

# Hospital Report



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E M E R G E N C Y   D E P A R T M E N T   C A R E

HOSPITAL REPORT  
**HRRRC**  
RESEARCH COLLABORATIVE

A joint initiative of the Ontario Hospital Association  
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This report is brought to you by the Government of Ontario in partnership with the Ontario Hospital Association.



# ABOUT THIS REPORT

Quality improvement has become an integral part of health care, and hospitals are no exception. In recent years there has been increasing interest in health-system performance measurement in order to provide the information that is required for the effective management of hospitals across Ontario.

Hospitals are faced with many challenges in order to offer the best possible care. This means ensuring that high quality care is provided when and where it is needed, while at the same time effectively managing resources. Measuring quality and efficiency in health care facilities is critical for managing them. Providing comparable information on performance benefits providers of care as well as the public interested in understanding the issues facing Ontario hospitals.

Better information allows hospitals to identify areas where there may be a need for improvement and monitor progress. Sharing this information allows users of the health care system to know which questions to ask and gives health care providers and decision-makers the evidence that is needed to further improve the quality of health care.

*Hospital Report 2007: Emergency Department Care* is a hospital-specific report that uses a balanced scorecard approach to provide information on the performance of hospitals that provide emergency department care in Ontario. The objectives of this series of reports are to facilitate local quality improvement programs, encourage openness and transparency in reporting and to support hospitals' accountability to the communities they serve.

## WHO SHOULD USE THIS REPORT?

This report is designed for health care providers, managers and others interested in the performance of hospitals in Ontario. The primary audiences for this report series are hospital boards of directors and senior managers and local health integration networks (LHINs). Results should also be shared broadly among hospital staff, patients, families and the public at large.

To ensure optimal use of the scorecard results, board members and senior managers can use the information in this report for strategic planning and priority-setting within their hospitals. By identifying indicators for which their hospital's performance is lower than average they can direct resources and refine/develop corporate policies to facilitate quality improvement in these areas. Within an environment of competing demands, boards need to ensure that the organization's culture supports an enduring commitment to quality improvement.

Hospitals can use these indicators to describe, evaluate and compare their performance. The results can be used to monitor improvements and outcomes related to specific quality improvement initiatives within hospitals. By comparing hospital-specific results to the provincial average and to peer hospitals' performance, individual hospitals can evaluate their progress in their quality improvement initiatives. These high-level comparisons can also be a first step for hospitals to identify opportunities for improving quality of care. The next step for hospitals would be to examine their own data that support the indicators, to understand the underlying factors contributing to their hospitals' results. Finally, hospitals can also use this report to identify other hospitals from which they might seek opportunities to learn.

Members of the public can use this report to better understand some of the issues facing the health care system. Public reporting of hospital performance can help to promote a culture of transparency so that Ontarians know that quality care will be available when they need it.

## Emergency Departments and Urgent Care Centres

There are two types of emergency departments (EDs) in Ontario hospitals: comprehensive emergency departments and urgent care centres. Comprehensive emergency departments are located in acute care hospitals, are open 24 hours a day, seven days per week and provide care to patients who arrive by ambulance or other means. Urgent care centres are also located in acute care hospitals, but have restricted hours and may not care for patients who arrive by ambulance. In this report, unless otherwise stated, the abbreviation ED describes both urgent care centres and comprehensive emergency departments.

## Concepts

In this report, the term **hospital** refers to both single-site organizations and multi-site organizations. **Hospital site** refers to specific sites within a hospital corporation.

# A SNAPSHOT OF HOSPITAL ACTIVITY IN ONTARIO'S LHINS

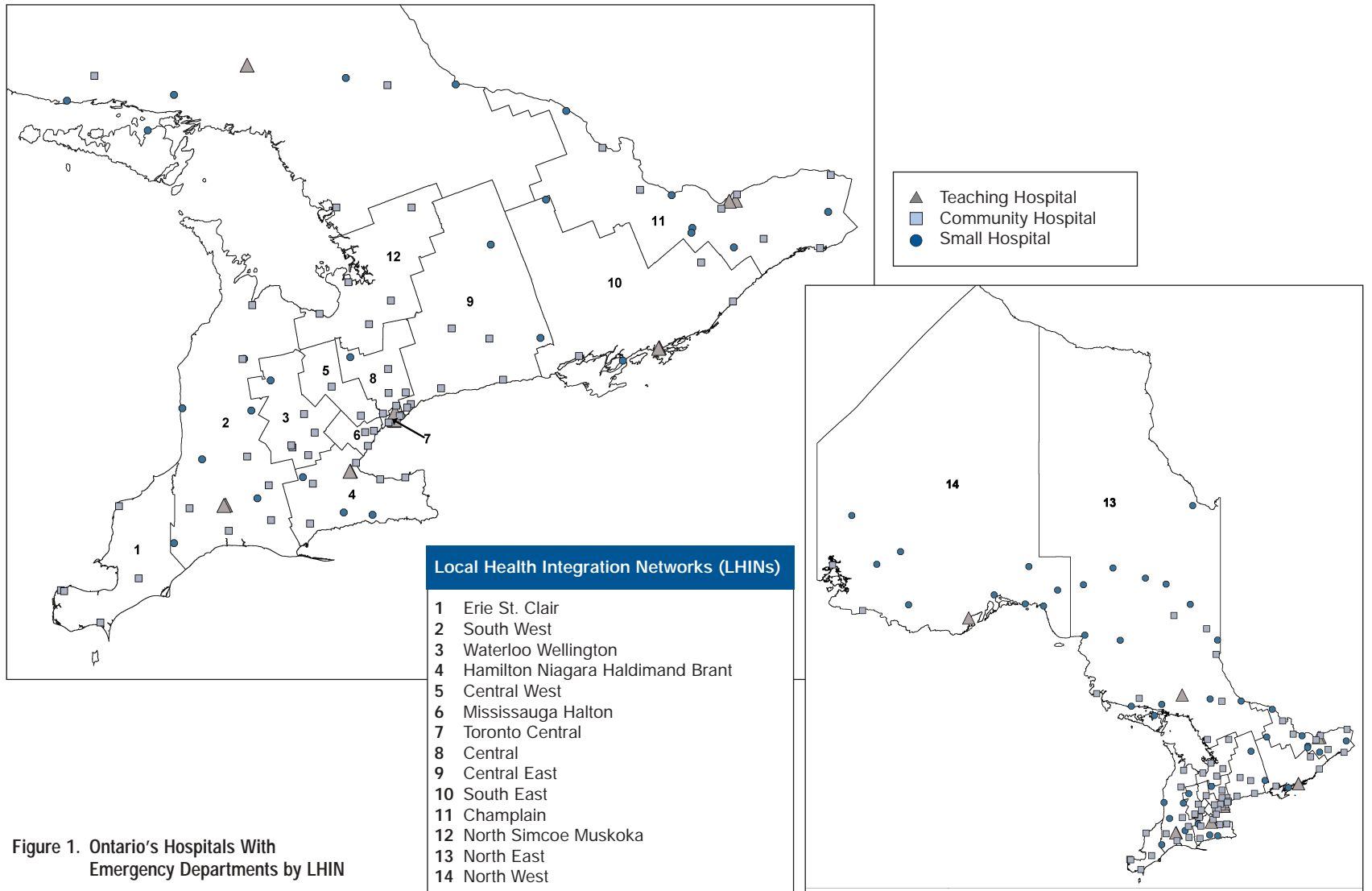


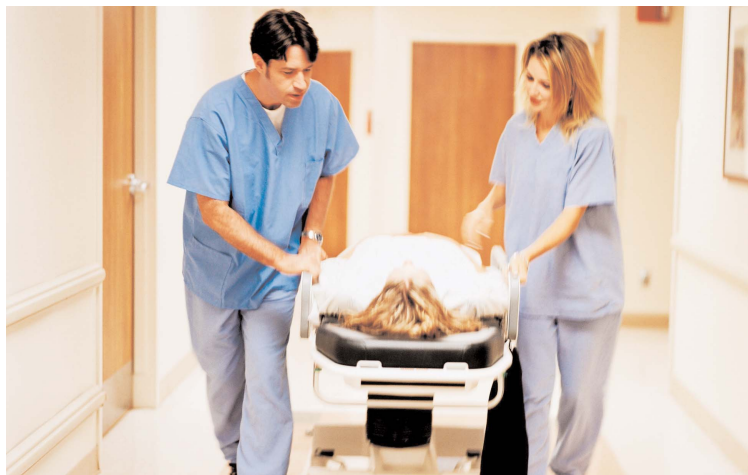
Figure 1. Ontario's Hospitals With  
Emergency Departments by LHIN

Emergency department (ED) care is an essential part of Ontario's health care system. In 2005–2006, there were over five million visits to Ontario EDs, encompassing a wide range of care demands from patients requiring immediate life-saving interventions to those not requiring urgent care services. Under the current climate of health care restructuring in Ontario to local health integration network (LHINs), understanding the variations of ED care across LHINs can assist in understanding the complement of care provided in each LHIN and support the process of quality improvement.

The 14 LHINs in Ontario are designated to plan, integrate and fund local health services, including hospitals, community care access centres, home care, long-term care and mental health within their specific geographic area. As of April 1, 2007, LHINs have taken on responsibility for planning, funding and integrating health services in their respective parts of the province. For more information visit the LHINs website at [www.lhins.on.ca](http://www.lhins.on.ca).

This section highlights selected characteristics of LHINs, providing context for interpretation of the emergency department indicator results.

When making comparisons across LHINs, it is important to consider the varying number and type of hospitals in each LHIN. Other factors also contribute to differences among LHINs (for example, population density, rural versus urban, geography, teaching and specialty hospitals). The performance allocation tables that follow the summary of results for each section of the report provide LHIN averages for each of the indicators. When comparing LHIN values for Patient Satisfaction and System Integration and Change indicators, it is important to remember that not all hospitals are included in the LHIN values.



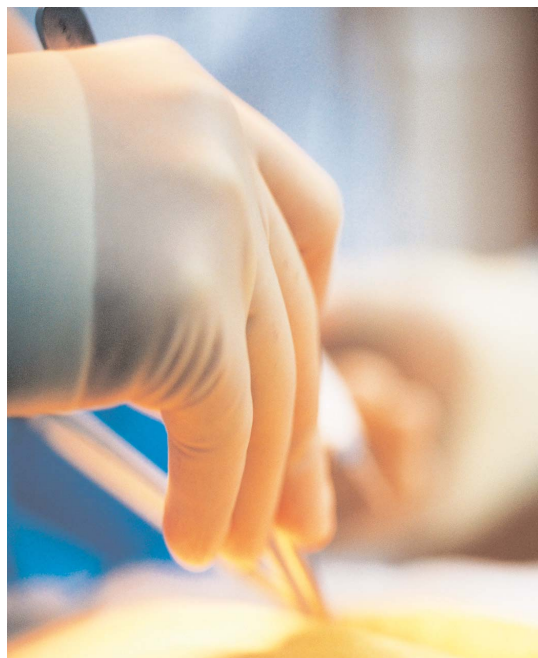
**Table 1. Emergency Departments in Ontario**

|    | LHIN                             | Percent of Ontario ED Visits | Small Hospitals | Community Hospitals | Teaching Hospitals | Total      |
|----|----------------------------------|------------------------------|-----------------|---------------------|--------------------|------------|
| 1  | Erie St.Clair                    | 5.4                          | 0               | 5                   | 0                  | 5          |
| 2  | South West                       | 11.5                         | 6               | 7                   | 2                  | 15         |
| 3  | Waterloo Wellington              | 4.3                          | 1               | 5                   | 0                  | 6          |
| 4  | Hamilton Niagara Haldimand Brant | 11.3                         | 3               | 6                   | 2                  | 11         |
| 5  | Central West                     | 3.3                          | 0               | 2                   | 0                  | 2          |
| 6  | Mississauga Halton               | 5.6                          | 0               | 3                   | 0                  | 3          |
| 7  | Toronto Central                  | 7.6                          | 0               | 2                   | 5                  | 7          |
| 8  | Central                          | 7.6                          | 1               | 5                   | 0                  | 6          |
| 9  | Central East                     | 10.2                         | 2               | 6                   | 0                  | 8          |
| 10 | South East                       | 5.4                          | 1               | 3                   | 2                  | 6          |
| 11 | Champlain                        | 10.4                         | 7               | 7                   | 2                  | 16         |
| 12 | North Simcoe Muskoka             | 4.7                          | 0               | 5                   | 0                  | 5          |
| 13 | North East                       | 8.6                          | 14              | 7                   | 1                  | 22         |
| 14 | North West                       | 3.9                          | 9               | 2                   | 1                  | 12         |
|    | <b>Ontario</b>                   | <b>100</b>                   | <b>44</b>       | <b>65</b>           | <b>15</b>          | <b>124</b> |

Table 1 shows the proportion of ED visits by LHIN and lists the number of hospitals with emergency departments (by hospital type) in each LHIN. A complete listing of hospitals located within each LHIN can be found on the Ministry of Health and Long-Term Care's website at [www.health.gov.on.ca](http://www.health.gov.on.ca).

Using 2005–2006 Ontario emergency department data, a snapshot analysis of ED activity in Ontario LHINs was undertaken to identify some of the LHIN-level variations in Ontario emergency department care. The results presented in this analysis reflect ED visits taking place within a LHIN, regardless of the place of residence of the patient.

As illustrated in Table 2, the volume of ED visits across LHINs varied markedly with the number of visits ranging from approximately 174 thousand to over half a million visits in some LHINs. This is related to several factors, including the number and type of hospitals within each LHIN (that is, small, community, teaching), the LHIN population size and composition (that is, age distribution), as well as access to outpatient and primary care services available within each LHIN.



|                 | LHIN                             | Number of Visits (Thousands)   | Percent of Visits Requiring Urgent Care* | Total Time Spent in ED (Median Hours)† | Percent of Patients Left Before Visit Completion | Percent of Patients Who Felt They Waited Too Long to See a Doctor‡ |
|-----------------|----------------------------------|--|--|--|--|--|
| 1               | Erie St.Clair                    | 284  | 47                                       | 2.2                                    | 5.4  | 53   |
| 2               | South West                       | 602  | 33                                       | 1.7                                    | 2.7  | 46   |
| 3               | Waterloo Wellington              | 224  | 55                                       | 3.0                                    | 6.9  | 64   |
| 4               | Hamilton Niagara Haldimand Brant | 588  | 45                                       | 2.5                                    | 4.5  | 58   |
| 5               | Central West                     | 174  | 68                                       | 2.9                                    | 5.2  | 72   |
| 6               | Mississauga Halton               | 293  | 64                                       | 3.1                                    | 4.7  | 58   |
| 7               | Toronto Central                  | 398  | 67                                       | 3.9                                    | 5.1  | 63   |
| 8               | Central                          | 395  | 55                                       | 3.1                                    | 4.7  | 63   |
| 9               | Central East                     | 531  | 57                                       | 2.5                                    | 3.7  | 57   |
| 10              | South East                       | 284  | 41                                       | 1.8                                    | 3.9  | 42   |
| 11              | Champlain                        | 544  | 47                                       | 2.5                                    | 4.6  | 50   |
| 12              | North Simcoe Muskoka             | 244  | 43                                       | 2.0                                    | 3.4  | 52   |
| 13              | North East                       | 451  | 29                                       | 1.6                                    | 2.8  | 50   |
| 14              | North West                       | 205  | 39                                       | 1.8                                    | 2.7  | 51   |
|                 | <b>Ontario</b>                   | <b>5,216</b>   | <b>48</b>                                | <b>2.4</b>                             | <b>4.2</b>                                       | <b>55</b>  |
| <b>Notes:</b>   |                                  | All data represent visits to 179 Ontario-based emergency departments and urgent care centres, with the exception of Total Time Spent in ED. This data element is based on visits to 167 Ontario-based emergency departments. However, the relationships between the variables do not change when urgent care centres are removed from the analysis.  |  |  |  |  |
|                 |                                  | * Urgent care is defined as Canadian Emergency Department Triage and Acuity Scale (CTAS) scores of I, II or III.   |  |  |  |  |
|                 |                                  | † Source: Canadian Institute for Health Information, <i>Understanding Emergency Department Wait Times: How Long Do People Spend in Emergency Departments in Ontario?</i> (Ottawa: CIHI, 2007), [online], cited May 16, 2007, from < <a href="http://secure.cihi.ca/cihiweb/en/downloads/emergency_department_wait_times_e.pdf">http://secure.cihi.ca/cihiweb/en/downloads/emergency_department_wait_times_e.pdf</a> >. |  |  |  |  |
|                 |                                  | ‡ These data represent the percent of patients (weighted) answering “Yes, definitely” or “Yes, somewhat” to “Did you have to wait long to see a doctor?” from the NRC + Picker 2005–2006 Emergency Department Survey.  |  |  |  |  |
| <b>Sources:</b> |                                  | National Ambulatory Care Reporting System, 2005–2006, CIHI; NRC + Picker Emergency Department Care Survey, 2005–2006.  |  |  |  |  |

There is also a range in the severity of illness among patients visiting the ED by LHIN. The most severe ED patients (that is, CTAS I–III—patients requiring urgent/emergent care and those requiring resuscitation) make up the majority of ED visits in only half of all LHINs. It is those LHINs serving primarily urban populations that show higher proportions of more severely ill patients. Patients in LHINs with a higher proportion of more severe ED patients also tend to spend more time in the ED (see Figure 2). For example, the median total time spent in ED for severe patients (3.4 hours) is twice the amount of time than less severe patients (1.6 hours).<sup>i</sup> Other factors contributing to ED length of stay include hospital-specific ED volumes and hospital type.<sup>i</sup>

The total time spent in ED is also related to patients leaving before their ED visit has been completed. LHINs with a longer ED median wait time have a higher proportion of patients leaving before their visit has been completed ( $r = 0.7$ ). Approximately four percent of ED patients leave before their visit has been completed, representing about 200,000 ED visits annually. This highlights a potentially important patient population who may not be receiving timely care in EDs in Ontario.

In most LHINs, at least half of all patients felt that they waited too long to see a physician. Upon closer examination of the results, it is found that the greatest dissatisfaction tends to occur in those LHINs with the longest ED wait times ( $r = 0.8$ ). A similar relationship is also found when comparing the patient satisfaction results to the time to initial physician assessment in the ED ( $r = 0.8$ ).

In summary, there are important differences in EDs across the LHINs. This can result in differences in the patient population treated in each LHIN (that is, patient volumes and the severity of patients) and can also be related to outcomes such as time spent in the ED, patient satisfaction with ED wait times and patients leaving before their visit is complete. It is important to keep these differences in mind when assessing LHIN indicator results.

### The Canadian Triage and Acuity Scale (CTAS)

The Canadian Triage and Acuity Scale is one method for grouping patients visiting the ED according to the severity of their conditions. The CTAS is designed to help ensure that the most severely ill patients are seen first. There are five categories:

**CTAS I:** severely ill, requires resuscitation

**CTAS II:** requires emergent care and rapid medical intervention

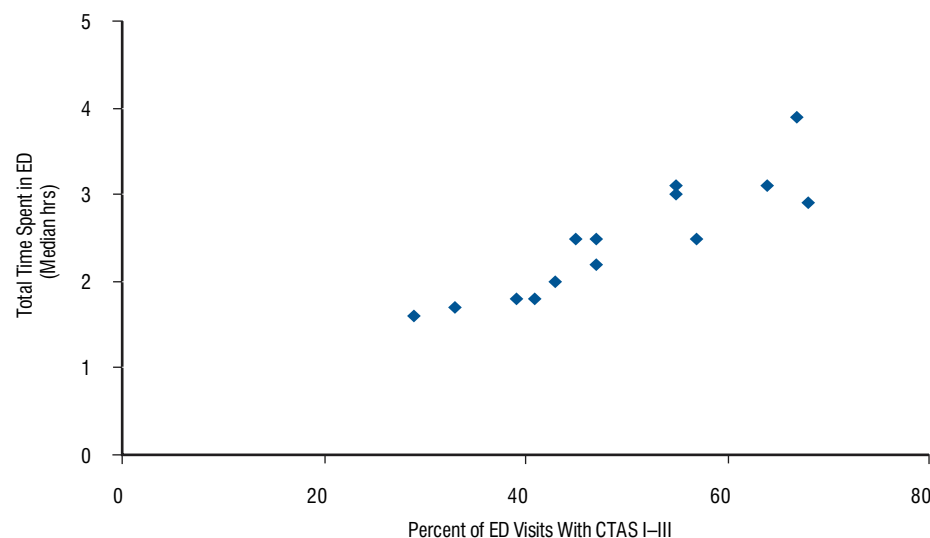
**CTAS III:** requires urgent care

**CTAS IV:** requires less-urgent care

**CTAS V:** requires non-urgent care

For more information on CTAS, see the Canadian Association of Emergency Physicians website at [www.caep.ca](http://www.caep.ca).

Total Time Spent in ED Versus Percent of ED Visits With CTAS I–III for Each LHIN, Ontario, 2005–2006



Source: National Ambulatory Care Reporting System, 2005–2006, CIHI.

Figure 2

i. Canadian Institute for Health Information, *Understanding Emergency Department Wait Times: How Long Do People Spend in Emergency Departments in Ontario?* (Ottawa: CIHI, 2007), [online], cited May 16, 2007, from <[http://secure.cihi.ca/cihiweb/en/downloads/emergency\\_department\\_wait\\_times\\_e.pdf](http://secure.cihi.ca/cihiweb/en/downloads/emergency_department_wait_times_e.pdf)>.

# A BALANCED SCORECARD



## WHAT IS A BALANCED SCORECARD?

Providing care in a hospital is a complex activity involving a multitude of skills, experiences and technologies. No single aspect of the system causes poor or excellent hospital performance. For this reason, performance-measurement activities must include measures that provide insights into multiple dimensions of a hospital's performance. The balanced scorecard approach describes performance across four dimensions or quadrants critical to the strategic success of any health care organization. These quadrants include: System Integration and Change, Patient Satisfaction, Clinical Utilization and Outcomes and Financial Performance and Condition.

Performance measures for each of the four quadrants are provided at the hospital-specific level, along with average scores by local health integration network (LHIN), hospital type and the province as a whole.

While all hospitals values are used in calculating average results by LHIN, hospital type and the province, hospital-specific values are shown for hospitals that had sufficient data and agreed to have their results published for quality improvement purposes. This year, 109 out of 124 (88%) emergency departments (EDs) participated in at least one quadrant and 85 (69%) EDs participated in all four quadrants of the report.

Using a balanced scorecard format, this report provides a summary of performance scores for 25 indicators across four areas of performance.

### System Integration and Change

This quadrant describes an emergency department's ability to manage change in a dynamic health care environment. The survey measures the structures, processes and innovations used by emergency departments to support quality improvement. This quadrant evaluates areas such as the development and use of standardized protocols, the involvement with external partners and the use of clinical information technology. [7 indicators]

### Patient Satisfaction

This quadrant examines patients' perceptions of their emergency department experience, including their overall impression of care and their perceptions related to communication, responsiveness and consideration. [4 indicators]

### Clinical Utilization and Outcomes

This quadrant describes clinical performance for care processes and outcomes related to asthma, ankle injury and pneumonia in emergency departments. This year, new pediatric indicators have also been incorporated. [10 indicators]

### Financial Performance and Condition

This quadrant describes the financial performance of emergency departments in terms of human resource productivity indicators. [4 indicators]



# “HIGH-PERFORMING” HOSPITALS



## HIGH-PERFORMING HOSPITALS WITHIN QUADRANTS

### System Integration and Change

#### Criteria

Highest score (or 100) on one indicator and above-average score on at least 3 of 7 indicators and no below-average score on any indicator

#### High-Performing Hospitals

- Alexandra Hospital
- Campbellford Memorial Hospital
- Guelph General Hospital
- Halton Healthcare
- Kingston General Hospital
- The Willett Hospital
- Toronto East General Hospital

### Patient Satisfaction

#### Criteria

Above-average rating on 4 out of 4 indicators

#### High-Performing Hospitals

- Alexandra Marine and General Hospital
- Almonte General Hospital
- Arnprior and District Memorial Hospital
- Carleton Place and District Memorial Hospital
- Deep River and District Hospital
- Grey Bruce Health Services
- Haliburton Highlands Health Services
- Huron Perth Healthcare Alliance
- Kemptville District Hospital
- Listowel and Wingham Hospitals Alliance
- MICs Group of Health Services
- Perth and Smiths Falls District Hospital
- St. Francis Memorial Hospital

### Clinical Utilization and Outcomes

#### Criteria

Above average on 3 of 7 indicators and no below-average score on any indicator (please note that the three new pediatric indicators are not included in the high-performing methodology).

#### High-Performing Hospitals

- Hotel Dieu Hospital, Kingston
- Lake of the Woods District Hospital
- University Health Network

### Financial Performance and Condition

#### Criteria

Hospitals with scores 0.5 standard deviations (SD) above the provincial average, in 3 of 3 indicators. (Please note that the % Management and Operational Support Staff indicator is not included in the high-performing methodology.)

#### High-Performing Hospitals

- Almonte General Hospital
- Carleton Place and District Memorial Hospital
- Deep River and District Hospital
- Hotel Dieu Hospital, Kingston
- Nipigon District Memorial Hospital
- North Wellington Health Care
- Services de santé de Chapleau Health Services
- South Huron Hospital
- St. Francis Memorial Hospital
- St. Michael's Hospital
- The Willett Hospital

For quality improvement purposes, the Hospital Report series has developed methodologies to identify “high-performing” hospitals within each of the four quadrants in emergency department care.

