

**Waits in emergency departments are longer than international standards or ideal response times recommended by the Canadian Association of Emergency Physicians.**



# 2

chapter

## Waits for Emergency Department Care

Waits for Routine Care

Waits for Emergency Department Care

Waits for Acute Care

Waits for Specialized Care

Waiting Across the Continuum

Canadians make close to 16 million visits to emergency departments (EDs) each year, and more than 1 million result in inpatient hospital admission.<sup>1</sup> Potential waits for care can begin before people arrive in the ED, can persist when they are ready to leave and can exist at several points in between. These long waits can be more than an inconvenience to patients—they can have adverse effects on patient outcomes. Patients waiting longer in the ED are more likely to experience delays in the treatment of pain or suffering, to express higher dissatisfaction and to leave without receiving treatment.<sup>2</sup> From the system's perspective, patient flow through the ED is also a challenge. Waits in Canadian EDs are longer than in other countries. An international comparison of 11 countries<sup>3</sup> found that Canada had not only the highest percentage of people with at least one visit to the ED in the past two years (44%, 14 percentage points higher than the average) but also the highest percentage waiting for four hours or more before being treated (31%, 19 percentage points higher than the average).

Measuring the waits, exploring the factors that contribute to wait times, and understanding the reasons Canadians are seeking care in EDs can help improve the care experience for patients, providers, and for the system as a whole. CIHI's National Ambulatory Care Reporting System (NACRS) collects information on ED use in six provinces and one territory (Prince Edward Island, Nova Scotia, Ontario, Manitoba, Saskatchewan, Alberta, and Yukon), with varying participation rates. NACRS data is used in this chapter to understand how long patients spend in the ED and where some of the waits occur.

## Waits Before Entering the ED

A 9-1-1 call can be the starting point for emergency medical service (EMS). While there is no pan-Canadian data on how long patients wait for an ambulance to arrive, good provincial data is available. For example, the Ontario government tracks 9-1-1 and EMS response times and has created benchmarks to monitor performance for regions and municipalities. The target response time is 8 minutes for severe cases requiring resuscitation and 6 minutes for a call requiring a defibrillator.<sup>4</sup> Some evidence suggests that these targets may not always be met.<sup>5-7</sup> In British Columbia, the British Columbia Ambulance Service (BCAS) has set a target of less than 9 minutes for an ambulance to arrive on the scene in urban and metropolitan areas.<sup>8</sup> However, in 2009–2010, average response times ranged from almost 9.5 minutes (Vancouver Island) to nearly 11 minutes (Interior), and the percentage of calls responded to in less than 9 minutes ranged from 47% (Lower Mainland) to 61% (Vancouver Island).<sup>8</sup>

Once in the ambulance, a patient may also experience waits when arriving at the ED. (Data for 2010–2011 shows that approximately 12% of ED patients arrived by ambulance.) Upon arrival, the responsibility for patient care is transferred from ambulance staff to hospital staff. The time it takes for this to happen is called ambulance offload time. In Ontario, benchmarks proposed for ambulance offload time (based on industry best practice) suggest that 90% of patients should be seen by ED staff within 30 minutes of arriving at the hospital.<sup>9</sup> Ontario data for 2010–2011 showed that while the majority of patients (81%) were seen by ED staff within 30 minutes, 10% of patients waited 54 minutes or longer. Ambulance offload delays have been shown to affect not only how quickly treatment can be offered but also the availability of EMS to attend the next 9-1-1 call.

