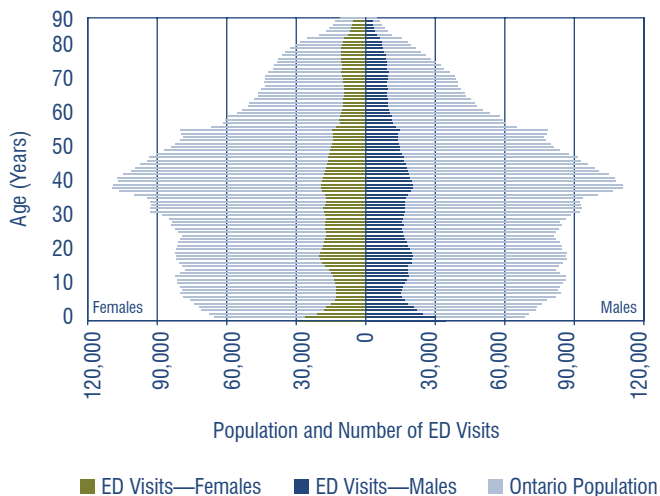
§ Reported visits exclude Prince Edward Island and Nunavut. Annually, approximately 95% of hospitals in Canada report ED visits to CIHI's Canadian MIS Database. However, each year some jurisdictions do not report. These jurisdictions change from year to year.



## 3

## Emergency Department Visits and the Ontario Population

The very young and the very old had disproportionately more visits to EDs than other segments of the population in 2003–2004 in Ontario.



**Note:** These data represent visits to 163 Ontario-based emergency departments.  
**Source:** National Ambulatory Care Reporting System, CIHI; Statistics Canada, 2003–2004.

## The Role of EDs in the Canadian Health Care System

Almost everyone requires some type of health care each year. In 2001, Statistics Canada reported that more than 23 million Canadians 15 years and older (94%) accessed at least some type of “first contact” health service. For some, that meant going to their family doctor or a walk-in clinic. For others, the first contact service they accessed was the emergency department of a hospital. EDs were primarily established to treat seriously ill and injured patients, 24 hours a day, seven days a week, who need immediate care. In practice, however, EDs strive to provide timely care to all patients regardless of why they are seeking care.<sup>6</sup>

## From the Battle Grounds to Modern Medicine

The beginnings of organized emergency care can be traced back to the Middle Ages. Greek doctors during the Crusades have been credited with developing first aid principles and ambulance services. Triage, meaning “to sort,” developed from the need to prioritize and provide immediate care of injured soldiers in battlefield settings. This concept was practised in France in the early 1800s. Baron Dominique Jean Larrey (1766–1842), Napoleon’s chief surgeon, recognized the need for quickly evacuating and then treating all the injured in an area close to the front lines. This was done using the first-ever ambulances, which were horse drawn vehicles that picked up people from the front lines.<sup>7</sup>

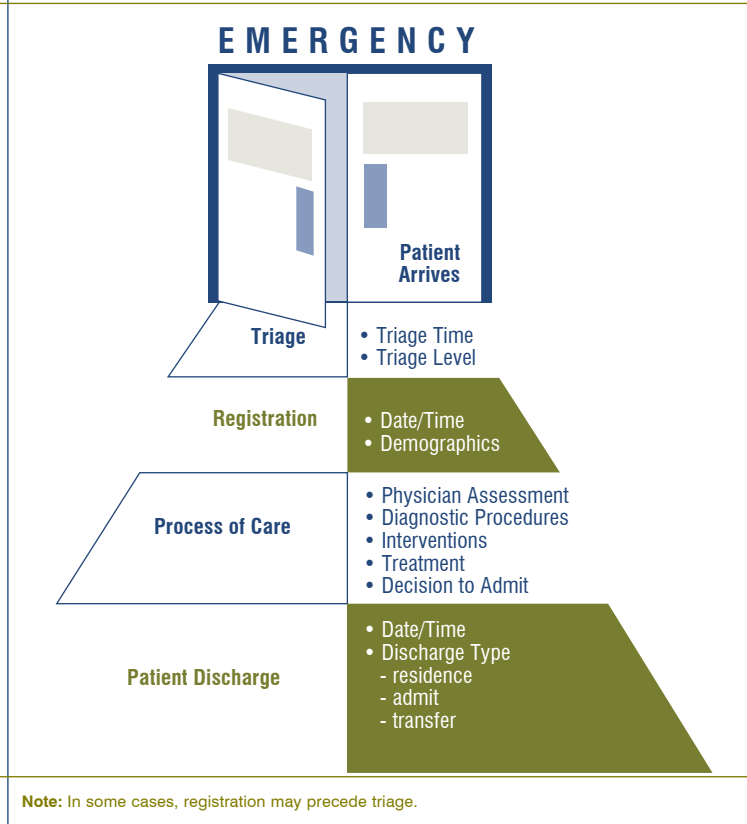
The Industrial Revolution also contributed to the evolution of emergency medicine. As more and more people entered the workforce of the industrialized world, the number of workers suffering accidents, injuries and other health problems increased. In Europe, this led to the establishment of first aid stations near work sites, with hospitals providing back-up care.

The integration of emergency medicine with efficient transportation has been highlighted by the National Academy of Sciences. For example, the excellence of initial first aid, efficiency of transportation and energetic treatment of seriously injured patients “have proven to be major factors in the progressive decrease in death rates of battle casualties reaching medical facilities, from 8% in World War I, to 4.5% in World War II, to 2.5% in Korea and to less than 2% in Vietnam.”<sup>8</sup>

## 4 Emergency Department Flow and Related Data

Unlike how other health services are organized, EDs have unique characteristics. For example, the majority of visits to EDs are unexpected and unscheduled and involve immediate assessment. At times, decisions about treatment need to be made very rapidly and actions need to be taken immediately.

While not all emergency departments are organized in the same way, most have an intake area where patients who arrive on their own (that is, not in an ambulance) register. During this time, patients are assessed or triaged by qualified health professionals and may be assigned severity scores, which have associated clinical urgency recommendations. If patients arrive by ambulance, the registration process may differ slightly, but the severity of the patient's condition is still assessed.



### Emergency Medicine Becomes a Medical Specialty

Canada now recognizes emergency medicine as an independent specialty, with professional associations and a structured training program. So do the UK, the U.S., Ireland, Australia, New Zealand and Japan, but not countries such as Germany and France.

Until the 1970s, those practising emergency medicine in Canada received little or no formal training in the provision of ED care.<sup>10</sup> In the early 1970s, the Royal College of Physicians and Surgeons of Canada proposed that emergency medicine programs be developed. During the 70s and 80s, groups of physicians formed different organizations to improve the quality of emergency care through specialized education, structure and standards. By 1980, the Canadian Association of Emergency Physicians had been formed and emergency medicine had been approved by the Royal College as a new specialty. In addition, the College of Physicians of Canada (CFPC) established certificates as an incentive for graduates who committed to a career in emergency medicine.

Emergency nursing was also born as a specialty around the same time. In 1980, the Canadian Nurses Association (CNA) began a certification program for specialty nursing groups including specialized roles emerging for working in EDs.

Today, care in the ED involves a variety of health professionals, from emergency physicians and nurses to cardiologists, neurologists, vascular surgeons, technicians and others. General and family practitioners (GP/FP) also work in some EDs. In fact, based on the National Physician Survey 2004—a study sponsored by the College of Family Physicians, the Canadian Medical Association, the Royal College of Physicians and Surgeons of Canada and the Canadian Institute for Health Information—almost one quarter (23.5%) of Canada's GP/FPs reported working in EDs in 2003 in some capacity. EDs are also fertile training grounds for many medical residents not planning on specializing in emergency medicine.



## Who Uses EDs?

Emergency departments are one of the most visible symbols of the health care system in our communities, large and small. The majority offer diagnostic and treatment services for patients with a wide range of illnesses and injuries. Some specialize in treating particular groups, such as children or trauma cases. According to a 2003 Statistics Canada survey, 3.3 million adult Canadians (15 years and older) reported receiving care for their most recent injury or had their most recent contact with a health professional in an ED. This was more common for men than women (14% vs. 12%).

ED use also varied by age and household income. For example, those in the lowest income group were more likely to have visited the ED for their most recent treatment than those in the highest income group (18% vs. 13%). And, those in rural areas were also more likely to have used ED services than those in urban areas (15% vs. 13%).

Similar patterns of ED use are evident in other countries. In 2003–2004, Australians made just over 5.8 million visits to EDs located in public hospitals in the country. Patient information, which was available for 73% of these visits, indicated that, overall, males made more visits to EDs than females (52% vs. 48%).

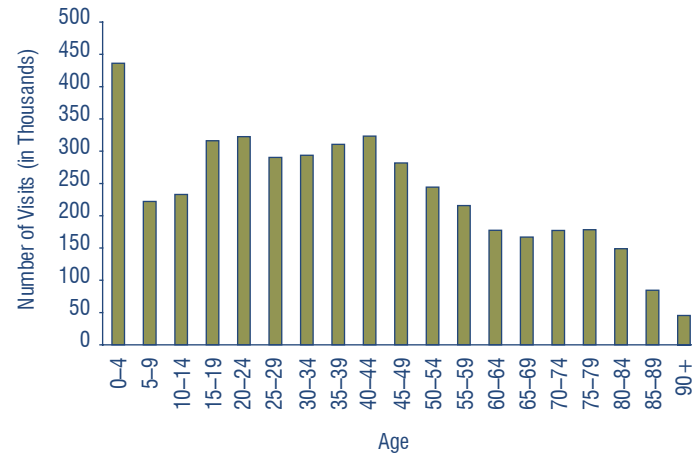


## 5 Age of Patients Visiting EDs

More detailed demographic information about who is using EDs is also available from CIHI's National Ambulatory Care Reporting System (NACRS) database. While coverage is limited (see Interpretative Cautions), these data include all visits regardless of age for a sample of Canadians, and include details regarding the reasons for care and patients' experiences. According to these data, males and females visited EDs to almost the same extent in 2003–2004 (49.6% vs. 50.4%, respectively). Overall, the number of visits dropped as age increased. However, infants (particularly those under 1 year old) accounted for the most visits to EDs in 2003–2004, compared to any other age group.

While only 12% of those visiting EDs in 2003–2004 arrived by ambulance, patients with the most severe health concerns (78%, vs. 2.8% with the least severe conditions) and elderly women 85 years of age and older were more likely to arrive by ambulance.

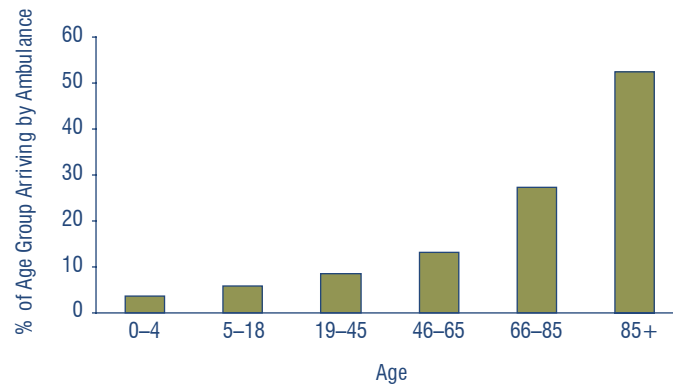
Infants (<5 years) had the highest number of ED visits of any age group in 2003–2004, with more visits being made by male babies.



**Note:** These data represent visits to 163 Ontario-based emergency departments, as well as participating sites located in Nova Scotia (no. = 4), British Columbia (no. = 3) and Prince Edward Island (no. = 1).  
**Source:** National Ambulatory Care Reporting System, CIHI.

## 6 Who Arrives by Ambulance?

Overall, 12% of those visiting EDs in 2003–2004 arrived by ambulance. The proportion of ED users who arrived by ambulance increased with age. Although the number of visits for those over 85 accounted for less than 3% of all ED visits in that year, just over 52% of those in this age group arrived by ambulance. In contrast, those under age 5 represented almost 10% of all ED visits, but less than 5% of those in this age group arrived by ambulance.



**Note:** These data represent visits to 163 Ontario-based emergency departments as well as participating sites located in Nova Scotia (no. = 4), British Columbia (no. = 3) and Prince Edward Island (no. = 1).  
**Source:** National Ambulatory Care Reporting System, CIHI.

