



Promoting and improving patient safety and health service quality across Alberta



# Urban and Regional Emergency Department Patient Experience Report 2009

**Section A: Overall Results** 

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# **Section A: Overall Results**

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#### 1.0 Executive Summary

#### Overview

Using the 2007 results as a baseline, the purpose of the 2009 study was to monitor changes in the performance of twelve urban and regional emergency department sites with the greatest crowding pressures, longest wait times, and poorest patient experience. The mail survey was conducted with a sample of patients who visited emergency departments between March 15 and 28, 2009 and achieved an overall raw response rate of 45% (46% in 2007). The margin of error for all sites combined is under 1.5%.

As in 2007, the questionnaire was based on the British Healthcare Commission Survey, which was thoroughly validated both in Britain and in Alberta prior to use. The rigorous survey methodology of 2007 was replicated in 2009, with similar response rates and survey samples. The majority of the 2007 analysis is repeated with comparisons between the two years at the combined and site levels. Samples were further assessed from the perspective of periodic variation over time attributable to such things as influenza.<sup>1</sup>

Emergency departments are often seen as a barometer for health system performance. Emergency departments reflect the success of effectively managing patients within primary healthcare, as well as the transition of seriously ill patients into acute care hospitals and beyond into continuing care. This 2009 study was conducted at the beginning of the major restructuring of Alberta's healthcare system, and can serve as a timely baseline to measure the impact of these significant changes.

#### Reasons for visiting an emergency department

About 4 in 10 respondents reported they attended the emergency department because it was the only choice available at the time. About 5 in 10 (46% in 2007 and 48% in 2009) visited the emergency department because it was the best place to deal with their medical problem; this difference between years is statistically significant.

- For 78% of respondents, self rated urgency is within 1 category of their Canadian Triage and Acuity Scale (CTAS) score.
  - 20% of patients in the two most urgent CTAS categories, CTAS I and II, self rated their problem as not urgent.
- About 6 in 10 respondents (59%) stated that the medical problem that brought them to the emergency department was for new symptoms; either a *new illness or condition* (32%) or *new injury or accident* (27%).
- Almost 1 in 4 (25%) said that the medical problem that brought them to the emergency department was related to a chronic illness, either for a worsening of their condition (22%) or for routine care of that condition (3%).
- About 1 in 3 respondents (35%) were advised to go to the emergency department by a health care professional, most often their personal family doctor (14%) or a Health Link nurse (8%).

<sup>&</sup>lt;sup>1</sup> Multivariate analysis of year and site effects, parallel study of longitudinal emergency department volumes and wait times, and examination of influenza data for the respective time periods suggests strongly that the survey samples at the pooled level are representative and that changes in results between years cannot be dismissed as "sampling error", or point in time variation as a consequence of such things as seasonal influenza. The potential for point in time variability is greater at the individual site level.



#### **Key Findings**

#### **Overall rating of care**

For the 12 sites combined, the overall rating of care does not change significantly between 2007 and 2009. However, site specific results do change from year to year:

- For Northern Lights Regional Health Centre, the proportion of respondents rating overall care as only fair to very poor is significantly reduced in 2009 as compared with 2007. Multivariate analysis specifically for this site suggests that improvement in the overall rating is a consequence of better performance in specific factors rather than changes in things such as demographics or volume of patients.
- Conversely, there are deteriorations in the overall rating of care from 2007 to 2009 for several other sites (Red Deer Regional, University of Alberta and Grey Nuns hospitals), although these changes are not statistically significant. Significant differences are observed for a number of specific items.

#### Drivers of the overall rating of care are consistent between years

Multivariate analysis by year shows stable relationships between both uncontrollable factors (such as age, gender and health status) and key performance factors (composite variables) with the overall rating. Drivers of the overall rating are virtually the same for both the 2007 and 2009 surveys.

- While long wait times have a strong negative relationship to the overall rating, staff care and communication issues and pain management have a greater impact on the overall rating of care.
- When combined secondary effects of wait time on other performance variables are considered, wait time becomes the third most important factor, followed by issues related to respect.
- Cleanliness and discharge information are also significant but not as important.

The maintenance of staff care and communication aspects of patient experience in a context of deteriorating wait times over time is a testament to the dedication of front line staff to provide good care to patients. Given the measured effects of wait times on most aspects of care this has helped to maintain the overall rating of care.

#### Wait times and crowding

Despite many efforts to improve wait times (access) in these busy emergency departments, self-reported wait times in the 2009 report are worse than those of 2007. Overcrowding in emergency departments in Alberta as throughout the rest of Canada increases the risk of poor patient experience and other potentially negative outcomes, and has serious implications for the quality of the interaction between staff and patients. The data shows that increased wait times compound the effects of the other composite factors. For example, negative experience of communication, respect and pain management is exacerbated when patients have longer wait times. Overall, people who waited longer (especially to see the physician) were less happy with their emergency department experience.

The following are the combined results for facilities included in both years:

 Median time to physician for sampled patients calculated from emergency department information system data increased significantly from 77 minutes in the 2007 survey to 95 minutes in 2009.



- Total median length of stay for sampled patients calculated from emergency department information system data increased from 3.4 to 3.6 hours for discharged patients and from 11.1 to 14.4 hours for admitted patients.
- 39% of admitted patients in the 2007 survey and 48% in 2009 self reported a length of stay greater than 12 hours, a statistically significant difference.
- Patients who reported waiting over two hours to see the physician increased significantly from 38% in 2007 to 42% in the 2009 survey.
- The proportion of patients who reported the waiting room as being extremely or very crowded was 37% in 2007 and 42% in 2009, a statistically significant difference. Likewise those who reported the waiting room was not at all crowded dropped from 29% to 22%.

Wait times vary by site; some have improved and some have deteriorated:

- The proportion of respondents who waited longer than two hours to see a physician (self-reported) in the Northern Lights Regional Health Centre decreased significantly from 47% in 2007 to 32% in 2009.
- Conversely, the proportion of respondents who waited longer than two hours to see a physician increased significantly from 20% in 2007 to 36% in 2009 for Red Deer Regional Hospital; from 28% to 44% for the Grey Nuns Hospital; from 42% to 51% for the Peter Lougheed Centre; and from 43% to 53% for the Royal Alexandra Hospital.

# Achievement of Canadian Association of Emergency Physicians (CAEP) guidelines for time to physician and reassessment

For all sites combined:

\*Canadian emergency department Triage and Acuity Scale (CTAS)

- 2 in 10 CTAS II patients (second to most urgent patient acuity level) are seen in the recommended 15 minutes.
- 2 in 10 CTAS III patients are seen in the recommended 30 minutes.
- 4 in 10 CTAS IV patients are seen within the recommended 60 minutes (43% in 2007 and 36% in 2009).
- 8 in 10 CTAS V patients in 2007 and 6 in 10 patients in 2009 are seen within the recommended 120 minutes.
- 28% of CTAS II patients in 2007 and 33% of patients in 2009 reported they were not checked on within the recommended 15 minutes for reassessment.
- For CTAS III, 41% in 2007 were not checked on within the recommended 30 minutes, compared to 45% in 2009.
- For CTAS IV, 34% in 2007 were not checked on within the recommended 60 minutes, compared to 41% in 2009.
- For CTAS V, 18% of 2007 patients were not checked on within the recommended two hours, compared to 26% in 2009.

#### Staff care and communication composite

As noted earlier, the staff care and communication composite has the greatest measured effect on the overall rating of care, considerably more than wait time. The mean score for this composite remains stable for both years. This suggests that despite additional wait time stress, clinical staff have managed to maintain critical care and



communication-related practices. This has helped to maintain the overall rating of care between years. While there is no change for combined sites, there is more variation between years at the site level. For example:

• The mean score for the staff care and communication composite increased between the two survey years for Northern Lights Regional Health Centre from 67.4 to 72.4 out of 100.

Specific questions comprising up the care composite show slight improvements between 2007 and 2009 for combined site data:

- 4 in 10 respondents reported their condition had either not been explained to them or had only been explained to some extent (39% in 2007 and 40% in 2009).
- 3 in 10 respondents reported either not receiving any information about their care or treatment or not getting enough (29% in 2007 and 28% in 2009).
- 6 in 10 respondents reported doctors and nurses either did not discuss their anxieties and fears or discussed them only to some extent (57% in 2007 and 59% in 2009).
- 3 in 10 respondents reported doctors either did not listen to what they had to say or only listened to some extent (30% in 2007 and 28% in 2009; p=0.003).
- 4 in 10 respondents reported either not having enough time with the doctor or nurse to discuss their health concern or only to some extent (38% in 2007 and 37% in 2009; p=0.004).
- 3 in 10 respondents reported they either do not have confidence and trust in the doctors and nurses treating them or only do to some extent (31% in 2007 and 32% in 2009).

Differences between years are more pronounced at the site level:

- The proportion of respondents who reported their condition had either not been explained to them or had only been explained to some extent dropped from 52% in 2007 to 42% in 2009 for Northern Lights Regional Health Centre.
- The proportion of respondents who reported doctors either did not listen to what they had to say or only listened to some extent decreased from 41% in 2007 to 33% in 2009 for Queen Elizabeth II Hospital.
- The proportion of respondents who did not have enough time with the doctor or nurse to discuss their health concern or only did to some extent decreased from 52% in 2007 to 45% in 2009 for Northern Lights Regional Health Centre.
- The proportion of respondents who reported they either do not have confidence and trust in the doctors and nurses treating them or did only to some extent decreased from 49% in 2007 to 37% in 2009 for Northern Lights Regional Health Centre. This is a statistically significant decrease.

#### **Other findings**

- 3 in 10 respondents (27% in 2007 and 29% in 2009) either considered leaving before treatment, or considered leaving to some extent.
- 1 in 10 respondents (15%) who were ultimately admitted either definitely considered leaving or considered leaving to some extent compared to 12% in 2007. This difference is not statistically significant.
- 2 in 10 respondents in 2009 (15% in 2007) classified as CTAS II and 3 in 10 (26% in 2007) classified as CTAS III definitely considered leaving or considered leaving to some extent. These changes are not statistically significant.



- 5 in 10 respondents (53%) who were not checked on by staff reported they considered leaving compared to 2 in 10 (16%) who said they were checked on. This is a statistically significant difference by group.
- 6 in 10 respondents (57%) who could not get the attention of staff reported they considered leaving compared to 2 in 10 (18%) who said they could get the attention of staff. This is a statistically significant difference by group.
- The proportion of those who reported not being checked on, or not to the extent they wanted, dropped from 58% in 2007 to 52% in 2009 for Northern Lights Regional Health Centre (not statistically significant); and increased from 46% in 2007 to 63% in 2009 for the Misericordia Hospital. This is a statistically significant change between years.
- The proportion of respondents who reported they have a regular family doctor or specialist increased from 73% to 83% for Northern Lights Regional Health Centre, a statistically significant difference.

#### Conclusion

Despite many efforts to address the complicated issues impacting emergency departments, wait times are significantly longer in the 2009 sample compared with 2007. Consequently some of the conclusions made from the 2007 report are repeated.

While it is acknowledged that the effects on clinical outcomes of prolonged waits to see a physician or not being reassessed according to CTAS guidelines, are poorly defined, it is a remaining concern that waiting patients may be at increased risk of harm from their medical conditions.

As suggested in the 2007 report, while wait times remain a challenge, facilities should consider implementing strategies to a) reassess patients according to CTAS guidelines; b) improve communication with waiting patients regarding changes in their condition, the status of their wait and the risks of leaving before treatment; and c) educate patients regarding their role in communicating with staff if their condition deteriorates.

It is a credit to emergency department staff that patients' overall rating of care has been maintained despite increased wait times and the stress this places on emergency departments and staff. Improved communication is shown to have a direct and positive impact on patient experience; therefore emergency department staff should be vigilant in developing strategies to further improve respectful communication with patients about their health issues and concerns, treatment and discharge information. However, the secondary effects of wait time on these other components of care are significant, and emergency department crowding must ultimately be brought to heal if current patient experience performance is to be maintained or improved.

Improvements have been demonstrated at specific sites that others could learn from and system-level efforts to improve emergency department crowding and wait times should increase. Many concurrent changes are occurring throughout the health care system and within emergency departments. This underscores the importance of a rigorous and highly structured approach to measuring the impact changes and initiatives have on wait times and quality of care.

The Urban and Regional Emergency Department Patient Experience Report 2009 serves as a timely baseline to measure the impact of sweeping changes to the health system in Alberta. Emergency department performance serves as a barometer of the broader health system, encompassing primary health care on the input side, to inpatient hospital care, and continuing care on the output side. Ongoing monitoring of emergency department performance is an important component of broader health system performance measurement.



#### 2.0 HQCA and background

The Health Quality Council of Alberta (HQCA) is an independent organization legislated under the Alberta Regional Health Authorities Act, with a mandate to measure, monitor and assess patient safety and health care quality; and to collaborate with health regions and boards, professions and government to translate that knowledge into actions that improve the quality and safety of Alberta's health system. A fundamental component of the HQCA mandate is to survey and report citizen experience with the health system.

The work leading up to the initial 2007 survey and report was the product of collaboration between Alberta health regions, government, and other stakeholders including a working group comprised of emergency department medical professionals, managers and academics. The full 2007 report is available on the HQCA website (www.hqca.ca) and includes many relevant details regarding rational for the survey, selection and validation of the survey instrument, and survey and analysis methodology. The repeated survey in 2009 was done in collaboration with Alberta Health Services and staff representing each of the participating sites.

The 2009 survey focused on patient experience of emergency department care in Alberta's twelve largest regional and urban hospital emergency departments only. Analysis in 2007 indicated these sites were sufficiently similar that comparison within this group was valid. This report provides results for these twelve sites only, including a detailed comparison with 2007 results to monitor change between the two survey years. Sites included are: Chinook Regional Hospital, Foothills Medical Centre, Grey Nun's Hospital, Medicine Hat Regional Hospital, Misericordia Hospital, Northern Lights Regional Health Centre, Peter Lougheed Centre, Queen Elizabeth II Hospital, Red Deer Regional Hospital Centre, Rockyview General Hospital, Royal Alexandra Hospital and University of Alberta Hospital.

#### 2.1 An ongoing focus on emergency department care

The following points were clearly recognized in undertaking the initial 2007 survey, and apply equally for the repeated survey in 2009.

- Emergency department crowding issues and many of the challenges facing emergency departments in Alberta are a health system issue where both causes of problems and their solutions extend beyond the emergency department. In this context, improving the experience of patients and their quality of care need to include strategies at broader hospital, health region or health system levels.
- Emergency department facilities are diverse in terms of the service they provide in the community, size and volume, patient population and the degree and causes of pressure they are presently experiencing. This suggests that readers must be cautious in drawing conclusions from comparisons between facilities. However, comparison will produce valuable information about the context of emergency department use and performance variation between facilities. It is recognized that facilities may not be able to influence all of the factors that impact their performance from a patient experience perspective; however the results do provide considerable actionable information.
- The purpose of this initiative is not to generate a "report card" for facilities, but rather to increase understanding of patient experience in those facilities, and to provide information regarding how patient experience and quality of care might be improved.



#### 2.2 Purpose of the 2009 study

Using the 2007 results as a baseline, the purpose of the 2009 study is to monitor changes in the performance of the emergency department sites with the greatest crowding pressures, longest wait times, and poorest patient experience. In addition this study seeks to:

- provide actionable information about patient experience that will assist care providers to improve the quality of emergency department patient care
- obtain standardized and comparable patient experience data for the highest volume emergency departments
- monitor changes in patient experience and related factors between 2007 and 2009
- confirm and re-evaluate factors affecting patient experience of emergency department care:
  - patient characteristics / and case mix of facility population
  - context and timing of visit
  - facility characteristics and function
  - wait time and crowding
- estimate differences between facilities for those factors above which are uncontrollable and develop statistical models for fair and reliable comparison between facilities and between surveys

#### 2.3 Selection of survey tool, validation, and testing

The 2007 working group and the HQCA reviewed the relevant literature, as well as previously developed emergency department survey tools and material from both the public and private domain. Several well validated survey tools were identified as options. It was determined that the approach should use a public domain survey tool that could be available to stakeholders without proprietary restrictions. The British emergency department survey tool was ultimately selected based on multiple criteria. This survey instrument was developed by Picker Europe (a non-profit organization) for the British National Health Service and the Healthcare Commission. It was used as the core set of questions for the HQCA survey with written permission from the Healthcare Commission.

Building on the British Emergency Department Survey, the HQCA developed additional items to reflect the unique Alberta context. In 2007, these new items and selected original items underwent several rounds of cognitive testing, after which a pilot test involving 480 emergency department patients was conducted. The pilot test helped to identify ambiguous survey questions, challenges in conducting the survey, set expectations, and established the survey methodology. The pilot conducted by the HQCA involved adults and children who visited an emergency department in one of two Alberta hospitals during December of 2006.

Evaluation of psychometric properties, validity, reliability at both the patient and facility level; and evaluation of structure and validity of possible composite "factors" were conducted on the 2007 data set. The earlier pilot test data set was not sufficiently robust to undertake such work. A more detailed description of this multi-stage validation process, as well as results from cognitive testing, pilot test and validation studies are provided in the full 2007 report.

Several items considered to be of low value were dropped from the 2009 version of the survey. In addition, a 5 item health utility (Health Related Quality of Life) measure, the EQ-5D, was included with permission of the Euroqol Foundation.



#### 2.4 **Privacy impact assessment**

As a custodian under the Health Information Act of Alberta, the HQCA submitted a privacy impact assessment (PIA) to conduct this survey and related data matching and analysis. The PIA was submitted to and was accepted by the Office of the Information and Privacy Commissioner of Alberta in 2007. The survey and data management process was repeated in 2009.

#### 2.5 RFP and selection of survey vendor

After reviewing quotations, the HQCA selected and engaged the services of a national research firm: Prairie Research Associates Incorporated (PRA), to conduct the survey. PRA conducted the 2007 survey and maintaining consistency of methods was a key factor in their selection for the 2009 survey.

#### 2.6 Preparation of data

Substantial assistance was provided by Alberta Health Services personnel in extracting and preparing data files from regional data sets and emergency department information systems. This data provided the basis for sample creation as well as reporting of administrative data<sup>2</sup> measures and parameters. Subsequent cleaning, standardization, and manipulation of these data were conducted by the HQCA staff to generate a consolidated sample frame database.

#### 3.0 Survey methodology

#### 3.1 Sample design and selection

The HQCA provided PRA with a sample of individuals who attended an emergency department in one of the 12 facilities within a two week period between March 15<sup>th</sup> and March 28<sup>th</sup>. The survey and sample protocol for 2009 is identical to 2007 with the exception that the smaller 2009 survey utilized a single sample wave and protocol, whereas the 2007 survey utilized two sequential waves. In 2007 the two wave approach was used to accommodate the volume and workload challenges of the much larger sample to ensure timeliness of contact.

To achieve the desired sample size, patients were selected randomly from the entire patient list from the sample period. Sample sizes were determined by predicted response rates (based on the 2007 survey) to achieve a representative sample at the facility level. Sample sizes were proportionately larger for smaller facilities – so for this cluster sample weights were calculated to adjust for the disproportionate sampling. This aggregate result should not be considered as an overall provincial result because the survey excludes the rural emergency departments in Alberta.

Adult patient samples (16 years of age and up) were generated for the 12 facilities surveyed in 2009, and excluded children aged 0 to 15,<sup>3</sup> patients who left before being seen or treated, and patients who died in the context of their emergency department stay. Patients without contact information, and a small number of "privacy" sensitive cases such as domestic abuse were also excluded from the sample and were randomly replaced with eligible cases. A rigorous 4 stage survey protocol was used to maximize the response rate and quality of the final sample.

<sup>&</sup>lt;sup>2</sup> Administrative data are data that were collected for "administrative" purposes such as accounting, billing, tracking of diagnoses, etc. Administrative data were not designed to measure the quality of health care; however, secondary use of administrative data can often produce useful measures of quality.

<sup>&</sup>lt;sup>3</sup> The 2007 survey included a pediatric sample in four sites. This was not repeated in 2009.



#### 3.2 Survey methodology

- *First survey mailing*. The first mailing included a cover letter, a copy of the questionnaire, and a postage-paid return envelope. This package of materials was addressed to the patients included in the HQCA's sample. (Section C, Appendix A)
- *Reminder postcard*. The reminder postcard (Section C, Appendix A) was sent approximately two weeks after the first mailing to those participants who had not returned their completed questionnaire at the time of this mailing. Participants who indicated that they did not want to participate were excluded from this reminder, as were individuals whose initial package had been returned as undeliverable or not at this address.
- Telephone reminders and surveys. PRA monitored the response rate by facility throughout the data collection
  period. To increase the response rate, PRA, in consultation with the HQCA, conducted reminder calls with those
  people who had not then returned their questionnaire. The main purpose of the reminder calls was to emphasize
  to participants the importance of the survey and thus increase the likelihood they would complete and return it.
  If participants preferred, they were given the option to complete the survey over the phone. Telephone calls
  started approximately three weeks after the initial mailing (just after the reminder postcard was mailed) and
  ended approximately 10 weeks after the initial mailing.
- Second survey mailing. The second survey mailing contained the same documents as the first mailing, with slight revisions to the cover letters (Section C, Appendix A). The second mailing was sent approximately two weeks after the reminder postcard and four weeks after the first mailing to those participants who had not yet responded. Again, this excluded those who had indicated that they did not want to participate and those whose correct address information was unavailable.

Table 1: Fielding dates					
	Dates				
First survey mailing	April 9 and 13, 2009				
Postcard mailing	April 30, 2009				
Second survey mailing	May 12, 2009				
Telephone reminders and surveys	May 1 – June 21, 2009				
Mail survey cut-off	June 19, 2009				

• Table 1 shows the dates of the mailings and follow-up calls.

#### 3.3 Overall response rate

Table 2 shows a breakdown of the outcomes for the survey process.

- In total, 10,917 survey packages were distributed to emergency department patients.
- In total, 4,942 patients completed the questionnaire,<sup>4</sup> for an overall response rate of 45%. Of those who completed the questionnaire, 93% completed it by mail (42% of the total sample) and 7% completed it by telephone (3% of the sample).
- About 43% of the sample received the two mailings and the reminder postcard, but did not complete the survey.
   PRA contacted 83% of these non-respondents by telephone (36% overall).
- Almost 5% of the sample had incorrect contact information, meaning that they did not receive the mailings. Of these, almost all (93%) were contacted by phone to complete the survey by telephone.

<sup>&</sup>lt;sup>4</sup> A completed questionnaire is defined as a questionnaire with a valid response to at least one question.



- About 5% of the sample refused to participate in the survey, most often by phone (3%) during the telephone reminder and survey calls.
- Less than 1% of the sample denied visiting an emergency department (and, therefore, said the survey did not apply to them). Reasons for respondents denying an emergency department visit are not clear, but may include: unwillingness to acknowledge their visit for privacy reasons; respondent perception of whether their visit was an emergency including the possibility that they were seeing a personal doctor as a "private patient"; and errors in registration data.

Table 2: Final outcomes					
Outcome	n	%			
Total sample	10,935	100.0%			
Total completed	4,942	45.2%			
By mail	4,589	42.0%			
By phone	353	3.2%			
Non-respondents (mail protocol complete)	4,728	43.2%			
Phone contact attempted	3,943	36.1%			
No phone contact attempted	785	7.2%			
Incorrect contact information	562	5.1%			
Phone contact attempted	520	4.8%			
No phone contact attempted	42	0.4%			
Refused	592	5.4%			
Refusal by phone	374	3.4%			
Refused for health reasons	120	1.1%			
Language barriers	68	0.6%			
Returned blank	12	0.1%			
Refusal by mail	8	0.1%			
Ineligible	7	0.1%			
Duplicate	3	0.0%			
Deceased	80	0.7%			
Denied visiting emergency department	31	0.3%			

• Almost 1% of the sample was deceased at the time of the survey.<sup>5</sup>

<sup>&</sup>lt;sup>5</sup> While individuals who passed away during their emergency department visit were removed from the sample, it was not feasible to identify individuals who died afterwards.



#### 3.4 Response rate by facility

Table 3 shows the response rates by facility, which ranged from 39.6% to 49.5%, with an average of 45.3%. The goal for each facility was to achieve 400 completes, which was reached at 9 of the 12 facilities.

