Hospital Report

2001

ACUTE CARE

Canadian Institute for Health Information
Institut canadien d'information sur la santé

University of Toronto

A joint initiative of the Ontario Hospital Association and the Government of Ontario

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About the University of Toronto

Since 1998, members of the Department of Health Administration, Faculty of Medicine at the University of Toronto have led a research collaborative, including faculty from Wilfrid Laurier and the University of Western Ontario, to develop the balanced scorecard framework and the methodological foundation for the *Hospital Report Series*. The research resulted in the development of a comprehensive balanced scorecard on the performance of Ontario's acute care hospitals. This year, the same core team of investigators has supported CIHI to produce this acute care report, based on methods previously developed by the research team.

For 2001, the Department of Health Administration has partnered with experts affiliated with several other organizations to enhance both the scope and

methods for the *Hospital Report* project. This year's research collaborative includes CIHI, the Institute for Clinical Evaluative Sciences (ICES), the Department of Rehabilitation Science and the Faculty of Nursing at the University of Toronto, the University Health Research Network, Providence Centre, Wilfrid Laurier University, the University of Western Ontario, and the Centre for Addiction and Mental Health. In the fall of 2001, the research collaborative will produce system-level balanced scorecards for emergency care and complex continuing care, feasibility studies in mental health and rehabilitation science, and reports focusing on nursing care, women's health, and population health. The goals of the research team are to enhance the accountability of Ontario's health system and to support quality improvement efforts.

A Foreword from the Government of Ontario

To improve hospital care and services, we must first understand how well those services are performing. The *Hospital Report Series* is based on that concept and provides an opportunity to showcase the achievements of the most effective and highest-performing hospitals.

With the *Hospital Report Series*, we are strengthening and expanding our focus upon performance-reporting to both the public and to providers of health care. The Report incorporates individual hospital report cards, which not only promote the importance of accountability to taxpayers, but also allow us to determine where certain hospitals are excelling and where others must improve.

Hospital report cards ensure that hospitals know how they are performing relative to their peers. The report cards create an opportunity for comparison with others and for sharing best practices. Furthermore, the report cards will help us track significant trends in the use and access to key surgical and diagnostic health care services.

Hospitals are already accountable to their boards and their patients, but with report cards they subject their performance to the toughest judges of all – Ontario's taxpayers. For hospitals and providers alike, the report cards prove their value in guiding further change.

Many have commented in the past about the need to create more effective and more powerful links among health planners, health care providers and the research community as a whole. In releasing this research report, I believe we are demonstrating that it is possible to create dynamic and effective partnerships between academic research and frontline health care. I wish to thank the many experts who provided their input and expertise in designing the indicators, and to acknowledge our shared goal that *Hospital Report 2001* becomes an important tool for promoting change.

I commend the researchers at the Canadian Institute for Health Information and the University of Toronto for the rigour they have applied to *Hospital Report 2001: Acute Care*. I also commend the province's hospitals and the Ontario Hospital Association (OHA) for demonstrating so clearly to Ontarians that a strong commitment to providing the best possible care goes hand in hand with accountability.

Hon. Tony Clement, M.P.P.
Ontario Minister of Health and Long-Term Care

A Foreword from the OHA

In 1997, the Ontario Hospital Association announced its intention to initiate "report cards" on performance. When embarking on this ground-breaking quest, we could not have predicted the level of commitment and cooperation by hospitals that voluntarily participated in the research, provided clinical and management expertise and pushed the expansion of the project each year to include new areas of study.

With research conducted by the University of Toronto, the reports started with a focus on inpatient acute care. *Hospital Report '98* was the first hospital-wide effort in Ontario to strengthen accountability and improve performance in health care. A balanced scorecard approach was chosen because we believe that in order to truly understand the overall efficiency of our health care system, we need to assess not only financial performance and the quality of patient care, but also how patients perceive that care.

Hospital Report '99 built on the system-level findings of the year before to include hospital-specific ratings for four elements of the balanced scorecard. It was one of the most comprehensive hospital-level reviews in the country, containing the results of one of the largest patient satisfaction surveys ever conducted in North America.

For *Hospital Report 2001: Acute Care*, the Canadian Institute for Health Information has replicated and expanded Hospital Report '99, adding a section on Women's Health with advice from the researchers at the University of Toronto.

A University of Toronto Research Collaborative will be releasing a series of new reports this fall in the areas of emergency care, complex continuing care, rehabilitation, mental health, nursing, women's health and population health. This year, we welcome the Ministry of Health and Long-Term Care as a funding partner for the *Hospital Report Series* and look forward to continuing this joint initiative in the future.

David MacKinnon
President, Ontario Hospital Association

Contents

Acknowledgements

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This year's report builds on concepts and methodologies developed by researchers from the University of Toronto's Department of Health Administration for previous reports. We continued to benefit from their extensive experience and invaluable advice. We would particularly like to thank Geoff Anderson, Professor, University of Toronto; Ross Baker, Associate Professor, University of Toronto; Paula Blackstien-Hirsch, Project Director, Hospital Report 2001, University of Toronto; Nan Brooks, Lecturer, University of Toronto; Adalsteinn Brown, Principal Investigator, Hospital Report 2001 and Assistant Professor, University of Toronto; Bo Green, Consultant, Determined Computing Services; Ellen Maki, Statistical Consultant, Analytica; Ian McKillop, Assistant Professor, Wilfrid Laurier University; Frank Markel, Assistant Professor, University of Toronto; Michael Murray, Assistant Professor, University of Toronto; George Pink, Associate Professor, University of Toronto; Ellen Schraa, PhD Student, University of Toronto; Jerry Seibert, Consultant; and Liane Soberman, PhD Candidate, University of Toronto. Extensive work for the Women's Health chapter was completed by Adalsteinn Brown; Alexandra Magistretti, Research Coordinator, University of Toronto; and Donna Stewart, Professor and Chair of Women's Health, University of Toronto.

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We would also like to acknowledge the support of the Ontario Hospital Association, Ontario hospitals, and the Government of Ontario in funding this initiative and to thank the Ontario Hospital Association for their leadership in initiating this effort.

Finally, this report benefited from the generous assistance of Ontario's hospitals, the Ontario Hospital Association's Report Card Advisory Committee, and the Joint OHA/Ministry of Health and Long-Term Care Report Card Steering Committee. More than 200 experts from across the province also participated in a range of advisory groups. Many of their names are listed in *Hospital Report '98* or Appendix 4 of *Hospital Report '99*. A list of advisory group members who contributed directly to the development of *Hospital Report 2001: Acute Care* appears in Appendix B of this report.