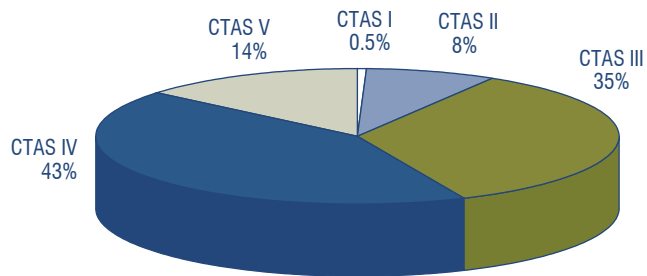


According to NACRS data, the majority (78%) of patients seen in EDs in 2003–2004 were triaged as either urgent (CTAS III) or less-urgent (CTAS IV). Those requiring immediate (CTAS I) or emergent care (CTAS II) represented less than 10% of all ED visits (0.5% and 8.2%, respectively).

Other countries also report seeing similar proportions of less-urgent cases in their EDs. In Australia,<sup>14</sup> the UK,<sup>15</sup> and the U.S.,<sup>16, 17</sup> for example, 12 to 15% of patients were triaged as least severe (using a variety of assessment methods) for the most recent year for which data are available—a figure similar to that recorded in NACRS.

## 7 Severity of ED Patients

One way ED staff assess patients arriving at emergency departments to help ensure that they receive treatment according to clinical urgency rather than order of arrival is the Canadian Triage and Acuity Scale (CTAS). In 2003–2004, only 0.5% of those arriving at EDs were triaged as most severe (CTAS I—for example, major trauma, shock, severe respiratory distress). The majority of cases (57%) were assessed as either less-urgent (CTAS IV—for example, chronic back pain, not sudden headache, mild allergic reaction) or non-urgent (CTAS V—for example, sore throat, menses, isolated diarrhea).



**Note:** These data represent visits to 163 Ontario-based emergency departments as well as participating sites located in Nova Scotia (no. = 4), British Columbia (no. = 3) and Prince Edward Island (no. = 1).

**Source:** National Ambulatory Care Reporting System, CIHI.

## 8 How Canada Compares

Overall, the distribution of ED patients by severity visiting selected Canadian EDs is similar to that observed in Australia. The U.S. uses a different four-point scale for assessing patients arriving at EDs, but still reflects relatively similar severity proportions for less than the most urgent visits. Urban-only EDs (Toronto-GTA and Calgary Health Region) tended to see a much lower proportion of non-urgent patients than the overall average.

| Triage Level        | NACRS <sup>†</sup><br>(2003–2004)<br>% | Toronto-GTA <sup>§</sup><br>(2003–2004)<br>% | Calgary Health<br>Region <sup>^</sup><br>(2004–2005)<br>% | U.S. <sup>‡</sup><br>(2002)<br>% | Australia*<br>(2003–2004)<br>% |
|---------------------|--|--|---|----------------------------------|--------------------------------|
| Classification Tool | CTAS                                   | CTAS   | CTAS  | NHAMCS                           | National Triage Scale          |
| Resuscitation       | 1                                      | 1  | 1   | 26                               | 1                              |
| Emergency           | 8                                      | 14   | 18  |                                  | 8                              |
| Urgent              | 35                                     | 48   | 52  | 40                               | 30                             |
| Less-Urgent         | 43                                     | 32   | 26  | 22                               | 46                             |
| Non-Urgent          | 14                                     | 6  | 3   | 12                               | 15                             |
| Millions of Visits  | 4.47                                   | 0.94   | 0.25  | 110.15                           | 5.86                           |

**Sources:**

<sup>†</sup> National Ambulatory Care Reporting System, CIHI. (Note: These data represent visits to 163 Ontario-based emergency departments, as well as participating sites located in Nova Scotia (no. = 4), British Columbia (no. = 3) and Prince Edward Island (no. = 1).

<sup>§</sup> National Ambulatory Care Reporting System, CIHI. (Note: These data represent visits to 20 EDs located within the Toronto-Greater Toronto Area (GTA).

<sup>^</sup> Data as per 2004–2005 from Calgary Health Region (CHR) acute care sites only. Data provided through CHR's Regional Emergency Department Information System (REDIS).

<sup>‡</sup> Based on advance data, CDC National Ambulatory Care (March 2004). The National Hospital Ambulatory Medical Care Survey (NHAMCS) categorized immediacy into four groups: emergent, urgent, semi-urgent and non-urgent.

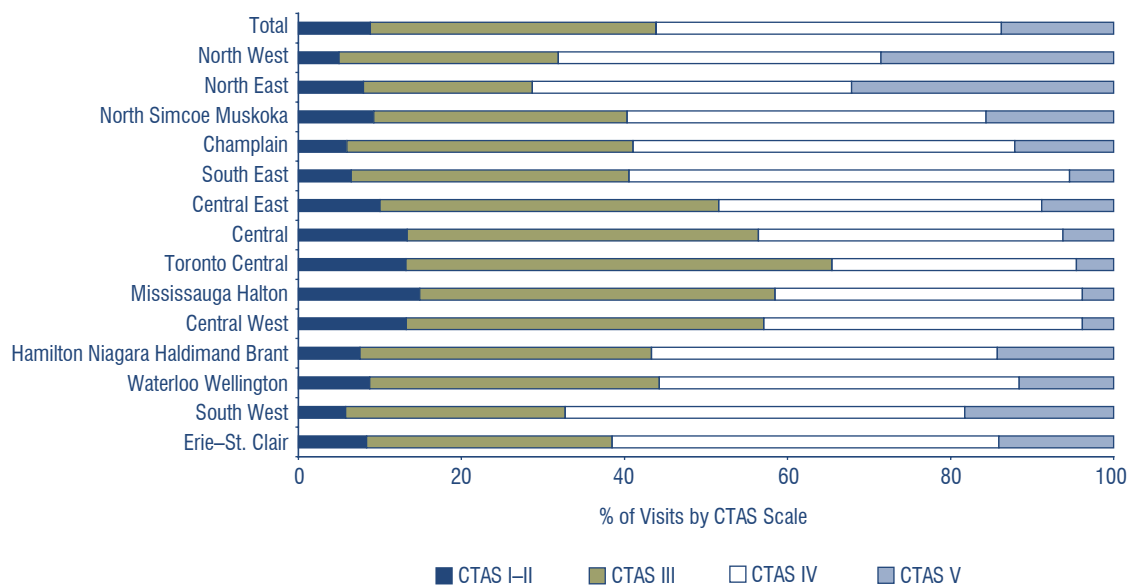
\* Based on Australian Institute of Health and Welfare (AIHW) 2005. Australian hospital statistics 2003–2004. AIHW cat. no. HSE 37. Canberra: AIHW (Health Services Series no. 23). Triage level is categorized into five groups: resuscitation, emergency, urgent, semi-urgent and non-urgent.

EDs located in urban areas tend to see different patient populations than EDs located in more rural areas. For example, in the Calgary Health Region, only 3% of patients seen in 2004–2005 were triaged as least severe (CTAS V). Similar rates (5.5%) were seen in Toronto in 2003–2004. Overall, 14% of visits in the NACRS data fell into this category.

The difference between urban and rural EDs is highlighted within Ontario's newly established Local Health Integration Networks (LHINs). Those LHINs serving primarily urban populations saw lower proportions of less severely ill patients than LHINs serving primarily rural populations in 2003–2004.

## 9 Patient Severity Differs Across Ontario

In 2005, Ontario announced its new Local Health Integration Networks. The distribution of Ontario's ED patients by severity in 2003–2004 varied according to these new LHIN regions. LHINs serving primarily urban populations saw a higher proportion of more severely ill patients than LHINs serving a more rural population.



**Note:** These data represent visits to 163 Ontario-based emergency departments.  
**Source:** National Ambulatory Care Reporting System, CIHI.

## The Effect of Severe Acute Respiratory Syndrome (SARS) on ED visits in Toronto, Ontario

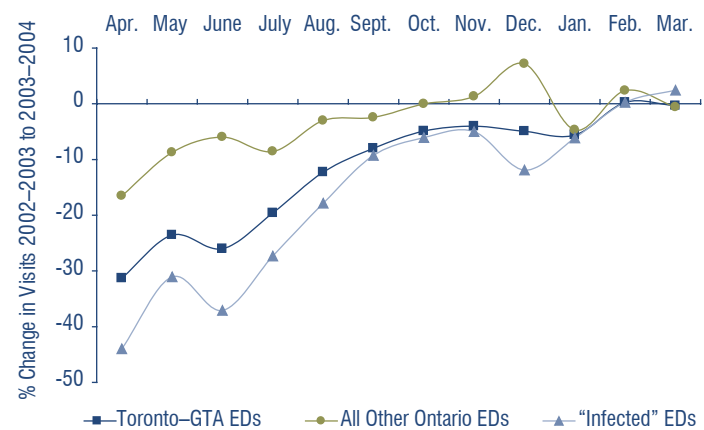
In 2003, Ontario's health care system experienced a major challenge. Hospitals in the Greater Toronto Area (GTA) were in the "hot zone" of SARS in Canada. The overwhelming majority of cases in the country and all of the SARS-related deaths occurred there.<sup>18</sup>

From March to July 2003, the SARS outbreak had a major impact on health services. EDs, mainly in the GTA area, were particularly affected. During that period, many clinics and non-urgent visits were cancelled. Guards at entrances to the emergency departments restricted access to staff and emergency department patients only (no visitors or family). Modifications to daily operations were updated frequently, and various strategies were implemented to stem the rate of transmission of the illness.

The SARS crisis highlighted many of the unique challenges that EDs face in dealing with contagious diseases, including how to maintain essential services during an outbreak. While those in need of immediate care were seen at about the same rate as in the previous year, patients with less severe health care needs visited EDs to a much lesser extent during the SARS crisis and beyond. The decrease in visits was evident both inside and outside the Toronto area, where most cases were located. Lessons drawn from Ontario's SARS experience may help to inform efforts across Canada to renew primary health care services.

### 10 SARS and ED Visits in Ontario

Visits to emergency departments in Ontario were affected by the SARS outbreak in the spring and summer of 2003. There were fewer ED visits in 2003–2004 than in 2002–2003 for both "infected" and "non-infected" hospitals. The decline in visits was evident well beyond the initial outbreak.



**Note:** Infected EDs were those reporting at least one case of SARS; Greater Toronto Area (GTA) EDs include infected hospitals; all other Ontario EDs include all EDs outside the GTA (that is, non-infected). These data represent visits to 163 Ontario-based emergency departments.  
**Source:** National Ambulatory Care Reporting System, CIHI.

## Patient Volume Fluctuates According to Time of Day and Day of the Week

Efficient management of an emergency department requires a team of providers capable of correctly identifying patients' needs, setting priorities and implementing appropriate investigation, treatment and discharge strategies. This capacity needs to be aligned with patient volumes and needs, which change depending on time of day or night, weekly and seasonally.



According to a 2001 Statistics Canada survey, 93% of Canadians aged 15 years and older indicated that they would go to hospitals or EDs for immediate care for minor health problems arising in the night. Fewer indicated that they would go to hospitals or EDs for care required at other times or if the care they needed was not immediate.

## 11 Where Do You Go for Care?

Canadians who need care tend to seek first contact services in different places at different times of the day. The chart below shows where Canadians aged 15 and older reported that they were most likely to seek routine care and immediate care for minor health problems for themselves or a family member during regular office hours (9 a.m. to 5 p.m., Monday to Friday), evenings (5 p.m. to 9 p.m.) and weekends and at night in 2001.

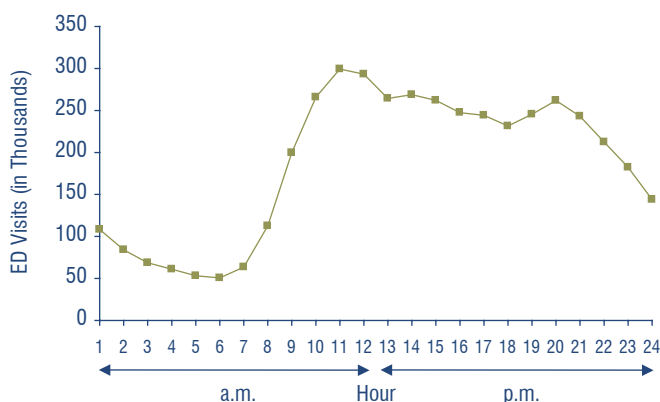
| Setting                          | Routine or Ongoing Care |                       |       | Immediate Care for Minor Health Problems |                       |       |
|----------------------------------|-------------------------|-----------------------|-------|--|-----------------------|-------|
|                                  | Regular Hours           | Evenings and Weekends | Night | Regular Hours                            | Evenings and Weekends | Night |
| Family Doctor's Office           | 80%                     | 20%                   | N/A   | 49%                                      | 8%                    | **    |
| Walk-in Clinic                   | 12%                     | 42%                   | N/A   | 23%                                      | 34%                   | 1%*   |
| Hospital or Emergency Department | 4%                      | 32%                   | N/A   | 23%                                      | 53%                   | 93%   |
| Community Health Centre          | 3%                      | 4%*                   | N/A   | 4%*                                      | 3%*                   | **    |
| Other                            | 1%*                     | 2%*                   | N/A   | 1%*                                      | 1%*                   | **    |

**Notes:**

\* Interpret with caution due to high sampling variability.  
 \*\* Data too unreliable to be published due to high sampling variability.  
 May not add up to 100% due to rounding or non-response.  
**Source:** Statistics Canada. *Access to Health Care Services in Canada, 2001*.  
 Ottawa: Statistics Canada, 2001. Cat. no. 82-575-XIE.