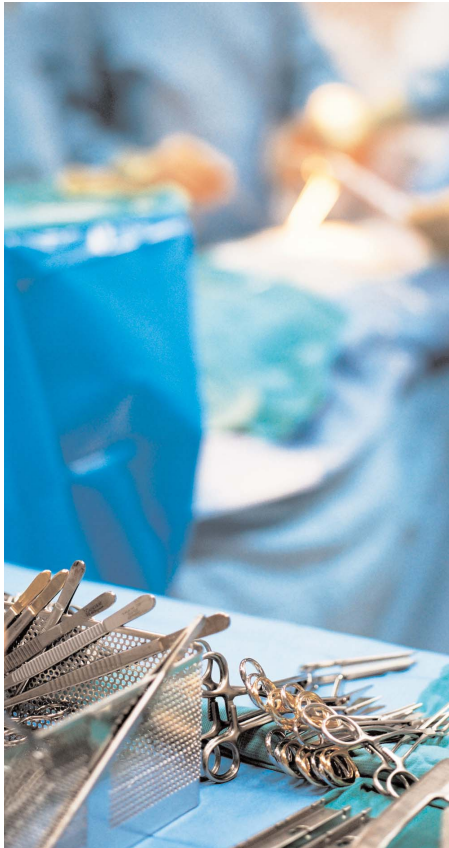
It is useful to highlight hospitals that performed well in particular quadrants when compared to their peers, because these hospitals may be able to share useful ideas and best practices with other hospitals within the specific areas of focus. It is interesting to note that no hospitals were identified as high performing across all four quadrants. This illustrates the importance of using a variety of measures, such as a balanced scorecard approach, when looking at hospital performance. Good performance in one quadrant does not necessarily translate into good performance in another quadrant.

In addition, high performance in a given year relates only to how hospitals perform based on the indicators calculated for that particular year. High performance is not necessarily a predictor of high-performing status in future years.

High-performing hospitals are listed in alphabetical order.



# INTERPRETING THE RESULTS



As there can be competing interests and incentives in the management of hospitals to maximize both quality and efficiency and maintain a balance of resources in the context of limited resources, no single indicator or quadrant should be used to assess a hospital. All aspects of performance are important. One quadrant, or one indicator, on its own will provide an incomplete picture of overall performance. The indicator results in this report should be viewed as screening tests that can identify potential opportunities for quality improvement. In medicine, screening tests do not provide a definitive diagnosis, but can help to identify patients that require follow-up. Similarly, comparisons of indicator results may not offer a definitive assessment of a hospital's performance. Further investigative work is required by hospitals to better understand the factors underlying their results and identify specific strategies or areas for improvement.

There are many factors that can cause indicator values to vary from hospital to hospital. Some of these factors, such as the diversity in patient characteristics and the populations served are beyond a hospital's control. To reflect this, adjustment factors have been applied, as appropriate, in order to ensure meaningful comparisons within the balanced scorecard quadrants. Adjustment factors are described in more detail in the technical summaries available on the Hospital Report website ([www.hospitalreport.ca](http://www.hospitalreport.ca)).

While commonly accepted risk-adjustment techniques were used to reduce the effect of factors that are beyond hospitals' control (for example, age of patients) on indicator results, it is not possible to adjust for every factor. For this reason, comparisons of indicator scores among hospitals, hospital types and LHINs should be made with caution. It is also important to exercise caution when examining year-to-year changes in indicator values. This is because the methodology used to calculate indicators is reviewed annually, and in some cases, changes are made to improve the methodology over time.

## HOW WAS HOSPITAL TYPE DETERMINED?

### Where Can You Find More Information?

Further information is available in the technical summaries, which can be accessed through the Hospital Report website, at [www.hospitalreport.ca](http://www.hospitalreport.ca). The technical summaries provide more detailed definitions of the indicators and the statistical methods used to calculate the results.

The hospitals included in this report vary considerably by size, populations served and overall patient volumes. In recognition of this variability and to allow for more meaningful comparisons, hospitals have been grouped into three hospital types: teaching, community and small.

**Teaching hospitals** were defined as those acute and pediatric hospitals that have membership in the Council of Academic Hospitals of Ontario (CAHO). Member hospitals provide highly complex patient care, are affiliated with a medical or health sciences school and have significant research activity and post-graduate training.

**Community hospitals** encompass those hospitals not defined as small or teaching.

**Small hospitals** were defined according to the guidelines set by the Joint Policy and Planning Committee (JPPC). In general, these hospitals are a single community provider and the total inpatient acute, CCC and day surgery weighted cases are under 2,700 as per 2005–2006 data.<sup>ii</sup>

For multi-site organizations, the hospital type designation was based on the size of the largest single hospital site in the organization.

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ii. While some hospitals have been categorized by the JPPC as small for 2005–2006, for the purposes of this report they continued to be categorized as community hospitals.



# INTERPRETATION OF BOX PLOTS AND PERFORMANCE ALLOCATION TABLES

## Interpreting Box Plots

For each quadrant, a summary of the distribution of the hospital values for the indicators is presented graphically using a box plot. Hospitals can use these graphs to determine where their indicator value falls relative to other hospitals', the median value and the provincial average.

Figure 3 is a sample box plot.

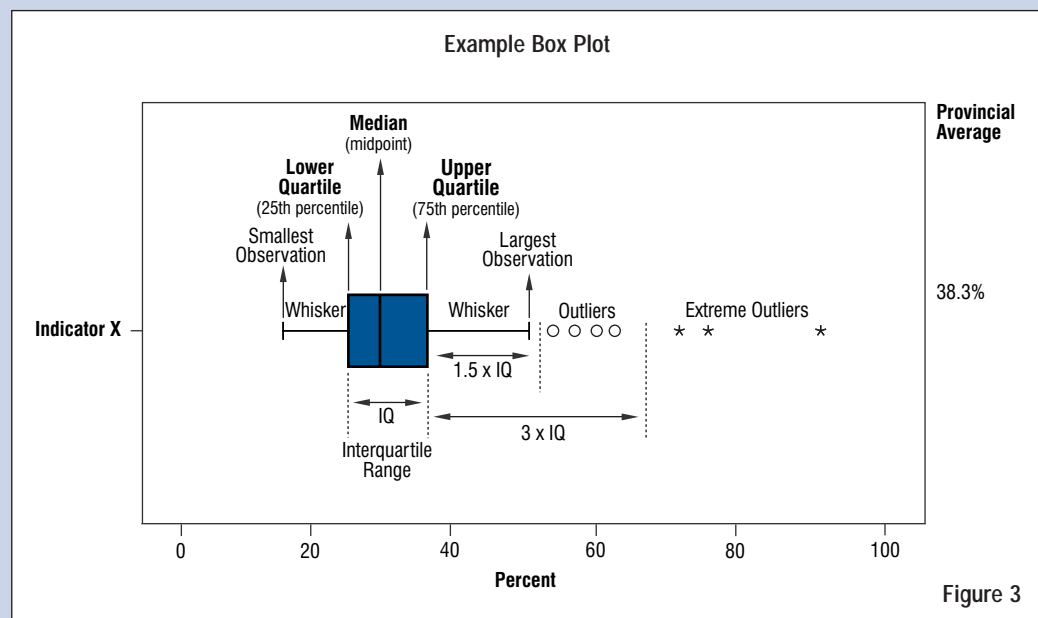
The **vertical line** in the shaded box represents the **median value**; this is the value at which half of hospital values are higher and half are lower.

The **shaded box** represents the **interquartile range (IQ)**; the middle 50% of hospital values will be contained in this range.

The **whiskers** or lines beyond the shaded box extend to **the largest and smallest values**, excluding outliers. That is, they contain approximately the top 25% and bottom 25% of hospital values.

**Outliers**, hospital values that are considerably different from the others, are identified by **circles**, and **extreme outliers** are identified by **stars**.

The provincial average (38.3%) is displayed to the right of the graph.



## Interpreting Performance Allocation Tables

The performance allocation tables in this report show the indicator values for each hospital participating in that quadrant of the report. Also included is a shaded background that indicates whether the hospital's score on that indicator reflected above-average performance, average performance or below-average performance. For more detailed information on the methodologies used to assign hospital performance, please see the technical summaries provided on the Hospital Report website at [www.hospitalreport.ca](http://www.hospitalreport.ca).

### Coloured shading for performance is assigned as follows:

- The hospital's score reflected above-average performance.
- The hospital's score reflected average performance.
- The hospital's score reflected below-average performance.

For some indicators, lower values suggest better performance. In these cases, lower values are labeled as above average.

### Some results are not shown, this is explained by the following symbol.

- NR** Means non-reportable—some results are not shown to protect patient or physician confidentiality, because the number of events was too low to obtain a reliable estimate or due to a data quality issue.

### Performance Allocation

The method for assignment of performance allocation varies based on the quadrant. For Clinical Utilization and Outcomes, hospitals' risk-adjusted rates were compared to the provincial average for all measures. For Patient Satisfaction, hospitals' risk-adjusted scores were compared to the provincial performance target for all measures. For System Integration and Change, performance classifications were assigned based on a hospital's score relative to hospital type. For this quadrant, teaching and community hospitals were grouped together (small, community/teaching) because small hospitals' scores were significantly different from the community/teaching group. Performance allocations are not calculated for the indicators in the Financial Performance and Condition quadrant.

The System Integration and Change (SIC) quadrant describes an emergency department's ability to manage change in a dynamic health care environment. The survey measures the structures, processes and innovations used by emergency departments to support quality improvement. This quadrant evaluates areas such as the development and use of standardized protocols, the involvement with external partners and the use of clinical information technology.

## Indicator Definitions

### Use of Standardized Protocols (Revised)

The degree to which EDs are developing and using clinical practice guidelines and medical directives for a broad range of relatively common conditions.

### Internal Coordination of Care (Revised)

The degree to which EDs are engaging in a variety of strategies that facilitate internal coordination of care.

### External Partnerships (Revised)

The degree to which EDs are directly engaged in initiatives with external health care providers and agencies in their communities.

### Management and Support of Human Resources (Revised)

The degree to which EDs are supporting staff training and education and are implementing mechanisms that facilitate discussion on issues regarding quality of work life, recruitment and retention of staff.

### Clinical Data Collection and Dissemination (Revised)

The extent to which EDs collect and disseminate clinical outcomes and appropriateness data related to timing issues, patient care management and adverse events. Dissemination relates to the sharing of data among selected stakeholders within the hospital and the use of data by committees and other specified staff.

### Use of Clinical Information Technology (Revised)

The extent to which EDs are using or developing electronic tracking systems and electronic records, and performing selected functions online.

### Healthy Work Environment (New)

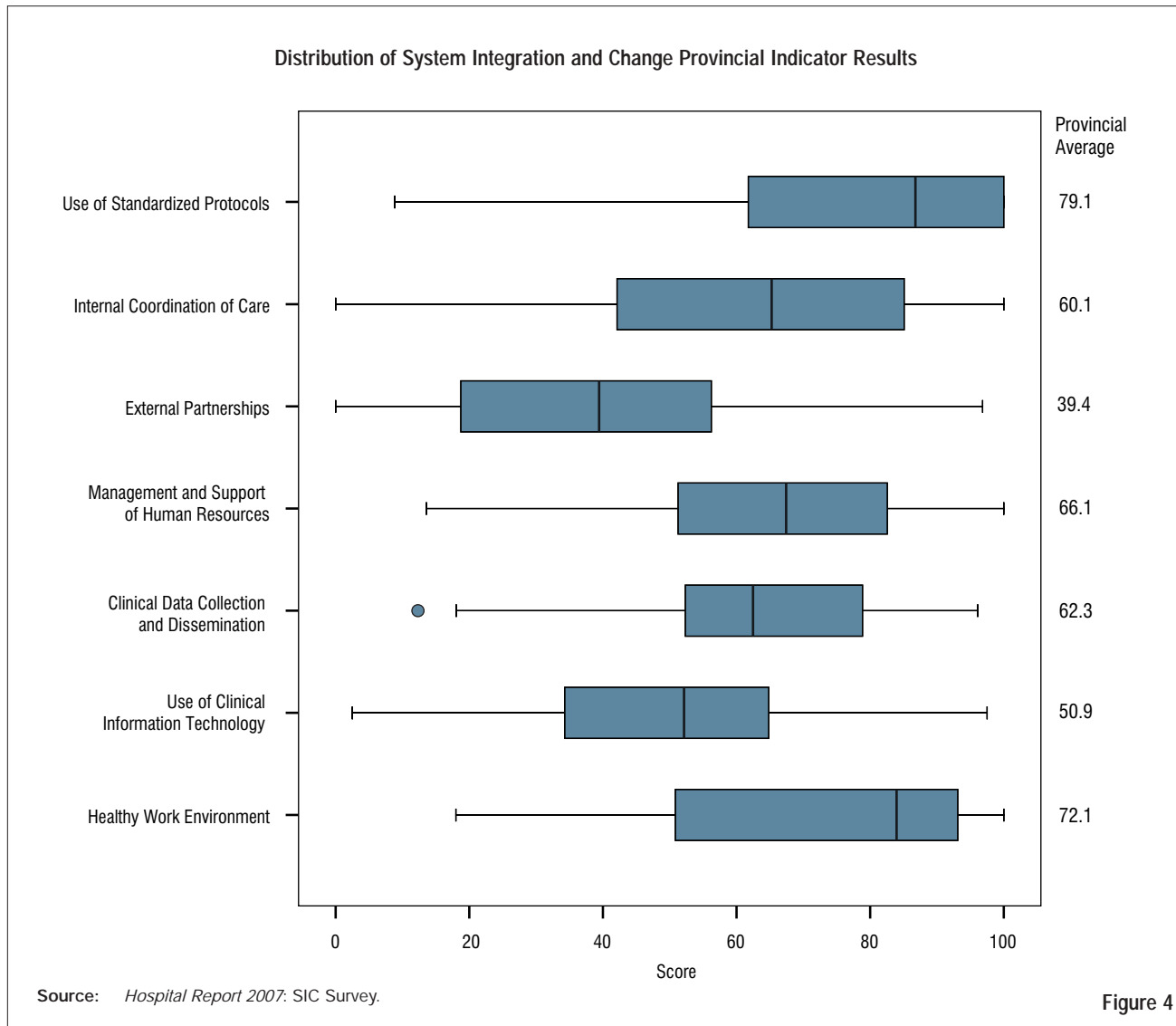
The extent to which hospitals have mechanisms in place to support and promote a healthy work environment, thereby contributing to employees' physical, social, mental and emotional well-being.

Data presented are based on results from a survey completed on a voluntary basis by hospital managers in February 2007. Results for the 102 hospitals that completed this year's ED SIC survey are included in the analysis and illustrated in the performance allocation tables.

This year, the introduction of a web-based SIC survey allowed for a more streamlined process for hospitals to submit their responses. Please note that there have also been significant changes in the indicator weights and methodologies and performance allocation methods. Caution should be taken when trending indicator results from previous years. For a complete listing of all the changes introduced this year, please refer to the Emergency Department 2007 System Integration and Change technical summary (available at [www.hospitalreport.ca](http://www.hospitalreport.ca)).

This year, the Healthy Work Environment indicator has been included in all sectors (that is, Emergency Department Care, Complex Continuing Care, Rehabilitation and Acute Care). Hospitals that participated in multiple sectors have the same Healthy Work Environment score across all sectors. However, the provincial average and performance allocation for this indicator is not consistent because it includes only participating hospitals within that sector.

## SUMMARY OF RESULTS

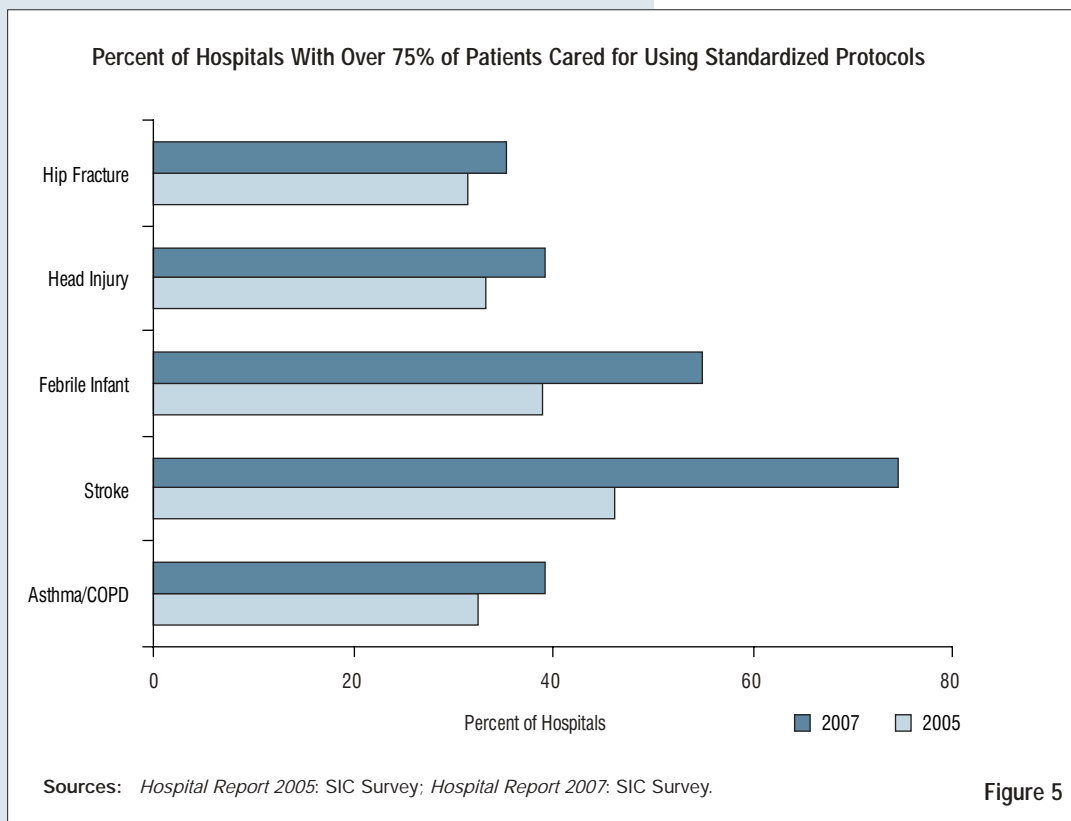


For more information on the interpretation of box plots, please refer to the Interpreting the Results section in this report.

Figure 4 depicts the distribution of scores and the provincial average (mean) for each of the indicators. There is considerable variation in scores for the majority of the indicators. Hospitals can use this figure to see where their scores (found in the performance allocation tables) for each of the indicators fall relative to other hospitals' scores in the province. This figure is not meant to facilitate comparison between indicators.

## SUMMARY OF RESULTS (CONT'D)

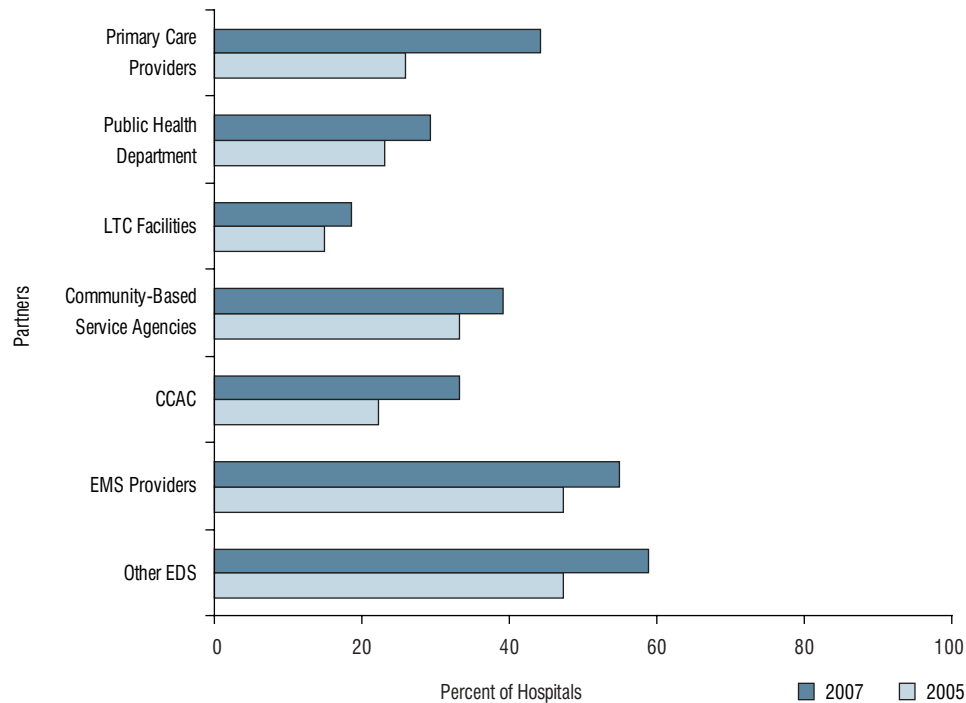
An increasing number of hospitals are developing and using standardized guidelines for the majority (75% or more) of their patients in several areas of clinical practice. This year, a considerable improvement in using practice guidelines was found in the treatment of stroke, febrile infants, head injury, asthma/chronic obstructive pulmonary disease (COPD) and hip fracture. This may be due to the increased awareness of clinical guidelines and protocols and improved coordination of activities among members of the care team.



## SUMMARY OF RESULTS (CONT'D)

Sharing best practices and working with external partners within each LHIN is important for hospitals as they strive to improve standards of care. This year, an increasing number of hospitals have become more engaged in the development of external partnerships, including primary care providers, emergency medical services (EMS), and other EDs. Figure 6 shows that compared to 2005, a greater proportion of hospitals report that they collaborate with their LHIN partners in order to strengthen their education and training practices. Close to 60% of EDs reported working with health care providers in other EDs within their LHINs.

Participation With Other LHIN Health Care Providers in Planning and Carrying Education Sessions for Community Partners and ED Staff



Sources: *Hospital Report 2005: SIC Survey; Hospital Report 2007: SIC Survey.*

Figure 6

## SUMMARY OF RESULTS (CONT'D)

Results indicate that EDs are engaged in a variety of activities to evaluate and improve clinical practice. There has been a slight improvement in the number of hospitals with committees to address specific issues/concerns surrounding ED quality improvement initiatives and evaluating ED clinical outcomes compared to the last report. Although there is a wide variation in responses, hospitals can continually strive to implement more forums/committees around evaluating ED clinical outcomes and improving data collection and data sharing capabilities across programs.

## PERFORMANCE ALLOCATION TABLE

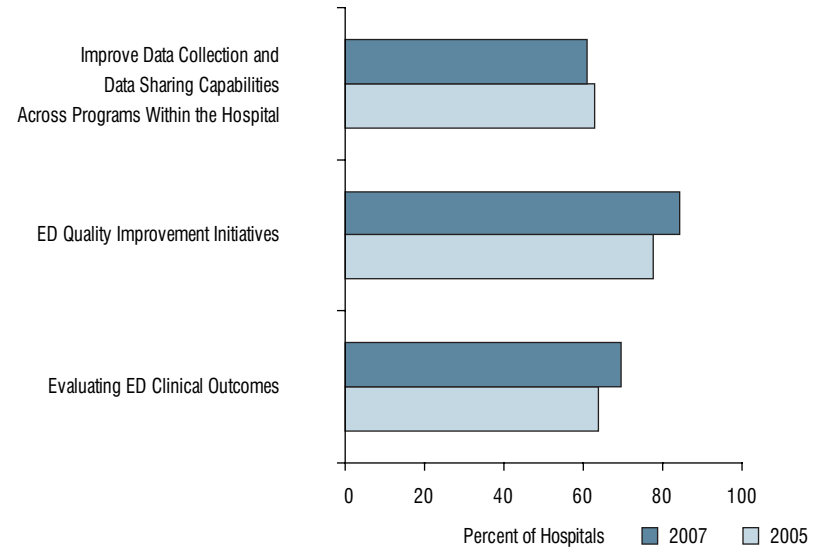
The performance allocation table includes results for 102 hospitals that completed the ED SIC survey and are participating in this report.

For each indicator, a higher score and above-average performance classification is interpreted as a better result. The maximum score for each indicator is 100. As in the last report, a three-point scale (above average, average, below average) was used to describe performance.

### Methodology Changes

In *Hospital Report 2005*, the method of assigning performance allocation was based on the k-means cluster analysis. The k-means approach was applied separately for each indicator. The k-means algorithm is a non-parametric statistical clustering method. For a more detailed description of the k-means cluster analysis, please refer to the *Hospital Report 2005: System Integration and Change* technical summary. For this year, in order to be consistent with other sectors of the System Integration and Change quadrant's performance allocation methods, a new performance allocation method was applied. It sets the upper and lower cut-points at the 95th percentile and the 5th percentile, respectively. This method does not require normality, yet produces an interval similar the one obtained by mean  $\pm$  1.645 standard deviations and should capture roughly 90% of the indicator values.

EDs With Forums/Committees to Address Specific Issues/Concerns



Sources: *Hospital Report 2005: SIC Survey*; *Hospital Report 2007: SIC Survey*.