Introduction

Introduction

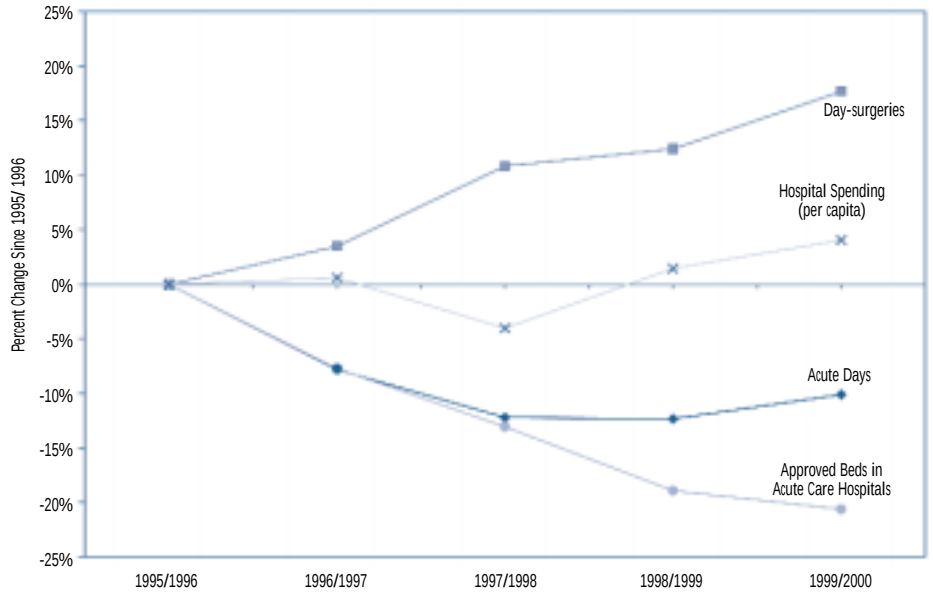
As you drive down the highway, blue "H" signs point you to Ontario's acute care hospitals. They diagnose and treat thousands of patients every day. For many years, acute care hospitals have taken a variety of steps to monitor their results. Often, this has involved collecting and analyzing data to measure their performance. More recently, groups of hospitals have begun to work together to gather performance data and compare their results. Sound measurements of hospital performance can be useful tools for understanding what hospitals are doing, how they are changing, what can be improved, and what is working well.

The Changing Face of Ontario's Hospitals

In Ontario, and across the country, hospitals are changing. Over the last ten years, many hospitals have merged, some sites have closed, and others have expanded. And still others have changed to provide different types of care. Other changes have also occurred over this period. For example, hospitals are now treating more and more patients in day-surgery programs. The number topped one million in 1997/1998. And it has continued to climb. The graph below also shows recent changes in public sector spending on hospital care in Ontario, approved beds, and inpatient days in acute care hospitals.

FIGURE 1.1: HOW ONTARIO HOSPITALS ARE CHANGING

Ontario hospitals continue to experience significant change. Over the last decade, the number of hospital beds in the province has dropped. So has the number of overnight (inpatient) acute care hospitalizations. But more and more patients are being treated in day-surgery programs. The graph below shows changes between 1995/1996 and 1999/2000 in the number of day-surgeries, inpatient acute days, and approved beds in acute care hospitals, as well as public sector spending (per capita) on all types of hospital care.



Note: Hospital spending inflation adjusted per capita for calendar year; forecast 1999 hospital spending.

Data Sources: Discharge Abstract Database; National Health Expenditure Database; Annual Hospital Survey, CIHI

The Hospital Report Series

Building on previous endeavours, a province-wide initiative began in 1997 to produce a new series of reports on the performance of Ontario hospitals. The series has three main objectives:

- To strengthen accountability by providing citizens of Ontario, hospital managers, health care providers, and policy makers with detailed information to better understand and assess the hospital system.
- To support ongoing quality improvement initiatives in all hospitals.
- To improve the quality of health care data by prompting health managers, clinicians, and others to review its accuracy and quality.

It is not intended to serve as a means for patients to choose a hospital when they need urgent care.

One year after the 1997 announcement, *Hospital Report '98* appeared. Developed by researchers at the University of Toronto and supported by the Ontario Hospital Association (OHA), it described the performance of Ontario's acute care facilities as part of an overall hospital system.

Hospital Report '98 did not, however, aim to provide performance information about specific hospitals. This began a year later in *Hospital Report '99*. Data were provided for a range of indicators at both the province-wide (or "system") level and at the hospital-specific level.

This year, the Canadian Institute for Health Information (CIHI), an independent, not-for-profit health information organization, has been responsible for developing the acute care report, with methodological advice from the University of Toronto. This has ensured that the methods developed in *Hospital Report '99* could be refined and replicated. The result is *Hospital Report 2001: Acute Care.* This independent report provides one of the most comprehensive sets of hospital performance results in Canada and around the world.

Supported through a joint initiative of the OHA and the Government of Ontario, the 2001 acute care report is just one in an expanded series of reports. Further independent reports on emergency departments, complex continuing care, rehabilitation, nursing, mental health, women's health, and population health will appear later this year. Coordinated by the University of Toronto, these additional reports are being developed by a broad-based consortium of research organizations from across the province.

A Balanced Scorecard

The provision of health care is a complicated activity requiring a multitude of skills, experiences, and technologies. No one person or discipline can cause poor or excellent performance. Similarly, hospitals are complex organizations that cannot be measured on a single dimension of performance.

Although the term "report card" has come to mean standardized publicly released reports on the quality of care, *Hospital Report 2001: Acute Care*, like its predecessors, is a "balanced scorecard" measuring multiple dimensions of hospital performance. For the first time, a special section has also been included on women's health.

Understanding the Four Quadrants

Hospital Report 2001: Acute Care measures four different dimensions (or "quadrants") of hospital performance:

Patient Satisfaction: Examines patients' perceptions of their hospital experience including their perceptions of overall quality of care, outcomes of care, and unit-based care.

Clinical Utilization and Outcomes: Describes the clinical performance of hospitals and refers to such things as access to hospital services, clinical efficiency, and quality of care.

Financial Performance and Condition: Describes how hospitals manage their financial and human resources. It refers to a hospital's financial health, efficiency, management practices, and human resource allocations.

System Integration and Change: Describes a hospital's ability to adapt to its changing health care environment. More specifically, it examines how clinical information technologies, work processes, and hospital-community relationships function within the hospital system.

Selecting Indicators

Each of the four quadrants includes several measures of hospital performance. These performance measures, or "indicators," were selected based on their scientific soundness, relevance, and feasibility. Researchers restricted the number of indicators to a manageable level, balancing the wide scope of the study with the need for conciseness. Final selections were based on current scientific literature and feedback from a series of advisory groups comprised of experts in the hospital and community sectors.

To calculate these indicators, a variety of data was used. Sources, methods of collection, and time periods vary across the quadrants. Overall, data were collected for 39 hospital-specific indicators: eight Patient Satisfaction indicators, 12 Clinical Utilization and Outcomes measures, nine Financial Performance and Condition measures, and 10 System Integration and Change comparators. To reflect the wide variations in the complexity of patient problems, demographic characteristics of patients, and characteristics of different hospital types, relevant adjustment factors have been used for each indicator. The goal is to ensure the most meaningful comparisons possible.