Table 3: Response rate by facility								
Facility	Sample size Completes (n)			Response rate	Refusals	Incorrect contact	Refusal/ Incorrect	
	(n)	Mail	Phone	Total	(%)	(n)	(n)	Rate (%)
Chinook Regional Hospital	910	392	27	419	46.0%	56	50	11.6%
Foothills Medical Centre	909	436	14	450	49.5%	28	37	7.2%
Grey Nun's Community Hospital	910	395	14	409	44.9%	38	35	8.0%
Medicine Hat Regional Hospital	910	438	6	444	48.8%	12	36	5.3%
Misericordia Hospital	910	377	26	403	44.3%	58	53	12.2%
Northern Lights Regional Health Centre	910	277	83	360	39.6%	86	41	14.0%
Peter Lougheed Centre	908	382	41	423	46.6%	61	36	10.7%
Queen Elizabeth II Hospital	910	359	37	396	43.5%	47	49	10.5%
Red Deer Regional Hospital Centre	910	385	33	418	45.9%	61	49	12.1%
Rockyview General Hospital	910	406	10	416	45.7%	35	47	9.0%
Royal Alexandra Hospital	910	363	31	394	43.3%	70	72	15.6%
University of Alberta Hospital	910	387	23	410	45.1%	40	57	10.7%
Total	10,917	4,597	345	4942	45.3%	592	562	10.6%



#### 3.5 Response rate by year

The 2007 survey involved a much larger sample of 46,838 emergency department users from 66 facilities in the province. In Table 4, we compare the outcomes for 2007 and 2009 for the 12 facilities surveyed in both years.

The outcomes of the survey in 2009 are very similar to those in 2007. In 2007, the survey of the same 12 facilities in Alberta achieved a response rate of 46.4% compared to 45.3% in 2009. The slightly higher response rate is most likely due to a slightly longer fielding period for the 2007 survey. In 2007, the survey was split into two waves, with the first wave being fielded for 15 weeks and the second wave fielded for 13 weeks. In 2009, the total field period was about 10 weeks. To compensate for this shorter field period, PRA made more reminder calls to participants to ensure a high rate of return.

Table 4: Final outcomes by year							
Outcome	20	07	2009				
Outcome	n	%	n	%			
Total sample	10,704	100%	10,935	100%			
Total completed	4,968	46.41%	4,942	45.19%			
By mail	4,676	43.68%	4,589	41.97%			
By phone	292	2.73%	353	3.23%			
Non-respondents (mail protocol complete)	4,215	39.38%	4,728	43.24%			
Phone contact attempted	1,945	18.17%	3,943	36.06%			
No phone contact attempted	2,270	21.21%	785	7.18%			
Incorrect contact information	908	8.48%	562	5.14%			
Phone contact attempted	908	8.48%	520	4.76%			
No phone contact attempted	-	-	42	0.38%			
Refused	475	4.44%	592	5.41%			
Deceased	99	0.92%	80	0.73%			
Denied visiting emergency department	39	0.36%	31	0.28%			

#### 3.6 Definition of compared groups and sample weighting

While the primary goal of this study was to produce actionable information at the facility level, results were also analyzed at an aggregate level. This aggregate result should not be considered as a "provincial" result given that many smaller rural sites have been excluded. In general, the 12 large urban or regional hospital emergency departments surveyed are faced with different and often more severe challenges than are smaller rural emergency departments. We have therefore focused on sites that routinely deal with the greatest challenges. Based on 2007 results, patient experience for the province as a whole would be more positive if these many smaller and rural sites were included in an aggregate result.

While examination of the results at a higher level provides useful insights about emergency department patient experience across similar high volume emergency departments as a whole, providers should ultimately focus on the variation between sites, as these site level results are the actionable substance of the report.



Results for pooled analysis presented in the first section of the report are weighted to adjust for the higher probability of patient selection in low volume sites, which is a direct consequence of the cluster sample design.<sup>6</sup> Results presented at the site level in the second section are not thus weighted.

#### 3.7 Statistical significance and strength of association

Statistical significance for the chi-square measure of association is more easily achieved with large sample sizes.<sup>7</sup> In view of this we suggest the standard for designating whether a relationship can be termed *statistically significant* from the typical significance level of 0.00 be raised to a more stringent 0.000. In addition, we sometimes report the Cramer's V coefficient to provide a measure of the *strength* of association.<sup>8</sup> While a Phi or Cramer's V of less than 0.15 suggests strength of association is extremely weak, significantly different proportions may still be important in the context of our study objectives.

Where the mean of ordinal or continuous data were compared, a t-test is used to measure significance of the observed difference. In the case of ordinal data, a Mann-Whitney U test was also computed, however it is only reported if the data were not normally distributed <u>and</u> if the outcome of the test (if significant or not) differs from that of the t-test. Sample sizes were sufficiently large that results for these two tests were usually the same.

Table 5: Tests for statistical significance andstrength of association				
Test Value				
Pearson's chi square (sig.)	0.000			
t-test (sig.)	0.000			
Cramer's V .150 or higher				

#### 4.0 **Profile of respondents**

Patient visits to emergency departments may be influenced by patient characteristics and the context of their need (or lack of need) for emergency medical treatment. This section provides a profile of respondents, including a breakdown of demographic characteristics, health characteristics, and health care use prior to their emergency department visit.

<sup>&</sup>lt;sup>6</sup> For pooled analysis, sites are weighted according to the number of completed surveys and total number of visits for the site.

<sup>&</sup>lt;sup>7</sup> Pearson's Chi Squared tests the hypothesis of independence between two nominal (categorical) variables. When Chi Squared is significant, the null hypothesis is rejected and the two variables are assumed to be associated beyond what is expected by chance alone.

<sup>&</sup>lt;sup>8</sup> Cramer's V may be interpreted as the strength of association between two variables - as a percentage of their maximum possible variation.  $V^2$  is the mean square canonical correlation between those variables.



### 4.1 Demographic characteristics

Table 6 shows the demographic characteristics of respondents:

Table 6: Respondent characteristics         Male or Female (administrative data)         Age Group (administrative data)         q69 What is the highest level of school that you have completed?         q73 Where do you presently live?         q71 What language do you mainly speak at home?         q70 Would you say you are?						
	2007	2009	Years Combined			
	(n=4,968)	(n=4,942)	(n=9,910)			
Gender						
Female	54%	56%	55%			
Male	46%	44%	45%			
Age						
16 to 24	13%	11%	12%			
25 to 34	15%	15%	15%			
35 to 44	13%	14%	13%			
45 to 64	31%	32%	31%			
65 to 74	11%	11%	11%			
over 75	17%	17%	17%			
Mean Age (years)         51.1         51.1         51.1						
Highest level of education	Highest level of education					
Less than high school	24%	23%	23%			
Completed high school	26%	24%	25%			
Technical school	12%	12%	12%			
Some university or college	13%	12%	12%			
Completed college degree	11%	13%	12%			
Complete university degree	11%	12%	12%			
Post-graduate degree	4%	4%	4%			
Language						
English	93%	91%	92%			
Other European	3%	4%	4%			
Other Non-European	4%	5%	5%			
Residence						
Own residence	68%	68%	68%			
Rents residence	26%	26%	26%			
Residential facility/senior's lodge	4%	4%	4%			
Nursing home/long-term care home	1%	1%	1%			
Ethnicity						
White / Caucasian	86%	84%	85%			
Other	14%	16 <mark>%</mark>	15%			
Note: these results are not weighted and reflect re	spondents only.					



- Six out of 10 respondents were female, with 2% more females responding in 2009 than 2007.
- Approximately 1 in 2 were under 50 years of age. Indeed, the average respondent is 51 years old.
- Based on the highest level of education achieved, about 1 in 2 respondents had a high school education or less
  and about 1 respondent in 4 reported having a post-secondary degree (college or university).
- The vast majority, 9 respondents in 10, reported English as their primary language.
- The vast majority, again about 9 in 10, owned or rented their accommodations, while a few reported living in a residential facility, senior's lodge, nursing home, or long-term care home.
- Slightly more than 8 respondents in 10 were Caucasian.

#### 4.2 Respondents compared to those not surveyed or not included

As shown in the following tables, characteristics of respondents who completed a survey are slightly different than those who either did not complete a survey or who were not included in the survey sample (no survey); as described by administrative data elements for age, gender, CTAS score,<sup>9</sup> and discharge disposition for the entire 4 week set of patients. Table 7 shows that a higher proportion of females complete the survey as compared with "no survey" groups. This difference in proportion is the same in 2007 and 2009 (6%). While the chi-squared test shows some association, the strength of this association is very weak (Cramer's V < 0.15).

Table 7: Gender by survey year         Survey compared to no survey 4 week sample frame (administrative data)									
Condor	20	07	20	09	Years Combined				
Gender	No Survey	Survey	No Survey	Survey	No Survey	Survey			
Female	48%	54%	50%	56%	49%	55%			
Male	52%	46%	50%	44%	51%	45%			
Count	42159	4968	20775	4942	62934	9910			
Count	47127		25717		72844				
p value Chi Squared =0.000 Cramer's V = 0.04			Chi Squared = $0.000$ Chi Squared = $0.000$ Cramer's V = $0.04$ Cramer's V = $0.04$						
Note: No surve	Note: No survey category includes non-respondents as well as those not included in the sample								

Table 8: Mean age and LOS by survey year         Survey compared to no survey within 4 week sample frame (administrative data)						
Value	2007		2009		Years Combined	
value	No Survey	Survey	No Survey	Survey	No Survey	Survey
Moon Ago	44 years	51 years	44 years	51 years	42 years	44 years
wean Age	45 years		45 years		45 years	
p value	t test :	= 0.000	t test = 0.000 t test = 0.0		0.000	
Mean	5.7 hours	6.3 hours	5.9 hours	5.9 hours	5.8 hours	6.1 hours
LOS	5.8 hours		5.9 hours		5.8 hours	
p value	t test :	= 0.000	t test = 0.845 t test = 0.005		0.005	
Note: No surve	Note: No survey category includes non-respondents as well as those not included in the sample					

<sup>&</sup>lt;sup>9</sup> Canadian Triage Assessment Score: triage priority with 1 being the most urgent and 5 being the least urgent.



Likewise, the proportion of older individuals is greater for respondents as compared to those not surveyed and this difference is consistent between survey years. As shown in Table 8 and Table 9, younger patients appear less likely to respond whereas older patients appear more likely to respond (weak association). Mean age is the same for both survey years. Differences between survey and no survey groups are significant in both years and combined.

As shown in Table 8, there is no difference in Mean LOS (length of stay) between those who completed the survey and those who did not in 2009; Although survey respondent length of stay was longer for survey respondents in 2007 (p=0.000).

Table 9: Age-group by survey year         Comparison within 4 week sample frame (administrative data)						
Ago Group	200	7	200	9	Years Combined	
Age Group	No Survey	Survey	No Survey	Survey	No Survey	Survey
16 to 24	20%	13%	20%	11%	20%	12%
25 to 34	20%	15%	21%	15%	21%	15%
35 to 44	17%	13%	17%	14%	17%	13%
45 to 64	25%	31%	26%	32%	25%	31%
65 to 74	7%	11%	6%	11%	6%	11%
over 75	11%	17%	10%	17%	10%	17%
Count	42159	4968	20775	4942	62934	9910
Count	47127		25717	25717		
n volue	Chi Squared =	=0.000	Chi Squared =0.000		Chi Squared =0.000	
p value Cramer's V = 0.11 Cramer's V = 0.15		Cramer's V =	0.13			
Note: No Survey	category includes	non-responden	ts as well as those	not included in	the sample	

While there is negligible association between CTAS score and doing the survey, there appears to be a slightly larger proportion of higher acuity patients in the respondent group as compared to those not surveyed especially in 2007 (Table 10). A similar pattern is seen with discharge disposition, with slightly higher proportion of admitted patients doing the survey as compared to those not surveyed (Table 11).

Table 10: CTAS score by survey year         Comparison within 4 week sample frame (administrative data)							
CTAS	20	07	200	9	Years Co	ombined	
CTAS	No Survey	Survey	No Survey	Survey	No Survey	Survey	
CTAS I	0.7%	0.4%	1%	0%	1%	0%	
CTAS II	16.2%	18.4%	18%	19%	17%	19%	
CTAS III	43.6%	43.9%	46%	45%	44%	44%	
CTAS IV	32.2%	30.4%	30%	31%	32%	31%	
CTAS V	7.3%	6.9%	5%	4%	7%	6%	
Count	41062	4864	20412	4887	61474	9751	
Count	45926		25299		25299 71225		
n value	Chi Squared	=0.000	Chi Squared =0.01		Chi Squared =0.000		
p value	Cramer's V =	0.02 Cramer's V = 0.02 C		Cramer's V = 0.02			
Note: Statistical t	Note: Statistical tests are between No Survey and Survey Groups						



This comparison suggests that the survey sample includes slightly more females and patients of an older age<sup>10</sup> than the remaining population not surveyed. As an alternative to age sex standardization relative to the population proportions; "predicted" facility scores for composites were computed using age, gender, and other patient characteristic variables shown to effect results. Many of these variables are not available in administrative data and so could not be adjusted to estimate the full population.

Case mix adjustment or standardization may permit "on par" comparison between sites. While several different approaches and many statistical models were evaluated, readers should recognize that all such models have limitations and produce different results. This suggests that unadjusted results should be considered carefully, recognizing that a facility must ultimately care for the patients they see whether or not those patients are pre-disposed to be more negative or positive relative to patients at other sites.

Table 11: Discharge status by sample category         Comparison within 4 week sample frame (administrative data)						
Discharge	2007 (n=	n=42,640) 2009 (n=23,443) Years Combined (n=66,083)		2009 (n=23,443)		mbined 083)
Disposition	No Survey	Survey	No Survey	Survey	No Survey	Survey
Not Admitted	85%	82%	83%	81%	84%	82%
Admitted	15%	18%	17%	19%	16%	18%
Count	37880	4760	18564	4879	56444	9639
nyaluo	Chi Squared =0.000		Chi Squared =0.000		Chi Squared =0.000	
p value	Cramer's V =	0.02	Cramer's V =	0.02	Cramer's V =	0.02
Note: Left without	beina seen (LWBS	s) and death exc	luded above. Data	is not weighted	l.	

#### 4.3 Self reported health characteristics

One of the objectives of this study was to understand how patient characteristics and the context of their visit to the emergency department might influence their experience in seeking and receiving care. It has also been shown that certain patient characteristics such as health status can impact results and comparability between different facilities. An understanding of such patient characteristics helps to explain what the patient's needs were when they attended the emergency department and what characteristics need to be considered when making fair (adjusted) comparisons between facilities that might have different patient populations.

Respondents were asked to rate their health during the four weeks preceding their visit and to report on any disabilities or home care needs they may have (See Table 12).

- Overall, about 2 in 3 adult respondents reported that their health was at least *good* in the past four weeks, including slightly more than 1 respondent in 10 who indicates it was *excellent*.
- Conversely, more than 1 respondent in 10 considered their health to be *poor* or *very poor* (both survey years).
- The proportion reporting poor or very poor health was slightly higher in 2007 (14%) compared with 2009 (11%).

<sup>&</sup>lt;sup>10</sup> Similar findings are frequently reported in the literature; see bibliography for further details.



Table 12: Health characteristicsq63 Overall, how would you rate your healthQX. EQ-5D MobilityQX. EQ-5D Self careQX. EQ-5D Usual activitiesQX. EQ-5D Pain or discomfortQX. EQ-5D Anxiety or depression	during the past 4	weeks?				
	2007 (n = 4,808)	2009 (n = 4,798)	Years Combined (n = 9,606)			
Health during past four weeks						
Excellent	11%	11%	11%			
Very good	22%	21%	22%			
Good	29%	32%	31%			
Fair	23%	24%	24%			
Poor	11%	9%	10%			
Very poor	3%	2%	3%			
Chi Squared p / Cramer's V	0.000	/ 0.05				
EQ-5D Health related quality of life (	collapsed)					
Scale	No problem	Moderate problem	Extreme problem			
Mobility (n=4766)	68%	30%	2%			
Self care (n=4779)	81%	16%	3%			
Usual activities (n=4775)	54%	36%	10%			
Pain or discomfort (n=4769)	46%	48%	6%			
Anxiety or depression (n=4721)	67%	29%	4%			
Note: Data is weighted for cluster sample at site	Note: Data is weighted for cluster sample at site level. EQ-5D not collected in 2007					

In 2009, the EQ-5D instrument was added to the questionnaire, and item specific results are shown in the bottom half of Table 12. In the questionnaire, each scale is comprised of three separate items (see Appendix A). This instrument is used extensively to measure health related quality of life and is also provides a summary measure of health utility. EQ-5D is a more definitive measure of health status than the single item rating, and may be useful for case mix adjustment and multivariate analysis.

#### 4.4 Prior use of personal family doctor or emergency department services

Respondents were asked to provide background on their use of selected health care services in the past 12 months.

Almost 9 in 10 adult respondents reported that they currently had a personal family doctor or specialist whom they see for most of their health care needs. Among those respondents with a personal family doctor or specialist, almost all reported visiting them at least once in the past 12 months, including more than 4 in 10 who have visited more often (5 or more visits in the past 12 months). About 5 in 10 respondents have visited the emergency department more than once in the past 12 months, and 1 in 10 have visited more than 5 times. Table 13 provides a breakdown of the responses to these questions. Overall there is no statistically significant difference in respondent's family doctor use or emergency department use between 2007 and 2009 samples.



#### Table 13: Visits to personal family doctor

q64 Do you currently have a personal family doctor or specialist whom you see for most of your health care needs?
q65 In the past 12 months, approximately how many times in total have you visited your personal family doctor or your specialist for your own care?

q66 In the past 12 months, approximately how many times have you visited an emergency department for your own care?

	2007	2009	Years Combined
Has a personal family doctor	(n =4,849)	(n =4,829)	(n= 9,678)
Yes	89%	88%	89%
Chi Squared sig.	0.	59	
In the past twelve months, how many times visited			
Your personal family doctor*	(n =4,245)	(n = 4,214)	(n =8,459)
None	4%	4%	4%
1 time	9%	10%	10%
2 to 4 times	40%	42%	41%
5 to 10 times	28%	27%	28%
More than 10 times	19%	18%	18%
Chi Squared sig.	0.	52	
An emergency department	(n =4,797)	(n = 4,774)	(n =9,571)
1 time	53%	52%	53%
2 to 4 times	40%	39%	39%
5 to 10 times	6%	7%	6%
More than 10 times	2%	2%	2%
Chi Squared sig.	0.22		
Data weighted for cluster sample at site level.  * Respondents who indicate that they do not have a personal family doct	for (Q64) were not	asked this questi	

#### 5.0 The emergency department visit and related health issues

This section examines some of the reasons for respondents' visit to the emergency department and includes information on their prior medical issues and history.

#### 5.1 Decision to go to the emergency department

The decision to go to the emergency department was influenced by a variety of factors. As Table 14 indicates, among adult respondents:

- Slightly less than 4 respondents in 10 decided on their own to present to the emergency department.<sup>11</sup>
- About 4 in 10 reported that a family member or friend advised them to go.
- About 1 in 3 respondents were advised to go to the emergency department by a health care professional, most often their personal family doctor (14%) or a Health Link nurse (8%).
- None of the differences between 2007 and 2009 are statistically significant.

<sup>&</sup>lt;sup>11</sup> Responses are not mutually exclusive; it is possible that some of those who say they decided on their own also indicated that others influenced them.



Table 14: Who advised to go to emergency departmentq1 Please identify all those who advised you to go to the emergency department.				
	2007 (n=4,876)	2009 (n = 4,871)	Years Combined (n = 9,747)	
Friend or family member	37%	37%	37%	
Decided on my own	34%	34%	34%	
Personal family doctor	15%	14%	14%	
Other	13%	13%	13%	
Health Link phone-line nurse	9%	8%	8%	
Doctor at walk-in clinic	7%	7%	7%	
Specialist doctor	5%	6%	6%	
Data weighted for cluster sample at site level. Respondents could choose more than one answer. Totals sum to more than 100%.				

While the decision to go was often made in consultation with others, many respondents chose to go to the emergency department instead of somewhere else because they felt they had no other option. According to results in the most common reasons for choosing to go to the emergency department are:

- The emergency department was the only choice available at the time for just over 4 in 10 respondents.
- It was the best place to go. Almost 5 respondents in 10 perceived the emergency department was the best place to go given their medical problem.
- About 3 in 10 reported they were told to go the emergency department rather than somewhere else.
- Just over 1 in 10 reported the emergency department was the most convenient place to go to seek health care.

Many respondents indicated that more than one of these reasons was relevant in their decision; however the vast majority believed they had no other option because the emergency department was the only medical service available, their medical condition dictated it, or they were told to go there.

Table 15: Why patient chose emergency department         q2 Why did you choose to go to the emergency department, instead of somewhere else such as a doctor's office?				
Reason	2007 (n=4,865)	2009 (n=4,867)	Years Combined (n=9,732)	
Emergency department was only choice available at time	43%	42%	43%	
Emergency department was the best place for my medical problem	46%	48%	47%	
Chi Squared sig. / Cramer's V (best place)	0.03	/ 0.02		
Told to go to the emergency department rather than somewhere else	28%	27%	27%	
Emergency department was the most convenient place to go	12%	12%	12%	
Note: Data are weighted for cluster sample at site. Respondents could choose more than one answer. Totals sum to more than 10	00%.			



#### 5.2 Getting to the emergency department

Typically, respondents report that they arrived at the emergency department by car after a trip that lasted 30 minutes or less. As shown in Table 16:

- About 7 adult respondents in 10 traveled to the emergency department by car.
- 8 out of 10 respondents traveled to the emergency department in 30 minutes or less.

There are no statistically significant differences between survey years.

Table 16: Traveling to the emergency departmentq4 How did you travel to the emergency department?q5 When you went to the emergency department, how long did it take you to get there?			
	2007 (n = 4,897)	2009 (n = 4,901)	Years Combined (n = 9,798)
Mode of transportation			
Car	67%	67%	67%
Ambulance	25%	24%	25%
Taxi	4%	4%	4%
Foot	2%	2%	2%
Bus/train	2%	2%	2%
Other	0%	0%	0%
Time to get to emergency department			
Up to 30 minutes	83%	83%	83%
More than 30 minutes, but less than 1 hour	9%	10%	9%
More than 1 hour	8%	7%	7%
Note: Data are weighted by site to adjust for cluster sample, n is reported	for mode of transportat	ion (Q4)	

#### 5.3 Urgency of health care problem

Respondents were asked to provide their own assessment of the seriousness of the health problem that brought them to the emergency department.<sup>12</sup> As shown in Table 17, among adult respondents:

- About 3 in 10 respondents believed that the health problem for which they visited the emergency department was *life threatening* or *possibly life threatening*.
- About 3 in 10 stated that their visit was *urgent* in nature, that is, there was a risk of permanent damage.
- Just over 4 in 10 stated that their visit was *somewhat urgent* (needed to be seen today) or *not urgent*.

Differences in self rated acuity between years are not statistically significant.

<sup>&</sup>lt;sup>12</sup> The self reported urgency question (Q3) was designed to provide a patient reported "proxy" for CTAS urgency, that is the "Canadian Emergency Department Triage and Acuity Scale" developed by the Canadian Association of Emergency Physicians (CAEP).



Table 17: Self-rated urgency         q3 Would you describe your health problem as?						
Urgency Rating	2007 (n = 4,849)	2007 2009 (n = 4,849) (n = 4,833)				
Life threatening	6%	6%	6%			
Possibly life threatening	22%	22%	22%			
Urgent	30%	30%	30%			
Somewhat urgent	38%	37%	37%			
Not urgent	4%	5%	5%			
Chi Squared	Chi Squared 0.234					
Note: Data are weighted						

Table 18: CTAS (triage) score         From administrative data						
CTAS Level	2007 (n=4,864)	2009 (n=4,893)	Years Combined (n=9,757)			
CTAS I	< 0%	< 0%	< 0%			
CTAS II	20%	21%	20%			
CTAS III	44%	46%	45%			
CTAS IV	29%	29%	29%			
CTAS V	7%	4%	5%			
Chi Squared / Camer's V 0.000 / 0.06						
Note: In the CTAS score, 1 is most urgent, and 5 is least urgent; data are weighted						

Triage priority is assessed for patients in most emergency department facilities using the Canadian emergency department Triage and Acuity Scale (CTAS), and is reported in Table 18. Acuity is slightly greater in the 2009 sample as compared with 2007, with an increase in the proportion of CTAS II and III and decrease in CTAS IV and V.

Comparing self rated urgency with CTAS score allows limited evaluation of how accurately patients may have viewed the urgency of their medical problem as compared to the CTAS score. Note that the response scale used for self rated urgency (question 3) was designed to approximate the meaning of the CTAS score. In Table 19, CTAS has been subtracted from self rated urgency, hence a value of (-2) indicates that CTAS urgency was 2 degrees less urgent than was self rated urgency. Likewise, a value of (+2) indicates that CTAS urgency is 2 degrees higher priority (more urgent) than self rated urgency. In general there is poor correspondence between CTAS and self rated urgency with only 38% of cases agreeing completely. Kappa statistic<sup>13</sup> is 0.13 and 0.12 for 2007 and 2009 respectively.