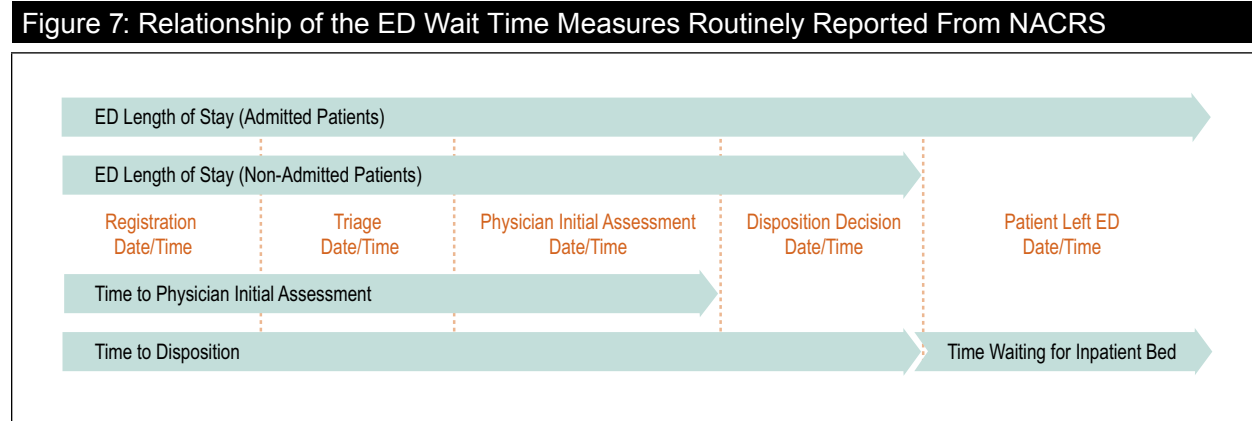
## Waits in the ED

Once the ED has assumed responsibility for a patient's care, that patient may experience waits for further assessment and treatment. Several measures, routinely calculated from NACRS data, can be helpful in understanding how long patients spend in the ED and where some of the waits occur:

- **ED Length of Stay:** Time from patient registration or triage to the time the main service provider (usually the ED physician) makes the decision to discharge the patient or to the time the patient is admitted. The remaining measures provide contextual understanding of what proportion of these hours represented time spent waiting.
- **Time Waiting for Physician Initial Assessment:** Time from patient registration or triage to the time a physician (or a nurse) first assesses the patient.
- **Time to Disposition:** Time from patient registration or triage to the time the main service provider makes a decision about the patient's care needs (that is, the decision to discharge or admit the patient).
- **Time Waiting for Inpatient Bed:** Time from making a decision to admit the patient to an acute care bed to the time the patient leaves the ED to go to the inpatient unit.



Figure 7 illustrates how these measures relate to one another.



**Source**

Canadian Institute for Health Information.

## Factors Determining ED Waits

Although a variety of factors can drive ED waits, experts have identified two that are key, both of which speak to the complexity of the patient's needs:

- Admission to inpatient care: In 2010–2011, about 1 in 10 ED visits resulted in inpatient admission.
- Seriousness of the patient's condition, measured by the Canadian Emergency Department Triage and Acuity Scale.<sup>i</sup> The five levels (in decreasing order of acuity) are as follows:<sup>10</sup>

**High Acuity**

- Level I (Resuscitation): Conditions that are threats to life or imminent risk of deterioration, requiring immediate aggressive interventions (e.g. cardiac arrest, major trauma or shock states).
- Level II (Emergent): Conditions that are a potential threat to life or limb function requiring rapid medical intervention or delegated acts (e.g. head injury, chest pain, gastrointestinal bleeding, abdominal pain with visceral symptoms, neonates with hyperbilirubinemia).
- Level III (Urgent): Conditions that could potentially progress to a serious problem requiring emergency intervention (e.g. mild moderate asthma or dyspnea, moderate trauma, vomiting and diarrhea in patients younger than age 2).