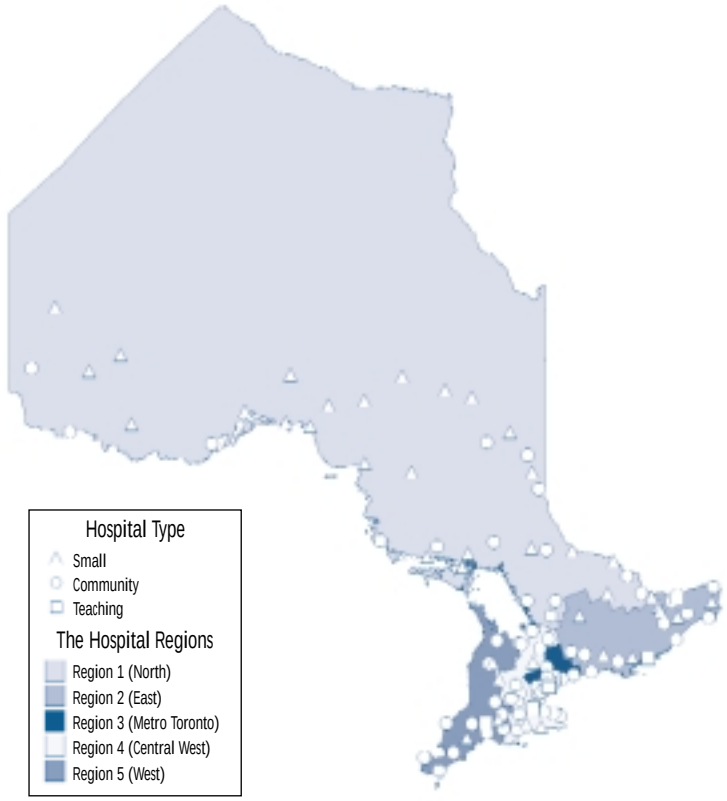
Hospital Participation in 2001

This report includes summary findings across all participating hospitals as well as hospital-by-hospital results. Overall, 121 acute care organizations, representing over 185 hospital sites, voluntarily agreed to participate in the province-wide analysis. Thirty-nine are small hospitals, as defined by the Joint Policy and Planning Committee (JPPC). They are facilities that generally provide less than 3,500 weighted cases, have a referral population of less than 20,000 people, and are the only hospital in their community. Another 13 are acute or paediatric teaching hospitals. They belong to the Ontario Council of Teaching Hospitals. The other 69 are community hospitals.

Ninety-five of these 121 organizations signed up for the hospital-specific portion of this report. Together, they represent 96% of all acute care hospitalizations in Ontario. Most of the remaining hospitals were not eligible to participate because they could not take part in all quadrants of the report. Twenty hospitals had too few patients to report patient satisfaction results. In addition, one hospital did not participate in the hospital-specific report due to an impending closure. This leaves five facilities that were eligible but chose not to participate in the hospital-specific report. In this sense, 95% of eligible hospitals participated in the hospital-specific portion of this report.

FIGURE 1.2: ONTARIO'S ACUTE CARE HOSPITAL CORPORATIONS

The map below illustrates the location of the 121 small, community, and teaching acute care hospitals in Ontario. For hospital partnerships or corporations with more than one site, only the main site is shown.



Allocating Hospital Performance Scores

It's not easy to translate information about specific hospitals into a performance score. There are no accepted benchmarks or standards — provincially, nationally, or internationally — that define the "best" or "right" value for each indicator or for each hospital. As such, in this report a hospital's score reflects its relative performance compared to other hospitals in the province.

In *Hospital Report '99*, hospitals were grouped into one of three performance categories: "above average", "average", and "below average". Since then, many hospital managers, health care decision-makers, and members of the public called for an increase in the number of performance categories. As such, University of Toronto researchers, CIHI, and the OHA Report Card Advisory Committee (composed of hospital CEOs and health care stakeholders) devised a set of principles to help determine the processes for appropriately increasing the number of performance categories.

Hospital performance scores were assigned using a two-part process. The first step used standard statistical techniques to identify the range of indicator values for each of five performance categories. The second step asked University of Toronto researchers and/or experts from each of the quadrants to review the results. Based on their advice, if the differences in scores were not sufficiently large to be clinically and/or administratively meaningful, the middle three categories of the five-point scale were collapsed into one.

What was the result? For 25 of the 39 hospital-specific indicators in *Hospital Report 2001: Acute Care*, hospitals were placed into one of five performance categories: "above average", "somewhat above average", "provincial average", "somewhat below average", and "below average". For the other 14 indicators, only three performance categories were used. As a result of these changes, hospital-specific results in 2001 are not directly comparable to those in the 1999 report. Nevertheless, comparisons across all hospitals based on indicator values can and have been made in many areas.

Principles for Deciding on the Number of Categories in the Performance Scale

To realize the full benefits of this report, communities, hospitals, stakeholders, and researchers must commit to the uptake of results through the implementation of quality improvement programs and other initiatives. The following principles were used to guide the selection of an appropriate number of performance categories:

- Enhance the use and usefulness of *Hospital Report 2001: Acute Care*.
- Where possible, increase the number of performance levels but do not force a specific number of categories.
- Focus on meaningful differences between classifications of performance and reflect certainty about these classifications.
- Choose appropriate analytic techniques based on the quality, distribution, and other characteristics of the data.
- Use a consistent analytic approach for the classification of high and low performers.
- To the extent possible, be consistent in the treatment and presentation of results across indicators within a quadrant and across quadrants.

More About This Report

Hospital Report 2001: Acute Care provides a "snapshot" of Ontario's acute care hospital system. It was designed specifically for hospital trustees, health care administrators, and others who want detailed information about the relative performance of hospitals across the province.

The report is divided into three parts: an introduction, province-wide balanced scorecard results, and a special section on women's health. It also includes an insert with hospital-specific performance results. A companion document, *Hospital Report 2001: Acute Care Technical Summary*, provides a more in-depth understanding of the methodologies used to calculate indicator values. In addition, a shorter overview of the findings described in this report has been prepared for wide distribution.

All these reports are available free on the *Hospital Report Series* partners' and sponsors' web sites, including www.cihi.ca. To order a copy by mail, please call the Ontario Ministry of Health and Long-Term Care at 1-888-668-4636.

We welcome your suggestions for future reports. To provide us with comments and ideas for future reports, please complete the feedback form on the web or at the back of this report.

Next Steps

Hospital Report 2001: Acute Care provides citizens of Ontario with information about their hospital system. It also helps hospitals build on their results as part of on-going improvement efforts. Future reports will continue to build on these objectives.

As data collection and measurement tools undergo refinement, future reports may highlight trends both province-wide and hospital-by-hospital. Case studies may be included to describe the results of hospitals' efforts to improve their performance. As well, results from upcoming reports in the *Hospital Report Series*, including reports on emergency departments and complex continuing care, may shed additional light on the acute care findings.

Research is also currently underway to examine the relationships between measures in each of the four balanced scorecard quadrants. For example, are patient satisfaction levels higher when there are better patient outcomes? How are lengths of stay and outcomes of care affected by hospital-community relationships? Do increases in nursing staff hours affect patient satisfaction levels? Answers to these and other questions may provide useful insights into the performance of Ontario's acute care hospitals.

Patient Satisfaction

Patient Satisfaction

Reports about Ontario's hospitals are regularly featured in the news. We often hear from governments, doctors, nurses, and individual patients or their families. But what do hospital patients think, overall, about their care? In the past, individual hospital surveys, reports from staff and volunteers, community forums, and other sources have offered pockets of information. But these sources did not allow one to assess patient satisfaction across the province or to look at how patient satisfaction differs from hospital to hospital.

With the introduction of the Standardized Hospital Patient Satisfaction Survey (SHoPSS), the largest patient satisfaction survey in Canada, comparisons between hospitals have become possible. The survey, now in its second year, asks patients across Ontario for their opinions of the care they received. It also asks for patients' ratings of specific aspects of care. By systematically tracking satisfaction levels over time, individual hospitals and the entire hospital system can monitor success in responding to patient and community expectations. The survey also gives hospitals insights about where they can improve satisfaction levels.

A Snapshot of Patients' Views of Ontario Hospitals

As in 1999, and in many other studies from within and outside Ontario, this year's survey found high overall patient satisfaction with acute hospital care. More than four in five (88%) patients rated the overall quality of their care as excellent or good. The majority (87%) also indicated they would return to the same hospital for medical care. And approximately 82% would recommend the hospital to their family and friends.