<sup>&</sup>lt;sup>13</sup> Kappa is a measure of inter-rater reliability; in this case the triage nurse versus the patient. Although the scales are necessarily different, self reported urgency was intended to serve as a self rated proxy for CTAS.



Table 19: Degree of difference between self rated urgency (Q3) and CTAS         CTAS subtracted from Q3 for each case					
(Q3) Relative Difference	Q3 (-) CTAS	2007	2009	Years Combined	
	-4	< 0%	< 0%	1%	
CTAS is less Urgent	-3	1%	1%	1%	
	-2	8%	6%	7%	
	-1	24%	24%	24%	
Identical >	0	38%	38%	38%	
	1	24%	25%	25%	
I	2	5%	6%	5%	
CTAS is	3	< 0%	< 0%	< 0%	
Urgent	4	< 0%	< 0%	< 0%	
Kappa (un-weighted)	0.13	0.12			
Notes: data are weighted; Kappa statistic is un-weighted Kappa Kappa is calculated for CTAS score versus self rated urgency (q3) within patient					

As Table 19 suggests, the distribution of difference between CTAS and self rated acuity appears to be stable between the two survey years. Similar proportions of patients (1 in 4) under estimate or under estimate the acuity of their condition by at least one degree.

In Table 20 we focus specifically on patients who are classified as CTAS I or II (the most urgent 2 categories); we find that 8 in 10 patients rate their acuity in the 3 most urgent categories. More important, 2 in 10 rate their acuity as only somewhat urgent or not urgent, significantly underestimating the urgency of their issue (19% in 2007 and 21% in 2009).

Table 20: Self rated acuity (Q3) for CTAS I or II by year			
Self rated acuity	2007 (n=947)	2009 (n=1,011)	
Life-threatening / or possibly life threatening	57%	52%	
Urgent, risk of permanent damage	25%	27%	
Somewhat urgent, needed to be seen today	18%	19%	
Not urgent, but I wanted to be seen today	1%	2%	



#### 5.4 Reasons for the emergency department visit

Respondents were asked to indicate if the health problem that brought them to the emergency department was the result of a new injury or illness, or related to previous problems.

As Table 21 shows, among adult respondents:

- Over half stated that the medical problem that brought them to the emergency department was for new symptoms; either a *new illness or condition* (32%) or *new injury or accident* (27%).
- Almost 4 in 10 said that the medical problem that brought them to the emergency department was due to a
  previous health problem, including the *worsening of the condition or illness* (22%), *complications or problems following recent medical care* (12%), for *routine care of pre-existing chronic condition or illness* (3%), or for *follow-up care* (2%).

Differences between 2007 and 2009 are not statistically significant.

Table 21: The reason for visiting an emergency department         q6 Thinking about the medical problem that brought you to the emergency department, would you say your problem was			
	2007 (n=4,826)	2009 (n=4,839)	Years Combined (n=9,665)
New illness or injury			
New illness/condition unrelated to previous illness/condition	32%	32%	32%
New injury/accident unrelated to previous injury/accident	26%	27%	27%
Related to previous illness or injury			
Worsening of pre-existing chronic illness/condition	23%	22%	23%
Complications or problems following recent medical care	13%	12%	13%
Routine care of a pre-existing chronic illness/condition	2%	3%	2%
Told to return to the emergency department for follow-up care	2%	2%	2%
Other	2%	2%	2%

#### 6.0 Overall ratings of care - global items

This section examines the responses of patients regarding several global questions where respondents provide an overall evaluation of their visit to the emergency department. While each of these items provides a different and useful perspective on that overall experience, the most important of these variables is the overall (global) rating of care (question 57). This item demonstrated very high reliability at the facility level,<sup>14</sup> and was arguably useful as a discrete performance measure. The properties of this variable also make it suitable for use as an outcome variable in subsequent multivariate analysis. In this regard, it provides a "yard-stick" against which other variables could be compared relative to how much they influence the overall rating.

<sup>&</sup>lt;sup>14</sup> As calculated using the SAS macro: General Reliability and Intra-class Correlation Program (GRIP) see Appendix D for details.



#### 6.1 **Overall questions about care**

In terms of the overall care respondents received while in the emergency department, Table 22 shows:

- About 8 in 10 respondents rate their overall care as excellent, very good or good (84% in 2007 and 85% in 2009).
- About 6 in 10 respondents (59%) reported their visit was dealt with "completely" to their satisfaction; with no change observed between years.
- About 4 in 10 respondents reported their main problem was either not dealt with to their satisfaction, or "only to some extent".
- About 7 in 10 respondents reported they were always treated with respect and dignity during their visit. (72% both years).

The small differences between 2007 and 2009 are not statistically significant (with site level data combined). There is considerably more variation at the site level and this is explored in detail in Section B of the report.

Table 22: Overall care received in the emergency department	_		
q57 Overall, how would you rate the care you received in the emergency department	?		
q55 was the main reason you went to the emergency department dealt with to your satisfaction? q56 Overall, did you feel you were treated with respect and dignity while you were in the emergency department?			
	2007 2009		
Overall rating of care	(n=4,802)	(n=4,850)	
Excellent	29%	29%	
Very good	36%	36%	
Good	19%	20%	
Fair	9%	9%	
Poor	4%	4%	
Very poor	3%	2%	
Main reason for visit dealt with to satisfaction	(n=4,782)	(n=4,840)	
Yes completely	59%	59%	
Yes to some extent	30%	31%	
No	11%	10%	
Overall, treated with respect and dignity	(n=4,773)	(n=4,839)	
Yes all of the time	72%	72%	
Yes some of the time	22%	23%	
No	6%	5%	
Note: Data are weighted by site for cluster sample. Differences between years are not stati	stically significant.		

Alternative sample weights by site, age group, and gender have virtually no impact on these results.



#### 7.0 Composite variables and specific patient experience questions

#### 7.1 Description of composite variables and relative importance

The majority of remaining questions from the survey reflect patient perceived quality of care as opposed to the context of that care.<sup>15</sup> These questions have been grouped into sets of items that are related and which are shown to address a common underlying construct or issue. Having demonstrated that these questions are sufficiently related to belong to a common scale or factor, composite variables for each factor have been calculated from the individual questions that belong in that factor.

The detailed analysis and methodology for identification, validation, and computation of composites are provided in Appendix D of the 2007 survey technical report.<sup>16</sup> This analysis (and subsequent multivariate analysis) suggests that these variables are valid, reliable, and have significant predictive power with respect to patient rating of overall care quality and other outcome variables.

The composite variables are essentially the average score of all variables within the scale. They provide a summary score for the common attribute of care represented by the scale. Given they are shown to be valid, composite variables are often better performance measures than the individual question items they represent, and they are more easily adjusted for case mix variation than are the full set of individual questions. Adjustment is potentially important for facility level comparisons where case mix may differ in important ways.

The quality of care results covered in this section, are presented by sub-section according to each composite. For each, the composite score is presented as a standardized score where 0 is the lowest possible score and 100 is the highest.<sup>17</sup> This is followed by the detailed results for each question that contributes to the composite. Some additional items not belonging to the composite may be presented in the same section if they are conceptually related.<sup>18</sup>

department care (Q37) As shown by regression coefficients		
Composite	Standardized Coefficient	
Staff care and communication composite	0.38	
Respect composite	0.17	
Pain management composite (estimated position in order)	+	
Wait time and crowding composite	0.09	
Facility cleanliness composite	0.13	
Discharge communication composite (for those discharged)	0.10	
Wait time communication composite	0.03	
Medication communication composite	n. sig. / decomposed	
Privacy composite	0.02	
Additional significant variables in the model are not shown. † pain composite was decomposed to constituent variables for the regression – Position in order reflects approximate importance given different "scale" for coeff Discharge communication Coefficient for discharged patients only (different anal	coefficients not comparable icient ysis)	

# Table 23: Summary of composite effect on overall (global) rating of emergency department care (Q57) As shown by regression coefficients

<sup>&</sup>lt;sup>15</sup> Selection of the original Healthcare Commission survey questions was based on extensive qualitative evaluation of emergency department patient issues, as well as patient rating of the relative importance of these issues. Closed ended questions are based on this research.

<sup>&</sup>lt;sup>16</sup> Emergency Department Patient Experience Survey (technical report), 2008, Health Quality Council of Alberta. www.hqca.ca
<sup>17</sup> The scoring scheme used to generate the 0 to 100 score follows the methods developed by the Healthcare Commission for their British survey.

<sup>&</sup>lt;sup>18</sup> Where an item has been shown (by factor analysis) to be most related to a specific composite, but was not included in the composite for reliability reasons, the results of this variable is reported in the same section.



As shown in Table 23 the staff care and communication composite is by far the most important to the overall rating (question 57), with a standardized coefficient of 0.38. Given standardized scores from 0 to 100, this predicts that a unit (1.0) increase in the care composite will yield an increase in the global rating of care (question 57) of (0.38). In other words, if the care composite improves from 60 to 80 out of 100; an initial overall ranking of 60/100 is predicted to increase to approximately 68/100.<sup>19</sup>

While the coefficients shown in Table 23 are for one of several models, the rank order of coefficients is the same in both models. Given similar order of importance regardless of which model is used, results for each composite and its constituent variables are presented in order of importance to the overall rating (question 57) as shown above.

While the relationship of some variables or composites to the overall rating (question 57) may be weak; one should not conclude that such variables are unimportant. They are merely not related to the global rating of care. For example, communication about medications does not appear have a significant impact on rating of overall care; however it is important for other obvious reasons.

It may be that lack of variance for Privacy and Medication composites relative to question 57 renders these composites as unimportant. For example – if a facility began to do physical exams in a more public area – privacy may start to have more impact on the overall rating.

When secondary effects of wait times and pain are considered in a path analysis, the net importance of these aspects of quality is increased (See Section 9.3). Staff care and communication continues to have the strongest impact on the overall rating.

#### 7.2 Staff care and communication composite and related questions

Table 24 lists the question items included in the staff care and communication composite. The majority of these items are related to communication in one way or another. Question 24 and question 25 are overall patient assessments of staff in terms of them knowing enough about the patient's condition and treatment, and patient confidence in the provider.

Table 24: Staff care and communication compositeQuestions included in calculation:q22 Doctor or nurse explained your condition in understandable wayq27 Amount of information provided about condition or treatmentq23 Doctor or nurse discussed your anxieties or fearsq21 Doctors and nurses listenedq20 Had enough time with doctor or nurse to discuss health concernq32 Involved as much as you wanted in decisionsq25 Doctors and nurses knew enough about condition or treatmentq24 Had confidence and trust in doctors and nurses			
	2007 (n=4,900)	2009 (n=4,903)	
Mean score out of 100	76.3	76.6	
t=-0.681; df=9800; p=0.496			
% of patients scoring 75 or higher	62%	62%	
Chi square=0.021; df=1; p=0.886			
Note: Composites are scored from between 0 and 100 where 100 is highest and best Q27 responses indicating too much information (<1%) are scored the same as responses indicating enough information. Data is weighted by site. Site level reliability (GRIP macro): 0.93 Standardized Scale Alpha (Cronbach's): 0.90			

<sup>&</sup>lt;sup>19</sup> Scores of both composites and Overall Quality (Q57) are standardized to a scale of 0 to 100 where 100 is best.



As in 2007, the *most important* factor relative to overall emergency department care is essentially staff care and communication from the patient perspective. Staff care and communication has the strongest relationship to the overall rating as compared with other composites; and improving this composite by 20 units (out of 100) is expected to increase the overall rating by 8 units (out of 100). See Table 58 for further detail.

As shown in Table 24, the mean score for the composite is 76.3 in 2007 and 76.6 in 2009; this small difference is not statistically significant. Likewise, the proportion of respondents with a score of 75 or higher is 62% in both years. While there is no change in the staff care and communication composite score when site data is pooled, there is more variation between years at the site level.

Table 25: Staff care and communication composite: core questions q22 While you were in the emergency department, did a doctor or nurse explain you	(part I) Ir condition and tr	eatment in a
way you could understand?	your condition of	r trootmont was
given to you?	your condition of	treatment was
q23 If you had any anxieties or fears about you condition or treatment, did a doctor	or nurse discuss	them with you?
q21 Did doctors and nurses insten to what you had to say? q20 Did you have enough time to discuss your health or medical problem with the d	loctor or nurse?	
	2007	2009
Doctor or nurse explained your condition in an understandable way	(n = 4,543)	(n = 4,582)
Yes definitely	61%	60%
Yes to some extent	30%	32%
No	9%	8%
Amount of information provided about condition or treatment	(n = 4,701)	(n = 4,774)
Not enough	22%	21%
Right amount	71%	71%
Too much	<1%	<1%
No information given	7%	7%
Doctor or nurse discussed your anxieties or fears	(n = 3,428)	(n = 3,518)
Yes completely	43%	42%
Yes to some extent	36%	38%
No	21%	21%
Doctors and nurses listened (p=0.003)	(n = 4,748)	(n = 4,828)
Yes definitely	71%	72%
Yes to some extent	26%	26%
No	4%	2%
Had enough time with doctor or nurse to discuss health concern (p=0.004)	(n = 4,770)	(n = 4,819)
Yes definitely	62%	63%
Yes to some extent	30%	31%
No	8%	6%
Note: Data are weighted by site; "Not relevant" responses are excluded from results and a Three additional variables included in the care composite are excluded here, but are show	are reflected in lowe	ər n

Table 25 and Table 26 show results for those questions within the staff care and communication composite that involve communication. While the composite score can provide a good overall measure of performance in this thematic area, it is important to examine the detailed results at the question level to identify actionable opportunities


for improvement. Overall performance for the composite is quite good (76/100); however, individual question results show where communication in specific areas might be improved to a greater extent especially considering site specific results shown in Section B of the report. Results for these items are almost the same between 2007 and 2009 where data from sites are examined together. The differences between years for "doctors and nurses listened"; and "had enough time with doctor or nurse" are small but statistically significant.

Considering the individual questions:

- About 4 in 10 respondents reported that their condition had either not been explained to them, or had only been explained to some extent.
- About 3 in 10 respondents reported either not receiving any information about their care or treatment, or not getting enough.
- Almost 6 in 10 respondents reported that doctors and nurses either did not discuss their anxieties and fears or discussed them only to some extent.
- About 3 in 10 respondents reported that doctors either did not listen to what they had to say or only listened to some extent.
- About 4 in 10 respondents reported either not having enough time with the doctor or nurse to discuss their health concern or only to some extent.

Table 26: Staff care and communication composite: core questions (part II)Being involved in decisions, staff knowing enough, and trustq32 Were you involved as much as you wanted to be in decisions about your care and treatment?q25 In your opinion, did the doctors and nurses in the emergency department know enough about your condition or treatment?q24 Did you have confidence and trust in the doctors and nurses examining and treating you?				
	2007	2009		
Involved as much as you wanted in decisions	(n =4,374)	(n =4,418)		
Yes definitely	57%	55%		
Yes to some extent	31%	33%		
No	12%	12%		
Doctors and nurses knew enough about condition or treatment	(n = 4,311)	(n = 4,382)		
All of them knew enough	49%	48%		
Most of them knew enough	30%	32%		
Only some of them knew enough	13%	14%		
None of them knew enough	7%	6%		
Had confidence and trust in doctors and nurses	(n = 4,780)	(n = 4,827)		
Yes definitely	68%	68%		
Yes to some extent	25%	26%		
No	6%	6%		

Note: "not relevant" responses are excluded from these results and are reflected in lower n; results are weighted by site.

Table 26 shows results for those questions within the staff care and communication composite that are about the patient being involved in decisions, and about the patients evaluation of doctors and nurses in terms of knowledge and trust. Differences between years are not statistically significant for sites combined and are greater at the site level.



- About 4 in 10 respondents reported either not being involved as much as they wanted in decisions (12%), or only being involved to some extent (33%).
- Only about 2 in 10 respondents reported that doctors and nurses did not know enough about the patient's condition or treatment (6%), or that only some of them knew enough (14%).
- About 3 in 10 respondents reported that they either: do not have confidence and trust in the doctors and nurses treating them (6%), or have so only to some extent (26%).

Table 27: Staff care and communication: supplemental questions	;	
q32. How much information about your condition or treatment was given to your	family or someone c	lose to you?
q37 Did a member of staff explain the results of the tests in a way you could under	erstand?	
qui needed allention, were you able to get a member of start to help you?	2007	2000
	2007	2009
Amount of information given to family	(n =2,930)	(n = 2,955)
Not enough	20%	21%
Right amount	80%	78%
Too much	1%	1%
Staff explained the results of the tests (if had tests)	(n = 3,095)	(n = 3,212)
Yes definitely	59%	57%
Yes to some extent	28%	28%
No	14%	15%
Able to get a member of staff to help you (if needed) (p=0.003)	(n = 3,752)	(n = 3,723)
Yes always	51%	51%
Yes sometimes	37%	38%
No, I could not find a member of staff to help me	10%	8%
A member of staff was with me always	1%	2%
Note: "not relevant" responses are excluded from these results and are reflected in a lo	wer n; Data are weigh	ted by site

Table 27 shows results for questions that are correlated with the care composite, but which were dropped from the composite to increase its reliability.<sup>20</sup> These items are still useful on their own, and question 30 (getting assistance when needed) has a significant effect on the overall care rating (question 57).

- About 2 in 10 respondents reported that not enough information had been given to family. One percent or less reported that too much information was given to family.
- For patients who had tests, 4 in 10 respondents reported that staff either did not explain the results of tests (15%) or only explained the results of tests to some extent (28%). It was unclear from this survey whether test results were actually available at the time of discharge.
- While having test results explained did not relate significantly with the overall care rating; merely having tests performed predicted a higher score.
- Of those individuals who sought help from staff during their emergency department visit, 5 in 10 respondents reported that they either could not find a member of staff to help them (8%) or only sometimes (38%). The small difference between years is statistically significant.

<sup>&</sup>lt;sup>20</sup> Internal consistency reliability as measured by Cronbach's Alpha – see Appendix D of the 2007 technical report for details.



• Finding staff help had a relatively large effect on the overall rating, suggesting the importance of this single item.

#### 7.3 Pain management composite and related questions

Overall, 7 in 10 respondents reported they were in pain during their emergency department visit. Table 28 shows mean scores for the pain management composite for those who had pain. For patients who had pain issues, having them dealt with had a significant impact on the overall rating (question 57).

Table 28: Pain management compositeQuestions included:q41 Wait time to get pain medicine (self reported)q42 Emergency department staff did everything the	ey could to help c	ontrol pain
	2007 (n=2,889)	2009 (n=2,962)
Mean score out of 100	61.4	59.8
t=1.616; df=5848; p=0.106		
% of patents scoring 75 or higher	48%	45%
Chi square=4.292; df=1; p=0.038		
Note: Data are weighed by site; Site level reliability (Gl Standardized Scale Alpha (Cronbach's): 0.78 Pearson correlation between 4 alternative methods of 98.3 – see Appendix D of 2007 report for details	RIP Macro): 0.99 calculation ranges	from 87.1 to

Table 29: Pain management composite: core questions         q39 While you were in the emergency department, how much of the time were you in pair (not included in calculation of composite)         q41 How many minutes after you requested pain medicine did it take before you got it?         q42 Do you think the emergency department staff did everything they could to help composite	in? trol your pain?	
	2007	2009
How much of the time in pain (if had pain during visit)	(n = 3,242)	(n = 3,329)
All or most of the time	69%	69%
Some of the time	24%	25%
Occasionally	7%	7%
Wait time to get pain medicine (p=0.05) (if requested pain medication)	(n = 1,113)	(n = 1,217)
0 to 10 minutes	45%	42%
11 to 30 minutes	21%	25%
More than 30 minutes	21%	18%
Asked for pain medicine but was not given any	13%	14%
Emergency department staff did everything they could to help control pain	(n = 2,852)	(n =2.915)
Yes definitely	52%	49%
Yes to some extent	26%	28%
No	22%	23%
Note: Q40 (not shown) is a screening question for pain: this is reflected in lower n; Data are weighted by site. Q39 is not included in calculation of composite score.		



Table 29 presents question specific results for the pain management composite:

• About 8 in 10 respondents felt that emergency department staff did everything they could to help control pain, including 5 in 10 who say they *definitely* did everything they could. However, roughly 2 in 10 respondents felt that staff did not do everything they could. Differences between survey years are not statistically significant.

Of those who reported pain, approximately 4 respondents in 10 requested pain medication (35% and 37% in 2007 and 2009 respectively). Among those who requested medication for the pain:

- About 4 in 10 were given the pain medication within 10 minutes, including 14% who received it right away.
- About 2 respondents in 10 waited more than half an hour for pain medication.
- One respondent in 10 (13% and 14%) reported that they did not receive any pain medication, even though they requested it.
- Differences in the wait time for pain medication are statistically significant between years (Chi Square p=0.05) with fewer respondents in 2009 waiting 30 minutes or longer, but also fewer respondents receiving pain medication within 10 minutes compared with 2007.

#### 7.4 Wait time and crowding composite and related questions

The wait time and crowding composite is made up of 5 questions related to either wait time or crowding.<sup>21</sup> As shown in Table 30 the mean scores for the wait time and crowding composite drop by 2% between 2007 and 2009; with the proportion of respondents scoring 75 or higher out of 100 dropping from 28% to 24%. This change is statistically significant.

Table 30: Wait time and crowding compositeQuestions included:q7 Crowding of emergency department waiting room (self report)q8 Found a comfortable place to sitq10 Wait time before speaking to triage nurse (self report)q13 Wait time before being examined by doctor (self report)q18 Total wait time for visit to emergency department (self report)				
	2007 (n=4,896)	2009 (n=4,863)		
Mean score out of 100	60.7	58.8		
t=4.364; df=9757; p=0.000				
% of patients scoring 75 or higher	28%	24%		
Chi square=27.042; df=1; p=0.000				
Note: Data are weighed by site; Data includes patients who were admitted. Site level reliability (GRIP Macro): 0.99 Standardized Scale Alpha (Cronbach's): 0.73				

Specific questions contributing to the wait time and crowding composite are presented in Table 31. With the sole exception of wait time to see the triage nurse, all items within the wait time composite show a small but statistically significant change between 2007 and 2009 towards increased wait time and crowding.

All weight times used in this composite are self reported as opposed to being from administrative data. Administrative data wait time information is similar and is explored in subsequent tables.

<sup>&</sup>lt;sup>21</sup> When administrative wait and crowding measures are included in factor analysis – they also land in this factor.



Table 31: Wait time and crowding composite: core questions           q7 How crowded was the emergency department waiting room when you first arrived the	ere?			
q8 Were you able to find a comfortable place to sit in the waiting area? q10 How long did you wait before you first spoke to the triage nurse, that is the person who first asked you about your health problem?				
q13 From the time you first arrived at the emergency department, how long did you v	vait before being	examined by a		
q18 Overall, how long did your visit to the emergency department last?				
	2007	2009		
Crowding of emergency department waiting room (P=0.000) ( <i>if patient used</i> )	n=(4,205)	n=(4,234)		
Extremely crowded	16%	16%		
Very crowded	21%	26%		
Somewhat crowded	34%	35%		
Not at all crowded	29%	22%		
Found a comfortable place to sit (p=0.002) (if patient needed one)	n=(3,554)	n=(3,712)		
Yes, I found a comfortable place to sit	72%	70%		
I found somewhere to sit, but it was uncomfortable	23%	27%		
No, I could not find a place to sit	4%	3%		
Wait time before speaking to triage nurse (if patient saw triage nurse)	n=(4,190)	n=(4,228)		
0 to 15 minutes	62%	63%		
16 to 30 minutes	21%	22%		
31 to 60 minutes	9%	9%		
More than 60 minutes	8%	6%		
Wait time before being examined by doctor (p=0.000)	n=(4,544)	n=(4,579)		
I did not have to wait	6%	6%		
1 to 30 minutes	21%	16%		
31 to 60 minutes	18%	17%		
More than 1 hour but no more than 2 hours	17%	18%		
More than 2 hours but no more than 4 hours	19%	21%		
More than 4 hours	19%	21%		
Total wait time for visit to emergency department (p=0.001)	n=(4,638)	n=(4,663)		
Up to 1 hour	8%	6%		
More than 1 hour but no more than 2 hours	12%	11%		
More than 2 hours but no more than 4 hours	24%	24%		
More than 4 hours but no more than 8 hours	30%	30%		
More than 8 hours but no more than 12 hours	12%	13%		
More than 12 hours but no more than 24 hours	9%	9%		
More than 24 hours	5%	7%		

Note: All wait times are self reported not from administrative data. Data is weighted by site.

"Not relevant" responses are excluded from these results and are reflected in lower n

Total wait time includes patients who were admitted, which will tend to increase the proportions of people waiting over 4 hours. This is explored at length in subsequent tables.