Figure 7

| Hospital  | Community Served | LHIN | Healthy Work Environment | Use of Standardized Protocols | Internal Coordination of Care | External Partnerships | Management and Support of Human Resources | Clinical Data Collection and Dissemination | Use of Clinical Information Technology |
|---|------------------|------|--------------------------|-------------------------------|-------------------------------|-----------------------|---|--|--|
| <b>PROVINCIAL AVERAGE</b>                             |                  |      | 72.1                     | 79.1                          | 60.1                          | 39.4                  | 66.1                                      | 62.3                                       | 50.9                                   |
| <b>TEACHING HOSPITALS AVERAGE</b>                     |                  |      | 87.1                     | 78.3                          | 78.1                          | 55.9                  | 82.1                                      | 70.8                                       | 68.8                                   |
| <b>TEACHING AND COMMUNITY HOSPITALS AVERAGE</b>       |                  |      | 76.3                     | 83.0                          | 69.4                          | 44.1                  | 72.6                                      | 68.3                                       | 58.9                                   |
| Children's Hospital of Eastern Ontario                | Ottawa           | 11   | 69.1                     | 88.2                          | 84.5                          | 57.5                  | 81.6                                      | 96.1                                       | 58.6                                   |
| Hamilton Health Sciences Corporation                  | Hamilton         | 4    | 84.0                     | 79.4                          | 89.9                          | 62.8                  | 87.9                                      | 52.3                                       | 84.5                                   |
| Hotel Dieu Hospital, Kingston                         | Kingston         | 10   | 47.4                     | 57.4                          | 51.4                          | 39.7                  | 47.1                                      | 61.5                                       | 46.6                                   |
| Kingston General Hospital                             | Kingston         | 10   | 100.0                    | 60.3                          | 100.0                         | 96.8                  | 100.0                                     | 75.0                                       | 76.3                                   |
| London Health Sciences Centre                         | London           | 2    | 88.8                     | 86.8                          | 43.3                          | 35.7                  | 71.0                                      | 53.4                                       | 82.0                                   |
| Mount Sinai Hospital                                  | Toronto          | 7    | 99.0                     | 100.0                         | 68.9                          | 63.2                  | 83.6                                      | 75.7                                       | 59.6                                   |
| St. Joseph's Health Care London                       | London           | 2    | 97.2                     | 98.5                          | 85.1                          | 37.9                  | 91.0                                      | 77.1                                       | 76.4                                   |
| St. Joseph's Healthcare Hamilton                      | Hamilton         | 4    | 98.5                     | 86.8                          | 88.3                          | 84.4                  | 92.5                                      | 82.9                                       | 80.2                                   |
| St. Michael's Hospital                                | Toronto          | 7    | 91.0                     | 30.9                          | 100.0                         | 56.2                  | 96.5                                      | 77.5                                       | 59.8                                   |
| Sunnybrook and Women's College Health Sciences Centre | Toronto          | 7    | 88.6                     | 93.4                          | 89.9                          | 46.2                  | 58.5                                      | 71.6                                       | 83.9                                   |
| The Hospital for Sick Children                        | Toronto          | 7    | 93.5                     | 54.4                          | 64.0                          | 34.5                  | 92.5                                      | 80.2                                       | 45.4                                   |
| The Ottawa Hospital                                   | Ottawa           | 11   | 94.3                     | 100.0                         | 74.8                          | 49.2                  | 78.9                                      | 57.0                                       | 47.9                                   |
| Thunder Bay Regional Health Sciences Centre           | Thunder Bay      | 14   | 69.8                     | 67.6                          | 63.0                          | 40.5                  | 72.6                                      | 52.0                                       | 64.8                                   |
| University Health Network                             | Toronto          | 7    | 98.0                     | 91.9                          | 89.9                          | 77.8                  | 95.5                                      | 78.9                                       | 97.5                                   |

| <b>SMALL HOSPITALS AVERAGE</b>                |                |    | 60.4 | 68.5  | 34.3 | 26.1 | 48.0 | 45.7 | 28.7 |
|---|----------------|----|------|-------|------|------|------|------|------|
| Alexandra Hospital                            | Ingersoll      | 2  | 91.1 | 100.0 | 78.9 | 54.7 | 61.6 | 80.3 | 52.1 |
| Alexandra Marine and General Hospital         | Goderich       | 2  | 20.2 | 100.0 | 46.7 | 33.2 | 61.9 | 67.7 | 47.5 |
| Almonte General Hospital                      | Almonte        | 11 | 85.6 | 100.0 | 17.8 | 55.9 | 51.2 | 63.5 | 14.3 |
| Atikokan General Hospital                     | Atikokan       | 14 | 70.6 | 45.6  | 0.0  | 4.3  | 38.4 | 18.1 | 7.5  |
| Campbellford Memorial Hospital                | Campbellford   | 9  | 96.4 | 86.0  | 60.5 | 83.5 | 86.6 | 42.5 | 28.8 |
| Carleton Place and District Memorial Hospital | Carleton Place | 11 | 90.6 | 100.0 | 66.3 | 40.1 | 81.4 | 74.7 | 23.8 |
| Dryden Regional Health Centre                 | Dryden         | 14 | 94.3 | 44.1  | 46.4 | 32.9 | 53.7 | 29.2 | 47.5 |
| Glengarry Memorial Hospital                   | Alexandria     | 11 | 72.8 | 45.6  | 0.0  | 9.0  | 40.9 | 46.8 | 2.5  |
| Haldimand War Memorial Hospital               | Dunnville      | 4  | 78.5 | 38.2  | 42.1 | 16.3 | 41.8 | 49.0 | 11.8 |

■ Above-Average Performance    
 ■ Average Performance    
 ■ Below-Average Performance

| Hospital                                      | Community Served  | LHIN | Healthy Work Environment | Use of Standardized Protocols | Internal Coordination of Care | External Partnerships | Management and Support of Human Resources | Clinical Data Collection and Dissemination | Use of Clinical Information Technology |
|---|-------------------|------|--------------------------|-------------------------------|-------------------------------|-----------------------|---|--|--|
| Haliburton Highlands Health Services          | Haliburton        | 9    | 24.4                     | 100.0                         | 66.1                          | 50.3                  | 50.8                                      | 53.9                                       | 16.3                                   |
| Hanover and District Hospital                 | Hanover           | 2    | 59.3                     | 91.2                          | 47.7                          | 22.5                  | 49.2                                      | 46.3                                       | 52.3                                   |
| Kemptville District Hospital                  | Kemptville        | 11   | 92.8                     | 82.4                          | 55.1                          | 18.5                  | 56.0                                      | 56.5                                       | 3.8                                    |
| Lennox and Addington County General Hospital  | Napanee           | 10   | 40.8                     | 70.6                          | 0.0                           | 37.6                  | 62.2                                      | 55.7                                       | 67.7                                   |
| Listowel and Wingham Hospitals Alliance       | Listowel          | 2    | 33.5                     | 86.8                          | 22.1                          | 20.6                  | 54.6                                      | 54.1                                       | 40.4                                   |
| Mattawa General Hospital                      | Mattawa           | 13   | 74.7                     | 42.7                          | 0.0                           | 17.2                  | 40.8                                      | 26.7                                       | 2.5                                    |
| McCausland Hospital                           | Terrace Bay       | 14   | 50.0                     | 36.8                          | 5.6                           | 6.1                   | 22.8                                      | 12.3                                       | 31.6                                   |
| MICs Group of Health Services                 | Cochrane          | 13   | 51.1                     | 58.1                          | 7.5                           | 6.9                   | 13.6                                      | 18.4                                       | 46.3                                   |
| Nipigon District Memorial Hospital            | Nipigon           | 14   | 33.5                     | 64.7                          | 16.9                          | 11.7                  | 26.4                                      | 23.2                                       | 11.3                                   |
| North Wellington Health Care                  | Mount Forest      | 3    | 88.9                     | 79.4                          | 70.2                          | 48.0                  | 58.6                                      | 59.8                                       | 37.3                                   |
| Sensenbrenner Hospital                        | Kapuskasing       | 13   | 55.9                     | 55.9                          | 36.5                          | 2.8                   | 36.9                                      | 43.8                                       | 31.3                                   |
| Services de santé de Chapleau Health Services | Chapleau          | 13   | 26.7                     | 45.6                          | 31.1                          | 23.2                  | 49.2                                      | 29.1                                       | 17.5                                   |
| Sioux Lookout Meno-Ya-Win Health Centre       | Sioux Lookout     | 14   | 36.5                     | 8.8                           | 19.9                          | 4.8                   | 33.9                                      | 22.7                                       | 30.0                                   |
| Smooth Rock Falls Hospital                    | Smooth Rock Falls | 13   | 60.8                     | 53.7                          | 17.8                          | 11.4                  | 31.0                                      | 23.5                                       | 21.3                                   |
| South Huron Hospital                          | Exeter            | 2    | 24.7                     | 54.4                          | 36.7                          | 16.9                  | 28.7                                      | 44.4                                       | 15.0                                   |
| St. Francis Memorial Hospital                 | Barry's Bay       | 11   | 49.0                     | 70.6                          | 44.9                          | 16.1                  | 35.3                                      | 57.3                                       | 27.9                                   |
| The Willett Hospital                          | Paris             | 4    | 90.9                     | 100.0                         | 83.3                          | 44.0                  | 83.6                                      | 88.3                                       | 60.2                                   |
| Wilson Memorial General Hospital              | Marathon          | 14   | 38.3                     | 89.0                          | 5.6                           | 17.4                  | 45.2                                      | 46.6                                       | 27.9                                   |

| COMMUNITY HOSPITALS AVERAGE              |             |    | 73.8 | 84.1  | 67.4  | 41.4 | 70.4 | 67.8 | 56.7 |
|--|-------------|----|------|-------|-------|------|------|------|------|
| TEACHING AND COMMUNITY HOSPITALS AVERAGE |             |    | 76.3 | 83.0  | 69.4  | 44.1 | 72.6 | 68.3 | 58.9 |
| Bluewater Health                         | Sarnia      | 1  | 87.9 | 82.4  | 30.5  | 13.2 | 40.8 | 48.1 | 35.0 |
| Brockville General Hospital              | Brockville  | 10 | 77.8 | 100.0 | 44.9  | 54.1 | 53.1 | 46.5 | 33.0 |
| Cambridge Memorial Hospital              | Cambridge   | 3  | 42.0 | 89.0  | 71.4  | 31.7 | 75.0 | 52.9 | 53.0 |
| Chatham-Kent Health Alliance             | Chatham     | 1  | 75.6 | 100.0 | 63.3  | 11.7 | 63.6 | 56.2 | 86.4 |
| Collingwood General and Marine Hospital  | Collingwood | 12 | 30.7 | 91.9  | 63.3  | 29.3 | 72.5 | 59.9 | 58.6 |
| Cornwall Community Hospital              | Cornwall    | 11 | 79.5 | 17.6  | 30.5  | 11.9 | 45.1 | 18.5 | 44.1 |
| Grand River Hospital                     | Kitchener   | 3  | 44.9 | 80.1  | 43.9  | 21.6 | 79.3 | 55.9 | 76.4 |
| Grey Bruce Health Services               | Owen Sound  | 2  | 89.6 | 31.6  | 59.9  | 6.5  | 66.1 | 56.1 | 57.3 |
| Groves Memorial Community Hospital       | Fergus      | 3  | 92.9 | 93.4  | 22.1  | 69.4 | 74.8 | 69.8 | 33.6 |
| Guelph General Hospital                  | Guelph      | 3  | 92.7 | 93.4  | 100.0 | 70.0 | 89.9 | 93.8 | 88.2 |

| Hospital   | Community Served | LHIN | Healthy Work Environment | Use of Standardized Protocols | Internal Coordination of Care | External Partnerships | Management and Support of Human Resources | Clinical Data Collection and Dissemination | Use of Clinical Information Technology |
|--|------------------|------|--------------------------|-------------------------------|-------------------------------|-----------------------|---|--|--|
| Halton Healthcare  | Oakville         | 6    | 100.0                    | 100.0                         | 81.0                          | 79.6                  | 88.9                                      | 86.9                                       | 76.4                                   |
| Headwaters Health Care Centre                                    | Orangeville      | 5    | 93.7                     | 93.4                          | 68.3                          | 79.5                  | 82.4                                      | 77.6                                       | 83.2                                   |
| Hôpital Général de Hawkesbury and District General Hospital Inc. | Hawkesbury       | 11   | 89.0                     | 35.3                          | 96.6                          | 60.1                  | 86.9                                      | 66.2                                       | 41.1                                   |
| Hôpital Montfort Hospital  | Ottawa           | 11   | 90.0                     | 100.0                         | 76.0                          | 73.9                  | 85.5                                      | 80.6                                       | 46.1                                   |
| Hôtel-Dieu Grace Hospital  | Windsor          | 1    | 96.7                     | 100.0                         | 88.8                          | 46.4                  | 94.5                                      | 93.6                                       | 71.4                                   |
| Humber River Regional Hospital                                   | Toronto          | 8    | 96.4                     | 100.0                         | 82.4                          | 64.2                  | 85.4                                      | 76.6                                       | 68.8                                   |
| Huron Perth Healthcare Alliance                                  | Stratford        | 2    | 53.5                     | 61.8                          | 73.2                          | 26.5                  | 45.8                                      | 47.2                                       | 92.0                                   |
| Huron District Hospital—North Simcoe Hospital Alliance           | Midland          | 12   | 97.1                     | 86.8                          | 66.7                          | 48.1                  | 57.1                                      | 60.3                                       | 59.6                                   |
| Joseph Brant Memorial Hospital                                   | Burlington       | 4    | 64.3                     | 89.0                          | 83.8                          | 27.4                  | 90.6                                      | 72.2                                       | 50.9                                   |
| Kirkland and District Hospital                                   | Kirkland Lake    | 13   | 93.1                     | 100.0                         | 53.2                          | 32.7                  | 52.7                                      | 78.9                                       | 51.4                                   |
| Lake of the Woods District Hospital                              | Kenora           | 14   | 39.9                     | 85.3                          | 73.9                          | 15.0                  | 56.4                                      | 65.0                                       | 27.9                                   |
| Lakeridge Health   | Oshawa           | 9    | 36.4                     | 100.0                         | 91.6                          | 76.5                  | 85.5                                      | 80.6                                       | 80.2                                   |
| Leamington District Memorial Hospital                            | Leamington       | 1    | 62.3                     | 70.6                          | 47.4                          | 45.1                  | 61.6                                      | 66.8                                       | 34.6                                   |
| Markham Stouffville Hospital                                     | Markham          | 8    | 83.2                     | 100.0                         | 71.1                          | 30.5                  | 66.3                                      | 57.9                                       | 72.0                                   |
| Muskoka Algonquin Healthcare                                     | Huntsville       | 12   | 34.0                     | 93.4                          | 40.5                          | 35.2                  | 56.0                                      | 58.1                                       | 32.5                                   |
| Niagara Health System  | Niagara Falls    | 4    | 94.0                     | 85.3                          | 94.4                          | 68.1                  | 87.1                                      | 87.5                                       | 60.4                                   |
| Norfolk General Hospital   | Simcoe           | 4    | 84.2                     | 55.9                          | 89.4                          | 56.9                  | 61.1                                      | 76.8                                       | 59.6                                   |
| North Bay General Hospital                                       | North Bay        | 13   | 18.0                     | 98.5                          | 42.1                          | 52.0                  | 78.7                                      | 53.0                                       | 43.9                                   |
| North York General Hospital                                      | Toronto          | 8    | 95.8                     | 100.0                         | 85.9                          | 15.1                  | 93.6                                      | 82.8                                       | 59.8                                   |
| Northumberland Hills Hospital                                    | Cobourg          | 9    | 95.9                     | 68.4                          | 67.2                          | 39.1                  | 92.0                                      | 67.9                                       | 57.1                                   |
| Orillia Soldiers' Memorial Hospital                              | Orillia          | 12   | 87.3                     | 76.5                          | 88.8                          | 56.9                  | 62.9                                      | 84.1                                       | 63.4                                   |
| Pembroke Regional Hospital                                       | Pembroke         | 11   | 89.3                     | 69.1                          | 72.3                          | 42.3                  | 50.2                                      | 64.2                                       | 56.4                                   |
| Perth and Smiths Falls District Hospital                         | Smiths Falls     | 10   | 93.6                     | 100.0                         | 57.3                          | 72.5                  | 71.2                                      | 81.3                                       | 88.2                                   |
| Peterborough Regional Health Centre                              | Peterborough     | 9    | 68.9                     | 100.0                         | 100.0                         | 74.4                  | 77.6                                      | 83.9                                       | 59.1                                   |
| Queensway Carleton Hospital                                      | Nepean           | 11   | 92.0                     | 100.0                         | 53.9                          | 22.3                  | 70.5                                      | 86.3                                       | 52.1                                   |
| Quinte Health Care   | Belleville       | 10   | 35.6                     | 93.4                          | 64.4                          | 51.3                  | 68.1                                      | 79.2                                       | 55.4                                   |
| Renfrew Victoria Hospital  | Renfrew          | 11   | 94.4                     | 95.6                          | 100.0                         | 53.9                  | 63.2                                      | 59.7                                       | 17.5                                   |
| Ross Memorial Hospital   | Lindsay          | 9    | 54.4                     | 61.8                          | 53.9                          | 20.8                  | 66.8                                      | 49.8                                       | 34.3                                   |
| Rouge Valley Health System                                       | Scarborough      | 9    | 70.4                     | 94.1                          | 45.5                          | 4.6                   | 81.9                                      | 69.4                                       | 52.1                                   |
| Royal Victoria Hospital  | Barrie           | 12   | 97.2                     | 70.6                          | 84.9                          | 18.7                  | 72.6                                      | 75.5                                       | 64.6                                   |
| Sault Area Hospital  | Sault Ste. Marie | 13   | 38.3                     | 36.8                          | 95.8                          | 29.9                  | 65.3                                      | 53.9                                       | 47.5                                   |
| South Bruce Grey Health Centre                                   | Kincardine       | 2    | 71.0                     | 95.6                          | 17.8                          | 4.8                   | 54.5                                      | 56.9                                       | 50.9                                   |
| Southlake Regional Health Centre                                 | Newmarket        | 8    | 34.8                     | 61.0                          | 88.8                          | 25.6                  | 92.0                                      | 76.5                                       | 63.6                                   |

| Hospital                               | Community Served | LHIN | Healthy Work Environment | Use of Standardized Protocols | Internal Coordination of Care | External Partnerships | Management and Support of Human Resources | Clinical Data Collection and Dissemination | Use of Clinical Information Technology |
|--|------------------|------|--------------------------|-------------------------------|-------------------------------|-----------------------|---|--|--|
| St. Joseph's Health Centre Toronto     | Toronto          | 7    | 96.7                     | 86.8                          | 68.9                          | 50.3                  | 81.5                                      | 62.2                                       | 92.0                                   |
| St. Mary's General Hospital            | Kitchener        | 3    | 85.5                     | 86.8                          | 100.0                         | 40.7                  | 71.4                                      | 81.5                                       | 72.0                                   |
| St. Thomas-Elgin General Hospital      | St. Thomas       | 2    | 83.9                     | 85.3                          | 35.5                          | 56.6                  | 58.7                                      | 62.7                                       | 50.9                                   |
| Strathroy Middlesex General Hospital   | Strathroy        | 2    | 28.4                     | 89.7                          | 24.9                          | 12.0                  | 42.2                                      | 25.2                                       | 47.9                                   |
| Temiskaming Hospital                   | New Liskeard     | 13   | 84.6                     | 63.2                          | 0.0                           | 15.2                  | 23.7                                      | 25.3                                       | 35.4                                   |
| The Brantford General Hospital         | Brantford        | 4    | 91.9                     | 100.0                         | 83.3                          | 44.7                  | 83.6                                      | 88.3                                       | 60.2                                   |
| The Credit Valley Hospital             | Mississauga      | 6    | 86.7                     | 100.0                         | 96.6                          | 57.5                  | 95.1                                      | 90.6                                       | 84.5                                   |
| The Scarborough Hospital               | Scarborough      | 9    | 87.3                     | 95.6                          | 91.6                          | 56.0                  | 74.5                                      | 72.7                                       | 51.8                                   |
| Tillsonburg District Memorial Hospital | Tillsonburg      | 2    | 83.5                     | 100.0                         | 88.8                          | 35.6                  | 71.5                                      | 82.5                                       | 55.2                                   |
| Timmins and District Hospital          | Timmins          | 13   | 50.8                     | 100.0                         | 43.3                          | 0.0                   | 44.8                                      | 48.2                                       | 48.4                                   |
| Toronto East General Hospital          | Toronto          | 7    | 98.0                     | 100.0                         | 100.0                         | 64.9                  | 94.6                                      | 94.4                                       | 76.4                                   |
| Trillium Health Centre                 | Mississauga      | 6    | 94.3                     | 100.0                         | 91.6                          | 60.0                  | 80.4                                      | 90.2                                       | 55.9                                   |
| West Lincoln Memorial Hospital         | Grimsby          | 4    | 93.4                     | 50.0                          | 35.5                          | 46.8                  | 33.1                                      | 74.7                                       | 13.6                                   |
| William Osler Health Centre            | Brampton         | 5    | 24.8                     | 89.7                          | 88.8                          | 26.0                  | 74.1                                      | 58.0                                       | 66.3                                   |
| Winchester District Memorial Hospital  | Winchester       | 11   | 52.4                     | 71.3                          | 29.0                          | 49.7                  | 75.6                                      | 60.4                                       | 6.8                                    |
| Windsor Regional Hospital              | Windsor          | 1    | 100.0                    | 98.5                          | 78.2                          | 61.3                  | 77.5                                      | 70.0                                       | 80.0                                   |
| Woodstock General Hospital             | Woodstock        | 2    | 83.4                     | 54.4                          | 58.8                          | 50.5                  | 63.8                                      | 79.0                                       | 59.5                                   |
| York Central Hospital                  | Richmond Hill    | 8    | 18.0                     | 98.5                          | 72.5                          | 31.2                  | 82.6                                      | 53.2                                       | 60.7                                   |

### RESULTS BY LOCAL HEALTH INTEGRATION NETWORK

|   |      |       |      |      |      |      |      |
|---|------|-------|------|------|------|------|------|
| LHIN 1 (Erie St. Clair)                   | 84.5 | 90.3  | 61.6 | 35.5 | 67.6 | 66.9 | 61.5 |
| LHIN 2 (South West)                       | 64.9 | 81.1  | 51.4 | 29.6 | 58.6 | 59.5 | 55.7 |
| LHIN 3 (Waterloo Wellington)              | 74.5 | 87.0  | 67.9 | 46.9 | 74.8 | 68.9 | 60.1 |
| LHIN 4 (Hamilton Niagara Haldimand Brant) | 86.6 | 76.1  | 76.7 | 50.2 | 73.5 | 74.7 | 53.5 |
| LHIN 5 (Central West)                     | 59.3 | 91.5  | 78.5 | 52.8 | 78.3 | 67.8 | 74.7 |
| LHIN 6 (Mississauga Halton)               | 93.7 | 100.0 | 89.7 | 65.7 | 88.2 | 89.2 | 72.3 |
| LHIN 7 (Toronto Central)                  | 95.0 | 79.6  | 83.1 | 56.2 | 86.1 | 77.2 | 73.5 |
| LHIN 8 (Central)                          | 65.6 | 91.9  | 80.1 | 33.3 | 84.0 | 69.4 | 65.0 |
| LHIN 9 (Central East)                     | 66.8 | 88.2  | 72.0 | 50.7 | 77.0 | 65.1 | 47.5 |
| LHIN 10 (South East)                      | 65.9 | 80.3  | 53.0 | 58.7 | 66.9 | 66.5 | 61.2 |
| LHIN 11 (Champlain)                       | 81.5 | 76.8  | 57.3 | 40.0 | 64.5 | 63.4 | 31.6 |
| LHIN 12 (North Simcoe Muskoka)            | 69.3 | 83.8  | 68.8 | 37.6 | 64.2 | 67.6 | 55.8 |
| LHIN 13 (North East)                      | 55.4 | 65.4  | 32.7 | 19.1 | 43.7 | 40.1 | 34.5 |
| LHIN 14 (North West)                      | 54.1 | 55.2  | 28.9 | 16.6 | 43.7 | 33.6 | 31.0 |

■ Above-Average Performance   ■ Average Performance   ■ Below-Average Performance

Measuring what Ontarians think about their emergency department hospital care is a key indicator of the quality of services provided in hospitals. The National Research Corporation (NRC)+Picker Emergency Department Survey focuses on the patient experience and allows patients to evaluate their interaction with hospital staff, including nurses and doctors, the services they received and the amount of time they waited for these services.

The analysis reflects perceptions of patients who visited an emergency department between April 2005 and March 2006.

For each of the indicators, a higher score is desirable, as is an above-average performance classification. The maximum score for each indicator is 100.

## Indicator Definitions

The four indicators for this quadrant are made up of individual questionnaire items that reflect four overall areas of patient satisfaction.

### Overall Impressions

Patients' assessments, overall, of their hospital stays.

### Communication

Patients' assessments of how well information was communicated to them or their family during their ED stays.

### Consideration

Patients' assessments of whether they were treated with respect and courtesy by doctors, nurses and other staff during their stays in the ED.

### Responsiveness

Patients' assessments of the amount of time they waited to see doctors and nurses and receive test results; assessments of pain management; assessments of team work; and the staff's responsiveness to their needs.

Questionnaire items included in each of the indicators are detailed in the technical summary on the Hospital Report website at [www.hospitalreport.ca](http://www.hospitalreport.ca).