Not only did most patients praise their overall hospital experiences, but they also had generally positive perceptions of specific aspects of the care they received. As in 1999, satisfaction levels were particularly high for questions about overall opinions of physician and nursing care. Over 90% of patients said that their physician care was excellent or good. Similarly, 89% rated their nursing care as excellent or good.

Also consistent with the 1999 survey results, patients tended to report being somewhat less satisfied with hospital support services and housekeeping. Most still rated these services as good or excellent, but others were less impressed. For example, 14% of patients rated support services – which include the work of social workers, volunteers, receptionists/secretaries, and food services – as fair. Another three percent felt that these services were poor or very poor. Similarly, about 12% rated the courtesy of the housekeeping staff and the cleanliness of the hospital, their rooms, and the bathrooms as fair, with approximately another five percent rating them as poor or very poor.

How Was the Research Done?

The Data Source

Standardized patient satisfaction surveys were mailed to over 74,000 patients who stayed overnight in Ontario acute care hospitals. Most of the patients surveyed were discharged in May and June of 2000. If a hospital had less than 500 discharges during those months, patients discharged in other months were also sent surveys. More than 30,000 surveys (about 40%) were completed and returned. All were used to calculate province-wide results. At the hospital-specific level, at least 100 valid survey responses from general medical and surgical inpatients (psychiatry and obstetrics patients were excluded) were required for a hospital's results to be included in this report. Those hospitals that did not reach this minimum received a Non-Reportable (NR) rating. This means that hospital-specific values were not calculated.

Two survey companies worked together in the coordination of the SHoPSS. The Gristmill Marketing Company, Ltd. was responsible for distributing the questionnaire and entering the data. The questionnaire, which was also used for *Hospital Report '99*, is a slightly modified version of a survey developed by Parkside Associates Inc. (PAI). PAI performed initial data analysis and produced summary reports of the raw data, which were sent to individual hospitals in January 2001. The Canadian Institute for Health Information – based on methods developed by researchers at the University of Toronto – used these data to analyze patient satisfaction across Ontario and to determine relative hospital performance results.

Selecting Indicators

The patient satisfaction indicators used here are the same as those used in *Hospital Report '99*. University of Toronto researchers and an advisory group with hospital representatives selected the survey instrument from responses to a Request for Proposals issued by the Ontario Hospital Association. Using data from a pilot test of this survey and advice from the advisory group, researchers developed 10 indicator scales by combining questions that were conceptually and statistically related. To do so, all questions were converted to scores out of 100 (very poor = 0, poor = 25, fair = 50, good = 75, excellent = 100 for a five-point scale, no = 0, to some extent = 50, yes = 100 for a three-point scale). Results for questions that made up an indicator scale were then averaged. Eight of the 10 indicators created from the SHoPSS are discussed in the Patient Satisfaction quadrant of this report. The other two (Coordination and Continuity of Care) are included in the System Integration and Change quadrant.

The Methods

The methodology used in this report is described in detail in *Hospital Report 2001: Acute Care Technical Summary*. It is available free on *Hospital Report Series* partners' and sponsors' web sites, including www.cihi.ca. Important features of the methods include the following:

- Patients from three types of hospitals were surveyed: small, community, and teaching facilities. Eighteen small, 65 community, and 12 teaching hospitals participated. However, one hospital was not included in either the system-wide or overall hospital-level analysis (including Figures 2.2 to 2.18) due to the late submission of data. Further, six small hospitals and three community hospitals did not meet the 100-survey cutoff. This means that proportionately fewer patients from small hospitals completed and returned questionnaires. The proportion of patients who returned surveys from small hospitals is relatively small because of low patient volumes.
- Not all questions were answered on every survey. Four hundred and ninety-four questionnaires were dropped from the analysis because fewer than half of the questions on the survey were completed.
- Certain groups of patients tend to report lower or higher levels of satisfaction than others. For example, research has shown that a patient's age, gender, and self-assessed health tend to make a difference in satisfaction levels.[1,2] To make comparisons as fair as possible, a statistical "risk-adjustment" technique known as multiple regression analysis was used to control for these effects. Multiple regression is a way of statistically looking at the relationship of outcomes, in this case patient satisfaction scores, to particular factors that can be related to them. Age, gender, self-assessed health, self-reported number of hospitalizations in the last two years, and whether the survey was completed by patients themselves or by family members were used to risk-adjust hospital-specific scores. Although these risk-adjustments do not account for all patient differences, they do help to remove the effect of some of the pre-existing influences.

Indicators of Satisfaction

Like its 1999 predecessor, *Hospital Report 2001: Acute Care* tracks eight indicators of patient satisfaction (Global Quality, Process Quality, Outcome, Unit-Based Care, Physician Care, Other Caregivers, Support Services, and Housekeeping) both at the patient-level and at the hospital-level. The patient-level results describe satisfaction levels across all Ontario hospitals. Each indicator is calculated as a composite score based on all patients' responses to several survey questions. The patient-level scores are weighted to represent the entire Ontario hospital patient population, not just the subset that returned satisfaction questionnaires. The hospital-level results describe average satisfaction levels, hospital-by-hospital. For this analysis, patient scores were averaged by hospital to identify hospital-specific performance. The hospital-level scores are risk-adjusted for comparability. Ontario-wide patient-level and hospital-level results for each indicator are presented.

How Performance is Assigned

The insert in the back of this report includes hospital-by-hospital performance scores for 10 patient satisfaction indicators (two of which are reported in the System Integration and Change quadrant). These scores reflect how a hospital performed relative to others across the province, taking into account the types of patients the hospital treated.

A standard risk-adjustment technique (multiple regression analysis) is used to control for differences in key patient characteristics, such as age, gender, and self-reported health status, across hospitals. Patients' adjusted scale ratings are then averaged to calculate an indicator value for each hospital.

Based on how its value compares with the average of all hospitals' values, each hospital receives one of five performance scores, ranging from "below average" to "above average". These scores are assigned using a standard statistical technique; 99.9% and 95.0% confidence intervals are calculated for each hospital (this is the range of values within which a hospital's scores would be expected to fall 999 times out of 1000 or 950 times out of 1000 respectively). As shown in Figure 2.1, the hospital's performance score depends on how these ranges compare to the average for all hospitals participating in the survey process. The goal is to identify differences (higher or lower values) that are unlikely to occur by chance alone. Figure 2.1 illustrates how performance scores are allocated.

FIGURE 2.1: HOW PATIENT SATISFACTION PERFORMANCE IS ASSIGNED

Confidence intervals for each hospital were calculated and compared to the grand mean of all hospitals to assign performance to one of five categories. To ensure comparable performance allocations a low cut-off point was applied as discussed in the *Hospital Report 2001: Acute Care Technical Summary*. For details on the performance allocation method for this quadrant, please see the sidebar "How Performance is Assigned".