Considering the specific question results for the wait time and crowding composite in Table 31:

- 3 in 10 respondents in 2007 report the waiting room was not at all crowded, dropping to 2 in 10 in 2009.
- At the other end of the scale, about 4 in 10 (37%) of 2007 respondents found the waiting room very crowded (21%) or extremely crowded (16%). This compares with 42% in 2009.
- About 7 in 10 respondents found a comfortable place to sit in both 2007 and 2009; however the proportion who found only an "uncomfortable" place to sit increased from 23% to 27% between years.
- Wait time for triage nurse improves slightly between 2007 and 2009, but this difference is not statistically significant.
- The proportion of respondents who report waiting over 2 hours to see a physician increases from 38% to 42% between years. Likewise, the proportion of respondents who report seeing the physician within 30 minutes drops 27% in 2007 to 22% in 2009.

As found in 2007, reported waits for initial triage assessment reflect a difference between patient perception of wait and response times proposed by the Canadian Association of Emergency Physicians (CAEP: <u>www.caep.org</u>) and the National Emergency Nurses Affiliation (NENA) for each CTAS level. For example, CTAS guidelines<sup>22</sup> suggest that initial triage should be completed within 10 minutes of patient arrival (at least visually). About 4 in 10 respondents report waiting longer than 15 minutes to see the triage nurse, and more than 1 in 10 waited longer than thirty minutes (17% in 2007; 15% in 2009). Results suggest a small improvement between 2007 and 2009, although this change is not statistically significant. While it is feasible that a visual assessment was done; the recommended 2 to 5 minute triage interview appears not to be occurring within the suggested time frame for at least 2 in 10 respondents.

Wait time to see physician appears to be the most important variable within the wait time composite with very stable multivariate results between 2007 and 2009. Time to physician has the strongest relationship with the overall rating of care (question 57) as compared with other wait time variables, suggesting that from the patient perspective it is more important even than total wait time. Once again, CAEP and NENA provide general consensus recommendations "fractile response" or wait times to physician assessment according to CTAS level,<sup>23</sup> and are a potentially useful measure of care quality from the perspective of urgency versus wait. This measure can be estimated based on self reported time to physician for which survey data are available for most patients; or based on time to physician from administrative data where data are missing for many patients (especially rural). Considering self-reported time to physician:

- 4 in 10 or 38% of 2007 and 42% of 2009 respondents report not seeing a physician in less than 2 hours; with 2 in 10 (19% and 21% respectively) waiting at least 4 hours. Although time to physician needs to be examined in the context of urgency (CTAS level); the CAEP recommendation for CTAS V (the least urgent category) is to see the physician within 2 hours.
- Almost 5 in 10 in 2007 (45%) report seeing the physician in under 60 minutes as compared with 39% in 2009.
- As in the 2007 report, subsequent tables compare self-reported time to physician against time to physician from administrative data and evaluate time to physician against CTAS recommendations.

<sup>&</sup>lt;sup>22</sup> Implementation Guidelines for the Canadian Emergency Department Triage and Acuity Scale (CTAS) 1998.

<sup>&</sup>lt;sup>23</sup> CAEP: Canadian Association of Emergency Physicians.



Table 32: Time to physician calculated from administrative data			
	2007 (n=3,493)	2009 (n=4,022)	
Simple mean (minutes)	118	136	
5% trimmed mean (minutes)	103	121	
Median (minutes)	77	95	
t test sig.	0.0	000	
Note: Data are weighed by site. Time to physician is calcu time of triage and time to physician. These data were rec there may be some reliability issues relative to measures	ulated as the differe orded less frequent such as LOS.	ence between tly in 2007 and	

Table 32 shows the mean time to physician, the 5% trimmed mean<sup>24</sup> time to physician, and the median time to physician for each group; as calculated from administrative data.<sup>25</sup> The median value or trimmed mean is likely the more appropriate to consider given that extreme values distort the mean and may be inaccurate. It is also important to note that there is likely some error associated with these data owing to process variation, how the data are captured, and data being sparse for rural sites.

- As shown, time to physician has increased with site data combined with a 5% trimmed mean of 103 minutes in 2007 to 121 minutes in 2009. Likewise, the mean increases from 118 minutes in 2007 to 136 minutes in 2009. This difference is statistically significant.
- The median time to physician rises from 77 minutes in 2007 to 95 minutes in 2009.

Wait time to see physician	20	07	2009		
wait time to see physician	Self	Admin	Self	Admin	
	(n=4,544)	(n=3,494)	(n=4,579)	(n=4,023)	
No wait (0)	6%	1%	6%	0%	
1 to 30 min	21%	21%	16%	19%	
31 to 60min	18%	19%	17%	18%	
1 to 2 hours	17%	25%	18%	21%	
2 to 4 hours	19%	21%	21%	25%	
> 4 hours	19%	13%	21%	17%	
Карра	0.2	0.24		0.23	

<sup>&</sup>lt;sup>24</sup> This is the mean that would be obtained if the lower and upper 2.5% of values of the variable were deleted, and is used instead of the simple mean because there are some outliers or extreme values in these data, the accuracy of which is unknown. <sup>25</sup> Physician time subtracted from triage time.



To compare self reported wait time to physician with wait time to physician from administrative data; administrative data<sup>26</sup> were coded into the same categories as those of the self reported question about wait time to see a physician (question 17). The comparative results are presented in Table 33:

- For these urban and regional facilities most categories of self reported wait time to see physician is surprisingly similar to administrative data with the largest difference being that administrative data show a higher proportion of 1 to 2 hour waits.
- A slightly larger proportion of respondents report waited more than 4 hours as compared with administrative data for the same patients.

Table 34 shows the degree to which physician wait time falls into the same category for administrative versus self reported data. Wait time categories are identical in 4 of 10 patients in both years.

Differences between the two measures are distributed quite evenly on either side of full agreement, suggesting that random rather than systematic error accounts for these differences. It is not clear whether one or the other measure is "correct", and self reported time to physician may provide a reasonable proxy where time to physician data is not reliably captured.

Table 34: physician (administrat	Degree of (TTP): Sel ive subtracte	difference betwe f reported versus ed from self reported	een measures of t s administrative c ))	time to lata categories
Relative d	lifference	Self (-) Admin	2007 (n=3,199)	2009 (n=3,719)
Admin		<= -4	1%	1%
TTP is	•	-3	4%	3%
larger	irger	-2	8%	8%
		-1	19%	19%
Identical	>	0	38%	38%
		1	20%	19%
Admin	I	2	7%	7%
TTP is	$\downarrow$	3	2%	2%
smaller	>= 4	1%	1%	
Kappa (un	-weighted)	-	0.24	0.24
Kappa is calo level. Data is	culated for Se weighted by	If Reported TTP versu site.	Is Administrative Data	TTP at the patient

The continuous nature of administrative data allows for direct comparison with CTAS recommendations regarding time to physician for each level of acuity as measured by CTAS. Table 35 presents "administrative" wait time to see physician according to CTAS categories for the urban group only.

For CTAS I, it is recommended there be no wait; however in recognition of likely data capture issues we have created a category for wait times of 0 to 5 minutes. Even so, administrative data suggest that only 15% of these most urgent patients achieved the response time. Given the small number of CTAS I patients (with data) and given that CTAS I patients "require resuscitation"; it appears likely that these data are inaccurate. It is likely that recording of

<sup>&</sup>lt;sup>26</sup> Calculated as triage time, subtracted from time when the patient saw a physician. These data are continuous rather than categorical and so must be coded into categories to compare with self reported information.



times are not a priority in the resuscitation setting. In contrast to administrative data, 6 out of 10 CTAS level 1 patients *reported* seeing the doctor "right away".

For other CTAS levels in the urban group, proportions achieving recommended times to physician are similar for administrative data and self reported data. Assuming CTAS targets are reasonable, performance in achieving these recommendations is very poor with the exception of CTAS level V patients. These results can be summarized as follows:

- Categories of wait and CTAS levels where CAEP recommendations were not achieved are identified by cells shaded grey (Table 35).
- For CTAS level II patients, less than 2 in 10 patients were seen by a physician within the recommended 15 minutes.
- For CTAS level III patients, less than 2 in 10 patients were seen within the recommended 30 minutes.
- For CTAS level IV patients, 4 in 10 patients were seen within the recommended 60 minutes, 43% in 2007 and 36% in 2009.
- For CTAS level V patients, 8 in 10 patients were seen within the recommended 120 minutes for 2007, and 6 in 10 for 2009.

Overall, the proportion of surveyed patients (CTAS II to V) for whom CTAS guidelines are achieved has dropped between 2007 and 2009.

Table 35: Time to see physician by CTAS time category by CTAS level								
	2007	2009	2007	2009	2007	2009	2007	2009
Time to Physician (administrative data)	CTASII (n=825)	CTASII (n=935)	CTASIII (n=1786)	CTASIII (n=1959)	CTASIV (n=764)	CTASIV (n=954)	CTASV (n=103)	CTASV (n=146)
0 to 5 minutes	6%	5%	2%	1%	8%	1%	10%	1%
5 to 15 minutes	9%	9%	5%	3%	8%	5%	11%	8%
15 to 30 minutes	17%	17%	8%	9%	10%	11%	9%	14%
30 to 60 minutes	26%	24%	16%	15%	17%	19%	26%	16%
60 to 120 minutes	26%	19%	24%	20%	26%	23%	24%	25%
More than 120 minutes	16%	25%	45%	51%	30%	41%	20%	36%
% achieving CTAS guideline	15%	14%	15%	13%	43%	36%	80%	64%
Note: Data is weighted I	Note: Data is weighted by site. Shaded cells are those where CTAS guidelines are not achieved.							

CAEP suggests that its CTAS wait time recommendations "are not standards" and that more research should be done to determine "the effect time delays have on patient outcomes". The full impact of not achieving CAEP recommendations from a clinical perspective remains to be determined. These CAEP guidelines may be unrealistic given current crowding norms, and may be impacted by emerging remedial strategies such as physicians seeing patients in the waiting area.



CAEP refers to a "fractile response" as "the proportion of patient visits for a given triage level where the patients were seen within the CTAS time frame defined for that level. For example if 85% of Level 3 patients were seen by the physician within 30 minutes in the previous month, then the fractile response for that institution over that time period would be 85%."<sup>27</sup>

Since these data represent a sample of patients rather than the entire patient population for the 4 week study period, we have avoided use of the term fractile response. Given the size of our sample however we expect the above results are likely valid and approximate what would be seen for the complete 2 week population of patients.

Table 36: Total Length of Stay           Self reported categories versus administrative data					
	20	07	2009		
	Self	Admin	Self	Admin	
Total Length of Stay (LOS)	(n=4,638)	(n=4,945)	(n=4,663)	(n=4,942)	
Up to 1 hour	8%	9%	6%	8%	
More than 1 hour but no more than 2 hours	12%	14%	11%	13%	
More than 2 hours but no more than 4 hours	24%	27%	24%	26%	
More than 4 hours but no more than 8 hours	30%	27%	30%	27%	
More than 8 hours but no more than 12 hours	12%	10%	13%	10%	
More than 12 hours but no more than 24 hours	9%	9%	9%	9%	
More than 24 hours	5%	4%	7%	6%	
Kappa (self versus admin)	0.	32	0.	34	
Chi Square Significance self (year to year)		0.0	201		
Chi Square Significance admin (year to year)		0.0	000		
Notes: Data are weighted; Kappa is unweighted					

As shown in Table 36, differences in length of stay between 2007 and 2009 are statistically significant for administrative data and for self reported data with a shift towards increased LOS.

- About 6 in 10 respondents in 2007 (56%) reported their total emergency department visit was longer than four hours. This compares with 59% in 2009.
- Similarly, 2 in 10 respondents, (20%) in 2007 and 17% in 2009; report their length of stay was under 2 hours.

<sup>&</sup>lt;sup>27</sup> Implementation Guidelines for the Canadian ED Triage & Acuity Scale (CTAS); CAEP 2007.



Year	2007			09
Status	Disch. (n=3,949)	Admit (n=877)	Disch. (n=3,981)	Admit (n=961)
mean (hours)	4.5	15.1	4.9	18.9
5% trimmed mean (hours)	4.0	13.2	4.3	17.1
Median (hours)	3.4	11.1	3.6	14.4
t test (discharge versus admit)	0.0	000	0.000	
t test (2007 versus 2009, discharge then admit)	0.000		0.0	000

# Table 27. Total length of stay (LOS) in minutes by discharged or admitted

site; LOS calculated as the difference between time of triage and time of discharge from the emergency department. Data represent survey sample only, not all patients for visit period.

It is expected that length of stay is very different for admitted versus discharged patients. Table 37 shows mean, 5% trimmed mean, and median LOS for admitted and discharged patients for both 2007 and 2009 survey samples, and median LOS for admitted and discharged combined, by year.

The difference in combined LOS between 2007 and 2009 survey samples is very small and is not statistically significant; with a median LOS of 242 minutes in 2007, and 244 minutes in 2009. However, when we examine LOS by admitted versus discharged groups we see significant changes between years as follows:

- LOS for discharged patients increases from a median of 3.4 hours in 2007 to 3.6 hours in 2009.
- LOS for admitted patients increases from a median of 11.1 hours in 2007 to 14.4 hours in 2009.

It appears (at least for the survey sample) that wait times for discharged patients (the majority) have increased modestly, while wait times for admitted patients have increased more substantially.

As with discharge status, significant differences in LOS by CTAS level are expected. More acute and complex patients whether discharged or admitted usually require more in the way of observation, tests, consultation, or procedures. As shown in Table 38:

Median LOS for CTAS I-III respondents was about 5.5 hours in 2007 and 5.7 in 2009; as compared with 2.4 hours in 2007 and 2.5 hours in 2009 for CTAS IV-V patients.



Year	2007		20	09
CTAS (collapsed)	I - III IV - V		I - III	IV - V
(n)	(n=3,121)	(n=1,727)	(n=3,284)	(n=1,609)
0 to 4 hours	35%	75%	34%	72%
4 to 6 hours	19%	15%	17%	16%
> 6 hours	46%	10%	48%	12%
Chi square CTAS (collapsed to two categories)	0.000		0.000	
Chi square by year; (CTAS I-III, then CTAS IV-V)	0.128		0.2	218
Mean LOS (hours)	8.4	3.2	9.5	3.7
Median LOS (hours)	5.5	2.4	5.7	2.6
t test by CTAS (within year)	0.000		0.0	000
t test by year (CTAS I-III, then CTAS IV-V)	0.000		0.0	001

CAEP has published a position statement regarding benchmarks for total emergency department length of stay,<sup>28</sup> stating that national benchmarks should be established as follows: "*ED length of stay not to exceed six hours in 95% of cases for CTAS Level I, II and III patients*" and "*ED length of stay not to exceed four hours in 95% of cases for CTAS Level IV and V patients*".

As shown in Table 38 the proposed CAEP LOS benchmarks:

- For CTAS I-III were not achieved for 4 in 10 respondents (46% 5%) in 2007 and 4 in 10 respondents (48% 5%) in 2009.
- For CTAS IV-V are not achieved for 2 in 10 respondents, (25% 5%) in 2007; and 2 in 10 respondents (28% 5%) in 2009.
- Proportions shown in shaded cells failed to achieve the respective benchmarks (with exception of 5% acceptable outliers).

Administrative length of stay can be compared with self reported length of stay by coding administrative data into the same response categories as captured in the survey (question 18).

The degree to which these two data elements differ by category is presented in Table 39. As was seen with wait time to see the physician, about 4 in 10 (42% in 2007 and 43% in 2009) of respondents reported their LOS to be in the same category as is indicated by administrative LOS and there is little change between years. While differences between the two measures are distributed in both directions, the proportion of patients where administrative LOS is less than self-reported LOS was considerably greater than the opposite situation. This may be due to:

- LOS calculation not including wait time prior to triage.
- Incorrect matching or visit selection with multiple visits (analysis in our data sets), especially where differences between the two measures are large.
- Patient perception of wait time seeming longer than actual wait time.

<sup>&</sup>lt;sup>28</sup> "Position statement on Emergency Department Overcrowding", Canadian Association of Emergency Physicians, February 2007



Table 39: Degree of difference between LOS measures:         Self reported versus administrative data         (administrative subtracted from self reported)				
Relative d category	ifference in	Self (-) Admin	2007 (n=1,263)	2009 (n=1,235)
Admin		<= -4	0%	0%
LOS is	*	-3	1%	1%
longer	-2	4%	3%	
		-1	11%	12%
Identical	>	0	42%	43%
		1	28%	28%
Admin	I	2	9%	9%
LOS is	$\downarrow$	3	3%	3%
shorter		>= 4	2%	2%
Kappa (un-weighted)         0.25         0.26				
Notes: data are weighted by site; Kappa statistic is un-weighted Kappa Kappa is calculated for Self Reported LOS versus Administrative Data LOS				

# 7.5 Respect composite and related questions

Table 40 shows the items comprising the respect composite as well as mean scores for both years. Overall, respect composite scores were quite good with a mean score of 84 out of 100 and no significant change between 2007 and 2009. Almost 8 in 10 respondents score 75 or more out of 100 but again, there is more variation by year at the site level than for combined sites.

Table 40: Respect compositeQuestions included:q26 Doctors and nurses talked in front (of patient) as if not thereq31 Staff provided conflicting informationq35 Family member or friend was allowed to join in treatment areaq16 Fairness of order in which patients were seenq11 Courtesy of triage nurse			
	2007 (n=4,922)	2009 (n=4,905)	
Mean score out of 100	83.9	83.9	
t=0.038; df=9825; p=0.970			
% of patients scoring 75 or higher	77%	76%	
Chi square=0.300;			
Note: Data are weighed by site Site level reliability (GRIP Macro): 0.92 Standardized Scale Alpha (Cronbach's): 0.59			

Opportunities for improvement can be identified by examination of the question specific results shown in Table 41, although these results are quite positive. There is more variation in performance at the level of specific facilities. Differences by year of survey for combined sites are only significant for the rating of the triage nurse.

• Under 2 in 10 respondents reported that doctors or nurses either talked in front of the patient "as if they were not there" (7%), or did so to some extent (13%).



- Almost 2 in 10 respondents reported that staff either provided conflicting information (6%) or did so some of the time (12%).
- About 3 in 10 reported that family was either not allowed to join the patient (8%) or was only allowed to join to some extent (12%).
- About 2 in 10 respondents (19%) believed the order of being seen was not fair. This is supported by the finding that 25% of respondents reported they can't say if the order was fair (data not shown).
- Overall, approximately 9 in 10 respondents overall rated the courtesy of the triage nurse as good, very good or excellent, with a 2% greater proportion rating as excellent or very good in 2009 as compared with 2007 (p=0.003)

Table 41: Respect composite: core questions         q26 Did doctors or nurses talk in front of you as if you weren't there?         q31 Sometimes in a hospital, a member of staff will say one thing and another will say something quite different.         Did this happen to you in the emergency department?         q35 Was our family member or friend allowed to join you in the treatment area when you wanted?         q16 Overall, did you think the order in which patients were seen was fair?         q11 How would you rate the courtesy of the emergency department triage nurse, that is the person who first asked you about your health problem?				
	2007	2009		
Doctors and nurses talked in front of patient as if not there	(n = 4,707)	(n = 4,771)		
No	80%	80%		
Yes to some extent	13%	13%		
Yes definitely	6%	7%		
Staff provided conflicting information	(n = 4,739)	(n = 4,785)		
No	82%	81%		
Yes to some extent	12%	12%		
Yes definitely	6%	6%		
Family member or friend was allowed to join in treatment area $(n = 3,125)$ $(n = 3,138)$				
Yes definitely	81%	80%		
Yes to some extent	12%	12%		
No	7%	8%		
Fairness of order in which patients were seen	(n = 3,223)	(n = 3,228)		
Yes	81%	81%		
No	19%	19%		
Courtesy of triage nurse (shown collapsed) (p=0.003)	(n = 4,429)	(n = 4,479)		
Excellent / very good	68%	70%		
Good	20%	20%		
Fair	8%	7%		
Poor / very poor	4%	3%		
Note: Data are weighted within categories; "not relevant" responses are excluded from results.				



### 7.6 Facility cleanliness composite and related questions

Table 42: Facility cleanliness compositeQuestions included:q44 Cleanliness of emergency department toiletsq43 Cleanliness of emergency department		
	2007 (n=4,707)	2009 (n=4,711)
Mean score out of 100	79.1	77.8
t=2.973; df=9415; p=0.003		
% of patients scoring 75 or higher	62%	62%
Chi square=5.389; df=1; p=0.020		
Note: Data are weighed by site Site level reliability (GRIP Macro): 0.98; Standardized	Scale Alpha (Croi	nbach's): 0.79

The facility cleanliness composite is comprised of two questions about the cleanliness of the facility in general, and the cleanliness of the washrooms. Mean scores are displayed in Table 42 above and are described as follows:

- The mean score is 79.1 for 2007 and 77.8 for 2009, a tiny but statistically significant difference.
- 6 in 10 respondents scored 75 out of 100 or better in both years (no difference).

Table 43: Facility cleanliness composite: core questionsq44 How clean were the toilets in the emergency department?q43 In your opinion, how clean was the emergency department?			
	2007	2009	
Cleanliness of emergency department toilets	(n = 3,170)	(n = 3,273)	
Very clean	44%	42%	
Fairly clean	43%	45%	
Not very clean	10%	10%	
Not at all clean	3%	3%	
Chi Square	0.155		
Cleanliness of emergency department	(n = 4,576) (n = 4,618)		
Very clean	49%	46%	
Fairly clean	44%	46%	
Not very clean	6%	6%	
Not at all clean	1%	2%	
Chi Sq. / Cramer's V	0.027	7/ 0.3	
Data are weighted by site	-		

Considering the individual question results shown in Table 43:

- Just over 4 in 10 respondents reported that toilets were very clean; 44% in 2007 and 42% in 2009. The small difference is not statistically significant.
- About 5 in 10 respondents reported the facility was very clean; 49% in 2007 and 46% in 2009. The small difference in results for cleanliness of facility is statistically significant (p=0.03).



#### 7.7 Discharge communication composite and related questions

The discharge composite is comprised of items related to discharge communication issues. These are closely related to communication about new medications although these have been addressed in their own composite. Unlike the medication questions, discharge communication questions were asked of most respondents, and are important for post-emergency department care and follow-up.

The mean score of the discharge communication composite was relatively lower than the other composites. These results are shown in Table 44 and are summarized as follows:

- The mean score was (49.2/100) for 2007 respondents, and (49.5/100) for 2009; essentially no change.
- Just over 3 out of 10 respondents scored 75/100 or higher, suggesting there is room for improvement with
  respect to discharge communication.
- A detailed look at specific items and their face value from a clinical perspective is suggested.

Table 44: Discharge communication composite         Questions included:         q51 Told when could resume usual activities         q52 Told about danger signals to watch for after you went home         q53 Told what to do if worried about condition or treatment after leaving         q54_a Staff asked how patient getting home         q54_b Staff asked whether someone at home to assist         q54_c Staff asked about other concerns about your safety and comfort at home         q54_d Staff asked if patient knew what to do for follow-up care			
2007 2009 (n=3,742) (n=3,717)			
Vean score out of 100         49.2         49.5			
t=-0.300; df=7457; p=0.764			
% of patients scoring 75 or higher	33%	33%	
Chi square=0.023; df=1; p=0.878			
Note: Data are weighed by site; Site level reliability (GRIP Macro): 0.87 Standardized Scale Alpha (Cronbach's): 0.87 (same rounded value as for GRIP by coincidence) Pearson Correlation between alternate methods of calculation ranges from 95.6 to 97.7 See Appendix D of 2007 report for details			

Specific question results for the discharge communication composite are presented in Table 45 (first of 2 tables). In general, it appears that discharge communication was less effective than desirable. Note that patients who reported they did not need such information are excluded from these results and this is reflected in a reduced n.

• About 4 in 10 respondents overall did not need information about when they could resume normal activities. These responses are not included in the table or number of respondents.

For patients who require the information:

- More than 4 in 10 respondents reported they were <u>not</u> told when they could resume normal activities; 42% in 2007 and 44% in 2009.
- About 4 in 10 respondents reported they were "completely" informed about when they could resume usual activities; 36% in both years.
- About 3 in 10 adult respondents reported they did not need information about danger signals to watch for.



For patients who require information about danger signals:

- . About 4 in 10 respondents reported they were "completely" informed about danger signals to watch for after they returned home; 36% in both the 2007 and 2009 survey samples.
- About 4 in 10 respondents reported being "completely" informed about what to do if they were worried about . their condition or treatment after they left; 40% for both years.