**Note:** Data were adjusted using common risk-adjustment techniques. A number of variables were used to adjust indicator scores for factors considered to be beyond a hospital's control that were observed to affect scores. These included age and sex, as well as the following questions from the survey: In general, how would you rate your health? Do you have a regular family physician/general practitioner who you see when you have health problems? Who completed this survey?

## NRC + Picker

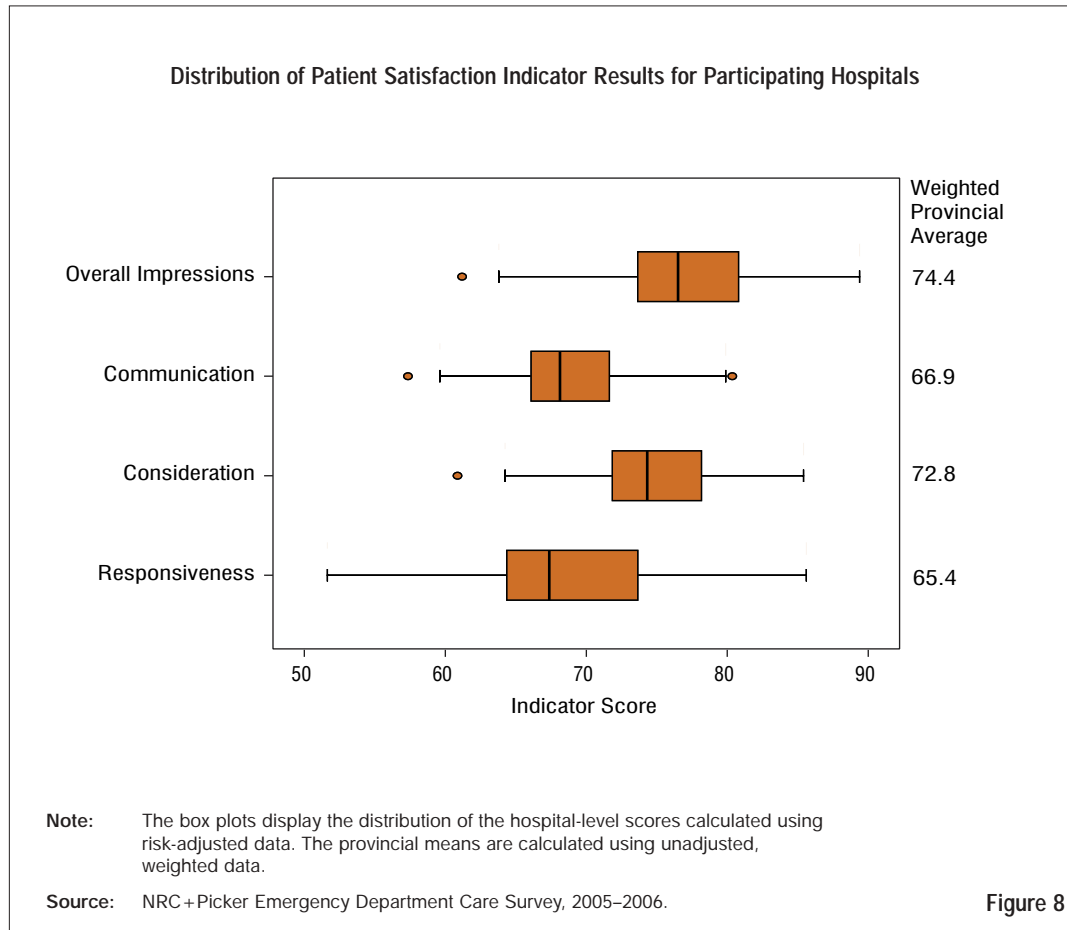
The patient satisfaction results in this report are based on data collected by NRC+Picker Canada. NRC+Picker Canada is a Canadian research company specializing in promoting patient-centred care in the Canadian health care setting. NRC+Picker Canada has over 13 years' experience nationally, and over 26 years' internationally, conducting survey research designed to uncover what is most important to patients.

Results for the 90 hospitals that voluntarily participated in the emergency department patient satisfaction survey process in 2005–2006 are included in the analysis and illustrated in the performance allocation tables.

## Response Rates

Approximately 113,500 questionnaires were mailed to individuals who had an emergency department visit at participating hospitals between April 1, 2005, and March 31, 2006. The overall response rate was 30%. Females had a response rate of 31.9%, while males had a response rate of 28.1%. The mean hospital response rate was 31.2%, and the median response rate was 31.1%. The lowest response rate for a given hospital was 20.2%.

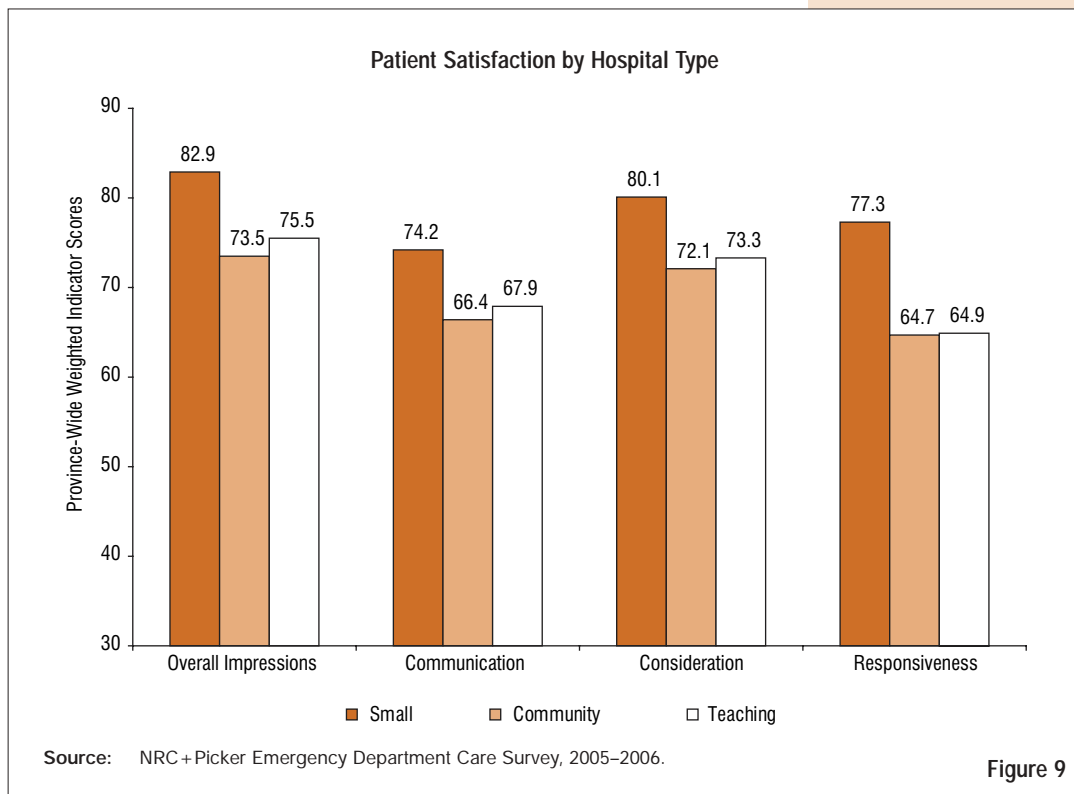
## SUMMARY OF RESULTS



For more information on the interpretation of box plots, please refer to the Interpreting the Results section in this report.

Figure 8 depicts the distribution of risk-adjusted scores for all hospitals and the weighted provincial average (mean) for each of the indicators. Hospitals can use this figure to determine where their indicator scores fit in relation to the overall distribution of scores.

## SUMMARY OF RESULTS (CONT'D)



Small hospitals generally continue to outperform larger community and teaching hospitals in all four dimensions of patient satisfaction (Figure 9). Also, as in previous years, the average scores for the South West LHIN remain the highest of all LHIN scores in all four dimensions of patient satisfaction.

Among the “high-performing” hospitals are: 10 small hospitals and 3 community hospitals. No teaching hospitals met the high-performing criteria.

Of all the indicators, the lowest average scores across the province were related to responsiveness. However, while this also holds across teaching and community hospitals, the small hospitals scored lowest in the area of communication (Figure 9). In relation to other hospital types, small hospitals appear to be very strong performers in the Responsiveness dimension, where scores are significantly higher, and where nearly all are identified as “above-average” performers.

## SUMMARY OF RESULTS (CONT'D)

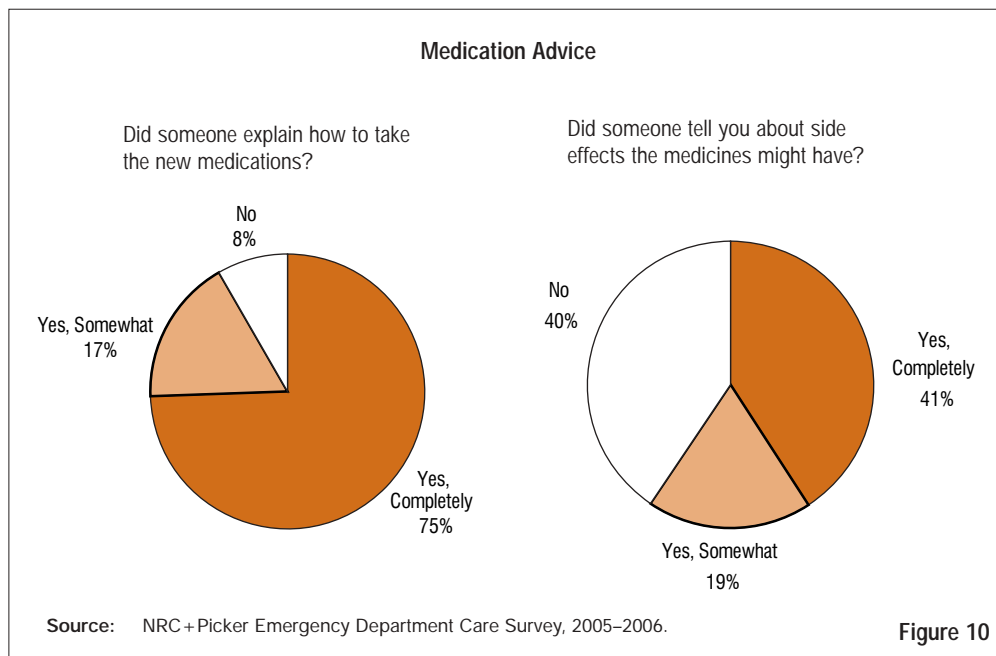


Figure 10

### Patient Satisfaction With Communication

In this time of heightened interest in patient safety, medication safety has emerged as an area of increasing public and governmental awareness.<sup>iii</sup> Poor physician–patient communication about new medications (including how to take the medications and potential adverse reactions or side-effects) can lead to patient medication non-adherence, which in turn may increase the risk of adverse medication events.<sup>iv</sup> Figure 10 presents province-level responses from patients regarding the quality of the communication of information about their medications that they received while in the emergency department. While three-quarters (75%) of respondents reported that they received full explanations of how to take their new medications, well over a third (40%) indicated that they received no information regarding the potential side effects of these new medications. This highlights one of the areas in which hospitals could look to improve educating and preparing their patients to care for themselves at home following discharge.

### Patient Satisfaction With Responsiveness

While some patients are seen by a doctor within minutes of arrival into the ED, 10% wait over three hours (3.2) or more before an initial assessment.<sup>v</sup> In 2005–2006, over half of surveyed patients felt that they had to wait too long to see a doctor in the ED (see Figure 11). This demonstrates that hospitals looking to improve patient satisfaction with responsiveness might examine the time patients wait to see a doctor and the reasons contributing to the waits.

- iii. Health Quality Council of Alberta, *Playing It Safe: You and Your Medication* (2007), [online], cited June 11, 2007, from <[http://www.hqca.ca/phpBB2/files/hqca\\_health\\_report\\_2007\\_202.pdf](http://www.hqca.ca/phpBB2/files/hqca_health_report_2007_202.pdf)>.
- iv. D. M. Tarn, J. Heritage, D. A. Paterniti, R. D. Hays, R. L. Kravitz and N. S. Wenger, "Physician Communication When Prescribing New Medications," *Archives of Internal Medicine* 166, 17 (2006): pp. 1855–1862.
- v. Canadian Institute for Health Information, *Understanding Emergency Department Wait Times: How Long Do People Spend in Emergency Departments in Ontario?* (Ottawa: CIHI, 2007).

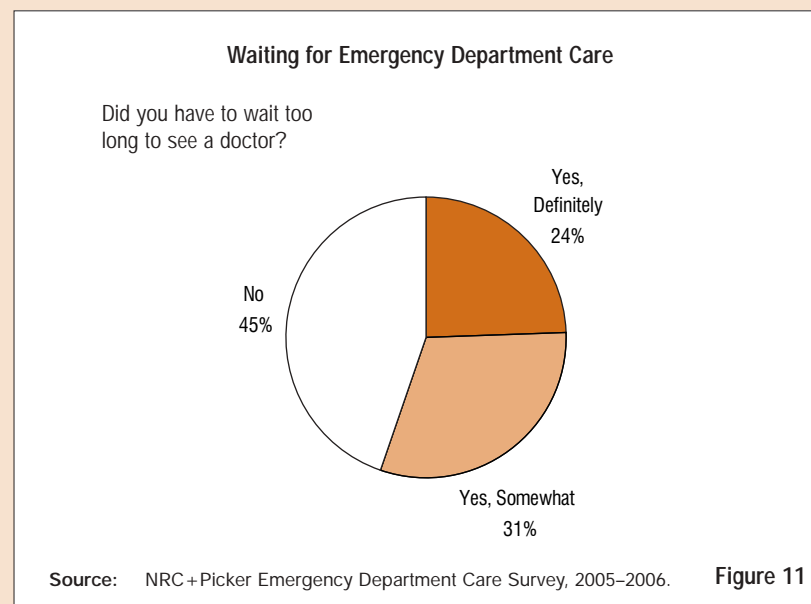


Figure 11

## PERFORMANCE ALLOCATION TABLE

Indicator results for the hospitals that participated in the patient satisfaction survey, and passed the 100-case volume screen, are shown in the performance tables.

The allocation of performance classifications in *Hospital Report 2007: Emergency Department Care* differs from the 2005 report in that hospital scores are now compared to the mean of all hospital scores (the "provincial performance target"), rather than the mean of the hospital scores belonging only to their hospital type (that is, teaching, community or small). These performance allocations are not directly comparable to those in *Hospital Report 2005: Emergency Department Care*.

| Hospital                           | Community Served | LHIN | Overall Impressions | Communication | Consideration | Responsiveness |
|------------------------------------|------------------|------|---------------------|---------------|---------------|----------------|
| <b>PROVINCIAL WEIGHTED AVERAGE</b> |                  |      | 74.4                | 66.9          | 72.8          | 65.4           |
| PROVINCIAL PERFORMANCE TARGET*     |                  |      | 76.6                | 69.0          | 74.8          | 68.2           |

| <b>TEACHING HOSPITALS AVERAGE</b>                     |             |    | 75.5 | 67.9 | 73.3 | 64.9 |
|---|-------------|----|------|------|------|------|
| Children's Hospital of Eastern Ontario                | Ottawa      | 11 | 74.6 | 68.4 | 74.0 | 59.8 |
| Hamilton Health Sciences Corporation                  | Hamilton    | 4  | 71.6 | 64.8 | 69.5 | 61.6 |
| Hôpital régional de Sudbury Regional Hospital         | Sudbury     | 13 | 73.6 | 66.4 | 72.4 | 62.9 |
| Hotel Dieu Hospital, Kingston                         | Kingston    | 10 | 82.7 | 72.1 | 80.9 | 73.2 |
| Kingston General Hospital                             | Kingston    | 10 | 77.6 | 69.5 | 76.7 | 68.5 |
| London Health Sciences Centre                         | London      | 2  | 78.7 | 70.7 | 75.7 | 69.4 |
| Mount Sinai Hospital                                  | Toronto     | 7  | 78.5 | 68.7 | 75.8 | 65.6 |
| St. Joseph's Health Care London                       | London      | 2  | 76.1 | 65.7 | 74.7 | 65.9 |
| St. Joseph's Healthcare Hamilton                      | Hamilton    | 4  | 75.7 | 67.3 | 73.4 | 64.8 |
| St. Michael's Hospital                                | Toronto     | 7  | 75.0 | 66.9 | 72.1 | 64.8 |
| Sunnybrook and Women's College Health Sciences Centre | Toronto     | 7  | 74.0 | 64.8 | 71.1 | 61.5 |
| The Hospital for Sick Children                        | Toronto     | 7  | 79.4 | 72.5 | 73.7 | 64.1 |
| The Ottawa Hospital                                   | Ottawa      | 11 | 76.3 | 70.3 | 74.4 | 65.7 |
| Thunder Bay Regional Health Sciences Centre           | Thunder Bay | 14 | 72.4 | 64.9 | 71.4 | 65.5 |
| University Health Network                             | Toronto     | 7  | 68.5 | 62.7 | 67.8 | 59.4 |

| <b>SMALL HOSPITALS AVERAGE</b>                |                |    | 82.9 | 74.2 | 80.1 | 77.3 |
|---|----------------|----|------|------|------|------|
| Alexandra Hospital                            | Ingersoll      | 2  | 76.6 | 62.4 | 72.6 | 68.5 |
| Alexandra Marine and General Hospital         | Goderich       | 2  | 84.0 | 76.5 | 80.9 | 76.9 |
| Almonte General Hospital                      | Almonte        | 11 | 87.5 | 79.9 | 83.2 | 85.6 |
| Arnprior and District Memorial Hospital       | Arnprior       | 11 | 83.6 | 76.8 | 80.5 | 76.8 |
| Carleton Place and District Memorial Hospital | Carleton Place | 11 | 84.7 | 76.5 | 82.6 | 78.7 |
| Deep River and District Hospital              | Deep River     | 11 | 89.4 | 80.4 | 85.3 | 83.2 |
| Dryden Regional Health Centre                 | Dryden         | 14 | 79.5 | 67.5 | 78.8 | 75.1 |
| Glengarry Memorial Hospital                   | Alexandria     | 11 | 82.2 | 73.9 | 78.7 | 78.7 |
| Haliburton Highlands Health Services          | Haliburton     | 9  | 89.3 | 79.9 | 85.4 | 84.2 |
| Hanover and District Hospital                 | Hanover        | 2  | 80.8 | 70.7 | 79.6 | 74.7 |
| Kemptville District Hospital                  | Kemptville     | 11 | 83.3 | 76.6 | 80.8 | 76.7 |
| Listowel and Wingham Hospitals Alliance       | Listowel       | 2  | 82.5 | 75.8 | 79.7 | 76.8 |
| MICs Group of Health Services                 | Cochrane       | 13 | 85.1 | 79.5 | 83.4 | 77.2 |

Above-Average Performance
  Average Performance
  Below-Average Performance

| Hospital                      | Community Served | LHIN | Overall Impressions | Communication | Consideration | Responsiveness |
|-------------------------------|------------------|------|---------------------|---------------|---------------|----------------|
| North Wellington Health Care  | Mount Forest     | 3    | 86.6                | 76.0          | 83.0          | 81.2           |
| South Huron Hospital          | Exeter           | 2    | 82.5                | 76.9          | 82.1          | 79.8           |
| St. Francis Memorial Hospital | Barry's Bay      | 11   | 87.3                | 79.8          | 84.3          | 82.3           |
| Stevenson Memorial Hospital   | Alliston         | 8    | 76.7                | 69.2          | 74.4          | 73.5           |
| The Willett Hospital          | Paris            | 4    | 81.7                | 72.0          | 79.1          | 74.3           |

| COMMUNITY HOSPITALS AVERAGE                                      |               |    | 73.5 | 66.4 | 72.1 | 64.7 |
|--|---------------|----|------|------|------|------|
| Bluewater Health   | Sarnia        | 1  | 78.3 | 69.7 | 76.0 | 72.6 |
| Brockville General Hospital                                      | Brockville    | 10 | 73.8 | 69.6 | 75.4 | 67.6 |
| Cambridge Memorial Hospital                                      | Cambridge     | 3  | 67.2 | 63.2 | 67.1 | 56.5 |
| Chatham-Kent Health Alliance                                     | Chatham       | 1  | 73.3 | 65.8 | 71.6 | 65.0 |
| Collingwood General and Marine Hospital                          | Collingwood   | 12 | 76.9 | 70.0 | 75.2 | 68.5 |
| Cornwall Community Hospital                                      | Cornwall      | 11 | 77.6 | 68.3 | 74.1 | 69.4 |
| Grand River Hospital   | Kitchener     | 3  | 65.3 | 61.4 | 68.4 | 52.8 |
| Grey Bruce Health Services                                       | Owen Sound    | 2  | 85.5 | 78.0 | 82.5 | 77.4 |
| Groves Memorial Community Hospital                               | Fergus        | 3  | 80.8 | 70.9 | 76.2 | 69.0 |
| Guelph General Hospital  | Guelph        | 3  | 73.0 | 66.1 | 74.4 | 62.9 |
| Halton Healthcare  | Oakville      | 6  | 74.7 | 66.8 | 72.2 | 65.8 |
| Headwaters Health Care Centre                                    | Orangeville   | 5  | 76.1 | 67.1 | 73.9 | 65.4 |
| Hôpital Général de Hawkesbury and District General Hospital Inc. | Hawkesbury    | 11 | 74.5 | 68.0 | 73.8 | 66.8 |
| Hôtel-Dieu Grace Hospital  | Windsor       | 1  | 73.5 | 67.0 | 71.8 | 66.9 |
| Humber River Regional Hospital                                   | Toronto       | 8  | 67.9 | 62.3 | 66.8 | 58.8 |
| Huron Perth Healthcare Alliance                                  | Stratford     | 2  | 85.9 | 78.6 | 83.4 | 80.4 |
| Huron District Hospital—North Simcoe Hospital Alliance           | Midland       | 12 | 74.4 | 68.5 | 73.6 | 66.9 |
| Joseph Brant Memorial Hospital                                   | Burlington    | 4  | 74.5 | 67.3 | 72.7 | 64.4 |
| Kirkland and District Hospital                                   | Kirkland Lake | 13 | 78.2 | 71.6 | 78.7 | 74.6 |
| Lake of the Woods District Hospital                              | Kenora        | 14 | 76.3 | 66.1 | 74.0 | 67.4 |
| Lakeridge Health   | Oshawa        | 9  | 73.9 | 66.6 | 72.9 | 66.1 |
| Leamington District Memorial Hospital                            | Leamington    | 1  | 75.9 | 68.2 | 75.1 | 68.4 |
| Markham Stouffville Hospital                                     | Markham       | 8  | 75.6 | 68.9 | 73.3 | 64.6 |
| Muskoka Algonquin Healthcare                                     | Huntsville    | 12 | 79.5 | 69.8 | 76.4 | 70.7 |
| Niagara Health System  | Niagara Falls | 4  | 70.1 | 65.0 | 71.0 | 63.1 |
| Norfolk General Hospital   | Simcoe        | 4  | 78.2 | 69.7 | 76.1 | 70.6 |

Above-Average Performance
  Average Performance
  Below-Average Performance

| Hospital                                 | Community Served | LHIN | Overall Impressions | Communication | Consideration | Responsiveness |
|--|------------------|------|---------------------|---------------|---------------|----------------|
| North Bay General Hospital               | North Bay        | 13   | 75.2                | 66.1          | 73.3          | 67.8           |
| North York General Hospital              | Toronto          | 8    | 70.7                | 62.4          | 68.4          | 58.9           |
| Northumberland Hills Hospital            | Cobourg          | 9    | 77.4                | 67.6          | 76.6          | 67.7           |
| Orillia Soldiers' Memorial Hospital      | Orillia          | 12   | 79.1                | 67.7          | 76.4          | 70.5           |
| Pembroke Regional Hospital               | Pembroke         | 11   | 69.4                | 66.6          | 70.4          | 64.4           |
| Perth and Smiths Falls District Hospital | Smiths Falls     | 10   | 83.1                | 76.5          | 80.4          | 78.9           |
| Peterborough Regional Health Centre      | Peterborough     | 9    | 70.5                | 65.8          | 71.7          | 63.3           |
| Queensway Carleton Hospital              | Nepean           | 11   | 79.7                | 70.9          | 77.8          | 68.1           |
| Quinte Health Care                       | Belleville       | 10   | 76.0                | 68.1          | 75.0          | 69.0           |
| Ross Memorial Hospital                   | Lindsay          | 9    | 79.0                | 67.8          | 77.6          | 69.1           |
| Rouge Valley Health System               | Scarborough      | 9    | 67.9                | 60.0          | 66.1          | 57.7           |
| Southlake Regional Health Centre         | Newmarket        | 8    | 76.6                | 68.1          | 73.6          | 66.5           |
| St. Joseph's Health Centre Toronto       | Toronto          | 7    | 71.5                | 62.7          | 69.6          | 62.5           |
| St. Mary's General Hospital              | Kitchener        | 3    | 80.8                | 71.2          | 76.5          | 69.4           |
| St. Thomas-Elgin General Hospital        | St. Thomas       | 2    | 75.3                | 70.5          | 74.3          | 67.0           |
| Strathroy Middlesex General Hospital     | Strathroy        | 2    | 73.7                | 65.0          | 72.5          | 65.9           |
| Temiskaming Hospital                     | New Liskeard     | 13   | 83.0                | 74.9          | 78.2          | 75.6           |
| The Brantford General Hospital           | Brantford        | 4    | 71.7                | 67.4          | 73.4          | 61.6           |
| The Credit Valley Hospital               | Mississauga      | 6    | 66.3                | 61.3          | 66.2          | 56.3           |
| The Scarborough Hospital                 | Scarborough      | 9    | 66.3                | 59.6          | 65.5          | 56.3           |
| Tillsonburg District Memorial Hospital   | Tillsonburg      | 2    | 80.9                | 72.9          | 77.8          | 73.7           |
| Timmins and District Hospital            | Timmins          | 13   | 76.5                | 69.3          | 73.4          | 67.4           |
| Toronto East General Hospital            | Toronto          | 7    | 67.5                | 63.9          | 66.6          | 56.5           |
| Trillium Health Centre                   | Mississauga      | 6    | 76.6                | 67.0          | 71.8          | 66.1           |
| West Lincoln Memorial Hospital           | Grimsby          | 4    | 77.1                | 66.1          | 71.0          | 66.5           |
| West Parry Sound Health Centre           | Parry Sound      | 13   | 76.5                | 67.9          | 74.5          | 71.5           |
| William Osler Health Centre              | Brampton         | 5    | 61.2                | 57.3          | 60.9          | 51.6           |
| Winchester District Memorial Hospital    | Winchester       | 11   | 82.2                | 72.2          | 81.1          | 73.8           |
| Windsor Regional Hospital                | Windsor          | 1    | 67.8                | 64.9          | 69.6          | 58.9           |
| Woodstock General Hospital               | Woodstock        | 2    | 73.8                | 67.4          | 74.1          | 66.0           |
| York Central Hospital                    | Richmond Hill    | 8    | 63.8                | 61.6          | 64.2          | 54.5           |

\* The average of hospital scores. Used for performance allocations.