**Low Acuity**

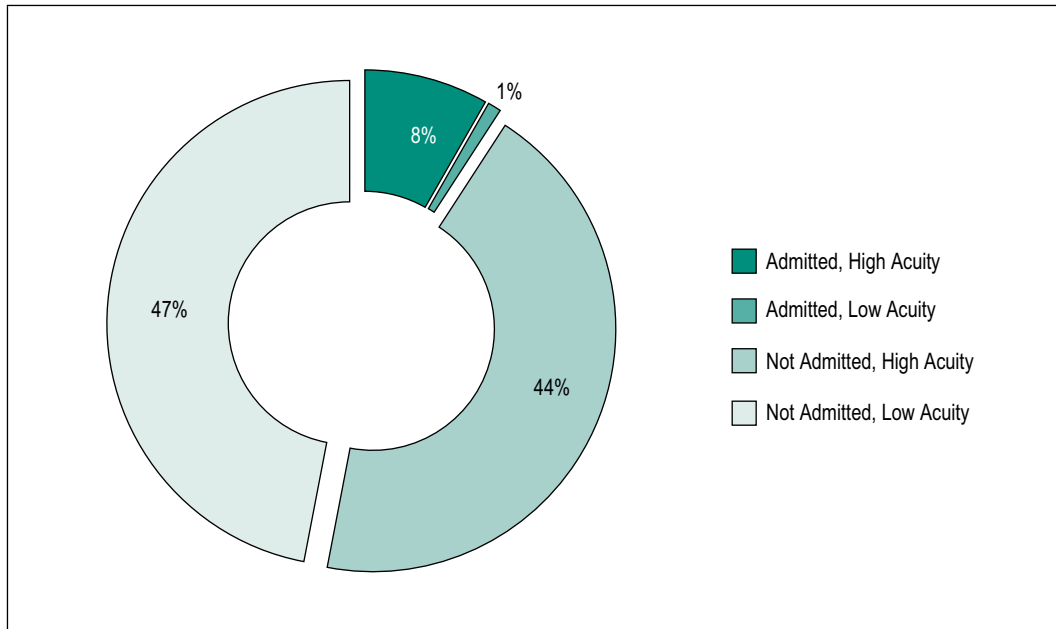
- Level IV (Less Urgent): Conditions related to patient age, distress or potential for deterioration or complications that would benefit from intervention or reassurance within 1 to 2 hours (e.g. urinary symptoms, mild abdominal pain, earache).
- Level V (Non-Urgent): Conditions in which investigations or interventions could be delayed or referred to other areas of the hospital or health care system (e.g. sore throat, menses, conditions related to chronic problems, psychiatric complaints with no suicidal ideation or attempts).

For ease of presentation and understanding, CTAS levels can be further combined to classify high acuity cases (levels I, II and III) and low acuity cases (levels IV and V).

i. The Canadian Emergency Department Triage and Acuity Scale (CTAS) was implemented in 1999. It aims to more accurately define patients' needs for timely care and provide operating objectives to standardize this care.

The relative share of ED patients that fall into these categories is presented in Figure 8.

**Figure 8: Relative Percentages of ED Patients Who Were Admitted or Not Admitted to Inpatient Care, by Acuity Level, 2010–2011**