Table 45: Discharge communication composite: core questionsDid a member of staff tell youq51 When you could resume you usual activities, such as when to go back to work or drive a car?q52 About what danger signals regarding your illness or treatment to watch for after you went home?q53 What to do if you were worried about your condition or treatment after you left the emergency department?			
	2007	2009	
Told when could resume usual activities	(n=2,395)	(n=2,422)	
Yes completely	36%	36%	
Yes to some extent	22%	20%	
No	42%	44%	
Told about danger signals to watch for after you went home	(n=2,835)	(n=2,897)	
Yes completely	36%	36%	
Yes to some extent	26%	26%	
No	37%	38%	
Told what to do if worried about condition or treatment after leaving	(n=3,429)	(n=3,492)	
Yes completely	40%	40%	
Yes to some extent	24%	25%	
No	36%	35%	

Note: Data are weighted by site; Differences are not significant; "Not relevant" responses are excluded from results. Not relevant responses such as "I did not need this type of information" are reflected in a lower n.

Table 46: Discharge communication composite: supplemental questionsDid a member of staff ask about any of the following when you left the emergency department?q54_a How you were getting home? (yes/no)q54_b If you had someone at home to assist you? (yes/no)q54_c If there were any other concerns about you safety and comfort at home? (yes/no)q54_d If you knew what to do for follow up care? (yes/no)				
	2007	2009		
Staff asked how patient getting home	(n=2,362)	(n=2,343)		
Yes	40%	40%		
Staff asked whether someone at home to assist	(n=2,151)	(n=2,165)		
Yes	37%	39%		
Staff asked about other concerns about your safety and comfort at home	(n=1,957)	(n=1,983)		
Yes	20%	22%		
Staff asked if patient knew what to do for follow-up care	(n=2,674)	(n=2,747)		
Yes	62%	64%		
Note: Data are weighted within categories; "Not relevant" responses are excluded from these Not relevant responses such as "not needed" are reflected in lower n. Not relevant choices w	e results. vere provided for al	l items.		

Not relevant responses such as "not needed" are reflected in lower n. Not relevant choices were provided for all items.



Four additional items beyond those in the original British survey were included in the discharge communication composite. These are presented in Table 46. The question response format is strictly "yes" or "no", without a response option for partial achievement of the parameters in question.

• About 4 in 10 respondents reported they did not need information about how they were getting home, whether there was someone at home to assist, or whether they had other concerns about safety at home. These results are excluded from the table and the number of respondents is reduced.

For patients who require the information:

- About 4 in 10 respondents reported that staff asked them how they were getting home; 40% in both years.
- About 4 in 10 respondents reported that staff asked whether there was someone at home to assist; 37% in 2007 and 39% in 2009 (difference not statistically significant).

#### 7.8 Wait time communication composite and related questions

The wait time communication composite is comprised of two questions regarding being informed about the wait time and why there is a wait; and one question about staff checking on the patient while they are waiting. The latter question may provide limited insight into another CTAS recommendation regarding how frequently waiting patients need to be reassessed. The scores for this composite are relatively low, suggesting this is an area where improvements are desirable.

The mean scores for this composite are presented in Table 47. Overall low scores for the wait time communication composite there may be opportunities for improvement. While the wait time communication composite had little effect on the overall rating of care, these issues may be important for other reasons.

- Respondents scored only 49/100 in 2007, and 45/100 in 2009; this difference is statistically significant.
- Likewise, only 3 in 10 respondents scored 75 or higher; 30% in 2007; dropping to 25% in 2009. This difference is statistically significant.

Table 47: Wait time communication comQuestions included:q14 Told how long had to wait to be examinedq15 Told why had to wait to be examinedq17 Staff checked on you while waiting	posite	
	2007 (n=4,686)	2009 (n=4,681)
Mean score out of 100	49.2	45.3
t=5/290; df=9364; p=0.000		
% of patients scoring 75 or higher	30%	25%
Chi square=28.874; df=1; p=0.000		
Note: Data are weighed by site. Site level reliability (G Standardized Scale Alpha (Cronbach's): 0.78 Pearson correlation between alternate methods of calo 90.9 to 98.0 see Appendix D of 2007 report for details	RIP Macro): 0.95 culating this compo	site range from

Specific question results are shown in Table 48. Not relevant response options such as "no, but I did not mind" are not shown. Specific question results are summarized as follows:



- Over 6 in 10 respondents reported they were not told how long they would have to wait to be examined; 64% in 2007 and 69% in 2009. Conversely, the proportion of respondents who report the wait time was shorter than what they were told dropped from 12% in 2007 to 9% in 2009. These differences are statistically significant.
- About 5 in 10 respondents reported not being told why they had to wait; 51% in 2007 and 53% in 2009 (not statistically significant). These respondents also indicated they would have liked an explanation.

Table 48: Wait time communication composite: core questionsq14 Were you told how long you would have to wait to be examined?q15 Were you told why had to wait to be examined?q17 Did a member of staff checked on you while you were waiting?				
	2007	2009		
Told how long had to wait to be examined	(n=4,276)	(n=4,350)		
Yes but wait was shorter	12%	9%		
Yes, wait was same	10%	9%		
Yes, but wait was longer	15%	13%		
No, I was not told	64%	69%		
Chi Square significance	0.000			
Told why had to wait to be examined	(n=2,150)	(n=2,226)		
Yes	49%	47%		
No, but I would have liked an explanation	51%	53%		
Staff checked on you while waiting	(n=3,342)	(n=3,316)		
Yes, definitely	60%	55%		
Yes, but I would have liked them to check more often	12%	13%		
No, but I would have liked them to check	28%	32%		
Chi Square significance	0.0	000		
Note: Data are weighted by site; Not relevant response choices such as "No, but I did not mind" are excluded, and are reflected in lower n				

- About 4 in 10 respondents reported that they did not need an explanation of why they had to wait. This information is excluded from the table and the number of respondents reported is correspondingly lower.
- 6 in 10 respondents reported that staff definitely checked on them while waiting; 60% in 2007 and 55% in 2009. This difference is statistically significant.
- An additional 1 in 10 respondents reported that while staff did check on them, they would have liked staff to check on them more often.

Staff checking on the patient is a potentially important question from the perspective of CTAS reassessment goals and this was examined in the 2007 report. In this context it is important to include "no" responses for patients who "did not mind" that staff did not check on them. These are excluded from calculation of the composite as "not relevant" and are not reported in Table 48 but are included in the base for calculation of proportions in Table 49.

CAEP CTAS guidelines for reassessment propose that level II patients should be reassessed every 15 minutes; level III every 30 minutes, level IV every 60 minutes, and level V every 120 minutes. Table 49 shows time to physician according to CTAS reassessment guideline time categories, and whether patients reported that staff had checked on them at any time while they waited.



Table 49: Staff not confirmed to check on patient while waiting to seephysician by time to physician and CTAS level			
Time to Physician	Not che	cked on	
By CTAS Level (row % within time)	2007	2009	
CTAS II	(n=824)	(n=935)	
0 to 15 min.	41%	39%	
15 to 30 min.	29%	38%	
30 to 60 min.	37%	35%	
60 to 120 min.	33%	40%	
over 120 min.	34%	42%	
% of all CTAS II patients within guidelines	28%	33%	
CTAS III	(n=1,787)	(n=1960)	
0 to 15 min.	36%	49%	
15 to 30 min.	50%	45%	
30 to 60 min.	43%	43%	
60 to 120 min.	50%	55%	
over 120 min.	48%	53%	
% of all CTAS III patients within guidelines	41%	45%	
CTAS IV	(n=761)	(n=953)	
0 to 15 min.	61%	63%	
15 to 30 min.	55%	67%	
30 to 60 min.	62%	61%	
60 to 120 min.	60%	65%	
over 120 min.	61%	64%	
% of all CTAS IV patients within guidelines	34%	41%	
CTAS V	(n=103)	(n=149)	
0 to 15 min.	67%	64%	
15 to 30 min.	67%	55%	
30 to 60 min.	52%	72%	
60 to 120 min.	76%	65%	
over 120 min.	90%	72%	
% of all CTAS V patients within guidelines	18%	26%	
Note: Data are weighted by site, Time to physician from administrative data (physician time - triage time) Grey cells represent cases unlikely to be achieving reassessment guidelines			



This information provides a proxy for whether staff reassessed the patient according to CTAS guidelines for their triage level in the following way:

- Question 17 asks whether staff checked on the patient while they waited. While many patients may also have waited to be treated after they saw they physician, we assume that shortest the patient could have "waited", was the time they waited before seeing the physician.
- If the patient reported that staff did not check on them during the time they waited; and if the time they waited (time to physician) is greater than the recommended time interval for reassessment; then it is reasonable to assume that the reassessment guideline has likely not been achieved. In fact, in some cases patients should have been reassessed 2 or 3 times, but they have reported that staff never checked on them at all.

It is possible that some reassessment is done without the patient knowing they had been "checked on"; either visually or when the patient came up to the triage nurse for some reason. This is offset by the degree to which we have intentionally underestimated time factors, using for example: time to physician rather than length of stay.

While it is difficult to precisely determine achievement of guidelines for reassessment; the above information suggests the reassessment goals are a challenge. For example:

- Almost 3 in 10 CTAS II patients who waited longer than 15 minutes to see the physician should have been reassessed at least once but reported they were not checked on; 28% in 2007 and 33% in 2009. More than 1 in 10 should have been reassessed 2 or 3 times according to the guidelines, but still reported they were not checked on.
- About 4 in 10 CTAS III patients who waited longer than 30 minutes to see the physician should have been reassessed at least once but report they were not checked on; 41% in 2007 and 45% in 2009. About 3 in 10 should have been re-assessed at least 2 times.
- More than 3 in 10 CTAS IV patients who waited longer than 60 minutes to see the physician should have been reassessed at least once but report they were not checked on while they waited; 34% in 2007 and 41% in 2009. More than half of these overall should have been re-assessed 2 times according to the guidelines.
- More than 2 in 10 CTAS V patients who waited 2 hours or more, should have been reassessed at least once but report they were not checked on; 18% in 2007 and 26% in 2009. Most CTAS V patients are never re-assessed (67% in 2009), but most of these appear to be within the guidelines.

Overall, it appears that the proportion of patients not being reassessed within guidelines has increased between 2007 and 2009 samples. While these results are a proxy – they strengthen the suggestion made in the 2007 report that further study be done to evaluate reassessment frequency, as well as the potential impact of not achieving CTAS reassessment guidelines. CAEP is well aware of the challenge in reassessing patients in the face of significant crowding and wait time pressures, and the 2004 revised CTAS guidelines recognize this challenge in stating: "*The CTAS NWG (national working group) believes that the focus should shift to the timely reassessment of patients waiting to be seen, to ensure that unavoidable delays are safe.*"

Changes in the role of patients are also suggested in the following statement: "It is important that the patient or their caregiver be instructed to contact the triage nurse if the presenting condition worsens while the patient is in the waiting area. The safety of waiting is a shared responsibility between the patient and the triage nurse."<sup>29</sup> This implies that patients and care givers might be better educated regarding their role in helping to ensure their emergency department care is safe even under circumstances of long wait times and crowding.

<sup>&</sup>lt;sup>29</sup> "Revisions to the Canadian Emergency Department Triage and Acuity Scale Implementation Guidelines", Michael Murray, MD et AL, 2004, CJEM, Vol 6, Num 6 p241.



#### 7.9 Medication communication composite and related questions

About 5 in 10 (50%) respondents report they are prescribed or provided with new medications during their emergency department visit. Although communication about medication did not influence the overall rating (question 57), it is important for obvious clinical reasons. A clear patient understanding of the purpose of medications, how to take them, and what side effects to watch for can help to prevent medication related complications or adverse events. Likewise, patient awareness of these issues and a patient role in helping to insure that this communication occurs may be useful. It is not clear how much responsibility is deferred to community pharmacists to provide this medication related information.

The medication communication composite is presented in Table 50, and reflects the subset of patients who receive medication as a consequence of their emergency department visit. In general the score for this composite was quite high at about 72 out of 100. Likewise, 6 in 10 patients scored 75/100 or higher; 54% in 2007 and 51% in 2009.

Table 50: Medication communication compositeQuestions included:q50 Told about medication side effects to watch forq49 Told how to take the new medicationsq48 Purpose of the medications explained in understandable way					
	2007 (n=1,785)	2009 (n=1,835)			
Mean score out of 100	72.2	70.2			
t=1.912;					
% of patients scoring 75 or higher	54.5%	51.3%			
Chi Square=3.532; df=1; p=0.060					
Note: Data are weighed within category; Site level reliability (GRIP Macro): 0.81 Standardized Scale Alpha (Cronbach's): 0.75					

Specific question results for the medication communication composite are presented in Table 51. Of those respondents given a new medication or prescription:

- Almost 8 in 10 reported receiving a complete explanation of the purpose of medication; 78% in 2007 and 75% in 2009 (~ statistically significant).
- About 7 in 10 reported explanation of how to take the medications; 74% in 2007 and 70% in 2009 (this difference is statistically significant).
- Almost 4 in 10 reported being told about side effects to watch for: 38% in 2007 and 34% in 2009 (not statistically significant).



Table 51: Medication communication composite: core questions         Did a member of staff						
q48 Purpose of the medications explained in understandable q49 Explain to you how to take the new medications?	way					
q50 Tell you about medication side effects to watch for?						
	2007	2009				
Purpose of the medications explained	(n=1,541)	(n=1,571)				
Yes completely	78%	75%				
Yes to some extent	16%	20%				
No	6%	6%				
Chi Square=6.110; df=2 p=0.047						
How to take the new medications explained	(n=1,639)	(n=1,666)				
Yes completely	74%	70%				
Yes to some extent	15%	18%				
No	12%	12%				
Chi Square=7.295; df=2 p=0.026						
Told about medication side effects to watch for	(n=1,717)	(n=1,778)				
Yes completely	38%	34%				
Yes to some extent	18%	19%				
No	44%	47%				
Note: Data are weighted within categories; "not relevant" response Not relevant responses such as "I did not need an explanation" are	es are excluded fror e reflected in lower	n results. n.				

While the medications prescribed may have limited side effect concerns, we would expect a higher proportion of patients should receive information about possible side effects. There may be some expectation that this information will be provided by community pharmacists, many of whom provide detailed written information with prescription medications they dispense.



## 7.10 Privacy composite and related questions

Overall, most respondents were not concerned with the level of privacy they were given during their visit to the emergency department. The privacy composite also has no measurable relationship with the overall rating (question 57) suggesting that these issues are both well managed and potentially unimportant to patients on average. It is possible that if privacy issues as described were poorly managed, this issue would become more important to patients.

Table 52: Privacy compositeQuestions included:q28 Given enough privacy when discussing condition or treatmentq29 Given enough privacy when being examined					
	2007 (n=4,798)	2009 (n=4,840)			
Mean score out of 100	81.8	80.3			
t=2.637; df=9635; sig=0.008					
% of patients scoring 75 or higher	68%	73%			
Chi Square=7.963; df=1 p=0.005					
Note: Data are weighted by site; Site level reliability (GRIP Macro): 0.93 Standardized Scale Alpha (Cronbach's): 0.78					

Even considering the high scores, Table 52 shows there were statistically significant differences between years:

- Respondents scored 82/100 in 2007 and 80/100 in 2009; a statistically significant difference.
- 7 in 10 respondents scored 75 or higher; 68% in 2007 and 73% in 2009 (also statistically significant).

Table 53: Privacy composite: core questionsq28 Were you given enough privacy when discussing your condition or treatment?q29 Were you given enough privacy when being examined or treated?						
	2007	2009				
Given enough privacy when discussing condition or treatment	(n=4,735)	(n=4,811)				
Yes definitely	64%	62%				
Yes, to some extent	28%	29%				
No	8%	9%				
Chi Square=7.103; df=2 p=0.029						
Given enough privacy when being examined or treated	(n=4,747)	(n=4,815)				
Yes definitely	76%	73%				
Yes, to some extent	19%	22%				
No	5%	5%				
Chi Square=9.254; df=2 p=0.010						
Note: Data are weighted by site						



Specific question results for the privacy composite are shown in Table 53 above, where:

- Just over 6 in 10 respondents reported they "definitely" have enough privacy when discussing their condition or treatment; 64% in 2007 and 62% in 2009. Differences in results by year are statistically significant (Chi Square).
- About 8 in 10 respondents indicated they "definitely" were given enough privacy; 76% in 2007, and 73% in 2009 (Chi Square indicates differences by year are statistically significant).

There appears to have been a modest deterioration in privacy between the two surveys; which may not be surprising given the emergence of novel strategies to address wait times such as physicians seeing patients in the waiting room, and the pattern of increasing crowding in these large hospital and urban sites.

## 8.0 Patients who considered leaving before treatment

Patients leaving before treatment can be an important issue for emergency departments as patients may leave prior to a diagnosis and have been shown to suffer adverse events and even death within the subsequent short-term followup. As we have seen from the results above, patient's assessment of urgency often differs from their actual CTAS score. To better understand this issue, question 13 on the survey asked whether the respondent considered leaving before they had been seen.

Table 54 shows whether the respondent considered leaving by discharge status and CTAS level. There are an important number of patients who were either admitted, or were CTAS I or II; and considered leaving before they had been seen. For example:

- More than 1 in 10 respondents who were ultimately admitted, either definitely considered leaving, or considered leaving to some extent; 12% in 2007 and 15% in 2009.
- Almost 3 in 10 respondents who were classified as CTAS level III considered leaving; 26% in 2007 and 29% in 2009.

Table 54: Considered leaving before being seen by discharge status and CTAS         q9 During your visit to the emergency department, did you consider leaving before you had been seen and treated?								
	2007 Considered leaving			g	2009	g		
	Yes, definitely	To some extent	No	Cram. V	Yes, definitely	To some extent	No	Cram. V
Status		(n=4,69	2)		(n=4,861)			
Admitted (row %)	5%	7%	87%	0.150	7%	8%	85%	0 1 4 7
Not Admitted	14%	16%	70%	0.150	13%	18%	68%	0.147
CTAS Level		(n=4,71	6)		(n=4,813)			
CTAS I (row %)	0%	11%	89%		0%	5%	95%	
CTAS II	7%	8%	85%		8%	10%	82%	
CTAS III	12%	14%	74%	0.111	12%	17%	71%	0.098
CTAS IV	15%	18%	67%		14%	21%	65%	
CTAS V	20%	17%	64%		10%	21%	69%	
Note: Data are weighted by site. Cramer's V is not between year; Chi Squared is significant to 0.000 where Cramer's V is shown								



Almost 2 in 10 respondents who were classified as CTAS level I or II considered leaving; 15% in 2007 and 18% in 2009 (combined proportions not show in table).

While we cannot say why these respondents ultimately decided to stay, they clearly would have been at some risk of harm if they had left. Leaving prior to the completion of assessment is a risky option for all emergency department patients. It is important to understand who these individuals are who contemplate leaving early; and what factors may pre-dispose them to leaving prior to seeing a physician or receiving full treatment. Wait time factors clearly have some impact as shown in Table 55.

Table 55: Considered leaving before being seen, by wait time to triage nurse and physician								
	2007 -	Considered	d Leavir	ng	2009 - Considered Leaving			
	Yes definitely	To some extent	No	Cram. V	Yes definitely	To some extent	No	Cram. V
Triage nurse wait (n)		2007 (n=4,1	07)			2009 (n=4,2	205)	
0 to 15 min <i>(row%)</i>	10%	12%	78%	0.151	11%	15%	74%	0.114
16 to 30 min	16%	18%	66%		15%	21%	65%	
31 to 60 min	19%	19%	62%		19%	28%	53%	
> 60 min	28%	26%	46%		22%	21%	57%	
Physician wait (n)		(n=4,444	)		(n=4,536)			
No wait (0) <i>(row%)</i>	3%	3%	94%	0.334	1%	5%	95%	0.279
1 to 30 min	2%	4%	94%		5%	5%	91%	
31 to 60min	4%	8%	88%		4%	10%	86%	
1 to 2 hours	7%	15%	78%		8%	17%	75%	
2 to 4 hours	16%	24%	60%		17%	23%	60%	
> 4 hours	33%	28%	39%		26%	29%	45%	
CAEP Guideline (n)		(n=3,376	)		(n=3,931)			
Meeting target (row%)	6%	9%	85%	0.113	6%	11%	83%	0.121
Not meeting target	12%	14%	74%		13%	17%	70%	
Note: Data are weighted by site. Chi Squared and Cramer's V are not between years; Chi Squared is significant to 0.000 where Cramer's V is shown; Triage nurse wait, and physician wait are self reported.								

Fewer respondents consider leaving prior to being seen with shorter wait times to see the triage nurse. For example:

- For respondents who waited longer than 60 minutes to see the triage nurse, over 5 in 10 reported they either definitely considered leaving or considered leaving to some extent; 54% in 2007 and 43% in 2009; a considerable improvement.
- For respondents who waited 31 to 60 minutes to see the triage nurse, 4 in 10 (38%) in 2007 and 5 in 10 (47%) in 2009 reported that they considered leaving.



Fewer respondents consider leaving prior to being seen with decreased wait time to see the physician. For example:

- For respondents who waited longer than 4 hours to see a physician, over 6 in 10 reported they either definitely considered leaving or considered leaving to some extent; 61% in 2007 and 55% in 2009.
- 4 in 10 considered leaving if they waited 2 to 4 hours; 40% in both 2007 and 2009.

Considering CTAS proposed targets for physician wait time (computed by triage level and using administrative data):

 Almost 3 in 10 respondents for whom CTAS proposed targets were not achieved reported they considered leaving; 26% in 2007 and 30% in 2009. This compared with over 1 in 10 patients for whom targets were achieved; 15% and 17% respectively.

All of the comparisons between wait times and "considering leaving" were statistically significant (0.000); and Cramer's V was as high as 0.33 indicating a reasonably strong relationship between physician wait and considering leaving.

Similar but weaker results were found for overall length of stay (data not shown). Self reported LOS was more strongly associated than administrative length of stay; presumably because the latter does not include time prior to triage assessment which is shown in Table 55 to be important in isolation of the other wait time variables.

	2007 ·	Considere	d leavi	ng	2009 - Considered leavi			ng
	Yes definitely	To some extent	No	Cram. V	Yes definitely	To some extent	No	Cram V
Staff checked (n)		(n=2,355	)		(n=2,254)			-
Yes definitely (row %)	6%	9%	86%		6%	10%	84%	
Yes, but I would have liked more often	20%	22%	58%	.268	18%	24%	58%	.267
No, but I wanted them to check	27%	24%	49%		25%	28%	47%	
Staff helped (n)		(n=2,688	)		(1	n=2,623)		
Yes always (row %)	6%	8%	86%		7%	11%	82%	
Yes sometimes	14%	21%	64%		17%	21%	62%	
No	36%	21%	43%	.252	30%	27%	43%	.208
A member of staff was always with me	4%	7%	89%		7%	3%	90%	

Two additional variables are strongly related to whether or not the respondent considered leaving. These relate to the need for reassessment recommended by CTAS, but also to keeping patients updated. This relationship was further confirmed in the HQCA's 2008 Population Survey<sup>30</sup> which included the same questions. Unlike wait times – these factors may be more easily influenced by specific emergency department strategies.

<sup>&</sup>lt;sup>30</sup> Health Quality Council of Alberta, Satisfaction with Health Care Services: A Survey of Albertans 2008, www.hqca.ca



Table 56 shows whether the respondent considered leaving before seeing the physician or being treated; by whether staff checked on them while they were waiting; and by whether the respondent could get a member of staff to help them if they needed attention.

- Over 5 in 10 respondents who were <u>not</u> checked on by staff reported that they considered leaving; (51% in 2007 and (53%) in 2009. This contrasts with 2 in 10 where staff definitely checked; (15%) in 2007 and (16%) in 2009.
- About 6 in 10 respondents who could <u>not</u> get help from staff reported that they considered leaving; (57%) in both years. This contrasts with over 1 in 10 where respondents could always find a member of staff to help; (14%) in 2007 and (18%) in 2009.

## 9.0 Regression on overall (global) rating

The objective of this multivariate analysis was to estimate the effect of both confounding (uncontrollable) variables, and other quality variables on the overall rating (question 57). One benefit of such analysis is that it provides information about the relative and unique importance of various attributes of quality relative to an *outcome* variable; while controlling for *confounding* variables that may also impact that variable.

A number of different regressions were undertaken using the overall rating (question 57) as an outcome variable; with coding according to the standardized (0-100) scoring scheme developed for the British National Health Service survey. The essential elements of alternative models were very similar.

The final models account for a relatively high proportion ( $\sim 60-65\%$ ) of variance in the overall rating of care variable, suggesting that we are in fact accounting for many of the factors that influence patient rating of overall care. It is important to note that we also measure a number of additional aspects of care quality that appear to be unrelated to the overall rating, but which may be important for other independent reasons.