■ Above-Average Performance    ■ Average Performance    ■ Below-Average Performance

| LHIN   | Overall Impressions | Communication | Consideration | Responsiveness |
|--|---------------------|---------------|---------------|----------------|
| <b>RESULTS BY LOCAL HEALTH INTEGRATION NETWORK</b> |                     |               |               |                |
| LHIN 1 (Erie St.Clair)                             | 74.0                | 67.1          | 72.9          | 66.7           |
| LHIN 2 (South West)                                | 80.2                | 72.0          | 77.8          | 72.1           |
| LHIN 3 (Waterloo Wellington)                       | 73.6                | 66.7          | 73.1          | 62.8           |
| LHIN 4 (Hamilton Niagara Haldimand Brant)          | 72.7                | 66.1          | 71.8          | 64.0           |
| LHIN 5 (Central West)                              | 63.2                | 58.7          | 62.7          | 53.5           |
| LHIN 6 (Mississauga Halton)                        | 73.7                | 65.6          | 70.7          | 63.8           |
| LHIN 7 (Toronto Central)                           | 73.4                | 66.1          | 70.8          | 61.9           |
| LHIN 8 (Central)                                   | 70.7                | 64.2          | 69.1          | 61.0           |
| LHIN 9 (Central East)                              | 72.9                | 65.0          | 71.7          | 64.0           |
| LHIN 10 (South East)                               | 78.2                | 70.5          | 77.0          | 71.4           |
| LHIN 11 (Champlain)                                | 78.6                | 71.2          | 76.6          | 69.5           |
| LHIN 12 (North Simcoe Muskoka)                     | 77.4                | 68.7          | 75.4          | 69.2           |
| LHIN 13 (North East)                               | 77.3                | 69.8          | 75.3          | 69.3           |
| LHIN 14 (North West)                               | 74.1                | 65.4          | 72.9          | 67.2           |

Emergency departments (EDs) across Ontario provide varied and complex functions, from initial assessment and triage, appropriate treatment and care, to referral to the appropriate level of care in the hospital or community. In some communities with limited primary care, they may serve as the first point of contact with the health care system and are often the gateway to inpatient hospital care. Therefore, the clinical aspects of care provided by EDs in Ontario are an important part of the health care system.

This quadrant includes clinical measures related to ED quality of care, clinical efficiency and the use of clinical decision rules. Data used for this section of the report are from the National Ambulatory Care Reporting System (NACRS) for 2005–2006 and are limited to residents of Ontario.

The indicators in this quadrant focus on performance related to three clinical conditions: pneumonia, ankle and foot injuries and asthma. New pediatric-specific indicators are also presented at a system level for three clinical conditions: asthma, bronchiolitis and croup.

Data from all eligible<sup>vi</sup> EDs in Ontario that contribute to the NACRS database were used to calculate provincial, hospital type and LHIN averages. The hospital-level indicator results in the table provided at the end of this section include data from 108 of the 124 hospitals that voluntarily agreed to participate in this quadrant of the report.

## Indicator Definitions

### Pneumonia

#### Proportion of Pneumonia Patients That Have an Inpatient Length of Stay (LOS) of $\leq 2$ Days

This indicator measures the proportion of adult patients (20 to 84 years) seen in the ED with a diagnosis of pneumonia who are admitted as an acute inpatient and who have an inpatient LOS  $\leq 2$  days. This indicator provides an indication of the proportion of patients seen in the ED with pneumonia who could potentially be safely treated in the community rather than being admitted to hospital. A lower rate is generally considered to be better.

### Asthma

#### Return Visit Rate for Asthma ( $\leq 24$ hrs)—Adult (20–64 Years)

This indicator measures the proportion of adult patients (20 to 64 years) who are discharged from the ED with a diagnosis of asthma who have an urgent or emergent return visit for asthma or a related condition to any ED within 24 hours after the initial discharge. This is a measure of the ED's ability to manage acute exacerbations of asthma among adult patients. A lower rate is generally considered to be better.

#### Return Visit Rate for Asthma (24–72 hrs)—Adult (20–64 Years)

This indicator measures the proportion of adult patients (20 to 64 years) who are discharged from the ED with a diagnosis of asthma who have an urgent or emergent return visit for asthma or a related condition to any ED 24 to 72 hours after the initial discharge. This is a measure of the ED's ability to manage acute asthma exacerbations among adult patients and adequately assess patients at risk for relapse. A lower rate is generally considered to be better.

### Risk Adjustment

Indicator values presented in this section have been adjusted for age, sex and triage status. For more information on the risk-adjustment methodology used in this report please see the technical summary on the Hospital Report website at [www.hospitalreport.ca](http://www.hospitalreport.ca).

vi Data from the Centre for Addiction and Mental Health (CAMH) have been excluded, as this emergency department serves a different patient population.

### **Return Visit Rate for Asthma (0–72 hrs)—Pediatric (1–19 Years)**

This indicator measures the proportion of pediatric patients (1 to 19 years) who are discharged from the ED with a diagnosis of asthma who have an urgent or emergent return visit for asthma or a related condition to any ED within 72 hours after the initial discharge. This is a measure of the ED's ability to manage asthma exacerbations in pediatric patients. A lower rate is generally considered to be better.

### **Ankle and Foot Injury**

#### **X-Ray Rate for Ankle or Foot Injury Patients—Adult (20–84 Years)**

This indicator measures the proportion of adult patients (20 to 84 years) with an ankle or foot injury who receive an X-ray of the ankle or foot. This is an indicator of clinical efficiency within the ED and the use of evidence-based clinical decision rules (that is, the Ottawa Ankle Rules) for diagnosing ankle or foot fractures in adult patients. In general, while it is desirable to have a relatively low rate on this indicator, too low a rate is an indication that the given hospital is underutilizing X-rays and hence, under-diagnosing ankle and foot fractures. Similarly, too high a rate on this indicator suggests that the ED may not be employing clinical decision rules and hence not using X-rays efficiently. Although a certain threshold of X-rays would be required, hospitals with lower rates are considered to be doing better for the purpose of this report. However, hospitals with very low rates should examine if they are under-utilizing X-rays by examining their return X-ray rates.

#### **X-Ray Rate for Ankle or Foot Injury Patients—Pediatric (5–19 Years)**

This indicator measures the proportion of pediatric patients (5 to 19 years) with an ankle or foot injury who receive an X-ray of the ankle or foot. This is an indicator of clinical efficiency within the ED and the use of evidence-based clinical decision rules (that is, the Ottawa Ankle Rules) for diagnosing ankle or foot fractures in pediatric patients. In general, while it is desirable to have a relatively low rate on this indicator, too low a rate is an indication that the given hospital is underutilizing X-rays and hence, under-diagnosing ankle and foot fractures. Similarly, too high a rate on this indicator suggests that the ED may not be employing clinical decision rules and hence not using X-rays efficiently. Although a certain threshold of X-rays would be required, hospitals with lower rates are considered to be doing better for the purpose of this report. However, hospitals with very low rates should examine if they are under-utilizing X-rays by examining their return X-ray rates.

#### **Return X-Ray Rate for Ankle or Foot Injury Patients (≤7 Days)**

This indicator measures the proportion of patients (5 to 84 years) who are discharged from the ED with a diagnosis of ankle or foot injury but without an ankle or foot X-ray, who have a return visit for ankle injury to any ED within seven days after the initial ED discharge and who receive an ankle or foot X-ray on the return visit. This indicator can inform hospitals about possible under-utilization of X-rays and potentially missed fractures during the initial visit to the ED. A lower rate is generally considered to be better.

### **General Definition for ED Return Visit Indicators**

For specific conditions unplanned return visits to the ED may be an indicator of ED quality and appropriateness of care. In addition, where evidence-based clinical guidelines have been established, return visits to the ED may also provide a measure of how effectively EDs have implemented these guidelines.

#### **Return visits are defined as:**

return visits to an emergency department within a defined time period after an initial ED visit

#### **Return visits include:**

cases that are return visits to the ED providing care before the return visit, as well as return visits to any other Ontario ED

#### **Return visits are attributed to:**

the last ED providing care before the return visit

## Pediatric ED Indicators

Pediatric patients represent about 20 percent of the patient population in Ontario's EDs. For the first time, pediatric ED indicators are available to provide information related to the quality and effectiveness of ED care for children. Three common pediatric conditions—asthma, bronchiolitis and croup—were examined for rates of radiography use. In uncomplicated or typical cases, the routine use of X-rays for the management of these conditions is not indicated. Since these are new indicators, results are only presented at a provincial or LHIN level.

### Chest X-Ray Rate for Asthma—Pediatric (1–19 Years)

This indicator measures the proportion of pediatric patients (1 to 19 years) with a diagnosis of asthma who receive a chest X-ray. Evidence-based clinical guidelines for the diagnosis and management of asthma do not contain recommendations for routine X-ray use.<sup>vii</sup> Hence, a lower rate on this indicator is generally considered better.

### Chest X-Ray Rate for Bronchiolitis—Pediatric (3–24 Months)

This indicator measures the proportion of pediatric patients (3 to 24 months) with a main problem of bronchiolitis who receive a chest X-ray. Evidence-based clinical guidelines for the diagnosis and management of bronchiolitis recommend against the routine use of X-rays.<sup>viii, ix</sup> Hence, a lower rate on this indicator is generally considered better.

### Chest and Neck X-Ray Rate for Croup—Pediatric (3 Months–3 Years)

This indicator measures the proportion of pediatric patients (3 months to 3 years) with a main problem of croup who receive a chest or neck X-ray. Evidence-based clinical guidelines for the diagnosis and management of croup indicate that X-rays are not required in patients with a typical history that respond appropriately to treatment.<sup>x</sup> Hence, a lower rate on this indicator is generally considered better.

vii U.S. National Institutes of Health, *Practical Guide for the Diagnosis and Management of Asthma*, 1997, [online], cited June 8, 2007, from <<http://www.nhlbi.nih.gov/health/prof/lung/asthma/practgde/practgde.pdf>>.

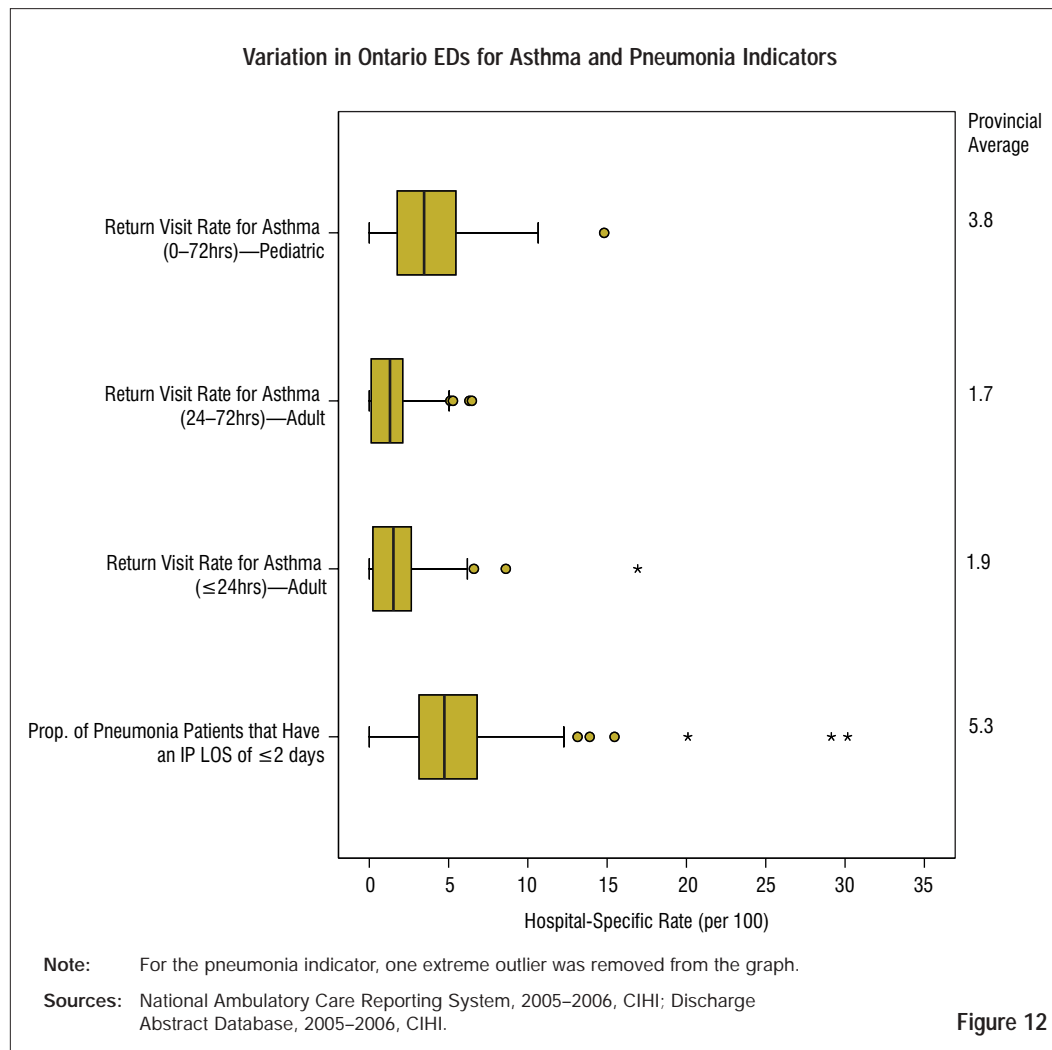
viii American Academy of Pediatrics, *Clinical Practice Guideline: Diagnosis and Management of Bronchiolitis*, 2006, [online], cited June 8, 2007, from <<http://aappolicy.aappublications.org/cgi/reprint/pediatrics;118/4/1774.pdf>>.

ix Scottish Intercollegiate Guidelines Network, *Bronchiolitis in Children: A National Clinical Guideline*, 2006, [online], cited June 8, 2007, from <<http://www.sign.ac.uk/pdf/sign91.pdf>>.

x Alberta Medical Association, *Guideline for the Diagnosis and Management of Croup*, 2007, [online], cited June 8, 2007, from <[http://www.topalbertadoctors.org/NR/rdonlyres/B072F5EF-1728-4BED-A88A-68A99341B98A/0/croup\\_guideline.pdf](http://www.topalbertadoctors.org/NR/rdonlyres/B072F5EF-1728-4BED-A88A-68A99341B98A/0/croup_guideline.pdf)>.

## SUMMARY OF RESULTS

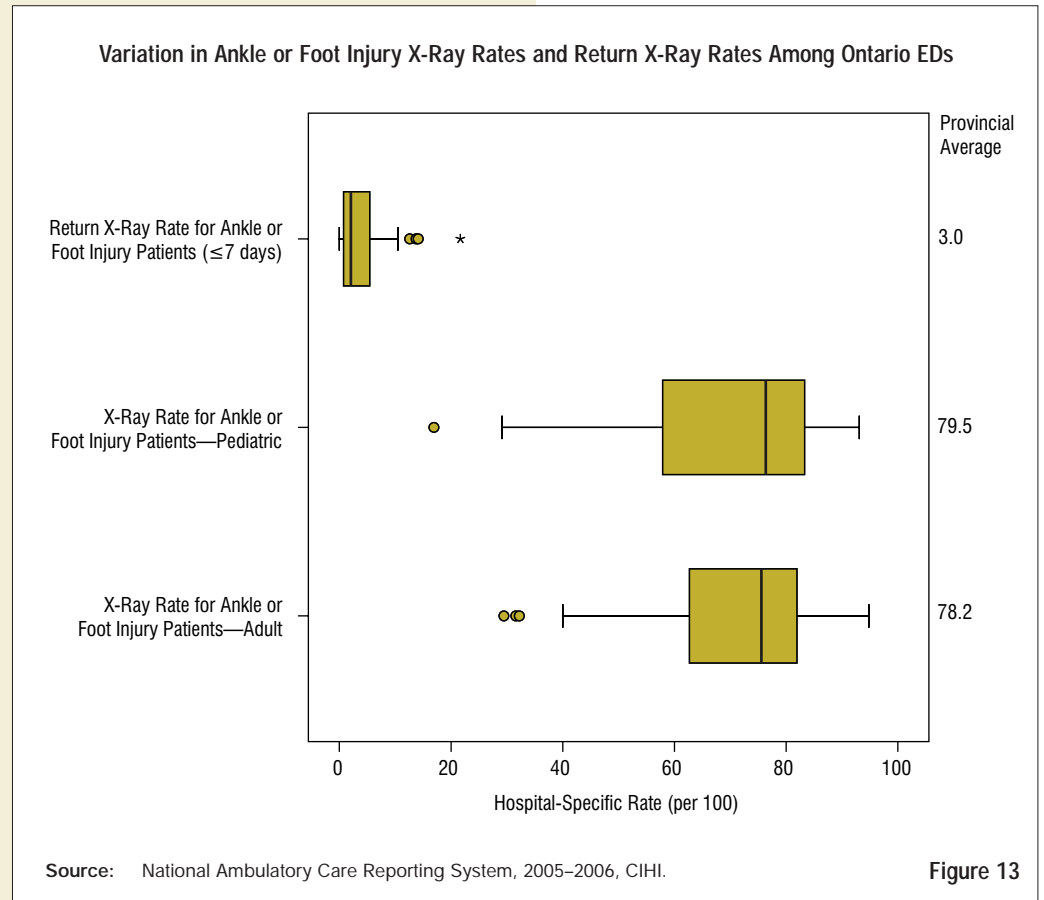
Indicator values presented in this section have been adjusted for age, sex and triage status. For more information on the risk-adjustment methodology used in this report, please see the technical summary on the Hospital Report website at [www.hospitalreport.ca](http://www.hospitalreport.ca).



For more information on the interpretation of box plots, please refer to the Interpreting the Results section in this report.

## SUMMARY OF RESULTS (CONT'D)

Figures 12 and 13 depict the distribution of scores for all hospitals and the provincial average (mean) score for each of the indicators. Hospitals can use these figures to determine where their indicator scores (as found in the performance allocation table) fit in relation to the overall distribution of scores for each of these clinical indicators.



## SUMMARY OF RESULTS (CONT'D)

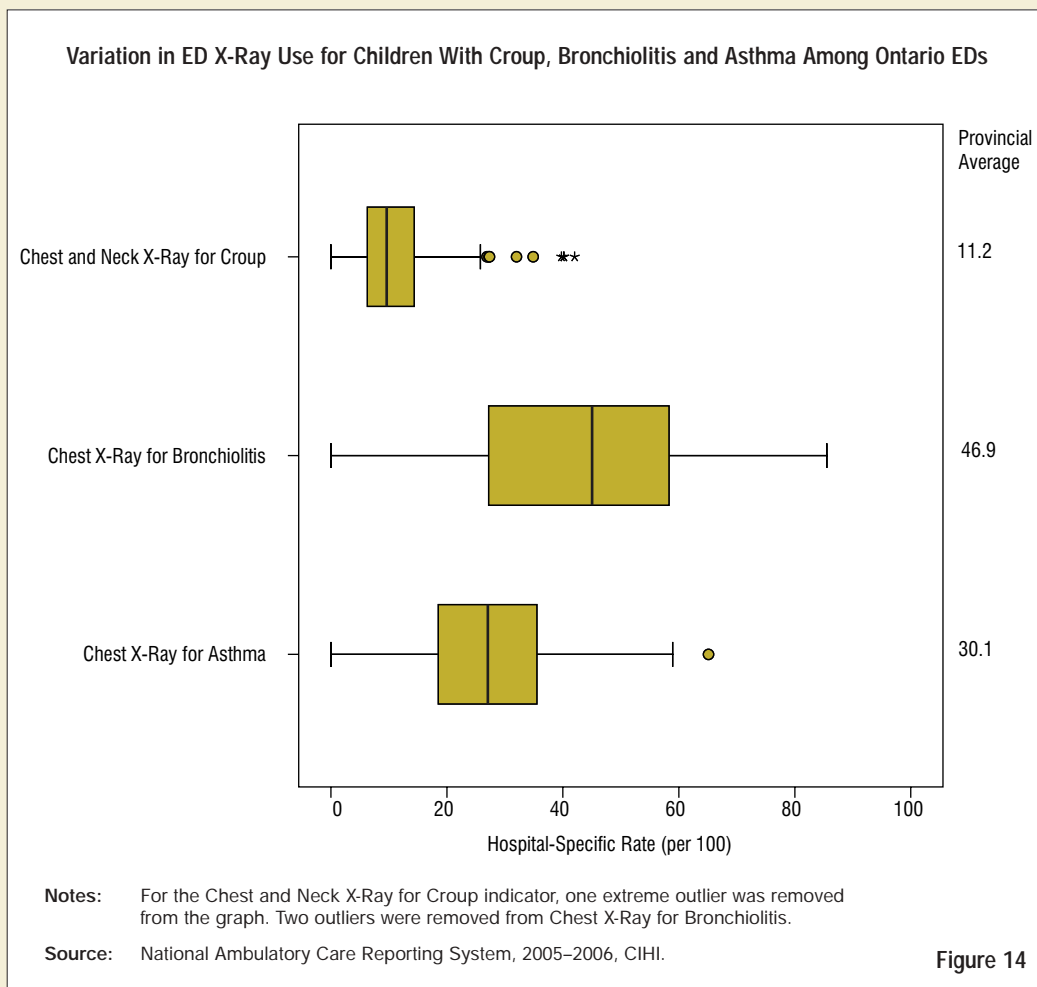


Figure 14 illustrates the distribution of scores for all hospitals and the provincial average (mean) score for the new pediatric indicators. These new indicators were developed by Guttman et al. (2006)<sup>xi</sup> to provide a more comprehensive assessment of the quality of ED services by examining pediatric ED care.

### Provincial Variation in ED X-Ray Use for Children

The results in Figure 14 and Table 3 show that a chest X-ray for bronchiolitis is a fairly common procedure within the ED, with almost half of children receiving an X-ray. However, these rates vary markedly among the EDs across the province, indicating that clinical practices may differ between EDs. Chest X-rays for asthma and chest and neck X-rays for croup have lower rates, on average, compared to chest X-ray rates for bronchiolitis. However, these indicators also show variation across EDs. More research is required to determine the appropriate rate for these indicators. However, hospitals with very high or very low scores may want to initiate an assessment into the reasons for this variation from the average. Variation in these rates may be a result of differences in the patient population (that is, atypical patients with additional comorbidities) as well as differences in clinical practice for the management of these conditions.

xi A. Guttman, A. Razaq, P. Lindsay, B. Zagorski and G. M. Anderson, "Development of Measures of the Quality of Emergency Department Care for Children Using a Structured Panel Process" *Pediatrics* 118, 1 (July 2006): pp.114–123, [online], cited December 1, 2006, from <<http://www.pediatrics.org/cgi/content/full/118/1/114>>.