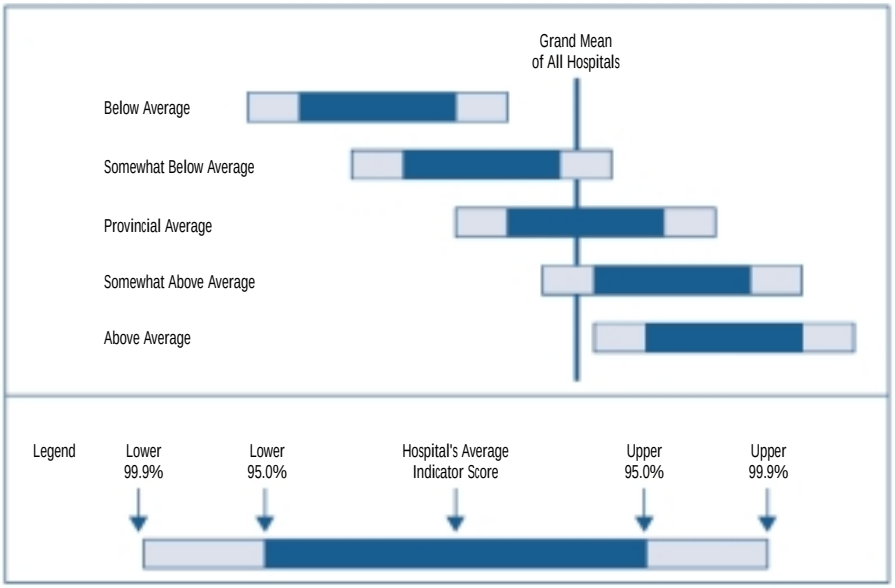
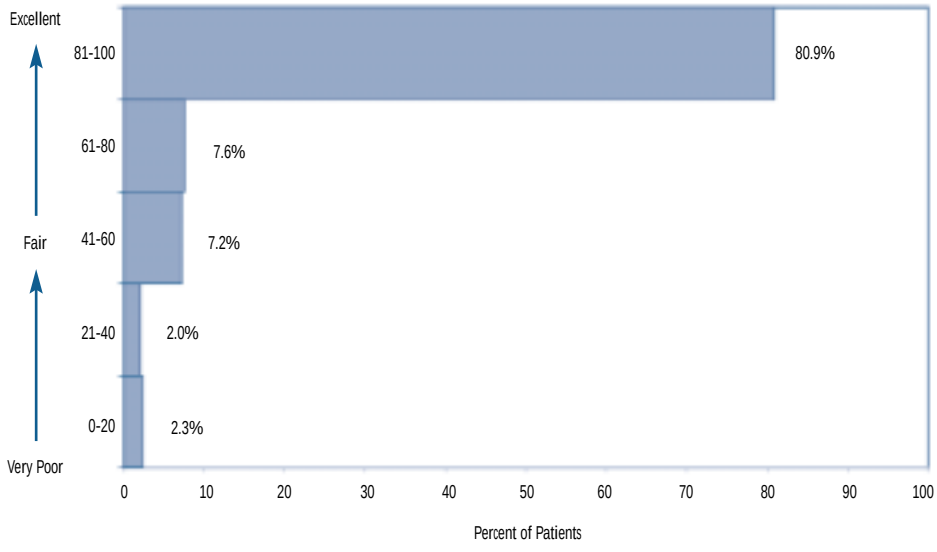


FIGURE 2.2: PATIENTS' GLOBAL PERCEPTIONS

Overall, patients reported being very satisfied with the care they received in Ontario hospitals. The following graph illustrates patient satisfaction ratings for the Global Quality indicator in 2000. It shows the percent of patients giving ratings in each of five-point ranges across all participating hospitals.



Source: Standardized Hospital Patient Satisfaction Survey, 2000

Measuring Overall Perceptions

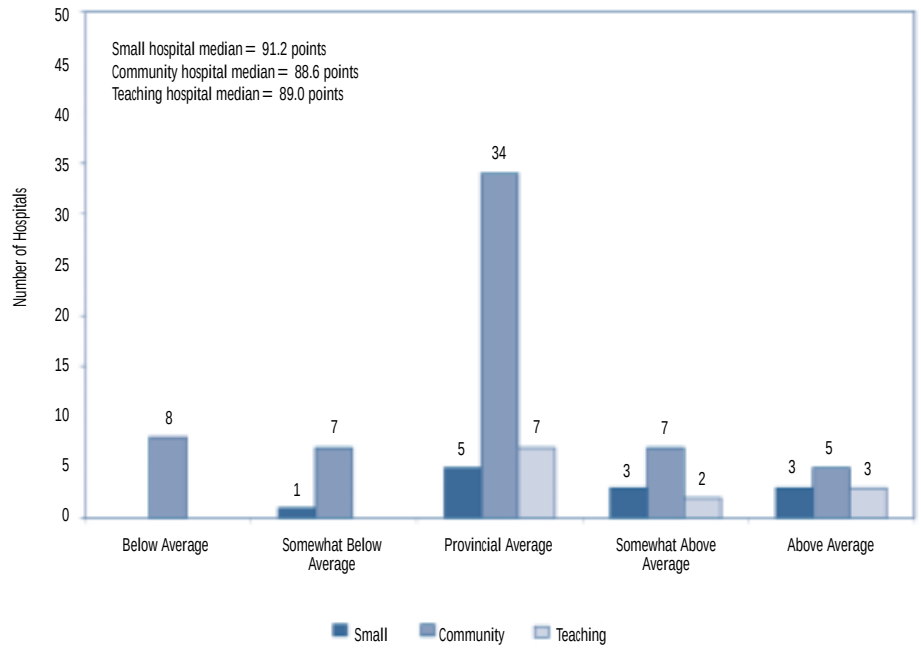
People's perceptions are often shaped by their personal experiences. Overall perceptions of care in hospital are no exception. For example, their medical conditions, encounters with health care providers, and room assignments (e.g. private or shared rooms) may affect patients' perceptions of care. Media reports about hospital care in general or about specific hospitals can also play a role.

These factors and others may influence the Global Quality indicator (sometimes referred to as the Overall Opinion indicator). It measures patients' overall responses to their hospital care after their stay. The indicator is not only a product of how well the hospital meets patients' needs, but also of its reputation in the community and its image in the province generally.

Most patients had high opinions of the care they received. Overall, almost 89% of patients rated Global Quality in the excellent or good range, while less than five percent felt it was poor or very poor.

FIGURE 2.3: HOW ONTARIO HOSPITALS PERFORMED – GLOBAL QUALITY INDICATOR

The graph below shows performance distributions of small, community, and teaching hospitals across Ontario for the Global Quality indicator. It also includes median point scores by hospital type (out of 100 possible points). Half of all hospitals had results below the median. The other half had higher values.



Source: Standardized Hospital Patient Satisfaction Survey, 2000

At the hospital-level, indicator values (averaged across all of the hospital's risk-adjusted responses) ranged from 78 to 99 out of 100 possible points. The majority of facilities were assigned to the "provincial average" performance category for the Global Quality indicator. This means that their results were on par with most other hospitals in the province.

What Makes Up the Global Quality Indicator?

The Global Quality indicator is based on three survey questions:

1. What is your overall opinion of the quality of care received?
2. Would you return to this hospital for your medical care?
3. Would you recommend this hospital to your friends or family?

The Process of Care

Although the Global Quality indicator measures how patients feel about their hospital stays, the Process Quality indicator is more closely linked to how patients perceive the care that a hospital provides. It may be the best overall measure of patient satisfaction, because it taps into most aspects of hospital care and services. It is also highly reliable because a large number of questions are used to create the Process Quality indicator.

Most patients (over 70%) felt hospitals did an excellent job of providing care. Almost 94% of patients rated the hospitals they stayed in as excellent or good on the Process Quality indicator (also known as the Satisfaction with Care and Services indicator). In contrast, fewer than seven percent of patients rated the hospital as fair or lower.