## 12 What a Difference the Hours Make

Emergency department visits in 2003–2004 fluctuated over the course of the day. The volume of ED visits increased just after 7:00 a.m. and rose steadily until 11:00 a.m.



Data collected in NACRS suggest that ED visits varied by time of day. For example, ED visits in 2003–2004 tended to increase from around 7:00 a.m. until about noon. Visit volume remained at about this level during the daytime, but began to drop around 8:00 p.m.

**Note:** These data represent visits to 163 Ontario-based emergency departments, as well as participating sites located in Nova Scotia (no. = 4), British Columbia (no. = 3) and Prince Edward Island (no. = 1).  
**Source:** National Ambulatory Care Reporting System, CIHI.

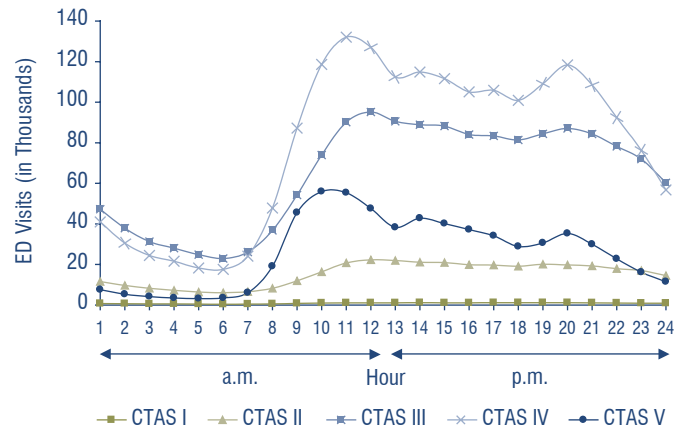
This general pattern applied to most patient groups, regardless of the severity of their condition. Pediatric hospitals experienced an added peak in volume of visits during, or just after, the dinner hour. Reasons for this could include parents seeking care for health issues that arose in their children during the day while they were at work or fever patterns that tend to increase in the evening hours.<sup>19</sup>

This pattern of ED visits by time of day is relatively similar to that in other countries. For example, in 2003, the Centers for Disease Control and Prevention in the U.S. reported an increase in ED visits in the morning; however, this increase continued until late afternoon and into the early evening (between 4 p.m. and 8 p.m.). Less than 7% of U.S. visits took place in the early morning hours, between 4 a.m. and 8 a.m. In Australia, visits for those triaged as most severe also increased around 8 a.m.<sup>14</sup> Like the U.S., visits for this particular patient group continued to increase until approximately 8 p.m. before starting to decrease.

There is also some evidence to suggest that EDs located in rural areas may have different peak times in patient volumes than EDs located in urban areas. A study conducted by the Institute of Clinical Evaluative Sciences found that urban Ontario EDs have a substantially higher proportion of their visits occurring after midnight when compared to rural Ontario EDs.<sup>3</sup>

### 13 Lower Severity Visits Fluctuate Most

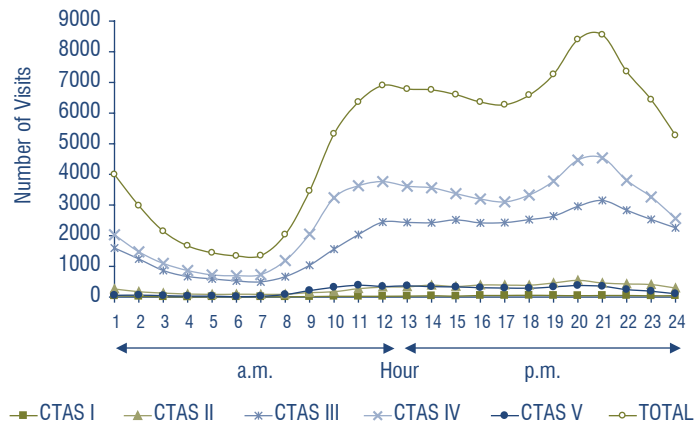
In 2003–2004, increases in the number of ED visits in the morning hours were most evident for lower severity patients. Given that many more persons go to the ED for less urgent conditions such as sore throat, chronic back pain, menses (CTAS IV/V) than for conditions requiring resuscitation (CTAS I), this trend has a major influence on the variations in visit volumes over the course of the day.



**Note:** These data represent visits to 163 Ontario-based emergency departments, as well as participating sites located in Nova Scotia (no. = 4), British Columbia (no. = 3) and Prince Edward Island (no. = 1).  
**Source:** National Ambulatory Care Reporting System, CIHI.

### 14 Two Peak Periods for Children

Pediatric EDs experienced the same increase in ED visits in the morning hours in 2003–2004 as did general EDs. However, an even higher peak in volumes of visits occurred in the early evening hours, perhaps as parents sought care for their children's health problems that arose during the day.

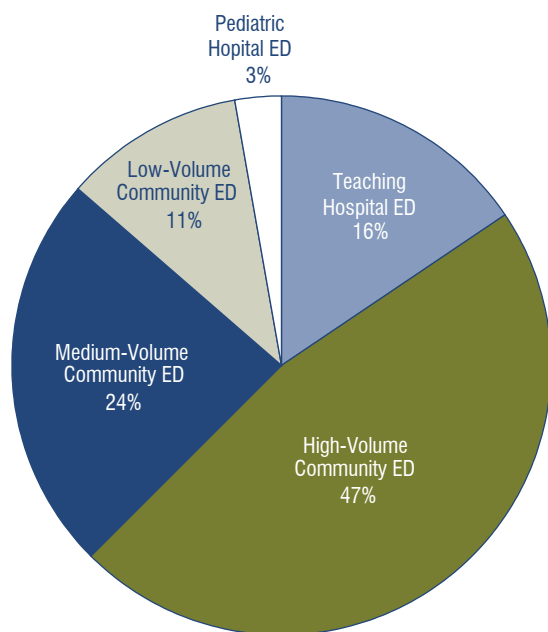


**Note:** These data represent visits to three pediatric emergency departments.  
**Source:** National Ambulatory Care Reporting System, CIHI.

Emergency department visits in some jurisdictions also fluctuate according to the day of the week. In both the UK and the U.S., Mondays were reported to be the busiest day of the week. In contrast, a study conducted in Alberta found ED use to be highest on Sundays and holidays.<sup>20</sup> CIHI's NACRS data revealed only a slight increase in the average number of visits for Mondays over other days of the week—1,300 visits on average on Mondays versus less than 1,250 visits for other days of the week. In general, this pattern was consistent for the most and least severely ill patients.

## 15 The Busiest EDs

Not all EDs see the same number of patients. Accordingly, EDs were classified into five different patient groupings: teaching hospitals; pediatric hospitals; and community hospitals treating low, medium and high numbers of patients.\* In 2003–2004, high-volume community hospital EDs saw almost half (47%) of those visiting EDs, whereas low-volume EDs only saw 11%.



**Note:** These data represent visits to 163 Ontario-based emergency departments, as well as participating sites located in Nova Scotia (no. = 4), British Columbia (no. = 3) and Prince Edward Island (no. = 1). Percentages do not add to 100 due to rounding.  
\* Low-volume community EDs—less than 15,000 annual ED visits; medium-volume community EDs—15,000 to 30,000 annual ED visits; High-volume Community EDs—more than 30,000 annual ED visits.

**Source:** National Ambulatory Care Reporting System, CIHI.

## High-Volume EDs See Higher Proportion of More Severely Ill Patients

The number and nature of ED visits varied by patient type and hospital location. Hospitals in urban areas and those affiliated with medical schools tended to have larger volumes of ED visits than those in rural areas or those not affiliated with medical schools. For example, high-volume community hospital EDs (those with over 30,000 visits annually) captured 47% of emergency department visits in 2003–2004. Medium-volume (between 15,000 and 30,000 visits annually) and low-volume (under 15,000 visits annually) facilities captured 24% and 11%, respectively. Teaching hospital EDs saw 16% of all ED visits.

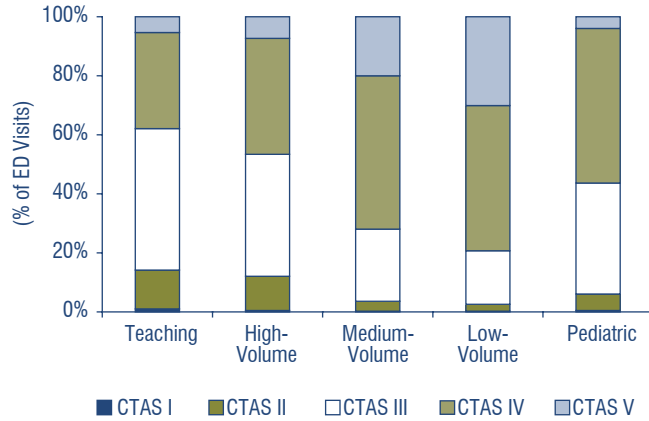
Hospitals that see more patients are also more likely to see more patients triaged as most severe. For example, 1% of patients seen in EDs located in teaching hospitals or high-volume EDs were triaged as CTAS I in 2003–2004. For medium- and low-volume hospitals, the percentage was approximately 0.2%.

How busy an ED is and how long patients wait for care depends on many factors. Examples include how many people come to the ED at a given time, how sick they are, and the type of ED visited. The extent to which these factors influence waiting for care in EDs is addressed in the next section. The extent to which system-level issues such as bed occupancy rates in hospitals and other system characteristics influence ED wait times is the focus of the third report in this series of reports on Understanding ED Wait Times. Watch our Web site ([www.cihi.ca](http://www.cihi.ca)) for its release in the spring of 2006.

16

### High-Volume EDs See Higher Percentage of Severely Ill Patients

In 2003–2004, EDs at teaching hospitals and high-volume community hospital EDs saw a higher proportion of the most severely ill patients visiting EDs. Medium- and low-volume EDs in community hospitals, on the other hand, tended to see a higher proportion of the least severely ill patients.



**Note:** These data represent visits to 163 Ontario-based emergency departments, as well as participating sites located in Nova Scotia (no. = 4), British Columbia (no. = 3) and Prince Edward Island (no. = 1).

**Source:** National Ambulatory Care Reporting System, CIHI.



## Waiting for Emergency Department Care

Having arrived at the ED at 10:00 p.m., Dylan was triaged to x-ray for his injured hand. He and his mother were back in the emergency department waiting room by 10:45 p.m. They waited there, among others seeking emergency care, until a doctor could tell them the results of his x-ray. Dylan's mother spent the next three hours answering his repeated question, "Can we go home now?" By 2:00 a.m., he was safely tucked in his bed with a freshly casted right hand.

Determining when the clock should start and stop in order to measure wait times and time spent associated with ED care is an important first step. Depending on who is asked, the clock may start and stop at different points along the pathway of care. For example, patients may want to know the total length of time their ED visit will take or how long they will wait to see a doctor once registered and triaged. The time it takes to receive diagnostic tests or to be transferred to a bed once a decision to admit has been made may also be of interest.



In this report, we have focused on two main measurements of time: how long patients spend in EDs from the time of registration (or triage) to the time of discharge (called the emergency department length of stay or EDLOS) and how long patients wait to be seen by a doctor after registering for care (called the physician initial assessment time or PIA).

## “When Can I Go Home?”—Understanding EDLOS

The length of time people spend in an ED varies according to the severity of their condition. For a more minor illness or injury (CTAS IV or V), lengths of stay tend to be shorter than for other patients. These patients have less complicated health issues and, as a result, may be dealt with more quickly. If diagnostic tests are needed or if ED physicians need to consult with other specialists, patients tend to stay longer and waits in EDs are extended. Those being admitted into the hospital, but not transferred to another facility, may wait longer still for an inpatient bed to become available.