## SUMMARY OF RESULTS (CONT'D)

Until recently, clinical practice guidelines for bronchiolitis and croup were not available. Results from the *Hospital Report 2007: Emergency Department System Integration and Change Survey*, also revealed that over one-third (40%) of Ontario Emergency EDs completing the survey do not use clinical practice guidelines for the treatment of croup. This may explain the variation in X-ray use observed across the province for 2005–2006. Clinical practice guidelines are currently available to hospitals and physicians for the management of these conditions.<sup>vii, viii, ix, x</sup>

**Table 3. Variation in ED X-Ray Use for Children With Croup, Bronchiolitis and Asthma Across LHINs**

|    | LHIN                             | Chest and Neck X-Ray for Croup | Chest X-Ray for Bronchiolitis | Chest X-Ray for Asthma |
|----|----------------------------------|--------------------------------|-------------------------------|------------------------|
| 1  | Erie St.Clair                    | 12.3                           | 52.8                          | 37.4                   |
| 2  | South West                       | 7.1                            | 36.8                          | 27.2                   |
| 3  | Waterloo Wellington              | 13.2                           | 54.4                          | 36.7                   |
| 4  | Hamilton Niagara Haldimand Brant | 14.4                           | 50.0                          | 34.3                   |
| 5  | Central West                     | 14.9                           | 60.6                          | 38.1                   |
| 6  | Mississauga Halton               | 10.7                           | 51.8                          | 31.5                   |
| 7  | Toronto Central                  | 10.2                           | 45.1                          | 27.9                   |
| 8  | Central                          | 12.6                           | 53.6                          | 34.3                   |
| 9  | Central East                     | 9.3                            | 51.5                          | 27.4                   |
| 10 | South East                       | 10.9                           | 37.4                          | 28.0                   |
| 11 | Champlain                        | 7.4                            | 25.7                          | 22.5                   |
| 12 | North Simcoe Muskoka             | 11.7                           | 57.2                          | 34.2                   |
| 13 | North East                       | 14.5                           | 38.6                          | 22.8                   |
| 14 | North West                       | 16.5                           | 61.2                          | 34.9                   |
|    | <b>Ontario</b>                   | <b>11.2</b>                    | <b>46.9</b>                   | <b>30.1</b>            |

**Source:** National Ambulatory Care Reporting System, 2005–2006, CIHI.

vii U.S. National Institutes of Health, *Practical Guide for the Diagnosis and Management of Asthma*, 1997, [online], cited June 8, 2007, from <http://www.nlm.nih.gov/health/prof/lung/asthma/practgde/practgde.pdf>.

viii American Academy of Pediatrics, *Clinical Practice Guideline: Diagnosis and Management of Bronchiolitis*, 2006, [online], cited June 8, 2007, from <http://aappolicy.aappublications.org/cgi/reprint/pediatrics;118/4/1774.pdf>.

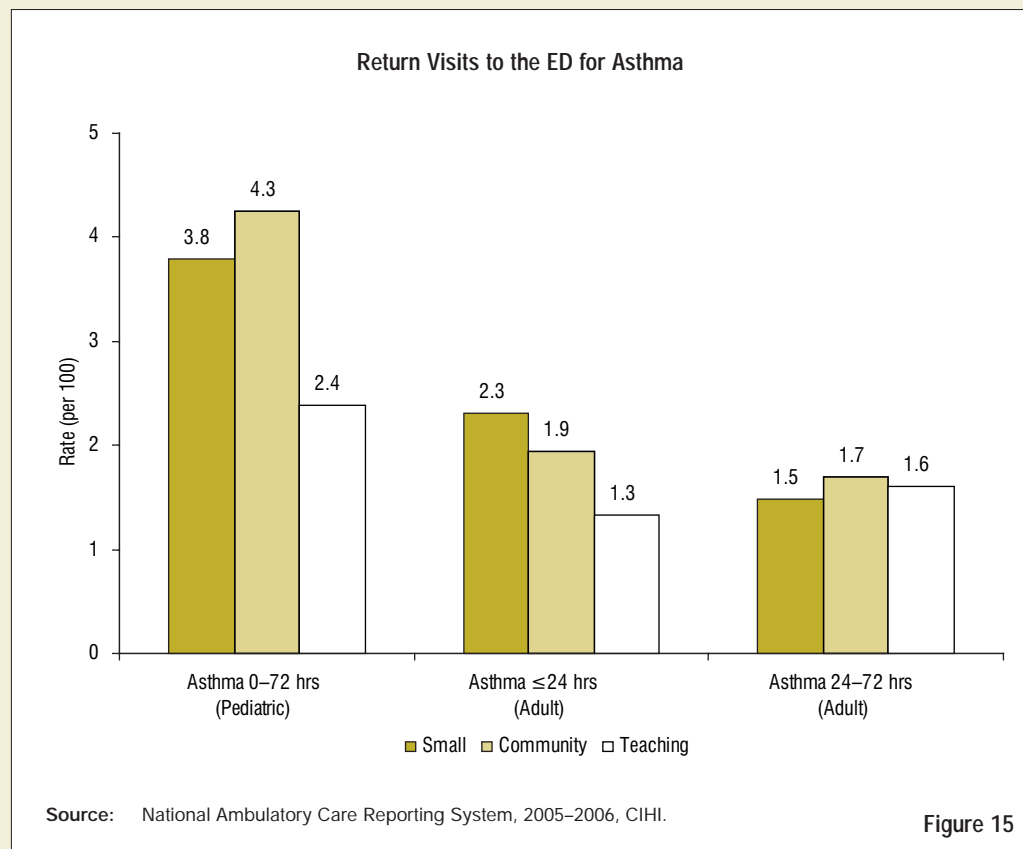
ix Scottish Intercollegiate Guidelines Network, *Bronchiolitis in Children: A National Clinical Guideline*, 2006, [online], cited June 8, 2007, from <http://www.sign.ac.uk/pdf/sign91.pdf>.

x Alberta Medical Association, *Guideline for the Diagnosis and Management of Croup*, 2007, [online], cited June 8, 2007, from [http://www.topalbertadoctors.org/NR/rdonlyres/B072F5EF-1728-4BED-A88A-68A99341B98A/0/croup\\_guideline.pdf](http://www.topalbertadoctors.org/NR/rdonlyres/B072F5EF-1728-4BED-A88A-68A99341B98A/0/croup_guideline.pdf).

## SUMMARY OF RESULTS (CONT'D)

Unscheduled return visits to the ED are an important clinical measure, as patients returning to the ED within a short period of time may reflect inadequate ED care, improper assessment of patients at risk for relapse or insufficient instruction for follow-up care.<sup>xii</sup> Other factors that can contribute to return visits include: severity of illness, patient, family and environmental characteristics and accessibility to the ED.

Asthma is a common chronic respiratory disease affecting an estimated 2.7 million Canadians over the age of 4.<sup>xiii</sup> It is also a significant factor in hospitalization and emergency department visits in Canada. Clinical guidelines for the management of asthma exacerbations within the ED are well established.<sup>vii</sup> However, just over half (56%) of Ontario EDs participating in the Hospital Report Emergency Department System and Integration Survey responded that they have a medical directive implemented in their EDs for the treatment of asthma. Thus, the examination of return visits to the ED for asthma provides an opportunity to examine hospitals' adherence to these guidelines and to assess whether there may be other factors contributing to return visits.



xii S. Nunez, A. Hexdall, A. Aguirre-Jaime, "Unscheduled returns to the emergency department: an outcome of medical errors?" *Quality and Safety in Health Care* 15, 2 (2006): pp. 102–108, [online], cited May 11, 2007, from: <<http://qshc.bmj.com/cgi/content/full/15/2/102>>.

xiii Health Canada, *It's Your Health: Asthma*, 2006, Catalogue # H13-7/4-2006E-PDF, [online], cited May 16, 2007, from <[http://www.hc-sc.gc.ca/iyh-vsv/diseases-maladies/asthm\\_e.html](http://www.hc-sc.gc.ca/iyh-vsv/diseases-maladies/asthm_e.html)>.

## SUMMARY OF RESULTS (CONT'D)

### Return Visits to the ED for Asthma Among Small, Teaching and Community Hospitals

Figure 15 shows the Return Visit Asthma indicator results by hospital type. Even though the return visit rates are on average low, 1.7 to 3.8 per 100, the burden to the system would be significant as ED visits for asthma are common.

Teaching hospitals had lower rates of return visits for asthma among children compared to small and community hospitals. Further analysis of return visits showed that the majority (80%) of return visits for asthma among children occurred within the first 24 hours. Figure 15 also shows that teaching hospitals have lower return rates for adult patients within the first 24 hours compared to community or small hospitals. This suggests that teaching hospitals, on average, may be more effective in their treatment of asthma. It has been found that hospitals using care plans such as pre-printed order sheets and those having access to a pediatrician have reduced rates of return visits for asthma in children.<sup>xiv</sup> However, it is also important to consider that there may be other factors contributing to the variation in return visit rates, such as characteristics of the patient (that is, severity of disease, compliance with or access to medication) and lower thresholds in some hospitals for hospital admission.

Small, community and teaching hospitals have similar results, on average, for adult asthma patients who return to the ED within 24 to 72 hours. This indicates that, in general, there is little difference among teaching, community and small hospitals in their ability to manage longer-term asthma exacerbations among adult patients.

### Future Development

The Ontario Hospital Association is working closely with the Ministry of Health and Long-Term Care on the Emergency Department Asthma Care Project, which will result in the distribution of a clinical tool for the treatment of acute asthma in emergency departments across the province. Additionally, a select number of Ontario hospitals will receive an asthma emergency care training program.<sup>xv</sup> This initiative should help provide further clinical guidance in the treatment of acute asthma in Ontario EDs.

xiv A. Guttman, B. Zagorski, A. Razzaq and G. Anderson, "Impact of Emergency Department Asthma Management Strategies on Return Visits in Children: A Population-Based Study", presented at AcademyHealth Annual 2007 Research Meeting in Orlando, Florida, on June 4, 2007, [online], cited June 8, 2007, from <<http://www.academyhealth.org/arm/2007/callforpapers.pdf>>.

xv Ontario Hospital Association, *Asthma Project*, [online], cited May 16, 2007, from <[http://www.oha.com/client/oha/oha\\_lp4w\\_ind\\_webstation.nsf/page/Asthma+Project](http://www.oha.com/client/oha/oha_lp4w_ind_webstation.nsf/page/Asthma+Project)>.

## SUMMARY OF RESULTS (CONT'D)

Pneumonia is a common respiratory illness that can occur in all ages. In most cases pneumonia can safely be treated in the community. However, elderly patients, those having trouble breathing and those with other illnesses may need to be treated in the hospital.<sup>xvi</sup>

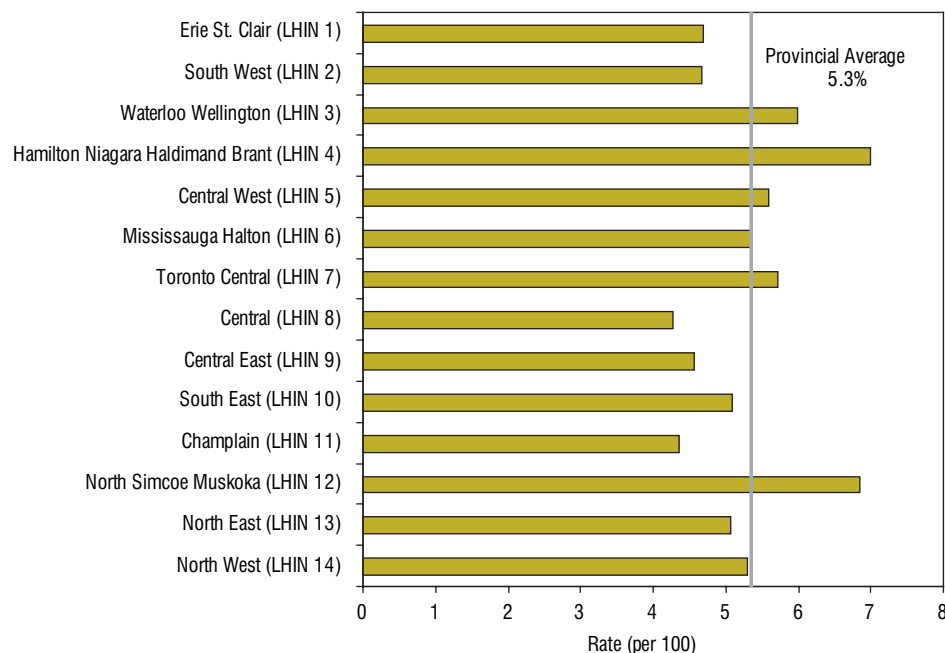
Many patients admitted with a length of stay (LOS) of two days or less could potentially be safely treated in the community rather than being admitted to hospital. Therefore, higher rates on this indicator may indicate a potential to save inpatient days by appropriately treating these patients in the community. Figure 16 shows the proportion of pneumonia patients that have an inpatient LOS of two days or under by LHIN. The variation in these rates across LHINs suggests that the criteria for hospital admission of pneumonia may not be consistent across the province. In 2005–2006, approximately 1,800 patients admitted via the ED with pneumonia were discharged within two days. This indicates that many of these patients could have potentially been treated in the community.

Hospitals can refer to validated clinical prediction rules such as the Pneumonia Severity Index to help identify low-risk pneumonia patients.<sup>xvii</sup> However, with the complexity of ED care it is also important to consider the role of patient and physician expectations for care. Pneumonia patients are frequently sent to the ED for admission to hospital.<sup>xviii</sup> Thus, it is important that adequate outpatient-based care be available and that patients and physicians have confidence in this care.

xvi M. J. Fine, T. E. Auble, D. M. Yealy, B. H. Hanusa, L. A. Weissfeld, D. E. Singer, C. M. Coley, T. J. Marrie and W. N. Kappoor, "A Prediction Rule to Identify Low-Risk Patients with Community-Acquired Pneumonia" *The New England Journal of Medicine* 336, 4 (January 23, 1997): pp. 243–250 [online], cited April 25, 2007, from <<http://content.nejm.org/cgi/content/abstract/336/4/243>>.

xvii S. J. Atlas, T. I. Benzer, L. H. Borowsky, Y. Chang, D. C. Burnham, J. P. Metlay, E. A. Halm and D. E. Singer, "Safely Increasing the Proportion of Patients with Community-Acquired Pneumonia Treated as Outpatients" *Archives of Internal Medicine* 158 (June 22, 1998): pp. 1350–1356, [online] cited April 25, 2007, from <<http://archinte.ama-assn.org/cgi/reprint/158/12/1350?ijkey=0f5b3434524987f6904457bb9d0acb189e1eb84a>>.

Proportion of Pneumonia Patients That Have an Inpatient LOS of  $\leq 2$  Days by LHIN



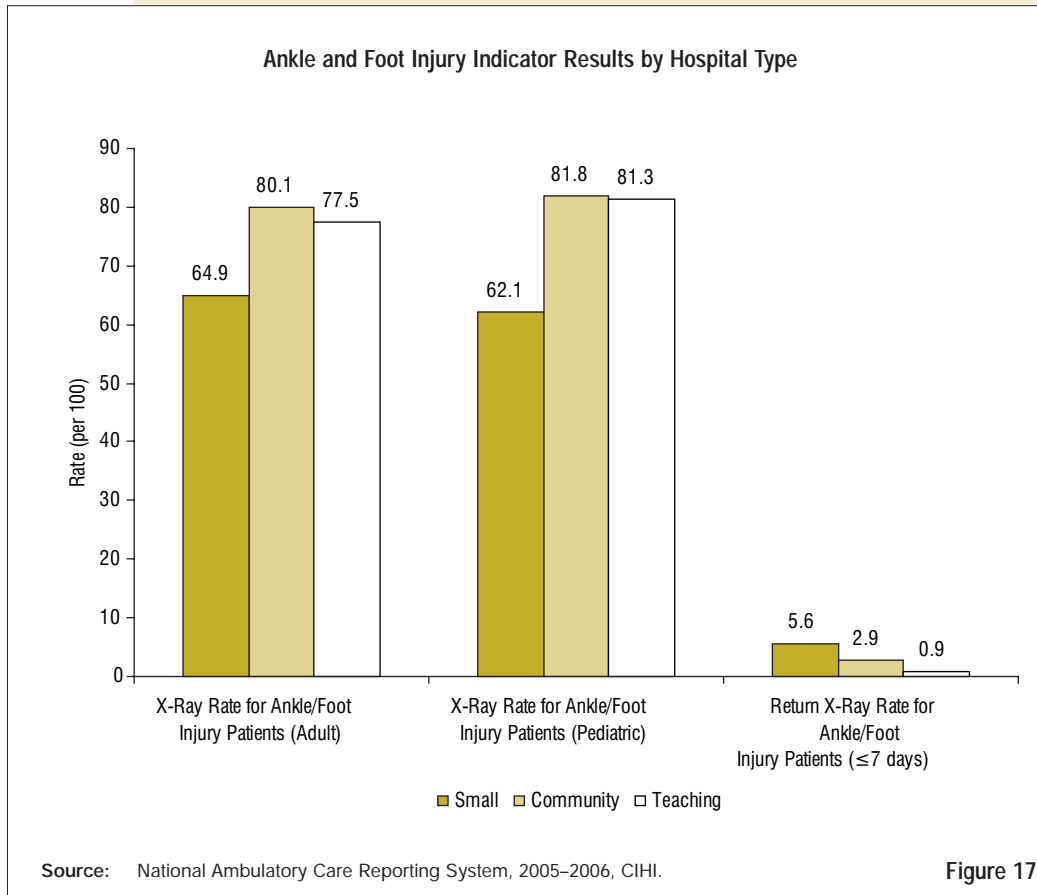
Sources: National Ambulatory Care Reporting System, 2005–2006, CIHI; Discharge Abstract Database, 2005–2006, CIHI.

Figure 16

### Pneumonia Severity Index

The Pneumonia Severity Index is a clinical prediction rule that assigns a score based on 20 patient characteristics that include demographic factors, coexisting diseases, abnormal physical findings and abnormal laboratory and radiologic findings. Scores are assigned to five distinct risk classes of pneumonia severity. Patients in risk classes I to III are considered at low risk of death or complications and thus may be considered as candidates for outpatient treatment instead of hospitalization.<sup>xviii</sup>

## SUMMARY OF RESULTS (CONT'D)



Ankle and foot injuries are common conditions for which people seek ED care. However, only a small proportion of these injuries result in a fracture.<sup>xviii</sup> Hospitals and physicians can refer to the Ottawa Ankle Rules, which are a set of clinical decision rules to help identify those patients requiring X-ray for ankle and foot injuries.<sup>xix</sup>

### Differences in Ankle X-Ray Between Small, Teaching and Community Hospitals

Figure 17 shows the results for the ankle and foot injury indicator by hospital type. The majority of adult and pediatric patients who are seen in the ED with an ankle or foot injury do receive an X-ray. As we would expect, the proportion of patients who did not receive an X-ray on their initial visit, but return to the ED and receive an X-ray, is small, the provincial rate being 3 per 100. Figure 17 shows that small hospitals have lower rates for X-rays on the initial visit than community and teaching hospitals. It also shows that small hospitals have higher return visit X-ray rates. This trend may reflect differences in access to a radiology department in small hospitals. For example, some small hospitals may not have 24/7 access to the radiology department. Therefore, when appropriate, physicians in small hospitals may ask the patients to return for an X-ray when the radiology department is open.

### Ottawa Ankle Rules

The Ottawa Ankle Rules are a set of simple guidelines developed to assist emergency physicians in deciding if a patient with injuries to the foot or ankle should receive an X-ray to diagnose a possible bone fracture. The successful implementation of these rules has been shown to decrease the use of ankle X-rays, ED wait times and health care costs without patient dissatisfaction or missed fractures.<sup>xviii, xix</sup>

xviii I. G. Stiell, G. Wells, A. Laupacis, R. Brison, R. Verbeek, K. Vandemheen and C. D. Naylor, "Multicentre Trial to Introduce the Ottawa Ankle Rules for Use of Radiography in Acute Ankle Injuries," *British Medical Journal* 311 (September 2, 1995): pp. 594–597.

xix I. G. Stiell, G. H. Greenberg, R. D. McKnight, R. C. Nair, I. McDowell, M. Reardon, J. P. Stewart and J. Maloney, "Decision Rules for the Use of Radiography in Acute Ankle Injuries: Refinement and Prospective Validation" *JAMA* 269, 9 (March 3, 1993): pp. 1127–1132.

| Hospital  | Community Served | LHIN | Proportion of Pneumonia Patients That Have an Inpatient LOS of ≤2 days | Return Visit Rate for Asthma (≤24 hrs)—Adult | Return Visit Rate for Asthma (24–72 hrs)—Adult | Return Visit Rate for Asthma (0–72 hrs)—Pediatric | X-Ray Rate for Ankle or Foot Injury Patients—Adult | X-Ray Rate for Ankle or Foot Injury Patients—Pediatric | Return X-Ray Rate for Ankle or Foot Injury Patients (≤7 days) |
|---|------------------|------|--|--|--|---|--|--|---|
| <b>PROVINCIAL AVERAGE</b>                             |                  |      | 5.3  | 1.9  | 1.7  | 3.8   | 78.2   | 79.5   | 3.0   |
| <b>TEACHING HOSPITALS AVERAGE</b>                     |                  |      | 5.4  | 1.3  | 1.6  | 2.4   | 77.5   | 81.3   | 0.9   |
| Children’s Hospital of Eastern Ontario                | Ottawa           | 11   | NR   | NR   | NR   | 2.8   | NR   | 79.9   | 1.5   |
| Hamilton Health Sciences Corporation                  | Hamilton         | 4    | 10.0   | 1.8  | 1.5  | 3.1   | 80.8   | 84.9   | 0.4   |
| Hôpital régional de Sudbury Regional Hospital         | Sudbury          | 13   | 2.5  | 1.5  | 2.0  | 1.2   | 82.1   | 87.7   | 1.8   |
| Hotel Dieu Hospital, Kingston                         | Kingston         | 10   | 1.2  | 0.6  | 1.2  | 1.8   | 70.0   | 74.1   | 0.9   |
| Kingston General Hospital                             | Kingston         | 10   | 6.7  | 1.9  | 1.2  | 1.6   | 66.5   | 73.8   | 1.2   |
| London Health Sciences Centre                         | London           | 2    | 5.7  | 1.7  | 1.3  | 2.9   | 81.6   | 80.4   | 0.5   |
| Mount Sinai Hospital                                  | Toronto          | 7    | 4.2  | 0.5  | 1.0  | 0.0   | 78.5   | 77.1   | 1.2   |
| St. Joseph’s Health Care London                       | London           | 2    | 0.0  | 0.7  | 1.3  | 2.0   | 82.8   | 83.3   | 0.7   |
| St. Joseph’s Healthcare Hamilton                      | Hamilton         | 4    | 9.4  | 2.8  | 1.1  | 3.0   | 80.7   | 83.0   | 1.0   |
| St. Michael’s Hospital                                | Toronto          | 7    | 5.5  | 1.4  | 2.9  | 7.5   | 71.1   | 84.0   | 1.2   |
| Sunnybrook and Women’s College Health Sciences Centre | Toronto          | 7    | 3.5  | 1.5  | 1.5  | 3.3   | 79.8   | 84.5   | 1.3   |
| The Hospital for Sick Children                        | Toronto          | 7    | NR   | NR   | NR   | 1.7   | NR   | 80.7   | 0.0   |
| The Ottawa Hospital                                   | Ottawa           | 11   | 4.8  | 0.5  | 1.6  | 0.9   | 76.4   | 84.0   | 0.7   |
| Thunder Bay Regional Health Sciences Centre           | Thunder Bay      | 14   | 3.2  | 1.3  | 1.8  | 2.5   | 78.1   | 81.6   | 1.1   |
| University Health Network                             | Toronto          | 7    | 5.4  | 0.7  | 1.8  | 0.0   | 64.4   | 63.5   | 0.4   |

|   |                |    |      |     |     |     |      |      |      |
|---|----------------|----|------|-----|-----|-----|------|------|------|
| <b>SMALL HOSPITALS AVERAGE</b>                |                |    | 4.8  | 2.3 | 1.5 | 3.8 | 64.9 | 62.1 | 5.6  |
| Alexandra Hospital                            | Ingersoll      | 2  | 3.8  | 3.2 | 3.1 | 3.0 | 68.2 | 62.8 | 1.4  |
| Alexandra Marine and General Hospital         | Goderich       | 2  | 12.1 | 0.0 | 3.1 | 2.2 | 58.1 | 41.9 | 6.8  |
| Almonte General Hospital                      | Almonte        | 11 | 8.1  | 8.6 | 6.3 | 9.2 | 58.7 | 42.9 | 5.5  |
| Atikokan General Hospital                     | Atikokan       | 14 | 0.0  | 0.0 | 0.0 | 0.0 | 50.9 | 33.9 | 9.1  |
| Campbellford Memorial Hospital                | Campbellford   | 9  | 1.0  | 1.2 | 1.1 | 3.1 | 77.7 | 82.0 | 5.2  |
| Carleton Place and District Memorial Hospital | Carleton Place | 11 | 5.6  | 2.7 | 0.8 | 3.3 | 61.1 | 56.6 | 6.9  |
| Deep River and District Hospital              | Deep River     | 11 | 0.0  | 0.0 | 2.4 | 5.5 | 69.3 | 57.3 | 1.1  |
| Dryden Regional Health Centre                 | Dryden         | 14 | 7.8  | 0.0 | 0.0 | 0.0 | 63.5 | 63.1 | 2.6  |
| Glengarry Memorial Hospital                   | Alexandria     | 11 | 0.0  | 4.7 | 1.0 | 5.0 | 68.8 | 74.2 | 13.7 |
| Haldimand War Memorial Hospital               | Dunnville      | 4  | 4.1  | 0.0 | 1.5 | 1.5 | 47.1 | 43.6 | 7.3  |
| Haliburton Highlands Health Services          | Haliburton     | 9  | 2.2  | 6.2 | 5.1 | 3.9 | 60.0 | 60.3 | 3.7  |