#### 9.1 Effects of patient characteristics on overall rating

Table 57 shows patient characteristic and context of visit variables for the regression model. These effects can be summarized as follows:

Males and females aged 16 to 35 tend to rate overall care more negatively than older people. There seems to be
a direct correlation between a person's age and how they rate the overall care with females being slightly more
positive.

Self rated health status also has important effects on the overall rating. The effects are quite linear even where not significant, and can be summarized as follows:

- Excellent health is expected to increase the overall rating by 2.46/100 relative to the base case of good health.
- Very poor health is predicted to reduce the overall rating by 5.4/100 relative to the base case of good health.
- In general, the better a person's health, the better the overall rating.



Table 57: Regression on overall rating (Q57) for all patients (Part A)         Underlying patient characteristics							
Variable	Element	Coefficient	t value	Significance			
	Intercept	12.76	8.00	sig			
	Base case: males 16 to 35						
	Females 16 to 35	0.05	0.08				
	Females 36 to 50	1.89	2.66	sig			
Conder and ago group	Females 51to 65	3.39	4.59	sig			
Gender and age group	Females 66+	3.56	4.72	sig			
	Males 36 to 50	1.28	1.73				
	Males 51 to 65	2.21	2.98	sig			
	Males 66+	2.67	3.48	sig			
	Base case: good health						
	Excellent	2.46	3.91	sig			
Solf roted boolth status	Very good	1.53	3.09	sig			
Self rated nealth status	Fair	-2.06	-4.20	sig			
	Poor	-1.72	-2.70	sig			
	Very poor	-5.40	-4.61	sig			
R2=61.70%; This table presents	selected items included in the model. Significal	nce is presented a	t the 95% leve	əl.			

# 9.2 Effects of specific care quality variables on overall rating

The effects of care quality variables on the overall rating (question 57) are shown in Table 58 and are summarized as follows:



Tabl Patie	e 58: Regression on c	overall rating (Q57) for all pa	atients (Part E	3)			
	Variable	Element	Coefficient	t value	Sig	Standardized coefficient	
	Doctors and nurses	Base case: everyone introduce	ed themselves				
	introducing themselves	Not all doctors and nurses Introduced Themselves	-1.83	-4.57	sig		
		Base case: didn't need attentic	on from staff				
	Getting attention of staff	Needed attention - staff helped	0.06	0.14			
		Needed attention - staff didn't help	-7.24	-9.03	sig		
	Bassived any tests	Base case: didn't receive tests					
S	Received any lesis	Received tests (X-rays, scans, or blood tests)	1.15	2.74	sig		
b/e		Base case: not in pain		-			
aria		In pain - staff definitely did all they could to help	1.14	2.47	sig		
ite v.	Help with pain	In pain - staff helped control somewhat	-2.93	-5.34	sig		
ISO		In pain - staff did not help	-8.64	-13.78	sig		
duc		In pain - not sure if staff did what they could	-3.00	-3.86	sig		
ŭ	Discharge status	Base case: discharged home					
pu	Disenarge status	Admitted	2.94	6.24	sig		
care a	Staff care and communication composite	Standardized score of 0 to 100	0.39	38.53	sig	0.38	
e of	Respect composite	Standardized score of 0 to 100	0.23	19.28	sig	0.17	
ienci	Facility cleanliness composite	Standardized score of 0 to 100	0.15	16.75	sig	0.13	
cperi	Wait time & crowding composite	Standardized score of 0 to 100	0.10	10.85	sig	0.09	
6		Base case: 1-30 Minutes					
ent		Did not wait	0.92	0.98			
ati	Waiting time for	31 to 60 minutes	-1.02	-1.76		0.40	
	doctor (Q13)	1 to 2 hours	-2.44	-4.09	sig	0.12	
		2 to 4 hours	-4.72	-8.03	sig		
		More than 4 hours	-8.51	-13.93	sig		
	Privacy composite	Standardized score of 0 to 100	0.02	2.52	sig	0.02	
	Wait time communication composite	Standardized score of 0 to 100	0.02	3.84	sig	0.03	
	Veer	Base case: 2007					
	rear	2009	0.54	1.54			
R2=6	1.70%; This table presents se	elected items included in the model.	Significance is pre	esented at ti	he 95%	level	
The c	The coefficient for wait and crowding composite <u>from an alternative model</u> is presented for comparison purposes. The alternate model is very similar except that the wait composite is used instead of wait time for doctor						



- Doctors or nurses not introducing themselves is predicted to drop the overall rating by 1.83/100 relative to the base case of doctors and nurses all introducing themselves.
- Not getting help from staff when needed is predicted to drop the overall rating by 7.24/100 relative to the base case of not needing help from staff.
- Staff not helping when the patient has pain is predicted to drop the overall rating by 8.64/100 relative to the base case of not having pain. Likewise, if the patient was not sure that staff did everything they could the overall rating is predicted to drop by about 3.00/100.
- A 1 unit (out of 100) improvement in the staff care and communication composite score is predicted to increase the overall rating by 0.39/100. This means that improving the care composite by 20/100 (i.e. from 60 to 80) will likely improve the overall rating by 8/100.
- A 1 unit (out of 100) improvement in the respect composite score is predicted to increase the overall rating by 0.23/100. This means that improving the respect composite by 20/100 (say from 60 to 80) will likely improve the overall rating by about 5/100.
- A 1 unit (out of 100) improvement in the cleanliness composite score is predicted to increase the overall rating by 0.15/100. This means that improving the cleanliness composite by 20/100 (i.e. from 60 to 80) will likely improve the overall rating by 3/100.
- A 1 unit (out of 100) improvement in the wait time composite score is predicted to increase the overall rating by 0.10/100. This means that improving the wait time composite by 20/100 (i.e. from 60 to 80) will likely improve the overall rating by about 2/100. As footnoted, this result is from an alternative model which exchanges wait time for physician for the wait time composite, but is otherwise the same model.
- The wait time communication composite and privacy composite effects are significant but much smaller. Although these are assumed to be important issues in general, it could be that the lack of variance in these variables amongst patients limits explanation of total variance in the overall care rating.
- The survey year was also included to see if any change is being picked up between the two years that the included factors were not explaining. However, this doesn't seem to be the case as the year variable is insignificant.

Wait time for physician is summarized as follows:

- Waiting 31 to 60 minutes (to see the physician) will reduce the overall rating by 1.02/100, relative to the base case of 0 to 30 minutes wait. However, this is just insignificant at the 95% confidence level.
- Waiting 1 to 2 hours will reduce the overall rating by 2.44/100.
- Waiting 2 to 4 hours will reduce the overall rating by 4.72/100.
- Waiting over 4 hours will reduce the overall rating by 8.51/100.

Outcomes also have some effect in the urban model, particularly being admitted. For example:

- Receiving tests (as compared with not receiving tests) is predicted to improve the overall rating by 1.15/100.
- Being admitted as an inpatient (as compared with being discharged home) is predicted to improve the overall rating by 2.94/100.

This same model is presented in Table 59 and Table 60 but for just those people who were discharged home following their emergency department visit. Similar results are found overall, but the focus on discharged patients allowed for inclusion of the discharge communication composite; where a one unit change has an effect on the



overall rating of 0.07/100. This means that improving the discharge communication composite by 20/100 (i.e. from 60 to 80) will likely improve the overall care rating by about 1.5/100.

Also presented in the models are the standardized coefficients for the composite variables. These allow for a more standardized evaluation of factor importance in that the higher the standardized coefficient, the greater the explanation of variance in overall care (question 57). It is clear that staff care and communication (from the patient perspective) drives the overall rating of care. The importance of this composite and the respect composite to the overall rating suggests that interaction with physicians and nurses and related clinical communication are critical to a good patient experience. Conversely communication about medication, privacy, and wait time communication – have less impact on the overall rating. They are arguably important to good care for other reasons.

Wait time to see the physician becomes the dominant driver of all wait time variables – and has a large impact on the overall rating especially when the wait for physician is long. In addition, obtaining staff help, or help with pain (likely to suffer somewhat in very crowded, long wait conditions) can have a large effect on the overall rating.

Table 59: Regression on overall rating (Q57) for patients discharged home (Part A)         Underlying patient characteristics and time of visit							
Variable	Element	Coefficient	t value	Significance			
	Intercept	14.30	7.56	sig			
	Base case: males 16 to 35						
	Females 16 to 35	0.58	0.84				
	Females 36 to 50	2.24	2.94	sig			
Conder and ago group	Females 51 to 65	3.59	4.47	sig			
Gender and age group	Females 66+	4.08	4.74	sig			
	Males 36 to 50	0.91	1.14				
	Males 51 to 65	1.98	2.40	sig			
	Males 66+	2.72	3.07	sig			
	Base case: good health						
	Excellent	2.32	3.42	sig			
Solf rated boalth status	Very good	1.32	2.45	sig			
	Fair	-1.70	-3.06	sig			
	Poor	-2.25	-3.02	sig			
	Very Poor	-6.25	-4.20	sig			
	Base case: weekend 18:00 to 23:59						
	Weekday/weekend 00:00 to 11:59	-1.96	-2.46	sig			
Time and day of visit	Weekday 12:00 to 17:59	-2.08	-2.47	sig			
	Weekday 18:00 to 23:59	-1.56	-1.78				
	Weekend 12:00 to 17:59	-1.73	-1.80				
R2=63.24%; This table presents sele	ected items included in the model. Significan	nce is presented at	the 95% lev	vel.			



For patients discharged home (Table 59), time of day of their visit had a stronger and significant relationship with the overall rating than in the previous model for all patients combined.

Patients who visited on weekend evenings had slightly higher overall ratings of care. 

Table 60: Regression on overall rating (Q57) for patients discharged home (Part B)         Patient experience variables and outcomes									
	Variable	Element	Coefficient	t value	Sig	Standardized coefficient			
	Doctors and nurses	Base case: everyone introduced	Base case: everyone introduced themselves						
	introducing themselves	Not all doctors and nurses introduced themselves	-1.62	-3.65	sig				
		Base case: didn't need attention from staff							
	Getting attention of	Needed attention - staff helped	-0.26	-0.54					
es	stan	Needed attention - staff didn't help	-6.72	-7.89	sig				
ble	_	Base case: didn't receive tests							
aria	Received any tests	Received tests (X-rays, scans, or blood tests)	0.98	2.22	sig				
e v		Base case: not in pain							
omposit		In pain - staff definitely did all they could to help	1.14	2.17	sig				
	Help with pain	In pain - staff helped control somewhat	-2.24	-3.66	sig				
l ce		In pain - staff did not help	-7.29	-10.70	sig				
ano		In pain - not sure if staff did what they could	-2.40	-2.84	sig				
f care	Staff care and communication composite	Standardized score of 0 to 100	0.38	32.49	sig	0.36			
0 é	Respect composite	Standardized score of 0 to 100	0.23	17.11	sig	0.17			
enc€	Facility cleanliness composite	Standardized score of 0 to 100	0.13	13.10	sig	0.12			
experi	Discharge communication composite	Standardized score of 0 to 100	0.07	10.89	sig	0.10			
∋nt (	Wait time & crowding composite	Standardized score of 0 to 100	0.11	10.18	sig	0.09			
atie	Base case: 1 to 30 Minutes								
đ		Did not wait	1.24	1.05					
	Waiting time for doctor	31 to 60 minutes	-1.79	-2.73	sig	0.13			
	(Q13)	1 to 2 hours	-2.48	-3.71	sig	0.15			
		2 to 4 hours	-5.22	-7.93	sig				
		More than 4 hours	-9.41	-13.60	sig				
	Privacy composite	Standardized score of 0 to 100	0.02	2.00	sig	0.02			
	Wait time communication composite	Standardized score of 0 to 100	0.02	2.48	sig	0.02			
	Year	Base case: 2007							
	roar	2009	0.60	1.52					
R2=63.	24%; This table presents sele	ected items included in the model. Sign	nificance is presen dol is presented b	ited at the	95% lev	el.			
The alt	ernate model is very similar e	xcept that the wait composite is used in	nstead of wait time	e for docto	riparisoi r	ι μαιμυσσο.			

The alternate model is very similar except that the wait composite is used instead of wait time for doctor



Table 61: Decomposition of the total effects of patient characteristics, being in pain, wait time for doctor, patient experience variables and outcomes on overall rating (Q57) (Part A)										
	Pre-determined variable		Total effect							
Outcome variable				Via being in	Via wait time	Via experience variables	Via outcomes	Direct effect		
	Variable	Basa casa: 2007		pan		variables				
Overall rating	Year	2000	0.001	0.001	0.016	0.012	0.005	0.007		
	Gender and age group	Earnalaa 16 ta 25	0.046*	0.004	0.012	0.000	0.008	0.012		
		Females 10 to 55	-0.040	-0.004	-0.012	-0.009	-0.008	-0.013		
		Malaa 26 to 50	0.035	0 001	-0.003	0.014	0.007	0.017		
			0.062	0.001	0.015	0.021	0.02	0.005		
		Malaa 51 to 65	0.113	0	0.019	0.033	0.03	0.031		
			0.145	0.002	0.034	0.05	0.038	0.021		
		Females 66+	0.198*	0.01	0.041	0.081	0.036	0.03^		
		Males 66+ 0.201* 0.015 0.039 0.09 0.038 0.019								
	Self rated health status	Base case: good he	alth							
		Excellent	0.127*	0.006	0.017	0.037	0.04	0.027*		
		Very good	0.1*	0.002	0.018	0.028	0.029	0.023*		
		Fair	-0.08*	-0.003	0.004	-0.028	-0.033	-0.02		
		Poor	-0.093*	-0.002	-0.005	-0.028	-0.044	-0.014		
		Very poor	-0.109*	-0.003	-0.009	-0.024	-0.044	-0.029*		
	Was the patient in pain	Base case: No								
		Yes	-0.103*		-0.02	0.015	-0.05	-0.048*		
	Waiting time for doctor	Base case: 1 to 30 Minutes								
		Did not wait	0.037*			0.02	0.002	0.015		
		31 to 60 minutes	-0.087*			-0.056	-0.021	-0.01		
		1 to 2 hours	-0.149*			-0.079	-0.036	-0.034*		
		2 to 4 hours	-0.269*			-0.13	-0.068	-0.071*		
		More than 4 hours	-0.386*			-0.142	-0.105	-0.139*		



Table 62: Decomposition of the total effects of patient characteristics, being in pain, wait time for
doctor, patient experience variables and outcomes on overall rating (Q57) (Part B)

ſ

Outcome variable	Bro dotormi		Indirect Effects						
	Variable	Element	Total effect	Via being in pain	Via wait time	Via experience variables	Via outcomes	Direct effect	
Overall	Doctors and	Base case: everyone introduced themselves							
	nurses introducing themselves	Not everyone introduced themselves	-0.163*				-0.124	-0.039*	
	Help with pain	Base case: not in pain/can't say don't know							
		Staff definitely did all they could to help	0.159*				0.091	0.068*	
		Staff helped control somewhat	-0.038				-0.025	-0.013	
		Staff did not help	-0.186*				-0.085	-0.101*	
		Base case: didn't need attention from staff							
	Getting attention of staff	Needed attention – staff helped	0.016				0.011	0.005	
		Needed attention – staff didn't help	-0.188*				-0.104	-0.084*	
rating		Base case: didn't receive tests							
	Received any tests	Received tests (X-ray, scans or blood tests)	-0.001				-0.019	0.018	
	Dischargo status	Base case: discharged home							
	Discharge status	Admitted	0.035*				-0.016	0.051*	
	Wait time communication composite	Standardized score of 0 to 100	0.071*				0.041	0.03*	
	Cleanliness composite	Standardized score of 0 to 100	0.136*					0.136*	
	Privacy composite	Standardized score of 0 to 100	0.016					0.016	
	Care and care communication composite	Standardized score of 0 to 100	0.364*					0.364*	
	Respect composite	Standardized score of 0 to 100	0.167*					0.167*	
* = p <u>&gt;</u> 0.01									



# Diagram 1. A simplified version of the sequential relationship of patient characteristics, being in pain, wait time for doctor, patient experiences, and outcome measures on overall rating (Q57)



The multivariate results provide a simple explanation of the relationship between the composites and overall rating; however, when these relationships are expanded a fuller according to a theorized sequence of effects, a more detailed understanding emerges. Being in pain and wait time for doctor has substantially more of an effect than what is unearthed in the conventional multivariate model, the evidence for which is seen in the modified and compounded effects pain and wait time have via the other variables.

Table 61 and Table 62, display a decomposition of the total effects of the multivariate analysis (Table 57 and Table 58) on overall rating, and includes calculations of the indirect and direct effects through a systematic application of ordinary least squares regression.<sup>31</sup> The total effect of one variable on another is due to the unique association between it and another, an association that is not part of common causes. Total effects are comprised of indirect effects - effects transmitted or mediated by intervening influences; and direct effects - unmediated influences of one variable on another. The indirect effects are decomposed to include the following intervening variables (simplistically outlined in Diagram 1): 1) pain; 2) wait time for doctor; 3) emergency department experience variables (i.e. doctors and nurses introducing themselves, getting help with pain, getting staffs' attention, receiving tests, discharge status, and wait time communication); and 4) outcome measures (i.e. cleanliness, privacy, staff care and communication, and respect).

The decision to assess the influence of particular variables or groups of variables is based on a logically sound breakdown of the causal ordering of events. Patients (measured and controlled for by the demographic, health status and year information) present themselves at an emergency department either in pain or not in pain. After presenting themselves, patients wait to be seen by a doctor and then experience a multitude of service factors (e.g. getting attention or help with pain, receiving tests, being admitted, etc.) that influence perceptions of respect, cleanliness, staff care and communication, and privacy, which in-turn, structures the patients' overall experience.

So why decompose the effect and expand the model? We feel it is important and necessary to interpret the patterns of direct and indirect influences of uncontrollable and controllable effects on overall ratings of emergency

<sup>&</sup>lt;sup>31</sup> This method is detailed in Alwin, D.F and R .M. Hauser (1975). "The decomposition of effects in path analysis." *American Sociological Review* 40(February):37-47, and involves successive calculations of reduced-form equations beginning with only uncontrollable variables, and then proceeding to compute equations which add intervening or mediating variables in sequential order.


departments. This overall rating is affected through influences of the antecedent variables on the consequent variables. By investigating the sequential relationships we can begin answering questions such as, "How does being in pain contribute to the effect of wait time, experience variables or outcome measures on overall rating?", or "How does long wait times for the doctor affect the effect of experience variables or outcome measures on overall rating?" Essentially, we are trying to explain the mechanism by which certain variables contribute to the overall rating score.

The values displayed in Table 61 and Table 62 represent standardized coefficients and care should be taken when interpreting the values of each cell. We recommend the reader only use the information to ascertain strengths and directions of effects, and do not interpret the values in the traditional manner (one standard unit increase in X results in a standard unit change in Y) because of the difficulty of interpreting standardized dichotomous variables. Yet having said that, the size and direction of the values (whether positive or negative) improves our understanding of the exacerbating or ameliorating influence particular variables have on others, and thereby on the overall rating score.

Evidence suggests, patients in pain, as compared to those not in pain, exacerbate the effect of wait time for doctor and outcome measures (those in pain tend to have lower scores than those not in pain). Likewise, longer wait times negatively influence the overall rating of an emergency department visit. Specifically, long waits diminish the positive effects created when staff communicate in a caring way or exacerbate the effects of poor staff care and communication. Additionally, long wait times lower the effects of outcome measures and thereby lower the overall rating score.

Many studies demonstrate a correlation between effective physician-patient communication and improved health outcomes,<sup>32</sup> as well as, a distressing effect of inadequate communication for patients and their families, who often want considerably more information than is usually provided by emergency department staff.<sup>33</sup> Therefore, it is not surprising when the results revealed poor wait time communication diminishes patient ratings of his or her overall emergency department experience. Similarly, simple courtesies like doctors and nurses not introducing themselves, not being able to get the attention of staff, and feeling that staff are not doing everything they can to help with one's pain reduces the overall emergency department's care rating. Alternatively, being perceived as helping patients manage their pain and communicating in a caring way positively affects the patient's experiences and therefore makes him or her less critical of the experience.

So what have we learned? Firstly, there are uncontrollable factors which influence overall ratings of emergency department care and patients experiencing pain and long wait times negatively mediate the efforts of emergency staff. However, and this is key, even though there are possible exacerbating factors at play, nonetheless, if emergency department staff can maintain effective and respectful communication and personable service this will positively influence the patients' overall emergency department experience and consequently improve patient experience ratings.

<sup>&</sup>lt;sup>32</sup> Stewart, M.A. (1995). "Effective physician-patient communication and health outcomes: a review." Canadian Medical Association Journal 152(9): 1423 – 1433. <sup>33</sup> Razavi D, and N. Delvaux (1997). "Communication skills and psychological training in oncology." *European Journal of* 

Cancer. 33(Suppl 6):S15-S21



### Urban and Regional Emergency Department Patient Experience Report 2009

Section B: Site Level Results



### **Section B: Site Level Results**

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### **Overall Results (Section A)**

### Appendices (Section C)

Appendix A	Questionnaires and survey materials used
Appendix B	Working group and credits
Appendix C	Analysis of sample representativeness and influenza



### 1.0 Sample representativeness and importance of global findings

It is well known that emergency department volumes and crowding fluctuate considerably over time and seasonally. This presents a challenge for surveys where it is necessary to randomly sample patients, and contact them within a short time of their visit. Given the measureable effects of wait times on patient experience, variability is an important consideration in comparing survey results from two different points in time.

Further analysis must be done on an ongoing basis to examine variability of wait times and associated long term trends. Likewise, measurement of patient experience in emergency departments may be better served in future by making a transition to a continuous sampling approach such that variability over time is reduced. This presents its own challenges as the statistical methods for this approach are more controversial and need to be further refined.

To minimize the impact of periodic variability on the sample, we conducted the 2009 survey as close as possible to the 2007 time frame, and in both cases during a time period where emergency departments normally experience high volumes. It is still expected that for a given site, the volumes in either sample period may be lower or higher than the bordering time periods. Even considering this variability, the survey results and administrative data suggest that volumes and wait times are increasing over time. Our analysis suggests that results are robust at the pooled level; and differences in wait times (or volumes) for the two sample periods are not attributable to such factors as influenza.<sup>1</sup>

At the individual site level, interpretation of relative performance should be done cautiously especially concerning wait times. Likewise, it must be recognized that the context and population of specific facilities may differ relative to each other.

Reflection on site level results should integrate the robust provincial level findings. At a patient level, wait time has a significant effect on other aspects of patient experience. Despite this, clinical communication and *caring* for patients are shown to have the greatest impact on patient experience overall, and can mitigate wait time effects to some extent. Staff can improve patient experience even during periods of long wait times if they take care to a) manage pain and keep patients informed, b) use and improve their provider – patient communication skills, and c) show caring and respect to patients.

### 2.0 How to interpret facility level results

### 2.1 General

Facility level results are presented in graphical format only. Variables are presented in the same order as used in the provincial level report (Section A) in the following way.

- Composite factors and the individual items that are related to them are presented as a set of related variables, with each composite "set" in order of relative importance to the overall rating of care.
- The raw composite score is presented first; with all facilities shown in the graph and sorted by score. Confidence intervals are included for each raw result. Results are sorted from low (bottom of page) to high (top of page). Composite scores are standardized from 0 to 100 where 100 is the best possible.
- A second "composite" graph is presented which includes the facility score predicted for the average set of patient characteristics. Based on the provincial data sets for all sites, this is the score a facility is predicted to achieve after adjustment for its particular set of patients.

<sup>&</sup>lt;sup>1</sup> See analysis presented in Appendix C, Section C for further details.



- This second graph for predicted composite scores uses a different color scheme.
- The unadjusted results for each question related to the composite are then presented sorted by score. The unadjusted results permit readers to drill down to the specific items that make up the composite. Typically these issues are more actionable and useful for quality improvement activities.
- For all quality related questions, graphs present a single proportion; generally the proportion of individuals who report the care attribute in question was either <u>not</u> or only partially achieved.
- All graphs of raw results include confidence intervals. Where these confidence intervals do not overlap; the difference between the measured proportions of two years or sites is statistically significantly (within 5% error). If the confidence intervals overlap, the proportions may still be different however there is a chance the difference is due to random sampling error.



### 2.2 How to interpret the raw results graphs



Facilities should ideally be compared with their peers on an individual basis; readers can decide which facilities provide the most appropriate comparisons. In many cases, the most similar facilities may reside in other health regions. For example: The University of Alberta Hospital emergency department (Edmonton) may wish to compare itself to the Foothills Hospital Medical Centre emergency department (Calgary). These two hospitals are the primary teaching hospitals in Alberta and often deal with complicated or specialized populations who may be directed to these sites. Despite these similarities, readers should recognize that there may still be differences between the two sites, their populations, and how they function in the broader community.