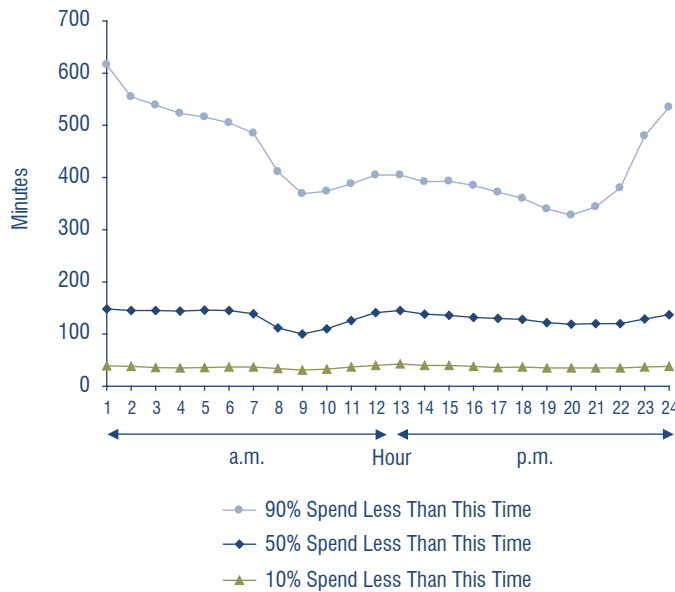
According to CIHI’s NACRS data, those visiting EDs in 2003–2004 spent a median of just over two hours in the ED (128 minutes). Median time reflects the point at which half of all patients spend less than this time and the other half spend more. Median times did not tend to fluctuate by the volume of patients in the ED, except in the busiest morning hours (7:00 a.m. to 10:00 a.m.) when EDLOS dropped for a short period of time.

### Emergency Department Length of Stay—Definition

For this report, length of stay in the ED is measured from the time the patient is first registered or triaged in the ED until the time the care provider discharges the patient from the ED. This measure includes time waiting for assessment or treatment and time spent receiving care. For more details about how this measure was calculated, see Appendix A—Technical Notes.

## 17 Time in the ED

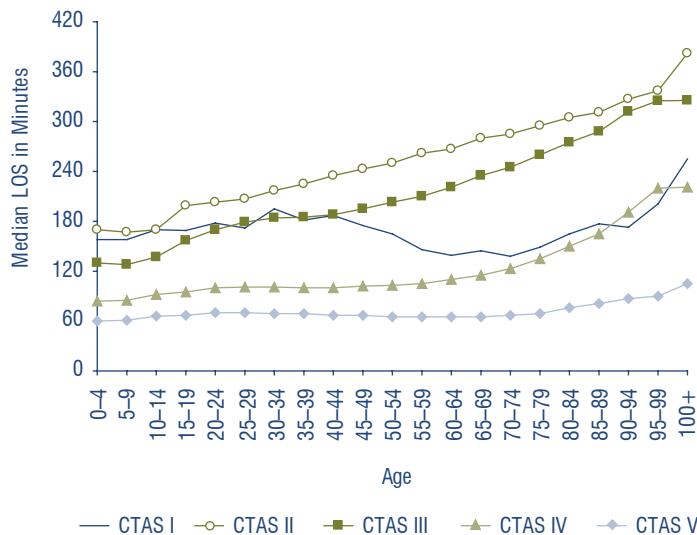
In 2003–2004, the overall median amount of time spent in the ED (also known as ED length of stay—EDLOS) was just over two hours. However, EDLOS fluctuated by the time of day. For example, those arriving in the morning tended to have shorter ED visits, perhaps reflecting an influx of ED and hospital staff able to discharge patients more quickly than at other times of the day or night.



**Note:** These data represent visits to 163 Ontario-based emergency departments, as well as participating sites located in Nova Scotia (no. = 4), British Columbia (no. = 3) and Prince Edward Island (no. = 1).  
**Source:** National Ambulatory Care Reporting System, CIHI.

## 18 Older People Stay Longer in EDs

In 2003–2004, as the age of patients visiting EDs increased, so did their total lengths of stay, regardless of the severity of their condition. ED length of stay includes time spent waiting for initial physician assessment as well as diagnostic tests or procedures and treatments.



**Note:** These data represent visits to 163 Ontario-based emergency departments, as well as participating sites located in Nova Scotia (no. = 4), British Columbia (no. = 3) and Prince Edward Island (no. = 1).  
**Source:** National Ambulatory Care Reporting System, CIHI.

Lengths of stay did, however, vary according to patients' severity. Patients with more severe conditions tended to spend more time in EDs than patients with less severe conditions in 2003–2004. Median EDLOS for those triaged as most severe (CTAS I) was 161 minutes compared to 67 minutes for those triaged as least severe (CTAS V). This difference likely reflects, in part, the fact that more complex health problems require more diagnostic tests and more monitoring than conditions that are more straightforward (for example, removing stitches or casting a broken arm) and is echoed by the finding that median EDLOS increases as age increases.

Increased EDLOS in more severe patients was also reported for those visiting EDs in Australia's public hospitals in 2003–2004. Patients triaged as most severely ill had median lengths of stay in EDs of just over three hours (195 minutes), whereas those triaged as least severely ill had a much lower median length of stay of 75 minutes.<sup>14</sup>

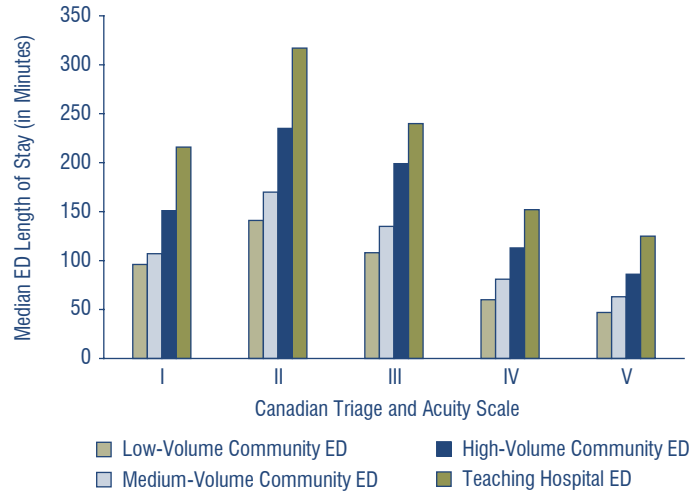
## Time Spent in EDs and ED Patient Volumes

Patients visiting EDs located in teaching hospitals tended to have longer lengths of stay, regardless of their severity, than patients visiting either low-, medium-, or high-volume EDs. The overall median ED length of stay was 203 minutes for those visiting teaching hospital EDs in 2003–2004, while for those visiting low-volume EDs it was 61 minutes.

Teaching hospitals are primarily located in urban areas. Longer overall time spent in teaching hospital EDs partly reflects earlier suggestions that urban EDs see different patient populations than rural EDs. (That said, median lengths of stay in teaching hospitals were higher for all triage levels.) This notion was further substantiated when EDLOS was calculated for 2003–2004 using the newly established boundaries for Ontario’s LHINs. Patients visiting EDs in the Toronto-Central region had the longest median lengths of stay (just over three hours). The majority of patients visited EDs within their LHIN. However, 31% of patients visiting EDs in Toronto-Central resided outside the LHIN.

## 19 Annual Patient Volume and Time Spent in EDs

How long patients typically spend in EDs varies by both severity of illness and type of ED. Overall, patients visiting EDs located in teaching hospitals had the longest average lengths of stay in 2003–2004, regardless of the severity their condition.

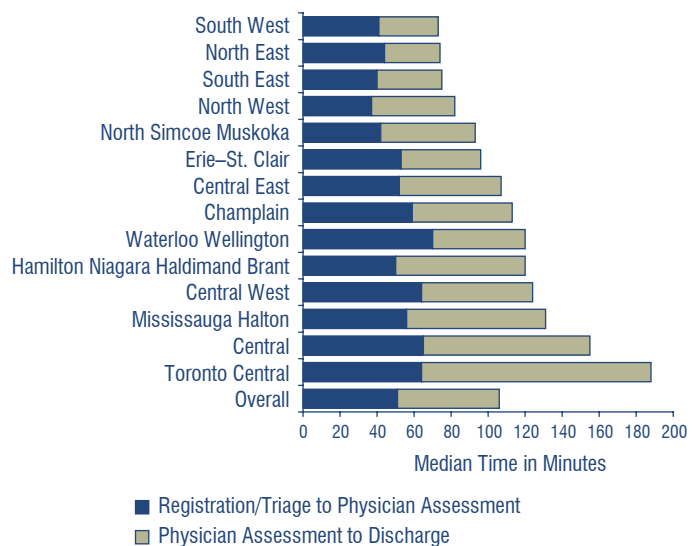


**Note:** These data represent visits to 163 Ontario-based emergency departments, as well as participating sites located in Nova Scotia (no. = 4), British Columbia (no. = 3) and Prince Edward Island (no. = 1).

**Source:** National Ambulatory Care Reporting System, CIHI.

## 20 Time in the ED by Ontario's New LHINs

Ontario has newly organized care into Local Health Integration Networks (LHINs). The bars represent ED length of stay by LHIN. Each bar shows two segments: the time from registration (or triage) to being seen by a physician and the time from then until discharge. Differences in ED length of stay may, in part, be explained by differences in the distribution of illness severity of the patients seen in the LHINs.



**Note:** These data represent visits to 163 Ontario-based emergency departments.

**Source:** National Ambulatory Care Reporting System, CIHI.






## Comparing ED Lengths of Stay?

The UK recently announced a target whereby 95% of patients visiting EDs should be discharged within four hours.<sup>20</sup> Although not without controversy, recent reports indicate that this target is being achieved. Whether this is an appropriate target for patients visiting EDs in Canada has not been established. However, according to ED visits in 2003–2004 from CIHI’s NACRS database, 76% had lengths of stay that were four hours or less. Only 7% had lengths of stay of more than eight hours.

In 2004, the U.S. Centers for Disease Control and Prevention reported that, among 110 million visits in 2002, patients spent, on average, about 3.2 hours in the emergency department. Overall, less than 1% stayed longer than 24 hours in EDs.

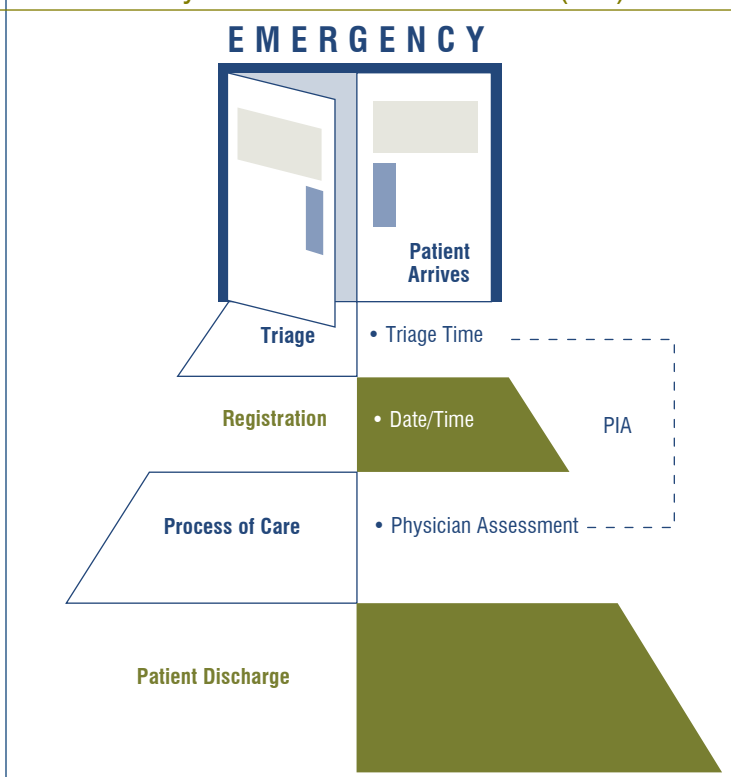
### 21 EDLOS in Canada, the U.S. and England

The proportion of patients that spend less than four hours in the EDs is similar in the U.S. and in selected EDs in Canada (NACRS\*). In England, however, almost all patients spend less than four hours in EDs. This result has increased in recent years after the implementation, in 2004, of a program targeting a 95%+ rate.

|   |  * |  |  |
|---|--|---|---|
| <b>% of Patients Spending &lt;4 Hours in the ED</b> | 76%  | 72%   | 96%   |
| <b>Millions of Visits</b>                           | 4.3  | 110.2   | 17.8  |
| <b>Time Period</b>                                  | April 2003 to March 2004   | 2002  | April 2004 to March 2005  |

\* These data represent visits to 163 Ontario-based emergency departments, as well as participating sites located in Nova Scotia (no. = 4), British Columbia (no. = 3) and Prince Edward Island (no. = 1).  
**Sources:** National Ambulatory Care Reporting System, CIHI; U.S.: National Ambulatory Medical Survey, 2002 *Emergency Department Summary, Advance Data* (March 18, 2004); England: Department of Health, hospital activity statistics. Attendances at accident and emergency departments, minor injury units and walk-in centres, Strategic Health Authorities, <<http://www.performance.doh.gov.uk/hospitalactivity>> and National Health Services, England, <<http://www.hesonline.nhs.uk>>.