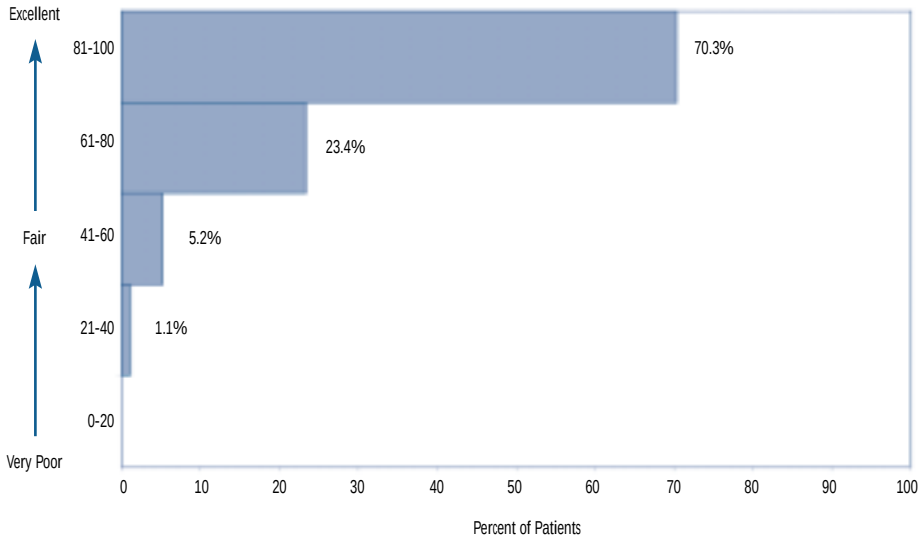
At the hospital-level, the majority of small, community, and teaching hospitals were rated in the "provincial average" category on the Process Quality indicator.

What Makes Up the Process Quality Indicator?

The Process Quality indicator is a weighted composite measure that reflects both the quality of care and the provision of services. Forty questions are included in this indicator. Unit-based care and physician care account for almost 41% of the index. A range of other topic areas, such as finance, admissions, and pain management, is also covered.

FIGURE 2.4: PATIENTS' OVERALL PERCEPTIONS OF PROCESS QUALITY

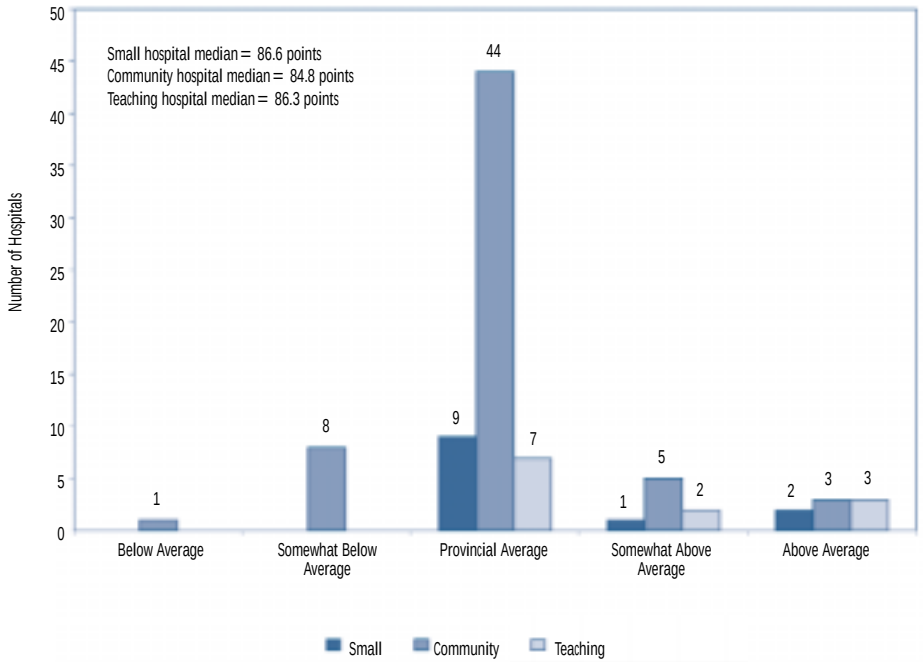
The Process Quality indicator is a composite of 40 questions from the patient satisfaction survey. The graph below shows the percent of patients giving ratings in each of five-point ranges for this indicator in the 2000 survey.



Source: Standardized Hospital Patient Satisfaction Survey, 2000

FIGURE 2.5: HOW ONTARIO HOSPITALS PERFORMED – PROCESS QUALITY INDICATOR

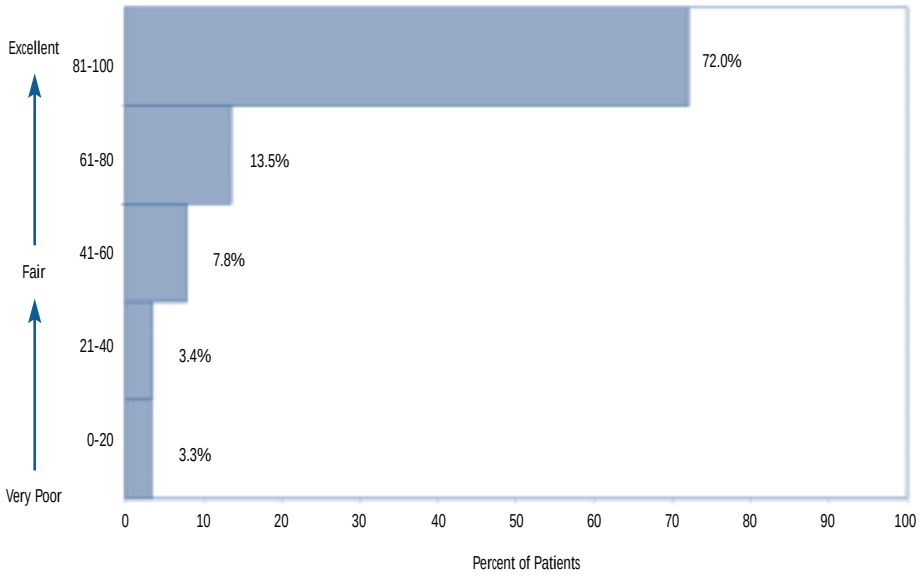
Performance distributions of small, community, and teaching hospitals across Ontario for the Process Quality indicator.



Source: Standardized Hospital Patient Satisfaction Survey, 2000

FIGURE 2.6: HOW PATIENTS FEEL ABOUT OUTCOMES OF CARE

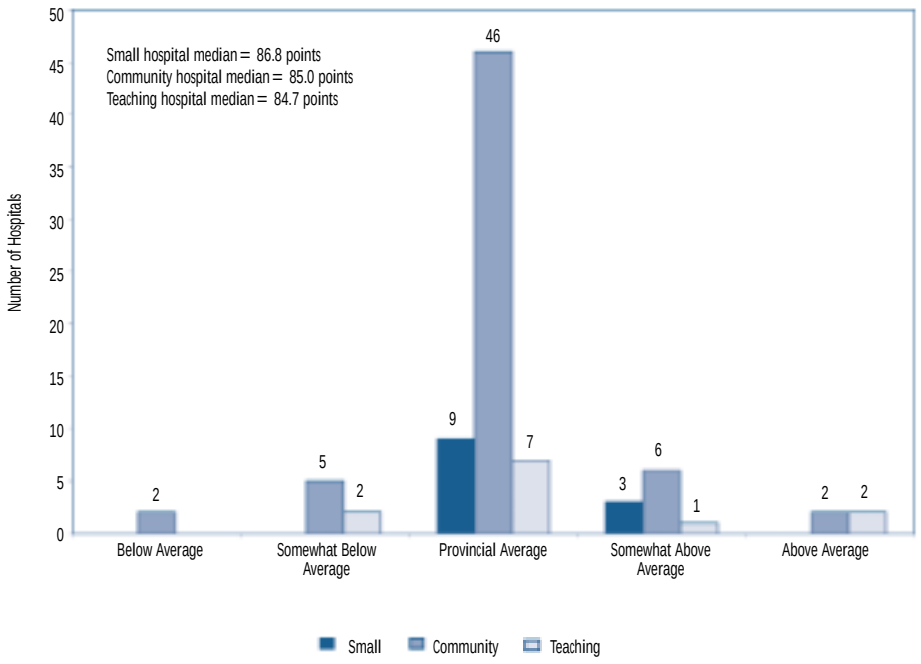
How satisfied are patients with the outcomes of their care? The graph below shows patient satisfaction ratings for the Outcome indicator.