### 2.3 How to interpret adjusted results graphs (composites only)





### 3.0 Confounding factors and effect on overall variables and composites

### 3.1 General

In most health care measurement activities where different groups of patients or different facilities are compared, it is important to understand how various patient characteristics might influence the measures. Many of these patient characteristics are outside the reasonable influence of care providers, yet they may have either a positive or negative impact on the results. In this respect, facilities are all unique to some extent; and some may be predisposed to report better or worse "performance" simply as a consequence of their unique patient populations. This makes "level playing field" comparisons between facilities challenging. When evaluating their results, facility staff may be tempted to say "our patients are different".

Some populations may be more difficult to care for or to satisfy than others: on average they may be older (more positive evaluations) or younger (more negative evaluations); they may be sicker (more negative evaluations, more complex care, longer waits); they may be more transient with less access to primary care (more use of emergency departments for routine care); or there may be community level conditions that impact available health care resources.

Regardless of how unique population characteristics may influence results, facilities and care providers must ultimately accommodate the population they serve. In this sense facilities should focus primarily on improving their own results over time rather than on how they compare with other facilities that may in fact serve a different population under different circumstances. Attention should focus on "how do we improve" rather than "are we good or bad". The main purpose of this measurement exercise is to identify opportunities and priorities for improvement at the facility level; rather than to produce a report card. With comparison between 2007 and 2009 results, sites can assess whether their initiatives have had an impact on patient experience.

While caution is warranted it can be very useful to compare different facilities. Such comparison may help to identify weak or strong aspects of care; as well as potentially achievable standards of care. It is most appropriate to compare facilities with their peers; that is, those facilities which are most similar in terms of their function and patient population. To aid in such comparison it is possible to standardize or statistically adjust for some between site differences in those measured patient characteristics that influence the results. While this allows us to estimate what facility results "might be" if facilities had similar populations; such methods are complex and each has its own methodological and practical limitations.

Readers should avoid being quick to judge facility level performance as either "good" or "bad". Facility staff and care providers should also pay considerable attention to unadjusted and question specific results as these represent the actual population of the facility; and the detailed information that contributes to composite scores. It is primarily at this level that targets for improvement activities can be identified.

### 3.2 Adjustment for different patient characteristics between sites

Using the same methods as in 2007, we generated predicted scores for composite (factor) variables and global ratings<sup>2</sup> for each facility, given their unique set of patient characteristics.<sup>3</sup> While it might be possible to do this for all variables of interest, we felt this was not justifiable. The composite variables have the advantage of each representing an underlying "theme" which is summative of a number of specific questions. The more "continuous" nature of the composite and global items also makes them better suited as performance measures; and more easily

 $<sup>^{2}</sup>$  This approach is often used with the CAHPS family of patient surveys developed by the Agency for Healthcare Research and Quality.

<sup>&</sup>lt;sup>3</sup> See Appendix D of the 2007 technical report for details.



and conveniently suited to model the effects of patient characteristics and other "uncontrollable" factors. Facility stakeholders will still need to drill down to the individual question results to assess changes between years and to develop appropriate improvement strategies.

The effects of patient characteristics and other non-controllable factors on the global rating of care question were explored previously (See Section A). All patient characteristic variables shown to be important were used as independent variables. Regression coefficients were generated for each *category* of each patient characteristic. These coefficients were used to calculate a "predicted" score for each patient taking into account the patient's unique combination of characteristics and how each of these affected the outcome variable (the composite or global rating score).

For example, being aged 65 or higher is predicted to increase the score of the *care composite* by 10.1 out of 100 relative to the base case of age 16 to 35. Likewise, rating health as "poor" is predicted to decrease the score of the care composite by 8.2 out of 100 relative to the base case of excellent health. Considering all such factors that have significant effects on the score of the care composite, the predicted composite score for each unique patient is calculated. Essentially each patient's "predicted" score is the score *expected* given the patient's unique characteristics. The predicted score for the facility is simply the average of all the predicted patient scores.

The following patient characteristics were shown to be important:

- Age group
- Gender
- Education
- Ethnicity (specific categories only)
- Language spoken at home
- Self rated urgency
- The patient was in pain while at the emergency department
- Discharge disposition (admitted or discharged)
- Emergency department was the only place to go
- Emergency department was the best place to go
- Patient was told to go to the emergency department
- Patient was seen by a health professional within the last 48 hours for the same problem
- Patient was seen by a health professional more than 48 hours ago for the same problem
- Number of emergency department visits in the last 12 months

It is important to recognize that we may not have measured and hence cannot adjust for all confounding variables that influence the results. Likewise, various standardization or adjustment methods will produce different results. This underscores the importance of using the unadjusted question level results to identify quality improvement opportunities; but with the understanding that influential patient characteristics may vary between sites. Examination of the predicted results will mainly help to determine the extent to which uncontrollable patient characteristics are different for a particular site as compared with others.



### 4.0 Facility level results

### 4.1 Visit context and patient characteristics

Graphs in the following section describe the context of the patient visit and some patient characteristics. They are not "performance" or patient experience variables, but rather provide important context about the type of patients seen by specific facilities.









 $q1_2$  - Proportion advised to go to emergency department by specialist



















q1\_5 - Proportion advised to go to emergency department by Health Link

8.4% 10.5%

10.9% 10.0%

9.0% 9.4%

10.2% 8.6%

15.4% 8.3%

6.9% 8.3%

10.3% 8.2%

7.1% 7.9%

5.2% 7.2%

5.9% 6.8%

7.7% 6.2%

6.4% 5.1%

**■**2007 **■**2009 Emergency department









Proportion advised to go to emergency department by a physician























q2\_3 - Proportion who thought the emergency department was the best place for their medical problem











q6\_1 - Proportion who visited the emergency department for a new injury or accident











## q6\_3 - Proportion who visited the emergency department for complications or problems following recent medical care











## q6\_5 - Proportion who visited emergency department for routine care of pre-existing chronic illness or condition





# q64 - Proportion who currently have a family doctor or specialist whom they see for most of their health care needs





### 4.2 Global (overall) items

Global rating items are reported in the following section. These individual items can be useful performance measures by themselves. In addition, the overall rating of care (Q57) is used as an outcome variable for some of the analysis reported earlier in Section A. Subsequent sections are organized in order of importance to or influence on the overall rating.

### Items reported:

- Q57. Overall, how would you rate the care you received in the emergency department?
- Q55. Was the main reason you went to the emergency department dealt with to your satisfaction?
- Q56. Overall, did you feel you were treated with respect and dignity while in the emergency department?



## q55 - Proportion of patients where main reason for going to emergency department was not dealt with to satisfaction





q56 - Proportion who were not treated with respect and dignity or were only some of the time





q57 - Proportion who rated care as fair, poor, or very poor





q57 - Proportion who rated care as poor or very poor










### 4.3 Staff care and communication composite and items

Results for the staff care and communication composite and related items are reported in the following section. Table 24 from Section A has been included for context.

Staff care and communication compositeQuestions included in calculation:q22 Doctor or nurse explained your condition in understandable wayq27 Amount of information provided about condition or treatmentq23 Doctor or nurse discussed your anxieties or fearsq21 Doctors and nurses listenedq20 Had enough time with doctor or nurse to discuss health concernq32 Involved as much as you wanted in decisionsq25 Doctors and nurses knew enough about condition or treatmentq24 Had confidence and trust in doctors and nurses				
	2007 (n=4,900)	2009 (n=4,903)		
Mean score out of 100	76.3	76.6		
Mean score out of 100 t=-0.681; df=9800; p=0.496	76.3	76.6		
Mean score out of 100 <i>t</i> =-0.681; <i>df</i> =9800; <i>p</i> =0.496 % of patients scoring 75 or higher	76.3 62%	76.6 62%		
Mean score out of 100 <i>t=-0.681; df=9800; p=0.496</i> % of patients scoring 75 or higher <i>Chi square=0.021; df=1; p=0.886</i>	76.3 62%	76.6 62%		

Note: Questions are in order of importance to the composite as determined by factor analysis

### Supplemental items reported:

The following questions are associated with the staff care and communication composite and its constituent items; but were not included in computation of the composite because dropping them improved internal consistency reliability.

Q34. How much information about your condition or treatment was given to your family or someone close to you?

Q36. Did you have any tests (such as X-rays, scans, or blood tests) during this visit to the emergency department?

Q37. Did a member of staff explain the results of the tests in a way you could understand?

Q30. If you needed attention, were you able to get a member of staff to help you?



Staff care and communication composite score





# Staff care and communication composite score (black bars indicate score predicted by patient characteristics and uncontrollable factors)

100





### q22 - Proportion where doctor or nurse did not fully explain their condition and treatment (of those that wanted an explanation)





q27 - Proportion who felt they were not given enough information about their condition or treatment





# q23 - Proportion where doctor or nurse did not fully discuss patient's anxieties about condition or treatment (of those who had anxieties)





### q21 - Proportion who stated that doctors and nurses didn't listen to what they had to say or only listened to some extent





q20 - Proportion who did not have enough time to fully discuss their problem with doctor or nurse



Proportion

## Promoting and improving patient safety and health service quality across Alberta

Emergency department



### q32 - Proportion who didn't feel that they were fully involved in decisions about their care (of those who were well enough)







Proportion



q24 - Proportion where patient did not have full confidence and trust in the treating physicians and nurses





# q34 - Proportion who felt their family or friend was not given enough information about their condition or treatment (of those who wanted it)





q36 - Proportion who received tests (such as X-rays, scans, blood tests, etc.)





q37 - Proportion where test results not explained or not fully explained (of those that had tests)





q30 - Proportion who, if needing attention, were not always able to get a member of staff to help





### 4.4 Pain management composite and items

Results for the pain management composite and related items are reported in the following section. Table 28 from Section A has been included for context.

Pain management composite Questions included: q41 Wait time to get pain medicine (self reported) q42 Emergency department staff did everything they could to help control pain			
	2007 (n=2,889)	2009 (n=2,962)	
Mean score out of 100	61.4	59.8	
t=1.616; df=5848; p=0.106			
% of patients scoring 75 or higher	48%	45%	
Chi square=4.292; df=1; p=0.038			
Note: Data are weighed by site; Site level reliability (GRIP Macro): 0.99 Standardized Scale Alpha (Cronbach's): 0.78 Pearson correlation between 4 alternative methods of calculation ranges from 87.1 to 98.3 – see Appendix D of 2007 report for details			

Note: Questions are in order of importance to the composite as determined by factor analysis

### Supplemental items reported:

Q38. Were you in any pain while you were in the emergency department?

Q39. While you were in the emergency department, how much of the time were you in pain?



Pain management composite score









q38 - Proportion who were in any pain during their emergency department visit





q40 - Proportion who requested pain medicine (of those that said they were in pain)





# q41 - Proportion that said it took longer than 15 minutes to receive pain medication (of those in pain and requesting medication)





# q42 - Proportion who felt that staff did not do everything they could to help control pain (of those in pain)





q39 - Proportion who were in pain all of the time or some of the time





### 4.5 Wait time and crowding composite and items

Results for the wait time and crowding composite and related items are reported in the following section. Table 30 from Section A has been included for context.

Wait time and crowding composite Questions included: q7 Crowding of emergency department waiting room (self report) q8 Found a comfortable place to sit q10 Wait time before speaking to triage nurse (self report) q13 Wait time before being examined by doctor (self report) q18 Total wait time for visit to emergency department (self report)			
	2007 (n=4,896)	2009 (n=4,863)	
Mean score out of 100	60.7	58.8	
t=4.364; df=9757; p=0.000			
% of patients scoring 75 or higher	28%	24%	
Chi square=27.042; df=1; p=0.000			
Note: Data are weighed by site. Data includes patients who were admitted. Site level reliability (GRIP Macro): 0.99 Standardized Scale Alpha (Cronbach's): 0.73			

Note: Questions are in order of importance to the composite as determined by factor analysis

### Supplemental items reported:

Administrative measure: Average number of patients per treatment space at triage time (reported for weekdays 8:00 to 22:00 to standardize for facilities not open 24 hours a day and 7 days a week)

Q9. During your visit to the emergency department, did you consider leaving before you had been seen and treated?



Wait time and crowding composite score









q7 - Proportion who found emergency department very or extremely crowded





q8 - Proportion who could not find comfortable place to sit in waiting area





q10 - Proportion who waited longer than 15 minutes to speak to triage nurse





## q13 - Wait time for doctor by category (self-reported) ■ Did not have to wait =1 to 30 minutes =31 to 60 minutes =1 to 2 hou

>4 hours 2 to 4 hours 1 to 2 hours 31 to 60 minutes 1 to 30 minutes



2007

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60



q18 - Proportion whose length of stay was longer than 4 hours





### Self-reported length of stay by category



2007



## Self-reported length of stay by category – discharged home

2009



2007



### Self-reported length of stay by category - admitted



2007

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2009



q9 - Proportion who thought about leaving prematurely





### 4.6 Respect composite and items

Results for the respect composite and related items are reported in the following section. Table 40 from Section A has been included for context.

Respect composite Questions included: q26 Doctors and nurses talked in front (of patient) as if not there q31 Staff provided conflicting information q35 Family member or friend was allowed to join in treatment area q16 Fairness of order in which patients were seen q11 Courtesy of triage nurse			
	2007 (n=4,922)	2009 (n=4,905)	
Mean score out of 100	83.9	83.9	
t=0.038; df=9825; p=0.970			
% of patients scoring 75 or higher	77%	76%	
Chi square=0.300; df=1 p=0.584			
Note: Data are weighed by site Site level reliability (GRIP Macro): 0.92 Standardized Scale Alpha (Cronbach's): 0.59			

Note: Questions are in order of importance to the composite as determined by factor analysis

### Supplemental items reported:

Q19. Did the doctors and nurses treating and assessing you introduce themselves?


Respect composite score





×

-



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85.7 88.6

84.8 86.9

84.3 84.7

85.6 86.2

84.5 83.8

84.1 84.1

83.9 86.2

81.5 84.1

84.1 83.4

82.4 82.8

85.8 80.5

81.9 80.4

**Z**009 M 2007

Emergency department



q26 - Proportion that felt doctors and nurses talked in front of them as if they weren't there





q31 - Proportion who stated that a member of staff said one thing and another staff member said another



Proportion



q35 - Proportion where family member or friend not fully allowed to join them in treatment area when desired





q16 - Proportion who did not think the order that patients were seen was fair





q11 - Proportion who rated triage nurse courtesy as being fair, poor or very poor





### q19 - Proportion who stated that none or only some of doctors and nurses treating and assessing introduced themselves





### 4.7 Facility cleanliness composite and items

Results for the facility cleanliness composite and related items are reported in the following section. Table 42 from Section A has been included for context.

Facility cleanliness composite Questions included: q44 Cleanliness of emergency department toilets q43 Cleanliness of emergency department		
	2007 (n=4,707)	2009 (n=4,711)
Mean score out of 100	79.1	77.8
t=2.973; df=9415; p=0.003		
% of patients scoring 75 or higher	62%	62%
Chi square=5.389; df=1; p=0.020		
Note: Data are weighed by site Site level reliability (GRIP Macro): 0.98; Standardized Scale Alpha (Cronbach's): 0.79		

Note: Questions are in order of importance to the composite as determined by factor analysis

### Supplemental items reported:

Q45. When you were in the emergency department, did you feel bothered or threatened by other patients?



Facility cleanliness composite score





Facility cleanliness composite score (black bars indicate score predicted by patient characteristics and uncontrollable factors)

100





q44 - Proportion who reported toilets were not very clean or not at all clean





q43 - Proportion who reported the emergency department was not very clean or not at all clean



Proportion

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Emergency department



q45 - Proportion that felt bothered or threatened by other patients





### 4.8 Discharge communication composite and items

Results for the discharge communication composite and related items are reported in the following section. Table 44 from Section A has been included for context.

Discharge communication composite Questions included: q51 Told when could resume usual activities q52 Told about danger signals to watch for after you went home q53 Told what to do if worried about condition or treatment after leaving q54_a Staff asked how patient getting home q54_b Staff asked whether someone at home to assist q54_c Staff asked about other concerns about your safety and comfort at home q54_d Staff asked if patient knew what to do for follow-up care				
	2007 (n=3,742)	2009 (n=3,717)		
Mean score out of 100	49.2	49.5		
t=-0.300; df=7457; p=0.764				
% of patients scoring 75 or higher	33%	33%		
Chi square=0.023; df=1; p=0.878				
Note: Data are weighed by site; Site level reliability (GRIP Macro): 0.87 Standardized Scale Alpha (Cronbach's): 0.87 (same rounded value as for GRIP by coincidence) Pearson Correlation between alternate methods of calculation ranges from 95.6 to 97.7 See Appendix D of 2007 report for details				



Discharge communication composite score







-



Emergency department

49.4

47.9

47.2

45.2



# q51 - Proportion who were not told or only told to some extent when they could resume usual activities (of those that needed it)





# q52 - Proportion who were not told or only told to some extent about danger signals to watch out for after they went home (of those who needed it)





q53 - Proportion who were not told or only told to some extent about what to do if they were worried about their condition after leaving the emergency department





q54\_a - Proportion who were not asked about how they were getting home (if needed)





q54\_b - Proportion who were not asked if they had someone at home to assist them (if needed)



Proportion

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Emergency department



# q54\_c - Proportion who were not asked if they had any other concerns about their safety and comfort at home (if needed)





q54\_d - Proportion who were not asked if they knew what to do for follow-up care (if needed)





### 4.9 Wait time communication composite and items

Results for the wait time communication composite and related items are reported in the following section. Table 47 from Section A has been included for context.

Wait time communication composite Questions included: q14 Told how long had to wait to be examined q15 Told why had to wait to be examined q17 Staff checked on you while waiting			
	2007 (n=4,686)	2009 (n=4,681)	
Mean score out of 100	49.2	45.3	
t=5/290; df=9364; p=0.000			
% of patients scoring 75 or higher	30%	25%	
Chi square=28.874; df=1; p=0.000			
Note: Data are weighed by site. Site level reliability (GRIP Macro): 0.95 Standardized Scale Alpha (Cronbach's): 0.78 Pearson correlation between alternate methods of calculating this composite range from 90.9 to 98.0 see Appendix D of 2007 report for details			

Note: Questions are in order of importance to the composite as determined by factor analysis



Wait time communication composite score









q14 - Proportion who were not told how long wait would be for physician or wait was underestimated



Proportion

# Promoting and improving patient safety and health service quality across Alberta

Emergency department



## q15 - Proportion not told why they had to wait to be examined but would have liked to be told (excludes those who did not need an explanation)





# q17 - Proportion who would have liked to have been checked up on more often while waiting (of those who cared)





### 4.10 Medication communication composite and items

Results for the medication communication composite and related items are reported in the following section. Table 50 from Section A has been included for context.

Medication communication composite Questions included: q50 Told about medication side effects to watch for q49 Told how to take the new medications q48 Purpose of the medications explained in understandable way				
	2007 (n=1,785)	2009 (n=1,835)		
Mean score out of 100	72.2	70.2		
t=1.912; df=3618; sig=0.056				
% of patients scoring 75 or higher	54.5%	51.3%		
Chi Square=3.532; df=1; p=0.060				
Note: Data are weighed within category; Site level reliability (GRIP Macro): 0.81 Standardized Scale Alpha (Cronbach's): 0.75				

Note: Questions are in order of importance to the composite as determined by factor analysis

### Supplemental items reported:

Q47. Before you left the emergency department, were any new medications prescribed or ordered for you?



Medication communication composite score





### Medication communication composite score (black bars indicate score predicted by patient characteristics and uncontrollable factors)





q47 - Proportion who had new medications prescribed for them





### q50 - Proportion where 'side effects' of prescribed medications was not fully explained (of those who were prescribed medication and wanted an explanation)





### q49 - Proportion where 'how to take' prescribed medications was not fully explained (of those who were prescribed medication and wanted an explanation)




# q48 - Proportion where purpose of prescribed medication was not fully explained (of those who were prescribed medication and wanted an explanation)





### 4.11 Privacy composite and items

Results for the privacy composite and related items are reported in the following section. Table 52 from Section A has been included for context.

Privacy composite Questions included: q28 Given enough privacy when discussing condition or treatment q29 Given enough privacy when being examined			
	2007 (n=4,798)	2009 (n=4,840)	
Mean score out of 100	81.8	80.3	
t=2.637; df=9635; sig=0.008			
% of patients scoring 75 or higher	68%	73%	
Chi Square=7.963; df=1 p=0.005			
Note: Data are weighted by site; Site level reliability (GRIP Macro): 0.93 Standardized Scale Alpha (Cronbach's): 0.78			

Note: Questions are in order of importance to the composite as determined by factor analysis



Privacy composite score











q28 - Proportion who were not given full privacy when discussing their condition or treatment





q29 - Proportion who were not given full privacy when being examined or treated





### Urban and Regional Emergency Department Patient Experience Report 2009

**Section C: Appendices** 



Appendix A

### Questionnaire and Survey Materials Us<mark>ed</mark>

### <DATE>

<First name proper> <Last name proper> < Address proper> <City>, <Province> <Postal Code> <SURVEY NUMBER>

Dear <First name proper> <Last name proper>:

We would like to invite you to take part in a survey about the quality of care in selected Alberta Emergency Departments. This confidential survey is intended to obtain your feedback about your most recent visit to <FACILITY> between March 15 and March 28, 2009. The important information you and others provide will assist emergency departments to identify areas for improvement. The questionnaire should only take about 15 minutes to complete and a pre-paid return envelope is enclosed for you to return the questionnaire.

The survey is being conducted by the Health Quality Council of Alberta (HQCA) in partnership with Alberta Health Services. The HQCA is an independent organization legislated under the Regional Health Authorities Act. The HQCA monitors and reports on the quality, safety, and performance of the health system and helps health care providers improve the quality of the care and services they provide. The HQCA is monitoring how patient experience has changed since the first emergency department survey which was conducted in 2007.

Your participation is entirely voluntary and you need not answer all of the questions. We hope you will participate and provide as much information as possible. We want to give you every opportunity to participate in this study. Your answers will be kept strictly confidential and will be combined with those of others in the final report. Individual survey answers will not be shared with anyone. We would appreciate it if you could take the time now to complete and return your questionnaire. If we do not receive anything from you by *<DATE 1>*, we may contact you by phone or send a reminder notice.

To manage the survey process and also to ensure confidentiality, we have engaged the services of Prairie Research Associates (PRA) Inc. PRA is an independent, national research firm that is under contract to the HQCA to follow the Alberta health information privacy legislation.

If you would like more information about the survey, or have questions on how to complete the questionnaire, please do not hesitate to call Nicholas Borodenko of PRA at 1-888-877-6744 (toll free) or by e-mail at HQCAsurvey@pra.ca.

Thank you in advance for your participation!

Sincerely,

John Cowell, MD Chief Executive Officer Health Quality Council of Alberta <DATE>

<First name proper> <Last name proper> < Address proper> <City>, <Province> <Postal Code> <SURVEY NUMBER>

Dear <First name proper> <Last name proper>:

We recently sent you a survey regarding the quality of care you received from your most recent visit to <FACILITY> between March 15 and March 28, 2009.

Your views are very important, and as we have not received your response, we are providing you with a second copy of the questionnaire. The questionnaire should only take about 15 minutes to complete. If you have already replied, please ignore this letter and accept our thanks for your participation.

While your participation in the survey is entirely voluntary, and you need not answer all the questions, we hope you will participate and provide as much information as possible. We want to ensure that you have the opportunity to participate in this study. If we do not receive anything from you within a week or so, a representative from Prairie Research Associates (PRA Inc.), our contracted research firm, may follow up with a phone call to determine your interest and to confirm that you received the survey.

Your answers will be kept in strict confidence and will be combined with those of others in the final report. Individual survey answers will not be shared with anyone.

If you would like more information about the survey, or have questions on how to complete the questionnaire, please do not hesitate to call Nicolas Borodenko of PRA Inc. at 1-888-877-6744 (toll free) or by e-mail at HQCAsurvey@pra.ca.

Sincerely,

John Cowell, MD Chief Executive Officer Health Quality Council of Alberta



### **Emergency Department Questionnaire**

### Taking part in this survey is voluntary

### Who should complete the questionnaire?

We are surveying people who have recently visited an emergency department. If you have not recently visited an emergency department, please fill-in this bubble O and return the blank questionnaire using the postage-paid envelope.

### **Completing the questionnaire**

For each question, please fill-in one bubble, o using a black or blue pen. Don't worry if you make a mistake; simply cross out or erase the mistake, and fill-in the correct bubble.

Sometimes you will find the bubble you have filled-in has an instruction to go to another question.

For example: O Yes → Go to 48 (Question 48)

By following the instructions, you will only complete questions that apply to you.

### **Questions or help?**

If you have any questions, please call Nicholas Borodenko of PRA Inc. at 1-888-877-6744 (toll-free).