### 22 Time to Physician Initial Assessment (PIA)



**Note:** In some cases, registration may precede triage.

### Waiting for Initial Physician Assessments

The total amount of time spent in EDs is one measure of time spent obtaining care for illnesses and injuries. However, patients may also care about the initial time spent waiting to see a doctor once registered.

The time spent waiting to see a doctor is included in the total time spent in an ED. However, it remains an important measure on its own because it may also influence EDLOS.<sup>21</sup> In addition, for some specific conditions, like acute stroke or acute

myocardial infarction, the time to the initial physician assessment is considered one of the most important factors influencing patient outcomes.<sup>22</sup> The extent to which people wait to see a physician for specific health concerns is the focus of the second report in this series. Here we present new analyses about the times spent in EDs waiting to see a doctor in 2003–2004 for all conditions combined.

Overall, according to NACRS data, patients waited a median time of 51 minutes to be assessed by a physician in 2003–2004. This is the time at which half of patients spent less than this time and the other half spent more than this time. Ten percent of ED patients waited 10 minutes or less (10th percentile), while 10% waited 165 minutes or more (90th percentile). In general, median wait times to see a physician varied slightly by the volume of patients in EDs at the time of the visit, but much more so by patient severity.

## Time to Physician Initial Assessment (PIA): Definition

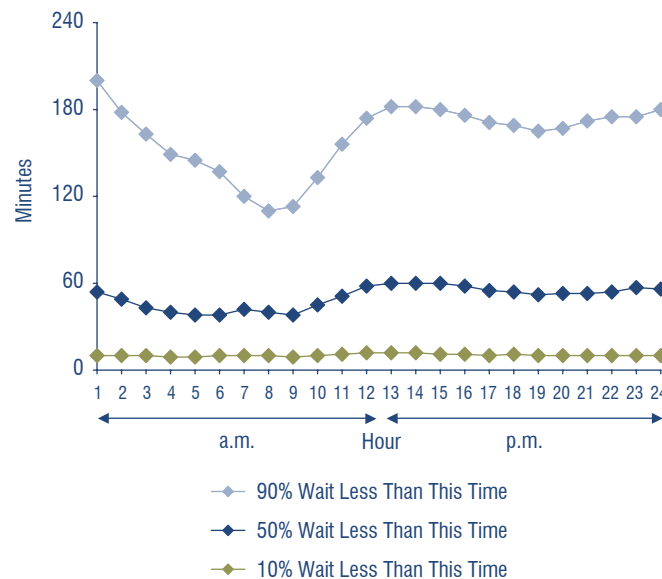
The time that a doctor first sees the patient is now collected within the NACRS database. For the purposes of this study, waiting to see a physician is considered to be from the time the patient is first registered or triaged in the ED until the initial assessment by an emergency physician, as recorded by the physician.

New data elements often have data quality issues and the time to physician initial assessment is no exception. For example, approximately 25% of these times were not recorded in 2003–2004, the first year of data collection. For some patient visits this is appropriate (for example, when patients leave the ED before being seen by a physician). Despite this percentage of missing data, to date, CIHI's data quality investigations of the NACRS data have not revealed systematic bias with respect to this data element. That is, times were about as likely to be missing for the young and the old, regardless of time of day. Interestingly, Australia has recently reported a similar limitation regarding reporting wait times associated with a physician's initial assessment.<sup>14</sup>

## 23

### Waiting to See the Doctor Varies by Daily Patient Volumes

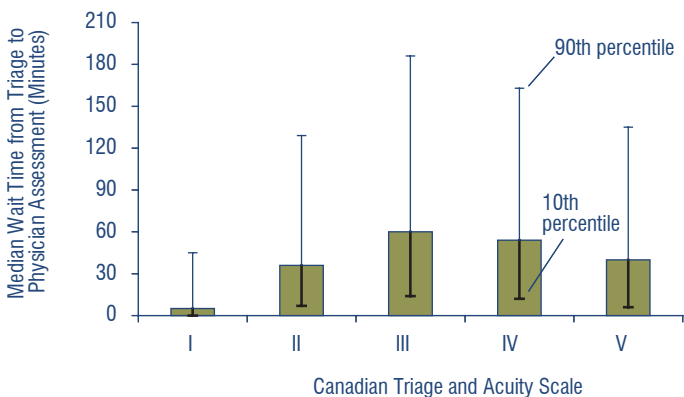
The time spent waiting to see a doctor is another measure of time spent in EDs. In 2003–2004, patients tended to see a doctor more quickly if they had registered or were triaged between 7 a.m. and 9 a.m., compared to other times of the day or night. This was true despite the increase in patient volumes at this time and might reflect an influx of hospital staff coming on shift.



**Note:** These data represent visits to 163 Ontario-based emergency departments, as well as participating sites located in Nova Scotia (no. = 4), British Columbia (no. = 3) and Prince Edward Island (no. = 1).  
**Source:** National Ambulatory Care Reporting System, CIHI.

## 24 ED Waiting Time to See a Doctor

Overall, half of all patients visiting EDs in 2003–2004 waited 51 minutes or less to see a physician once they had been triaged by a trained health professional. Time spent waiting to see a physician varied by the severity of their condition. Those triaged as most severe had the shortest waits, with a median of approximately five minutes. However, 10% of these patients were seen immediately (10th percentile = 0 minutes) whereas another 10% waited 45 minutes or more (90th percentile).



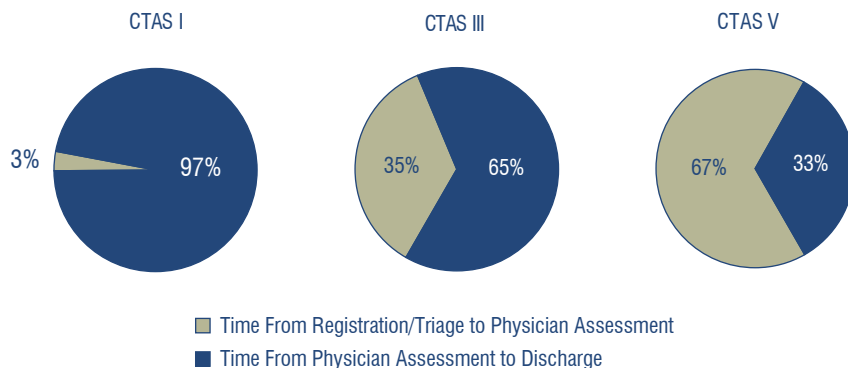
The most severely ill patients (CTAS I) were seen by a physician within a median time of approximately 5 minutes, whereas those with conditions assessed as urgent (CTAS III) waited a median time of just under 60 minutes to be seen by a physician. The majority of the time that patients assessed as CTAS I spent in EDs occurred after being seen by a physician (97% of their EDLOS). For those assessed as CTAS III, the picture is somewhat different. These patients spent 35% of their total time in EDs (EDLOS) waiting to be seen by a physician.

**Note:** These data represent visits to 163 Ontario-based emergency departments, as well as participating sites located in Nova Scotia (no. = 4), British Columbia (no. = 3) and Prince Edward Island (no. = 1).

**Source:** National Ambulatory Care Reporting System, CIHI.

## 25 Waiting for and Receiving Care

The proportion of time that patients spend in the ED can generally be divided between time spent waiting to see a physician and time spent after that undergoing diagnostics and receiving treatment. Overall, patients assessed as most severe (CTAS I, for example, shock, major trauma, cardiac arrest) spent the shortest proportion of time in EDs waiting to be assessed by a physician in 2003–2004. Conversely, those assessed as non-urgent (CTAS V, for example, sore throat, chronic back pain) spent the largest proportion of time waiting for a physician.



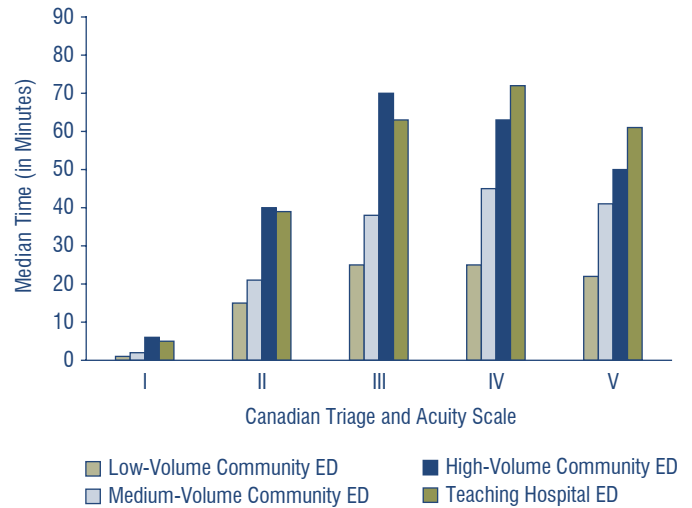
**Note:** These data represent visits to 163 Ontario-based emergency departments, as well as participating sites located in Nova Scotia (no. = 4), British Columbia (no. = 3) and Prince Edward Island (no. = 1).

**Source:** National Ambulatory Care Reporting System, CIHI.

Patients assessed as CTAS I were typically seen rapidly, regardless of the type of ED visited. Patients with less severe health conditions visiting low- and medium-volume EDs, however, had shorter waiting times to see a physician. Overall, the longest wait times were associated with EDs located in teaching hospitals.

## 26 Wait Times to See a Physician Vary by ED type

The amount of time that patients waited to see a physician varied by type of ED in 2003–2004. Overall, patients who visited lower-volume EDs in community hospitals had the shortest median wait times from registration or triage to when they saw a physician. This was true regardless of the severity of their conditions.



**Note:** These data represent visits to 163 Ontario-based emergency departments, as well as participating sites located in Nova Scotia (no. = 4), British Columbia (no. = 3) and Prince Edward Island (no. = 1).  
**Source:** National Ambulatory Care Reporting System, CIHI.

### Establishing Goals for Time to Physician Initial Assessment

The time it takes to be seen by a physician can be critical for some conditions. When the Canadian Triage and Acuity Scale (CTAS) was established, goals or operating objectives of time to physician initial assessment were proposed. These times were:

- **CTAS I** Resuscitation: immediate
- **CTAS II** Emergent: 15 minutes (time to physician assessment)
- **CTAS III** Urgent: 30 minutes (time to physician assessment)
- **CTAS IV** Less-Urgent: 60 minutes (time to physician assessment)
- **CTAS V** Non-Urgent: 120 minutes (time to physician assessment)

Those who developed the CTAS were clear that these times are not established standards of care and might not make sense for all facilities (for example, those without on site physician coverage).<sup>12</sup> However, they do allow for some comparisons across different facility types and even with other countries that are using the same assessment goals.

Analyses of the 2003–2004 NACRS data according to these goals suggest that most patients are seen within these times. But that’s not true for everyone. A higher proportion of those triaged as non-urgent (CTAS V) are seen within the proposed time (87% under 120 minutes) than those triaged as most severely ill (54% of CTAS I patients were seen in under 5 minutes). And, 10% of patients in this category waited 45 minutes or more for initial assessment by a physician. In Australia, where triage levels also use a five-level triage scale and assessment goals are the same, approximately 99% of patients visiting public hospital EDs who were triaged as “requiring resuscitation” were seen within the recommended time in 2003–2004. For other triage levels, the range was from 61% to 82% of patients.<sup>14</sup>

## Where Do We Go From Here?

Once treated in the ED, the majority of patients were discharged to their place of residence in 2003–2004. A smaller number were admitted to hospital. The likelihood of admission to hospital varied by both the ED volume and by CTAS level. A higher percentage of patients visiting high-volume or teaching hospital EDs were admitted, echoing the earlier finding that these EDs also tend to see higher proportions of patients triaged as most severe (CTAS I). Overall, those triaged as CTAS I had higher rates of admission (50%) than those triaged at any other level. Only about 3% of patients left before being seen by a physician, and fewer still either left against medical advice or were transferred. (See Appendix B for details.)

Similar patterns of discharge disposition were seen when Ontario-only data were compared to earlier data (2001–2002) from Alberta, with a few notable exceptions. In both provinces, deaths were very rare events (0.1%). However, Ontario ED visits were more likely to end in a hospital stay. Approximately 11% did so, while Alberta reported only 8% of admissions to hospital. And, Alberta reported higher rates of patients being discharged back to their place of residence.