■ Above-Average Performance    ■ Average Performance    ■ Below-Average Performance

| Hospital                                      | Community Served  | LHIN | Proportion of Pneumonia Patients That Have an Inpatient LOS of $\leq 2$ days | Return Visit Rate for Asthma ( $\leq 24$ hrs)—Adult | Return Visit Rate for Asthma (24–72 hrs)—Adult | Return Visit Rate for Asthma (0–72 hrs)—Pediatric | X-Ray Rate for Ankle or Foot Injury Patients—Adult | X-Ray Rate for Ankle or Foot Injury Patients—Pediatric | Return X-Ray Rate for Ankle or Foot Injury Patients ( $\leq 7$ days) |
|---|-------------------|------|--|---|--|---|--|--|--|
| Hanover and District Hospital                 | Hanover           | 2    | 1.3  | 4.1   | 3.7  | 8.0   | 46.6   | 54.2   | 10.5   |
| Kemptville District Hospital                  | Kemptville        | 11   | 4.8  | 0.0   | 0.0  | 10.6  | 72.7   | 70.2   | 3.9  |
| Lady Dunn Health Centre                       | Wawa              | 13   | 15.5   | 0.0   | 0.0  | 0.0   | 51.2   | 37.9   | 4.6  |
| Lennox and Addington County General Hospital  | Napanee           | 10   | 2.9  | 3.5   | 0.7  | 6.1   | 77.7   | 77.7   | 2.0  |
| Listowel and Wingham Hospitals Alliance       | Listowel          | 2    | 4.9  | 1.3   | 1.2  | 0.0   | 62.2   | 52.7   | 5.5  |
| Mattawa General Hospital                      | Mattawa           | 13   | 5.0  | 0.0   | 0.0  | 5.5   | 40.0   | 29.5   | 1.2  |
| McCausland Hospital                           | Terrace Bay       | 14   | 0.0  | 0.0   | 0.0  | 0.0   | 68.6   | 57.7   | 3.5  |
| MICs Group of Health Services                 | Cochrane          | 13   | 7.5  | 0.0   | 0.0  | 1.5   | 51.5   | 45.0   | 3.8  |
| Nipigon District Memorial Hospital            | Nipigon           | 14   | 0.0  | 0.0   | 0.0  | 4.8   | 68.1   | 71.0   | 0.0  |
| North Wellington Health Care                  | Mount Forest      | 3    | 12.3   | 0.0   | 0.0  | 6.6   | 56.7   | 56.4   | 9.5  |
| Sensenbrenner Hospital                        | Kapuskasing       | 13   | 11.1   | 0.0   | 0.0  | 3.9   | 59.7   | 52.8   | 5.9  |
| Services de santé de Chapleau Health Services | Chapleau          | 13   | NR   | 0.0   | 0.0  | 0.0   | 48.9   | 39.1   | 7.2  |
| Sioux Lookout Meno-Ya-Win Health Centre       | Sioux Lookout     | 14   | 29.1   | 0.0   | 2.5  | 0.0   | 32.2   | 47.3   | 0.7  |
| Smooth Rock Falls Hospital                    | Smooth Rock Falls | 13   | NR   | NR  | NR   | NR  | 31.6   | 29.1   | 0.0  |
| South Huron Hospital                          | Exeter            | 2    | 9.1  | 2.5   | 0.0  | 3.9   | 66.8   | 62.4   | 10.2   |
| St. Francis Memorial Hospital                 | Barry's Bay       | 11   | 4.2  | 0.0   | 0.0  | 10.7  | 64.6   | 73.8   | 2.4  |
| Stevenson Memorial Hospital                   | Alliston          | 8    | 3.1  | 4.2   | 1.2  | 3.1   | 86.3   | 89.7   | 0.0  |
| The Willett Hospital                          | Paris             | 4    | 2.5  | 4.4   | 4.0  | 6.0   | 75.6   | 72.3   | 0.9  |
| Wilson Memorial General Hospital              | Marathon          | 14   | 0.0  | 0.0   | 6.5  | 0.0   | 29.5   | 33.7   | 8.6  |

| COMMUNITY HOSPITALS AVERAGE             |             |    | 5.3 | 1.9 | 1.7 | 4.3 | 80.1 | 81.8 | 2.9  |
|---|-------------|----|-----|-----|-----|-----|------|------|------|
| Bluewater Health                        | Sarnia      | 1  | 4.3 | 1.7 | 2.3 | 2.3 | 76.8 | 79.4 | 2.3  |
| Brockville General Hospital             | Brockville  | 10 | 5.6 | 0.7 | 1.3 | 5.1 | 84.9 | 86.0 | 0.0  |
| Cambridge Memorial Hospital             | Cambridge   | 3  | 8.1 | 1.5 | 1.5 | 4.4 | 85.8 | 91.5 | 0.0  |
| Chatham-Kent Health Alliance            | Chatham     | 1  | 4.7 | 2.0 | 3.4 | 1.7 | 78.1 | 79.4 | 8.1  |
| Collingwood General and Marine Hospital | Collingwood | 12 | 4.7 | 2.1 | 2.1 | 4.4 | 78.4 | 74.8 | 4.5  |
| Cornwall Community Hospital             | Cornwall    | 11 | 2.6 | 2.1 | 1.3 | 7.9 | 75.3 | 79.8 | 7.4  |
| Grand River Hospital                    | Kitchener   | 3  | 4.3 | 2.1 | 0.9 | 5.9 | 83.9 | 89.2 | 1.2  |
| Grey Bruce Health Services              | Owen Sound  | 2  | 3.6 | 1.4 | 2.1 | 3.2 | 63.2 | 60.8 | 12.6 |
| Groves Memorial Community Hospital      | Fergus      | 3  | 3.2 | 3.3 | 2.4 | 5.7 | 65.8 | 74.3 | 7.9  |
| Guelph General Hospital                 | Guelph      | 3  | 7.4 | 2.2 | 3.8 | 6.1 | 85.2 | 87.3 | 0.6  |

■ Above-Average Performance    ■ Average Performance    ■ Below-Average Performance

| Hospital   | Community Served | LHIN | Proportion of Pneumonia Patients That Have an Inpatient LOS of ≤2 days | Return Visit Rate for Asthma (≤24 hrs)—Adult | Return Visit Rate for Asthma (24–72 hrs)—Adult | Return Visit Rate for Asthma (0–72 hrs)—Pediatric | X-Ray Rate for Ankle or Foot Injury Patients—Adult | X-Ray Rate for Ankle or Foot Injury Patients—Pediatric | Return X-Ray Rate for Ankle or Foot Injury Patients (≤7 days) |
|--|------------------|------|--|--|--|---|--|--|---|
| Halton Healthcare  | Oakville         | 6    | 6.6  | 1.8  | 1.7  | 5.9   | 81.4   | 85.1   | 1.0   |
| Headwaters Health Care Centre                                    | Orangeville      | 5    | 1.5  | 0.0  | 0.9  | 5.7   | 82.4   | 85.5   | 2.4   |
| Hôpital Général de Hawkesbury and District General Hospital Inc. | Hawkesbury       | 11   | 2.3  | 1.8  | 1.7  | 3.2   | 76.7   | 75.7   | 8.1   |
| Hôpital Montfort Hospital  | Ottawa           | 11   | 4.5  | 0.4  | 2.8  | 4.0   | 76.7   | 76.9   | 0.7   |
| Hôtel-Dieu Grace Hospital  | Windsor          | 1    | 3.8  | 1.0  | 2.5  | 3.0   | 84.9   | 84.4   | 0.0   |
| Humber River Regional Hospital                                   | Toronto          | 8    | 4.5  | 1.7  | 2.0  | 2.2   | 87.9   | 90.2   | 0.9   |
| Huron Perth Healthcare Alliance                                  | Stratford        | 2    | 4.7  | 1.6  | 0.4  | 3.1   | 73.5   | 72.9   | 7.6   |
| Huron District Hospital—North Simcoe Hospital Alliance           | Midland          | 12   | 5.6  | 1.7  | 0.4  | 6.0   | 88.9   | 86.0   | 0.0   |
| Joseph Brant Memorial Hospital                                   | Burlington       | 4    | 4.5  | 1.9  | 1.3  | 2.6   | 86.5   | 89.9   | 0.0   |
| Kirkland and District Hospital                                   | Kirkland Lake    | 13   | 6.7  | 1.3  | 2.3  | 3.6   | 48.1   | 46.2   | 2.4   |
| Lake of the Woods District Hospital                              | Kenora           | 14   | 7.6  | 1.3  | 0.0  | 2.6   | 59.7   | 51.9   | 0.0   |
| Lakeridge Health   | Oshawa           | 9    | 4.0  | 1.3  | 1.5  | 3.7   | 79.2   | 80.2   | 2.7   |
| Leamington District Memorial Hospital                            | Leamington       | 1    | 6.9  | 0.0  | 2.7  | 4.4   | 88.2   | 85.3   | 4.5   |
| Markham Stouffville Hospital                                     | Markham          | 8    | 3.6  | 1.9  | 0.6  | 3.6   | 84.2   | 86.3   | 4.0   |
| Muskoka Algonquin Healthcare                                     | Huntsville       | 12   | 10.8   | 1.1  | 0.3  | 5.3   | 83.4   | 81.0   | 4.3   |
| Niagara Health System  | Niagara Falls    | 4    | 4.7  | 2.5  | 1.6  | 4.9   | 79.1   | 81.8   | 2.3   |
| Norfolk General Hospital   | Simcoe           | 4    | 6.5  | 3.5  | 5.3  | 1.3   | 85.0   | 82.3   | 10.2  |
| North Bay General Hospital                                       | North Bay        | 13   | 7.2  | 4.4  | 2.6  | 5.6   | 85.5   | 86.7   | 5.6   |
| North York General Hospital                                      | Toronto          | 8    | 4.3  | 1.4  | 0.8  | 4.0   | 78.1   | 83.9   | 1.7   |
| Northumberland Hills Hospital                                    | Cobourg          | 9    | 3.2  | 1.1  | 1.1  | 4.7   | 80.0   | 76.8   | 2.4   |
| Orillia Soldiers' Memorial Hospital                              | Orillia          | 12   | 4.9  | 1.1  | 1.5  | 4.2   | 79.4   | 82.1   | 0.8   |
| Pembroke Regional Hospital                                       | Pembroke         | 11   | 7.0  | 4.5  | 2.1  | 0.0   | 75.9   | 74.8   | 2.0   |
| Perth and Smiths Falls District Hospital                         | Smiths Falls     | 10   | 3.9  | 1.4  | 1.0  | 5.1   | 73.4   | 73.8   | 3.5   |
| Peterborough Regional Health Centre                              | Peterborough     | 9    | 8.1  | 0.6  | 1.0  | 2.6   | 84.8   | 85.3   | 0.0   |
| Queensway Carleton Hospital                                      | Nepean           | 11   | 5.2  | 1.5  | 3.4  | 7.7   | 85.0   | 93.1   | 0.8   |
| Quinte Health Care   | Belleville       | 10   | 5.2  | 2.9  | 2.0  | 6.6   | 73.2   | 75.7   | 3.8   |
| Renfrew Victoria Hospital  | Renfrew          | 11   | 3.3  | 3.1  | 2.9  | 5.1   | 79.9   | 74.8   | 4.3   |
| Riverside Health Care Facilities Inc.                            | Fort Frances     | 14   | 8.3  | 4.4  | 1.3  | 6.2   | 46.8   | 49.7   | 2.2   |
| Ross Memorial Hospital   | Lindsay          | 9    | 4.5  | 1.8  | 0.7  | 5.0   | 74.2   | 81.1   | 0.0   |
| Rouge Valley Health System                                       | Scarborough      | 9    | 3.6  | 2.9  | 1.6  | 4.4   | 83.1   | 85.8   | 0.6   |

■ Above-Average Performance    ■ Average Performance    ■ Below-Average Performance

| Hospital                               | Community Served | LHIN | Proportion of Pneumonia Patients That Have an Inpatient LOS of ≤2 days | Return Visit Rate for Asthma (≤24 hrs)—Adult | Return Visit Rate for Asthma (24–72 hrs)—Adult | Return Visit Rate for Asthma (0–72 hrs)—Pediatric | X-Ray Rate for Ankle or Foot Injury Patients—Adult | X-Ray Rate for Ankle or Foot Injury Patients—Pediatric | Return X-Ray Rate for Ankle or Foot Injury Patients (≤7 days) |
|--|------------------|------|--|--|--|---|--|--|---|
| Royal Victoria Hospital                | Barrie           | 12   | 6.9  | 1.8  | 1.0  | 1.5   | 82.9   | 83.0   | 0.6   |
| Sault Area Hospital                    | Sault Ste. Marie | 13   | 5.4  | 2.0  | 0.2  | 3.5   | 75.3   | 77.6   | 0.9   |
| South Bruce Grey Health Centre         | Kincardine       | 2    | 7.7  | 3.4  | 2.4  | 9.1   | 55.5   | 50.2   | 8.0   |
| Southlake Regional Health Centre       | Newmarket        | 8    | 5.0  | 2.5  | 1.4  | 4.3   | 86.1   | 88.0   | 0.9   |
| St. Joseph's Health Centre Toronto     | Toronto          | 7    | 7.3  | 1.6  | 1.8  | 5.0   | 83.6   | 88.2   | 0.9   |
| St. Mary's General Hospital            | Kitchener        | 3    | 4.0  | 2.5  | 1.9  | 3.2   | 85.8   | 89.7   | 0.0   |
| St. Thomas-Elgin General Hospital      | St. Thomas       | 2    | 4.0  | 1.9  | 2.9  | 3.0   | 75.5   | 73.6   | 0.4   |
| Strathroy Middlesex General Hospital   | Strathroy        | 2    | 2.1  | 3.0  | 1.9  | 6.9   | 76.2   | 78.7   | 1.6   |
| Temiskaming Hospital                   | New Liskeard     | 13   | 1.6  | 1.2  | 1.2  | 5.4   | 59.2   | 55.5   | 3.5   |
| The Brantford General Hospital         | Brantford        | 4    | 5.1  | 2.0  | 0.5  | 2.0   | 82.3   | 82.0   | 0.0   |
| The Credit Valley Hospital             | Mississauga      | 6    | 4.8  | 2.1  | 1.2  | 2.5   | 82.5   | 87.0   | 1.3   |
| The Scarborough Hospital               | Scarborough      | 9    | 4.2  | 2.7  | 2.5  | 4.4   | 81.8   | 82.5   | 0.7   |
| Tillsonburg District Memorial Hospital | Tillsonburg      | 2    | 5.7  | 3.3  | 4.8  | 7.3   | 71.7   | 74.1   | 2.1   |
| Timmins and District Hospital          | Timmins          | 13   | 7.9  | 0.8  | 2.0  | 3.7   | 73.0   | 77.6   | 1.3   |
| Toronto East General Hospital          | Toronto          | 7    | 8.1  | 2.2  | 1.6  | 3.2   | 86.6   | 91.6   | 0.0   |
| Trillium Health Centre                 | Mississauga      | 6    | 4.1  | 1.3  | 1.5  | 3.6   | 84.6   | 88.3   | 0.0   |
| West Lincoln Memorial Hospital         | Grimsby          | 4    | 11.8   | 3.0  | 0.0  | 7.8   | 76.9   | 82.7   | 3.0   |
| West Parry Sound Health Centre         | Parry Sound      | 13   | 6.4  | 4.5  | 1.0  | 8.9   | 76.1   | 70.7   | 3.6   |
| William Osler Health Centre            | Brampton         | 5    | 6.7  | 1.2  | 1.5  | 3.4   | 84.1   | 87.3   | 0.8   |
| Winchester District Memorial Hospital  | Winchester       | 11   | 5.1  | 4.8  | 0.0  | 4.8   | 74.7   | 70.0   | 3.9   |
| Windsor Regional Hospital              | Windsor          | 1    | 5.9  | 2.3  | 2.4  | 6.8   | 80.5   | 80.2   | 0.0   |
| Woodstock General Hospital             | Woodstock        | 2    | 2.4  | 2.6  | 3.4  | 3.9   | 70.8   | 69.8   | 2.8   |
| York Central Hospital                  | Richmond Hill    | 8    | 5.0  | 1.4  | 0.7  | 2.3   | 83.3   | 87.2   | 1.6   |

**Notes:**

Non-reportable (NR)—results are not shown due to <5 total cases.

All indicators are shown as rates per 100.

A hospital's performance rating is based on the hospital-specific confidence interval. Therefore, it is possible that hospitals with similar scores have different performance ratings. Please see the Technical Summary for more information.

|  | Proportion of Pneumonia Patients That Have an Inpatient LOS of $\leq 2$ days | Return Visit Rate for Asthma ( $\leq 24$ hrs)—Adult | Return Visit Rate for Asthma (24–72 hrs)—Adult | Return Visit Rate for Asthma (0–72 hrs)—Pediatric | X-Ray Rate for Ankle or Foot Injury Patients—Adult | X-Ray Rate for Ankle or Foot Injury Patients—Pediatric | Return X-Ray Rate for Ankle or Foot Injury Patients ( $\leq 7$ days) |
|--|--|---|--|---|--|--|--|
| <b>RESULTS BY LOCAL HEALTH INTEGRATION NETWORK</b> |  |   |  |   |  |  |  |
| LHIN 1 (Erie St. Clair)                            | 4.7  | 1.7   | 2.7  | 3.3   | 80.2   | 80.8   | 3.7  |
| LHIN 2 (South West)                                | 4.7  | 1.9   | 1.9  | 3.8   | 72.6   | 70.7   | 5.4  |
| LHIN 3 (Waterloo Wellington)                       | 6.0  | 2.2   | 2.0  | 5.3   | 81.0   | 84.4   | 3.9  |
| LHIN 4 (Hamilton Niagara Haldimand Brant)          | 7.0  | 2.3   | 1.6  | 3.8   | 79.4   | 81.2   | 2.6  |
| LHIN 5 (Central West)                              | 5.6  | 1.0   | 1.4  | 3.7   | 83.7   | 86.8   | 1.2  |
| LHIN 6 (Mississauga Halton)                        | 5.4  | 1.6   | 1.4  | 3.8   | 82.6   | 85.9   | 1.4  |
| LHIN 7 (Toronto Central)                           | 5.7  | 1.4   | 1.9  | 2.7   | 77.8   | 84.3   | 0.8  |
| LHIN 8 (Central)                                   | 4.3  | 1.8   | 1.3  | 3.1   | 83.7   | 87.6   | 1.2  |
| LHIN 9 (Central East)                              | 4.6  | 2.2   | 1.7  | 4.2   | 80.2   | 81.3   | 2.1  |
| LHIN 10 (South East)                               | 5.1  | 2.1   | 1.5  | 5.1   | 72.9   | 75.8   | 2.3  |
| LHIN 11 (Champlain)                                | 4.4  | 1.9   | 2.0  | 4.3   | 75.9   | 77.3   | 3.7  |
| LHIN 12 (North Simcoe Muskoka)                     | 6.8  | 1.6   | 1.0  | 3.9   | 82.6   | 81.5   | 2.1  |
| LHIN 13 (North East)                               | 5.1  | 1.8   | 1.3  | 3.1   | 72.5   | 72.3   | 4.2  |
| LHIN 14 (North West)                               | 5.3  | 1.5   | 1.3  | 2.6   | 67.1   | 66.9   | 2.9  |

With over 5 million visits every year, EDs play an important role in Ontario's health care system. Measures of financial performance and condition provide stakeholders with valuable insights into how hospitals allocate the financial and human resources in their EDs. This quadrant focuses on selected measures of efficiency and productivity related to human resource use in Ontario emergency departments.

Four measures of financial performance and condition related to ED activities were recommended for use by an advisory panel. The indicators presented are based on data from 2005–2006. These data are submitted annually to the Ontario Ministry of Health and Long-Term Care using formats specified by the Ontario Healthcare Reporting Standards (OHRS). To enable informed decisions using relevant management information, the OHRS undergoes annual changes. For example, in April 2005, hospitals were required to submit earned hours by occupational class. This change allows for a more detailed reporting of the earned hours of hospital staff by the type of health provider. As hospitals increase their familiarity with these new reporting standards, it is expected that the data collected will provide a clearer depiction of the type of health providers employed within Ontario EDs.

Data from all 124 hospitals with EDs were used to calculate provincial, LHIN and hospital type means; hospital-specific data are shown for 108 hospitals that voluntarily agreed to participate in this quadrant of the report.

## Indicator Definitions

### % Total Worked Hours

This indicator measures the proportion of staff hours (excluding medical staff) spent engaged in activities related to operation of the ED. Sick time and educational time are examples of staff hours (nursing and non-nursing) that are not spent engaged in activities directly related to the operation of the ED. This indicator is a measure of productivity, and variations in this indicator occur because of a complex mix of practices. Factors such as continuing staff education reduce labour productivity during the training period but may increase labour productivity or quality of care in subsequent periods. Low productivity due to high sick time is not desirable and may indicate a need for practice improvement. Values much higher or lower than the mean and significant changes from previous years may require investigation.

### % Management and Operational Support Staff Hours

This indicator measures the proportion of staff hours spent engaged in activities related to managing or directly supporting the department but not directly involved in providing patient care, such as those performed by a unit manager or registration clerk. A higher value indicates a greater proportion of hours spent on management or support of the operation of the emergency department. A lower value indicates a lesser proportion of hours spent on management and more on activities that directly contribute to the provision of emergency department care to patients. It is important to achieve a proper balance between management and operational support and patient care resources to ensure optimal quality patient care in emergency departments. Values much higher or lower than the mean and significant changes from previous years may require investigation.

### % Nursing Worked Hours

This indicator measures the proportion of time nursing personnel spend working in the hospital on activities such as direct patient care, charting and in-service education, as a proportion of the total hours earned. The hours measured are for those nursing personnel who normally provide patient care, and excludes nurses who fill management and administrative roles. Values much higher or lower than the mean and significant changes from previous years may require investigation.

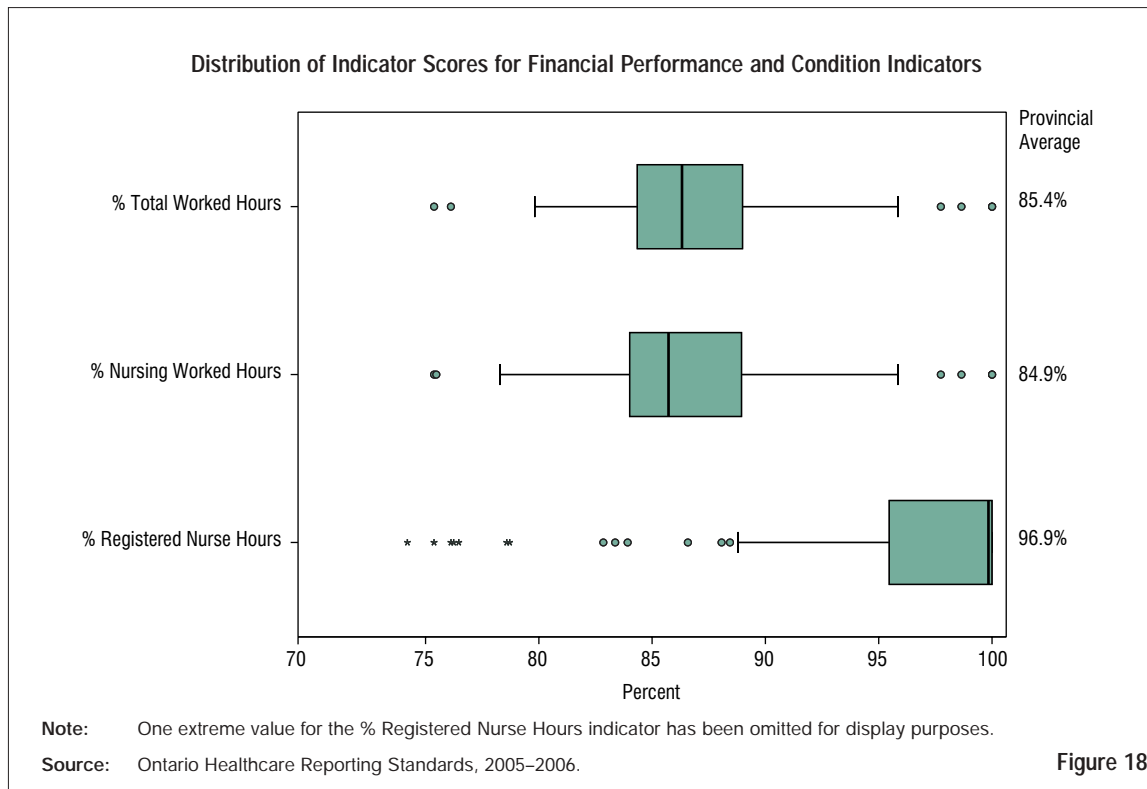
### % Registered Nurse (RN) Hours

This indicator measures the proportion of nursing care hours that were provided by registered nurses. Evidence suggests that a higher proportion of RNs in the staff mix may contribute to improved patient outcomes. Variations in this indicator reflect the different nursing staff mix (that is, registered nurses, regulated practical nurses and unregulated staff) employed by hospitals. As with all indicators of financial performance and condition, this indicator should be reviewed in relation to outcome indicators in other quadrants.