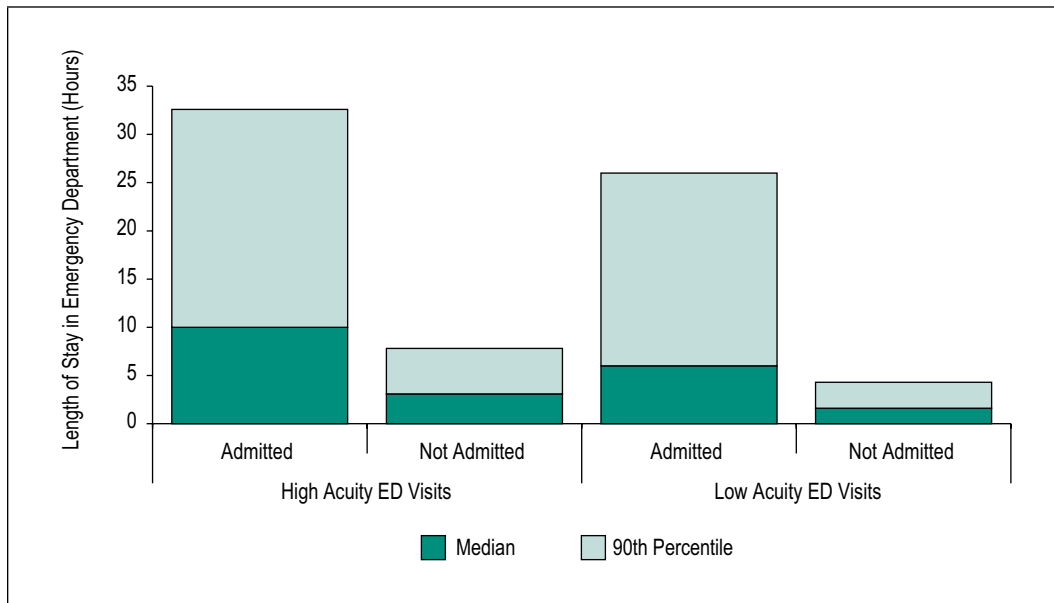
**Source**

National Ambulatory Care Reporting System, 2010–2011, Canadian Institute for Health Information.

The level of acuity and patient admission/non-admission affected ED wait times as follows:

- **ED Length of Stay:** In 2010–2011, the overall average length of stay in the ED was approximately 4.4 hours, with 90% of visits completed within 8 hours. Patients who were ultimately admitted spent far longer in the ED than those who were not admitted, and the length of stay was further exacerbated by the seriousness of their medical problem (see Figure 9).

**Figure 9: Overall Length of Stay in Emergency Departments (Median and 90th Percentile), by Admission Status and Acuity Level, 2010–2011**



**Source**

National Ambulatory Care Reporting System, 2010–2011, Canadian Institute for Health Information.

- Time Waiting for Physician Initial Assessment:** Overall and by CTAS level, waits to see a physician are longer than the ideal response times recommended by the Canadian Association of Emergency Physicians (CAEP). Table 2 presents a breakdown of these waits by CTAS level, outlining ideal response time targets—longer for lower acuity (that is, less serious) conditions—and how often they are met. While these targets are met for 50% of the low acuity cases (CTAS level V), they are not met for 90% of visits in any CTAS level.

**Table 2: A Comparison of Recommended and Actual Times From Triage to Physician Initial Assessment, by CTAS Level**

CTAS Level	Time to Physician Initial Assessment		
	Ideal Response Time*	Actual (Median)	Actual (90th Percentile)
<b>I (Resuscitation)</b>	Immediate (<5 minutes)	11 minutes	47 minutes
<b>II (Emergent)</b>	15 minutes or less	54 minutes	190 minutes
<b>III (Urgent)</b>	30 minutes or less	79 minutes	229 minutes
<b>IV (Less Urgent)</b>	60 minutes or less	66 minutes	188 minutes
<b>V (Non-Urgent)</b>	120 minutes or less	53 minutes	165 minutes

**Note**

\* Adapted from CTAS Implementation Guidelines.

**Source**

National Ambulatory Care Reporting System 2010–2011, Canadian Institute for Health Information.

The applicability of these ideal response times in certain situations has been questioned. For example, resuscitation efforts often begin before registration or triage. As well, physicians in rural hospitals have noted that the recommended physician response times are unrealistically short for rural EDs.<sup>11</sup> In urban EDs, physicians are physically present in the ED during their shift, but in rural EDs, the on-call physician may be at home, in the clinic or on nursing home rounds for much of the day.<sup>11</sup> CAEP has acknowledged that these response times are ideals (objectives) and not established care standards, with the overall intent to improve patient care through more appropriate triaging of patients.<sup>12</sup>

- **Time to Disposition Decision:** Wait times for disposition were largely driven by whether the patient was admitted or not. For 90% of admitted patients, a decision was made about their further care needs within 13 hours, approximately twice as long as for patients who were not admitted.

Appropriate use of ED services by patients with chronic conditions has received significant attention as potentially contributing to extended waits in the ED. Many of the complications associated with chronic conditions such as congestive heart failure and chronic obstructive pulmonary disease can be avoided or delayed through appropriate delivery of primary care.<sup>13</sup> For this reason, they are considered ambulatory care sensitive conditions (ACSCs).<sup>ii</sup>

As discussed in Chapter 1, although the majority of Canadians reported having a regular family physician, many reported having difficulty in accessing them on the same or next day. This has led to speculation that patients with chronic illnesses are turning instead to EDs for care that could otherwise be handled by their family doctor, in turn putting additional pressure on an already strained system.

