

March 2008

Emergency Department
Patient Experience Survey

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Section A: Provincial Results

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1.0 Executive Summary

Overview

The Health Quality Council of Alberta (HQCA) conducted a survey of approximately 45,000 patients attending any one of 66 emergency departments in Alberta between January 27 and February 23, 2007. The 66 emergency departments were chosen from a total of 108 across the province because they had the highest volume of patient visits. The participating emergency facilities provided the HQCA with additional information about the patient's emergency visit and the community in which the emergency department was located.

The questionnaire used was based on the British Healthcare Commission survey, which had been thoroughly validated in the United Kingdom. Prior to conducting the survey, the HQCA also performed validation studies and a pilot test to ensure the survey would collect valid and reliable information regarding the emergency department patient experience in Alberta. Almost half (48%) or 22,560 of patients who were sent a questionnaire completed it, generating standardized baseline information about the experience of patients visiting Alberta emergency departments and indicating a high level of interest by Albertans. This sample resulted in a low margin of error for the combined urban ($\pm 1.26\%$) and rural ($\pm 0.61\%$) sites.

Key Findings

Overall, 90% of rural and 84% of urban respondents ranked their overall care experience as excellent, very good or good. While wait times, especially the time it took to see a doctor, negatively affected patients' overall emergency care experience, those surveyed also said the care and communication they ultimately received most influenced how they rated their emergency experience.

Wait times and reassessment

- Wait times, especially the time it took to see a doctor, negatively affected patients' overall emergency care experience. Overall, people who waited longer or experienced extreme crowding were less happy with their emergency department experience. Wait time issues were more common and had the greatest impact on urban emergency departments.
- 2 out of 10 (20%) urban respondents said they waited 2 to 4 hours to see a doctor. An additional 2 out of 10 (19%) said they waited longer than 4 hours. This compares with 1 in 10 (9%) rural respondents who said they waited 2 to 4 hours to see a doctor, with an additional 2% who waited longer than 4 hours.
- The times recommended by the Canadian Association of Emergency Physicians (CAEP) for physicians to see patients were not always achieved. For CTAS level 2 patients visiting urban facilities, only 14% of patients were seen by the physician within the suggested response time of 15 minutes. For CTAS level 3 patients, 23% were seen within the suggested time of 30 minutes; 39% of CTAS level 4 patients were seen within the suggested time of 1 hour. Results for rural sites were similar for CTAS 2 (17%) and much better for CTAS 3 (53%) and CTAS 4 (70%).
- Patients also said the overall order in which patients were seen was fair (82% urban; 92% rural).
- Our study further explored the question about staff checking on patients while they were waiting in relation to wait time and reassessment guidelines established by the CAEP. These guidelines are intended to reduce the risk for patients who are waiting for emergency care. However, the times recommended by CAEP for reassessment of patients were not always achieved.
- Considering urban facilities, our data suggested: 2 in 10 (21%) CTAS level 2 patients were not reassessed within the suggested time of every 15 minutes while they were waiting. Nearly 4 in 10 (38%) for CTAS level 3 were not reassessed every 30 minutes; 4 in 10 (36%) CTAS level 4 patients were not reassessed every 60 minutes. Results for rural sites were considerably better but are still potentially concerning.
- Nearly 5 out of 10 (47%) urban and 3 out of 10 (33%) rural respondents said when they looked for help, they could not always find a staff member to help them.
- The survey also showed patients were more likely to leave the emergency without being seen if staff were not regularly checking on them or if patients could not get help from staff when they needed it.

Staff care and communication

- The survey found what mattered most to patients, and what most influenced their overall rating, was the care and communication they ultimately received from the staff.

- Respondent said physicians and staff did not always take the time to respond and listen to their needs and concerns or explain things to them like health condition, test results, wait times and discharge information. Almost 4 out of 10 (36%) respondents reported their condition had either not been explained to them, or had only been explained to some extent. Nearly three in 10 (26%) said doctors did not listen to them or only listened to a certain extent. About 4 in 10 (38%) urban and 3 in 10 (28%) rural respondents said they did not have enough time with the doctor or nurse to talk about their health concern.
- Patients also said they were not always involved as much as they wanted in decisions about their care or treatment. Four in 10 (43%) urban and about 3 in 10 (33%) rural respondents reported they were not involved in decisions about their care or treatment to the extent they wanted.
- Over three-quarters (76%) of the patients said they were treated with dignity and respect while in the emergency department.
- The majority (90%) of patients rated the courtesy of the nurse doing the assessment as excellent, very good or good.
- Most patients said all or most doctors and nurses knew enough about their condition and treatment (88% urban; 85% rural).
- Upon discharge from the emergency department, 6 in 10 (60%) respondents said they were not told or were only told to some extent when they could begin normal activities or what danger signals to watch for at home.

In addition, the survey found:

- Comparing the patient's self-rated urgency level with the hospital-assessed CTAS score, our results showed patients can underestimate the urgency of their health problem. For example, nearly 3 in 10 (26%) patients who were classified as CTAS 1 or 2, and 1 in 10 (13%) patients who were ultimately admitted considered leaving while they waited for emergency care.
- On average, urban emergency departments saw patients who were sicker and who felt the emergency department was the best place for their health issue. In contrast, rural emergency facility patients were not as sick and the facilities played a larger role in providing after-hours and routine care versus emergency care.
- Six in 10 (62%) rural respondents reported the emergency department facility was the only choice available to them at the time. While the data suggested rural respondents more often received routine or follow-up care in the emergency department facility, this may be quite appropriate in the context of available health care services in that community.

Conclusion

Despite many efforts in Alberta emergency departments to reduce the length of time patients wait for care, it remains a significant and challenging problem, especially for urban and regional hospital sites. One of the areas of great concern is reassessment for waiting patients. While we acknowledge that the clinical impacts of long wait times and of not being reassessed are not well known, we are concerned that waiting patients who are not re-assessed according to CTAS guidelines may be at increased risk of harm from their medical condition.

We recognize solutions to emergency department wait time and crowding issues are complex and involve many aspects of the health care system. Until wait times are eliminated, facilities that have wait time issues should immediately implement strategies and systems 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 emergency department staff if their condition deteriorates.

Finally, emergency department staff should be vigilant in developing strategies for high-quality, respectful communication with patients about their health issues, concerns and treatment as well as for discharge and medication instructions. Improving such communication and care from the perspective of patients, and maintaining it even when facilities are crowded, is predicted by our data to have a significant and positive impact upon the patient experience as well as overall care.

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 report on 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 objectively report citizen experience with the health system.

This report focuses on patient experience of emergency department care in Alberta. Emergency department services in Alberta are provided by a diverse range of facilities from “classic” hospital based emergency departments in urban areas, to urgent care centers, to small multi-function rural emergency departments or community health centers. While public and provider concerns have focused primarily on large hospital based emergency departments – this initiative includes all of the above facility types.

The work leading up to this report is 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. Credits are provided in Appendix A.

2.1 A focus on emergency department care

In 2003 and 2004, the HQCA conducted the Satisfaction with Health Care Services surveys. The results from these surveys indicated Albertans are concerned with emergency department (ED) services in the province. It was also recognized that the majority of high volume emergency departments in Canada and in North America are facing a crisis of crowding, access, and related quality challenges.

Consequently, a provincial stakeholder network — the *Health Quality Network*¹, led by the HQCA, concluded that a more in-depth study of emergency patient experience in the province was required. Any evaluation of ED services would have to consider the reasons the patient visited an ED, the time of the visit, alternatives available, and the characteristics of the ED facility.

The following points were clearly recognized in undertaking this initiative:

- ▶ 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 within the province are extremely 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 among facilities.
- ▶ Despite the above caution, comparison of facilities 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 we expect the results to 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.

¹ The Alberta's *Health Quality Network* is a provincial network lead by the HQCA and comprised of health regions, health boards health care professional organizations, and government.

2.2 Working group

In order to guide this initiative, the HQCA formed a working group of emergency department clinicians, health services and measurement researchers, and other stakeholders; with representation from different regions in the province as well as university and AHW. This working group was fundamental to the scope, design and progress of this initiative. Participant roles and credits are provided in Appendix A.

2.3 Purpose of the study

The purpose of the ED survey initiative is multifaceted and attempts to:

- ▶ provide actionable information about patient experience that will assist care providers to improve the quality of emergency patient and family care.
- ▶ obtain standardized and comparable patient experience data across the province.
- ▶ provide a baseline for implementation of new regional ED initiatives.
- ▶ identify and estimate factors affecting patient experience of ED 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 in those factors above which are uncontrollable, and develop a case mix adjustment model for more fair comparison of facilities.
- ▶ provide a means to select a short set of items from the full survey that might be suitable for more frequent measurement.

2.4 Selection of survey tool, validation, and testing

The working group and the HQCA staff 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 decided that our 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. These new items and selected original items underwent several rounds of cognitive testing, after which a pilot test involving 480 ED 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 ED 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 current 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 Appendices C and D.

2.5 Survey versions

The HQCA emergency department survey involved two slightly different questionnaires: the adult version (for respondents 16 years of age and older (Appendix B) and the pediatric version (for proxy respondents for patients 12 years of age and younger) who visited a pediatric emergency centre (also Appendix B). The pediatric version of the survey uses most of the same questions as the adult survey with the exception of several demographic questions which were excluded from the pediatric version.

As discussed, both versions of the survey underwent several rounds of cognitive testing and were pre-tested. Based on these results, the HQCA made minor changes to question wording, order, and instructions to help participants better understand the requirements of each section.

2.6 Privacy impact assessment

As a custodian under the Health Information Act of Alberta, 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.

2.7 RFP and selection of survey vendor

In order to conduct the survey data collection process, the HQCA publicly posted a Request for Proposal (RFP). Following a structured review and evaluation process, and based on pre-defined criteria, the HQCA selected and engaged the services of a national research firm: Prairie Research Associates Incorporated (PRA Inc), to conduct the survey.

2.8 Preparation of data

Substantial assistance in extracting and preparing data files from regional data warehouses and emergency department information systems was provided by all Alberta health regions as well as RSHIP (Regional Shared Health Information Program) and Alberta Health and Wellness (Ambulatory Care Classification System). This data provided the basis for sample creation as well as reporting of administrative data² measures and parameters. Subsequent cleaning, standardization, and manipulation of these data was conducted by HQCA staff to generate a consolidated sample frame database.

3.0 Survey methodology summary

The survey methodology used by the HQCA and PRA Inc. to conduct this survey is provided in detail in Appendix E. A brief summary is provided here.

3.1 Sample design and selection

The HQCA provided PRA with a sample of individuals who attended an emergency department in one of 66 Alberta health care facilities in 2007 between either January 27 and February 9 or February 10 and February 23. Of 108 provincial facilities, 40 emergency department sites were excluded where historical patient volumes (2005-2006 data) predicted a 4 week sample size of less than 350 completed surveys, assuming a 50% response rate. Three sites were also excluded because of data system access limitations. In contrast, three facilities were included despite predicted small sample sizes because the historical case mix of patients was high, indicating a greater proportion of higher acuity “emergent” patients as opposed to possible primary care issues.

² *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.

To achieve the desired sample size, patients were selected randomly from the entire patient list from the sample period. Sample sizes were proportionately larger for small facilities – so this is a cluster sample designed to produce reliable data at the facility level, but requiring weighting adjustment for aggregations of facility level results.

Adult patient samples (16 years of age and up) were generated for 65 facilities, and pediatric samples were generated for those 4 facilities with the highest pediatric patient volume. Respondents for the pediatric sample were parents or guardians; and the process for collecting “proxy” information was tested in the pilot study.

Patients without contact information, children aged 13 – 15, and a number of clinically or “privacy” sensitive cases were excluded from the sample and randomly replaced with eligible cases (See Appendix E for details). A rigorous 4 stage survey protocol was used to maximize the response rate and quality of the final sample. This included the initial mailing; a reminder post card, a repeat mailing, and a phone follow up.

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

Table 1: Fielding dates		
	Dates	
	Wave 1	Wave 2
First survey mailing	March 6, 2007	March 20, 2007
Postcard mailing	March 20, 2007	April 3, 2007
Reminder calls	March 23 – April 11, 2007	April 11 – May 6, 2007
Second survey mailing	April 3, 2007	April 17, 2007
Phone survey	April 27 – June 5, 2007	May 11 – June 8, 2007
Mail survey cut-off	June 26, 2007	June 26, 2007

3.2 Response rate and outcome of survey process

In total, 46,838 survey packages were distributed to Alberta emergency department patients, with 22,560 of these surveys being completed and returned to achieve an overall raw response rate of 48%. Overall almost 10% of the sample had incorrect contact information meaning that they did not receive the mailings and had no chance to complete the survey. Incorrect mailing information varies by facility. Final survey outcomes are presented in Table 2.

Table 2: Final survey process statistics		
Disposition	n	%
Total sample	46,838	100.0%
Total completed	22,560	48.2%
By mail	20,613	44.0%
By phone	1,982	4.2%
Non-respondents (mail protocol complete) (sub total)	16,497	35.2%
No phone contact	9,365	20.0%
Phone contact made	7,132	15.2%
Incorrect contact information	4,437	9.5%
Refused (sub total)	2,338	5.0%
Refused by phone	1,683	3.5%
Refused for health reasons	290	0.6%
Language barriers	232	0.5%
Returned blank	55	0.1%
Refused by mail	45	0.1%
Ineligible	33	0.1%
Denied visiting ED	687	1.5%
Deceased	284	0.6%

The response rate by facility ranges from 39.7% to 53.9% with an average of 48.2%. The goal for each facility was to achieve either a response rate of 50% or 400 completes (whichever happened first). Overall, this target was achieved with 44 of the 66 facilities (23 achieved a 50% response rate or better, and 21 achieved at least 400 completes but did not achieve a 50% response rate).

Facilities with lower response rates tended to: be in small remote communities, be the only facility in the community (perhaps providing extended primary care), have higher rates of inaccurate contact information for patients, or have a higher proportion of transient (non-local) patients.

3.3 Definition of compared groups and sample weighting

Although the primary goal of this study was to produce actionable information at the facility level, results were also analyzed at the provincial level. Large urban or regional hospital emergency departments are faced with different and often more severe challenges than are smaller rural emergency departments. In addition, the pediatric sample targets a very different patient population and is for the most part “proxy” information from parents. As a consequence it was inappropriate to report aggregate results for the province as a whole for these three groups. While examination of the results at a higher level provides useful insights about emergency department patient experience throughout Alberta, providers should ultimately focus on the variation between sites, as these site level results are the actionable substance of the report.

The overall results presented in this first section of the report are aggregated into 4 broad sample categories. The “Urban” category combines urban-hospital and regional-hospital based emergency departments. These facilities tend to experience both a greater volume and higher acuity of patients, as well as longer wait times and more facility crowding. The Urban category includes facilities which are primary teaching hospitals and use physician medical residents; and/or are regional trauma centers. While all facilities are unique in some regard, facilities within the urban group are clearly distinct from the rural sites especially in terms of wait time related issues and effects.

“Rural” category facilities generally experience a lower volume and lower acuity of patients; and tend to be located in smaller or more rural communities. Both the “Urban” and “Rural” categories represent adult patients only (16 years of age or older).

The “Adult” category simply combines the “Urban” and “Rural” sites and patients.

In contrast the “Pediatric” category represents parents of pediatric patients (0 – 12 years of age) from 2 regional hospital based emergency departments; and 2 urban academic teaching hospitals with dedicated pediatric specialization.

Comparison to the pediatric sample is only appropriate for the urban sample given the pediatric sample is drawn from “urban” sites. The pediatric sample is also “proxy” information from parents although provided from the perspective of their child. The reader should also keep in mind that the pediatric sample is drawn only from those four sites within the province with the largest pediatric volume. Pediatric care occurs in many other emergency departments albeit at lower volumes, and experience may be different at these sites. As two of the pediatric sites have specialized pediatric care, this may impact results relative to sites without such capacity.

Three urgent care centers from urban areas have been excluded from the overall report because of their unique site level characteristics. Results for urgent care centers are provided in the facility level report.

Results for all 4 categories (Adult, Urban, Rural and Pediatrics) 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.³

³ Urban, rural, and pediatric groups are each weighted within their own category, using their own mean sample size and total number of visits. The adult group is weighted based on the mean sample size and total number of visits for combined Urban and Rural (Adults).

3.4 Statistical significance and strength of association

Statistical significance for the chi-square measure of association is more easily achieved with large sample sizes.⁴ In view of this we have increased the standard for designating whether a relationship can be termed *statistically significant* from the typical significance level of 0.00 to a more stringent 0.000. Unless otherwise mentioned, all differences discussed have achieved this level of significance for the chi-squared test. In addition, we sometimes report the Cramer’s V coefficient to provide a measure of the *strength* of association⁵. 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 and 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 3: Tests for statistical significance and strength 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.

4.1 Demographic characteristics

Table 4 shows the demographic characteristics of respondents. Among the adult sample:

- ▶ One in 2 were female.
- ▶ Approximately 1 in 2 were under 50 years of age. Indeed, the typical respondent is 49 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. The remaining 1 in 5 were split between Aboriginal or Native Canadian (7%) and other ethnicities (6%).

⁴ 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.

⁵ Cramer’s V may be interpreted as the strength of association between two variables - as a percentage of their maximum possible variation. V² is the mean square canonical correlation between those variables.

Table 4: Respondent characteristics			
<i>Male or Female (Administrative Data)</i>			
<i>Age Group (Administrative Data)</i>			
<i>Q70. What is the highest level of school that you have completed?</i>			
<i>Q75. Where do you presently live?</i>			
<i>Q76. What language do you mainly speak at home?</i>			
<i>Q77. Would you say you are...?</i>			
	%		
	Adult (n=19,787)	Urban (n=5,421)	Rural (n=14,366)
Gender			
Male	44%	46%	43%
Female	56%	54%	57%
Age			
16 to 35	30%	29%	31%
36 to 50	24%	22%	25%
51 to 65	22%	22%	23%
66 to 75	11%	11%	11%
76 and older	13%	15%	10%
Average age	50 years	51 years	48 years
t test significance		0.000	
Highest level of education			
Less than high school	30%	24%	32%
Completed high school	27%	26%	27%
Technical school	12%	12%	12%
Some university or college	11%	13%	10%
Completed college degree	11%	11%	11%
Complete university degree	8%	11%	7%
Post-graduate degree	2%	3%	1%
Language			
English	94%	93%	95%
Other	6%	8%	5%
Residence			
Own residence	75%	69%	78%
Rents residence	21%	26%	19%
Residential facility/senior's lodge	3%	4%	3%
Nursing home/long-term care home	1%	1%	1%
Ethnicity			
Caucasian	88%	87%	88%
Aboriginal	8%	4%	10%
Other	4%	9%	2%
Note: These data were not collected for pediatric patients n reflects survey question counts.			

Among the adult respondents, the characteristics are fairly similar regardless of whether they visited an urban or rural emergency department, with several exceptions:

- ▶ While the proportion of respondents who reported being Caucasian was the same for both rural and urban facilities, respondents who attended a rural emergency department are more likely to be Aboriginal than respondents who attended one in an urban centre (9% versus 4%). Conversely, those who attended an urban facility are more likely to report being a member of another ethnic group (10%) than those who attended a rural facility (2%).
- ▶ Urban emergency department respondents were slightly older than rural with 5% more adults over 75 years of age, and a mean patient age 3 years older (significant).

- ▶ Rural emergency department respondents had slightly lower education levels as compared to urban respondents, 59% of respondents with high school or less as compared with 50% in the urban group.

Table 4 presents the combined results (Adult) and the results by those who attended an emergency department in an urban and rural setting.⁶

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 score⁷, and discharge disposition for the entire 4 week set of patients. Table 5 shows that a higher proportion of females complete the survey as compared with “no survey” groups. This difference in proportion was largest for Urgent Care Centers (13%), followed by Rural (8%), and Urban (6%). While the chi-squared test shows some association, the strength of this association is very weak (Cramer’s V < 0.15).

Table 5: Gender by sample category; Survey Compared to No Survey 4 Week Sample Frame (Administrative Data)						
Gender	Urban Adult		Rural Adult		Urban Urgent Care	
	No Survey	Survey	No Survey	Survey	No Survey	Survey
Female	49%	55%	49%	57%	47%	60%
Male	51%	45%	51%	43%	53%	40%
Count	45522	5418	34684	14342	32860	1295
	50940		49026		34155	
p value	Chi Squared =0.000 Cramer's V = 0.04		Chi Squared =0.000 Cramer's V = 0.07		Chi Squared =0.000 Cramer's V = 0.08	
<i>Note: No survey category includes non-respondents as well as those not included in the sample</i>						

Likewise, the proportion of older individuals is greater for respondents as compared to those not surveyed. As shown in Table 6 and Table 7, younger patients appear less likely to respond whereas older patients appear more likely to respond (weak association). Mean age is seven years older for urban respondents, six years older for rural respondents, and two years older for urgent care respondents as compared to those who were not surveyed (within category). All differences are significant (t-test).

Table 6: Mean age and LOS by sample category; Survey Compared to No Survey Within 4 Week Sample Frame (Administrative Data)						
Value	Urban Adult		Rural Adult		Urban Urgent Care	
	No Survey	Survey	No Survey	Survey	No Survey	Survey
Mean Age	44 years	51 years	42 years	48 years	42 years	44 years
	45 years		44 years		42 years	
p value	t test = 0.000		t test = 0.000		t test = 0.000	
Mean LOS	5.9 hours	6.3 hours	2.2 hours	2.2 hours	2.6 hours	3.3 hours
	6.0 hours		2.2 hours		2.6 hours	
p value	t test = 0.001		t test = 0.797		t test = 0.000	
<i>Note: No survey category includes non-respondents as well as those not included in the sample</i>						

⁶ This demographic information was not collected for the Pediatric sample.

⁷ Canadian Triage Assessment Score: triage priority with 1 being the most urgent and 5 being the least urgent.

Table 7: Age-group by sample category <i>Comparison within 4 week sample frame (administrative data)</i>						
	Urban Adult		Rural Adult		Urban Urgent Care	
Age Group	No Survey	Survey	No Survey	Survey	No Survey	Survey
16 - 24	42%	29%	44%	31%	45%	40%
25 - 34	25%	22%	26%	25%	26%	28%
35 - 44	16%	22%	15%	23%	17%	18%
65 - 74	7%	11%	7%	11%	7%	8%
75 +	10%	16%	8%	10%	6%	6%
Count	44526	5415	33043	14331	12753	1285
	49941		47374		14038	
p value	Chi Squared =0.000		Chi Squared =0.000		Chi Squared =0.020	
	Cramer's V = 0.11		Cramer's V = 0.15		Cramer's V = 0.03	
<i>Note: No Survey category includes non-respondents as well as those not included in the sample</i>						

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 (Table 8). 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 9).

Table 8: CTAS score by sample category; <i>Comparison within 4 week sample frame (administrative data)</i>						
	Urban Adult		Rural Adult		Urban Urgent Care	
CTAS	No Survey	Survey	No Survey	Survey	No Survey	Survey
CTAS I	1%	0%	2%	2%	0%	0%
CTAS II	16%	18%	4%	5%	4%	5%
CTAS III	42%	44%	15%	15%	24%	30%
CTAS IV	33%	31%	42%	43%	54%	59%
CTAS V	7%	7%	37%	34%	19%	6%
Count	39872	5118	22697	9527	11651	1268
	44990		32224		12919	
p value	Chi Squared =0.000		Chi Squared =0.000		Chi Squared =0.000	
	Cramer's V = 0.02		Cramer's V = 0.03		Cramer's V = 0.10	
<i>Note: CTAS data for rural sites are inconsistent and many cases are not included</i>						

This comparison suggests that the survey sample includes slightly more females and patients of an older age⁸ 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.

⁸ Similar findings are frequently reported in the literature; see bibliography for further details.

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 9: Discharge status by sample category <i>Comparison within 4 week sample frame (administrative data)</i>						
Discharge Disposition	Urban Adult (n=45775)		Rural Adult (n=45838)		Urban UCC (n=13464)	
	No Survey	Survey	No Survey	Survey	No Survey	Survey
Discharged	85%	82%	96%	95%	94%	97%
Admitted	15%	18%	4%	5%	6%	3%
Died	< 1%	0 %	< 1%	0 %	< 1%	0 %
Count	40585	5190	32128	13710	12181	1283
p value	Chi Squared =0.000 Cramer's V = 0.03		Chi Squared =0.000 Cramer's V = 0.07		Chi Squared =0.000 Cramer's V = 0.04	
<i>Note: Left without being seen (LWBS) excluded from comparison</i>						

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 10).

- ▶ 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* during this time.
- ▶ Almost 4 respondents in 10 reported having some type of long-standing disability or health problem. Among those with a long-standing disability or problem, about 3 in 4 (representing 32% of all adult respondents) reported that it affected their daily activities.
- ▶ About 1 respondent in 10 is either currently receiving home-care services (7%) or waiting for such services (2%).

Respondents for the pediatric patients were more likely than the adult urban sample to report better health in the previous four weeks as might be expected given their younger age. Pediatric respondents are also much less likely to report that the patient has a disability or uses home care (see Table 10). Urban emergency department respondents report lower health status than the rural patients. Further considering the rating of health where 1 is excellent health and 6 is very poor health, the mean rating of (3.13) for urban patients is significantly less healthy than rural (2.94) and pediatric (2.17).

Table 10: Health characteristics				
<i>Q71. Overall, how would you rate your health during the past 4 weeks?</i>				
<i>Q72. Do you have a long-standing physical or mental health problem or disability?</i>				
<i>Q73. Does this problem or disability affect your day-to-day activities?</i>				
<i>Q74. Do you receive home-care services at present?</i>				
	%			
	Adult (n = 19,159)	Pediatric (n = 1,452)	Urban (n = 5,244)	Rural (n = 13,897)
Health during past four weeks				
Excellent	12%	30%	11%	14%
Very good	23%	36%	22%	24%
Good	29%	21%	29%	30%
Fair	22%	8%	24%	22%
Poor	10%	3%	11%	9%
Very poor	3%	<1%	3%	2%
<i>Chi Squared p / Cramer's V</i>		0.000 / 0.32		
			0.000 / 0.07	
Disability				
Yes	39%	12%	41%	37%
- Affects day-to-day activities	34%	9%	36%	32%
- Does not affect day-to-day activities	5%	2%	5%	5%
<i>Chi Squared p / Cramer's V (for Yes)</i>		0.000 / 0.25		
			0.000 / 0.03	
Home care				
Yes	7%	2%	8%	6%
Waiting for services	2%	1%	2%	1%
<i>Chi Squared p / Cramer's V</i>		0.000 / 0.11		
			0.000 / 0.06	
<i>Weighted Data: n represents sample size adjusted for cluster sample within group, for self rated health status (Q71)</i>				

Respondents from urban facilities more often reported having disabilities or needing home care as compared with rural respondents. Overall, this suggests urban emergency department patients have more pre-existing co morbidity and higher complexity than those who attend rural emergency departments. This agrees with provincial measures of case mix severity (from administrative data) which show urban sites as having a significantly more intensive case mix than rural sites.

4.4 Most responsible diagnosis: differences between urban and rural

Table 11 presents a comparison of most responsible diagnoses between urban and rural survey respondents (taken from the Ambulatory Care Classification System {ACCS} data). While in general, the diagnosis distribution between rural and urban facilities was quite similar, a few items stand out:

- ▶ Urban facilities tended to have a higher proportion of patients reporting with heart disease; and symptoms or signs of circulatory, respiratory, abdomen, and digestive systems.
- ▶ Rural facilities tended to have higher proportions of people with respiratory infections and have about 1 in 10 patients receiving a “Persons encountering health services for specific procedures and health care” diagnosis.

Table 11: Visits to Alberta emergency departments by diagnostic categories, Adult survey respondents only, administrative data source: Ambulatory Care Classification System		
Primary Diagnosis Category	(n=5,152)	(n=13,680)
	Urban	Rural
Symptoms and signs involving the circulatory and respiratory systems	7.78%	4.21%
Symptoms and signs involving the digestive system and abdomen	4.64%	2.76%
Injuries to the wrist and hand	4.04%	3.63%
General symptoms and signs	3.94%	2.04%
Chronic lower respiratory diseases	3.84%	3.65%
Persons encountering health services for specific procedures and health care	3.34%	10.11%
Injuries to the head	3.20%	2.33%
Injuries to the knee and lower leg	2.60%	1.78%
Other forms of heart disease	2.54%	1.24%
Acute upper respiratory infections	2.52%	7.47%
Dorsopathies	2.52%	2.63%
Ischaemic heart diseases	2.27%	0.76%
Other diseases of urinary system	2.10%	3.07%
Other diseases of intestines	2.08%	1.47%
Influenza and pneumonia	1.96%	1.52%
Non-infective enteritis and colitis	1.88%	1.98%
Injuries to the ankle and foot	1.81%	1.98%
Soft tissue disorders	1.77%	2.53%
Persons encountering health services for examination and investigation	1.63%	1.88%
Episodic and paroxysmal disorders	1.55%	1.57%
Injuries to the elbow and forearm	1.53%	0.84%
Injuries to the shoulder and upper arm	1.42%	1.12%
Arthropathies	1.38%	2.01%
Complications of surgical and medical care, not elsewhere classified	1.38%	0.68%
Disorders of gallbladder, biliary tract and pancreas	1.26%	0.53%
Symptoms and signs involving cognition, perception, emotional state and behaviour	1.26%	0.66%
Injuries to the thorax	1.24%	1.07%
Injuries to the abdomen, lower back, lumbar spine and pelvis	1.22%	1.00%
Injuries to the neck	1.20%	0.62%
Infections of the skin and subcutaneous tissue	1.18%	1.24%
Persons encountering health services in other circumstances	1.16%	1.41%
Injuries to the hip and thigh	1.01%	0.45%
Other diseases of the digestive system	0.93%	0.28%
Diseases of oesophagus, stomach and duodenum	0.85%	1.19%
Neurotic, stress-related and somatoform disorders	0.85%	1.10%
Diseases of appendix	0.82%	0.09%
Cerebrovascular diseases	0.74%	0.15%
Diseases of oral cavity, salivary glands and jaws	0.56%	1.24%
Disorders of conjunctiva	0.49%	1.02%
Other diseases of upper respiratory tract	0.49%	1.28%
Diseases of middle ear and mastoid	0.33%	1.08%
Other acute lower respiratory infections	0.23%	1.33%
Persons encountering health services in circumstances Related to reproduction	0.17%	0.93%
Dermatitis and eczema	0.21%	0.98%

Note: Data are not weighted within category. Table does not include all diagnoses categories; Categories must account for at least 1% in either urban or rural, or there must be at least a 0.5% difference between urban and rural. Categories are sorted by urban proportion, until "Other diseases of the digestive system".

Because “Persons encountering health services for specific procedures and health care” is such an aggregated classification, Table 12 presents a breakdown of the exact diagnoses within the category. Mainly it involves chemotherapy and surgical follow-up care.

In fact, for those who reported seeing a health care provider for the same problem within 48 hours prior to visiting the ED, approximately 1 in 5 rural respondents fell into the category of “Persons encountering health services for specific procedures and health care” About 1 in 4 rural respondents who presented to the ED for chronic illness maintenance also fell into this category.

Table 12: Focus on diagnostic category (Rural);
"Persons encountering health services for specific procedures and health care"

Primary Diagnosis	Diagnosis Description	n	%
Z512	Other chemotherapy	372	27%
Z480	Attention to surgical dressings and sutures	284	21%
Z5188	Other specified medical care	247	18%
Z478	Other specified orthopaedic follow-up care	209	15%
Z488	Other specified surgical follow-up care	49	4%
Z532	Procedure not carried out because of patient's decision	47	3%
Z513	Blood transfusion without reported diagnosis	31	2%
Z452	Adjustment and management of vascular access device	19	1%
Z466	Fitting and adjustment of urinary device	19	1%
Z467	Fitting and adjustment of orthopaedic device	12	1%
Z479	Orthopaedic follow-up care, unspecified	12	1%
Z51808	Other specified medical care	11	1%
Z418	Other procedures for purposes other than remedying health state	10	1%
Z468	Fitting and adjustment of other specified devices	10	1%
Z516	Desensitization to allergens	9	1%
Z489	Surgical follow-up care, unspecified	6	0%
Z538	Procedure not carried out for other reasons	6	0%
Z515	Palliative care	5	0%
Z511	Chemotherapy session for neoplasm	3	0%
Z539	Procedure not carried out, unspecified reason	3	0%
Z433	Attention to colostomy	2	0%
Z450	Adjustment and management of cardiac pacemaker	2	0%
Z509	Care involving use of rehabilitation procedure, unspecified	2	0%
Z514	Preparatory care for subsequent treatment, not elsewhere classified	2	0%
Z519	Medical care, unspecified	2	0%
Z421	Follow-up care involving plastic surgery of breast	1	0%
Z432	Attention to ileostomy	1	0%
Z434	Attention to other artificial openings of digestive tract	1	0%
Z438	Attention to other artificial openings	1	0%
Z458	Adjustment and management of other implanted devices	1	0%
Z460	Fitting and adjustment of spectacles and contact lenses	1	0%
Z465	Fitting and adjustment of ileostomy and other intestinal appliances	1	0%
Z530	Procedure not carried out because of contraindication	1	0%
Z540	Convalescence following surgery	1	0%
	Total Rural	1,383	100%

*Note: Data are not weighted;
Only diagnoses for "persons encountering health services for specific procedures and health care" shown.*

4.5 Prior use of health care services

Respondents were asked to provide background on their use of 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). Table 13 provides a breakdown of the responses to these questions. Overall there is no difference between urban and rural groups with respect to having a personal family doctor, or the number of visits to that doctor. It is important to note that there are significant differences between sites and geographic zones within these broader categories (see facility level results).

A slightly higher proportion of respondents for pediatric patients indicated having a personal family doctor as compared with urban adults, whereas urban adults were significantly more likely to be heavy family doctor users with 5 or more visits (47% as compared with the pediatric group (29%).