### Your answers will be confidential.

Your data is protected under the Health Information Act of Alberta and will only be used or disclosed in non-identifying form. The information is collected under the authority of the Health Quality Council of Alberta Regulation, section 7(2)(d) and will be used to identify areas of improvement in emergency departments.

### COPYRIGHT INFORMATION

This questionnaire is based on the NHS Emergency Department Questionnaire provided by the Health Care Commission (UK). Use of this copyrighted material by any other individual or organization for any other purpose requires written permission from the Health Care Commission.





### BEFORE YOUR ARRIVAL AT THE EMERGENCY DEPARTMENT

1. Please identify **all** those who advised you to go to the Emergency Department:

My personal family doctor	O Yes	O No
My specialist doctor	⊖ Yes	⊖ No
A doctor at a walk-in clinic	⊖ Yes	O No
A friend or family member	⊖ Yes	O No
The Health Link phone-line nurse	○ Yes	O No
No one, I decided on my own	⊖ Yes	⊖ No
Other (please specify):		

- Why did you choose to go to the Emergency Department, instead of somewhere else such as a doctor's office? FILL-IN <u>ALL</u> THAT APPLY
  - O The Emergency Department was the only choice available **at the time**.
  - O The Emergency Department was the most convenient place to go.

O I (we) thought the Emergency Department was the **best place** for my medical problem.

O Department rather than somewhere else.

O Other:

- 3. Would you have described your health problem as:
  - Life-threatening
  - O Possibly life-threatening
  - O Urgent, risk of permanent damage
  - $\ensuremath{\bigcirc}$  Somewhat urgent, needed to be seen today
  - $\bigcirc$  Not urgent, but I wanted to be seen today

- 4. How did you travel to the Emergency Department?
  - O In an ambulance
  - O By car
  - O By taxi
  - On foot
  - By bus or train

○ Other

- 5. When you went to the Emergency Department, how long did it take you to get there?
  - $\odot$  Up to 30 minutes
  - O More than 30 minutes, but no more than 1 hour
  - More than 1 hour
  - O Don't know / Can't remember
- Thinking about the medical problem that brought you to the Emergency Department; Would you say that your problem was . . .
  - A new injury or accident **not** related to a previous injury or accident
  - A new illness or condition **not** related to a previous illness or condition
  - Complications or problems following recent medical care
  - Worsening of pre-existing chronic illness or condition
  - Routine care of a pre-existing chronic illness or condition
  - I was told to return to the Emergency Department for follow-up care

○ Other



### **YOUR VISIT**

- 7. How crowded was the Emergency Department waiting room when you first arrived there?
  - Extremely crowded
  - $\bigcirc$  Very crowded
  - Somewhat crowded
  - Not at all crowded
  - $\bigcirc$  I did not see the waiting room
  - Don't know / Can't remember
- 8. Were you able to find a comfortable place to sit in the waiting area?
  - O Yes, I found a comfortable place to sit
  - I found somewhere to sit, but it was not comfortable
  - $\bigcirc$  No, I could not find a place to sit
  - O I did not want or need a place to sit
  - $\bigcirc$  I did not see the waiting room
  - Don't know / Can't remember
- 9. During your visit to the Emergency Department, did you consider leaving before you had been seen and treated?
  - Yes, definitely
  - O Yes, to some extent
  - $\bigcirc$  No

### *In your Emergency Department visit, you probably met a few different staff members.*

The "*receptionist*" is the person who checks your health-care card and address, and who gives you a wristband or hospital card. The "*triage nurse*" is a different person - who asks you about your health problem in detail and decides on your priority for treatment.

The next two questions are about the "triage nurse."

10.How long did you wait before you FIRST SPOKE to the *triage nurse*, that is, the person who first asked you about your health problem?

$\bigcirc$ 0 to 15 minutes	→ Go to 11
$\odot$ 16 to 30 minutes	→ Go to 11
$\odot$ 31 to 60 minutes	→ Go to 11
O More than 60 minutes	→ Go to 11
O Don't know / Can't remember	→ Go to 11
○ I did not see a triage nurse	→ Go to 13

- 11.How would you rate the courtesy of the Emergency Department *triage nurse*, that is, the person who first asked you about your health problem?
  - Excellent
  - $\bigcirc$  Very good
  - $\bigcirc$  Good
  - O Fair
  - O Poor
  - $\bigcirc$  Very poor
- 12. When you first arrived at the Emergency Department, did you see the *triage nurse* before the *receptionist*?
  - ⊖ Yes
  - O No
  - O Don't know / Can't remember



### WAITING

- 13. From the time you first arrived at the Emergency Department, how long did you wait BEFORE BEING EXAMINED by a doctor?
  - O I did not have to wait
  - 1 to 30 minutes
  - 31 to 60 minutes
  - O More than 1 hour but no more than 2 hours
  - $\bigcirc$  More than 2 hours but no more than 4 hours
  - O More than 4 hours
  - Don't know / Can't remember
  - I did not see a doctor
- 14. Were you told **how long** you would have to wait to be examined?
  - Yes, but the wait was **shorter**
  - O Yes, and I had to wait as long as I was told
  - Yes, but the wait was longer
  - No, I was not told
  - Don't know / Can't remember
- 15. Were you told WHY YOU HAD TO WAIT to be examined?
  - O Yes
  - No, but I would have liked an explanation
  - O No, but I did not need an explanation
  - Don't know / Can't remember
- 16.Overall, did you think the order in which patients were seen was fair?

⊖ Yes

O No

○ Can't say / Don't know

- 17. Did a member of staff check on you while you were waiting?
  - Yes, definitely
  - ${\rm O}$  Yes, but I would have liked them to check more often
  - $\bigcirc$  No, but I would have liked them to check
  - $\bigcirc$  No, but I did not mind
  - O Don't know / Can't remember
- 18. **Overall**, how long did your visit to the Emergency Department last?
  - $\odot$  Up to 1 hour
  - $\odot$  More than 1 hour but no more than 2 hours
  - $\bigcirc$  More than 2 hours but no more than 4 hours
  - O More than 4 hours but no more than 8 hours
  - $\odot$  More than 8 hours but no more than 12 hours
  - $\odot$  More than 12 hours but no more than 24 hours
  - O More than 24 hours
  - Can't remember

### **DOCTORS AND NURSES**

- 19. Did the doctors and nurses treating and assessing you introduce themselves?
  - O Yes, all of them introduced themselves
  - Some of them introduced themselves
  - O Very few or none of them introduced themselves
  - Can't remember
- 20.Did you have **enough time** to discuss your health or medical problem with the doctor or nurse?
  - Yes, definitely
  - $\odot$  Yes, to some extent
  - $\bigcirc$  No



21. Did the doctors and nurses listen to what you had to say?

○ Yes, definitely

 $\odot$  Yes, to some extent

O No

22. While you were in the Emergency Department, did a doctor or nurse explain your condition and treatment in a way you could understand?

○ Yes, completely

O Yes, to some extent

O No

- O I did not need an explanation
- 23. If you had any anxieties or fears about your condition or treatment, did a doctor or nurse discuss them with you?

 $\bigcirc$  Yes, completely

○ Yes, to some extent

 $\bigcirc \mathsf{No}$ 

- O I did not have anxieties or fears
- 24. Did you have confidence and trust in the doctors and nurses examining and treating you?

○ Yes, definitely

○ Yes, to some extent

 $\bigcirc \mathsf{No}$ 

25. In your opinion, did the doctors and nurses in the Emergency Department know enough about your condition or treatment?

 $\bigcirc$  All of them knew enough

 $\bigcirc$  Most of them knew enough

- $\bigcirc$  Only some of them knew enough
- $\bigcirc$  None of them knew enough

○ Don't know / Can't say

- 26.Did doctors or nurses talk in front of you as if you weren't there?
  - $\bigcirc$  Yes, definitely
  - O Yes, to some extent
  - O No

### YOUR CARE AND TREATMENT

- 27. While you were in the Emergency Department, how much information about your condition or treatment was given to **you**?
  - Not enough
  - O Right amount
  - $\bigcirc$  Too much
  - I was not given any information about my treatment or condition
- 28.Were you given enough privacy when **discussing your condition or treatment**?
  - $\bigcirc$  Yes, definitely
  - O Yes, to some extent
  - O No
- 29. Were you given enough privacy when **being** examined or treated?
  - $\bigcirc$  Yes, definitely
  - O Yes, to some extent
  - O No
- 30. If you needed attention, were you able to get a member of staff to help you?
  - Yes, always
  - Yes, sometimes
  - O No, I could not find a member of staff to help me
  - O A member of staff was with me all the time
  - I did not need attention



- 31. Sometimes in a hospital, a member of staff will say one thing and another will say something quite different. Did this happen to you in the Emergency Department?
  - Yes, definitely
  - Yes, to some extent
  - O No
- 32. Were you involved as much as you wanted to be in decisions about your care and treatment?
  - Yes, definitely
  - Yes, to some extent
  - $\bigcirc$  No
  - I was not well enough to be involved in decisions about my care
- 33.Did a family member or friend come with you or join you in the Emergency Department?
  - $\bigcirc$  Yes, someone came with me  $\rightarrow$  Go to 34
  - Yes, someone joined me there  $\rightarrow$  Go to 34 ○ Yes, but he / she needed to leave  $\rightarrow$  Go to 34
  - ⊙ No →
- 34. How much information about your condition or treatment was given to **your family or someone close to you**?
  - Not enough
  - O Right amount
  - Too much
  - O My family did not want or need information
  - $\bigcirc$  I did not want family or friends to have information

### The "treatment area" is the area inside the Emergency Department where patients have a bed and are examined and treated by the doctor.

- 35.Was your family member or friend **allowed** to join you in the treatment area when **you** wanted?
  - Yes, definitely
  - O Yes, to some extent
  - O No
  - O I did not want them there

### **TESTS** (e.g., X-rays or scans)

36.Did you have any tests (such as X-rays, scans, or blood tests) during this visit to the Emergency Department?



- No → Go to 38
- 37.Did a member of staff explain **the results of the tests** in a way you could understand?
  - Yes, definitely
  - $\odot$  Yes, to some extent
- O No

Go to 36

- Not sure / Can't remember
- O I was told the test result would be given to later
- O I was never told the results of the test

### PAIN

- 38. Were you in any pain while you were in the Emergency Department?
  - Yes → Go to 39
  - No → Go to 43
- 39.While you were in the Emergency Department, how much of the time were you in pain?
  - O All or most of the time
  - Some of the time
  - Occasionally



Ho. Dia you request pain medicine	40.	Did you	request	pain	medicine'
-----------------------------------	-----	---------	---------	------	-----------

 $\bigcirc Yes \rightarrow Go to 41$  $\bigcirc No \rightarrow Go to 42$ 

41. How many minutes after you requested pain medicine did it take before you got it?

O 0 minutes / Right away

- 1 to 5 minutes
- 6 to 10 minutes
- 11 to 15 minutes
- 16 to 30 minutes
- O More than 30 mintues
- I asked for pain medicine but wasn't given any
- 42. Do you think the Emergency Department staff did everything they could to help control your pain?
  - Yes, definitely
  - O Yes, to some extent
  - O No
  - O Can't say / Don't know

### HOSPITAL ENVIRONMENT AND FACILITIES

- 43.In your opinion, how clean was the Emergency Department?
  - $\bigcirc \text{Very clean}$
  - O Fairly clean
  - Not very clean
  - O Not at all clean
  - Can't say

- 44. How clean were the toilets in the Emergency Department?
  - Very clean
  - Fairly clean
  - Not very clean
  - Not at all clean
  - O I did not use a toilet
- 45. While you were in the Emergency Department, did you feel bothered or threatened by other patients?
  - Yes, definitely
  - O Yes, to some extent
  - O No

### LEAVING THE EMERGENCY DEPARTMENT

46.What happened at the end of your visit to the Emergency Department?

<ul> <li>Admitted to the same hospital</li> </ul>	<b>→</b>	Go to 55
O Transferred to a different hospital	→	Go to 55
○ Went home	→	Go to 47
$\bigcirc$ Stayed with a relative or friend	→	Go to 47
○ Other	→	Go to 47

### Medications (e.g., medicines, tablets, ointments)

- 47.Before you left the Emergency Department, were any **new** medications prescribed or ordered for you?
  - Yes → Go to 48
  - No → Go to 51
- 48. Did a member of staff explain **the purpose** of the medications you were to take at home in a way you could understand?
  - Yes, completely
  - O Yes, to some extent
  - O No
  - O I did not need an explanation



- 49. Did a member of staff explain to you **how to take** the new medications?
  - Yes, completely
  - Yes, to some extent
  - O No
  - I did not need an explanation
- 50.Did a member of staff tell you about **medication side effects** to watch for?
  - $\bigcirc$  Yes, completely
  - O Yes, to some extent
  - O No
  - O I did not need this type of information

### Information

- 51. Did a member of staff tell you when you could **resume your usual activities**, such as when to go back to work or drive a car?
  - Yes, definitely
  - Yes, to some extent
  - O No
  - O I did not need this type of information
- 52. Did a member of staff tell you about what danger signals regarding your illness or treatment to watch for after you went home? O Yes, completely
  - Yes, to some extent
  - O No
  - O I did not need this type of information
- 53.Did a member of staff tell you **what to do** if you were worried about your condition or treatment after you left the Emergency Department?
  - $\bigcirc$  Yes, completely
  - O Yes, to some extent
  - O No
  - Don't know / Don't remember

- 54. Did a member of staff ask about any of the following when you left the Emergency Department
  - a) How you were getting home?
    - Yes No Not needed
  - b) If you had someone at home to assist you?
    - Yes No Not needed
  - c) If there were any other concerns about your safety and comfort at home?
    - Yes No Not needed
  - d) If you knew what to do for follow-up care?
    - $\bigcirc$  Yes  $\bigcirc$  No  $\bigcirc$  Not needed

### **OVERALL**

- 55. Was the main reason you went to the Emergency Department dealt with to your satisfaction?
  - Yes, completely
  - O Yes, to some extent
  - $\bigcirc$  No
- 56. Overall, did you feel you were treated with respect and dignity while you were in the Emergency Department?
  - Yes, all of the time
  - Yes, some of the time
  - O No
- 57. Overall, how would you rate the care you received in the Emergency Department?
  - Excellent
  - $\bigcirc$  Very good
  - $\bigcirc$  Good
  - O Fair
  - O Poor
  - Very poor



### YOUR OWN HEALTH STATE TODAY

Please indicate which statement best describes your **health state** <u>today</u> by filling in one bubble in each group below.

### 58. Mobility

- $\bigcirc$  I have no problems in walking about
- $\bigcirc$  I have some problems in walking about
- $\bigcirc$  I am confined to bed

### 59. Self Care

- $\bigcirc$  I have no problems with self care
- O I have some problems with self care
- O I am unable to wash or dress myself

### 60. Usual Activities

- O I have no problems performing my main activity
- O I have some problems performing my usual activities
- O I am unable to perform my usual activities
- 61.Pain / Discomfort
  - O I have no pain or discomfort
  - O I have moderate pain or discomfort
  - O I have extreme pain or discomfort

### 62. Anixiety / Depression

- O I am not anxious or depressed
- O I am moderately anxious or depressed
- O I am extremely anxious or depressed
- 63.Overall, how would you rate your health during the **past 4 weeks**?
  - O Excellent
  - Very good
  - ⊖ Good
  - O Fair
  - O Poor
  - Very poor

64.Do you currently have a personal family doctor or specialist whom you see for most of your health-care needs?

○ Yes → Go to 65

- No → Go to 66
- 65. In the past 12 months, how many times in total have you visited your personal family doctor or your specialist FOR YOUR OWN CARE?
  - $\bigcirc$  0 times
  - O 1 time
  - $\odot$  2 to 4 times
  - 5 to 10 times
  - $\odot$  More than 10 times
- 66. In the past 12 months, how many times have you visited an Emergency Department FOR YOUR OWN CARE? (please include this visit)
  - 0 times
  - O 1 time
  - 2 to 4 times
  - $\odot$  5 to 10 times
  - More than 10 times

### **ABOUT YOU**

- 67. Are you male or female?
  - O Male
  - O Female

### 68. What was your year of birth? (Please print in the boxes below)





<ul> <li>Completed high school</li> <li>Post-secondary technical school</li> <li>Some university or college</li> <li>Completed college diploma</li> <li>Completed university degree</li> <li>Post-grad degree (Master's or Ph.D.)</li> </ul>	<ul> <li>No</li> <li>73. Where do you presently live?</li> <li>My own house, condominium, or apartment</li> <li>A rented house, condominium, or apartment</li> <li>A residential facility or seniors' lodge</li> </ul>
<ul> <li>Post-secondary technical school</li> <li>Some university or college</li> <li>Completed college diploma</li> <li>Completed university degree</li> <li>Post-grad degree (Master's or Ph.D.)</li> </ul>	<ul> <li>73. Where do you presently live?</li> <li>O My own house, condominium, or apartment</li> <li>O A rented house, condominium, or apartment</li> <li>O A residential facility or seniors' lodge</li> </ul>
	○ A pursing home or long term care control
<ul> <li>70. Would you say you are?</li> <li>O White / Caucasian</li> <li>O Native Canadian / Aboriginal</li> <li>O Chinese</li> <li>O Latin American</li> <li>O Black</li> <li>O Asian (please specify)</li> <li>O Other (please specify)</li> </ul>	74. Do you have any additional comments, concerns or issues? If so, please explain.
<ul> <li>71. What language do you mainly speak at home?</li> <li>O English</li> <li>O Other</li> </ul>	75. May we contact you if we have additional questions about your experience?
	⊙ Yes ○ No

72. Do you receive home-care services at present?

○ Yes

69.What is the highest level of school that you have

completed?

### THANK YOU VERY MUCH FOR YOUR HELP. Your response will help to improve Emergency Department Care in Alberta.

Please return using the pre-paid envelope provided to you.

Do you have urgent concerns about your health? *Health Link Alberta* Nurse advice and health service information 24 hours a day In Calgary (403) 943-LINK (5465) In Edmonton (780) 408-LINK (5465) OR Toll-Free 1-866-408-5465



### <DATE>

<First name proper> <Last name proper> < Address proper> <City>, <Province> <Postal Code> <SURVEY NUMBER>

Dear <First name proper> <Last name proper>:

We recently sent you a survey regarding the quality of care you received from your most recent visit to <FACILITY> between March 15 and March 28, 2009.

Your views are very important, and as we have not received your response, we are providing you with a second copy of the questionnaire. The questionnaire should only take about 15 minutes to complete. If you have already replied, please ignore this letter and accept our thanks for your participation.

While your participation in the survey is entirely voluntary, and you need not answer all the questions, we hope you will participate and provide as much information as possible. We want to ensure that you have the opportunity to participate in this study. If we do not receive anything from you within a week or so, a representative from Prairie Research Associates (PRA Inc.), our contracted research firm, may follow up with a phone call to determine your interest and to confirm that you received the survey.

Your answers will be kept in strict confidence and will be combined with those of others in the final report. Individual survey answers will not be shared with anyone.

If you would like more information about the survey, or have questions on how to complete the questionnaire, please do not hesitate to call Nicolas Borodenko of PRA Inc. at 1-888-877-6744 (toll free) or by e-mail at HQCAsurvey@pra.ca.

Sincerely,

John Cowell, MD Chief Executive Officer Health Quality Council of Alberta



Appendix B

### Working Group and Credits



### Acknowledgements:

This survey and report were made possible through the contributions of numerous individuals.

The methods and process for this work were developed in 2007. Thus, everyone who participated in the 2007 working group inherently facilitated the 2009 survey and report. These individuals are identified in Appendix A of the 2007 report.

For the 2009 survey, the survey process engaged administrative and medical leads at each site and within each of the geographic zones within Alberta Health Services for support and internal communication. Nursing leads at each site were responsible for placement of patient notification posters and additional communication with clinical staff. Alberta Health Services and emergency department data managers were engaged to extract data files from each emergency department data system for generation of survey samples. Finally, emergency department staff and communications staff likely fielded questions from patients about the survey.

The Health Quality Council of Alberta greatly thanks all of you for your contributions.



Appendix C

### Analysis of Sample Representativeness and Influenza



In re-examining the data and models, it became evident that any unmeasured burden of illness or changes in emergency department volume do not substantively account for the variation in overall patient rating scores. Increased volumes and length of stay are an evolving trend throughout the urban emergency departments in Alberta.

In March and early April 2009, H1N1 emerged in North America (March 18, 2009 the first cases emerged in Mexico, and then on April 6, 2009 "swine flu" is officially corroborated by the World Health Organization's (WHO),<sup>1</sup> in Canada, the Public Health Agency of Canada (PHAC) claims the first reported date of H1N1 symptoms is April 10, 2009, while the most recent onset date is May 3, 2009<sup>2</sup>). H1N1 has burdened the health care system quite extensively, yet the time of H1N1 and its consequential effects are not a mitigating factor in the sampling of the 2009 emergency department survey because the sample period for this survey (March 15 to 28) is before any documented cases of H1N1 in Canada. Furthermore, by examining PHAC's influenza like-illness (ILI) trends, corroborating evidence is found to support their and the World Health Organization's (WHO) H1N1 timeframe.

Graph AA displays the total number of influenza tests performed in Alberta for the weeks of October 5 to 11 up to and including May 24 to 30 for the 2006/07 and 2008/09 flu seasons (the information for this graph is based on data from the Flu Watch archives on the PHAC's website). The number of tests performed in Alberta are nearly identical for the first part of the two winter flu seasons. However, for the 2006/07 flu season there is a spike in influenza tests in mid December that is not mimicked in 2008/09. As for the latter part of the season, the 2008/09 winter flu season is slightly higher than the 2006/07 season, as well, there is a dramatic increase in tests starting the week of April 26 to May 2. Though the seasonal test rate was slightly higher in 2008/09, as compared to 2006/07, the difference in their proportional contribution to total emergency department visits, verses 2006/07, is extremely small.

Trend analysis of Calgary emergency department ILI rates illustrates an overall increase from the week starting October 5, 2008 to the week of June 21- 27, 2009 (see Graph BB). Tracking the rates from left to right, it becomes clear that there are a number of spikes in Calgary's rates of ILI in emergency departments, yet none of these spikes occur during the sampling of the 2009 emergency department survey. In fact, the H1N1 spike shows clearly to occur during the week of April 26- May 2, 2009. An examination of the Alberta Health Services data clearly indicates a slight decline with ILIs during the sampling of the 2009 emergency department survey.

Results based on a sample can always be subject to uncharacteristic variability/spikes. However, as the onset of H1N1 did not take place until after the sampling of the 2009 emergency department survey we find **no evidence to** support possible "sampling error" or point in time anomalous variations attributable to influenza outbreaks or H1N1. Additionally, since there are similar annual increases in emergency department length of stay for admitted patients (based on Calgary REDIS data) as in the survey, and because the multivariate results are robust even when considering yearly and site variations (see Section 9.0 for further details) it is very difficult to attribute any "negative" findings to unaccounted influences in regards to these factors. All in all, the results are sound and the overall findings are robust.

<sup>&</sup>lt;sup>1</sup> WHO (2009). "Influenza-like illness in the United States and Mexico." Retrieved from:

http://www.who.int/csr/don/2009\_04\_24/en/index.html <sup>2</sup> PHAC (2009). "Flu Watch – April 26, 2009 to May 2, 2009 (Week 17)." Retrieved from: http://www.phacaspc.gc.ca/fluwatch/08-09/w17 09/index-eng.php



### 05 yeM - 42 yeM 62 - 71 YeM 91 - 01 YeM e - £ yeM April 26 - May 2 25 - 61 lingA 81 - 21 linqA April 5 - 11 A March 29 - April 4 March 22 - 28 March 15 - 21 March 8 - 14 Магсһ 1 - 7 Feb 22 - 28 Feb 15 - 21 Feb 8-14 7 - 1 də7 1an 25 - 31 Jan 18-24 ՀՀ-ՀՀ ոեւ Jan 4-10, 2009 Dec 28 - Jan3 Dec 21 - 27 Dec 14 - 20, 2008 Dec 7 - 13 Nov 30 - Dec 6 62 - 82 voN Vov 16-22 SI - 6 VON 8 - 2 voN Oct 26 - Nov 1 Oct 19 - 25 Oct 12 - 18 Oct 5 - 11 500 5000 4500 4000 3500 2500 2000 10000 3000 1500

## Graph AA. Total number of influenza tests performed in Alberta for the weeks of October 5<sup>th</sup> to 11<sup>th</sup> till the week of May 24<sup>th</sup> to May 30<sup>th</sup>

Source: Public Health Agency of Canada



Graph BB. Calgary Emergency Department Rate (%) with ILI from the week of October 5th to 11 th, 2008 till June 21st to 27th, 2009



Source: Alberta Health Services



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