Source: Standardized Hospital Patient Satisfaction Survey, 2000

FIGURE 2.7: HOW ONTARIO HOSPITALS PERFORMED – OUTCOME INDICATOR

Performance distributions of small, community, and teaching hospitals across Ontario for the Outcome indicator.



Source: Standardized Hospital Patient Satisfaction Survey, 2000

Treatment Outcomes

Achieving good outcomes of care is important for both hospitals and patients. The Outcome indicator focuses on patients' perceptions of the overall results of their stay.

Almost three in four patients (72%) were very satisfied with the outcomes of their care. This is similar to the 71% seen in 1999. Although overall satisfaction levels were high, scores for this indicator tended to be somewhat lower than those for Global Quality and Process Quality. Almost 15% of patients said that the outcomes of their care were fair, poor, or very poor. In part, this reflects the fact that only 69% of patients felt they had a better understanding of their condition when they left the hospital than when they arrived.

What Makes Up the Outcome Indicator?

The Outcome indicator is based on answers to three questions:

1. Overall, are you satisfied with the outcome of your hospital care?
2. Do you feel the condition for which you were admitted to the hospital has improved as much as expected?
3. When you left the hospital, did you have a better understanding of your condition than when you entered?

Satisfaction With Unit-Based Care

During a hospital stay, patients come into contact with a variety of staff. Registered nurses (RNs), licensed practical nurses (LPNs), and registered psychiatric nurses (RPNs) tend to provide the bulk of unit-based care. Nevertheless, patients often do not distinguish the care provided by nurses with that provided by other caregivers. Accordingly, the Unit-Based Care indicator reflects, to some extent, satisfaction with the quality of unit-based services delivered by the entire care team. This measure was called the Nursing Care indicator in *Hospital Report '99* and is also known as the Bedside Care Indicator.

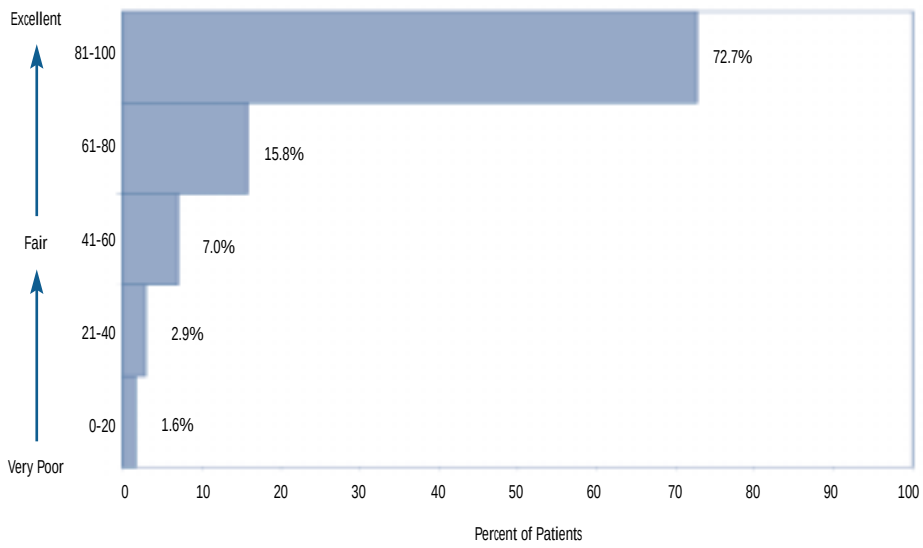
What Makes Up the Unit-Based Care Indicator?

The Unit-Based Care indicator is comprised of 10 questions:

1. What is your overall opinion of nursing care?
2. Were you satisfied with the thoroughness of care you received from the nursing staff?
3. Did you feel that the nursing staff was concerned about you as a person?
4. How would you rate the courtesy of nursing staff?
5. Did you receive satisfactory answers from the nursing staff?
6. How would you rate the skill of nursing staff?
7. Did you feel comfortable about sharing your personal concerns with the nursing staff?
8. Did the nursing staff place things needed within your reach?
9. When you used your call button, were you answered promptly?
10. Did the nursing staff call you by name?

FIGURE 2.8: HOW PATIENTS FEEL ABOUT UNIT-BASED CARE

Unit-based care, the bulk of which is provided by nursing staff, is one of the most important influences on patient satisfaction. The graph below illustrates patient satisfaction ratings for the Unit-Based Care indicator.



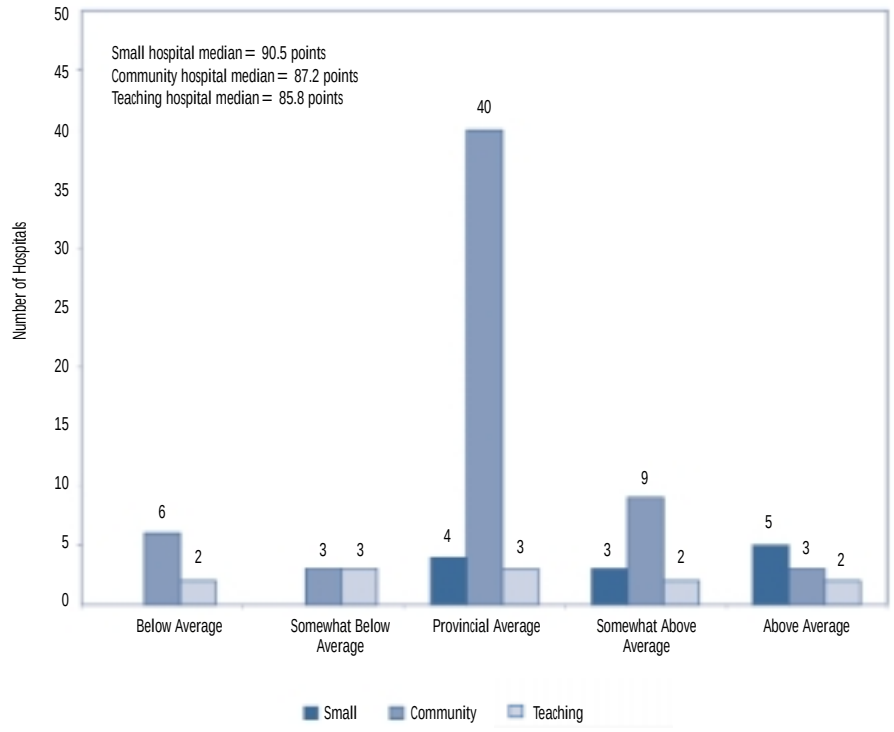
Source: Standardized Hospital Patient Satisfaction Survey, 2000

Overall, patients reported high levels of satisfaction on the Unit-Based Care indicator. Almost 73% felt the care they received was excellent, and only 12% of patients gave scores of fair or lower. In particular, scores were highest for the skill and courtesy of nursing staff (over 90% of patients rated skill and courtesy as excellent or good). In contrast, patients were less pleased with how promptly their call buttons were answered (only 69% of patients said they were answered promptly).