Table 13: Visits to personal family doctor				
<i>Q63. Do you currently have a personal family doctor or specialist whom you see for most of your health-care needs?</i>				
<i>Q64. 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?</i>				
	%			
	Adult (n = 19,310)	Pediatric (n = 1,456)	Urban (n = 5,421)	Rural (n = 14,366)
Has a personal family doctor				
Yes	89%	94%	89%	89%
<i>Chi Squared sig. / Cramer's V for pediatric versus urban</i>	0.000 / 0.07			
<i>Chi Squared p / Cramer's V for urban versus rural</i>			not significant	
Visited personal family doctor in past 12 months*	(n = 16,910)	(n = 1,353)	(n = 4,646)	(n = 12,241)
No	4%	3%	4%	4%
1 time	10%	16%	10%	10%
2 to 4 times	40%	52%	40%	40%
5 to 10 times	28%	21%	28%	28%
More than 10 times	18%	8%	19%	18%
<i>Chi Squared sig. / Cramer's V for pediatric versus urban</i>	0.000 / 0.16			
<i>Chi Squared sig. / Cramer's V for urban versus rural</i>			not significant	
Weighted Data: n represents sample size adjusted for cluster sample within group; non response excluded.				
* Respondents who indicate that they do not have a personal family doctor (Q63) were not asked this question.				

Table 14: Visits to other health care professionals				
<i>Q65. In the past 12 months, approximately how many times have you visited an emergency department for your own care?</i>				
<i>Q66. In the past 12 months, approximately how many times have you visited a walk-in clinic, nursing station, or other clinic for you own care?</i>				
<i>Q67. In the past 12 months, approximately how many times have you visited an Alternative medicine provider such as a Chiropractor, Acupuncturist, Chinese Medicine provider, or Naturopath?</i>				
In the past twelve months, how many times visited...	Adult (n = 19,094)	Pediatric (n = 1,439)	Urban (n = 5,242)	Rural (n = 13,843)
Emergency department				
None	8%	15%	11%	7%
1 time	35%	41%	41%	35%
2 to 4 times	44%	39%	40%	44%
5 to 10 times	9%	4%	6%	9%
More than 10 times	4%	<1%	2%	4%
Walk-in clinic, nursing station, or other clinic				
None	45%	36%	45%	48%
1 time	15%	23%	17%	13%
2 to 4 times	25%	33%	26%	25%
5 to 10 times	9%	7%	8%	9%
More than 10 times	5%	2%	4%	5%
Alternative medicine provider (e.g., chiropractor, acupuncturist, naturopath)				
None	69%	87%	74%	68%
1 time	5%	3%	4%	5%
2 to 4 times	11%	4%	8%	12%
5 to 10 times	8%	4%	7%	9%
More than 10 times	6%	2%	6%	7%
Note: reported n is for emergency department visits				

Use of other health care services is shown in Table 14. Among the adult respondents:

- ▶ Almost 9 in 10 reported visiting an emergency department at least once in the past 12 months. By definition all respondents to this survey should have visited an emergency department facility at least once. About 1 in 10 did not include their current visit in this tally; or perhaps did not consider the referenced encounter as an emergency department visit (the visit is not perceived to be an emergency, or the facility is called a community health center or urgent care center rather than an emergency department).
- ▶ About 1 respondent in 10 would be considered a heavy user of emergency departments (5 or more visits).
- ▶ Just over half reported visiting a walk-in clinic, nursing station, or other type of clinic for their care in the past 12 months. Overall, slightly more than 2 in 10 were designated as heavy or very heavy users.
- ▶ About 3 in 10 say they have visited an alternative medicine provider, such as a chiropractor, in the past 12 months. About 1 respondent in 6 was designated as a heavy user (or about half of respondents who visited an alternative medicine provider).

To get a sense of the number of visits that were made by respondents to other health care professionals in the last 12 months, a proxy value was created. Using the minimum number of visits in each category (i.e., 1 visit, 2 to 4 equals 2 visits, 5 to 10 equals 5 visits, more than 10 equals 11 visits), we calculated a minimum number of visits and grouped respondents into five categories: non-users, light users, moderate users, and heavy users of the system. The results are shown in Table 15.

- ▶ A few adult respondents indicate only one visit (7%).
- ▶ Light users (who made a minimum of 2 to 4 visits in the past 12 months) made up the largest category at about 4 respondents in 10 for adults and 5 in 10 for the pediatric group.
- ▶ About 1 respondent in 3 was classified as a moderate user (someone who made a minimum of 5 to 9 visits in the last 12 months).
- ▶ More than 8 in 10 pediatric group respondents (85%) were classified as light to moderate users (2-9) visits, slightly more than urban adults (72%).
- ▶ About 1 respondent in 4 was a heavy user (someone who made a minimum of 10 or more visits in past twelve months), including 5% of users who might be considered very heavy users (a minimum of 20 or more visits). There were slightly more heavy users among adults as compared to respondents for the pediatric group.
- ▶ Overall there were few differences between urban and rural groups although there is variation at the facility level within these categories.

Table 15: Number of visits to health professionals combined <i>Based on Q65 (Family Doctor), Q66 (emergency department), and Q67 (Walk-in Clinic)</i>				
In the past 12 months...*	Adult (n = 19,771)	Pediatric (n = 1,482)	Urban (n = 5,421)	Rural (n = 14,366)
One visit only	7%	3%	6%	7%
Light user (2 to 4 visits)	37%	46%	37%	37%
Moderate (5 to 9 visits)	34%	39%	35%	32%
Heavy user (10 to 19 visits)	18%	10%	18%	18%
Very heavy user (20 or more visits)	5%	2%	4%	6%
<i>Chi Squared sig. / Cramer's V for pediatric versus urban</i>		<i>0.000 / 0.13</i>		
Note: data are weighted within each group Number of visits was calculated using responses to questions 64, 65, and 66. Categories were assigned the minimum number of visits and then summed across questions. Non-responses were treated as zero unless non-response was recorded in all variables (case dropped). Alternative medicine providers are excluded from this calculation				

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 16 indicates, among adult respondents:

- ▶ Slightly less than 4 respondents in 10 decided on their own to present to the emergency department.⁹
- ▶ About 1 in 3 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 (16%) or a Health Link nurse (8%).

Pediatric group respondents (26%) were more likely than urban adults (9%) to report that they went to the emergency department based on advice from a Health Link nurse. This suggests that parents (in urban areas) may be more familiar with and seek advice from Health Link as compared to urban adults.

Table 16: Who advised to go to emergency department				
<i>Q1. Please identify all those who advised you to go to the emergency department.</i>				
	%			
	Adult (n = 19,572)	Pediatric (n = 1,470)	Urban (n = 5,367)	Rural (n = 14,196)
Decided on my own	37%	33%	33%	40%
Friend or family member	36%	29%	36%	34%
Personal family doctor	16%	13%	15%	17%
Health Link phone-line nurse	8%	26%	9%	8%
Doctor at walk-in clinic	6%	8%	7%	5%
Specialist doctor	4%	4%	5%	3%
Other	10%	6%	12%	7%
<i>Note: Data are weighted within category. Respondents could choose more than one answer. Totals sum to more than 100%.</i>				

With health care professionals considered together, 5 in 10 (48%) pediatric respondents report that a health professional advised them to visit the emergency department, as compared with 4 in 10 (38%) for urban adults, and 3 in 10 (31%) for rural adults¹⁰.

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 Table 17, the most common reasons for choosing to go to the emergency department are:

- ▶ The emergency department was the only choice available at the time. Just over half of respondents reported this as the reason.
- ▶ It was the best place to go. Almost 4 respondents 10 perceived the emergency department was the best place to go given their medical problem.

⁹ 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.

¹⁰ (Chi Squared = 0.000 / Cramer's V = 0.08)

- ▶ About 1 in 4 reported they were told to go the emergency department rather than somewhere else.
- ▶ About 1 in 7 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.

Rural respondents (62%) were more likely than urban respondents (44%) to report that the emergency department was *the only choice available at the time*. In smaller communities, the emergency department may be the only health care facility available at the time. Indeed, rural respondents (30%) were less likely than urban (46%) to say they chose the emergency department because it was the best place for their medical problem. In other words, while it may not be the best place for their problem (e.g., may not be an emergency), it was the only option available at the time of their health problem.

Table 17: 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	%			
	Adult (n=19,382)	Pediatric (n=1,457)	Urban (n=5,307)	Rural (n=14,080)
Emergency department was only choice available at time	53%	46%	44%	62%
<i>Chi Squared sig. / Cramer's V for urban versus rural</i>			0.000 / 0.17	
Emergency department was the best place for my medical problem	38%	48%	46%	30%
Told to go to the emergency department rather than somewhere else	23%	29%	27%	19%
<i>Chi Squared sig. / Cramer's V for urban versus rural</i>			0.000 / 0.15	
Emergency department was the most convenient place to go	14%	6%	12%	17%
Other	6%	6%	6%	6%

Note: Data are weighted within group. Respondents could choose more than one answer. Totals sum to more than 100%.

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 18, about 3 adult respondents in 4:

- ▶ Traveled to the emergency department by car
- ▶ Took up to 30 minutes to get to the emergency department

Adult respondents who attended an urban facility are more likely to have taken an ambulance to the emergency department than those who attended a rural facility. This may be due to a number of factors, including the time it would take for an ambulance to get to rural respondents and the availability of ambulance services in rural communities. Urban adults are also more likely to have arrived by ambulance than are respondents for the pediatric group. Less than 4% of respondents arrive at the emergency department by means other than car or ambulance.

Although the mode of transportation to emergency departments differs among groups, the time it took to get the facility does not. It might be expected that rural respondents would have a further distance to travel to the emergency department, however, about 8 in 10 respondents reached the emergency department in 30 minutes or less regardless of whether they attended an urban or rural emergency department.

Table 18: Traveling to the emergency department				
Q4. 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?				
	%			
	Adult (n = 19,486)	Pediatric (n = 1,467)	Urban (n = 5,343)	Rural (n = 14,139)
Mode of transportation				
Car	78%	89%	68%	86%
Ambulance	16%	9%	24%	8%
Taxi	3%	2%	4%	2%
Foot	2%	<1%	2%	2%
Bus/train	1%	<1%	2%	<1%
Other	<1%	<1%	1%	1%
<i>Chi Squared sig. / Cramer's V for urban versus rural</i>			0.000 / 0.25	
<i>Chi Squared sig. / Cramer's V for urban versus rural</i>	0.000 / 0.20			
Time to get to emergency department				
Up to 30 minutes	83%	77%	83%	82%
More than 30 minutes, but less than 1 hour	10%	16%	9%	11%
More than 1 hour	7%	7%	7%	6%
Note: Data are weighted within category, n is reported for mode of transportation (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.¹¹ As shown in Table 19, among adult respondents:

- ▶ About 1 in 5 believed that the health problem for which they visited the emergency department was *life threatening* or *possibly life threatening*.
- ▶ About 1 in 4 stated that their visit was *urgent* in nature, that is, there was a risk of permanent damage.
- ▶ About half of respondents stated that their visit was *somewhat urgent* (needed to be seen today) or *not urgent*.

Table 19: Self-rated urgency				
Q3. Would you describe your health problem as...?				
	%			
	Adult (n = 19,244)	Pediatric (n = 1,454)	Urban (n = 5,293)	Rural (n = 13,914)
Life threatening	4%	2%	6%	3%
Possibly life threatening	17%	17%	22%	12%
Urgent	26%	28%	29%	22%
Somewhat urgent	44%	49%	38%	49%
Not urgent	8%	4%	4%	12%
<i>Chi Squared / Cramer's V Urban versus Rural</i>			0.000 / 0.20	
<i>Chi Squared / Cramer's V Pediatric versus Urban</i>	0.000 / 0.11			
Self rated urgency mean score	3.35	3.35	3.13	3.58
<i>t test sig. Urban versus Rural</i>			0.000	
<i>t test sig. Pediatric versus Urban</i>	0.000			
Note: Data are weighted within each group				

¹¹ 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 20: CTAS (triage) score <i>From administrative data</i>				
CTAS Level	Adult (n=16525)	Pediatric (n=1477)	Urban (n=5311)	Rural (n=9810)
CTAS I	1%	< 1%	< 1%	2%
CTAS II	13%	12%	19%	5%
CTAS III	33%	52%	45%	16%
CTAS IV	35%	34%	29%	44%
CTAS V	17%	2%	7%	34%
<i>Chi Squared / Camer's V Urban versus Rural</i>			0.000 / 0.45	
<i>Chi Squared / Camer's V Pediatric versus Urban</i>	0.000 / 0.12			

Note: In the CTAS score, 1 is most urgent, and 5 is least urgent; data are weighted in each group

Respondents who attended a rural facility were more likely than urban respondents (61% versus 41%) to say that their visit was *somewhat* or *not urgent*. This difference may be due in part to lack of care alternatives in the community given that a higher proportion of rural respondents than urban indicated that the emergency department was the only place to go for their health-care needs. Conversely, a higher proportion of respondents who attended an urban (27%) rather than rural (15%) facility reported that their condition was *life threatening* or *possibly life threatening*. The mean score for self-rated urgency at rural sites was significantly less urgent¹² as compared with urban adults.

A higher proportion of respondents for a pediatric patient (48%) reported their health problem is only somewhat urgent as compared to urban adult patients (37%). The mean score for self rated urgency for the pediatric group was significantly higher (less urgent) as compared with adults attending an urban facility.

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 20. As with self-rated urgency, the rural group has a significantly larger proportion of CTAS IV or V as compared to urban. Likewise, the median triage score for rural was significantly “less urgent” than was the median score for urban (not shown). The CTAS score of pediatric patients was slightly less urgent than that of urban adult patients however this difference is not significant.

Table 21: Discharge status <i>From administrative data</i>				
Disposition	Adult (n=18920)	Pediatrics (n=1436)	Urban (n=5191)	Rural (n=13713)
Discharged	88%	93%	81%	95%
Admitted	12%	7%	19%	5%
<i>Chi Squared / Cramer's V, Urban versus Rural</i>			0.000 / 0.22	
<i>Chi Squared / Cramer's V, Pediatrics versus Urban</i>	0.000 / 0.13			

Note: Collapsed data; does not include "Left Without Being Seen"

As might be expected from CTAS scores, significantly more respondents presenting at an urban facility (19%) were admitted than respondents presenting at a rural site (5%). The comparison between urban pediatric and adult presentations suggests fewer children were admitted than adults (See Table 21).

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

¹² Less urgent has a numerically higher score.

(Question 3) was designed to approximate the meaning of the CTAS score. In Table 22, CTAS has been subtracted from self rated urgency, hence a value of (-2) indicates that CTAS urgency was 2 degrees more urgent than was self rated urgency. Likewise, a value of (+2) indicates that CTAS urgency is 2 degrees lower priority (less urgent) than self rated urgency. In general there is poor correspondence between CTAS and self rated urgency with only 36% to 38% of cases agreeing completely. Kappa statistic¹³ varies between (0.13) for the urban group which has the highest agreement, and (0.07) for rural; indicating only slight agreement between the CTAS scores and self rated acuity scale.

Table 22: Degree of difference between self rated urgency (Q3) and CTAS					
<i>CTAS subtracted from Q3 for each case</i>					
(Q3) Relative Difference	Q3 (-) CTAS	Adult	Pediatrics	Urban	Rural
CTAS is more Urgent ↑	-4	< 0%	< 0%	< 0%	1%
	-3	3%	1%	1%	3%
	-2	11%	4%	8%	12%
	-1	29%	21%	24%	32%
Identical >	0	37%	38%	38%	36%
CTAS is less Urgent ↓	1	16%	30%	24%	12%
	2	4%	5%	4%	3%
	3	1%	< 0%	< 0%	1%
	4	< 0%	< 0%	< 0%	< 0%
Kappa (un-weighted)		0.12	0.13	0.08	0.07
<i>Notes: data are not weighted in this table; Kappa statistic is un-weighted Kappa</i>					
<i>Kappa is calculated for CTAS score versus self rated urgency (q3) within patient</i>					

Of potential clinical interest, only 26% of rural site respondents with CTAS level 1 or 2 felt that their problem was life threatening or possibly life threatening. In contrast, 68% of rural site respondents with a CTAS score of 4 or 5 felt that their problem was only somewhat urgent or not urgent. In contrast, 57% of urban site adults with a CTAS score of 1 or 2 felt that their problem was either life threatening or possibly life threatening; while 59% of those with a CTAS score of 4 or 5 reported their problem was not urgent or somewhat urgent.

Considering rural sites have only recently added CTAS scoring to their ACCS data collection, the reliability of these data remains in question and the proportion of missing cases was high (30% of rural site cases). Compared to urban adult patients, these rural data suggest a) that rural patients with high acuity under-estimated the urgency of their problem; or b) rural site application of CTAS was skewed towards higher acuity, suggesting CTAS may have been applied inconsistently or used to manage priority in some informal way.

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 23 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* (33%) or *new injury or accident* (26%).

¹³ 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.

- ▶ 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* (20%), *complications or problems following recent medical care* (11%), for *routine care of pre-existing chronic condition or illness* (4%), or for *follow-up care* (3%).

For the urban group, almost 4 in 10 respondents reported that their problem was either a worsening of a previous condition, or a complication of recent medical care. This was somewhat higher than the rural group (36% versus 29%).

Considering the pediatric group, 7 in 10 respondents reported the problem was a new illness or injury; 12% more than adults who attended an urban facility (70% versus 58%).

Table 23: 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...				
	%			
	Adult (n=18,859)	Pediatric (n=1,482)	Urban (n=5,421)	Rural (n=14,366)
New illness or injury				
New illness/condition unrelated to previous illness/condition	33%	47%	32%	33%
New injury/accident unrelated to previous injury/accident	26%	23%	26%	25%
Related to previous illness or injury				
Worsening of pre-existing chronic illness/condition	21%	16%	23%	19%
Complications or problems following recent medical care	11%	16%	13%	10%
Routine care of a pre-existing chronic illness/condition	4%	1%	2%	5%
Told to return to the emergency department for follow-up care	4%	1%	2%	5%
Other	2%	3%	2%	2%
<i>Chi Squared / Cramer's V, Urban versus Rural</i>			0.000 / 0.11	
<i>Chi Squared / Cramer's V, Pediatric versus Urban</i>			0.000 / 0.15	

Note: Data are weighted within each category

5.5 Receiving previous medical care for the same problem

All respondents were asked whether or not they received previous health care for the same problem that brought them to the emergency department. Results in Table 24 show that among adult respondents:

- ▶ About 1 in 5 attended an emergency department (19%) and/or hospital (7%) for the same problem in the month prior to their current visit.
- ▶ About 4 in 10 reported seeing a health care provider for the same problem that brought them to the emergency department. Most often it was their personal family doctor (27%).
- ▶ Among those who saw a health care provider within the last month for the same problem, about half said that it was within the week prior to their emergency department visit, including 16% who saw them the same day. About 1 in 5 said they had not seen a health care provider about the problem for over a month prior to the emergency department visit.
- ▶ While the proportion of pediatric respondents who had previously seen a health care provider for the same problem was not different from urban or rural adults; over 50% of these pediatric respondents saw a provider within the past 48 hours. This compares with about 35% for urban adults and 22% for rural adults.

It is not clear how many of those respondents who reported seeing a health care provider for the same problem prior to their emergency department visit might have been managed differently prior to the emergency department visit. This is a potentially important group for further study. A better understand of the characteristics and medical concerns of these individuals would be helpful.

Table 24: Related medical problems and care				
Q7. At some time in the last month, were you in the hospital or the emergency department for the same problem?				
Q8. Before your most recent emergency department visit, did you see a health-care provider for the same problem?				
Q9. When did you see the health-care provider(s) mentioned above for the same problem?				
	%			
	Adult (n=19,135)	Pediatric (n=1,482)	Urban (n=5,421)	Rural (n=13,824)
In hospital or emergency department for same problem				
Yes (net)	23%	13%	22%	22%
- Emergency department	19%	11%	18%	19%
- Admitted to hospital	7%	3%	8%	6%
Saw health-care provider for same problem				
Yes (saw health care provider - net)	39%	39%	41%	38%
- Personal family doctor	27%	21%	26%	27%
- Walk-in clinic or urgent care centre doctor	9%	16%	11%	8%
- Specialist	8%	6%	9%	6%
- Home care nurse	2%	<1%	2%	2%
- Other	3%	4%	3%	2%
When visited health care provider before emergency department visit*	(n=7416)	(n=557)	(n=2,114)	(n=5,156)
Less than 1 day	16%	28%	20%	11%
Within 1 to 2 days	14%	25%	17%	11%
Within 3 to 7 days	24%	26%	24%	24%
Within 8 to 30 days	29%	17%	27%	31%
More than 30 days	25%	17%	23%	28%
Saw any health care provider within the last 48 hours for same problem (net) †	(n=7416)	(n=556)	(n=2114)	(n=5155)
Proportion meeting dual condition	29%	50%	35%	22%
<i>Chi Squared / Cramer's V, Urban versus Rural</i>			0.000 / 0.14	
<i>Chi Squared / Cramer's V, Pediatric versus Urban</i>	0.000 / 0.13			
Note: Respondents could choose more than one answer. Totals sum to more than 100% because of multiple response. * Respondents who did not see a health-care provider for the same problem (Q8) were not asked when they last visited before their emergency department visit. † Calculated variable using both Q8 and Q9 – missing in either dropped.				

About 4 adult respondents in 10 (41%) said that they were waiting for other medical care prior to their emergency department visit. Table 25 shows that respondents were primarily waiting:

- ▶ To see a health care professional, either their personal family doctor (17%) or a specialist (8%).
- ▶ For diagnostic tests, either major (8%) or minor (7%).

The rural group had a higher proportion of respondents who are waiting to see a family doctor (20%) as opposed to 14% for urban adults. Given the nature of staffing in small emergency departments, it is feasible that some of these individuals may actually see their family doctor in the emergency department.

When “major” services are combined to include specialist, surgery, major non-surgical procedure, or major diagnostic; more urban adults were waiting a major service than are pediatric respondents (22% versus 10%) or rural respondents (22% versus 17%).

Table 25: Waiting for other treatments and procedures				
Q10. Before your emergency department visit, were you already waiting for any of the following?				
	%			
	Adult (n = 19,787)	Pediatric (n = 1,482)	Urban (n = 5,421)	Rural (n = 14,366)
See my personal family doctor	17%	14%	14%	20%
See a specialist	8%	7%	10%	6%
Major diagnostic tests	8%	3%	9%	7%
Minor diagnostic tests	7%	3%	7%	7%
Specific treatments or therapies	4%	2%	4%	4%
Surgery	3%	1%	3%	3%
Major non-surgical procedure	2%	<1%	2%	1%
Other	2%	3%	2%	1%
Waiting for major health care servicet	20%	10%	22%	17%
<i>Chi Squared / Cramer's V, Urban versus Rural</i>			0.000 / 0.06	
<i>Chi Squared / Cramer's V, Pediatric versus Urban</i>			0.000 / 0.12	
Note: Respondents could choose more than one answer. Totals sum to more than 100%. All responses include coded "other". "Other" is corrected to exclude open responses that do not indicate waiting for a health care service.				
† includes any of the following: specialist, surgery, major diagnostic, or major non surgical procedure				

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 (Q61). This item demonstrated very high reliability at the facility level¹⁴; 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.

6.1 Overall questions about care

In terms of the overall care respondents received while in the emergency department, Table 26 shows:

- ▶ Nine in 10 rural group respondents (90%); and 9 in 10 pediatric group respondents (88%) reported their care to be good, very good, or excellent; as compared with about 8 in 10 urban respondents (84%).
- ▶ Approximately 8 in 10 rural group respondents (75%) reported very good or excellent care; as compared with almost 7 in 10 urban (65%) and just over 7 in 10 pediatric (71%).
- ▶ Overall, slightly more than 1 in 10 overall stated that the care was *fair* or worse, including about 1 in 50 who stated the care was *very poor*.

¹⁴ As calculated using the SAS macro: General Reliability and Intra-class Correlation Program (GRIP) see appendix D for details.

Table 26: Overall care received in the emergency department				
<i>Q61. Overall, how would you rate the care you received in the emergency department?</i>				
<i>Q59. Was the main reason you went to the emergency department dealt with to your satisfaction?</i>				
<i>Q60. Overall, did you feel you were treated with respect and dignity while you were in the emergency department?</i>				
	Adult	Pediatric	Urban	Rural
Overall rating of care	(n=19,117)	(n=1,458)	(n=5,239)	(n=13,873)
Excellent	35%	34%	29%	41%
Very good	35%	37%	36%	34%
Good	17%	17%	19%	15%
Fair	8%	7%	9%	6%
Poor	3%	3%	4%	3%
Very poor	2%	2%	3%	1%
<i>Chi Squared / Cramer's V Pediatric versus Urban</i>		<i>0.000 / 0.06</i>		
<i>Chi Squared / Cramer's V Urban versus rural</i>			<i>0.000 / 0.12</i>	
Main reason for visit dealt with to satisfaction	(n=19,057)	(n=1,439)	(n=5,218)	(n=13,845)
Yes completely	64%	61%	59%	68%
Yes to some extent	27%	31%	30%	24%
No	9%	8%	11%	8%
<i>Chi Squared / Cramer's V Pediatric versus Urban</i>		<i>0.010 / 0.01</i>		
<i>Chi Squared / Cramer's V Urban versus rural</i>			<i>0.000 / 0.09</i>	
Overall, treated with respect and dignity	(n=19,015)	(n=1,450)	(n=5,207)	(n=13,812)
Yes all of the time	76%	74%	72%	80%
Yes some of the time	19%	23%	22%	16%
No	5%	3%	6%	4%
<i>Chi Squared / Cramer's V Pediatric versus Urban</i>		<i>0.000 / 0.05</i>		
<i>Chi Squared / Cramer's V Urban versus rural</i>			<i>0.000 / 0.08</i>	
<i>Note: Data are weighted within group</i>				

The majority of respondents reported the main reason for their visit was dealt with to their satisfaction:

- ▶ About 7 in 10 rural group respondents (68%) reported their visit was dealt with “completely” to their satisfaction; as compared with 6 in 10 for the urban (59%) and pediatric (61%) groups.
- ▶ About 3 in 10 rural, and 4 in 10 urban or pediatric group respondents reported their main problem was either not dealt with to their satisfaction, or “only to some extent”.
- ▶ About 8 in 10 rural (80%) and 7 in 10 urban or pediatric respondents reported they were always treated with respect and dignity during their visit. (72% for urban and 74% for pediatric).

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.¹⁵ 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. 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 highest¹⁶. 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.¹⁷

As shown in Table 27 the staff care composite is by far the most important to the overall rating (Question 61), with a coefficient of 0.39. 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 (Q61) of (0.39). 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 / 100.¹⁸

Table 27: Summary of composite effect on overall (global) rating of emergency department care (Q61); As shown by regression coefficients	
Composite	Coefficient
Staff care and communication composite	0.39
Respect composite	0.26
Pain (estimated position in order)	†
Wait time and crowding composite	0.13
Cleanliness composite	0.12
Discharge information composite	0.07
Wait time communication composite	n. sig. / 0.01
Medication communication composite	n. sig. / decomposed
Privacy composite	n. sig. / 0.01
<i>Additional significant variables in the model are not shown. † pain composite was decomposed to constituent variables for the regression – coefficients not comparable Position in order reflects approximate importance given different “scale” for coefficient</i>	

¹⁵ 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.

¹⁶ The scoring scheme used to generate the 0 to 100 score follows the methods developed by the Healthcare Commission for their British survey.

¹⁷ 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.

¹⁸ Scores of both composites and Overall Quality (Q61) are standardized to a scale of 0 to 100 where 100 is best.

While the coefficients shown in Table 27 are for one of several models, the rank order of coefficients is essentially the same for both rural and urban samples. 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 (Q61) as shown above.

While the relationship of some variables or composites to the overall rating (Q61) 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 Q61 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.

7.2 Staff care and communication composite and related questions

Table 28 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. Q29 and Q30 are overall patient assessments of staff in terms of them knowing enough about the patients condition and treatment, and patient confidence in the provider.

Table 28: Staff care and communication composite				
<i>Questions included in calculation:</i>				
<i>q26 Doctor or nurse explained your condition in understandable way</i>				
<i>q31 Amount of information provided about condition or treatment... ..</i>				
<i>q27 Doctor or nurse discussed your anxieties or fears</i>				
<i>q25 Doctors and nurses listened</i>				
<i>q24 Had enough time with doctor or nurse to discuss health concern</i>				
<i>q36 Involved as much as you wanted in decisions</i>				
<i>q29 Doctors and nurses knew enough about condition or treatment</i>				
<i>q28 Had confidence and trust in doctors and nurses</i>				
Group (n)	Adult (n=19,510)	Pediatric (n=1,474)	Urban (n=5,347)	Rural (n=14,158)
Mean score	79.0	82.9	76.5	81.6
<i>t test sig. pediatric versus urban</i>		0.000		
<i>t test sig. urban versus rural</i>			0.000	
% patients scoring 75 or higher	66%	72%	61%	70%
<i>Note: Composites are scored from between 0 and 100 where 100 is highest and best † Q31 responses indicating too much information (<1%) are scored the same as responses indicating enough information..</i>				
<i>Site level reliability (GRIP macro): 0.93 Standardized Scale Alpha (Cronbach's): 0.90</i>				

Although recent attention has focused on wait time issues, it is notable that the *most important* factor relative to overall emergency department care is essentially quality of care from the patient perspective. Staff care and communication has the strongest relationship to the overall rating as compared with other composites; and improving the care composite by 20 units (out of 100) is expected to increase the overall rating by 8 units (out of 100). See Table 65 (urban) for further detail.

The mean score for the urban group (77) was significantly lower than that of the rural group and the pediatric (urban) group. Likewise only 61% of respondents in the urban group attained a score of 75 or higher as compared with 70% of respondents in the rural group.

Table 29 shows results for those questions within the care 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 (80/100); however, individual question results show where communication in specific areas might be improved. In general, the urban group scored more negatively in questions as compared with the rural group; and respondents for pediatric patients were more positive than both urban and rural. These differences were generally significant for a Chi-Squared (0.000), while the strength of association varies from minimal to weak as suggested by Cramer's V measure.

Considering the individual questions:

- ▶ Almost 4 in 10 urban respondents reported that their condition had either not been explained to them, or had only been explained to some extent. This compares with about 3 in 10 rural and pediatric respondents.
- ▶ About 3 in 10 urban respondents (29%) reported either not receiving any information about their care or treatment, or not getting enough; this compares with 2 in 10 pediatric respondents (18%), and 2 in 10 rural respondents (21%).

Table 29: Staff care and communication composite: communication related questions (part I)				
Q26. While you were in the emergency department, did a doctor or nurse explain your condition and treatment in a way you could understand?				
Q31. While you were in the emergency department, how much information about your condition or treatment was given to you?				
Q27. If you had any anxieties or fears about you condition or treatment, did a doctor or nurse discuss them with you?				
Q25. Did doctors and nurses listen to what you had to say?				
Q24. Did you have enough time to discuss your health or medical problem with the doctor or nurse?				
Doctor or nurse explained your condition in an understandable way	Adult (n = 17,877)	Pediatric (n = 1,407)	Urban (n = 4,964)	Rural (n = 12,795)
Yes definitely	65%	73%	61%	69%
Yes to some extent	28%	23%	30%	25%
No	8%	4%	8%	7%
Amount of information provided about condition or treatment	(n = 18,770)	(n = 1,428)	(n = 5,135)	(n = 13,651)
Right amount	75%	82%	71%	79%
Not enough	19%	13%	22%	15%
No information given	6%	5%	7%	6%
Doctor or nurse discussed your anxieties or fears	(n = 12,923)	(n = 1,170)	(n = 3,746)	(n = 12,557)
Yes completely	47%	58%	43%	51%
Yes to some extent	33%	32%	36%	30%
No	20%	10%	21%	19%
Doctors and nurses listened	(n = 18,989)	(n = 1,447)	(n = 5,190)	(n = 13,821)
Yes definitely	74%	76%	71%	77%
Yes to some extent	23%	23%	26%	21%
No	3%	1%	4%	3%
Had enough time with doctor or nurse to discuss health concern	(n = 19,020)	(n = 1,448)	(n = 5,211)	(n = 13,811)
Yes definitely	67%	74%	63%	72%
Yes to some extent	26%	24%	30%	23%
No	7%	3%	8%	5%
<i>Note: Data are weighted within groups; "Not relevant" responses are excluded from results and are reflected in lower n. All comparisons between Pediatric versus Urban, and Urban versus Rural have a significant Chi-Squared, but low Cramer's V. Three additional variables included in the care composite are excluded here, but are shown in the next table.</i>				

- ▶ Almost 6 in 10 urban respondents (57%) reported that doctors and nurses either did not discuss their anxieties and fears (21%) or discussed them only to some extent (36%). This compares with 5 in 10 rural respondents and 4 in 10 pediatric respondents.
- ▶ About 3 in 10 urban respondents reported that doctors either did not listen to what they had to say (4%) or only listened to some extent (26%). This is slightly higher than the 2 in 10 rural and pediatric respondents.
- ▶ About 4 in 10 urban respondents (38%) reported either not having enough time with the doctor or nurse to discuss their health concern (8%); or only to some extent (30%). This compared with approximately 3 in 10 respondents in both rural and pediatric groups.

Table 30 shows results for those questions within the care 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.

- ▶ About 4 in 10 respondents (all categories) reported either not being involved as much as they wanted in decisions (~10%), or only being involved to some extent (~30%).
- ▶ Only about 1 in 10 urban site respondents reported that doctors and nurses did not know enough about the patient’s condition or treatment (3%), or that only some of them knew enough (9%). This compares with 2 in 10 for the pediatric group and almost 2 in 10 for the rural group. While this difference is small, it is the only variable in the care dimension where the urban group performs better than the others. This may reflect the presence of more specialized staff at larger urban sites.
- ▶ About 3 in 10 respondents (all categories) 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 (24%). There was little difference among groups.