In comparison, in the U.S., 12% of patients visiting EDs were admitted to hospital in 2002. Another 44% were referred to other physicians or to outpatient clinics. For approximately 8% of U.S. emergency department visits, no follow-up care was planned.<sup>17</sup>

## 27 Discharged From the ED

The table below shows the variety of ways in which patients' visits may end once arriving at the ED. The majority are discharged home. This is true in both Ontario and Alberta; however, Alberta did report a higher percentage of patients who are discharged back to their place of residence. On the other hand, Ontario reported a higher proportion of hospitalizations (11%) than did Alberta (8%). There were also some differences in the proportion of patients who left without being seen and who left without medical advice between the two provinces. Some of these differences may be explained by provincial differences in the severity of the conditions typically seen in the EDs.

| Disposition                 | Ontario* (2003–2004) |            | Alberta (2001–2002) |            |
|-----------------------------|----------------------|------------|---------------------|------------|
|                             | No.                  | %          | No.                 | %          |
| Returned to Residence       | 3,660,900            | 83.9       | 1,583,400           | 87.4       |
| Transfers                   | 28,600               | 0.7        | 21,200              | 1.2        |
| Left Without Being Seen     | 136,800              | 3.1        | 7,200               | 0.4        |
| Left Against Medical Advice | 30,200               | 0.7        | 41,600              | 2.3        |
| Admission to Hospital       | 475,600              | 10.9       | 146,100             | 8.0        |
| Death                       | 6,500                | 0.1        | 1,700               | 0.1        |
| Other                       | 25,400               | 0.6        | 11,100              | 0.6        |
| <b>Total</b>                | <b>4,364,000</b>     | <b>100</b> | <b>1,812,300</b>    | <b>100</b> |

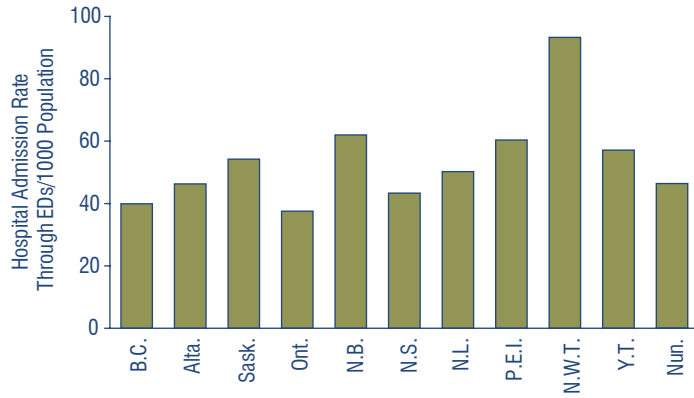
\* These data represent visits to 163 Ontario-based emergency departments.

Sources: Ontario: National Ambulatory Care Reporting System, CIHI; Alberta: Ambulatory Care in Alberta, ACCS Report, August 2004, Alberta Health and Wellness. Data reported are based on 2001–2002.

Admissions to hospital are influenced by both the number of people who come to the ED and by how likely they are to have to stay in hospital. As a result, hospital admission rates through EDs vary across Canada's provinces and territories.\* The Northwest Territories had the highest age-standardized rate of hospitalization (97/1000 population) through EDs in 2003–2004. Ontario had the lowest (38/1000 population).

## 28 ED Hospital Admission Rates Across Canada

Across Canada, age-standardized admissions rates to hospitals through EDs vary by province and territory. In 2003–2004, the Northwest Territories had a higher admission rate to hospital through EDs than any other province or territory.



**Note:** Population estimates for 2003 across Canada were provided by Statistics Canada. Age-standardized rates per population are standardized to the age distribution of the 1991 Canadian population. Comparable data are not currently available for Manitoba and Quebec, due to differences in how data are collected. Maternal conditions are excluded from this analysis.

**Source:** Discharge Abstract Database, CIHI.

\* Comparable data for Quebec and Manitoba are not available.



## Conclusion

Canada's emergency departments (EDs) handle more than 14 million patient visits each year. In total, more than a third of Canadian adults said that they had gone to an ED in the past two years in 2004. That's a higher rate than in Australia, New Zealand, the UK and the U.S. Canadians were also more likely to say that they could instead have been treated by their regular doctor if care had been available. Nearly one in five (18%) said so, about the same as in the U.S., but more than in other countries.

This report is the first in a series designed to understand who is using emergency departments and how long they spend waiting for and receiving care once there. It includes new data and analyses drawn from the pockets of information on emergency department care that exist in Canada and around the world. For example, in this report we have shown that while lengths of stay in EDs vary according to time of day, volume of ED visits and the severity of patients' conditions, not all of these factors play a role in the time spent waiting to see a physician once registered or triaged. But severity of illness does matter, and the sickest patients have the shortest average waiting times. Overall, physicians saw just over half of all patients with a cardiac arrest, major trauma, or other condition that represents a threat to life or carries an immediate risk of deterioration within five minutes of their arrival in the ED in 2003–2004.\* On the other hand, the report also shows that that 1 in 10 patients with these types of health problems waited 45 minutes or longer to be seen.

\* These data represent ED visits to 163 Ontario-based emergency departments, as well as participating sites located in Nova Scotia (no. = 4), British Columbia (no. = 3) and Prince Edward Island (no. = 1).



In these and other areas, our information gaps are narrowing. Yet there is still much that we don't know. For example, how have ED use and wait times changed over time? Are they the same across the country? What factors affect ED wait times, and how does care in the ED affect other parts of the health system?

While some information is available, these and many other questions remain unanswered. The prospects of getting answers are, in some cases, very good. A number of initiatives to fill information gaps are underway, both within individual jurisdictions and at a pan-Canadian level. In future reports, we hope to build on these efforts and contribute to strengthening our collective knowledge base.



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# Appendix A—Technical Notes

## Inclusion and Exclusion Criteria for Analytical Sample

### Inclusion Criteria:

All emergency visits: emergency visits were identified through MIS functional code that starts with “71310,” “72310” or “73310,” and scheduled ED visit indicator equal to “no” (visit was not scheduled in advance).

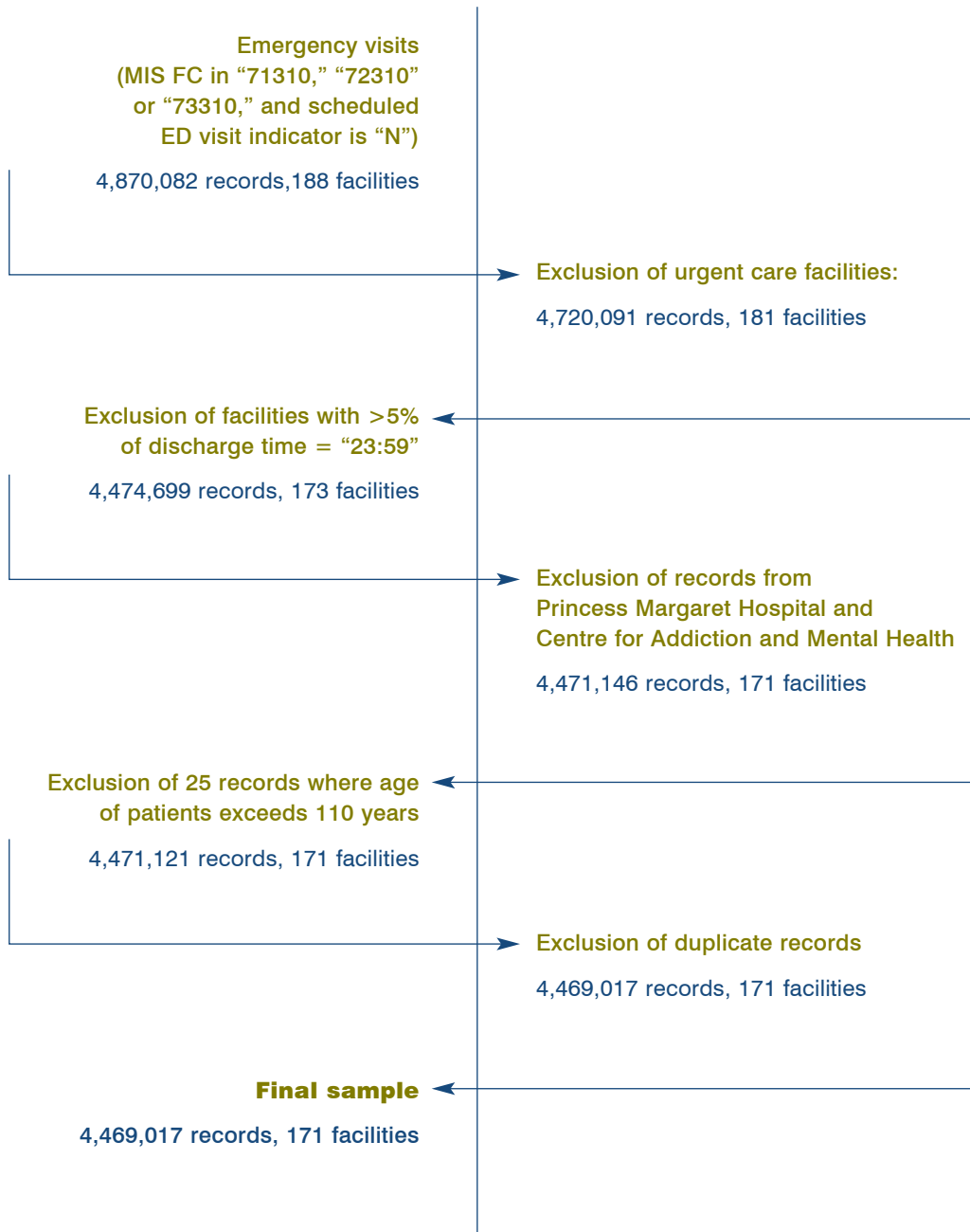
### Exclusion Criteria:

1. Seven facilities providing only urgent care service (that is, not open 24 hours a day, seven days a week) were excluded.
2. Data quality for records provided by each of the remaining facilities was checked. Eight facilities where the number of records with an unknown time of visit completed (that is, time recorded as 23:59, which is the default value when this time is unknown) exceeded 5% were excluded.
3. Additionally, two other facilities that serve specific populations that were different from the rest of the sample were excluded. These facilities are the Centre for Addiction and Mental Health and Princess Margaret Hospital (cancer care centre).
4. Twenty-five records where patients’ age exceeded 110 years were excluded.
5. All remaining records were checked for possible duplicates, and 2,104 duplicate records (0.04%) were removed.



## Flow Chart: Analytical Sample

This flow chart documents step by step how inclusion and exclusion criteria shaped the sample of records used for this report.



## Variable Calculations and/or Definitions

### Canadian Triage and Acuity Scale (CTAS)

CTAS is one measure of a patient's priority for treatment and an indirect estimator of the symptom severity on arrival to the ED developed by Canadian Association of Emergency Physicians. The urgency or need for ED treatment decreases as CTAS scores increase. The CTAS levels used in NACRS are 1) resuscitation required, 2) emergent care required, 3) urgent care required, 4) less-urgent care required and 5) non-urgent care required.

### Emergency Department Length of Stay (EDLOS)

The total time spent by a patient in an emergency department from time of registration or triage (whichever occurs first) to the time of visit completion.

#### Methodology of Calculation:

EDLOS is calculated as the difference between the start (triage or registration) and the end of the visit in minutes.

#### Notes:

In cases of visits that led to hospital admission, discharge time recorded in NACRS does not necessarily correspond to the patient's actual transfer to the ward or intensive care unit (ICU). When calculating ED LOS, patients who left without being seen were excluded, since their departure time may not always be recorded correctly.

### Time to Physician Initial Assessment (Time to PIA)

The time spent by a patient in an emergency department from time of registration or triage (whichever occurs first) to the time of initial physician assessment.

#### Methodology of Calculation:

Time of either registration or triage, depending which occurs first, is considered as the start of the visit. Time to PIA is calculated as the difference in minutes between the start of the visit and the time of initial physician assessment.

#### Notes:

Physician initial assessment times were not recorded for patients who left without being seen by a physician or for patients assessed by health care providers other than a physician. These records were excluded from the sample. A small number of records where physician assessment time was more than one hour earlier than the start of the visit time were excluded from the analysis due to the high probability of physician initial assessment time being misrecorded. When physician assessment time was less than one hour earlier than the start of the visit, time to PIA was set to zero.



## Classification of Facilities

Based on the distribution of annual volume of visits by facility, and similar to other reports, facilities were categorized by volume into low, medium and high.