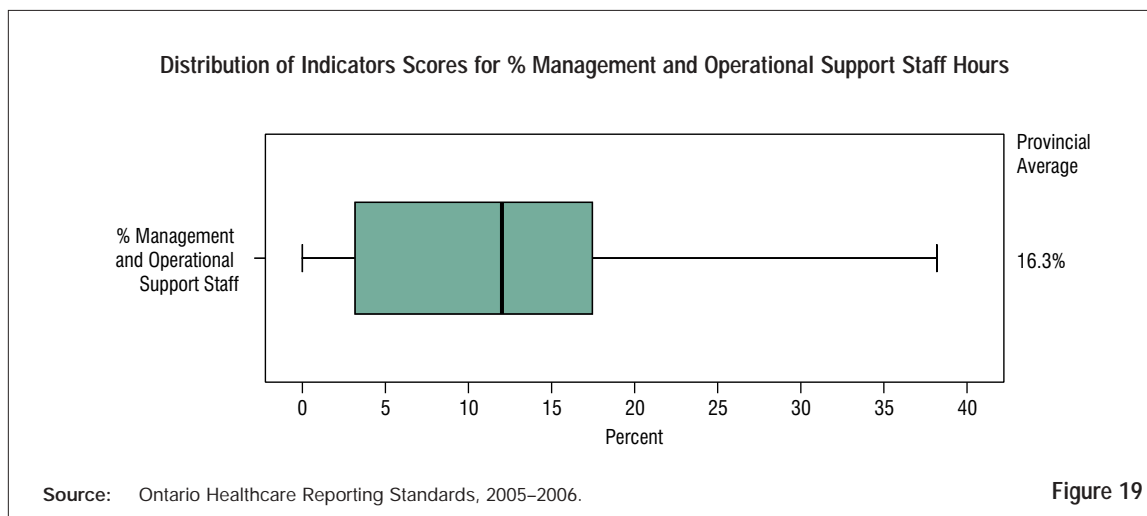
While the important clinical role played by EDs has long been recognized, the ability to measure the productivity, financial efficiency and sustainability of this department within a hospital has been more difficult to achieve. Developing indicators that are specific to activities occurring in EDs is particularly challenging for two reasons. First, EDs function as a unit within much larger hospital structures. Although some ED expenses can be isolated, many other costs stem from using resources that are shared with other hospital units. Typical examples include the laboratory, housekeeping staff and information systems. As a result, it is difficult to isolate all of the revenues and expenditures that relate solely to ED activities. It is for this reason that costing indicators of the ED are absent for this sector.

Second, many of the performance indicators the advisory panel recommended require a method to classify and group similar patients. These classification schemes usually have mechanisms for assessing the relative differences in resource demands made by different types of patients. Although a classification scheme for emergency patients has been developed, the data being generated by this system are still undergoing review and testing and are not yet available.

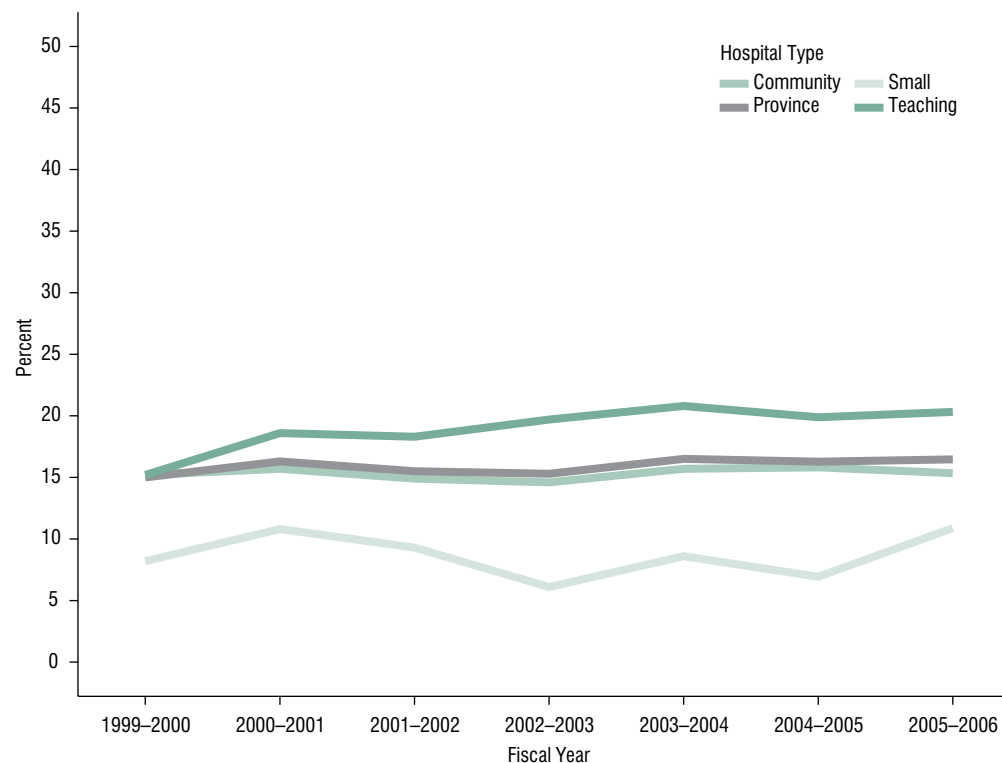
## SUMMARY OF RESULTS



For more information on the interpretation of box plots, please refer to the Interpreting the Results section in this report.



Trends in % Management and Operational Support Staff Hours



Sources: Ontario Healthcare Reporting Standards, 1999-2000 to 2005-2006.

Figure 20

Approximately 85% of staff hours were spent on activities related to the operation of the emergency department. The remaining 15% can be accounted for by vacation time, sick time, maternity leave and other benefits. Small hospitals had the highest percent of worked time (87.3%) while teaching hospitals had the lowest percent (84.7%). Overall, Ontario hospitals reported a slight drop in the value for this indicator over the seven-year period from 1999-2000 to 2005-2006. However, the total worked hours increased from 8.0 million hours to 10.1 million hours over the same period, with annual growth ranging from 2% to 8%. This trend was fairly consistent across peer groups, with teaching hospitals consistently reporting higher growth rates than the provincial average.

For 2005-2006, EDs reported that 16.3% of total hours were spent on management and operational support activities. Teaching hospitals had the highest percent (20.3%) of management and operational support hours and small hospitals had the lowest value (8.7%). The value for this indicator increased over the seven years from 1999-2000 to 2005-2006, with teaching hospitals consistently reporting higher values than the provincial average (Figure 20). Small hospitals had large variations in this indicator over the seven-year period, which may reflect the variation in staffing practices in low-volume EDs.

It is difficult to make inter-hospital comparisons using this indicator because there are wide variations in how emergency departments are structured and how they report their use of staff. For example, the hours worked by registration clerks, ward aides, multi-skilled workers, orderlies, service consultants, housekeepers and others may or may not be included in ED data, depending upon local practices. At this time, it is not feasible to assess the materiality of these reported differences.

For 2005-2006, approximately 85% of the hours earned by nursing personnel working in EDs were spent engaged in activities related to patient care. The remaining time is accounted for by vacation time, orientation and other benefit hours. Small hospitals reported the highest percentage of nursing worked hours (87.1%), and teaching hospitals had the lowest percentage (84.1%).

For 2005-2006, 96.9% of hours worked by nursing staff were provided by registered nurses, suggesting that emergency department staffing models rely heavily on registered nursing staff. Teaching hospitals reported the highest percentage of registered nursing hours (99.2%), and small hospitals had the lowest percentage (94.5%). The high percentage of registered nursing staff in Ontario's emergency departments reflects the need to have nursing staff with a high degree of decision-making and a broad scope of practice.

| Hospital  | Community Served | LHIN | % Total Worked Hours | % Management and Operational Support Staff | % Nursing Worked Hours | % Registered Nurse Hours |
|---|------------------|------|----------------------|--|------------------------|--------------------------|
| <b>PROVINCIAL AVERAGE</b>                             |                  |      | 85.4                 | 16.3                                       | 84.9                   | 96.9                     |
| <b>TEACHING HOSPITALS AVERAGE</b>                     |                  |      | 84.7                 | 20.3                                       | 84.1                   | 99.2                     |
| Children's Hospital of Eastern Ontario                | Ottawa           | 11   | 86.0                 | 36.2                                       | 84.5                   | 96.1                     |
| Hamilton Health Sciences Corporation                  | Hamilton         | 4    | 82.3                 | 19.7                                       | 81.7                   | 99.9                     |
| Hôpital régional de Sudbury Regional Hospital         | Sudbury          | 13   | 86.0                 | 21.3                                       | 85.2                   | 94.6                     |
| Hotel Dieu Hospital, Kingston                         | Kingston         | 10   | 88.9                 | 1.8  | 88.4                   | 100.0                    |
| Kingston General Hospital                             | Kingston         | 10   | 83.8                 | 15.4                                       | 82.7                   | 100.0                    |
| London Health Sciences Centre                         | London           | 2    | 83.1                 | 22.6                                       | 83.4                   | 100.0                    |
| Mount Sinai Hospital                                  | Toronto          | 7    | 82.4                 | 18.5                                       | 80.1                   | 100.0                    |
| St. Joseph's Health Care London                       | London           | 2    | 89.2                 | 9.7  | 90.1                   | 78.7                     |
| St. Joseph's Healthcare Hamilton                      | Hamilton         | 4    | 86.4                 | 16.3                                       | 85.7                   | 100.0                    |
| St. Michael's Hospital                                | Toronto          | 7    | 89.1                 | 16.4                                       | 89.8                   | 100.0                    |
| Sunnybrook and Women's College Health Sciences Centre | Toronto          | 7    | 83.9                 | 21.2                                       | 83.3                   | 99.9                     |
| The Hospital for Sick Children                        | Toronto          | 7    | 84.9                 | 24.8                                       | 84.4                   | 100.0                    |
| The Ottawa Hospital                                   | Ottawa           | 11   | 84.2                 | 17.2                                       | 83.7                   | 100.0                    |
| Thunder Bay Regional Health Sciences Centre           | Thunder Bay      | 14   | 87.0                 | 20.8                                       | 85.1                   | 98.7                     |
| University Health Network                             | Toronto          | 7    | 85.0                 | 24.9                                       | 84.6                   | 100.0                    |
| <b>SMALL HOSPITALS AVERAGE</b>                        |                  |      | 87.3                 | 8.7  | 87.1                   | 94.5                     |
| Alexandra Hospital                                    | Ingersoll        | 2    | 79.8                 | 11.0                                       | 78.3                   | 100.0                    |
| Alexandra Marine and General Hospital                 | Goderich         | 2    | 85.4                 | 5.4  | 84.7                   | 100.0                    |
| Almonte General Hospital                              | Almonte          | 11   | 92.1                 | 0.0  | 92.1                   | 100.0                    |
| Atikokan General Hospital                             | Atikokan         | 14   | 84.4                 | 0.0  | 83.7                   | 78.6                     |
| Campbellford Memorial Hospital                        | Campbellford     | 9    | 82.5                 | 14.1                                       | 82.4                   | 99.9                     |
| Carleton Place and District Memorial Hospital         | Carleton Place   | 11   | 91.4                 | 12.7                                       | 92.4                   | 100.0                    |
| Deep River and District Hospital                      | Deep River       | 11   | 89.9                 | 0.0  | 89.9                   | 100.0                    |
| Dryden Regional Health Centre                         | Dryden           | 14   | 88.5                 | 28.3                                       | 91.0                   | 95.5                     |
| Glengarry Memorial Hospital                           | Alexandria       | 11   | 91.2                 | 0.0  | 91.2                   | 91.5                     |
| Haldimand War Memorial Hospital                       | Dunville         | 4    | 92.6                 | 38.2                                       | 89.2                   | 98.4                     |
| Haliburton Highlands Health Services                  | Haliburton       | 9    | 90.2                 | 0.0  | 90.2                   | 76.2                     |
| Hanover and District Hospital                         | Hanover          | 2    | 87.8                 | 3.5  | 87.6                   | 99.9                     |

| Hospital                                      | Community Served  | LHIN | % Total Worked Hours | % Management and Operational Support Staff | % Nursing Worked Hours | % Registered Nurse Hours |
|---|-------------------|------|----------------------|--|------------------------|--------------------------|
| Kemptville District Hospital                  | Kemptville        | 11   | 87.8                 | 0.1  | 87.8                   | 100.0                    |
| Lady Dunn Health Centre                       | Wawa              | 13   | 97.7                 | 0.0  | 97.7                   | 98.8                     |
| Lennox and Addington County General Hospital  | Napanee           | 10   | 91.0                 | 16.2                                       | 91.0                   | 99.8                     |
| Listowel and Wingham Hospitals Alliance       | Listowel          | 2    | 89.7                 | 4.7  | 89.9                   | 96.1                     |
| Mattawa General Hospital                      | Mattawa           | 13   | 80.0                 | 0.0  | 80.0                   | 100.0                    |
| McCausland Hospital                           | Terrace Bay       | 14   | 83.3                 | 0.0  | 83.3                   | 100.0                    |
| MICs Group of Health Services                 | Cochrane          | 13   | 87.9                 | 0.0  | 87.8                   | 89.0                     |
| Nipigon District Memorial Hospital            | Nipigon           | 14   | 91.8                 | 0.0  | 91.8                   | 100.0                    |
| North Wellington Health Care                  | Mount Forest      | 3    | 90.2                 | 0.0  | 90.2                   | 100.0                    |
| Sensenbrenner Hospital                        | Kapuskasing       | 13   | 84.6                 | 25.4                                       | 85.4                   | 96.9                     |
| Services de santé de Chapleau Health Services | Chapleau          | 13   | 100.0                | 0.0  | 100.0                  | 100.0                    |
| Sioux Lookout Meno-Ya-Win Health Centre       | Sioux Lookout     | 14   | NR                   | NR   | 85.4                   | 100.0                    |
| Smooth Rock Falls Hospital                    | Smooth Rock Falls | 13   | 84.1                 | 0.0  | 84.1                   | 100.0                    |
| South Huron Hospital                          | Exeter            | 2    | 88.9                 | 2.9  | 89.1                   | 100.0                    |
| St. Francis Memorial Hospital                 | Barry's Bay       | 11   | 94.2                 | 0.0  | 94.1                   | 100.0                    |
| Stevenson Memorial Hospital                   | Alliston          | 8    | 86.9                 | 6.1  | 86.9                   | 92.1                     |
| The Willett Hospital                          | Paris             | 4    | 92.4                 | 0.4  | 92.3                   | 100.0                    |
| Wilson Memorial General Hospital              | Marathon          | 14   | 75.4                 | 0.0  | 75.4                   | 100.0                    |

| COMMUNITY HOSPITALS AVERAGE                                      |             |    | 85.5 | 15.3 | 84.9 | 96.3  |
|--|-------------|----|------|------|------|-------|
| Bluewater Health   | Sarnia      | 1  | 83.8 | 11.2 | 84.4 | 99.9  |
| Brockville General Hospital                                      | Brockville  | 10 | 88.1 | 19.8 | 88.2 | 100.0 |
| Cambridge Memorial Hospital                                      | Cambridge   | 3  | 80.5 | 27.0 | 79.2 | 97.9  |
| Chatham-Kent Health Alliance                                     | Chatham     | 1  | 84.4 | 8.3  | 84.5 | 95.0  |
| Collingwood General and Marine Hospital                          | Collingwood | 12 | 84.7 | 28.0 | 83.4 | 100.0 |
| Cornwall Community Hospital                                      | Cornwall    | 11 | 84.5 | 9.4  | 84.1 | 96.1  |
| Grand River Hospital   | Kitchener   | 3  | 84.3 | 22.3 | 84.3 | 99.8  |
| Grey Bruce Health Services                                       | Owen Sound  | 2  | 85.9 | 11.3 | 85.8 | 99.3  |
| Groves Memorial Community Hospital                               | Fergus      | 3  | 89.6 | 20.6 | 88.7 | 99.9  |
| Guelph General Hospital  | Guelph      | 3  | 85.8 | 13.7 | 84.3 | 99.3  |
| Halton Healthcare  | Oakville    | 6  | 88.4 | 16.3 | 87.9 | 91.3  |
| Headwaters Health Care Centre                                    | Orangeville | 5  | 87.5 | 13.0 | 86.5 | 92.1  |
| Hôpital Général de Hawkesbury and District General Hospital Inc. | Hawkesbury  | 11 | 85.0 | 8.7  | 87.3 | 74.2  |

| Hospital   | Community Served | LHIN | % Total Worked Hours | % Management and Operational Support Staff | % Nursing Worked Hours | % Registered Nurse Hours |
|--|------------------|------|----------------------|--|------------------------|--------------------------|
| Hôpital Montfort Hospital                              | Ottawa           | 11   | 87.5                 | 20.2                                       | 83.6                   | 99.3                     |
| Hôtel-Dieu Grace Hospital                              | Windsor          | 1    | 80.1                 | 14.7                                       | 79.1                   | 99.9                     |
| Humber River Regional Hospital                         | Toronto          | 8    | 85.0                 | 17.6                                       | 84.8                   | 100.0                    |
| Huron Perth Healthcare Alliance                        | Stratford        | 2    | 88.0                 | 2.8  | 87.9                   | 100.0                    |
| Huron District Hospital—North Simcoe Hospital Alliance | Midland          | 12   | 85.3                 | 3.8  | 85.2                   | 90.9                     |
| Joseph Brant Memorial Hospital                         | Burlington       | 4    | 83.0                 | 13.0                                       | 83.2                   | 100.0                    |
| Kirkland and District Hospital                         | Kirkland Lake    | 13   | 84.4                 | 9.4  | 84.5                   | 99.8                     |
| Lake of the Woods District Hospital                    | Kenora           | 14   | 89.1                 | 6.8  | 89.6                   | 82.8                     |
| Lakeridge Health                                       | Oshawa           | 9    | 85.2                 | 12.7                                       | 84.5                   | 100.0                    |
| Leamington District Memorial Hospital                  | Leamington       | 1    | 85.7                 | 30.0                                       | 84.8                   | 100.0                    |
| Markham Stouffville Hospital                           | Markham          | 8    | 90.5                 | 14.4                                       | 89.2                   | 93.7                     |
| Muskoka Algonquin Healthcare                           | Huntsville       | 12   | 87.6                 | 4.3  | 87.7                   | 87.4                     |
| Niagara Health System                                  | Niagara Falls    | 4    | 84.3                 | 9.4  | 83.6                   | 95.0                     |
| Norfolk General Hospital                               | Simcoe           | 4    | NR                   | NR   | NR                     | 99.3                     |
| North Bay General Hospital                             | North Bay        | 13   | 86.5                 | 11.8                                       | 84.9                   | 100.0                    |
| North York General Hospital                            | Toronto          | 8    | 82.2                 | 16.7                                       | 81.2                   | 100.0                    |
| Northumberland Hills Hospital                          | Cobourg          | 9    | 85.6                 | 13.7                                       | 85.9                   | 97.6                     |
| Orillia Soldiers' Memorial Hospital                    | Orillia          | 12   | 85.9                 | 20.8                                       | 85.4                   | 94.1                     |
| Pembroke Regional Hospital                             | Pembroke         | 11   | 87.0                 | 7.6  | 87.0                   | 83.4                     |
| Perth and Smiths Falls District Hospital               | Smiths Falls     | 10   | 89.5                 | 0.0  | 89.5                   | 91.5                     |
| Peterborough Regional Health Centre                    | Peterborough     | 9    | 85.2                 | 13.7                                       | 85.2                   | 93.9                     |
| Queensway Carleton Hospital                            | Nepean           | 11   | 87.5                 | 21.7                                       | 86.6                   | 96.3                     |
| Quinte Health Care                                     | Belleville       | 10   | 87.2                 | 8.9  | 87.3                   | 100.0                    |
| Renfrew Victoria Hospital                              | Renfrew          | 11   | 93.5                 | 10.3                                       | 92.8                   | 75.4                     |
| Riverside Health Care Facilities Inc.                  | Fort Frances     | 14   | 90.2                 | 9.4  | 89.2                   | 96.2                     |
| Ross Memorial Hospital                                 | Lindsay          | 9    | 89.1                 | 4.6  | 88.9                   | 99.9                     |
| Rouge Valley Health System                             | Scarborough      | 9    | 86.4                 | 21.9                                       | 85.8                   | 100.0                    |
| Royal Victoria Hospital                                | Barrie           | 12   | 84.5                 | 21.0                                       | 82.7                   | 95.1                     |
| Sault Area Hospital                                    | Sault Ste. Marie | 13   | 85.8                 | 12.1                                       | 84.9                   | 88.8                     |
| South Bruce Grey Health Centre                         | Kincardine       | 2    | 88.6                 | 2.0  | 88.7                   | 99.5                     |
| Southlake Regional Health Centre                       | Newmarket        | 8    | 86.1                 | 22.0                                       | 84.7                   | 100.0                    |
| St. Joseph's Health Centre Toronto                     | Toronto          | 7    | 84.4                 | 14.4                                       | 81.9                   | 89.5                     |
| St. Mary's General Hospital                            | Kitchener        | 3    | 86.1                 | 35.0                                       | 86.8                   | 100.0                    |

| Hospital                               | Community Served | LHIN | % Total Worked Hours | % Management and Operational Support Staff | % Nursing Worked Hours | % Registered Nurse Hours |
|--|------------------|------|----------------------|--|------------------------|--------------------------|
| St. Thomas-Elgin General Hospital      | St. Thomas       | 2    | 81.2                 | 13.2                                       | 80.2                   | 99.6                     |
| Strathroy Middlesex General Hospital   | Strathroy        | 2    | 84.8                 | 7.5  | 84.7                   | 100.0                    |
| Temiskaming Hospital                   | New Liskeard     | 13   | 87.2                 | 0.0  | 87.6                   | 100.0                    |
| The Brantford General Hospital         | Brantford        | 4    | 89.3                 | 17.5                                       | 88.6                   | 88.1                     |
| The Credit Valley Hospital             | Mississauga      | 6    | 87.5                 | 14.1                                       | 88.0                   | 100.0                    |
| The Scarborough Hospital               | Scarborough      | 9    | 84.7                 | 14.7                                       | 84.9                   | 99.7                     |
| Tillsonburg District Memorial Hospital | Tillsonburg      | 2    | 88.9                 | 17.4                                       | 89.9                   | 98.9                     |
| Timmins and District Hospital          | Timmins          | 13   | 86.5                 | 8.3  | 86.8                   | 98.9                     |
| Toronto East General Hospital          | Toronto          | 7    | 84.2                 | 13.9                                       | 82.3                   | 83.9                     |
| Trillium Health Centre                 | Mississauga      | 6    | 87.0                 | 14.9                                       | 86.4                   | 99.2                     |
| West Lincoln Memorial Hospital         | Grimsby          | 4    | 87.5                 | 16.2                                       | 86.2                   | 99.8                     |
| West Parry Sound Health Centre         | Parry Sound      | 13   | 89.6                 | 19.0                                       | 88.4                   | 88.4                     |
| William Osler Health Centre            | Brampton         | 5    | 85.1                 | 20.3                                       | 84.7                   | 95.6                     |
| Winchester District Memorial Hospital  | Winchester       | 11   | 87.8                 | 1.6  | 87.7                   | 100.0                    |
| Windsor Regional Hospital              | Windsor          | 1    | 81.0                 | 25.2                                       | 80.4                   | 100.0                    |
| Woodstock General Hospital             | Woodstock        | 2    | 87.3                 | 4.0  | 87.5                   | 100.0                    |
| York Central Hospital                  | Richmond Hill    | 8    | 84.0                 | 15.2                                       | 82.2                   | 89.9                     |

NR = Non-reportable—results are not shown due to data quality issues.

## RESULTS BY LOCAL HEALTH INTEGRATION NETWORK

|   |      |      |      |      |
|---|------|------|------|------|
| LHIN 1 (Erie St. Clair)                   | 82.5 | 16.6 | 82.2 | 98.9 |
| LHIN 2 (South West)                       | 84.8 | 14.6 | 84.9 | 99.0 |
| LHIN 3 (Waterloo Wellington)              | 84.7 | 23.8 | 84.3 | 99.4 |
| LHIN 4 (Hamilton Niagara Haldimand Brant) | 84.6 | 15.4 | 84.0 | 97.5 |
| LHIN 5 (Central West)                     | 85.3 | 19.5 | 85.0 | 95.1 |
| LHIN 6 (Mississauga Halton)               | 87.6 | 15.1 | 87.3 | 97.0 |
| LHIN 7 (Toronto Central)                  | 85.0 | 19.1 | 83.9 | 95.9 |
| LHIN 8 (Central)                          | 85.3 | 17.0 | 84.2 | 97.5 |
| LHIN 9 (Central East)                     | 85.8 | 14.2 | 85.6 | 97.9 |
| LHIN 10 (South East)                      | 86.9 | 11.2 | 86.6 | 99.0 |
| LHIN 11 (Champlain)                       | 86.2 | 17.2 | 85.7 | 95.8 |
| LHIN 12 (North Simcoe Muskoka)            | 85.5 | 16.7 | 84.8 | 93.2 |
| LHIN 13 (North East)                      | 86.0 | 12.5 | 85.5 | 93.0 |
| LHIN 14 (North West)                      | 87.0 | 16.4 | 85.9 | 96.3 |

# APPENDIX A: DATA SOURCES

The following table provides a list of the data sources used in each of the four sections of this report.

| Quadrant                            | Data Source  | Year*       |
|-------------------------------------|--|-------------|
| System Integration and Change       | System Integration and Change (SIC) Survey                                     | 2007 Survey |
| Patient Satisfaction                | NRC + Picker Emergency Department Care Survey                                  | 2005–2006   |
| Clinical Utilization and Outcomes   | National Ambulatory Care Database (NACRS)<br>Discharge Abstract Database (DAD) | 2005–2006   |
| Financial Performance and Condition | Ontario Healthcare Reporting Standards (OHRS)                                  | 2005–2006   |

\*Note: Previous years may also have been used in this report for trending purposes.





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