Table 30: Staff care and communication composite (cont.):				
Being involved in decisions, staff knowing enough, and trust				
Q36 Were you involved as much as you wanted to be in decisions about your care and treatment?				
Q29 In your opinion, did the doctors and nurses in the emergency department know enough about your condition or treatment?				
Q28. Did you have confidence and trust in the doctors and nurses examining and treating you?				
	Adult	Pediatric	Urban	Rural
Involved as much as you wanted in decisions	(n =17,830)	(n = 1,376)	(n = 4,787)	(n =14,366)
Yes definitely	62%	65%	57%	68%
Yes to some extent	28%	28%	31%	25%
No	10%	7%	12%	8%
Doctors and nurses knew enough about condition or treatment	(n = 17,399)	(n = 1,359)	(n = 4,715)	(n = 12,688)
All of them knew enough	54%	49%	54%	59%
Most of them knew enough	28%	31%	34%	26%
Only some of them knew enough	11%	13%	9%	10%
None of them knew enough	6%	7%	3%	5%
Had confidence and trust in doctors and nurses	(n = 19,039)	(n = 1,440)	(n = 5,220)	(n = 13,812)
Yes definitely	70%	72%	68%	72%
Yes to some extent	24%	24%	25%	23%
No	6%	4%	6%	5%
<i>Note: “not relevant” responses are excluded from these results and are reflected in lower n; results are weighted within each group</i>				

Table 31 shows results for questions that are correlated with the care composite, but which were dropped from the composite to increase its reliability¹⁹. These items are still useful on their own, and question 34 (getting assistance when needed) has a significant effect on the overall care rating (Q61).

- ▶ About 2 in 10 urban respondents reported that not enough information had been given to family; as compared with close to 2 in 10 for rural and 1 in 10 for the pediatric group. One percent or less reported that too much information was given to family.
- ▶ For patients who had tests, 4 in 10 respondents in the urban group reported that staff either did not explain the results of tests (13%) or only explained the results of tests to some extent (28%). This is compared with almost 4 in 10 for rural and just over 3 in 10 for pediatric respondents. It was unclear from this survey whether test results were actually available at the time of discharge.

¹⁹ Internal consistency reliability as measured by Cronbach’s Alpha – see appendix D for details.

- ▶ 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 urban respondents reported that they either could not find a member of staff to help them (10%) or only sometimes (37%). This compares with about 3 in 10 for rural (33%); and almost 5 in 10 for pediatric (46%).
- ▶ Finding staff help had a relatively large effect on the overall rating, suggesting the importance of this single item.

Table 31: Staff care and communication: related questions not included in composite				
<i>Q38. How much information about your condition or treatment was given to your family or someone close to you?</i>				
<i>Q41. Did a member of staff explain the results of the tests in a way you could understand?</i>				
<i>Q34. If you needed attention, were you able to get a member of staff to help you?</i>				
	Adult	Pediatric	Urban	Rural
Amount of information given to family	(n =10,576)	(n = 1,151)	(n = 3,258)	(n = 6,783)
Not enough	17%	9%	19%	14%
Right amount	83%	91%	80%	86%
Too much	1%	1%	1%	1%
Staff explained the results of the tests (if had tests)	(n = 10,236)	(n = 640)	(n = 3,389)	(n = 5,798)
Yes definitely	61%	66%	59%	63%
Yes to some extent	26%	26%	28%	22%
No	14%	8%	13%	15%
Able to get a member of staff to help you (if needed attention)	(n = 13,810)	(n = 1,191)	(n = 4,088)	(n = 9,175)
Yes always	57%	54%	51%	65%
Yes sometimes	33%	39%	37%	27%
No, I could not find a member of staff to help me	8%	7%	10%	6%
A member of staff was with me always	2%	<1%	1%	3%
<i>Note: "not relevant" responses are excluded from these results and are reflected in a lower n; Data are weighted within each group.</i>				

7.3 Respect composite and related questions

Table 32 shows the items comprising the respect composite as well as mean scores for all 4 groups. Unlike the previous composite, the rural group scored highest followed by pediatric and then urban, with significant differences in comparison to the urban group.

Likewise, more than 8 in 10 (85%) of rural respondents achieved a score of at least 75 out of 100; as compared with almost 8 in 10 (79%) for pediatric respondents and urban respondents (75%). For this composite, the urban group and the pediatric group (also urban) were quite similar in their score. Overall, respect composite scores were quite good with a range of 84/100 to 89/100 between the three groups.

Table 32: Respect composite				
<i>Questions included:</i>				
<i>q30 Doctors and nurses talked in front (of patient) as if not there</i>				
<i>q35 Staff provided conflicting information</i>				
<i>q39 Family member or friend was allowed to join in treatment area</i>				
<i>q20 Fairness of order in which patients were seen</i>				
<i>q15 Courtesy of triage nurse</i>				
Group (n)	Adult (n=19,566)	Pediatric (n=1,476)	Urban (n=5,370)	Rural (n=14,180)
Mean	86.53	85.96	84.15	89.05
<i>t test pediatric versus urban</i>		0.000		
<i>t test urban versus rural</i>			0.000	
% scoring 75 or higher	80%	79%	75%	85%
<i>Note: Data are weighed within category</i>				
<i>Site level reliability (GRIP Macro): 0.92 Standardized Scale Alpha (Cronbach's): 0.59</i>				

Opportunities for improvement can be identified by examination of the question specific results shown in Table 33, although these results are quite positive. There is likely more variation in performance at the level of specific facilities.

- ▶ Under 2 in 10 urban or pediatric group respondents reported that doctors or nurses either talked in front of the patient “as if they were not there” (6%), or did so to some extent (12% / 13%). This proportion is slightly lower in the rural group.
- ▶ Almost 2 in 10 urban group respondents reported that staff either provided conflicting information (6%) or did so some of the time (12%) this compares with about 2 in 10 for pediatric and 1 in 10 for rural respondents.
- ▶ Only 3% of pediatric group respondents (less than 1 in 10) reported that family was either not allowed to join the patient or was only allowed to join to some extent. This compared with 2 in 10 for the urban and 1 in 10 for rural.
- ▶ About 2 in 10 urban (19%) or pediatric group (17%) respondents believed the order of being seen was not fair. This compares with 1 in 10 for the rural group. This may reflect a lack of understanding or absence of communication about the triage process. This is supported by the finding that 25% of respondents reported they can not 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.

Table 33: Respect composite: specific questions				
<i>Q30 Did doctors or nurses talk in front of you as if you weren't there?</i>				
<i>Q35 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?</i>				
<i>Q39 Was our family member or friend allowed to join you in the treatment area when you wanted?</i>				
<i>Q20 Overall, did you think the order in which patients were seen was fair?</i>				
<i>Q15 How would you rate the courtesy of the emergency department triage nurse, that is the person who first asked you about your health problem?</i>				
	Adult	Pediatric	Urban	Rural
Doctors and nurses talked in front of patient as if not there	(n = 18,841)	(n = 1,428)	(n = 5,142)	(n = 13,734)
No	83%	82%	81%	85%
Yes to some extent	12%	12%	13%	10%
Yes definitely	6%	6%	6%	5%
Staff provided conflicting information	(n = 18,926)	(n = 1,436)	(n = 5,177)	(n = 13,765)
No	85%	79%	82%	88%
Yes to some extent	10%	14%	12%	8%
Yes definitely	5%	7%	6%	5%
Family member or friend was allowed to join in treatment area	(n = 11,376)	(n = 1,173)	(n = 3,431)	(n = 7,379)
Yes definitely	85%	96%	82%	89%
Yes to some extent	10%	3%	11%	8%
No	5%	1%	7%	4%
Fairness of order in which patients were seen	(n = 14,154)	(n = 896)	(n = 3,526)	(n = 11,258)
Yes	87%	83%	82%	92%
No	13%	17%	19%	8%
Courtesy of triage nurse (collapsed)	(n = 18,006)	(n = 1,416)	(n = 5,850)	(n = 13,304)
Excellent / Very Good	72%	69%	68%	75%
Good	18%	19%	20%	16%
Fair	7%	8%	8%	6%
Poor / Very Poor	4%	3%	4%	3%
<i>Note: Data are weighted within categories; "not relevant" responses are excluded from results.</i>				

7.4 Pain management composite and related questions

Overall, 6 in 10 respondents (64%) reported they were in pain during their emergency department visit. Table 34 shows mean scores for the pain 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 61).

Table 34: Pain composite				
<i>Questions included:</i>				
<i>q45 Wait time to get pain medicine (self reported)</i>				
<i>q46 Emergency department staff did everything they could to help control pain</i>				
Group (n)	Adult (n=11,017)	Pediatric (n=654)	Urban (n=3,160)	Rural (n=7,602)
Mean	64.48	65.36	61.44	68.01
Std. deviation	37.73	36.08	38.32	36.73
<i>t test pediatric versus urban</i>		0.012		
<i>t test urban versus rural</i>			0.000	
% scoring 75 or higher	59%	57%	56%	62%
<i>Note: Data are weighed within category; 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 for details</i>				

Table 35 Pain composite individual questions and amount of time in pain				
<i>q43 While you were in the emergency department, how much of the time were you in pain? (not in composite)</i>				
<i>q45 How many minutes after you requested pain medicine did it take before you got it?</i>				
<i>q46 Do you think the emergency department staff did everything they could to help control your pain?</i>				
	Adult (n = 12,325)	Pediatric (n = 761)	Urban (n = 3,543)	Rural (n = 8,483)
How much of the time in pain <i>(if had pain during visit)</i>				
All or most of the time	83%	54%	70%	70%
Some of the time	12%	37%	24%	22%
Occasionally	6%	9%	7%	7%
Wait time to get pain medicine <i>(if requested pain medication)(collapsed)</i>	(n = 12,325)	(n = 190)	(n = 1,270)	(n = 3,444)
0 to 10 minutes	46%	54%	44%	47%
11 to 30 minutes	23%	21%	21%	25%
More than 30 minutes	19%	14%	21%	16%
Asked for pain medicine but was not given any	12%	11%	13%	11%
Emergency department staff did everything they could to help control pain	(n = 10,887)	(n = 641)	(n = 3,120)	(n = 7,522)
Yes definitely	55%	52%	52%	58%
Yes to some extent	25%	31%	26%	25%
No	20%	17%	22%	17%
<i>Note: Q44 (not shown) is a screening question for pain: this is reflected in lower n; Data are weighted within each group</i>				

Table 35 presents question specific results for the pain composite:

- ▶ About 8 in 10 respondents felt that emergency department staff did everything they could to help control pain, including 55% who say they *definitely* did everything they could. However, roughly 2 in 10 respondents felt that staff did not do everything they could.

Of those who reported pain, 3 respondents in 10 requested pain medication (20% overall). Among those who requested medication for the pain:

- ▶ About 4 in 10 were given the pain medication within 10 minutes, including 12% who received it right away.
- ▶ About 1 respondent in 6 waited more than half an hour for pain medication.
- ▶ One respondent in 10 reported that they did not receive any pain medication, even though they requested it.

7.5 Wait time and crowding composite

The wait time and crowding composite is made up of 5 questions related to either wait time or crowding²⁰. Table 36 shows the mean scores for the wait time and crowding composite by group. Rural facilities as a group scored significantly better (by 18 points out of 100) than did urban facilities. This difference was somewhat expected given that wait time issues have been recognized as a concern for urban emergency departments for some time. While the pediatric group (urban) scored better than the urban adult group – it was only by 4 points.

Table 36: Wait time and crowding composite				
<i>Questions included:</i>				
<i>q11 Crowding of emergency department waiting room (self report)</i>				
<i>q12 Found a comfortable place to sit</i>				
<i>q14 Wait time before speaking to triage nurse (self report)</i>				
<i>q17 Wait time before being examined by doctor (self report)</i>				
<i>q22 Total wait time for visit to emergency department (self report)</i>				
Group (n)	Adult (n=19,504)	Pediatric (n=1478)	Urban (n=3,160)	Rural (n=14,161)
Mean	69.57	64.49	60.71	78.92
<i>t test pediatric versus urban</i>		0.000		
<i>t test urban versus rural</i>			0.000	
% scoring 75 or higher	46%	33%	28%	66%
<i>Note: Data are weighed within category; Data includes patients who were admitted. Site level reliability (GRIP Macro): 0.99 Standardized Scale Alpha (Cronbach's): 0.73</i>				

²⁰ When administrative wait and crowding measures are included in factor analysis – they also land in this factor.

Specific questions contributing to the wait time and crowding composite are presented in Table 37.

Table 37: Wait time and crowding composite – specific questions				
<i>q11 How crowded was the emergency department waiting room when you first arrived there?</i>				
<i>q12 Were you able to find a comfortable place to sit in the waiting area?</i>				
<i>q14 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?</i>				
<i>q17 From the time you first arrived at the emergency department, how long did you wait before being examined by a doctor?</i>				
<i>q22 Overall, how long did your visit to the emergency department last?</i>				
	Adult	Pediatric	Urban	Rural
Crowding of emergency department waiting room (if patient saw the waiting room)	(n = 17,033)	(n = 1,359)	(n = 4,606)	(n = 12,536)
Extremely crowded	10%	12%	16%	4%
Very crowded	15%	19%	21%	9%
Somewhat crowded	32%	37%	34%	29%
Not at all crowded	43%	25%	29%	58%
Found a comfortable place to sit (if patient needed one)	(n = 14,831)	(n = 1,240)	(n = 3,894)	(n = 11,238)
Yes, I found a comfortable place to sit	80%	79%	72%	88%
I found somewhere to sit, but it was uncomfortable	17%	18%	24%	10%
No, I could not find a place to sit	3%	3%	4%	2%
Wait time before speaking to triage nurse (if patient saw triage nurse)	(n = 17,222)	(n = 1,389)	(n = 4,595)	(n = 12,849)
0 to 15 minutes	66%	64%	63%	70%
16 to 30 minutes	20%	22%	21%	18%
31 to 60 minutes	8%	9%	9%	7%
More than 60 minutes	6%	5%	7%	5%
Wait time before being examined by doctor (if the patient saw a doctor) (Self report)	(n = 18,091)	(n = 1,423)	(n = 4,970)	(n = 13,097)
I did not have to wait	7%	4%	6%	8%
1 to 30 minutes	31%	17%	21%	41%
31 to 60 minutes	21%	18%	18%	24%
More than 1 hour but no more than 2 hours	16%	20%	17%	15%
More than 2 hours but no more than 4 hours	15%	24%	20%	9%
More than 4 hours	11%	18%	19%	2%
Total wait time for visit to emergency department (self report)	(n = 18,527)	(n = 1,431)	(n = 5,066)	(n = 13,480)
Up to 1 hour	21%	5%	8%	35%
More than 1 hour but no more than 2 hours	21%	12%	12%	30%
More than 2 hours but no more than 4 hours	24%	33%	24%	24%
More than 4 hours but no more than 8 hours	19%	37%	30%	8%
More than 8 hours but no more than 12 hours	7%	8%	12%	1%
More than 12 hours but no more than 24 hours	5%	4%	9%	1%
More than 24 hours	4%	1%	6%	1%
<i>Note: "Not relevant" responses are excluded from these results and are reflected in lower n</i>				
<i>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.</i>				

Considering the specific question results for the wait and crowding composite in Table 37:

- ▶ 6 in 10 (58%) rural respondents reported that the waiting room was not at all crowded, as compared with 3 in 10 for urban (29%) and for pediatric (25%). At the other end of the scale, about 4 in 10 urban respondents found the wait room very crowded (21%) or extremely crowded (16%). This compares with about 1 in 10 in the rural group.
- ▶ 9 in 10 rural respondents found a comfortable place to sit as compared with 7 in 10 urban respondent and 8 in 10 pediatric.
- ▶ There was very little difference in wait time for triage nurse, although a slightly higher percentage of rural respondents (70%) reported seeing the triage nurse within 15 minutes.

Longer 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: www.caep.org) and the National Emergency Nurses Affiliation (NENA) for each CTAS level. For example, CTAS guidelines²¹ suggest that initial triage should be completed within 10 minutes of patient arrival (at least visually). About 4 in 10 adults report waiting longer than 15 minutes to see the triage nurse, and more than 1 in 10 (14%) waited longer than thirty minutes. Results are similar for all groups. 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 is likely the most important variable within the wait time composite. It has the strongest relationship with the overall rating of care (Q61) 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 level²², 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 (39%) urban (adult) respondents and pediatric respondents (urban) report not seeing a physician in less than 2 hours; with 2 in 10 (19%) 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.
- ▶ 1 in 10 rural respondents (11%) reported not seeing the physician within 2 hours; while 5 in 10 (49%) saw the physician within 30 minutes as compared with 3 in 10 urban (30 minutes) and 2 in 10 pediatric (30 minutes).
- ▶ Subsequent tables compare self-reported time to physician against time to physician from administrative data and evaluate time to physician against CTAS recommendations.

Table 38: Time to physician calculated from administrative data				
Group (n)	Adult (n=7,461)	Pediatric (n=1,175)	Urban (n=3,606)	Rural (n=1,052)
Simple mean (minutes)	113.09	102.67	116.81	77.48
5% trimmed mean (minutes)	98.46	96.11	102.02	69.29
Median (minutes)	74	80	77	56
<i>t test pediatric versus urban</i>		<i>0.000</i>		
<i>t test urban versus rural</i>			<i>0.000</i>	
<i>Note: Data are weighed within category; Time to physician is calculated as the difference between time of triage and time to physician. This data are not collected for all sites (especially rural); and accuracy of data are unclear for many sites.</i>				

²¹ Implementation Guidelines for the Canadian Emergency Department Triage and Acuity Scale (CTAS) 1998.

²² CAEP: Canadian Association of Emergency Physicians.

Table 38 shows the mean time to physician, the 5% trimmed mean²³ time to physician, and the median time to physician for each group; as calculated from administrative data²⁴. 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.

- ▶ Urban sites have the longest wait time to see a physician, with a 5% trimmed mean of 102 minutes. This contrasts strongly with rural sites with a 5% trimmed mean wait of 69 minutes. This difference is statistically significant.
- ▶ The pediatric group 5% trimmed mean wait is 96 minutes, somewhat faster than urban adults. This difference is statistically significant.

Table 39: Time to physician								
Self reported versus administrative data								
	Adult		Pediatric		Urban		Rural	
Wait time to see physician	Self	Admin	Self	Admin	Self	Admin	Self	Admin
	(n=18,091)	(n=7,461)	(n=1,423)	(n=1,175)	(n=4,970)	(n=3,606)	(n=13,097)	(n=1,052)
No wait (0)	7%	1%	4%	1%	6%	1%	8%	1%
1-30 min	31%	21%	17%	18%	21%	21%	41%	27%
31-60min	21%	20%	18%	17%	18%	20%	24%	27%
1-2 hours	16%	25%	20%	29%	17%	25%	15%	26%
2-4 hours	15%	21%	24%	26%	20%	21%	9%	17%
> 4 hours	11%	12%	18%	8%	19%	13%	2%	3%
Kappa	0.24		0.27		0.25		0.17	

Notes: Data are weighted within categories; Kappa statistic is un-weighted Kappa

To compare self reported wait time to physician with wait time to physician from administrative data; administrative data²⁵ 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 39:

- ▶ For urban centers 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 – 2 hour waits (25%) in contrast to self reported (17%).
- ▶ Administrative data reveal that 13% of urban respondents waited more than 4 hours as compared with 19% for self reported for this group. The reason for this difference is unclear; however wait times prior to triage (not collected in administrative data) may account for some of the difference.
- ▶ The larger differences between measures for the rural respondents may be attributable to very sparse administrative data (n=1052) as compared to self report (n=13,097). The kappa statistic for both Urban and Pediatric indicates only fair agreement overall, and weak agreement for rural.²⁶

Table 40 shows the degree to which physician wait time falls into the same category for administrative versus self reported data. For the urban and pediatric groups, wait time categories are identical in 4 of 10 patients. With the possible exception of the pediatric group where administrative data appear more likely to be shorter than self reported (at least for 1 degree of difference), 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.

²³ 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.

²⁴ Physician time subtracted from triage time.

²⁵ 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.

²⁶ The kappa statistic is calculated to determine the degree of agreement between two raters or scores for the same individual.

It is not clear whether one or the other measure is “correct”, and self reported time to physician may provide a more comprehensive view of this issue at least for rural sites given the sparse administrative data available for this group. In addition, self reported time to physician also includes the time prior to triage assessment which is not captured in administrative data.

Table 40: Degree of difference between measures of time to physician: Self reported versus administrative data in same categories <i>(administrative subtracted from self reported)</i>					
Relative difference in category	Self (-) Admin	Adult (n=18,263)	Pediatrics (n=1,415)	Urban (n=5,011)	Rural (n=13,235)
Admin TTP is larger ↑	<= -4	1%	0%	1%	1%
	-3	3%	1%	3%	3%
	-2	9%	5%	8%	10%
	-1	21%	17%	20%	24%
Identical >	0	39%	41%	39%	35%
Admin TTP is smaller ↓	1	19%	25%	19%	19%
	2	7%	7%	7%	5%
	3	2%	3%	2%	2%
	>= 4	1%	0%	1%	1%
Kappa (un-weighted)		0.24	0.27	0.25	0.17
<i>Kappa is calculated for Self Reported TTP versus Administrative Data TTP at the patient level</i>					

The continuous nature of administrative data allow for direct comparison with CTAS recommendations regarding time to physician for each level of acuity as measured by CTAS. Table 41 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 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 5 patients. These results can be summarized as follows:

- ▶ 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, about 2 in 10 patients were seen within the recommended 30 minutes; 15% according to administrative data, and 23% by self report.
- ▶ For CTAS level IV patients, 4 in 10 patients were seen within the recommended 60 minutes, 42% according to administrative data and 39% by self report.
- ▶ For CTAS level V patients, 8 in 10 patients were seen within the recommended 120 minutes according to administrative data, versus 6 in 10 patients by self report. This may reflect enhanced capacity for physicians to see patients with simple problems relatively quickly.
- ▶ Categories of wait and CTAS levels where CAEP recommendations were not achieved are identified by cells shaded grey (Table 41).

Table 41: Time to see physician by CTAS time category by CTAS level <i>(urban adult, administrative data)</i>						
CTAS Level	CTAS I	CTAS II	CTAS III	CTAS IV	CTAS V	All CTAS
n (urban, administrative data)	(n=13)	(n=838)	(n=1,859)	(n=805)	(n=92)	(n=3,607)
0 to 5 minutes	15%	6%	2%	7%	8%	4%
5 to 15 minutes	54%	10%	5%	7%	9%	7%
15 to 30 minutes	23%	17%	8%	9%	9%	11%
30 to 60 minutes	8%	25%	17%	19%	29%	20%
60 to 120 minutes	0%	26%	24%	27%	24%	25%
More than 120 minutes	0%	16%	44%	31%	22%	34%
% achieving CTAS guideline	15%	16%	15%	42%	78%	23%
n (urban, self reported)	(n=13)	(n=897)	(n=2192)	(n=1453)	(n=324)	(n=4879)
% achieving CTAS guideline	62%	14%	23%	39%	57%	29%
n (rural, self reported)	(n=158)	(n=446)	(n=1488)	(n=3987)	(n=2940)	(n=9019)
% achieving CTAS guideline	32%	17%	53%	70%	87%	69%

*Note: percent of patients achieving CAEP guideline by self reported wait to see physician is an estimate because categories of response do not correspond with the CAEP time categories.
Where meeting guideline is unclear – it is assumed to be achieved. Rural sites have considerable missing CTAS data.*

Achievement of CTAS response times using self reported time to physician data (Question 17) are shown for both urban and rural sites at the bottom of Table 41. This information provides an estimate of how well CTAS response times are achieved for rural sites, as follows:

- ▶ According to self reported wait time to physician (and CTAS level) the recommended CTAS response times were achieved for only 2 out of 10 rural respondents who are coded as CTAS level II.
- ▶ Recommended CTAS response times for CTAS level III were achieved for 5 of 10 rural respondents; as compared with 2 of 10 urban (self reported).
- ▶ Recommended CTAS response times for CTAS level IV were achieved for 7 of 10 rural respondents; as compared with 4 of 10 urban (self reported).
- ▶ Recommended CTAS response times for CTAS level V were achieved for 9 of 10 rural respondents; as compared with 6 of 10 urban (self reported).

CAEP suggests that it's 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.

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%."²⁷

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 valid and approximate what would be seen for the complete 4 week population of patients.

As shown previously in Table 37 self reported total wait time (question 22) was significantly different for urban group respondents as compared to rural group respondents.

²⁷ Implementation Guidelines for the Canadian ED Triage & Acuity Scale (CTAS); CAEP 2007.

- ▶ About 6 in 10 respondents from the urban group (57%) reported their total emergency department visit was longer than four hours. This was similar to 5 in 10 pediatric respondents (50%); however, it contrasts sharply with 1 in 10 (11%) reported by rural respondents.
- ▶ Similarly, more than 6 in 10 respondents in the rural group (65%) reported their emergency visit was completed in 2 hours or less. This compares with only 2 in 10 respondents in both urban and pediatric groups where the visit was completed in 2 hours or less.

There were similar differences for median length of stay (LOS) calculated as the difference between triage time and discharge (or admit) time. Discharged respondents in the urban group experienced a median wait of 205 minutes as compared with 167 minutes for the pediatric group, and 72 minutes for the rural group. Both differences are statistically significant. Unlike wait time to see physician, these data are frequently recorded for rural sites.

Group	Adult		Pediatric		Urban		Rural	
	Disch. (n=16,586)	Admit (n=2,227)	Disch. (n=1,320)	Admit (n=103)	Disch. (n=4,198)	Admit (n=909)	Disch. (n=13,010)	Admit (n=670)
mean	192.73	810.73	188.45	527.95	267.33	946.20	125.45	274.72
5% trimmed mean	163.67	683.91	176.38	497.36	239.29	816.29	97.04	200.78
median	118	536	167	447	205	666	72	151
t test	0.000		0.000		0.000		0.000	

Note: Data are weighed within category; 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 was expected that length of stay (LOS) is different for admitted versus discharged patients for all groups. Table 42 shows mean, 5% trimmed mean, and median LOS for all groups. These differences are largest within the urban and pediatric groups.

- ▶ Median LOS for urban respondents who were admitted was just over 11 hours as compared with 3 hours and 40 minutes for discharged patients.
- ▶ Median LOS for pediatric respondents was almost 7 and ½ hours for admitted patients as opposed to almost 3 hours for discharged patients.
- ▶ Median LOS for rural respondents was about 2 and ½ hours for admitted patients as compared with about 1 and ½ hours for those who were discharged.

As with discharge status, significant differences in LOS by CTAS level were to be 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 43:

- ▶ Median LOS for urban group respondents was about 5 and ½ hours for CTAS I–III patients; as compared with 2 and ½ hours for CTAS IV–V patients.
- ▶ Median LOS for pediatric group respondents was about 3 hours for CTAS I–III patients as compared with just over 2 and ½ hours for CTAS IV–V patients.
- ▶ Median LOS for rural group respondents was almost 2 hours for CTAS I–III patients as compared with about 1 hour for CTAS IV–V patients.
- ▶ These differences are more extreme if the mean is used rather than the median because of outliers.

Table 43: Total length of stay (LOS) by CTAS level
Calculated from administrative data

Grouped CTAS	Adult		Pediatric		Urban		Rural	
	I - III	IV - V	I - III	IV - V	I - III	IV - V	I - III	IV - V
(n)	(n=7,811)	(n=8,593)	(n=7,811)	(n=8,593)	(n=7,811)	(n=8,593)	(n=7,811)	(n=8,593)
0 to 4 hours	44%	84%	66%	82%	35%	74%	82%	91%
4 to 6 hours	17%	9%	19%	15%	19%	15%	9%	4%
> 6 hours	38%	7%	15%	4%	45%	10%	9%	4%
<i>Chi sq.</i>	0.000		0.000		0.000		0.000	
<i>Cramer's V</i>	0.43		0.20		0.40		0.12	
Mean LOS	446	144	237	167	510	193	178	109
Median LOS	276	92	186	155	327	146	109	68
<i>t test</i>	0.000		0.000		0.000		0.000	

Note: Data are weighed within category; 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.

CAEP has published a position statement regarding benchmarks for total emergency department length of stay²⁸, 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 43 the proposed CAEP LOS benchmarks for CTAS I-III were achieved for 5 in 10 respondents within the urban group (54%); 9 in 10 respondents for the pediatric group (85%), and 9 in 10 for the rural group (91%).

- ▶ The CAEP length of stay benchmarks for CTAS 4-5 are achieved for over 7 in 10 respondents within the urban group (74%); 8 in 10 respondents for the pediatric group (82%), and 9 in 10 for the rural group (91%).
- ▶ Proportions shown in shaded cells failed to achieve the respective benchmarks.

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 22).

The degree to which these two data elements differ by category is presented in Table 44. As was seen with wait time to see the physician, almost half of respondents reported their LOS to be in the same category as is indicated by administrative LOS. 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 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.

²⁸ “Position statement on Emergency Department Overcrowding”, Canadian Association of Emergency Physicians, February 2007

Table 44: Degree of difference between LOS measures: Self reported versus administrative data (administrative subtracted from self reported)					
Relative difference in category	Self (-) Admin	Adult (n=18,263)	Pediatrics (n=1,415)	Urban (n=5,011)	Rural (n=13,235)
Admin LOS is longer ↑	<= -4	2%	0%	1%	2%
	-3	2%	0%	2%	2%
	-2	4%	1%	4%	5%
	-1	14%	7%	12%	15%
Identical >	0	45%	44%	45%	45%
Admin LOS is shorter ↓	1	23%	37%	24%	21%
	2	6%	7%	6%	7%
	3	2%	3%	3%	2%
	>= 4	2%	0%	2%	2%
Kappa (un-weighted)		0.32	0.24	0.32	0.24
<i>Notes: data are not weighted in this table; Kappa statistic is un-weighted Kappa Kappa is calculated for Self Reported LOS versus Administrative Data LOS</i>					

A measure of crowding based on administrative data was also calculated at the patient level. Data regarding the number of treatment spaces were collected from most facilities prior to the start of the survey. Based on this, treatment space occupancy was calculated at the patient level as the number of patients in the emergency department at the time of triage for that patient; divided by the number of treatment spaces. The weighted results for adult, urban and rural groups are shown in Table 45. The time frame 8 AM to 10 PM on weekdays was used to standardize for variable hours of operation for a number of smaller facilities.

Table 45: Self reported crowding compared with treatment space occupancy, from 8 AM to 10 PM on weekdays.				
		Adult (n=8,860)	Urban (n=2,335)	Rural (n=6,691)
Self Reported Crowding				
Extremely crowded	Mean	122%	124%	112%
Very crowded		109%	108%	113%
Somewhat crowded		93%	96%	89%
Not at all crowded		69%	78%	66%
Extremely crowded	Median	118%	120%	94%
Very crowded		108%	109%	100%
Somewhat crowded		88%	94%	75%
Not at all crowded		60%	75%	50%
Mean occupancy by minute			94%	48%
<i>Note: Data are weighted within groups; Treatment space occupancy calculated at the patient level as the number of patients in the emergency department at the time of triage over the number of standard + other treatment spaces as a percent. Mean occupancy by minute is the mean number of patients in the facility over the number of standard + other treatment spaces; calculated for each minute.</i>				

As shown, perceived crowding in the waiting room had a very linear relationship with treatment space occupancy both for urban and rural groups. In other words, when patients perceived that the facility was “extremely crowded”, the mean treatment space occupancy was in fact very high. For example: Urban adults reported the facility to be extremely crowded visited the facility at a time when mean treatment space occupancy was at 124%. Hence, for every treatment space available

there was on average 1.24 patients in the facility (at the time of triage); indicating that all available treatment spaces were in constant use. While such a measure should ideally incorporate staffing levels as well as treatment spaces²⁹; this measure appears to be very predictive of patient perceived crowding; and can be generated from easily available administrative data. Likewise the patient reported measure appears to be sensitive to actual occupancy: even though patients may not know the proportion of treatment spaces available – perceived waiting room crowding reflects actual occupancy levels.

Also shown in Table 45, is mean occupancy calculated by minute. For weekdays from 8 AM to 10 PM, the mean occupancy (calculated by minute) is 94%; as compared to 48% for rural. These differences are significant.

7.6 Facility cleanliness composite and questions

Table 46: Facility cleanliness composite				
<i>Questions included:</i>				
<i>q48 Cleanliness of emergency department toilets</i>				
<i>q47 Cleanliness of emergency department</i>				
Group (n)	Adult (n=18,915)	Pediatric (n=654)	Urban (n=3,160)	Rural (n=7,602)
Mean	83.69	81.27	78.96	88.61
<i>Mann Whitney U: pediatric versus urban</i>		0.120		
<i>t test urban versus rural</i>			0.000	
% scoring 75 or higher	63%	58%	53%	73%
<i>Note: Data are weighed within category; Site level reliability (GRIP Macro): 0.98; Standardized Scale Alpha (Cronbach's): 0.79</i>				

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 46 above and are described as follows:

- ▶ Urban respondents and pediatric respondents were not significantly different although pediatrics scored slightly better with 6 in 10 respondents scoring 75 out of 100 or better.
- ▶ 5 in 10 urban group respondents scored 75 out of 100 or better, as compared with 7 in 10 rural group respondents. This difference is statistically significant.

Considering the individual question results shown in Table 47:

- ▶ Almost 5 in 10 urban and pediatric respondents reported that toilets were very clean. This compares with almost 7 in 10 rural group respondents (statistically significant).
- ▶ About 6 in 10 pediatric group respondents reported the facility was very clean; as compared with 5 in 10 urban (adult), and 7 in 10 rural group respondents. The difference between urban and rural is statistically significant.
- ▶ Less than 1 in 10 respondents overall reported either toilets or facility to be either not very clean, or not at all clean; this compares with 1 in 20 rural respondents.