- **Low-Volume Facilities:** emergency departments with annual number of emergency visits less than 15,000
- **Medium-Volume Facilities:** emergency departments with annual number of emergency visits between 15,000 and 30,000
- **High-Volume Facilities:** emergency departments with annual number of emergency visits more than 30,000

Additionally, the following types of facilities were categorized separately:

- **Teaching Facilities:** emergency departments of hospitals that are listed as members of Association of Academic Healthcare Organizations (ACAHO) or Council of Academic Hospitals in Ontario (CAHO), including pediatric hospitals.
- **Pediatric Facilities:** emergency departments of hospitals that are designated pediatric care hospitals.
- **Urgent Care Centres:** facilities that provide urgent care, but are not open seven days a week and 24 hours a day.

## Visit Disposition

- **Discharge to Place of Residence:** patient is discharged to his or her place of residence, which could be a private home or a nursing, retirement, or chronic care facility.
- **Left Without Being Seen:** patient is registered and/or triaged, but left prior to being seen by a health care provider.
- **Left Against Medical Advice:** patient is triaged, registered and assessed by a health care provider, but leaves without treatment or, if treatment was initiated, leaves against medical advice before the treatment is completed.
- **Admission Into Hospital:** patient is admitted to the reporting facility in the capacity of an inpatient, critical care patient, or directly to surgery or another unit directly from the ED.
- **Transfer:** patient is transferred to another acute care facility directly from the reporting ED.
- **Death:** patient died on or after arrival in the ED.
- **Other:** other emergency department visit outcome not specified above.

## Arrival by Ambulance

Indicates cases where a patient was brought to an emergency department by ground, air, or water ambulance or a combination of transportation media. Ambulances include all licensed ambulances, inter-facility transfer service units and air and water ambulances having the capability of providing medical intervention to a service recipient en-route to the destination.







# Appendix B—Tables

- 1** Number of ED Visits by Facility Type
- 2** Age and Sex Distribution of Patients Arriving by Ambulance to EDs
- 3** Times Associated With Care in EDs by CTAS Level
- 4** Time Spent in the ED by the Severity of the Condition
- 5a** Facilities by Local Health Integration Network (LHIN) Regions
- 5b** Age and Sex Distribution of Patients Visiting EDs by Local Health Integration Networks (LHINs)
- 6** Length of Stay in EDs by Facility Type
- 7** ED Visit Discharge Disposition by Patient Severity
- 8** ED Visit Conclusion by Facility Type



## 1 Number of ED Visits by Facility Type

| Facility Group                         | No. of Facilities | % of Facilities | No. of Visits    | % of Visits | Average Visits/Day |
|--|-------------------|-----------------|------------------|-------------|--------------------|
| Pediatric Hospital EDs                 | 3                 | 1.8             | 121,600          | 2.7         | 111                |
| Community Hospital EDs (Low Volume)    | 61                | 35.7            | 489,600          | 11          | 22                 |
| Community Hospital EDs (Medium Volume) | 48                | 28.1            | 1,068,400        | 23.9        | 61                 |
| Community Hospital EDs (High Volume)   | 43                | 25.1            | 2,095,500        | 46.9        | 133                |
| Teaching Hospital EDs                  | 16                | 9.4             | 693,900          | 15.5        | 119                |
| <b>Total</b>                           | <b>171</b>        | <b>100</b>      | <b>4,469,000</b> | <b>100</b>  | <b>72</b>          |

**Notes:**

Low volume = <15,000 annual visits  
 Medium volume = 15,000 to 30,000 annual visits  
 High volume = >30,000 annual visits  
 Facilities were included in this report according to the definition of the emergency departments referred to in the text.  
 These data represent visits to 163 Ontario-based emergency departments, as well as participating sites located in Nova Scotia (no. = 4), British Columbia (no. = 3) and Prince Edward Island (no. = 1).  
**Source:** NACRS, 2003-2004, CIHI.

## 2 Age and Sex Distribution of Patients Arriving by Ambulance to EDs

|         | Mode of Arrival     | 0-4            |            | 5-18           |            | 19-45          |            | 46-65          |            | 66-85          |            | 85+           |            | TOTAL            |
|---------|---------------------|----------------|------------|----------------|------------|----------------|------------|----------------|------------|----------------|------------|---------------|------------|------------------|
|         |                     | No.            | %          | No.            | %          | No.            | %          | No.            | %          | No.            | %          | No.           | %          |                  |
| MALES   | Ambulance           | 9,200          | 3.8        | 21,800         | 5.9        | 71,900         | 8.9        | 62,200         | 13.8       | 79,100         | 26.3       | 21,600        | 47.6       | 265,900          |
|         | Self-Transportation | 232,700        | 96.2       | 348,600        | 94.1       | 736,200        | 91.1       | 387,700        | 86.2       | 221,900        | 73.7       | 23,700        | 52.4       | 1,950,800        |
|         | <b>Total</b>        | <b>242,000</b> | <b>100</b> | <b>370,400</b> | <b>100</b> | <b>808,100</b> | <b>100</b> | <b>450,000</b> | <b>100</b> | <b>301,100</b> | <b>100</b> | <b>45,300</b> | <b>100</b> | <b>2,216,700</b> |
| FEMALES | Ambulance           | 6,900          | 3.6        | 19,100         | 5.8        | 69,000         | 8.0        | 54,500         | 12.3       | 95,000         | 28.2       | 46,500        | 54.8       | 291,000          |
|         | Self-Transportation | 187,300        | 96.4       | 311,500        | 94.2       | 793,500        | 92.0       | 388,800        | 87.7       | 241,700        | 71.8       | 38,300        | 45.2       | 1,961,000        |
|         | <b>Total</b>        | <b>194,200</b> | <b>100</b> | <b>330,500</b> | <b>100</b> | <b>862,500</b> | <b>100</b> | <b>443,300</b> | <b>100</b> | <b>336,700</b> | <b>100</b> | <b>84,800</b> | <b>100</b> | <b>2,252,100</b> |

**Note:** These data represent visits to 163 Ontario-based emergency departments, as well as participating sites located in Nova Scotia (no. = 4), British Columbia (no. = 3) and Prince Edward Island (no. = 1).  
**Source:** NACRS, 2003-2004, CIHI.

## 3 Times Associated With Care in EDs by CTAS Level

| CTAS Level               | ED Length of Stay (min) |      |        |      |      | Time to Physician Initial Assessment (min) |      |        |      |      | Time From Physician Assessment to Discharge (min) |      |        |      |      |
|--------------------------|-------------------------|------|--------|------|------|--|------|--------|------|------|---|------|--------|------|------|
|                          | 10th                    | 25th | Median | 75th | 90th | 10th                                       | 25th | Median | 75th | 90th | 10th  | 25th | Median | 75th | 90th |
| <b>I (Resuscitation)</b> | 16                      | 74   | 161    | 304  | 544  | 0  | 0    | 5      | 18   | 45   | 13  | 65   | 155    | 303  | 560  |
| <b>II (Emergent)</b>     | 85                      | 143  | 241    | 403  | 638  | 7  | 18   | 36     | 70   | 129  | 38  | 96   | 190    | 355  | 605  |
| <b>III (Urgent)</b>      | 60                      | 106  | 190    | 320  | 510  | 14   | 30   | 60     | 113  | 186  | 13  | 35   | 110    | 229  | 440  |
| <b>IV (Less Urgent)</b>  | 33                      | 57   | 100    | 173  | 275  | 12   | 25   | 54     | 101  | 163  | 5   | 10   | 30     | 80   | 175  |
| <b>V (Non-Urgent)</b>    | 21                      | 38   | 67     | 120  | 194  | 6  | 17   | 40     | 80   | 135  | 5   | 10   | 20     | 45   | 105  |

**Notes:** These data represent visits to 163 Ontario-based emergency departments, as well as participating sites located in Nova Scotia (no. = 4), British Columbia (no. = 3) and Prince Edward Island (no. = 1).  
 Length of stay in the ED is defined as the time spent by a patient in an emergency department from time of registration or triage (whichever occurs first) to the time of discharge.  
 Time to physician initial assessment is defined as the time spent by a patient in an emergency department from time of registration or triage (whichever occurs first) to the time of first physician assessment.  
 Time from physician assessment to discharge is defined as the time spent by a patient in an emergency department after being seen by the physician to the time they are discharged.  
**Source:** NACRS FY 2003-2004, CIHI.

#### 4 Time Spent in the ED by the Severity of the Condition

| ED Length of Stay | Canadian Triage and Acuity Scale (CTAS) |            |               |            |                |            |                  |            |                  |            |                |            |
|-------------------|---|------------|---------------|------------|----------------|------------|------------------|------------|------------------|------------|----------------|------------|
|                   | Overall                                 |            | I             |            | II             |            | III              |            | IV               |            | V              |            |
|                   | No.                                     | %          | No.           | %          | No.            | %          | No.              | %          | No.              | %          | No.            | %          |
| 0–1 Hours         | 906,500                                 | 20.9       | 4,500         | 21.0       | 17,500         | 4.8        | 142,900          | 9.5        | 484,900          | 26.4       | 256,600        | 42.8       |
| 1–2 Hours         | 1,119,400                               | 25.9       | 3,700         | 17.3       | 49,100         | 13.5       | 295,000          | 19.6       | 579,300          | 31.6       | 192,200        | 32.0       |
| 2–4 Hours         | 1,245,800                               | 28.8       | 6,000         | 27.8       | 113,500        | 31.2       | 492,700          | 32.7       | 519,800          | 28.3       | 113,800        | 19.0       |
| 4–8 Hours         | 756,800                                 | 17.5       | 4,600         | 21.4       | 117,700        | 32.3       | 404,400          | 26.8       | 200,700          | 10.9       | 29,300         | 4.9        |
| 8–12 Hours        | 174,200                                 | 4.0        | 1,300         | 6.2        | 37,300         | 10.2       | 102,700          | 6.8        | 28,900           | 1.6        | 4,000          | 0.7        |
| 12–24 Hours       | 99,400                                  | 2.3        | 1,000         | 4.6        | 22,400         | 6.2        | 57,400           | 3.8        | 15,900           | 0.9        | 2,700          | 0.4        |
| 24+ Hours         | 26,000                                  | 0.6        | 400           | 1.7        | 6,200          | 1.7        | 13,500           | 0.9        | 4,800            | 0.3        | 1,200          | 0.2        |
| <b>Total*</b>     | <b>4,328,000</b>                        | <b>100</b> | <b>21,600</b> | <b>100</b> | <b>363,800</b> | <b>100</b> | <b>1,508,700</b> | <b>100</b> | <b>1,834,300</b> | <b>100</b> | <b>599,600</b> | <b>100</b> |

**Notes:** These data represent visits to 163 Ontario-based emergency departments, as well as participating sites located in Nova Scotia (no. = 4), British Columbia (no. = 3) and Prince Edward Island (no. = 1).

\* Total visits are different from overall sample, as they exclude those who left without being seen and those with missing CTAS scores.

**Source:** NACRS, 2003–2004, CIHI.

#### 5a Facilities by Local Health Integration Network (LHIN) Regions

| LHIN                             | No. of Visits    | % of Visits |
|----------------------------------|------------------|-------------|
| Erie–St. Clair                   | 280,300          | 6.4         |
| South West                       | 494,100          | 11.3        |
| Waterloo Wellington              | 199,500          | 4.6         |
| Hamilton Niagara Haldimand Brant | 463,100          | 10.6        |
| Central West                     | 161,900          | 3.7         |
| Mississauga Halton               | 186,100          | 4.3         |
| Toronto Central                  | 261,600          | 6.0         |
| Central                          | 310,900          | 7.1         |
| Central East                     | 529,900          | 12.1        |
| South East                       | 138,700          | 3.2         |
| Champlain                        | 520,600          | 11.9        |
| North Simcoe Muskoka             | 217,600          | 5.0         |
| North East                       | 416,100          | 9.5         |
| North West                       | 183,600          | 4.2         |
| <b>Total</b>                     | <b>4,364,000</b> | <b>100</b>  |

**Notes:** These data represent visits to 163 Ontario-based emergency departments.

LHIN boundaries are obtained from Ontario Ministry of Health—data access, from [http://www.health.gov.on.ca/transformation/lhin/lhinmap\\_mn.html](http://www.health.gov.on.ca/transformation/lhin/lhinmap_mn.html).