However, data from 2010–2011 shows that patients presenting to the ED with an ACSC as their main problem represented a very small segment (4%) of ED users. Additionally, most patients (85%) in this group were assessed by ED staff at high acuity (CTAS levels I, II and III) compared with just 57% for overall ED visits. Visits for ACSC conditions were also more likely to result in admissions to acute inpatient care: 33% compared with just 10% of ED visits overall. The same pattern was found at all CTAS levels. This data suggests that patients seeking care in EDs for ACSCs did require hospital treatment. Whether or not different community care options could have prevented some of these complications is unknown.

## Waiting to Leave the ED

Once patients receive care in the ED, some may be discharged home, others admitted to hospital and still others discharged to further care settings. In all of these situations, waits can occur.

- **Time Waiting for Inpatient Bed:** Among patients who were admitted, half of high acuity patients were admitted to an inpatient bed within 3 hours, more than double the wait time experienced by low acuity patients. Within 24 hours, 90% of high acuity patients were admitted to an inpatient bed, 8 hours longer than the wait experienced by low acuity patients.

ii. In Canada, ACSC conditions are angina, asthma, COPD, epilepsy, diabetes, heart failure and pulmonary edema, and hypertension

While the above result appears counterintuitive, there are many factors that impact time waiting for an inpatient bed, including time needed for patient monitoring, diagnostic or laboratory test results or specialist consultation. Another reason ED patients may wait for admission is limited bed availability. One factor often identified as influencing bed availability is the number of alternate level of care (ALC) patients. ALC describes patients in acute care beds who are waiting to be moved to another care setting, most often long-term care or rehabilitation. Across Canada in 2010–2011, about 5% of inpatient hospitalizations were ALC-related.

An analysis of Ontario data for 2010–2011 did not show a strong relationship between ALC and ED waits. Other factors—such as a high number of ED visits (50,000 or more per year) and a higher proportion of high acuity patients (two-thirds of visits or more per year)—played bigger roles in influencing ED waits than did ALC.

The relationship between ALC and ED wait times may exist under specific circumstances or in certain settings. For example, for large and teaching hospitals in urban areas with a large proportion of high acuity (CTAS levels I, II, III) ED visits, analyses have revealed some evidence of a relationship with ALC. Specifically, time waiting for an inpatient bed in the EDs of those hospitals increased as the proportion of ALC days increased. The reason such hospitals have ALC days accounting for a greater percentage of their acute care length of stay may be due to clinical factors such as underlying patient mix. This will be explored further in Chapter 3.

## Wait Times in Quebec EDs

The Quebec Ministry of Health and Social Services established a targeted average wait time of 12 hours in the emergency department (before being transferred or admitted to other floors/facilities, to intermediate resources or discharged).<sup>14</sup> Unlike targets in other jurisdictions, this target takes into account only patients on a stretcher, who are typically in greater need of care. The challenge of meeting the 12-hour target is also due in part to increased ED volume. In 2010–2011, there were 111,802 additional visits to Quebec EDs compared with the number of visits the year before (a 3.4% increase). Other contributing factors include an increased workload in the ED due to a rising number of older patients (more than 25% of patients arriving on stretchers were age 75 or older) and a 4.6% increase in patients arriving by ambulance.<sup>14</sup>



## Strategies for Reducing Waits

In recent years, all jurisdictions across Canada have worked toward shortening ED wait times. Many success stories exist. Here are some examples:

### Financial Incentives

- In Ontario, the Emergency Room Wait Times Strategy was launched in 2008, designed to reduce total length of stay in the ED. Key principles included clear performance metrics, targets focused on improvements in the 90th percentile total ED length of stay and financial incentives providing dedicated funding to hospitals that demonstrated measurable reductions in ED wait times.<sup>15</sup> As of May 2012, the average ED wait time had improved by up to 14% from the 2008 baseline, with 86% of ED visits occurring within the target range.<sup>16</sup>
- Pay-for-Performance incentives exist for hospitals that reach efficiency targets or for physicians whose patients achieve health outcome goals. These incentives come in the form of quality bonuses, performance fee schedules or increased reimbursement rates for higher-quality providers.<sup>17</sup> In 2007, Vancouver Coastal Health launched a Pay-for-Performance model that rewarded hospitals for meeting ED length of stay targets. Between 2007 and 2008, improvements were achieved in a number of ED wait time targets, ranging from 13% to 24%.<sup>18</sup>