²⁹ Staffing level information is not captured in administrative data. It may be available from staff scheduling information on a site by site basis

Table 47: Facility cleanliness composite – specific questions				
<i>q48 How clean were the toilets in the emergency department?</i>				
<i>q47 In your opinion, how clean was the emergency department?</i>				
	Adult	Pediatric	Urban	Rural
Cleanliness of emergency department toilets	(n = 11,735)	(n = 1,033)	(n = 3,479)	(n = 7,782)
Very clean	54%	46%	44%	67%
Fairly clean	37%	44%	43%	29%
Not very clean	7%	8%	9%	4%
Not at all clean	2%	2%	3%	1%
<i>Chi Sq. / Cramer's V Pediatrics versus Urban</i>		0.09 / 0.4		
<i>Chi Sq. / Cramer's V Urban versus Rural</i>			0.000 / 0.21	
Cleanliness of emergency department	(n = 18,518)	(n = 1,426)	(n = 5,001)	(n = 13,646)
Very clean	59%	56%	48%	70%
Fairly clean	36%	38%	44%	28%
Not very clean	4%	5%	6%	2%
Not at all clean	1%	1%	1%	0%
<i>Chi Sq. / Cramer's V Pediatrics versus Urban</i>		0.000 / 0.6		
<i>Chi Sq. / Cramer's V Urban versus Rural</i>			0.000 / 0.23	
<i>Data are weighted within each group</i>				

7.7 Discharge communication composite and related items

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 48 and are summarized as follows:

- ▶ The mean score for the pediatric group was 59/100 as compared with urban (49/100) and rural (54/100). Differences are statistically significant.
- ▶ Only 4 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 48: Discharge communication composite				
<i>Questions included:</i>				
<i>q55 Told when could resume usual activities</i>				
<i>q56 Told about danger signals to watch for after you went home</i>				
<i>q57 Told what to do if worried about condition or treatment after leaving</i>				
<i>q58_a Staff asked how patient getting home</i>				
<i>q58_b Staff asked whether someone at home to assist</i>				
<i>q58_c Staff asked about other concerns about your safety and comfort at home</i>				
<i>q58_d Staff asked if patient knew what to do for follow-up care</i>				
Group (n)	Adult (n=18,915)	Pediatric (n=1,304)	Urban (n=4,107)	Rural (n=11,974)
Mean	51.48	58.86	49.34	53.54
<i>t test urban versus pediatric</i>		0.000		
<i>t test urban versus rural</i>			0.000	
% scoring 75 or higher	40%	39%	35%	44%
<i>Note: Data are weighed within category; Site level reliability (GRIP Macro): 0.87</i>				
<i>Standardized Scale Alpha (Cronbach's): 0.87 (same rounded value as for GRIP)</i>				
<i>Pearson Correlation between alternate methods of calculation ranges from 95.6 to 97.7</i>				
<i>See Appendix D for details</i>				

Specific question results for the discharge communication composite are presented in Table 49 (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.

Table 49: Discharge communication composite – specific core questions				
<i>Did a member of staff tell you ...</i>				
<i>q55 When you could resume your usual activities, such as when to go back to work or drive a car?</i>				
<i>q56 About what danger signals regarding your illness or treatment to watch for after you went home?</i>				
<i>q57 What to do if you were worried about your condition or treatment after you left the emergency department?</i>				
	Adult (n=9,520)	Pediatric (n=784)	Urban (n=2,629)	Rural (n=6,856)
Told when could resume usual activities				
Yes completely	40%	44%	36%	45%
Yes to some extent	21%	28%	22%	20%
No	39%	28%	42%	35%
Told about danger signals to watch for after you went home	(n=11,202)	(n=1,140)	(n=3,105)	(n=8,028)
Yes completely	40%	51%	36%	44%
Yes to some extent	25%	32%	27%	23%
No	35%	17%	37%	33%
Told what to do if worried about condition or treatment after leaving	(n=14,406)	(n=1,223)	(n=3,765)	(n=10,966)
Yes completely	42%	54%	40%	44%
Yes to some extent	23%	27%	24%	21%
No	35%	19%	35%	34%
<i>Note: Data are weighted within categories; "not relevant" responses are excluded from results.</i>				
<i>Not relevant responses such as "I did not need this type of information" are reflected in a lower n.</i>				

- ❖ 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 urban respondents (42%) and almost 4 in 10 rural (35%) respondents reported they were not told when they could resume normal activities; this compares with 3 in 10 for the pediatric group (28%).

- ▶ An additional 2 in 10 urban and rural group respondents (adults) were only informed “to some extent”, as compared with 3 in 10 for the pediatric group.
- ▶ About 4 in 10 respondents reported they were “completely” informed about when they could resume usual activities.
- ❖ *About 3 in 10 adult respondents overall (urban and rural) reported they did not need information about danger signals to watch for. Only 1 in 10 respondents in the pediatric group did not need this information – suggesting that information about danger signals may be more important for the pediatric group. These responses are not included in the table or in the number of respondents.*

For patients who require the information:

- ▶ About 4 in 10 urban (36%) and rural (44%) group respondents reported they were “completely” informed about danger signals to watch for after they returned home. This compares with 5 in 10 for pediatric group respondents (51%).
- ▶ About 4 in 10 urban (40%) and rural (44%) group respondents reported being “completely” informed about what to do if they were worried about their condition or treatment after they left. This compares with 5 in 10 for pediatric group respondents (51%).

Table 50: Discharge communication composite – specific supplemental questions				
<i>Did a member of staff ask about any of the following when you left the emergency department?</i>				
<i>q58_a How you were getting home?</i>				
<i>q58_b If you had someone at home to assist you?</i>				
<i>q58_c If there were any other concerns about you safety and comfort at home?</i>				
<i>q58_d If you knew what to do for follow up care</i>				
	Adult	Pediatric	Urban	Rural
Staff asked how patient getting home	(n=8,676)	(n=462)	(n=2,575)	(n=5,746)
Yes	40%	14%	40%	41%
No	60%	86%	60%	59%
Staff asked whether someone at home to assist	(n=7,965)	(n=371)	(n=2,351)	(n=5,312)
Yes	39%	27%	38%	42%
No	61%	73%	62%	58%
Staff asked about other concerns about your safety and comfort at home	(n=7,217)	(n=403)	(n=2,139)	(n=4,786)
Yes	21%	22%	20%	23%
No	79%	78%	80%	77%
Staff asked if patient knew what to do for follow-up care	(n=10,521)	(n=881)	(n=2,934)	(n=7,495)
Yes	65%	68%	63%	67%
No	35%	32%	37%	33%
<i>Note: Data are weighted within categories; "Not relevant" responses are excluded from these results. Not relevant responses such as "not needed" are reflected in lower n. Not relevant choices were provided for all items.</i>				

Four additional items beyond those in the original British survey were included in the discharge communication composite. These are presented in Table 50. 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 adult respondents (urban or rural) 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. More than 6 in 10 pediatric group respondents reported they did not need this information – perhaps reflecting the fact that children had an adult or parent with them to take care of them. These results are excluded from the table and the number of respondents.*

- ❖ About 3 in 10 respondents (including the pediatric group) reported they did not need information about follow up care. Patient and parent are similar in their need for information about follow up care.

For patients who require the information:

- ▶ About 4 in 10 urban (40%) and rural (41%) group respondents reported that staff asked them how they were getting home.
- ▶ Just over 1 in 10 pediatric group respondents (14%) reported they were asked how they were getting home. This low proportion may reflect the reasonable assumption on behalf of staff that children are going to go home with the adult who brought them, or this question may reflect the proxy response (from parents rather than patients).
- ▶ About 4 in 10 adults (39%) reported that staff asked whether there was someone at home to assist. This compares with 3 in 10 for the pediatric group (27%); again this lower number for pediatric respondents may reflect obvious parental involvement.

7.8 Wait time communication composite and specific items

The wait time communication composite is comprised of 2 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 51:

- ▶ Pediatric group respondents scored only 42 out of a possible 100; as compared with urban group respondents (49/100) and rural group respondents (52/100).
- ▶ Likewise, less than 3 in 10 pediatric group respondents achieved a composite score of 75 or higher (out of 100). While this may represent relatively poor performance for the pediatric group, it also raises the possibility that parents have a greater need for this type of information than do adult patients.
- ▶ Almost 5 in 10 rural group respondents achieved a composite score of 75 (out of 100) or higher.

Table 51: Wait time communication composite				
<i>Questions included:</i>				
<i>q18 Told how long had to wait to be examined</i>				
<i>q19 Told why had to wait to be examined</i>				
<i>q21 Staff checked on you while waiting</i>				
Group (n)	Adult (n=18,915)	Pediatric (n=1,304)	Urban (n=4,107)	Rural (n=11,974)
Mean	50.65	42.12	49.06	52.32
<i>t test urban versus pediatric</i>		0.000		
<i>t test urban versus rural</i>			0.000	
% scoring 75 or higher	40%	25%	34%	46%
<i>Note: Data are weighed within category; 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 for details</i>				

Overall low scores for the wait time communication composite for all groups suggest that 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.

Specific question results are shown in Table 52. 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 overall reported they were not told how long they would have to wait to be examined. This rises to 7 in 10 for the pediatric group.
- ▶ An additional 1 in 10 respondents reported being told how long they would have to wait, but waited longer than what they were told.
- ▶ About 1 in 10 urban group respondents (12%) or pediatric group respondents (8%) reported being told how long they would have to wait, and that their wait was actually shorter. This compares with 2 in 10 for the rural group.
- ▶ About 4 in 10 (38%) pediatric group respondents reported not being told why they had to wait; as compared with 5 in 10 (49%) for the urban group and 6 in 10 (62%) for the rural group. These respondents also said they would have liked an explanation.
- ❖ *About 4 in 10 respondents overall 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.*

Table 52: Wait time communication composite – specific questions				
<i>q18 Were you told how long you would have to wait to be examined?</i>				
<i>q19 Were you told why had to wait to be examined?</i>				
<i>q21 Did a member of staff checked on you while you were waiting?</i>				
	Adult	Pediatric	Urban	Rural
Told how long had to wait to be examined	(n=17,149)	(n=1,329)	(n=4,664)	(n=12,545)
Yes but wait was shorter	15%	8%	12%	18%
Yes, wait was same	11%	8%	9%	13%
Yes, but wait was longer	12%	15%	15%	10%
No, I was not told	62%	69%	64%	60%
Told why had to wait to be examined	(n=8,275)	(n=685)	(n=2,346)	(n=5,785)
Yes	55%	38%	49%	62%
No, but I would have liked an explanation	45%	62%	51%	38%
Staff checked on you while waiting	(n=12,175)	(n=1,056)	(n=3,630)	(n=8,015)
Yes, definitely	65%	47%	60%	73%
Yes, but I would have liked them to check more often	9%	11%	12%	7%
No, but I would have liked them to check	25%	41%	29%	21%
<i>Note: Data are weighted within categories; Not relevant response choices such as "No, but I did not mind" are excluded, and are reflected in lower n.</i>				

- ▶ 5 in 10 pediatric group respondents reported that staff “definitely” checked on them while waiting; as compared with 6 in 10 urban and 7 in 10 rural.
- ▶ 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. 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 52, but are included in Table 53.

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 53 shows whether staff checked on the patient (question 21) by CTAS level and time to physician.

Table 53: Staff checked on patient while waiting by time to physician and CTAS level						
Time to Physician	Pediatric		Urban		Rural (self report)	
	Patient checked on		Patient checked on		Patient checked on	
	Yes	No	Yes	No	Yes	No
CTAS II	(n=125)		(n=712)		(n=400)	
0 to 15 min.	14%	6%	11%	3%	49%	16%
15 to 30 min.	16%	2%	14%	3%		
30 to 60 min.	21%	8%	19%	7%	11%	9%
60 to 120 min.	18%	10%	20%	6%	5%	5%
over 120 min.	2%	2%	12%	5%	3%	3%
CTAS III	(n=587)		(n=1694)		(n=1378)	
0 to 15 min.	3%	2%	5%	2%	40%	12%
15 to 30 min.	7%	4%	5%	3%		
30 to 60 min.	7%	9%	11%	6%	15%	10%
60 to 120 min.	13%	19%	13%	11%	7%	7%
over 120 min.	15%	20%	24%	21%	3%	6%
CTAS IV	(n=384)		(n=751)		(n=3788)	
0 to 15 min.	3%	7%	6%	9%	25%	19%
15 to 30 min.	2%	2%	4%	5%		
30 to 60 min.	10%	7%	7%	11%	10%	15%
60 to 120 min.	11%	14%	10%	17%	6%	11%
over 120 min.	11%	33%	12%	19%	4%	11%
CTAS V	(n=18)		(n=86)		(n=2761)	
0 to 15 min.	6%	11%	5%	12%	26%	22%
15 to 30 min.	0%	0%	2%	7%		
30 to 60 min.	6%	6%	13%	15%	9%	14%
60 to 120 min.	0%	33%	8%	16%	5%	11%
over 120 min.	11%	28%	3%	19%	3%	10%

Note: Data are weighted within categories, Time to physician from administrative data (physician time - triage time) for Urban and Pediatric. Time to physician self reported for rural. CTAS level 1 not shown due to small n; Grey cells represent cases unlikely to be achieving reassessment guidelines

Table 53 shows time to physician according to CTAS reassessment guideline time categories, and whether or not staff checked on the patient while they waited. This information provides a proxy for whether staff reassessed the patient according to CTAS guidelines for their triage level in the following way:

1. Question 21 asks whether staff checked on the patient while they waited. While many patients may also have waited to be treated after they saw their physician, we assume that shortest the patient could have “waited”, was the time they waited before seeing the physician.
2. If the patient reported that staff did not check on them at all 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 re-assessment 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:

- ▶ For Urban or Pediatric CTAS II; 2 in 10 patients who waited longer than 15 minutes to see the physician should have been re-assessed at least once but reported they were not checked on. 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.
- ▶ For Rural CTAS II; almost 2 in 10 patients (17%) who waited longer than 30 minutes to see the physician should have been reassessed, but were not checked on. About 1 in 10 should have been reassessed 2 times, but still reported they were not checked on. Note: this excludes patients who waited 15 to 30 minutes because this level of detail was not captured for the self reported rural data.³⁰
- ▶ For pediatric CTAS III, 5 in 10 respondents who waited longer than 30 minutes to see the physician should have been reassessed at least once but report they were not checked on; and about 4 in 10 should have been re-assessed at least 2 times.
- ▶ For urban CTAS III, about 4 in 10 respondents who waited longer than 30 minutes to see the physician should have been reassessed at least once but report they were not checked on. About 3 in 10 should have been re-assessed 2 times according to the guidelines.
- ▶ For rural CTAS III, over 2 in 10 respondents who waited longer than 30 minutes to see the physician should have been reassessed at least once, but report they were not checked on.
- ▶ For pediatric CTAS IV, almost 5 in 10 respondents (47%) 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. This compares with about 4 in 10 for urban, and 2 in 10 for rural. About half of these overall should have been re-assessed 2 times according to the guidelines.
- ▶ It is important to note that CTAS V had the highest proportion of patient reporting not being checked on overall.

While these results are not conclusive – they suggest further study be done to evaluate re-assessment frequency, as well as the potential impact of not achieving CTAS re-assessment guidelines. CAEP is well aware of the challenge in re-assessing 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.*”³¹ 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.

7.9 Medication communication composite and specific items

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 61), 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.

³⁰ Self reported time to physician was used for the rural group because of the low n for time to physician from administrative data.

³¹ “Revisions to the Canadian Emergency Department Triage and Acuity Scale Implementation Guidelines”, Michael Murray, MD et AL, 2004, CJEM, Vol 6, Num 6 p241.

The medication communication composite is presented in Table 54, and reflects the subset of patients who receive medication as a consequence of their emergency department visit. There were no significant differences between the groups, and in general the score for this composite was quite high at about 73 out of 100 for all patients; where 6 in 10 patients scoring 75 / 100 or higher.

Table 54: Medication communication composite				
<i>Questions included:</i>				
<i>q54 Told about medication side effects to watch for</i>				
<i>q53 Told how to take the new medications</i>				
<i>q52 Purpose of the medications explained in understandable way</i>				
Group (n)	Adult (n=8,094)	Pediatric (n=487)	Urban (n=1,955)	Rural (n=6,610)
mean score (out of a possible 100)	72.87	75.26	72.37	73.28
<i>Mann-Whitney U - pediatric versus urban</i>		0.550		
<i>t test - urban versus rural</i>			0.250	
% scoring 75 or higher	56%	57%	56%	56%
<i>Note: Data are weighed within category; Site level reliability (GRIP Macro): 0.81 Standardized Scale Alpha (Cronbach's): 0.75</i>				

Specific question results for the medication communication composite are presented in Table 55. The proportion of respondents who reported complete explanation of the purpose of medications and how to take medications was close to 80% or 8 in 10 patients. On average the remaining 2 of 10 respondents received this information to some extent.

Table 55: Medication communication composite - specific questions				
<i>Did a member of staff ...</i>				
<i>q54 Tell you about medication side effects to watch for?</i>				
<i>q53 Explain to you how to take the new medications?</i>				
<i>q52 Explain the purpose of the medications you were to take at home in a way you could understand?</i>				
	Adult (n=7,799)	Pediatric (n=475)	Urban (n=1,883)	Rural (n=6,373)
Purpose of the medications explained				
Yes completely	79%	83%	78%	80%
Yes to some extent	16%	15%	16%	15%
No	5%	2%	6%	5%
How to take the new medications explained	(n=7,344)	(n=462)	(n=1,799)	(n=5,926)
Yes completely	74%	78%	74%	74%
Yes to some extent	15%	15%	15%	16%
No	11%	8%	11%	11%
Told about medication side effects to watch for	(n=6,834)	(n=434)	(n=1,688)	(n=5,476)
Yes completely	38%	36%	38%	37%
Yes to some extent	17%	21%	18%	17%
No	45%	43%	44%	46%
<i>Note: Data are weighted within categories; "not relevant" responses are excluded from results. Not relevant responses such as "I did not need an explanation" are reflected in lower n.</i>				

While medications in question 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.

The third item regarding being informed about side effects, showed relatively poor communication in this area although this is consistent between groups. For example:

- ▶ 4 in 10 respondents overall reported they received no information about possible side effects and 2 in 10 reported they received this information only to some extent.

7.10 Privacy

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 61) suggesting also 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 56: Privacy composite				
<i>Questions included:</i>				
<i>q32 Given enough privacy when discussing condition or treatment</i>				
<i>q33 Given enough privacy when being examined</i>				
Group (n)	Adult (n=8,094)	Pediatric (n=1,304)	Urban (n=487)	Rural (n=6,610)
Mean	72.87	91.69	81.80	87.68
<i>t test pediatric versus urban</i>		0.000		
<i>t test urban versus rural</i>			0.000	
% scoring 75 or higher	68%	82%	64%	73%
<i>Note: Data are weighted within category; Site level reliability (GRIP Macro): 0.93 Standardized Scale Alpha (Cronbach's): 0.78</i>				

Even considering the high scores, Table 56 shows there were statistically significant differences between the groups as follows:

- ▶ The pediatric respondent group had the highest composite score with 92 out of 100, and 8 in 10 respondents having a mean score of 75 or higher. This is followed by the rural group with a mean score of 88/100 and 7 in 10 respondents having a score of at least 75.
- ▶ The urban group had a mean score of 82/100, and 6 in 10 respondents had a mean score of at least 75. This likely reflects the more crowded facilities often seen in the large urban sites, as it is presumably harder to achieve privacy if there are more people in close proximity.

Specific question results for the privacy composite are shown in Table 57 below, where:

- ▶ 6 in 10 urban group respondents reported they “definitely” have enough privacy when discussing their condition or treatment. This compares with 7 in 10 for rural, and 8 in 10 for pediatric respondents.
- ▶ 3 in 10 urban group respondents (28%) reported they have privacy to discuss their condition or treatment only to some extent. This compares with 2 in 10 for rural (21%) and 1 in 10 for pediatric (14%).
- ▶ A similar distribution is seen for privacy when being examined or treated. About 8 in 10 urban (76%) or rural (84%) respondents indicated they “definitely” were given enough privacy; as compared with 9 in 10 in the pediatric group (88%).

Table 57: Privacy composite - specific questions				
<i>q32 Were you given enough privacy when discussing your condition or treatment?</i>				
<i>q33 Were you given enough privacy when being examined or treated?</i>				
	Adult	Pediatric	Urban	Rural
Given enough privacy when discussing condition or treatment	(n=18,909)	(n=1,430)	(n=5,174)	(n=13,746)
Yes definitely	69%	83%	64%	74%
Yes, to some extent	25%	14%	28%	21%
No	6%	3%	8%	5%
Given enough privacy when being examined or treated	(n=18,923)	(n=1,426)	(n=5,184)	(n=13,740)
Yes definitely	80%	88%	76%	84%
Yes, to some extent	17%	10%	19%	14%
No	4%	1%	5%	2%
<i>Note: Data are weighted within categories;</i>				

8.0 Patients who considering leaving before treatment

Patients leaving before treatment can be an important issue for emergency departments since they leave prior to a diagnosis and have been shown to suffer adverse events and even death within the subsequent short-term follow-up. 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 58 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 1 or 2; and considered leaving before they had been seen. For example:

- ▶ More than 1 in 10 urban respondents (13%) who were ultimately admitted, either definitely considered leaving, or considered leaving to some extent. This compares with 1 in 10 for the pediatric group (10%) and less than 1 in 10 for the rural group (8%).

Table 58: Considered leaving before being seen by discharge and CTAS														
<i>Q13 During your visit to the emergency department, did you consider leaving before you had been seen and treated?</i>														
Considered Leaving	Yes, def.	Some extent	No	<i>Cram. V</i>	Yes, def.	Some extent	No	<i>Cram. V</i>	Yes, def.	Some extent	No	<i>Cram. V</i>		
Status	Urban (n=5,036)					Rural (n=13,326)					Pediatrics (n=1,402)			
Discharged	13%	16%	71%	0.14	7%	13%	80%	0.06	13%	20%	68%	0.12		
Admitted	6%	7%	87%		3%	5%	92%		3%	7%	90%			
CTAS Level	Urban (n=5,154)					Rural (n=9,544)					Pediatrics (n=1,443)			
CTAS 1	0%	11%	89%	0.11	6%	15%	78%	0.02	0%	0%	100%	0.16		
CTAS 2	7%	8%	85%		3%	9%	88%		5%	10%	84%			
CTAS 3	12%	14%	74%		5%	10%	86%		11%	20%	69%			
CTAS 4	14%	18%	68%		8%	14%	78%		18%	20%	62%			
CTAS 5	19%	17%	64%		9%	12%	78%		3%	31%	66%			
<i>Note: Data are weighted within groups</i>														
<i>Cramer's V is between gender or age group not between survey group; Chi Squared is significant to 0.000 where Cramer's V is shown</i>														

- ▶ Almost 3 in 10 urban respondents (26%) who were classified as CTAS level I or II considered leaving. This compared with 3 in 10 for rural (33%), and under 2 in 10 for pediatric (15%).
- ▶ Almost 3 in 10 urban respondents (26%) who were classified as CTAS level III considered leaving; This compared with over 1 in 10 rural (15%) and 3 in 10 pediatric (31%) respondents.

While we can not 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 and complete leaving early; and what factors may predispose them to leaving prior to seeing a physician or receiving full treatment. Wait time factors clearly have some impact as shown in Table 59.

Table 59: Considered leaving before being seen, by wait time to triage nurse and physician												
Considered leaving	Yes, def.	Some extent	No	Cram. V	Yes, def.	Some extent	No	Cram. V	Yes, def.	Some extent	No	Cram. V
Triage nurse wait	Pediatrics (n=1,365)				Urban (n=4,504)				Rural (n=12,665)			
0-15 min	9%	16%	75%	0.15	10%	12%	78%	0.15	4%	8%	87%	0.22
16-30 min	17%	21%	62%		16%	18%	66%		10%	17%	73%	
31-60 min	21%	28%	51%		19%	20%	62%		17%	24%	59%	
> 60 min	23%	36%	41%		28%	26%	46%		27%	31%	42%	
Physician wait	Pediatrics (n=1,396)				Urban (n=4,861)				Rural (n=12,891)			
No wait (0)	2%	2%	96%	0.36	3%	3%	94%	0.33	1%	2%	98%	0.34
1-30 min	1%	2%	97%		3%	4%	94%		2%	4%	94%	
31-60min	6%	5%	89%		4%	8%	88%		4%	13%	82%	
1-2 hours	6%	19%	74%		7%	14%	78%		13%	24%	63%	
2-4 hours	17%	30%	53%		16%	24%	61%		26%	32%	42%	
> 4 hours	31%	35%	33%		33%	28%	39%		38%	29%	33%	
CAEP guideline	Pediatrics (n=1,390)				Urban (n=4,769)				Rural (n=8,882)			
Meeting target	2%	3%	95%	0.31	3%	7%	90%	0.24	4%	8%	88%	0.32
Not meeting target	15%	24%	61%		15%	18%	66%		16%	24%	61%	
<i>Note: Data are weighted within groups; Cramer's V between wait time categories; Chi Squared is significant to 0.000 where Cramer's V is shown. Triage nurse wait, and physician wait are self reported.</i>												

The likelihood that respondents consider leaving prior to being seen decreased with shorter wait time to be triaged.

For example:

- ▶ For urban respondents who waited longer than 60 minutes to see the triage nurse, over 5 in 10 (54%) reported they either definitely considered leaving or considered leaving to some extent; 4 in 10 if they waited 31 to 60 minutes (39%), and over 3 in 10 considered leaving if they waited 16 to 30 minutes (34%).
- ▶ For rural respondents who waited longer than 60 minutes to see the triage nurse, almost 6 in 10 (58%) reported they considered leaving; 4 in 10 if they waited 31 – 60 minutes (41%); and 3 in 10 considered leaving if they waited 16 to 30 minutes (27%).
- ▶ For pediatric group respondents who waited longer than 60 minutes to see the triage nurse, almost 6 in 10 (59%) reported they considered leaving; 5 in 10 (49%) if they waited 31 – 60 minutes; and 4 in 10 (38%) considered leaving if they waited 16 to 30 minutes.

The likelihood that respondents consider leaving prior to being seen decreased with shorter wait time to see the physician. For example:

- ▶ For urban respondents who waited longer than 4 hours to see a physician, over 6 in 10 (61%) reported they either definitely considered leaving or considered leaving to some extent; 4 in 10 considered leaving if they waited 2 to 4 hours (40%), and 2 in 10 if they waited 1 to 2 hours (21%).
- ▶ For rural respondents who waited longer than 4 hours to see a physician, almost 7 in 10 (67%) reported they either definitely considered leaving or considered leaving to some extent; 6 in 10 considered leaving if they waited 2 to 4 hours (58%), and 4 in 10 if they waited 1 to 2 hours (37%).
- ▶ For pediatric respondents who waited longer than 4 hours to see a physician, almost 7 in 10 (66%) reported they either definitely considered leaving or considered leaving to some extent; almost 5 in 10 considered leaving if they waited 2 to 4 hours (47%), and under 3 in 10 if they waited 1 to 2 hours (25%).

Considering CTAS proposed targets for physician wait time (computed by triage level):

- ▶ For urban respondents, over 3 in 10 (33%) for whom CTAS proposed targets were not achieved reported they considered leaving; as compared with 1 in 10 patients for whom targets were achieved.
- ▶ For rural respondents, over 4 in 10 (40%) for whom CTAS proposed targets were not achieved reported they considered leaving; as compared with 1 in 10 patients (12%) where targets were achieved.
- ▶ For pediatric respondents, over 4 in 10 (39%) for whom CTAS proposed targets were not achieved reported they considered leaving; as compared with 1 in 20 patients (5%) where targets were achieved.

All of the comparisons between wait times and “considering leaving” were statistically significant (0.000); and Cramer’s V was as high as 0.36 indicating “strong” association between these variables.

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 59 to be important in isolation of the other wait time variables.

Table 60: Intention to leave prior to being seen, by staff checking or helping														
<i>Q21 Did a member of staff check on you while you were waiting?</i>														
<i>Q34 If you needed attention, were you able to get a member of staff to help you?</i>														
Considered Leaving	Yes, def.	Some extent	No	<i>Cram. V</i>	Yes, def.	Some extent	No	<i>Cram. V</i>	Yes, def.	Some extent	No	<i>Cram. V</i>		
Staff checked	Pediatrics (n=1,376)					Urban (n=4,826)					Rural (n=12,947)			
Yes (net)	9%	13%	79%	0.21	8%	11%	81%	0.21	3%	7%	89%	0.23		
No (net)	16%	25%	59%		18%	19%	62%		11%	18%	71%			
Staff helped	Pediatrics (n=1,164)					Urban (n=3,990)					Rural (n=9,016)			
Yes always	6%	12%	82%	0.25	6%	8%	86%	0.25	3%	6%	91%	0.29		
Yes sometimes	18%	28%	53%		15%	21%	64%		13%	23%	64%			
No, I could not	34%	29%	38%		37%	20%	43%		35%	27%	38%			

*Note: Data are weighted within groups.
Cramer's V between categories of staff checking or helping; Chi Squared is significant to 0.000 where Cramer's V is shown*

Two additional variables appeared to be 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. Unlike wait times – these factors may be more easily influenced by specific emergency department strategies.

Table 60 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:

- ▶ For the pediatric group, 4 in 10 respondents who were not checked on by staff (41%) reported that they considered leaving (at least to some extent); this compared with 2 in 10 where staff checked.
- ▶ Again for the pediatric group, 6 in 10 of those respondents who could not get help from staff considered leaving; as compared with 2 in 10 who could always get help when they needed attention. Likewise, 5 in 10 who could only get help sometimes considered leaving.
- ▶ For the urban group, 4 in 10 respondents who were not checked on by staff (37%) reported that they considered leaving; as compared with 2 in 10 (19%) where staff checked.
- ▶ For the urban group, 6 in 10 respondents who could not get help from staff (57%) reported that they considered leaving; as compared with over 1 in 10 (14%) who could always get help from staff when they needed attention. Likewise, 4 in 10 (36%) who could only get help sometimes considered leaving.

9.0 Multivariate analysis: regression on overall (global) rating

The objective of this multivariate analysis was to estimate the effect of both confounding variables, and other quality variables on the overall rating (Q 61). 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. Given the consistent and notable differences between the rural and urban groups, different models were created for each group.

A number of different regressions were undertaken using the overall rating (Question 61) 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 (~ 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 (rural model)

Table 61 shows patient characteristic variables that were retained in the rural model. These respondent attributes are compared to the noted “base case”. For example, specific age and gender categories have significant effects on the overall rating relative to the base condition of females 16 – 34 years of age. For females the overall rating (Q61) is predicted to increase:

- ▶ By 1.4/100 for age 45 – 54 and by 2.3 /100 for age 55 – 64.
- ▶ By 1.63/100 for age 65 – 74 and by 2.39 for age 75 and older.

A similar pattern is seen for males over 45, where the score is predicted to be higher than females aged 16 – 34 by between 2.26 and 2.81 (out of 100) depending on the age category. Younger males however are predicted to have a lower overall rating:

- ▶ Males aged 16 – 34 are predicted to have a lower overall rating than females aged 16 – 34 by (negative)1.5 / 100.
- ▶ Being male 35-44 or female 35-44 has no statistically significant effect on the overall rating relative to the base case.

Two education categories have a statistically significant effect on the overall rating relative to the base case of “completed high-school”. That is to say:

- ▶ Having some university or college, or having completed college is predicted to raise the overall rating by 1.1 / 100 and 1.2/100 respectively.

- ▶ Statistically significant effects are not observed for other education categories relative to the base case of completed high school.

Self rated health status is probably the most important patient characteristic with respect to ratings of health care service quality. As is often reported in the literature:

- ▶ Having *very poor* health status is predicted to decrease the overall rating by 3.4 out of 100.
- ▶ Having *excellent* health status is predicted to increase the overall rating by 2.39 out of 100.

Overall, the effects described above are similar to those seen in other health care survey data. Because these variables influence ratings of health care services, it is important they be included in multivariate models so that their effects are controlled for. These are important variables for “case mix adjustment” or “standardization”, often applied such that diverse populations can be compared on par with each other.

Table 61: Regression on overall rating (Q61) for Rural (Part A); Patient Characteristics Variables			
Variable	Element	Coeff.	Sig.
Model 1	Intercept	3.69	sig
Gender and age group (Administrative Data)	<i>Base case: Females 16-34</i>		
	Females 35-44	0.22	
	Females 45-54	1.42	sig
	Females 55-64	2.31	sig
	Females 65-74	1.63	sig
	Females 75+	2.39	sig
	Males 16-34	-1.46	sig
	Males 35-44	1.06	
	Males 45-54	2.35	sig
	Males 55-64	2.81	sig
	Males 65-74	2.74	sig
	Males 75+	2.26	sig
	Education (Q70)	<i>Base case: completed high school</i>	
Grade school or some high school only		-0.05	
Post secondary technical school		0.48	
Some university or college		1.13	sig
Completed college diploma		1.22	sig
Completed university degree		1.10	
Post graduate degree		-0.35	
Self rated health status (Q71)	<i>Base case: Good health</i>		
	Excellent	2.39	sig
	Very Good	0.67	
	Fair	0.12	
	Poor	0.50	
	Very Poor	-3.40	sig
<i>R2=63.10%: This table presents only the patient characteristic items included in the model, and remaining variables are presented in the following two tables</i>			

9.2 Effects of visit context variables on overall rating (rural model)

Other confounding variables also influence ratings of health care services. In this study we have measured or evaluated a large number of variables that describe the context of the emergency department visit. These are such things as how the patient uses health care services, what time of day and week was the visit, whether they were directed to go the emergency department and many others. The majority of these many variables are dropped from the model as unimportant. Several remain however (see Table 62) and their effects are described as follows:

- ▶ Individuals in the rural group who are “waiting for a major health care service” are predicted to rate their overall care more positively by 1.1/100, relative to the base case of “not waiting for a major service”.
- ▶ Being “told to go to the emergency department by a health professional” is predicted to increase the overall rating by 1/100 relative to the base case of not being told to go by a health professional.
- ▶ Arriving by bus is predicted to decrease the overall rating by a very large 9.1/100 relative to the base case of having arrived by car (rural model only), although the volume of patients arriving by bus is very low.
- ▶ Arriving at the emergency department between midnight and 7:00 AM on a weekend is predicted to drop the overall rating by 3.3/100 relative to the base case of 6:00 PM to midnight on a weekend.