**Source:** NACRS, 2003–2004, CIHI.

## 5b Age and Sex Distribution of Patients Visiting EDs by Local Health Integration Networks (LHINs)

| LHIN                             | Overall No. of Visits | Utilization Rate* | Sex  |      | 0-4    |      | 5-18   |      | 19-45   |      | 46-65   |      | 66-85  |      | 85+    |     |
|----------------------------------|-----------------------|-------------------|------|------|--------|------|--------|------|---------|------|---------|------|--------|------|--------|-----|
|                                  |                       |                   | M    | F    | No.    | %    | No.    | %    | No.     | %    | No.     | %    | No.    | %    | No.    | %   |
|                                  |                       |                   | %    | %    | No.    | %    | No.    | %    | No.     | %    | No.     | %    | No.    | %    | No.    | %   |
| Erie-St. Clair                   | 280,300               | 26.1              | 48.7 | 51.3 | 27,100 | 9.7  | 41,800 | 14.9 | 108,700 | 38.8 | 54,700  | 19.5 | 39,900 | 14.2 | 8,000  | 2.8 |
| South West                       | 494,100               | 28.0              | 50.0 | 50.0 | 53,400 | 10.8 | 89,700 | 18.1 | 176,200 | 35.7 | 95,900  | 19.4 | 66,200 | 13.4 | 12,800 | 2.6 |
| Waterloo Wellington              | 199,400               | 19.9              | 50.0 | 50.0 | 19,200 | 9.6  | 29,100 | 14.6 | 80,700  | 40.5 | 37,200  | 18.7 | 27,700 | 13.9 | 5,500  | 2.7 |
| Hamilton Niagara Haldimand Brant | 463,100               | 23.3              | 50.2 | 49.8 | 40,100 | 8.6  | 67,700 | 14.6 | 173,500 | 37.5 | 93,000  | 20.1 | 73,200 | 15.8 | 15,600 | 3.4 |
| Central West                     | 161,900               | 17.7              | 51.2 | 48.8 | 17,600 | 10.8 | 23,700 | 14.7 | 66,700  | 41.2 | 31,300  | 19.3 | 18,900 | 11.7 | 3,800  | 2.3 |
| Mississauga Halton               | 186,000               | 16.2              | 50.3 | 49.7 | 19,900 | 10.7 | 27,900 | 15.0 | 73,700  | 39.6 | 36,200  | 19.4 | 23,300 | 12.5 | 5,000  | 2.7 |
| Toronto Central                  | 261,600               | 15.3              | 51.1 | 48.9 | 35,700 | 13.7 | 34,300 | 13.1 | 93,000  | 35.5 | 50,000  | 19.1 | 38,900 | 14.9 | 9,800  | 3.8 |
| Central                          | 310,900               | 15.4              | 49.5 | 50.5 | 29,600 | 9.5  | 44,200 | 14.2 | 118,700 | 38.2 | 60,200  | 19.4 | 47,100 | 15.1 | 11,200 | 3.6 |
| Central East                     | 529,900               | 20.4              | 49.9 | 50.1 | 41,300 | 7.8  | 76,500 | 14.4 | 204,100 | 38.5 | 111,000 | 21.0 | 80,000 | 15.1 | 16,900 | 3.2 |
| South East                       | 138,700               | 27.7              | 48.8 | 51.2 | 10,900 | 7.8  | 21,800 | 15.7 | 50,200  | 36.2 | 28,400  | 20.5 | 22,700 | 16.4 | 4,600  | 3.3 |
| Champlain                        | 520,600               | 23.5              | 48.6 | 51.4 | 54,200 | 10.4 | 86,500 | 16.6 | 190,400 | 36.6 | 102,700 | 19.7 | 71,600 | 13.8 | 15,100 | 2.9 |
| North Simcoe Muskoka             | 217,600               | 31.0              | 49.4 | 50.6 | 19,600 | 9.0  | 37,600 | 17.3 | 81,200  | 37.3 | 42,400  | 19.5 | 31,200 | 14.4 | 5,600  | 2.6 |
| North East                       | 416,100               | 36.1              | 48.2 | 51.9 | 31,500 | 7.6  | 65,300 | 15.7 | 153,600 | 36.9 | 94,400  | 22.7 | 61,600 | 14.8 | 9,600  | 2.3 |
| North West                       | 183,600               | 35.8              | 49.6 | 50.4 | 16,200 | 8.8  | 29,200 | 15.9 | 72,600  | 39.6 | 38,200  | 20.8 | 23,400 | 12.8 | 4,000  | 2.2 |

**Notes:** These data represent visits to 163 Ontario-based emergency departments. LHIN boundaries obtained from Ontario Ministry of Health—data access, from <[http://www.health.gov.on.ca/transformation/lhin/lhinmap\\_mn.html](http://www.health.gov.on.ca/transformation/lhin/lhinmap_mn.html)>  
 \*\*Utilization rates are based on the number of people who visited EDs located within LHINs divided by the population of the LHIN. Population estimates for each LHIN are based on the most updated estimates from Statistics Canada (July 2002). Utilization rates are age-standardized to the 1991 Canadian population.  
**Source:** NACRS, 2003-2004, CIHI.

## 6 Length of Stay in EDs by Facility Type

| ED Length of Stay | Pediatric      |            | Urgent Care    |            | Low Volume     |            | Medium Volume    |            | High Volume      |            | Teaching       |            |
|-------------------|----------------|------------|----------------|------------|----------------|------------|------------------|------------|------------------|------------|----------------|------------|
|                   | No.            | %          | No.            | %          | No.            | %          | No.              | %          | No.              | %          | No.            | %          |
| 0-1 Hour          | 10,800         | 9.1        | 46,200         | 31.1       | 229,100        | 47.8       | 330,600          | 31.8       | 289,900          | 14.4       | 46,100         | 6.9        |
| 1-2 Hours         | 29,900         | 25.2       | 53,700         | 36.2       | 139,600        | 29.1       | 326,900          | 31.4       | 497,700          | 24.7       | 125,300        | 18.7       |
| 2-4 Hours         | 45,900         | 38.7       | 38,000         | 25.6       | 76,700         | 16.0       | 260,800          | 25.1       | 644,400          | 31.9       | 218,000        | 32.5       |
| 4-8 Hours         | 24,300         | 20.5       | 9,200          | 6.2        | 24,100         | 5.0        | 91,500           | 8.8        | 435,500          | 21.6       | 181,400        | 27.0       |
| 8-12 Hours        | 4,300          | 3.6        | 800            | 0.5        | 4,800          | 1.0        | 16,500           | 1.6        | 93,700           | 4.6        | 54,800         | 8.2        |
| 12-24 Hours       | 3,000          | 2.5        | 300            | 0.2        | 4,000          | 0.8        | 10,400           | 1.0        | 46,500           | 2.3        | 35,500         | 5.3        |
| 24+ Hours         | 500            | 0.4        | 100            | 0.1        | 1,100          | 0.2        | 3,200            | 0.3        | 10,900           | 0.5        | 10,300         | 1.5        |
| <b>Total</b>      | <b>118,700</b> | <b>100</b> | <b>148,200</b> | <b>100</b> | <b>479,300</b> | <b>100</b> | <b>1,039,900</b> | <b>100</b> | <b>2,018,700</b> | <b>100</b> | <b>671,500</b> | <b>100</b> |

**Notes:** These data represent visits to 163 Ontario-based emergency departments, 7 urgent care facilities and participating sites located in Nova Scotia (no. = 4), British Columbia (no. = 3) and Prince Edward Island (no. = 1).  
 Low volume = <15,000 annual visits  
 Medium volume = 15,000 to 30,000 annual visits  
 High volume = >30,000 annual visits  
 Urgent care facilities were defined as those centres providing less than 24-hour, 7-day-a-week care and do not generally care for patients arriving by ambulance (mental health facilities excluded).  
**Source:** NACRS, 2003-2004, CIHI.

## 7 ED Visit Discharge Disposition by Patient Severity

| Disposition                 | Overall          |            | Canadian Triage and Acuity Scale (CTAS) |            |                |            |                  |            |                  |            |                |            |
|-----------------------------|------------------|------------|---|------------|----------------|------------|------------------|------------|------------------|------------|----------------|------------|
|                             |                  |            | I                                       |            | II             |            | III              |            | IV               |            | V              |            |
|                             | No.              | %          | No.                                     | %          | No.            | %          | No.              | %          | No.              | %          | No.            | %          |
| Returned to Residence       | 3,752,000        | 84.0       | 4,400                                   | 20.5       | 218,600        | 59.6       | 1,196,800        | 77.1       | 1,748,700        | 91.9       | 583,600        | 93.4       |
| Transfers                   | 29,400           | 0.7        | 1,300                                   | 5.9        | 7,100          | 2.0        | 14,700           | 0.9        | 5,500            | 0.3        | 800            | 0.1        |
| Left Without Being Seen     | 141,000          | 3.2        | 0                                       | 0.1        | 3,000          | 0.8        | 42,900           | 2.8        | 68,400           | 3.6        | 25,400         | 4.1        |
| Left Against Medical Advice | 30,400           | 0.7        | 100                                     | 0.3        | 2,900          | 0.8        | 13,000           | 0.8        | 11,200           | 0.6        | 3,300          | 0.5        |
| Admissions                  | 483,800          | 10.8       | 10,900                                  | 50.2       | 131,500        | 35.9       | 270,900          | 17.5       | 61,300           | 3.2        | 9,300          | 1.5        |
| Death                       | 6,600            | 0.1        | 4,900                                   | 22.5       | 800            | 0.2        | 500              | 0.0        | 100              | 0.0        | 400            | 0.1        |
| Other                       | 25,700           | 0.6        | 100                                     | 0.5        | 2,800          | 0.8        | 12,900           | 0.8        | 7,600            | 0.4        | 2,300          | 0.4        |
| <b>Total</b>                | <b>4,469,000</b> | <b>100</b> | <b>21,600</b>                           | <b>100</b> | <b>366,800</b> | <b>100</b> | <b>1,551,600</b> | <b>100</b> | <b>1,902,700</b> | <b>100</b> | <b>625,000</b> | <b>100</b> |

**Note:** These data represent visits to 163 Ontario-based emergency departments, as well as participating sites located in Nova Scotia (no. = 4), British Columbia (no. = 3) and Prince Edward Island (no. = 1).  
**Source:** NACRS, 2003–2004, CIHI.

## 8 ED Visit Discharge Disposition by Facility Type

| Disposition                 | Pediatric      |            | Urgent Care    |            | Low Volume     |            | Medium Volume    |            | High Volume      |            | Teaching       |            |
|-----------------------------|----------------|------------|----------------|------------|----------------|------------|------------------|------------|------------------|------------|----------------|------------|
|                             | No.            | %          | No.            | %          | No.            | %          | No.              | %          | No.              | %          | No.            | %          |
| Returned to Residence       | 106,200        | 87.3       | 141,200        | 94.1       | 439,000        | 89.7       | 948,000          | 88.7       | 1,711,500        | 81.7       | 547,400        | 78.9       |
| Transfers                   | 600            | 0.5        | 2,600          | 1.7        | 5,500          | 1.1        | 9,200            | 0.9        | 8,700            | 0.4        | 5,400          | 0.8        |
| Left Without Being Seen     | 3,000          | 2.5        | 1,800          | 1.2        | 10,200         | 2.1        | 28,500           | 2.7        | 76,900           | 3.7        | 22,400         | 3.2        |
| Left Against Medical Advice | 400            | 0.3        | 500            | 0.4        | 2,600          | 0.5        | 5,700            | 0.5        | 16,400           | 0.8        | 5,400          | 0.8        |
| Admissions                  | 11,200         | 9.2        | 1,900          | 1.2        | 29,100         | 6.0        | 72,600           | 6.8        | 263,900          | 12.6       | 106,900        | 15.4       |
| Death                       | 0              | 0.0        | 0              | 0.0        | 600            | 0.1        | 1,300            | 0.1        | 3,500            | 0.2        | 1,300          | 0.2        |
| Other                       | 300            | 0.3        | 2,000          | 1.4        | 2,500          | 0.5        | 3,100            | 0.3        | 14,700           | 0.7        | 5,100          | 0.7        |
| <b>Total</b>                | <b>121,600</b> | <b>100</b> | <b>150,000</b> | <b>100</b> | <b>489,600</b> | <b>100</b> | <b>1,068,400</b> | <b>100</b> | <b>2,095,500</b> | <b>100</b> | <b>693,900</b> | <b>100</b> |

**Notes:** These data represent visits to 163 Ontario-based emergency departments, 7 urgent care facilities, as well as participating sites located in Nova Scotia (no. = 4), British Columbia (no. = 3) and Prince Edward Island (no. = 1).  
 Urgent care facilities were defined as those centres providing less than 24-hour, 7-day-a-week care and do not generally care for patients arriving by ambulance.  
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 Medium volume = 15,000 to 30,000 annual visits  
 High volume = >30,000 annual visits  
**Source:** NACRS, 2003–2004, CIHI.