### Human Resource Policies

- In Nova Scotia, the Extended Care Paramedic (ECP) program involved Advanced Care Paramedics trained to address the needs of nursing home patients (geriatric assessment, management and skills such as suturing and blood draws) in the Capital District Health Authority. A single paramedic was on duty seven days per week from 9 a.m. to 9 p.m., supported by an Emergency Health Services (EHS) Medical Oversight Physician. After 67 weeks, 961 nursing home calls were made. Of these, 74% were treated on site, 23% had transportation arranged to minimize wait times and only 3% required immediate transfer. The program's success has led to the creation of a framework and evaluation to roll out the program province-wide.<sup>19-21</sup>
- In August 2008, Toronto Emergency Medical Services (EMS) implemented an EMS Offload Nurse program, which centred on a dedicated offload nurse having responsibility for the care of EMS patients until they are treated in the ED. In December 2007, the average offload time was 61.2 minutes; one year later, it had dropped to 51.9 minutes. For Toronto EMS, this equates to three extra ambulances available each hour.<sup>22</sup>



## Technology, Patient Flow

- The Health Quality Council in Saskatchewan developed a computer simulation model that examined a layout redesign for EDs in Regina. This model investigated the impact of designating a special area of the ED for less critical patients—rather than occupying beds in the main ED—and resulted in a two-week pilot in Regina General Hospital and Pasqua Hospital EDs. Considerable improvements were observed in the typical time from patients arriving in the ED to physician assessment (at Pasqua, from 63 to 35 minutes) and in the percentage of patients leaving the ED before being assessed by a physician (at Pasqua, from 8.8% to 2.3%). Patient and staff satisfaction also improved.<sup>23</sup>
- Alberta Health Services began the Emergency to Home: A Seniors Journey to the Right Care initiative in early 2010. With pilot sites in Edmonton, Calgary and Red Deer, the program was aimed at reducing the number of avoidable ED visits and unnecessary hospital admissions for seniors (who accounted for up to 20% of all ED visits provincially).<sup>24</sup> Seniors in the ED were assessed and cared for by emergency and home care staff, along with a care coordinator, and were safely discharged to home care and other community supports.<sup>24</sup> Within one year of implementation, 17% of seniors (up from 8%) were connected with home care programs in their community to better manage their health needs, and significant reductions in their acute admissions were observed (up to 50% in Red Deer, for example), enabling others to have more timely access to emergency care services.<sup>24, 25</sup> Due to its success, the initiative was expanded into other areas (Fort McMurray, Ponoka, Wetaskiwin, Grande Prairie, and Medicine Hat, as well as additional sites in Edmonton) in the fall of 2011.<sup>24, 25</sup>

## Conclusion

This chapter described time spent in Canada's emergency departments. In 2010–2011, most ED visits were completed in 8 hours or less. Patients who were admitted and of higher acuity had the longest overall length of stay. Even after adjusting for seriousness of their condition, most patients waited longer to see a physician than suggested by CAEP's ideal response times. Additionally, survey data shows that ED wait times in Canada are long compared with those in other countries. Moving forward, as pan-Canadian data collection increases, the quality and understanding of that data will likely improve, giving rise to an increase in number and quality of jurisdictional comparisons.

Ambulatory care sensitive conditions and alternate level of care are two of the most often cited factors related to long waits in EDs. However, current analyses have identified that most ED visits where patients were seeking care for ACSCs were likely appropriate. Further, it appears that factors such as the volume of ED cases and share of high acuity patients were better predictors of ED wait times than were any of the examined measures of the impact of ALC stays. The next chapter will delve further into ALC and other waits experienced in the acute care setting.

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