Table 62: Regression on overall rating (Q61) for Rural (Part B); Context of Visit Variables			
Variable	Element	Coeff.	sig.
Awaiting major medical services (Q10 collapsed)	<i>Base case: not waiting for major medical service</i>		
	Waiting for major medical service	1.10	sig
Who told you to go (Q1 collapsed)	<i>Base case: not told to go by health professional</i>		
	Told to go by medical professional	0.76	sig
Arrival mode (Q4)	<i>Base case: arrived by car</i>		
	Ambulance	1.02	
	Taxi	0.43	
	On foot	0.82	
	Bus or train	-9.05	sig
	Other	1.95	
Time of Visit (Administrative Data)	<i>Base case: Weekend 18:00-23:59</i>		
	Weekday: 00:00-06:59	-1.64	
	Weekday: 07:00-11:59	-0.20	
	Weekday: 12:00-17:59	-0.42	
	Weekday: 18:00-23:59	-0.33	
	Weekend: 00:00-06:59	-3.27	sig
	Weekend: 07:00-11:59	0.08	
	Weekend: 12:00-17:59	-1.18	
<i>R²=63.10%: This table presents quality items included in the model</i>			

9.3 Effects of specific care quality variables on overall rating (rural model)

Examining the effect of specific quality of care variables on the overall rating of care (question 61) provides useful information with respect to which of these quality variables most strongly influence the overall rating. This assumes the overall rating is a good “yardstick” by which to compare more specific quality factors. Quality of care variables with no relationship to the overall rating may still be important for other obvious reasons and should not be dismissed.

Table 63: Regression on overall rating (Q61) for Rural (Part C); Patient Experience Variables and Outcomes					
Type	Variable	Element	Coeff.		
Patient Experience of Care and Composite Variables	Doctors and nurses introducing themselves (Q23)	<i>Base case: everyone introduced themselves</i>			
		Not all doctors and nurses introduced themselves	-1.91	sig	
	Getting attention of staff (Q34)	<i>Base case: didn't need attention from staff</i>			
		Needed attention - staff member helped	0.78	sig	
		Needed attention - staff member did not help	-6.30	sig	
	Help with pain (Q42 & Q46)	<i>Base case: not in pain</i>			
		In pain - staff helped	-0.18		
		In pain - staff did not do everything they could to help	-6.79	sig	
		In pain – not sure staff did what they could	-1.27	sig	
	Care Composite	Standardized score of 0 to 100	0.40	sig	
	Respect Composite	Standardized score of 0 to 100	0.30	sig	
	Cleanliness Composite	Standardized score of 0 to 100	0.15	sig	
	<i>Wait & Crowding Composite †</i>	<i>Standardized score of 0 to 100</i>	<i>0.12</i>	<i>sig</i>	
	Waiting time for doctor (Q17))	<i>Base case: 1-30 Minutes</i>			
		Did Not Wait	0.77		
		31-60 Minutes	-1.41	sig	
		1-2 Hours	-3.44	sig	
2-4 Hours		-5.07	sig		
More Than 4 Hours		-11.04	sig		
Discharge Information Composite	Standardized score of 0 to 100	0.05	sig		
Wait-time Communication Composite	Standardized score of 0 to 100	0.01	sig		
Outcomes	Received tests (Q40)	<i>Base case: Did not receive tests</i>			
		Received tests In ED (X-rays, scans, or blood tests)	0.83	sig	
	Received medication (Q51)	<i>Base case: Did not receive medication</i>			
		Received medication before leaving ED	0.87	sig	
Expected Cost (ACCS Cost Data)	Cost in 2004/2005 dollars	0.002			

$R^2=63.10\%$: This table presents selected items included in the model.. †Coefficient for wait and crowding composite is from model 2 where wait composite used instead of wait for doctor.

Our regression models explain over 60% of the variance in the overall rating, with most of the composite measures and some other variables having statistically significant effects on the overall rating. In other words, having identified many of the factors influencing patient rating of overall care – we can more easily improve this rating by strategically targeting those attributes of care for improvement. These specific quality variables and their effects on the overall rating are presented in Table 63, sorted by type of variable and then in order of importance. These relationships are summarized as follows:

- ▶ Doctors or nurses not introducing themselves is predicted to drop the overall rating by 1.9/100 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 6.3/100; relative to the base case of not needing help from staff. Likewise getting that needed help from staff is predicted to improve the overall rating by 1/100.
- ▶ Staff not helping when the patient has pain is predicted to drop the overall rating by 6.3/100 relative to the base case of not having pain. Likewise, if staff only help to some extent the overall rating is predicted to drop by 1.3/100.³²
- ▶ A 1 unit (out of 100) improvement in the care composite score is predicted to increase the overall rating by 0.4/100. 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 0.3/100. This means that improving the respect composite by 20/100 (i.e. from 60 to 80) will likely improve the overall rating by 6/100.
- ▶ 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.
- ▶ The discharge communication composite and the wait time communication composite have a significant but quite small impact on the overall rating.
- ▶ A 1 unit (out of 100) improvement in the wait time composite score is predicted to increase the overall rating by 0.12/100. This means that improving the wait time composite by 20/100 (i.e. from 60 to 80) will likely improve the overall rating by 2.5/100. Note: this is from an alternative but similar model. In this model we substitute wait time to physician.

Wait time to physician is more strongly related with the overall rating than is the wait time composite. Because of this, the selected model “decomposes” the composite, and wait time to see the physician ends up as the dominant (retained) wait time variable. This change also increases the R^2 (amount of variance explained) for the model. A very linear relationship is described as follows:

- ▶ Waiting 30 to 60 minutes (to see the physician) will reduce the overall rating by 1.4/100, relative to the base case of 0 – 30 minutes wait.
- ▶ Waiting 1 – 2 hours will reduce the overall rating by 3.4/100.
- ▶ Waiting 2 – 4 hours will reduce the overall rating by 5.1/100.
- ▶ Waiting over 4 hours will reduce the overall rating by (negative) 11.4 / 100.

Outcomes of care can also influence the overall rating. For example:

- ▶ Receiving tests (as compared with not receiving tests) is predicted to improve the overall rating by 1/100. Having test results explained appears to have no effect.
- ▶ Receiving medication or a prescription (as compared with not) is predicted to improve the overall rating by 1/100. The medication communication composite has no effect and is dropped from the model.
- ▶ An increase in total estimated cost of the emergency visit of 1 dollar (ACCS data) is predicted to improve the overall rating by 0.002/100. This means that a \$1000 increase in cost would improve the overall rating by about 2/100. Note: this effect is only significant in the alternative model which uses the wait time composite rather than wait time to see physician.

³² Needing attention and needing help with pain are not as correlated as we expected, although if one variable is dropped from the regression, the coefficients on the other rise slightly.

9.4 Effects of patient characteristics on overall rating (urban model)

It is important to note that the urban group includes regional hospital emergency departments in small Alberta cities as well as the large urban hospital emergency departments. It does not include urgent care centers.

The regression models for the urban group are quite similar to those of the rural group presented above. For the most part differences are subtle, and relate to the magnitude of effects. The major variables included are the same for the majority of models that were generated.

Table 64 shows patient characteristic and context of visit variables for the selected urban group regression model. For the most part the same variables are important. These effects can be summarized as follows:

- ▶ Females aged 45 – 54 are predicted to rate overall care more positively by 2.3/100 relative to the base case: female aged 16 – 34.
- ▶ Females aged 55 – 64 are predicted to rate overall care more positively by 3.2/100 relative to the base case.
- ▶ Females aged 75+ are predicted to rate overall care more positively by 3.1/100 relative to the base case.
- ▶ Males aged 16 - 34 are predicted to rate overall care more poorly by 1.8 /100 relative to the base case: but this is not statistically significant.
- ▶ Males aged 35 – 44 and 45 - 54 are predicted to rate overall care more poorly by 0.8 /100 relative to the base case: but this is not statistically significant.
- ▶ Education has no significant effects on overall rating for the urban group, but contributes to the stability of the model.

As with the rural model, self rated health status 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 3.1/100 relative to the base case of good health.
- ▶ Very poor health is predicted to reduce the overall rating by 5.0/100 relative to the base case of good health.
- ▶ In general, the better health, the better the overall rating.
- ▶ Waiting for a major health care service is predicted to reduce the overall rating by 1.4/100 relative to the base case of not waiting for a major service.

There are more time of day effects in the urban group as compared with the rural group. This is not surprising considering daily patterns of crowding seen in many urban emergency departments. These effects are summarized as follows:

- ▶ Relative to the base case of weekend 6 PM to midnight; visiting an emergency department from midnight to 7 AM on a weekday is expected to lower the overall rating score by 3/100.
- ▶ Visiting from 12 Noon to 6 PM during a week day is expected to lower the overall rating score by 2.9/100.
- ▶ Visiting from 7 AM to 6:00 PM on the weekend is expected to lower the overall rating score by about 3 out of 100.

Table 64: Regression on overall rating (Q61) for urban (Part A); Patient Characteristics and Context Variables			
Variable	Element	Coeff.	Sig.
	Intercept	13.70	sig
Gender and age group (Administrative Data)	<i>Base case: Females 16-34</i>		
	Females 35-44	0.92	
	Females 45-54	2.32	sig
	Females 55-64	3.22	sig
	Females 65-74	2.39	
	Females 75+	3.10	sig
	Males 16-34	-1.78	
	Males 35-44	-0.78	
	Males 45-54	-0.79	
	Males 55-64	1.87	
	Males 65-74	1.14	
	Males 75+	0.59	
Education (Q70)	<i>Base case: completed highschool</i>		
	Grade School or Some High School	0.16	
	Post Secondary Technical School	0.05	
	Some University or College	1.12	
	Completed College Diploma	0.16	
	Completed University Degree	-0.37	
	Post Graduate Degree (Masters or Higher)	1.24	
Self rated health status (Q71)	<i>Base case: Good health</i>		
	Excellent	3.05	sig
	Very Good	0.45	
	Fair	-0.57	
	Poor	-1.81	
	Very Poor	-5.02	sig
Awaiting major medical services (Q10 collapsed)	<i>Base case: not waiting for major medical service</i>		
	Waiting for major medical service	-1.39	sig
Time of Visit (Administrative Data)	<i>Base case: Weekend 18:00-23:59</i>		
	Weekday: 00:00-06:59	-3.05	sig
	Weekday: 07:00-11:59	-1.88	
	Weekday: 12:00-17:59	-2.85	sig
	Weekday: 18:00-23:59	-1.43	
	Weekend: 00:00-06:59	-2.43	
	Weekend: 07:00-11:59	-2.87	sig
	Weekend: 12:00-17:59	-3.00	sig

$R^2=65.12\%$. This table presents selected items included in the model.

9.5 Effects of specific care quality variables on overall rating (urban model)

The effects of care quality variables on the overall rating (question 61) are similar in urban and rural models although the effects in the urban model are often larger. These effects are shown in Table 65 and are summarized for the selected urban model as follows:

	Variable	Element	Coeff.	Sig.
Patient experience of care and composite variables	Doctors and nurses introducing themselves (Q23)	<i>Base case: everyone introduced themselves</i>		
		Not all doctors and nurses Introduced Themselves	-2.50	sig
	Getting attention of staff (Q34)	<i>Base case: didn't need attention from staff</i>		
		Needed attention - staff member helped	-0.19	
		Needed attention - staff member didn't help	-7.46	sig
	Help with pain (Q42 & Q46)	<i>Base case: not in pain</i>		
		In pain - staff member helped	0.18	
		In pain - staff member did not do everything they could	-5.94	sig
		In pain - not sure if staff did what they could	-2.18	sig
	Care composite	<i>Standardized score of 0 to 100</i>	0.39	sig
	Respect composite	<i>Standardized score of 0 to 100</i>	0.25	sig
	<i>Wait & Crowding Composite †</i>	<i>Standardized score of 0 to 100</i>	<i>0.13</i>	<i>sig</i>
	Waiting time for doctor (Q17)	<i>Base case: 1-30 Minutes</i>		
		Did not wait	2.16	
		31-60 minutes	-1.84	sig
		1-2 hours	-2.53	sig
		2-4 ours	-5.60	sig
		More Than 4 Hours	-9.13	sig
Cleanliness composite	<i>Standardized score of 0 to 100</i>	0.13	sig	
Discharge information composite	<i>Standardized score of 0 to 100</i>	0.07	sig	
Privacy composite	<i>Standardized score of 0 to 100</i>	0.02		
Wait time communication composite	<i>Standardized score of 0 to 100</i>	0.01		
Outcomes	Received tests (Q40)	<i>Base case: Did not receive tests</i>		
		Received tests (X-rays, Scans, or Blood Tests)	0.92	
	Discharge disposition (administrative data)	<i>Base case: Was discharged home</i>		
		Admitted as inpatient	4.16	sig

R²=65.12%; This table presents selected items included in the model. ...Coefficient for wait and crowding composite is from model 4 where wait composite used instead of wait for doctor.

- ▶ Doctors or nurses not introducing themselves is predicted to drop the overall rating by (negative) 2.5 / 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 7.5/100; relative to the base case of not needing help from staff. Unlike the rural model, getting that needed help from staff does not actually improve the overall rating.
- ▶ Staff not helping when the patient has pain is predicted to drop the overall rating by 5.9/100 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 2.2/100.
- ▶ A 1 unit (out of 100) improvement in the care 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 0.25/100. This means that improving the respect composite by 20/100 (say from 60 to 80) will likely improve the overall rating by 5/100.
- ▶ The discharge communication composite effects are very small and the wait time communication composite and privacy composite effects are both small and non significant.
- ▶ A 1 unit (out of 100) improvement in the cleanliness composite score is predicted to increase the overall rating by 0.13/100. This means that improving the respect 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 0.13/100. 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 3/100. Again, this is from an alternative but similar model. As with the rural group the model presented substitutes wait time to physician.

Wait time for physician is summarized as follows:

- ▶ Waiting 30 to 60 minutes (to see the physician) will reduce the overall rating by 1.8/100, relative to the base case of 0 – 30 minutes wait.
- ▶ Waiting 1 – 2 hours will reduce the overall rating by 2.5/100.
- ▶ Waiting 2 – 4 hours will reduce the overall rating by 5.6/100.
- ▶ Waiting over 4 hours will reduce the overall rating by 9.1/100.

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 1/100. This is similar to the rural model but is not significant for urban. Having test results explained appears to have no effect.
- ▶ Being admitted as an inpatient (as compared with being discharged) is predicted to improve the overall rating by 4.2/100.

Overall and considering both rural and urban models, it is clear that quality of care (from the patient perspective) drives the overall rating of care. The importance of the care and respect composites 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, discharge instructions, privacy, and wait time communication – have minimal 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.

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Emergency Department
Patient Experience Survey

Section D
Appendices A-E

March 2008

Emergency Department
Patient Experience Survey

Appendix A
Working Group and Credits

Appendix A: Working Group and Credits

Background

To guide this initiative, the Health Quality Council of Alberta (HQCA) formed a technical working group of emergency department clinicians, health services and measurement researchers, and other stakeholders; with representation from different health regions in the province as well as universities and Alberta Health and Wellness (AHW). This working group was fundamental to the scope, design and outcome of this work.

Collective roles included:

- ▶ Criteria, review and selection of available survey tools
- ▶ Conceptualization of and feedback on supplemental “context” survey items
- ▶ Feedback on terminology and on testing results (cognitive and field testing)
- ▶ Review and feedback on analysis and reporting

The purpose of this appendix document is to acknowledge the many individuals who contributed to this initiative. Working group members contributed at different times and in different ways according to their expertise and availability. No one individual was involved in all aspects of the initiative and may not have had the opportunity to provide their perspective on all aspects of this work.

In addition to the working group, a large number of individuals from various health regions and participating sites provided facility characteristics information, site level communication, or local data management for generation of samples.

The HQCA is very appreciative of the time, effort, and unique expertise provided by all of these individuals.

Working group

Edith Amend
Regional Program Manager
Surgical Services
Palliser Health Region

Francois P. Belanger MD FRCPC
Acting Regional Department Head
Assistant Professor
Department of Paediatrics
Calgary Health Region

Janet Carstairs
Director of Patient Services (former)
Northern Lights Health Region

Tim Cooke
Measurement and Analysis Lead
Health Quality Council of Alberta

Don Hunt MA RN EMT-P
Executive Director
QE II Regional Hospital
Peace Country Health

Jamie Jones RN BN
Initiative Specialist: Patient Access & Flow
Calgary Health Region

Olesia Luciw-Andryjowycz BScN MSA
Manager Health System Quality
Health Services Strategy Development Branch
Strategic Directions Division
Alberta Health and Wellness

Carmel Montgomery RN MN
Clinical Quality Consultant
Regional Quality Office
Capital Health

Brian H. Rowe MD MSc CCFP(EM) FCCP
Canada Research Chair in Emergency Airway Diseases
Professor and Research Director
Department of Emergency Medicine
University of Alberta

Dr. William Sevcik FRCP
Assistant Professor
Department of Emergency Medicine
University of Alberta

Ken Ternovo RN
Program Manager
Royal Alexandra Hospital Emergency Department
Capital Health

Dr. Denise Watt FRCP
Department of Emergency Medicine
Calgary Health Region

Dr. Bill Wertzler FRCP
Department of Emergency Medicine
Calgary Health Region

Stewart Zaleschuk RN BScN
Patient Care Manager (former)
West View Health Centre Emergency Department
Capital Health

Specific contracts and consultation

Carol E. Adair MSc PhD
Associate Professor
Depts. of Psychiatry and Community Health Sciences
Faculty of Medicine
University of Calgary
Role: Cognitive testing and validation of new and selected survey questions

Mingfu Liu PhD (Statistics)
Senior Research Analyst
Quality, Safety and Health Information
Calgary Health Region
Role: Evaluation of case mix methods, hospital level reliability, and advice regarding statistical methods

Contribution of Healthcare Commission survey tool and related methods

Dr. Ian J. Seccombe
Staff and Patient Survey Lead
Healthcare Commission (UK)

Caroline Powell
Deputy Chief Executive
Picker Institute Europe (UK)

Analysis and reporting

Nicholas Borodenko
Associate
Prairie Research Associates

Tim Cooke
Measurement and Analysis Lead
Health Quality Council of Alberta

Pam Brandt
Communications Lead
Health Quality Council of Alberta

Rick Schorn
Economic Analysis Lead
Health Quality Council of Alberta

Charlene McBrien-Morrison
Research and Reporting Lead
Health Quality Council of Alberta

Data management role leading to generation of facility level samples

Crista Aadland (Palliser Health Region)
Bruce Airth (Aspen Regional Health Authority)
Edith Amend (Palliser Health Region)
Richard Andersen (Calgary Health Region)
Simone Bailly (David Thompson Health Region)
Glenda Bishop (East Central Health)
Edith Bruinink (Northern Lights Health Region)
Ray Charania (Calgary Health Region)
Brian Harder (Northern Lights Health Region)
Chris Houston (Capital Health)

Raymond Kimbal (David Thompson Health Region)
David Lorenz (Peace Country Health Region)
Stephanie Machielse (Chinook Health Region)
Carmel Montgomery (Capital Health)
Lisa Ronan (Northern Lights Health Region)
Kim Sabourin (Capital Health)
Lorrene Thiessen (RSHIP)
Dongmei Wang (Calgary Health Region)
Valerie White (Peace Country Health Region)

Data collection process and preliminary reporting

Kerry Dangerfield
Partner
Prairie Research Associates

Nicholas Borodenko
Associate
Prairie Research Associate

Site and regional liaisons

Site liaisons were identified for each potential participating site in the province. Site liaisons were responsible for completing the site inventory (site characteristics), communication with staff, and placement of posters regarding the survey in the facility in advance of the start of the survey. Regional liaisons helped identify and coordinate site liaisons and activities within each regional health authority.

Lori Anderson, Calgary Health Region
Randy Arsenault, Slave Lake Health Complex
Cindy Baker, Cardston Municipal Hospital
Dave Bateman, Canmore General Hospital
Beverly Belland, St Therese Health Center
Norma Jean Bieleny, East Central Health
Caroline Bosgra, Lacombe Hospital & Care Centre
Karen Bouman, Swan Hills Healthcare Center
Shelly Bromby, Hardisty Health Center
Tracy Brown, Valleyview Health Centre
Rick Bruce, Edson & District Healthcare Centre
Lynn Chorley, Northeast Community Health Centre
Katherine Chubbs, Cold Lake Health Center
Geri Clark, Killam Health Center
Lana Clark, Provost Health Center
Margaret Clowser, High River General Hospital
Joan Connors, Seton General Hospital
Terri Critch, Northern Lights Regional Health Centre
Teresa Davidson, Alberta Children's Hospital
Cheryl Deckert, Wetaskiwin General Hospital
Nadine Doris, Peace River Community Health Centre
Penny Farley, Didsbury District Health Care Complex
Brenda Findlay, Vulcan Community Health Center
Carol Funnell, Coronation Health Center
Norma Galloway, Brooks Health Centre
Rod Graf, Drumheller Regional Health Complex
Cindy Grimberg, Innisfail Health Centre
Pam Hanna, Manning Community Health Centre
Jeannie Hare, Redwater Health Center
Melody Henriksen, Tofield Health Center
Nan Horne, Sturgeon General Hospital
Kathy Howe, Foothills Medical Centre
Cheryl Huxley, Wainwright Health Center
Harold James, Lamont Health Center
Janet Johnston, Capital Health
Lori Judson, Grande Cache General Hospital
Karen Kyle, Mayerthorpe Healthcare Center
Yolanda Lackie, Aspen Regional Health Authority
Karen Latoszek, University Of Alberta Hospital
Gita Layton, Taber & District Health Care Centre
Anne Leland, Westview Health Centre
Paulette Levasseur, Elk Point Health Centre
Barb Lowe Kuhn, Big Country Hospital
Lyn Luchak, Rimbey Hospital & Care Centre
Janet MacDonell, Peace Country Health Region
Alexis Mageau, Calgary Health Region
Alta Magee, Bow Island Health Center
Angie Mann, High Level General Hospital
Dan Marchand, Health First Strathcona

Jane McClements, Daysland Health Center
Lisa McConnell, Hinton General Hospital
Kamla McGonigal, South Calgary Health Centre
Anne Mcnair Gariepy, Valley General Hospital & Extended Care Centre
Lawrence McNeil, Sacred Heart Community Health Centre
Carol Milner, Misericordia Hospital
Kathy Miskew, Viking Health Center
Gisvind Moehrle, William J Cadzow Health Center
Joyce Nadeau, Westlock Healthcare Center
Susan O'Connor, Drayton Valley General Hospital
Debora Okrainetz, Vermilion Health Center
Belinda Osborne, 8th & 8th Health Centre
Marie Owen, David Thompson Health Region
Diane Palmer, Stettler Health Center
Theresa Pasquotti, Lethbridge Regional Hospital
Crownsnest Pass, Crownsnest Pass Health Care Centre
Marion Peters, Sundre General Hospital
David Ponich, George McDougall Health Center
Mary Proskie, Boyle Healthcare Center
Wilf Pruden, Athabasca Healthcare Center
Kirk Richardson, Wabasca//Desmarais Healthcare Centre
Kim Roberts, St Mary's Hospital
Jan Robinson, High Prairie Health Complex
Sharon Rogers, Claresholm General Hospital
Lynn Rollins, Okotoks Urgent Care Centre
Gayle Sadler, Banff Mineral Springs Hospital
Betty Sawchenko, Fort Saskatchewan Health Centre
Mary Schnell, Pincher Creek Hospital
Shelley Scorgie, Queen Elizabeth II Hosp - Acute
Edie Shackleton, Peter Lougheed Centre
Dianne Shanks, Chinook Health Region
Barb Shellian, Calgary Health Region
Terry Smith, Rockyview General Hospital
Brenda Smith-Goddu, Leduc General Hospital
Alex Smyl, Bonnyville Health Centre
Shona Sponholz, Ponoka Hospital and Care Centre
Marj Stockwell, Whitecourt Healthcare Center
Suzanne Telford, Olds Hospital & Care Centre
Linda Tessmann-Potvin, Medicine Hat Regional Hospital
Heather Thompson, Barrhead Healthcare Center
Valerie Thompson, Two Hills Health Center
Judy Treppel, Devon General Hospital
Debbie Westman, Red Deer Regional Hospital Centre
Liz Wiens, Three Hills Health Centre
Anita Wilson, St Joseph's General Hospital
Maureen Wotherspoon, Banff Mineral Springs Hospital
Brenda Wright, Raymond Hospital

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Appendix B
Questionnaires and Survey Materials Used

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 and return the blank questionnaire using the postage-paid envelope.

Completing the questionnaire

For each question, please fill-in one bubble, using a black or blue pen, or a soft-led pencil. 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: 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.

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Please remember, this questionnaire is about your **most recent** visit to the Emergency Department or Urgent Care Centre identified in your letter.

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 Yes No

My specialist doctor Yes No

A doctor at a walk-in clinic Yes No

A friend or family member Yes No

The *Health Link* phone-line nurse Yes No

No one, I decided on my own Yes No

Other (please specify):

2. Why did you choose to go to the Emergency Department, instead of somewhere else such as a doctor's office? FILL-IN **ALL** THAT APPLY

The Emergency Department was the only choice available **at the time**.

The Emergency Department was the most convenient place to go.

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

I **was told** to go to the Emergency Department rather than somewhere else.

Other:

3. Would you have described your health problem as:

Life-threatening

Possibly life-threatening

Urgent, risk of permanent damage

Somewhat urgent, needed to be seen today

Not urgent, but I wanted to be seen today

4. How did you travel to the Emergency Department?

In an ambulance

By car

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?

Up to 30 minutes

More than 30 minutes, but no more than 1 hour

More than 1 hour

Don't know / Can't remember

6. 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

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7. At some earlier time in the last month, were you in hospital or the Emergency Department **for the same problem**? FILL-IN ALL THAT APPLY

- Yes, I was in an Emergency Department
- Yes, I was admitted to a hospital
- No

8. **Before** your most recent Emergency Department visit, did you see a health-care provider **for the same problem**? FILL-IN ALL THAT APPLY

- No → **Go to 10**
- Yes, my personal family doctor → **Go to 9**
- Yes, a doctor at walk-in clinic or urgent care centre → **Go to 9**
- Yes, a specialist → **Go to 9**
- Yes, my home-care nurse → **Go to 9**
- Other → **Go to 9**

9. **When** did you see the health-care provider(s) mentioned above **for the same problem**? FILL-IN ALL THAT APPLY

- Less than 1 day before my visit
- Within 1 to 2 days before my visit
- Within 3 to 7 days before my visit
- Within 8 to 30 days before my visit
- More than 30 days before my visit

10. Before your Emergency Department visit, were you **already waiting** for any of the following? FILL-IN ALL THAT APPLY

- To see a specialist
- Major diagnostic tests (such as CT scan, MRI, X-ray, or Ultrasound)
- Minor diagnostic tests (blood or lab tests, etc.)
- Surgery
- Major non-surgical procedures (such as angioplasty, angiogram, or bowel scope)
- Specific treatments or therapies
- To see my personal family doctor
- Other:

YOUR VISIT

11. How crowded was the Emergency Department waiting room when you first arrived there?

- Extremely crowded
- Very crowded
- Somewhat crowded
- Not at all crowded
- I did not see the waiting room
- Don't know / Can't remember

12. Were you able to find a comfortable place to sit in the waiting area?

- Yes, I found a comfortable place to sit
- I found somewhere to sit, but it was uncomfortable
- No, I could not find a place to sit
- I did not want or need a place to sit
- I did not see the waiting room
- Don't know / Can't remember

13. During your visit to the Emergency Department, did you consider leaving before you had been seen and treated?

- Yes, definitely
- Yes, to some extent
- No

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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**."

14. 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?

- 0 to 15 minutes → **Go to 15**
- 16 to 30 minutes → **Go to 15**
- 31 to 60 minutes → **Go to 15**
- More than 60 minutes → **Go to 15**
- Don't know / Can't remember → **Go to 15**
- I did not see a triage nurse → **Go to 17**

15. 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
- Very good
- Good
- Fair
- Poor
- Very poor

16. When you first arrived at the Emergency Department, did you see the **triage nurse** before the **receptionist**?

- Yes
- No
- Don't know / Can't remember

WAITING

17. From the time you first arrived at the Emergency Department, how long did you wait BEFORE BEING EXAMINED by a doctor?

- I did not have to wait
- 1 to 30 minutes
- 31 to 60 minutes
- More than 1 hour but no more than 2 hours
- More than 2 hours but no more than 4 hours
- More than 4 hours
- Don't know / Can't remember
- I did not see a doctor

18. Were you told **how long** you would have to wait to be examined?

- Yes, but the wait was **shorter**
- 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

19. Were you told WHY YOU HAD TO WAIT to be examined?

- Yes
- No, but I would have liked an explanation
- No, but I did not need an explanation
- Don't know / Can't remember

20. Overall, did you think the order in which patients were seen was fair?

- Yes
- No
- Can't say / Don't know



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21. Did a member of staff check on you while you were waiting?
- Yes, definitely
 - Yes, but I would have liked them to check more often
 - No, but I would have liked them to check
 - No, but I did not mind
 - Don't know / Can't remember

22. **Overall**, how long did your visit to the Emergency Department last?
- Up to 1 hour
 - More than 1 hour but no more than 2 hours
 - More than 2 hours but no more than 4 hours
 - More than 4 hours but no more than 8 hours
 - More than 8 hours but no more than 12 hours
 - More than 12 hours but no more than 24 hours
 - More than 24 hours
 - Can't remember

DOCTORS AND NURSES

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

25. Did the doctors and nurses listen to what you had to say?
- Yes, definitely
 - Yes, to some extent
 - No

26. 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
 - Yes, to some extent
 - No
 - I did not need an explanation

27. If you had any anxieties or fears about your condition or treatment, did a doctor or nurse discuss them with you?
- Yes, completely
 - Yes, to some extent
 - No
 - I did not have anxieties or fears

28. Did you have confidence and trust in the doctors and nurses examining and treating you?
- Yes, definitely
 - Yes, to some extent
 - No

29. In your opinion, did the doctors and nurses in the Emergency Department know enough about your condition or treatment?
- All of them knew enough
 - Most of them knew enough
 - Only some of them knew enough
 - None of them knew enough
 - Don't know / Can't say



30. Did doctors or nurses talk in front of you as if you weren't there?

- Yes, definitely
- Yes, to some extent
- No

YOUR CARE AND TREATMENT

31. While you were in the Emergency Department, how much information about your condition or treatment was given to **you**?

- Not enough
- Right amount
- Too much
- I was not given any information about my treatment or condition

32. Were you given enough privacy when **discussing your condition or treatment**?

- Yes, definitely
- Yes, to some extent
- No

33. Were you given enough privacy when **being examined or treated**?

- Yes, definitely
- Yes, to some extent
- No

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

- Yes, always
- Yes, sometimes
- No, I could not find a member of staff to help me
- A member of staff was with me all the time
- I did not need attention

35. 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
- No

36. Were you involved as much as you wanted to be in decisions about your care and treatment?

- Yes, definitely
- Yes, to some extent
- No
- I was not well enough to be involved in decisions about my care

37. Did a family member or friend come with you or join you in the Emergency Department?

- Yes, someone came with me → **Go to 38**
- Yes, someone joined me there → **Go to 38**
- Yes, but he / she needed to leave → **Go to 38**
- No → **Go to 40**

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

- Not enough
- Right amount
- Too much
- My family did not want or need information
- 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.

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

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

40. Did you have any tests (such as X-rays, scans, or blood tests) during this visit to the Emergency Department?
- Yes → **Go to 41**
 - No → **Go to 42**
41. Did a member of staff explain **the results of the tests** in a way you could understand?
- Yes, definitely
 - Yes, to some extent
 - No
 - Not sure / Can't remember
 - I was told the test results would be given to me later
 - I was never told the results of the test

PAIN

42. Were you in any pain while you were in the Emergency Department?
- Yes → **Go to 43**
 - No → **Go to 47**
43. While you were in the Emergency Department, how much of the time were you in pain?
- All or most of the time
 - Some of the time
 - Occasionally

44. Did you request pain medicine?
- Yes → **Go to 45**
 - No → **Go to 46**
45. How many minutes after you requested pain medicine did it take before you got it?
- 0 minutes / Right away
 - 1 to 5 minutes
 - 6 to 10 minutes
 - 11 to 15 minutes
 - 16 to 30 minutes
 - More than 30 minutes
 - I asked for pain medicine but wasn't given any
46. Do you think the Emergency Department staff did everything they could to help control your pain?
- Yes, definitely
 - Yes, to some extent
 - No
 - Can't say / Don't know

HOSPITAL ENVIRONMENT AND FACILITIES

47. In your opinion, how clean was the Emergency Department?
- Very clean
 - Fairly clean
 - Not very clean
 - Not at all clean
 - Can't say



48. How clean were the toilets in the Emergency Department?

- Very clean
- Fairly clean
- Not very clean
- Not at all clean
- I did not use a toilet

49. While you were in the Emergency Department, did you feel bothered or threatened by other patients?

- Yes, definitely
- Yes, to some extent
- No

LEAVING THE EMERGENCY DEPARTMENT

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

- Admitted to the same hospital → **Go to 59**
- Transferred to a different hospital → **Go to 59**
- Went home → **Go to 51**
- Stayed with a relative or friend → **Go to 51**
- Other → **Go to 51**

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

51. Before you left the Emergency Department, were any **new** medications prescribed or ordered for you?

- Yes → **Go to 52**
- No → **Go to 55**

52. 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
- Yes, to some extent
- No
- I did not need an explanation

53. Did a member of staff explain to you **how to take** the new medications?

- Yes, completely
- Yes, to some extent
- No
- I did not need an explanation

54. Did a member of staff tell you about **medication side effects** to watch for?

- Yes, completely
- Yes, to some extent
- No
- I did not need this type of information

Information

55. 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
- No
- I did not need this type of information

56. Did a member of staff tell you about what **danger signals** regarding your illness or treatment to watch for after you went home?

- Yes, completely
- Yes, to some extent
- No
- I did not need this type of information

57. 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?

- Yes, completely
- Yes, to some extent
- No
- Don't know / Don't remember

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58. 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?

- Yes No Not needed

OVERALL

59. Was the main reason you went to the Emergency Department dealt with to your satisfaction?

- Yes, completely
 Yes, to some extent
 No

60. 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
 No

61. Overall, how would you rate the care you received in the Emergency Department?

- Excellent
 Very good
 Good
 Fair
 Poor
 Very poor

62. If you needed to complain about the care you received, did you know how to do this?

- Yes
 No, but I would have liked to know
 I had no need to complain

ABOUT YOU

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

- Yes → **Go to 64**
 No → **Go to 65**

64. In the past 12 months, how many times in total have you visited your personal family doctor or your specialist FOR YOUR OWN CARE?

- 0 times
 1 time
 2 to 4 times
 5 to 10 times
 More than 10 times

65. In the past 12 months, how many times have you visited an Emergency Department FOR YOUR OWN CARE? (please include this visit)

- 0 times
 1 time
 2 to 4 times
 5 to 10 times
 More than 10 times

66. In the In the past 12 months, how many times have you visited a walk-in clinic, nursing station, or other clinic FOR YOUR OWN CARE?

- 0 times
 1 time
 2 to 4 times
 5 to 10 times
 More than 10 times



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67. In the past 12 months, how many times in total have you visited an Alternative Medicine provider such as a Chiropractor, Acupuncturist, Chinese Medicine provider, or Naturopath?

- 0 times
- 1 time
- 2 to 4 times
- 5 to 10 times
- More than 10 times

68. Are you male or female?

- Male
- Female

69. What was your year of birth?

(Please print in the boxes below)

eg.

1	9	3	4
---	---	---	---

--	--	--	--

70. What is the highest level of school that you have completed?

- Grade school or some high school
- Completed high school
- Post-secondary technical school
- Some university or college
- Completed college diploma
- Completed university degree
- Post-grad degree (Master's or Ph.D.)

71. Overall, how would you rate your health during the **past 4 weeks**?

- Excellent
- Very good
- Good
- Fair
- Poor
- Very poor

72. Do you have a long-standing physical or mental health problem or disability?

- Yes → **Go to 73**
- No → **Go to 74**

73. Does this problem or disability affect your day-to-day activities?

- Yes, definitely
- Yes, to some extent
- No

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

- Yes
- No, but I am waiting for home-care services
- No

75. Where do you presently live?

- My own house, condominium, or apartment
- A rented house, condominium, or apartment
- A residential facility or seniors' lodge
- A nursing home or long-term care centre

76. What language do you mainly speak at home?

- English
- Other

77. Would you say you are ...?

- White / Caucasian
- Native Canadian / Aboriginal
- Chinese
- Latin American
- Black
- Asian (please specify)
- Other (please specify)

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78. Do you have any additional comments, concerns or issues? If so, please explain.

This survey will result in further activities to help improve care

79. May we contact you if we have additional questions about your experience?

Yes No


80. Would you like to know about **focus groups** on health care issues if they are held in your community?

Yes No

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



Emergency Department Questionnaire

Taking part in this survey is voluntary

Who should complete the questionnaire?

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

If you feel your child is mature enough to answer the questions, he or she can complete the survey. You can provide assistance and support as needed.

If the child is not able to answer the questions, the person who visited the emergency department with the child should complete the survey **from the child's point of view**.

Completing the questionnaire

For each question, please fill-in one bubble, using a black or blue pen, or a soft-led pencil. 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: 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.

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Please remember, this survey should be completed from the point of view of the person referred to in the cover letter (the patient), or by the patient.

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 Yes No

My specialist doctor Yes No

A doctor at a walk-in clinic Yes No

A friend or family member Yes No

The *Health Link* phone-line nurse Yes No

No one, I decided on my own Yes No

Other (please specify):

2. Why did you choose to go to the Emergency Department, instead of somewhere else such as a doctor's office? FILL-IN **ALL** THAT APPLY

The Emergency Department was the only choice available **at the time**.

The Emergency Department was the most convenient place to go.

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

I **was told** to go to the Emergency Department rather than somewhere else.

Other:

3. Would you have described your health problem as:

Life-threatening

Possibly life-threatening

Urgent, risk of permanent damage

Somewhat urgent, needed to be seen today

Not urgent, but I wanted to be seen today

4. How did you travel to the Emergency Department?

In an ambulance

By car

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?

Up to 30 minutes

More than 30 minutes, but no more than 1 hour

More than 1 hour

Don't know / Can't remember

6. 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

46810



7. At some earlier time in the last month, were you in hospital or the Emergency Department **for the same problem**? FILL-IN ALL THAT APPLY

- Yes, I was in an Emergency Department
- Yes, I was admitted to a hospital
- No

8. **Before** your most recent Emergency Department visit, did you see a health-care provider **for the same problem**? FILL-IN ALL THAT APPLY

- No → **Go to 10**
- Yes, my personal family doctor → **Go to 9**
- Yes, a doctor at walk-in clinic or urgent care centre → **Go to 9**
- Yes, a specialist → **Go to 9**
- Yes, my home-care nurse → **Go to 9**
- Other → **Go to 9**

9. **When** did you see the health-care provider(s) mentioned above **for the same problem**? FILL-IN ALL THAT APPLY

- Less than 1 day before my visit
- Within 1 to 2 days before my visit
- Within 3 to 7 days before my visit
- Within 8 to 30 days before my visit
- More than 30 days before my visit

10. Before your Emergency Department visit, were you **already waiting** for any of the following? FILL-IN ALL THAT APPLY

- To see a specialist
- Major diagnostic tests (such as CT scan, MRI, X-ray, or Ultrasound)
- Minor diagnostic tests (blood or lab tests, etc.)
- Surgery
- Major non-surgical procedures (such as angioplasty, angiogram, or bowel scope)
- Specific treatments or therapies
- To see my personal family doctor
- Other:

YOUR VISIT

11. How crowded was the Emergency Department waiting room when you first arrived there?

- Extremely crowded
- Very crowded
- Somewhat crowded
- Not at all crowded
- I did not see the waiting room
- Don't know / Can't remember

12. Were you able to find a comfortable place to sit in the waiting area?

- Yes, I found a comfortable place to sit
- I found somewhere to sit, but it was uncomfortable
- No, I could not find a place to sit
- I did not want or need a place to sit
- I did not see the waiting room
- Don't know / Can't remember

13. During your visit to the Emergency Department, did you consider leaving before you had been seen and treated?

- Yes, definitely
- Yes, to some extent
- No

46810



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**."

14. 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?

- 0 to 15 minutes → **Go to 15**
- 16 to 30 minutes → **Go to 15**
- 31 to 60 minutes → **Go to 15**
- More than 60 minutes → **Go to 15**
- Don't know / Can't remember → **Go to 15**
- I did not see a triage nurse → **Go to 17**

15. 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
- Very good
- Good
- Fair
- Poor
- Very poor

16. When you first arrived at the Emergency Department, did you see the **triage nurse** before the **receptionist**?

- Yes
- No
- Don't know / Can't remember

WAITING

17. From the time you first arrived at the Emergency Department, how long did you wait BEFORE BEING EXAMINED by a doctor?

- I did not have to wait
- 1 to 30 minutes
- 31 to 60 minutes
- More than 1 hour but no more than 2 hours
- More than 2 hours but no more than 4 hours
- More than 4 hours
- Don't know / Can't remember
- I did not see a doctor

18. Were you told **how long** you would have to wait to be examined?

- Yes, but the wait was **shorter**
- 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

19. Were you told WHY YOU HAD TO WAIT to be examined?

- Yes
- No, but I would have liked an explanation
- No, but I did not need an explanation
- Don't know / Can't remember

20. Overall, did you think the order in which patients were seen was fair?

- Yes
- No
- Can't say / Don't know



46810



21. Did a member of staff check on you while you were waiting?
- Yes, definitely
 - Yes, but I would have liked them to check more often
 - No, but I would have liked them to check
 - No, but I did not mind
 - Don't know / Can't remember

22. **Overall**, how long did your visit to the Emergency Department last?
- Up to 1 hour
 - More than 1 hour but no more than 2 hours
 - More than 2 hours but no more than 4 hours
 - More than 4 hours but no more than 8 hours
 - More than 8 hours but no more than 12 hours
 - More than 12 hours but no more than 24 hours
 - More than 24 hours
 - Can't remember

DOCTORS AND NURSES

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

25. Did the doctors and nurses listen to what you had to say?
- Yes, definitely
 - Yes, to some extent
 - No

26. 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
 - Yes, to some extent
 - No
 - I did not need an explanation

27. If you had any anxieties or fears about your condition or treatment, did a doctor or nurse discuss them with you?
- Yes, completely
 - Yes, to some extent
 - No
 - I did not have anxieties or fears

28. Did you have confidence and trust in the doctors and nurses examining and treating you?
- Yes, definitely
 - Yes, to some extent
 - No

29. In your opinion, did the doctors and nurses in the Emergency Department know enough about your condition or treatment?
- All of them knew enough
 - Most of them knew enough
 - Only some of them knew enough
 - None of them knew enough
 - Don't know / Can't say



30. Did doctors or nurses talk in front of you as if you weren't there?

- Yes, definitely
- Yes, to some extent
- No

YOUR CARE AND TREATMENT

31. While you were in the Emergency Department, how much information about your condition or treatment was given to **you**?

- Not enough
- Right amount
- Too much
- I was not given any information about my treatment or condition

32. Were you given enough privacy when **discussing your condition or treatment**?

- Yes, definitely
- Yes, to some extent
- No

33. Were you given enough privacy when **being examined or treated**?

- Yes, definitely
- Yes, to some extent
- No

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

- Yes, always
- Yes, sometimes
- No, I could not find a member of staff to help me
- A member of staff was with me all the time
- I did not need attention

35. 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
- No

36. Were you involved as much as you wanted to be in decisions about your care and treatment?

- Yes, definitely
- Yes, to some extent
- No
- I was not well enough to be involved in decisions about my care

37. Did a family member or friend come with you or join you in the Emergency Department?

- Yes, someone came with me → **Go to 38**
- Yes, someone joined me there → **Go to 38**
- Yes, but he / she needed to leave → **Go to 38**
- No → **Go to 40**

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

- Not enough
- Right amount
- Too much
- My family did not want or need information
- 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.

39. Was your family member or friend **allowed** to join you in the treatment area when **you** wanted?

- Yes, definitely
- Yes, to some extent
- No
- I did not want them there

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

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

- Yes → **Go to 41**
- No → **Go to 42**

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

- Yes, definitely
- Yes, to some extent
- No
- Not sure / Can't remember
- I was told the test results would be given to me later
- I was never told the results of the test

PAIN

42. Were you in any pain while you were in the Emergency Department?

- Yes → **Go to 43**
- No → **Go to 47**

43. While you were in the Emergency Department, how much of the time were you in pain?

- All or most of the time
- Some of the time
- Occasionally

44. Did you request pain medicine?

- Yes → **Go to 45**
- No → **Go to 46**

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

- 0 minutes / Right away
- 1 to 5 minutes
- 6 to 10 minutes
- 11 to 15 minutes
- 16 to 30 minutes
- More than 30 minutes
- I asked for pain medicine but wasn't given any

46. Do you think the Emergency Department staff did everything they could to help control your pain?

- Yes, definitely
- Yes, to some extent
- No
- Can't say / Don't know

HOSPITAL ENVIRONMENT AND FACILITIES

47. In your opinion, how clean was the Emergency Department?

- Very clean
- Fairly clean
- Not very clean
- Not at all clean
- Can't say



46810



48. How clean were the toilets in the Emergency Department?

- Very clean
- Fairly clean
- Not very clean
- Not at all clean
- I did not use a toilet

49. While you were in the Emergency Department, did you feel bothered or threatened by other patients?

- Yes, definitely
- Yes, to some extent
- No

LEAVING THE EMERGENCY DEPARTMENT

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

- Admitted to the same hospital → **Go to 59**
- Transferred to a different hospital → **Go to 59**
- Went home → **Go to 51**
- Stayed with a relative or friend → **Go to 51**
- Other → **Go to 51**

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

51. Before you left the Emergency Department, were any **new** medications prescribed or ordered for you?

- Yes → **Go to 52**
- No → **Go to 55**

52. 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
- Yes, to some extent
- No
- I did not need an explanation

53. Did a member of staff explain to you **how to take** the new medications?

- Yes, completely
- Yes, to some extent
- No
- I did not need an explanation

54. Did a member of staff tell you about **medication side effects** to watch for?

- Yes, completely
- Yes, to some extent
- No
- I did not need this type of information

Information

55. Did a member of staff tell you when you could **resume your usual activities**, such as when to go back to school?

- Yes, definitely
- Yes, to some extent
- No
- I did not need this type of information

56. Did a member of staff tell you about what **danger signals** regarding your illness or treatment to watch for after you went home?

- Yes, completely
- Yes, to some extent
- No
- I did not need this type of information

57. 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?

- Yes, completely
- Yes, to some extent
- No
- Don't know / Don't remember

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58. 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?

- Yes No Not needed

OVERALL

59. Was the main reason you went to the Emergency Department dealt with to your satisfaction?

- Yes, completely
 Yes, to some extent
 No

60. 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
 No

61. Overall, how would you rate the care you received in the Emergency Department?

- Excellent
 Very good
 Good
 Fair
 Poor
 Very poor

62. If you needed to complain about the care you received, did you know how to do this?

- Yes
 No, but I would have liked to know
 I had no need to complain

ABOUT YOU

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

- Yes → **Go to 64**
 No → **Go to 65**

64. In the past 12 months, how many times in total have you visited your personal family doctor or your specialist FOR YOUR OWN CARE?

- 0 times
 1 time
 2 to 4 times
 5 to 10 times
 More than 10 times

65. In the past 12 months, how many times have you visited an Emergency Department FOR YOUR OWN CARE? (please include this visit)

- 0 times
 1 time
 2 to 4 times
 5 to 10 times
 More than 10 times

66. In the In the past 12 months, how many times have you visited a walk-in clinic, nursing station, or other clinic FOR YOUR OWN CARE?

- 0 times
 1 time
 2 to 4 times
 5 to 10 times
 More than 10 times

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67. In the past 12 months, how many times in total have you visited an Alternative Medicine provider such as a Chiropractor, Acupuncturist, Chinese Medicine provider, or Naturopath?

- 0 times
- 1 time
- 2 to 4 times
- 5 to 10 times
- More than 10 times

68. Overall, how would you rate your health during the **past 4 weeks**?

- Excellent
- Very good
- Good
- Fair
- Poor
- Very poor

69. Do you have a long-standing physical or mental health problem or disability?

- Yes → **Go to 70**
- No → **Go to 71**

70. Does this problem or disability affect your day-to-day activities?

- Yes, definitely
- Yes, to some extent
- No

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

- Yes
- No, but I am waiting for home-care services
- No

72. What language do you mainly speak at home?

English

Other

73. How was this questionnaire completed?

- By the child (the patient)
- By the child **with assistance** from a family member or parents
- By a family member or parent who was there, but from **the child's** point of view.

74. Do you have any additional comments, concerns or issues? If so, please explain.

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.

46810





<DATE>

Partnering to achieve world-class excellence in all dimensions of quality and safety across Alberta's health system.

<FIRST NAME> <LAST NAME>
< ADDRESS>
<CITY>, <PROV> <POSTAL CODE>
<SURVEY NUMBER>

Dear <Mr./Ms> <LAST NAME>,

We would like to invite you to take part in a survey about the quality of care in Alberta Emergency Departments. This confidential survey is intended to obtain your feedback about your most recent visit to <FACILITY> between January 26 and February 9, 2007. 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 <RHA>. 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 has made Emergency Department care a priority focus in 2006 and 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

**Postcard: Mailing 2
Coloured CARD Stock**



<FIRST NAME> <LAST NAME>
< ADDRESS>
<CITY>, <PROV> <POSTAL CODE>
<SURVEY NUMBER>

Recently the Health Quality Council of Alberta sent you a questionnaire. If you have already completed and returned it to us, please accept our sincere thanks. If not, please do so at your earliest convenience.

The survey was sent to only a small group of individuals so it is extremely important that your responses are included. The information collected from this study will assist emergency departments in Alberta to identify areas for improvement.

If, by some chance, you did not receive the questionnaire or it was misplaced, please call Nicholas Borodenko at 1-888-877-6744 and another package will be sent to you.

Sincerely,

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



Mailing 3

<DATE>

<FIRST NAME> <LAST NAME>
< ADDRESS>
<CITY>, <PROV> <POSTAL CODE>
<SURVEY NUMBER>

Dear <Mr./Ms.> <LAST NAME>,

We recently sent you a survey regarding the quality of care you received from your most recent visit to <FACILITY> between January 26 and February 9, 2007.

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



Mailing 1 - Pediatric

Partnering to achieve world-class excellence in all dimensions of quality and safety across Alberta's health system.

<DATE>

To the Parent or Guardian of:
<FIRST NAME> <LAST NAME>
<ADDRESS>
<CITY>, <PROV> <POSTAL CODE>
<SURVEY NUMBER>

Dear Parent or Guardian,

We would like to invite you to take part in a survey about the quality of care in Alberta Emergency Departments. This confidential survey is intended to obtain your feedback about your child's most recent visit to <FACILITY> between January 26 and February 9, 2007. 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 <RHA>. 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 to improve the quality of the care and services they provide. The HQCA has made Emergency Department care a priority focus in 2006 and 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. All 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 if you could take the time now to complete and return the 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 to ensure confidentiality, we have engaged the services of Prairie Research Associates (PRA) Inc. PRA is an independent, national research firm who 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 Nicolas Borodenko of PRA Inc. 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

How should we complete the survey?
If you feel the child is mature enough to answer the questions, they can complete the survey. You can provide assistance and support as needed.
If the child is not capable of answering the questions, the person who visited the emergency department with the child should complete the survey from the child's point of view.



**Postcard: Mailing 2
Coloured CARD Stock**

Partnering to achieve world-class excellence in all dimensions of quality and safety across Alberta's health system.



CANADA		POSTES
POST		CANADA
Postage paid		Port payé
Lettermail		Poste-lettres
1011071		

To the Parent or Guardian of:
<FIRST NAME> <LAST NAME>
<ADDRESS>
<CITY>, <PROV> <POSTAL CODE>
<Survey number>

Recently the Health Quality Council of Alberta sent you a questionnaire. If you have already completed and returned it to us, please accept our sincere thanks. If not, please do so at your earliest convenience.

The survey was sent to only a small group of individuals so it is extremely important that your responses are included. The information collected from this study will assist emergency departments in Alberta to identify areas for improvement.

If, by some chance, you did not receive the questionnaire or it was misplaced, please call Nicholas Borodenko of PRA at 1-888-877-6744 and another package will be sent to you.

Sincerely,

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

Letter template for emergency department
staff regarding the survey

MEMO TO: <staff of facility>

FROM: <Insert appropriate individual>

FOR USE WITH
LETTERHEAD

Emergency Department Patient Experience Survey: January to May 2007

Alberta emergency departments and regional health authorities are working in partnership with the Health Quality Council of Alberta (HQCA) to conduct a *Patient Experience Survey*. This survey will be conducted by mail (where possible) and will involve a **random** selection of patients attending this facility between January and May 2007.

To bring about improvements in the quality of care, it is vital to obtain feedback from patients and to take into account their views and priorities. This is a standardized provincial survey designed to allow facilities to compare their results and learn from each other so that best practice as it affects the patient experience can be shared. The survey process will examine various factors that impact the patient experience in emergency departments. We recognize that some of these factors are outside the control of the facility and that facilities in the province are very diverse.

In completing the questionnaire, patients are being asked about various aspects of their care including: arrival at hospital, quality of care, pain management, communication with doctors and nurses, information provided, tests and treatments, adequacy of involvement in their own care, hospital environment and facilities.

Participation is voluntary, and those patients who are selected will be given the opportunity to decline to be involved if they choose. The information provided by patients will be confidential and private; and will only be reported in aggregate. It will not be possible to identify individual patient responses.

The HQCA is an independent organization legislated under the *Regional Health Authorities Act* with a mandate to promote and improve health service quality and safety on a provincewide basis. The HQCA is also a custodian under the Health Information and Privacy Act. All information used and collected will be protected under the HIA. Posters have been placed in the facility to inform patients about the survey.

The results of this survey will be available in June 2007 and will be published on the [Health Quality Council of Alberta](http://www.hqca.ca) web site. Health regions will receive their own report directly.

For more information about the survey, please telephone Tim Cooke at **403-297-8276** or email tim.cooke@hqca.ca. For more information from a regional perspective, please contact your <Insert RHA Liaison or contact>.

We Need Your Help!

How was your emergency department experience?
We're interested in your feedback.

WHAT ARE WE DOING?

We're conducting a survey of patients who attend the emergency department of this facility between January and May 2007. *Patients will be asked about various aspects of their care in the facility.*

WHY ARE WE INTERESTED?

Your experience and feedback will help to improve the care we provide. *Your feedback will help shape how emergency department care is provided in the future.*

HOW WILL IT BE DONE?

We'll randomly select patients who will be sent a survey by regular mail. *Participation is completely voluntary. All answers are confidential.*

WHO IS DOING IT?

The Health Quality Council of Alberta in partnership with your health region and this facility. *The Health Quality Council of Alberta is an independent organization legislated under the Regional Health Authorities Act with a mandate to promote and improve health service quality and safety across the province.*

WHAT ABOUT PRIVACY?

Your health information and feedback is strictly governed by the Health Information and Privacy Act (HIA) of Alberta. *As a custodian under HIA, the Health Quality Council of Alberta will protect the privacy of your information.*

CAN YOU REFUSE?

If you are selected and don't want to participate, simply return the incomplete questionnaire. *A self-addressed, stamped envelope will be provided.*

DO YOU HAVE QUESTIONS?

If you have any questions about the survey, please contact Tim Cooke at 403-297-8276 or by e-mail at info@hqca.ca.

WHAT WILL HAPPEN TO THE RESULTS?

The full results of the survey will be posted on the Health Quality Council of Alberta website, www.hqca.ca, in summer 2007.



This is a Health Quality Council of Alberta initiative in partnership with: Alberta Health and Wellness, Aspen Regional Health, Calgary Health Region, Capital Health, Chinook Health Region, David Thompson Health Region, East Central Health, Northern Lights Health Region, Palliser Health Region and Peace Country Health.

March 2008

Emergency Department
Patient Experience Survey

Appendix C
Selection, Validation, and Testing of Survey Instruments

Appendix C: Selection, validation, and testing of survey instruments

1. Selection of core tool

a. Background

In 2006, the technical working group refined scope and objectives for the emergency department survey initiative. Considering these objectives, HQCA staff reviewed published and grey literature as well as survey tools and documentation submitted by Alberta health regions to identify potential survey instruments.

b. Criteria

These tools were subsequently evaluated by the working group in terms of:

- ▶ Origin and development history
- ▶ Validation studies and work (both published and unpublished)
- ▶ Associated publication (including peer reviewed, grey literature, and proprietary)
- ▶ Public domain status
- ▶ Current or historic use in Alberta and Canada
- ▶ Issue content relative to objectives

c. Evaluation of questionnaire tools

Upon identification of available survey instruments, the working group was provided with literature and materials for each tool, as well as a structured process to capture their feedback. The following survey instruments were evaluated:

i. Calgary Health Region Emergency Patient Experience Questionnaire

- ▶ Study looked at expectations of patients and public in attending an emergency department
- ▶ Survey tool based on set of 6 focus groups which identified a set of key issues for patients
- ▶ 2 peer reviewed publications, large regional report
- ▶ Key findings: expectations (other than expectation of wait time) unaffected by triage level; patient issues of concern largely focused on communication issues; patients relatively unconcerned about clinical / diagnostic quality of care
- ▶ While the survey tool used is not useful to measure “achievement of expectations”, the results of the study are quite useful to identify which issues are most relevant to Alberta patients; and potentially for development of question items not found in currently available emergency department survey tools
- ▶ Some context items in questionnaire may be useful for us
- ▶ Limitation is that study only involved patients from urban hospital emergency departments in Calgary

ii. Capital Health Emergency Patient Satisfaction Questionnaire

- ▶ Survey used SEQUIS question items (proprietary) along with some from the HQCA population level survey
- ▶ Survey was conducted by phone using Health Link on cost recovery basis
- ▶ 1 study and publication in peer reviewed journal
- ▶ Used in accreditation process – some useful items
- ▶ Limited rigorous validation (including SEQUIS items)

iii. Press-Ganey Emergency Department Questionnaire

- ▶ Proprietary survey tool from major US vendor
- ▶ Some testing in Canada; 1 corporate validation study
- ▶ 1 peer reviewed publication, 1 corporate publication
- ▶ Tool extensively used in US market (potential for benchmarks)
- ▶ Patient rating of quality approach to scaling (conservative approach to measurement relative to Picker)

iv. Healthcare Commission / Picker Europe (UK) Emergency Department Questionnaire

- ▶ Instrument based on patient experience report, but also utilizes more conventional ratings of quality.
- ▶ Extensive validation work done by Picker Europe as contracted to NHS and the Healthcare Commission (full documentation on web)¹
- ▶ Numerous related publications in peer reviewed journals on patient issues and measurement approach²
- ▶ Survey is Crown Copyright; preliminary inquiry indicates we could use without restrictions
- ▶ Extensively developed set of materials for conducting survey and reporting survey results
- ▶ Two iterations of survey completed on national scale
- ▶ Much of content and wording is directly applicable
- ▶ Some validation work required
- ▶ Emergency Department Experience similar to ours, with exception of formal direct transfer of patients from GPs for a significant number of patients

v. NRC-Picker (Ontario Hospital Association) Emergency Department Questionnaire

- ▶ Proprietary tool (but appears to have utilized the public domain Healthcare Commission material)
- ▶ Shares a common heritage with the Healthcare Commission tool (Picker survey approach and patient issues)
- ▶ Shares some peer reviewed publications with Healthcare Commission survey tool on key patient issues and measurement approach
- ▶ “Corporate” validation study in Canada (Ontario Hospital Association)
- ▶ Has been tested by the vendor in Canada working in conjunction with the OHA, BC Patient Satisfaction Steering Committee, and participating hospitals
- ▶ Comparative data available through vendor and potentially through sponsoring agencies in BC and Ontario (not explored yet)
- ▶ British Columbia has tested some supplemental content (Some based on Calgary “Expectations” survey)
- ▶ Use of tool requires use of NRC-Picker Canada as sole source

d. Selection of Healthcare Commission / Picker Europe instrument

Based on the criteria and available material, the working group selected the Healthcare Commission survey tool to be used as the core for our emergency department survey. The group felt this instrument was the most rigorously and extensively validated of all options, provided considerable support material, and appeared to be in the public domain.

e. Permission obtained from the Healthcare Commission

The British Healthcare Commission was contacted to request permission to use the survey instrument and seek further information regarding development, methods, and interest in collaborative activities. Written permission to use the survey instrument as our core set of questions was obtained from the Healthcare Commission. Subsequent draft and final material were provided to the Healthcare Commission, and several exchanges of technical material and feedback occurred during the course of the initiative.

2. Development of supplemental material

a. Generation of new items

The working group recognized that in order to examine the patient context of the emergency department visit, it would be necessary to develop and test new items. Most of the previously developed survey tools focused predominantly on patient experience or patient satisfaction items and did not explore the context of the visit. Some limited items were to be found in the Calgary Health Region Emergency Department Patient Experience Survey, but on the whole a significant number of items needed to be developed.

The working group and the HQCA staff drafted a long list of potential items which were refined and reduced through several iterations of group and individual feedback. A final draft set of items were prepared for subsequent testing and validation.

¹ Bullen, Magee and Reeves, “Development and pilot testing of the NHS Acute Trust Emergency Department Survey” Healthcare Commission, 2003.

² Jenkinson, Coulter, and Bruster. “The Picker Patient Experience Questionnaire: Development and Validation Using Data from Inpatient Surveys in Five Countries.” 2002, International Journal of Quality in Healthcare 14 (5): 353-8.

Because of the complexity of many of the “visit context” issues, it was felt that these new items had to be qualitatively validated using a technique called cognitive testing or cognitive interviewing. This technique is used to dissect how respondents understand and interpret questions, such that the wording, context, and instructions can be refined and clarified to reliably measure the intended issues.

The services of a PhD researcher with cognitive interviewing experience were obtained via contract to undertake cognitive testing of new questions as well as specific items from the core survey where it was felt the Canadian context might be different.

b. Cognitive testing of new and other key questions

The draft set of new items were further refined and a cognitive testing protocol and materials were developed for all items of interest (including several of the original items). Three iterative rounds of cognitive testing were undertaken, resulting in final recommendations regarding question retention, question wording, response options and question order. These results and item recommendations were previously reported as:

*Health Quality Council of Alberta emergency department survey project
Summary Report of Cognitive Item Testing - Rounds 1 and 2
G. Marcoux and C. Adair, University of Calgary and Humetrics Research
October 9, 2006 (46 pages)*

*Health Quality Council of Alberta emergency department survey project
Report Detail of Cognitive Item Testing - Rounds 1 and 2
G. Marcoux and C. Adair, University of Calgary and Humetrics Research
October 8, 2006 (97 pages)*

*Health Quality Council of Alberta emergency department survey project
Final Detailed Report of Cognitive Item Testing - Round 3
G. Marcoux and C. Adair, University of Calgary and Humetrics Research
October 26, 2006 (21 pages)*

These documents are available from the HQCA upon request.

3. Pilot testing of survey process

a. RFP pilot test phase

Based on the cognitive testing results, two consolidated pilot test questionnaires were formatted which included the new items as well as the core survey items from the Healthcare Commission survey tool. With a few exceptions to reflect the Canadian context, the core items were retained in their original order and format to maintain comparability potential with British data, and by agreement with the Healthcare Commission.

An RFP was posted to undertake a pilot test using the consolidated questionnaires. After a structured review of proposals, the contract was awarded to Prairie Research Associates who worked together with HQCA staff to finalize pilot study objectives, survey protocol and materials.

b. Pilot test survey

One pediatric and one adult hospital were recruited to participate in the pilot study, and the pilot study survey was conducted with 480 emergency department patients in December of 2006. The pilot study resulted in minor changes in the questionnaire tool, materials, and protocol. While the survey tool performed very well, the pilot study predicted it would be challenging to obtain response rates of 50% or higher. Several adjustments were made to the survey protocol to enhance response rates.

The pilot study used several versions of the survey and randomized study groups to evaluate alternative response choices and question structure for selected items where further definitive data regarding reliability was required. On the basis of results from these comparisons, further refinements were made to the questionnaire.

In addition, the pilot study evaluated the feasibility of including a 1 page family questionnaire to be returned with the other survey material. While this aspect of the pilot test showed that such a family survey was feasible, the randomized family survey study group demonstrated a lower response rate. Given the demonstrated challenges in obtaining the target 50% response rate, this option was not considered for the final emergency department survey.

The results of the pilot study were previously reported as:

*Health Quality Council of Alberta emergency department survey project
Report on the Alberta Emergency Department Survey Pilot
Prairie Research Associates, January 2007*

This document is available from the HQCA upon request.

March 2008

Emergency Department
Patient Experience Survey

Appendix D
Factor Analysis, Composites, and Reliability

Appendix D: Factor analysis, composites, and reliability

1. Factor analysis and structure of data

To examine the potential for composite variables, and to examine the structure of the data; correlation and factor analysis were conducted in SPSS on the data set as a whole, as well as urban rural and pediatric sub-sets. Factor analysis uses correlation or covariance between individual (related) variables to identify sets of variables that share common underlying “themes”. In this case, factor analysis was conducted primarily on original core survey items, or new items which target quality issues as opposed to the context of the visit.

The principle components analyses utilized a number of different approaches. Different assumptions regarding missing data were also tried with variable results, the most effective and logically consistent results coming from pair-wise deletion of missing data as opposed to list-wise deletion or substitution of the mean.

Different factor models were generated using various extraction criteria: The initial model was set to extract factors with eigenvalues over 1 and this resulted in a 10 factor solution with the final factor being comprised of a single variable. Four subsequent models forced the number of factors to be 8, 9, and 11. In addition, Varimax (Orthogonal) and Promax (oblique) rotation were applied (to “align” related variables in 3 dimensional space) with similar results.

The final model forced a 9 factor solution and used varimax (Orthogonal) rotation: this was essentially the same as the eigenvalue over 1 model without a 10th single item factor. Item membership is logically consistent, and similar in different study groups. A summary of these factor analysis results based on the rotated component matrix are presented in Table 1.

A relatively consistent and logical factor structure emerged regardless of intentional variation in methods, suggesting that the survey questions have good construct validity, cover a diversity of patient issues and represent nine discrete themes with very few stand alone items. This appears to reflect a high quality of validation work undertaken in the development of the original Healthcare Commission survey instrument. This built on common aspects of patient experience identified in other areas of healthcare delivery, but also included qualitative study of issues important to emergency department patients, evaluation of the relative importance of these issues to emergency department patients, and cognitive testing of question wording and response options.

2. Internal consistency reliability

Following factor analysis, those items which correlated strongly with a particular “factor” were analyzed to determine internal consistency reliability of each potential multi item scale using Cronbach’s Alpha¹, and standardized Cronbach’s Alpha.² As shown in Table 2, Alphas for tested scales are high in most cases and range from 0.90 for the staff care composite to 0.59 for discharge communication. In general, the higher the Alpha, the more reliable the measure; all composites other than the discharge communication composite achieve the “acceptable” Alpha of 0.70 suggested by Nunnally³.

Where Alphas were predicted to improve if a particular item was dropped, this item was generally dropped. This occurred for example in both the cleanliness and pain composites where dropping an item resulted in a significant improvement of the Alpha, suggesting that the dropped item did not fit optimally within the scale. Alphas are expected to drop if items within the scale reflect more than one underlying dimension. In the case of the staff care composite, three items were dropped without reducing the Alpha to improve the efficiency of the measure (three fewer items were required for an equally reliable measure). These 3 items dropped were selected in part on the basis of factor analysis results.

¹ Chronbach’s Alpha is a frequently used measure of internal consistency reliability for scales (or repeatability). Specifically, it is a measure of squared correlation between observed scores and true scores.

² Raw Alpha is based on item correlation, and Standardized Alpha is based on covariance.

³ Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). New York: McGraw-Hill.

Table 1. Principle components factor analysis - rotated component matrix

Variable Label	Staff Care	Meds	Wait and Crowding	Discharge Commun	Wait time commun	Environ.	Respect	Privacy	Pain
q24 Had enough time with doctor or nurse to discuss health concern	0.643	0.159	0.113	0.056	0.194	0.072	0.122	0.187	0.009
q25 Doctors and nurses listened	0.673	0.131	0.062	0.063	0.203	0.104	0.179	0.132	0.074
q26 Doctor or nurse explained your condition in understandable way	0.767	0.215	0.081	0.088	0.106	0.034	0.025	0.083	0.007
q27 Doctor or nurse discussed your anxieties or fears	0.680	0.259	0.057	0.185	0.189	0.044	0.009	0.119	0.089
q28 Had confidence and trust in doctors and nurses	0.660	0.151	0.060	0.118	0.196	0.161	0.158	0.075	0.118
q29 Doctors and nurses knew enough about condition or treatment	0.671	0.091	0.121	0.086	0.113	0.141	0.106	-0.009	0.093
q31NE Amount of information provided about condition or treatment	0.700	0.184	0.096	0.101	0.030	0.007	0.040	0.044	0.024
q36 Involved as much as you wanted in decisions	0.659	0.190	0.117	0.095	0.065	0.081	0.102	0.142	0.104
* Q38NE Amount of information given to family (dropped - reliability)	0.602	0.110	0.099	0.174	-0.004	-0.009	0.204	0.076	0.064
* q41 Staff explained the results of the tests (dropped- reliability)	0.490	0.350	0.053	0.063	0.091	0.007	0.102	0.087	-0.013
* q34 Able to get a member of staff to help you (dropped - reliability)	0.377	0.153	0.227	0.125	0.348	0.226	0.276	0.161	0.228
q52 Purpose of the medications explained in understandable way	0.346	0.658	0.017	-0.028	0.128	0.078	0.190	0.012	-0.056
q53 Told how to take the new medications	0.226	0.741	-0.003	0.015	0.153	0.083	0.143	0.036	-0.005
q54 Told about medication side effects to watch for	0.149	0.674	0.021	0.311	0.135	0.105	-0.078	0.055	0.042
q11 Crowding of Emergency Department Waiting Room (self report)	0.087	0.005	0.729	0.014	-0.012	0.095	0.051	0.092	-0.035
q12 Found a comfortable place to sit	0.184	0.036	0.472	0.039	0.011	0.255	0.164	0.042	0.132
q14 Wait time before speaking to triage nurse (self report)	0.023	0.119	0.513	0.072	0.257	-0.188	0.158	0.092	0.018
q17 Wait time before being examined by doctor (self report)	0.108	0.032	0.722	0.131	0.280	0.075	0.074	-0.006	0.159
q22 Total wait time for visit to emergency department (self report)	0.167	0.024	0.727	-0.044	0.000	0.158	-0.144	-0.009	-0.026
q55 Told when could resume usual activities	0.317	0.587	0.125	0.274	-0.010	0.089	-0.047	0.070	0.118
q56 Told about danger signals to watch for after you went home	0.360	0.638	0.081	0.353	0.046	0.024	-0.024	0.076	0.149
q57 Told what to do if worried about condition or treatment after leaving	0.257	0.576	0.062	0.400	0.045	-0.008	0.005	0.084	0.148
q58 a Staff asked how patient getting home	0.121	0.159	0.030	0.798	0.200	0.088	0.076	0.011	-0.002
q58 b Staff asked whether someone at home to assist	0.158	0.159	0.056	0.813	0.170	0.074	0.038	0.042	0.064
q58 c Staff asked about other concerns about your safety and comfort at home	0.140	0.174	0.054	0.768	0.090	0.047	-0.034	0.034	0.042
q58 d Staff asked if patient knew what to do for follow-up care	0.343	0.379	0.092	0.487	0.074	0.038	0.100	0.038	0.084
q18 Told how long had to wait to be examined	0.113	0.080	0.151	0.150	0.692	0.000	-0.301	0.060	-0.020
q19 Told why had to wait to be examined	0.274	0.146	0.202	0.165	0.709	0.095	-0.023	0.035	0.053
q21 Staff checked on you while waiting	0.223	0.109	0.355	0.201	0.535	0.133	0.280	0.056	0.201
q23 Doctors and nurses introduced themselves	0.254	0.189	-0.149	0.201	0.460	0.063	0.164	0.141	0.038
q47 Cleanliness of Emergency Department	0.144	0.125	0.158	0.085	0.124	0.796	0.048	0.092	0.036
q48 Cleanliness of Emergency Department toilets	0.152	0.110	0.151	0.100	0.127	0.803	0.059	0.102	0.053
* q49 Felt bothered or threatened by other patients (dropped - reliability)	0.025	0.016	0.286	0.047	-0.061	0.295	0.183	0.157	-0.049
q13 Considered leaving before being seen and treated	0.150	0.054	0.442	0.088	0.262	0.060	0.429	-0.025	0.110
q15 Courtesy of triage nurse	0.298	0.085	0.126	0.123	0.393	0.242	0.325	0.055	0.066
q20 Fairness of order in which patients were seen	0.223	0.054	0.356	0.028	0.324	0.179	0.416	-0.023	0.200
q30 Doctors and nurses talked in front (of patient) as if not there	0.167	0.073	0.029	-0.041	-0.032	0.079	0.543	0.107	-0.058
q35 Staff provided conflicting information	0.347	0.000	0.150	-0.003	-0.025	0.174	0.429	-0.040	0.052
q39 Family member or friend was allowed to join in treatment area	0.132	0.019	0.041	0.108	-0.041	-0.117	0.427	0.294	0.005
q32 Given enough privacy when discussing condition or treatment	0.277	0.119	0.105	0.044	0.104	0.148	0.115	0.783	0.067
q33 Given enough privacy when being examined	0.243	0.083	0.086	0.037	0.116	0.157	0.119	0.800	0.060
* q43 How much of the time in pain (dropped - reliability)	0.043	0.002	0.015	0.002	-0.020	-0.023	-0.096	0.043	0.800
q45 Wait time to get pain medicine (self reported)	0.289	0.191	0.161	0.164	0.206	0.110	0.177	0.054	0.545
q46 Emergency Department staff did everything they could to help control pain	0.372	0.227	0.152	0.198	0.258	0.144	0.247	0.075	0.484

Note: Number of factors forced to 9, however results using MlnEigen = 1 criterion are virtually identical with additional 10th factor loading on single variable

Varimax rotation used to generate the table above

Items preceded by * were dropped from the composite to improve reliability

Table 2. Internal consistency reliability and facility level reliability (GRIP), by composite

Var Label	Composite	Factor Coeff.	Mean Score	Scale Mean if Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	Scale Alpha	Stand. Scale Alpha	Item Hospital Level Rel. GRIP	Compos. Hospital Level Rel. GRIP
q24 Had enough time with doctor or nurse to discuss health concern	Fxcare	0.64	82.25	556.52	27257.20	0.68	0.52	0.89	0.90	0.90	0.91	
q25 Doctors and nurses listened	Fxcare	0.67	86.33	552.44	28002.93	0.72	0.56	0.89	0.90	0.90	0.866	
q26 Doctor or nurse explained your condition in understandable way	Fxcare	0.77	80.25	558.52	26345.39	0.74	0.56	0.88	0.90	0.90	0.871	
q27 Doctor or nurse discussed your anxieties or fears	Fxcare	0.68	68.73	570.04	25094.26	0.69	0.49	0.89	0.90	0.90	0.866	0.93
q28 Had confidence and trust in doctors and nurses	Fxcare	0.66	82.05	556.72	26752.34	0.72	0.53	0.88	0.90	0.90	0.890	
q29 Doctors and nurses knew enough about condition or treatment	Fxcare	0.67	76.14	562.63	27339.84	0.65	0.43	0.89	0.90	0.90	0.860	
q31NE Amount of information provided about condition or treatment	Fxcare	0.70	86.31	552.46	28168.62	0.65	0.43	0.89	0.90	0.90	0.812	
q36 Involved as much as you wanted in decisions	Fxcare	0.66	76.71	562.06	26340.10	0.67	0.45	0.89	0.90	0.90	0.874	
q11 Crowding of Emergency Department Waiting Room (self report)	Fxwait	0.73	73.15	290.77	5657.79	0.53	0.29	0.66	0.73	0.73	0.984	
q12 Found a comfortable place to sit	Fxwait	0.47	90.39	273.54	7096.18	0.38	0.17	0.72	0.73	0.73	0.931	
q14 Wait time before speaking to triage nurse (self report)	Fxwait	0.51	80.78	283.15	6396.59	0.37	0.17	0.73	0.73	0.73	0.963	0.99
q17 Wait time before being examined by doctor (self report)	Fxwait	0.72	52.11	5628.24	6.64	0.48	0.48	0.62	0.73	0.73	0.985	
q22 Total wait time for visit to emergency department (self report)	Fxwait	0.73	67.49	296.43	6154.69	0.54	0.41	0.66	0.73	0.73	0.993	
q54 Told about medication side effects to watch for	Fxmeds	0.67	86.48	128.43	4624.41	0.58	0.42	0.62	0.72	0.75	0.712	0.81
q53 Told how to take the new medications	Fxmeds	0.74	80.74	134.18	3778.75	0.63	0.47	0.51	0.72	0.75	0.779	
q52 Purpose of the medications explained in understandable way	Fxmeds	0.66	47.69	167.23	3109.39	0.48	0.23	0.77	0.72	0.75	0.717	
q55 Told when could resume usual activities	Fxdisadd	0.27	42.62	228.09	43500.19	0.57	0.41	0.86	0.87	0.87	0.769	
q57 Told what to do if worried about condition or treatment after leaving	Fxdisadd	0.40	44.69	226.02	41601.78	0.70	0.63	0.84	0.87	0.87	0.840	
q56 Told about danger signals to watch for after you went home	Fxdisadd	0.35	48.18	222.54	41769.22	0.68	0.59	0.84	0.87	0.87	0.849	
q58_a Staff asked how patient getting home	Fxdisadd	0.80	32.32	238.39	41728.70	0.63	0.56	0.85	0.87	0.87	0.832	0.87
q58_b Staff asked whether someone at home to assist	Fxdisadd	0.81	31.80	238.91	41117.70	0.67	0.60	0.84	0.87	0.87	0.756	
q58_c Staff asked about other concerns re. safety and comfort at home	Fxdisadd	0.77	21.29	249.43	43356.99	0.64	0.47	0.85	0.87	0.87	0.552	
q58_d Staff asked if patient knew what to do for follow-up care	Fxdisadd	0.49	49.81	220.90	41118.27	0.61	0.38	0.85	0.87	0.87	0.755	
q18 Told how long had to wait to be examined	Fxwtcom	0.69	42.86	136.97	4014.18	0.59	0.38	0.62	0.73	0.78	0.925	
q19 Told why had to wait to be examined	Fxwtcom	0.71	77.67	102.17	6118.88	0.65	0.43	0.65	0.73	0.78	0.917	0.95
q21 Staff checked on you while waiting	Fxwtcom	0.54	59.31	120.53	3888.62	0.56	0.34	0.67	0.73	0.78	0.949	
q47 Cleanliness of Emergency Department	Fxclean	0.80	85.26	177.94	1017.14	0.59	0.43	0.33	0.78	0.79	0.974	
q48 Cleanliness of Emergency Department toilets	Fxclean	0.80	83.01	180.19	896.31	0.56	0.43	0.35	0.78	0.79	0.955	0.98
q49 Felt bothered or threatened by other patients	Fxclean	0.29	94.93	168.27	1539.28	0.23	0.05	0.78	drop	drop	0.712	
q15 Courtesy of triage nurse	Fxresp	0.33	81.54	357.69	4795.54	0.44	0.21	0.49	0.58	0.59	0.886	
q20 Fairness of order in which patients were seen	Fxresp	0.42	87.77	351.46	3927.96	0.40	0.21	0.50	0.58	0.59	0.921	
q30 Doctors and nurses talked in front (of patient) as if not there	Fxresp	0.43	88.93	350.30	4855.83	0.29	0.10	0.56	0.58	0.59	0.742	0.92
q35 Staff provided conflicting information	Fxresp	0.43	89.14	350.09	4495.62	0.40	0.17	0.50	0.58	0.59	0.815	
q39 Family member or friend was allowed to join in treatment area	Fxresp	0.43	91.85	347.38	5353.49	0.21	0.05	0.59	0.58	0.59	0.870	
q32 Given enough privacy when discussing condition or treatment	Fxpriv	0.78	83.87	181.44	1285.29	0.54	0.42	0.29	0.77	0.78	0.926	0.93
q33 Given enough privacy when being examined	Fxpriv	0.80	89.86	175.46	1603.84	0.56	0.42	0.31	0.77	0.78	0.895	
q43 How much of the time in pain	Fxpain	0.48	12.02	120.13	4395.77	0.21	0.04	0.78	drop	drop	0.526	0.99
q45 Wait time to get pain medicine (self reported)	Fxpain	0.80	51.90	80.24	2583.36	0.60	0.42	0.29	0.78	0.78	0.806	
q46 Emergency Department staff did everything to help control pain	Fxpain	0.54	68.23	63.92	2097.29	0.58	0.42	0.31	0.78	0.78	0.806	

GRIP: General Reliability and Intra-Class Correlation Program (in SAS), developed by Hays, R. D., Wang, E., & Sonksen, M. (1995, September)

3. Site level reliability (GRIP Macro)

Reliability can also be assessed in terms of how well an item or composite measure discriminates between performance levels at different facilities. In health care survey literature, this is often described as “hospital level reliability”. The General Reliability and Intra-class Correlation Program (GRIP)⁴ was developed to assess hospital level reliability by comparing the “between site” variance; to the “within site” variance. “Within site” variance might be attributable to factors such as patient characteristics or differences between physicians, rather than performance at the site level. Assessing the capacity of a measure to discriminate between facilities is important if comparisons are intended among facilities.

We used the GRIP macro⁵ to estimate site level reliability both for individual items as well as composite items⁶. These results are also presented in Table 2. Facility level reliability is high (over 0.90) for all composites except medication communication (0.81) and discharge communication (0.87).

4. Robustness of composites considering alternative methods of calculation

It has been recognized that the method of calculating composite scores is sensitive to systematically missing data and different scale types of individual items; where such items contribute to a composite. Within a composite, scores of individual items and direction of scoring should ideally be standardized. Consumer Assessment of Health Plans Surveys (CAHPS) surveys developed by The Agency for Healthcare Research and Quality (AHRQ) often collapses scales to 3 data points, effectively making all scales equivalent in their scoring.⁷ For the British emergency department survey and instrument, a standardized scoring scheme was employed by the Healthcare Commission; we have adopted this scoring scheme for our data.

The remaining issue is essentially how to deal with systematically missing data. Survey questions often require screening items such that the question is only asked of individuals for whom the issue is relevant. Even without screeners, some items may be more likely to generate a “don’t know” or “not relevant” or “not needed” response. Where such items contribute to a composite score – the contribution of all items within the composite may not be equivalent. This is more of a concern if the number of missing responses varies between sites. If this occurs, differences in composite scores among sites may be influenced inappropriately by missing data patterns.

Although methods exist to “impute” missing data - with values predicted by similar cases, we have elected not to use this approach. Given the primary issue is systematically missing data as a consequence of screeners or not relevant choice options; we have chosen (for example) not to generate a score for “help with pain” for an individual who did not have pain, based on other similar individuals who did have pain.

Alternative methods to calculate composite scores may reduce a disproportionate contribution from items that have a higher proportion of valid data than other items. The method used by the British Healthcare Commission in their emergency department survey essentially averages the score for a specific item across all respondents with non-missing data, and then calculates the composite score based on these average scores for all contributing items.⁸ Because this generates a facility level composite score but not a respondent level composite score; there are some limitations for patient level multivariate analysis.

Other approaches that could be applied independently or in combination with the above, weight the contribution of each item within a composite according to the proportion of valid (non-missing) data. Such weighting can be based on pooled data from all facilities, or on data at the facility level. Such methods of computing composite scores are provided as an option for CAHPS health plan surveys⁷.

⁴ Hays, R. D. Wang, E., & Sonksen, M; General Reliability and Intraclass Correlation Program (GRIP). (1995, September). Paper presented at the 3rd Annual Conference of Western Users of SAS Software, Long Beach, California.

⁵ SAS code provided on Dr. Ron. Hays Website: http://gim.med.ucla.edu/FacultyPages/Hays/UTILS/grip_feb18-04.sas

⁶ Composites were computed at the patient level using a simple average score of constituent items; and using the NHS standardized scoring scheme. Other methods of calculating composites are compared in section 4 of this appendix document.

⁷ “T5 Instructions for Analyzing CAHPS Data: Using the CAHPS Analysis Program Version 3.0; CAHPS Survey and Reporting Kit 2005. AHRQ.

⁸ This is a simplification of the method which also incorporates direct standardization and estimation of random effects.

In considering the approach, four different methods of calculating composites were evaluated in order to: a) determine which composites were the least sensitive to differences in calculation method in terms of site level results; and b) to select an appropriate method considering both reliability and our reporting objectives.

Method #1: The average score is calculated across all non-missing question responses in the composite for each respondent. Average composite values were then derived for each facility. This is the simplest method of calculating the composites, but is sensitive to systematically missing data and some items count more than others. It has the advantage of producing a composite score for each respondent such that it is possible to use record level composites for various multivariate analyses.

Method #2: The averages for each individual item in the composite are calculated by facility; then facility score for the composite is calculated by first multiplying the average item scores by the overall proportion of valid responses within the composite, and then summing these fractional scores. This is a weighted average of the questions in that the contribution of each question to the composite average is determined by the facility's proportion of valid responses for each question. A respondent level composite score is not possible using this method.

Method #3: As above, the averages for each question in the composite are calculated by facility. These averages are then weighted according to the pooled (all facilities) proportion of valid responses for each item, and then summed to generate the facility composite score. This is a weighted average of the questions in that the contribution of each question to the composite average is determined by the proportion of valid responses for each question from the entire data set. This differs from method #2 in that the weighting of each specific item when deriving the composite is the same for all facilities and is based on valid responses for the entire data set rather than the facility data sets. A respondent level composite score is not possible using this method.

Method #4: The averages for each separate item in the composite are calculated by facility. Then these facility level *item* scores are averaged to calculate the composite score for the facility. This is an un-weighted average of the questions in that each question counts the same in deriving the composite, regardless of the proportion of missing data. This method is potentially less sensitive to systematically missing data for individual items than is Method #1; however a respondent level composite score is again not possible using this method.

Composite	Method #2	Method #3	Method #4	Average
Staff care	99.84%	99.79%	99.73%	99.79%
Respect	99.74%	99.62%	99.12%	99.49%
Wait time	99.89%	99.67%	99.62%	99.73%
Privacy	99.97%	99.97%	99.97%	99.97%
Cleanliness	99.84%	99.78%	99.54%	99.72%
Medication communication	99.22%	98.41%	98.22%	98.62%
Discharge communication	97.69%	97.17%	95.65%	96.84%
Pain	98.34%	96.51%	87.09%	93.98%
Wait time communication	98.01%	92.78%	90.90%	93.89%

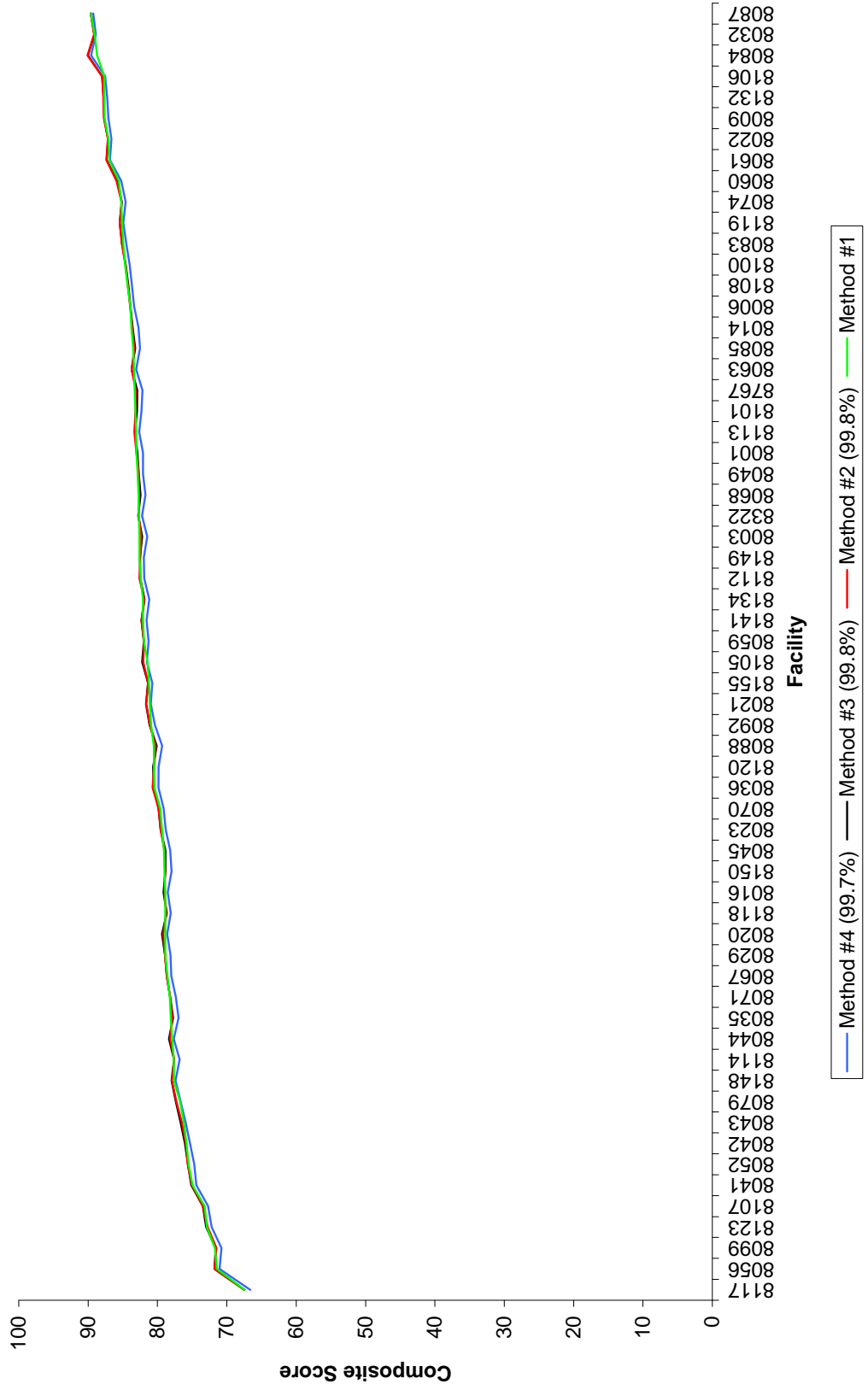
Table 3 shows the Pearson correlation of Methods 2, 3, and 4 (facility level methods) with Method 1 (a simple average score). For five of the nine composites: Staff Care, Respect, Wait Time, Privacy, and Cleanliness; the correlation with the simplest method is extremely high approaching 100%. As comparative graphs for these composites show (see figures 1 through 5) the different methods have negligible impact on the facility composite scores; providing further evidence of the stability and reliability of these measures.

The stability of the composite score regardless of calculation method decreases for the *Medication Communication Composite*, although the Pearson correlation is still high (98.62%). As shown in Figures 7, 8 and 9; site level variation between methods becomes more important, suggesting that the *Discharge Communication Composite*, the *Pain Composite*, and the *Wait Time Communication Composite* may be less reliable at the facility level as a consequence of systematically missing data. It should be recognized that these particular themes or issues may be more relevant and important to some patients than others; and that this may vary between facilities. While alternative methods of calculation may be better suited to these particular themes, we are cautious that changing the impact of items not relevant to all respondents – yields different performance results.

In calculating composites, we have therefore chosen to use the *simplest* method (Method #1) because there is negligible difference between methods for the three most important composites (Staff Care, Respect, and Wait Time). Furthermore, Method #1 allows us to generate patient level composite scores, permitting more granular multivariate analysis.

These results suggest that within the composite theme of *Medication Communication*; and especially within the themes of *Discharge Communication*, *Pain*, and *Wait Time Communication*: relatively more attention should focus on the constituent item scores rather than the composite scores – at least with respect to relative performance between sites.

Figure 1. Care Composite: alternative methods of calculation



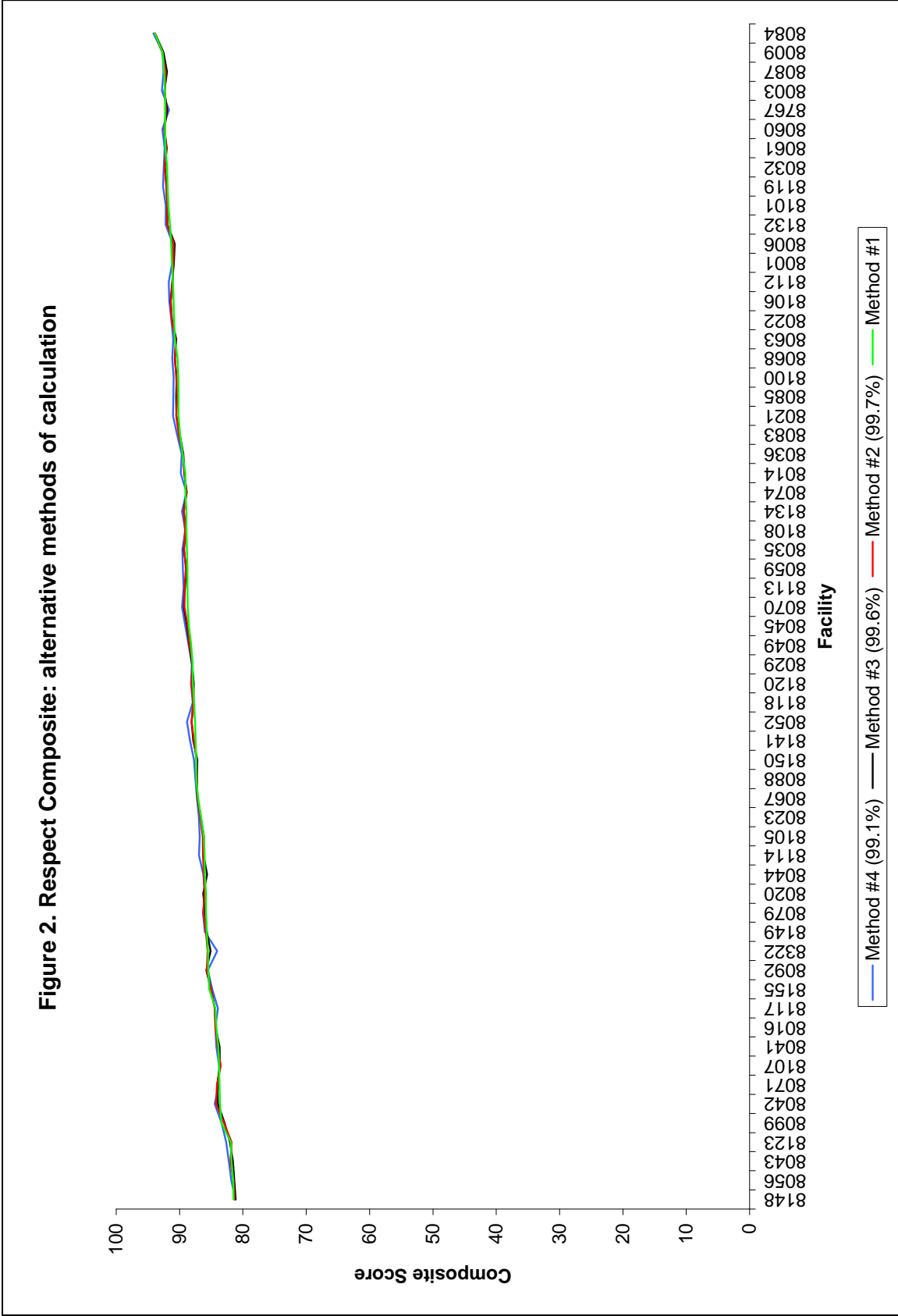


Figure 3. Wait Time Composite: alternative methods of calculation

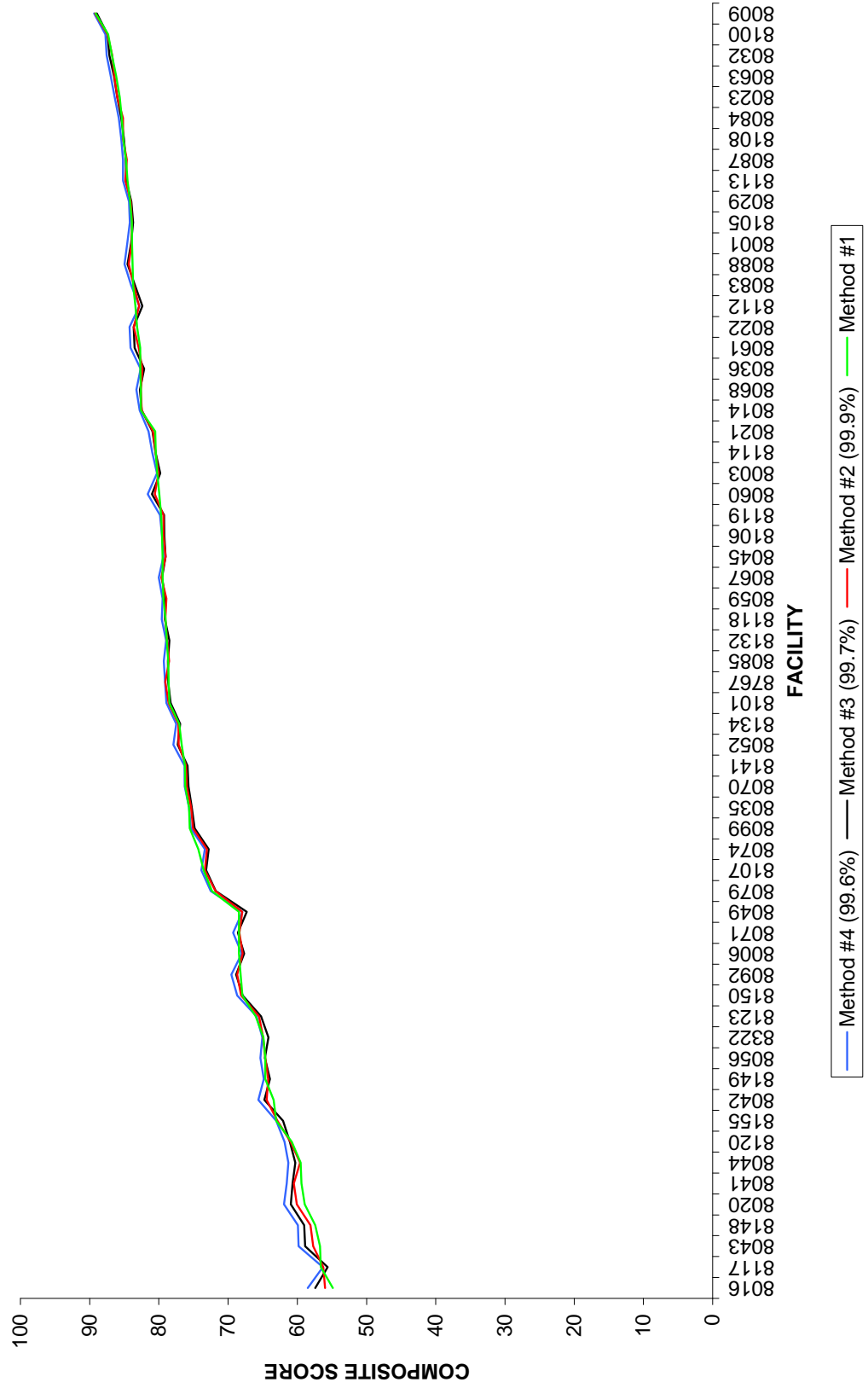


Figure 4. Privacy Composite: alternative methods of calculation



Figure 5. Cleanliness Composite: alternative methods of calculation

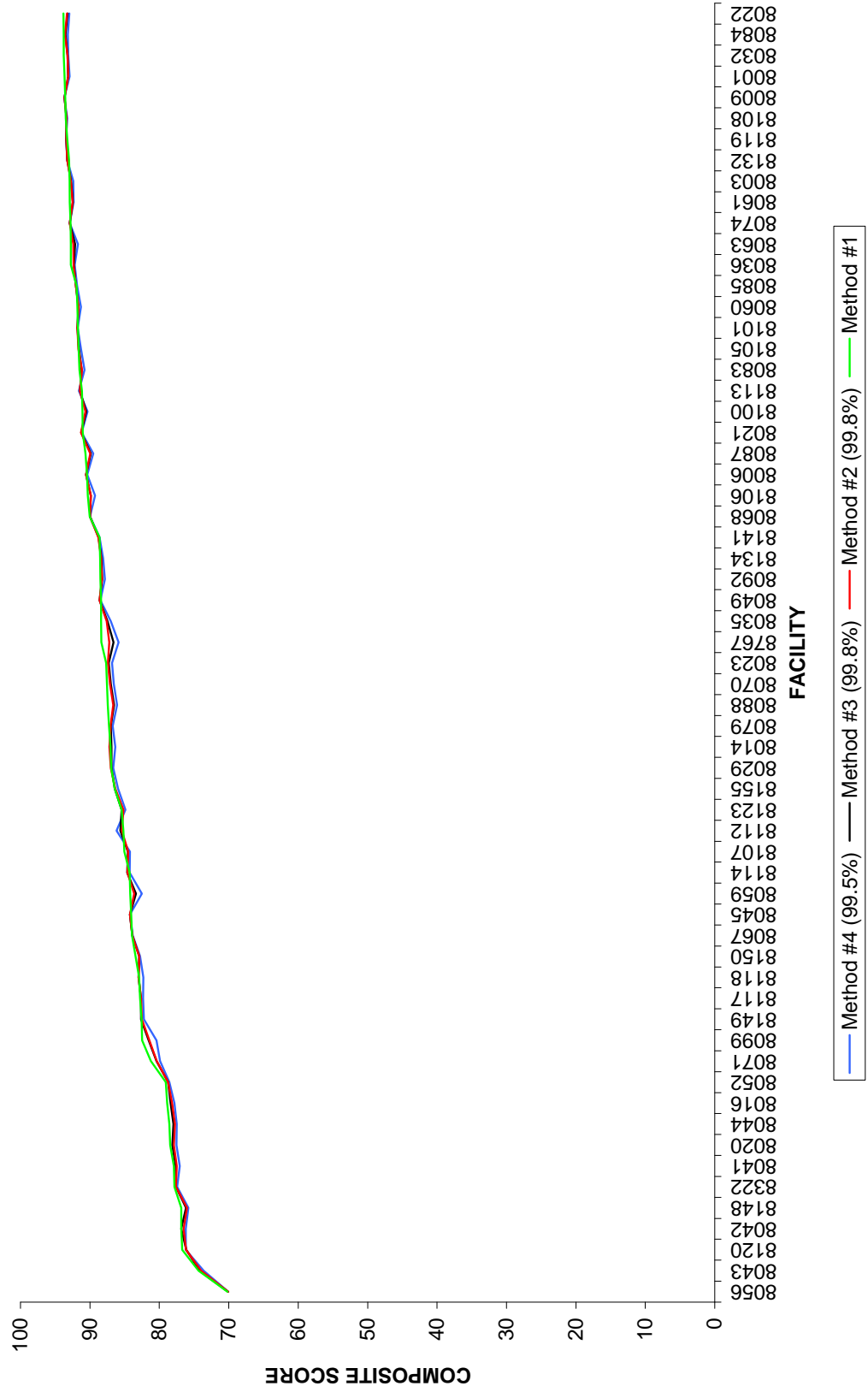


Figure 6. Medication Composite: alternative methods of calculation

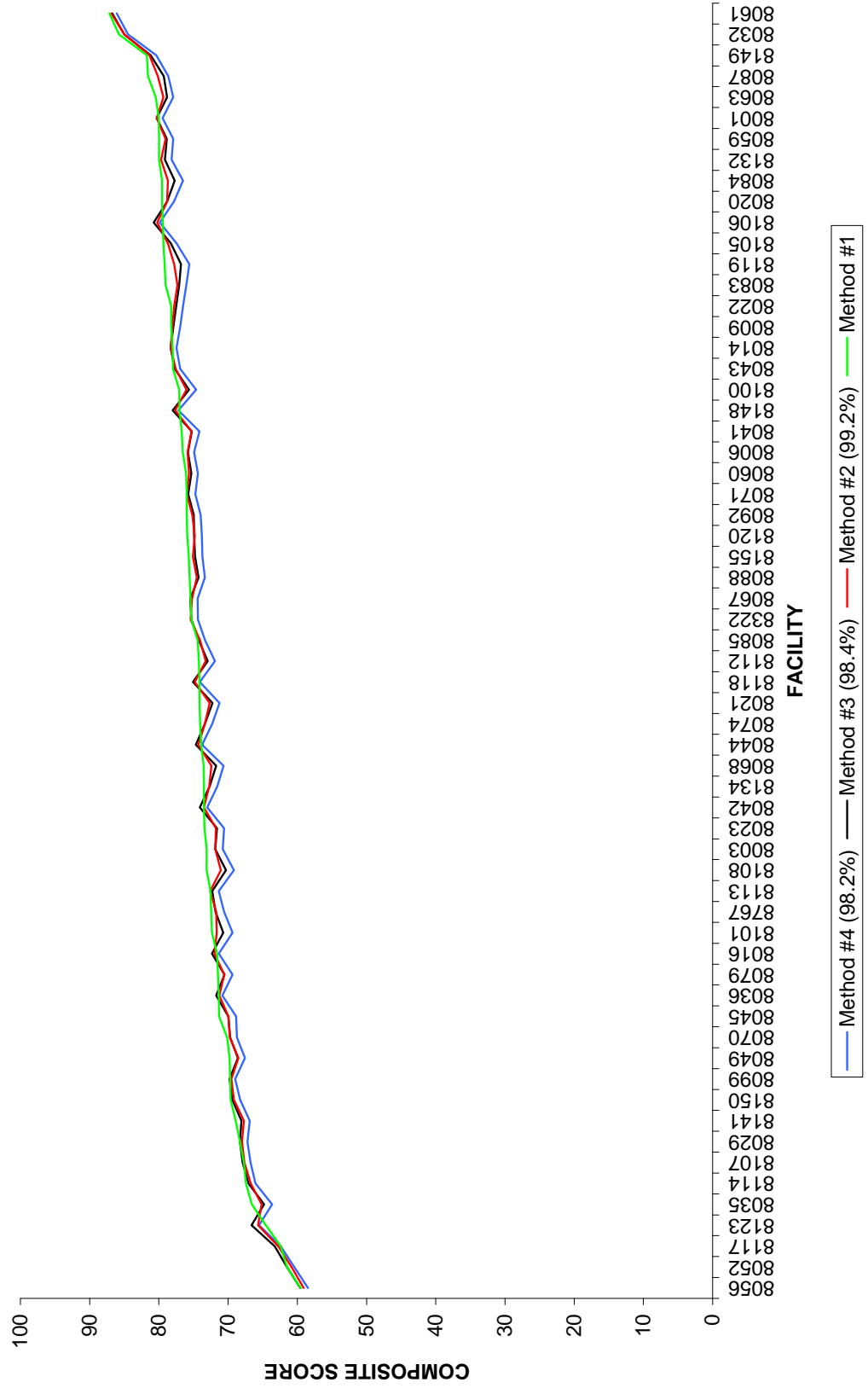


Figure 7. Discharge Information Composite: alternative methods of calculation

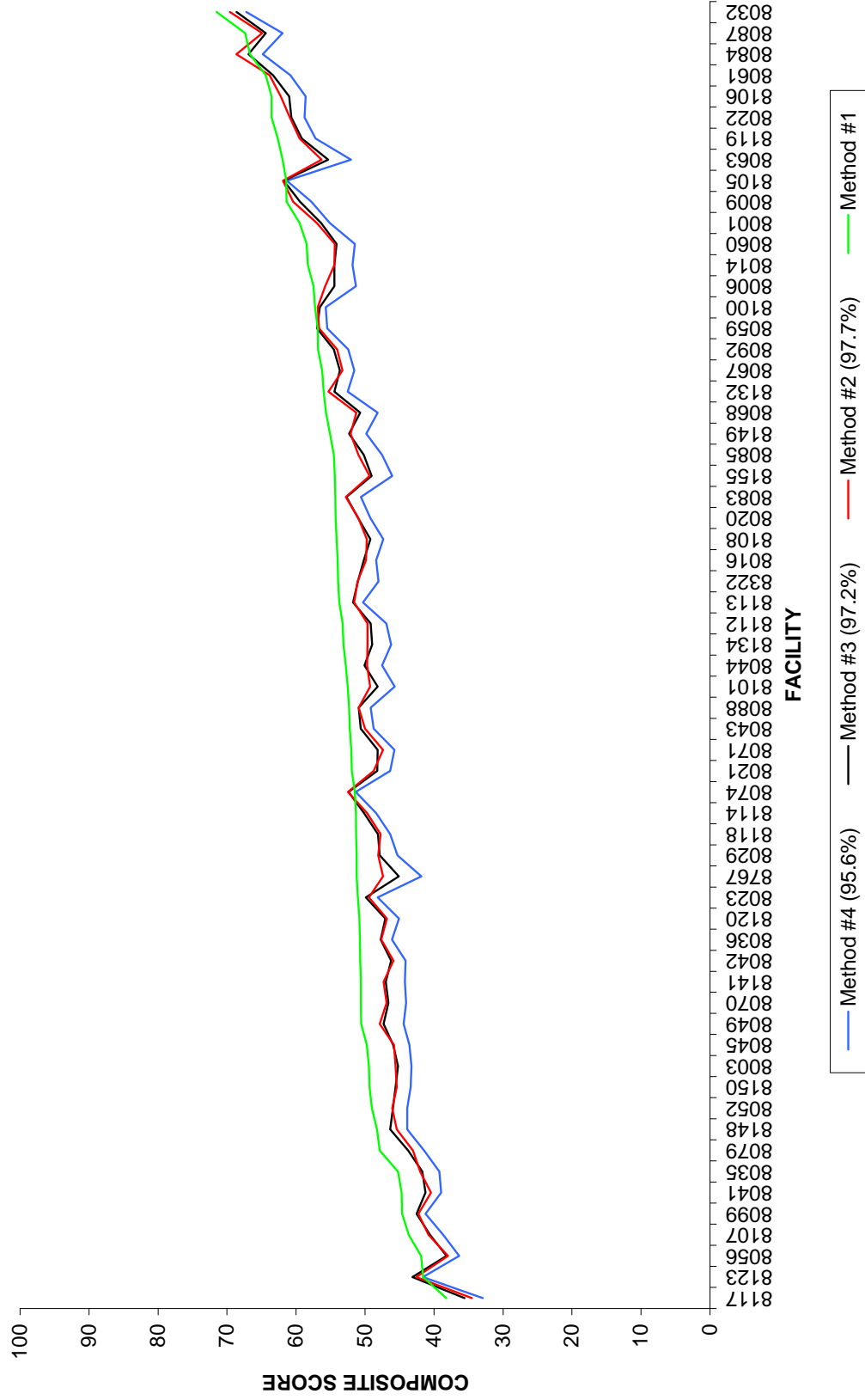


Figure 8. Pain Composite: alternative methods of calculation

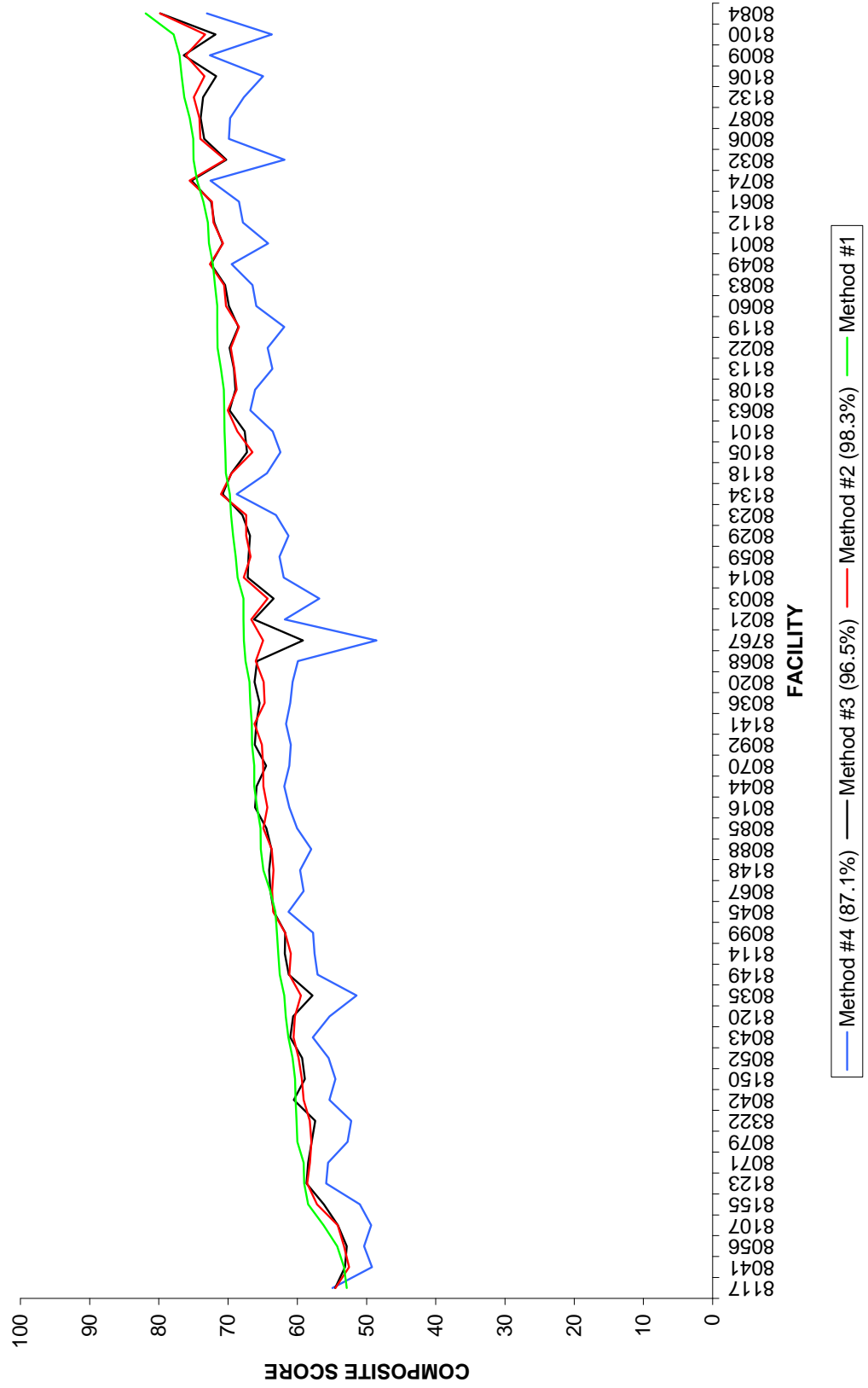
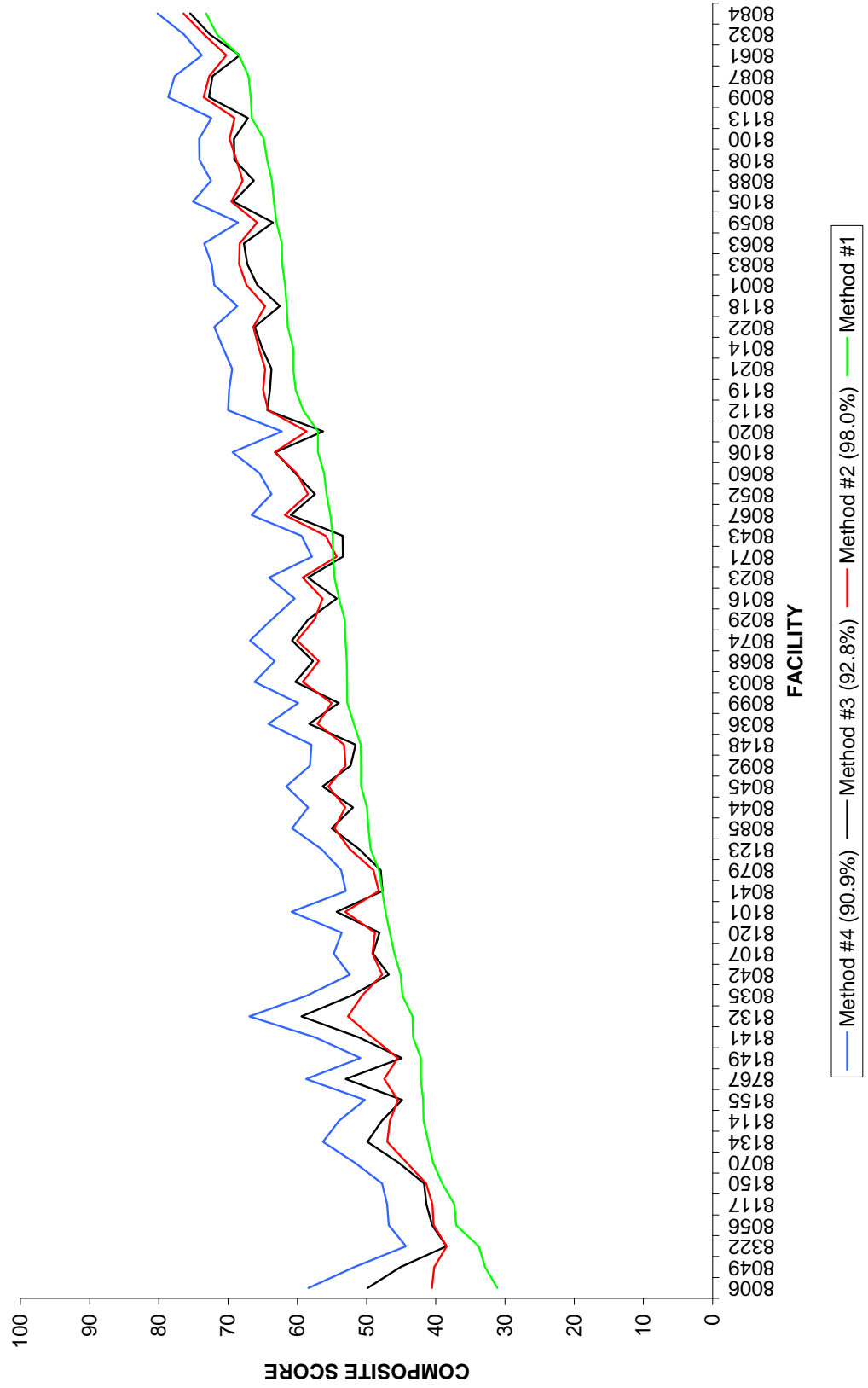


Figure 9. Wait time Communication Composite: alternative methods of calculation



5. Regressions on overall rating of care: Further possible evidence of construct and content validity

As mentioned in the provincial level report, the objective of this multivariate analysis was to estimate the effect of both confounding variables, and other quality variables on the overall rating (Question 61). 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 61) as an outcome variable; with coding according to the standardized (0-100) scoring scheme developed for the British Healthcare Commission survey. The essential elements of alternative models were very similar. The final models account for a relatively high proportion (~ 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 are accounted for.

From the perspective of construct validity, we find that both composites and specific individual items strongly predict the overall rating of quality. The high R^2 for the models (proportion of variance explained) suggests that the survey tool captures many of the variables that impact the overall rating of quality. This presumes that the overall rating of quality (Question 61) is a good global outcome measure. Question 61 does have among the highest site level reliability scores (0.94) as calculated by the General Reliability and Intra-class Correlation Program (GRIP).

March 2008

Emergency Department
Patient Experience Survey

Appendix E
Survey Methodology and Field Result Details

Appendix E: Survey methodology and field result details

1.0 Sample design and selection

The Health Quality Council of Alberta (HQCA) provided Prairie Research Associates (PRA) with a sample of individuals who attended an emergency department (ED) in one of 66 Alberta health care facilities in 2007 between either January 26 and February 9 or February 10 and February 23.

Previous analysis of Alberta data has shown variation in emergency department use patterns according to day of week and time of day. Hence, the sample period covers exactly 4 weeks and all times of day. Given random selection of patients, this ensures that daily and weekly patterns will be representative.

Collecting information from patients over a relatively long four week period both permitted inclusion of lower volume sites, and reduced the possibility that an individual facilities data might be skewed by focal events such as a major outbreak of illness or a major accident.

A cluster sample design was used to ensure a sufficient sample size was achieved for generation of reliable facility level results in lower volume sites. This means that a higher *proportion* of patients are selected in small sites, and when reporting results that combine facilities, sample weights must be applied to correct for the different probability of patient selection between sites.

Of 108 provincial facilities, 40 sites were excluded where historical patient volumes (2005-2006 data) predicted a 4 week sample size of less than 350 completed surveys, assuming a 50% response rate. Three sites were also excluded because of data system access limitations. In contrast, 3 facilities were included despite predicted small sample sizes because the historical case mix of patients was high, indicating a greater proportion of higher acuity “emergent” patients as opposed to possible primary care issues.

To achieve the desired sample size, patients were selected randomly from the entire patient list from the sample period. A random unique identifier was generated for each patient, and patient lists were sorted by this identifier. Patients were selected from these randomized lists until target sample sizes were reached, or until all eligible patients had been selected. Where patients were excluded for reasons described below, subsequent “replacement” of additional randomly selected patients was used to reach target sample sizes. In the smallest sites, all available patients were included in the sample.

Adult patient samples (generated for 65 facilities) excluded patients below the age of 16. While some patients under this age would be capable of answering a questionnaire, confidentiality issues versus parental involvement, and survey validation concerns suggested that younger patients be excluded. This also follows the age parameters used in the British survey of emergency department patients using the same core questionnaire. Although no upper age limit was set, we acknowledge that some elderly patients may not have been capable of responding due to cognitive limitations or other issues.

Pediatric samples were drawn from the four emergency departments in the province where patient volumes were expected to generate a reliable sample size. Pediatric family surveys were sent to parents of children 12 years of age or younger. The expert working group determined that involvement of parents in completing the survey was unlikely to compromise confidentiality for children aged 12 years or younger.

Where possible, parents were asked to assist older children to complete the survey from the child’s perspective. Where children were too young to be involved, adults were requested to complete the survey themselves – again from the perspective of the child. This process was tested in the pilot study and was found to be effective and reliable.

The following exclusions to participation were applied for both adult and pediatric surveys:

- Death recorded in ED record
- Presenting complaint involving sexual abuse or assault
- Involvement of Social Services (children)

- Section 10 “Committed” with violence or threat of suicide
- Patient left without being seen or prior to treatment
- No contact information provided with registration

The sample of patients was broken down into two waves; the first wave (Wave 1) of patients attended one of the participating emergency departments between January 26 and February 9, 2007 and the second wave (Wave 2) attended between February 10 and February 23, 2007. The sample sizes were relatively the same (Wave 1 = 23,730, Wave 2 = 23,108).

The sample was broken into two waves for a couple of reasons:

- ▶ *To reduce the effect of lag time on patient evaluation.* The length of time between the patient experience and when they are asked to evaluate that experience can impact results. Use of two sample waves allows patients at the beginning of the sample period to consider their experience closer to the time of their experience.
- ▶ *To help manage the survey process.* Having two samples of relatively equal size helped reduce the number of questionnaires that needed to be mailed at one time. Rather than mailing over 46,000 questionnaires at once, each sample required about 23,000 to be mailed at one time. Splitting the sample also allowed for easier management of phone surveys and reminders because the waves were staggered by two weeks.

2.0 Survey protocol

The protocol for the mail portion of the HQCA Emergency Department Survey involved an initial mailing of the survey package, a reminder postcard mailed approximately two weeks after the initial mailing, and a second mailing of the survey package approximately four weeks after the initial mailing. Each of these steps is described in further detail below.

- ▶ ***First survey mailing.*** The first mailing included a cover letter (Appendix B), a copy of the questionnaire, and a postage-paid return envelope. The adult survey package was addressed to the patient who had visited the ED; the pediatric survey package was addressed to the parent or guardian of the child who was treated in the emergency department. The cover letter instructed the parents or guardians to complete the questionnaire on behalf of their child, but to answer the survey from the child’s point of view.
- ▶ ***Reminder postcard.*** The reminder postcard (Appendix B) 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.*** PRA monitored the response rate by facility throughout the data collection period. In order to increase the response rate, PRA, in consultation with the HQCA, decided to conduct reminder calls among the facilities with the lowest proportion of returned questionnaires. 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. PRA also used the calls to determine if participants had received the survey and to update the mailing address if required. If participants preferred, they were given the option to complete the survey over the phone. Telephone reminder telephone calls started approximately two weeks after the initial mailing (just after the reminder postcard was mailed) and ended five weeks after the initial mailing (just after the second survey package was mailed).
- ▶ ***Second survey mailing.*** The second survey mailing contained the same documents as the first mailing, with slight revisions to the cover letters. 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).

- ▶ **Telephone surveys.** Based on the pilot study and other information, it was anticipated that some facilities might have unique issues with respect to achieving target response rates. Previous research has suggested that mixed mode and phone survey methodologies can help to increase response rates among marginalized or transient populations. In targeting those facilities with low response rates (that is, below 50% or 400 completed surveys), PRA contacted individual non-respondents to complete the questionnaire by telephone. Only those individuals who had not returned their completed questionnaire and had not indicated that they did not want to participate in the survey (refusal) were contacted. The telephone surveys started approximately three weeks after the second survey was mailed.

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

Table 1: Fielding dates		
	Dates	
	Wave 1	Wave 2
First survey mailing	March 6, 2007	March 20, 2007
Postcard mailing	March 20, 2007	April 3, 2007
Reminder calls	March 23 – April 11, 2007	April 11 – May 6, 2007
Second survey mailing	April 3, 2007	April 17, 2007
Phone survey	April 27 – June 5, 2007	May 11 – June 8, 2007
Mail survey cut-off	June 26, 2007	June 26, 2007

3.0 Response rate and outcomes

In this section, we examine the response rates obtained for the survey.

3.1 Overall

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

- ▶ In total, 46,838 survey packages were distributed to emergency department patients.
- ▶ In total, 22,560 patients completed the questionnaire,¹ for an overall response rate of 48%. Of those who completed the questionnaire, 91% completed the questionnaire by mail (44% of the total sample) and 9% completed the questionnaire by telephone (4% of the sample).
- ▶ About 35% of the sample received the two mailings and the reminder postcard, but did not complete the survey. We contacted about 43% of these non-respondents by telephone (15% overall), again focusing on those from the facilities with a lower than expected response rate.
- ▶ Almost 10% of the sample had incorrect contact information, meaning that they did not receive the mailings.
- ▶ About 2% of the sample denied visiting an emergency department (and, therefore, said the survey did not apply to them) or were deceased.² 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 (unlikely).

¹ A completed questionnaire is defined as a questionnaire with a valid response to at least one question. Thirty-five patients only answered the open-ended question (Q78 in the adult survey, Q74 in the pediatric). Although they are counted as completed questionnaires, they are not included in any further analyses in this report. This results in a sample size of 22,560.

² While individuals who passed away during their ED visit were removed from the sample, it was not feasible to identify individuals who died afterwards.

Table 2: Final outcomes		
Outcome	n	%
Total sample	46,838	100.0%
Total completed	22,560	48.2%
By mail	20,613	44.0%
By phone	1,982	4.2%
Non-respondents (mail protocol complete)	16,497	35.2%
No phone contact	9,365	20.0%
Phone contact made	7,132	15.2%
Incorrect contact information	4,437	9.5%
Refused	2,338	5.0%
Refused by phone	1,683	3.5%
Refused for health reasons	290	0.6%
Language barriers	232	0.5%
Returned blank	55	0.1%
Refused by mail	45	0.1%
Ineligible	33	0.1%
Denied visiting ED	687	1.5%
Deceased	284	0.6%

3.2 Response rate by facility

Table 3 shows the response rates by facility, which ranged from 39.7% to 53.9% with an average of 48.2%. The goal for each facility was to achieve either a response rate of 50% or 400 completes (whichever happened first).

Overall, we achieved this goal with 44 of the 66 facilities (23 achieved at least a 50% response rate, and 21 received at least 400 completes but did not achieve a 50% response rate).

The facilities with the lowest response rates tend to have similar characteristics:

- ▶ They are located in smaller, remote communities, such as High Prairie or Slave Lake. This often resulted in respondents receiving surveys by mail several days or even weeks after those respondents who were living in larger, urban centres. The greater the length of time between visiting the emergency department and receiving the survey may reduce the likelihood of respondents to complete the survey.
- ▶ The emergency departments are the only health care facilities available in the community. In these communities, the emergency department also serves as a walk-in clinic and general health centre. Some participants may have attended an emergency department for routine or non-emergency care and, therefore, may have deemed the survey as irrelevant to their situation.
- ▶ The information provided about patients' addresses was often incomplete or incorrect. Because mail took longer to reach these participants, the returned mail was often not received for several weeks after it was mailed, which reduced the opportunity to update the address and re-mail the survey.

Table 3: Response rate by facility

Facility	Sample size (n)	Completes (n)			Response rate (%)	Refusals (n)	Incorrect contact info (n)	Refusal/Incorrect Rate (%)
		Mail	Phone	Total				
Daysland Health Centre	241	130	0	130	53.9%	4	2	2.5%
Crowsnest Pass Health Centre	419	224	0	224	53.5%	2	5	1.7%
Innisfail Health Centre	643	323	19	342	53.2%	32	58	14.0%
Stollery Children's Hospital (U of A)	898	478	0	478	53.2%	1	11	1.3%
Fairview Health Complex	741	341	51	392	52.9%	53	79	17.8%
Fort Saskatchewan Health Centre	721	319	62	381	52.8%	65	84	20.7%
Westlock Healthcare Centre	440	205	27	232	52.7%	24	48	16.4%
Drumheller Health Centre	717	360	18	378	52.7%	24	37	8.5%
Barrhead Healthcare Centre	738	389	0	389	52.7%	13	7	2.7%
Red Deer Regional Hospital (Pediatric)	562	280	16	296	52.7%	6	35	7.3%
Sundre Hospital	403	203	9	212	52.6%	6	12	4.5%
Olds Hospital	537	268	10	278	51.8%	16	21	6.9%
Alberta Children's Hospital	900	466	0	466	51.8%	5	5	1.1%
Beaverlodge Municipal Hospital	784	377	28	405	51.7%	36	35	9.1%
Queen Elizabeth II Hospital (Pediatric)	469	220	22	242	51.6%	4	31	7.5%
Ponoka Hospital	662	273	67	340	51.4%	51	116	25.2%
Taber Health Centre	479	204	42	246	51.4%	36	57	19.4%
Wainwright Health Centre	565	277	13	290	51.3%	11	24	6.2%
South Calgary Health Centre	900	459	0	459	51.0%	8	5	1.4%
Foothills Medical Centre	900	456	0	456	50.7%	11	12	2.6%
Sacred Heart Community Health Centre	507	239	16	255	50.3%	35	50	16.8%
Sturgeon Community Hospital	898	450	0	450	50.1%	9	15	2.7%
Hinton Healthcare Centre	468	191	43	234	50.0%	40	61	21.6%
St Joseph's General Hospital	669	334	0	334	49.9%	12	9	3.1%
St Therese St Paul Healthcare Centre	558	227	51	278	49.8%	57	106	29.2%
St Mary's Hospital	860	419	9	428	49.8%	25	35	7.0%
Edson Healthcare Centre	861	352	76	428	49.7%	85	107	22.3%
Valleyview Health Centre	578	240	47	287	49.7%	48	108	27.0%
Three Hills Health Centre	649	321	0	321	49.5%	11	4	2.3%
Vermilion Health Centre	420	203	4	207	49.3%	14	15	6.9%
Rockyview General Hospital	900	441	0	441	49.0%	10	10	2.2%
Grimshaw Berwyn Community Health Complex	575	281	1	282	49.0%	6	9	2.6%
Two Hills Community Health Centre	191	81	12	93	48.7%	7	21	14.7%
Misericordia Community Hospital	889	432	0	432	48.6%	10	10	2.2%
Canmore General Hospital	727	288	63	351	48.3%	56	163	30.1%
Peace River Community Health Centre	854	352	59	411	48.1%	62	104	19.4%
Athabasca Healthcare Centre	298	133	10	143	48.0%	7	15	7.4%
Cold Lake Healthcare Centre	839	331	70	401	47.8%	73	135	24.8%
Lacombe Hospital	890	409	16	425	47.8%	17	42	6.6%
Red Deer Regional Hospital Centre	899	390	38	428	47.6%	59	87	16.2%
Strathmore District Health Services	900	393	35	428	47.6%	51	65	12.9%
High River General Hospital	886	413	9	422	47.6%	16	26	4.7%
Big Country Health Centre	198	93	1	94	47.5%	9	3	6.1%
Bonnyville Health Centre	890	353	68	421	47.3%	74	103	19.9%
Medicine Hat Regional Hospital	896	424	0	424	47.3%	7	20	3.0%
Pincher Creek Health Centre	478	188	36	224	46.9%	24	84	22.6%
Brooks Health Centre	899	360	58	418	46.5%	84	111	21.7%
Wetaskiwin Hospital	896	325	92	417	46.5%	69	231	33.5%
Northeast Community Health Centre	895	370	45	415	46.4%	70	93	18.2%
William J Cadzow Healthcare Centre	673	245	67	312	46.4%	58	149	30.8%
University Of Alberta Hospital	885	396	15	411	46.4%	44	69	12.8%
8th & 8th Urgent Care Centre	900	336	81	417	46.3%	96	152	27.6%

Facility	Sample size (n)	Completes (n)			Response rate (%)	Refusals (n)	Incorrect contact info (n)	Refusal/Incorrect Rate (%)
		Mail	Phone	Total				
Peter Lougheed Centre	900	382	34	416	46.2%	57	120	19.7%
Leduc Community Hospital	903	388	28	416	46.1%	39	33	8.0%
Grey Nun's Community Hospital	891	408	0	408	45.8%	16	17	3.7%
Royal Alexandra Hospital	876	353	46	399	45.5%	75	184	29.6%
Cardston Health Centre	584	204	60	264	45.2%	39	155	33.2%
Chinook Regional Hospital	893	400	1	401	44.9%	15	21	4.0%
Drayton Valley Hospital	899	386	12	398	44.3%	12	22	3.8%
Queen Elizabeth II Hospital	889	331	62	393	44.2%	81	161	27.2%
Westview Health Centre	898	375	22	397	44.2%	45	83	14.3%
Health First Strathcona	450	192	0	192	42.7%	6	4	2.2%
Northern Lights Regional Health Centre	895	266	96	362	40.4%	90	197	32.1%
Northwest Health Centre	855	267	77	344	40.2%	87	209	34.6%
Slave Lake Healthcare Centre	625	174	76	250	40.0%	66	153	35.0%
High Prairie Health Complex	635	190	62	252	39.7%	57	182	37.6%
Total	46,838	20,578	1,982	22,560	48.2%	2,338	4,437	14.5%

- ▶ The phone numbers provided for patients were often not in service (NIS) or incorrect. Because of the high proportion of invalid phone numbers in these facilities, we were not able to update mailing addresses when they were incorrect or conduct the surveys by phone.
- ▶ Site characteristics collected in the pilot study indicated that some sites might have a higher proportion of transient patients where contact information is likely inaccurate or incomplete. As seen in Table 4, about one-quarter to one-fifth of contact information was incorrect for the four hospitals with the lowest overall response rates.

3.3 Response by sample type (adult or pediatric)

Overall, the pediatric sample (52%) obtained a slightly higher response rate than the adult sample (48%).

- ▶ All four of the pediatric hospitals achieved a response rate higher than 50%, and there was no need to include the pediatric hospital patients in the telephone survey, because response rates were high.
- ▶ The adult sample achieved a response rate of 48%, but required almost 2,000 phone surveys (4%) to achieve this rate.

The difference in response rate between the two samples is based on a multitude of factors, including the age of the participants (the adult sample tended to be older), location of facilities (all pediatric hospitals were in large urban centers), quality of patient information (the adult sample had a higher proportion of incorrect mailing addresses and phone numbers), and the fact that parents/guardians were being asked to report on the care given their child.

Outcomes	Adult		Pediatric	
	n	%	n	%
Total sample	44,007	100.0%	2,829	100.0%
Total completed	21,113	48.0%	1,482	52.3%
By mail	19,169	43.6%	1,444	51.0%
By phone	1,944	4.4%	38	1.3%

Note: Mail and phone percentages may not sum to Total due to rounding.



210, 811 – 14 Street NW
Calgary, Alberta, Canada T2N 2A4
T: 403.297.8162 F: 403.297.8258
E: info@hqca.ca www.hqca.ca