When it comes to unit-based care, small hospitals tended to score better than their larger counterparts. As shown below, there were no small hospitals that scored in the "below average" or "somewhat below average" categories for this indicator. Their median score was also higher than for other types of hospitals. Half of all hospitals scored above this level. The other half had lower scores.

FIGURE 2.9: HOW ONTARIO HOSPITALS PERFORMED – UNIT-BASED CARE INDICATOR

Performance distributions of small, community, and teaching hospitals across Ontario for the Unit-Based Care indicator.



Source: Standardized Hospital Patient Satisfaction Survey, 2000

Does Gender Make a Difference?

When it comes to patient satisfaction ratings, gender seems to make a difference.[3] In the SHoPSS, men were more likely than women to give a rating of excellent for the Process Quality indicator (74% vs. 68%). Men also tended to be more satisfied than women with unit-based care. Seventy-seven percent of male patients rated unit-based care at the highest level (81-100 points), compared with 69% of female patients. Nevertheless, men and women had relatively similar average scores for the Unit-Based Care indicator. Men had an average of 88 points and women averaged 85 points out of 100. These patterns were also evident for other indicators such as Global Quality and Housekeeping. What causes these differences? Future patient satisfaction research may begin to provide answers.

Satisfaction with Physician Care

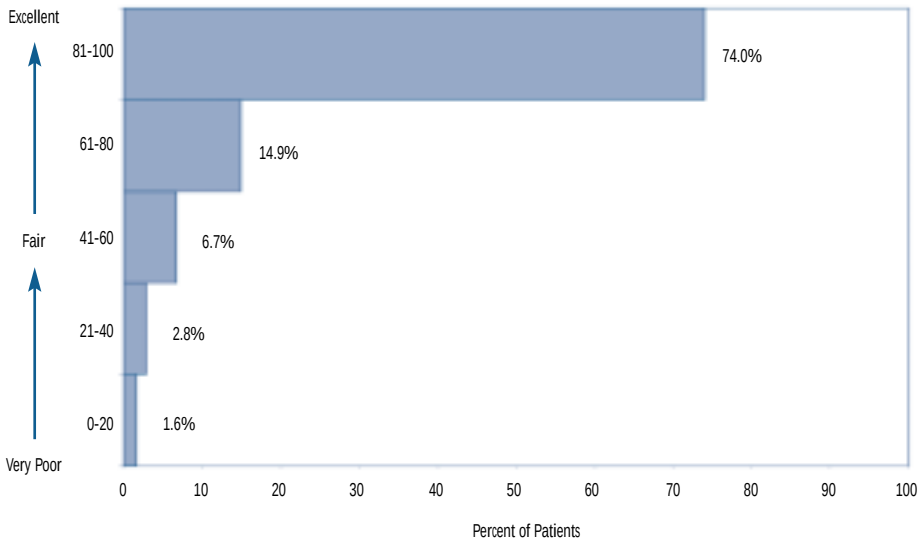
Although physicians are usually not hospital employees, the care that they provide is an important contributor to overall patient satisfaction. As with the Unit-Based Care indicator, patients tended to report high satisfaction ratings with physician care.

Overall, patients were very satisfied with the physician care they received. As in 1999, almost 89% of patients rated their physician care as excellent or good.

At the hospital-level, most facilities were clustered in the "provincial average" performance category.

FIGURE 2.10: HOW PATIENTS FEEL ABOUT PHYSICIAN CARE

Physician care is another strong contributor to overall patient satisfaction. The following graph shows patient satisfaction ratings for the Physician Care indicator.



Source: Standardized Hospital Patient Satisfaction Survey, 2000

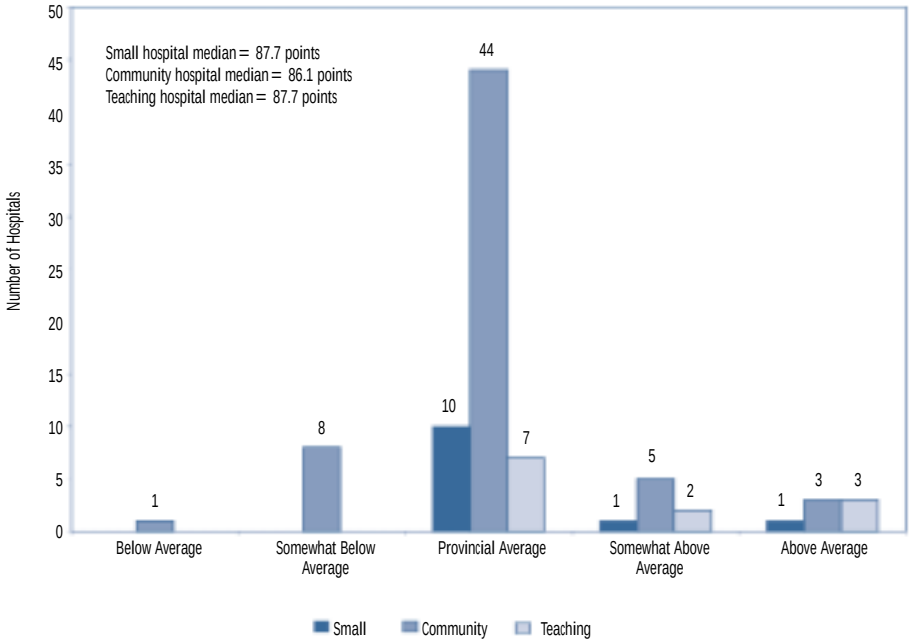
What Makes Up the Physician Care Indicator?

The Physician Care indicator is based on answers to 10 questions:

1. What is your overall opinion of physician care?
2. Did your physicians adequately explain your diagnosis and treatment to you?
3. Were you satisfied with the thoroughness of care you received from your physicians?
4. Did your physicians keep you informed about your condition and the care planned for you?
5. How would you rate the courtesy of physicians?
6. How would you rate the skill of physicians?
7. Were you adequately involved with decisions affecting your care?
8. Were your questions about your tests/treatments answered in a way you could understand?
9. Were you satisfied with how well your family members were kept informed about your condition?
10. Were you told what to expect during your hospital stay?

FIGURE 2.11: HOW ONTARIO HOSPITALS PERFORMED – PHYSICIAN CARE INDICATOR

Performance distributions of small, community, and teaching hospitals across Ontario for the Physician Care indicator.



Source: Standardized Hospital Patient Satisfaction Survey, 2000

Satisfied Seniors?

In this survey as in others, patients' satisfaction with their hospital care seems to be related to age.[4] In the 2000 SHoPSS, patients between the ages of 65 and 84 were more likely to have higher satisfaction levels than patients under 65 and over 84 for some indicators. For example, 77% of patients between the ages of 65 and 84 gave the highest satisfaction rating (81-100) on the Physician Care indicator. This is compared to about 72% of patients under 65 years and 71% of those 85 years and over.

Similar results were seen for the Other Caregivers indicator. Although 62% of patients scores' were in the excellent range for the Other Caregivers indicator, seniors between the ages of 65 and 84 were most likely to have given scores at the highest end of that scale. Why? At this point, we don't know. Future research may help tell the rest of the story.

What Makes Up the Other Caregivers Indicator?

The Other Caregivers indicator is based on answers to four questions:

1. How would you rate the skill of physiotherapists?
2. How would you rate the skill of x-ray/radiology personnel?
3. How would you rate the skill of people who drew blood?
4. How would you rate the courtesy of people who drew blood?

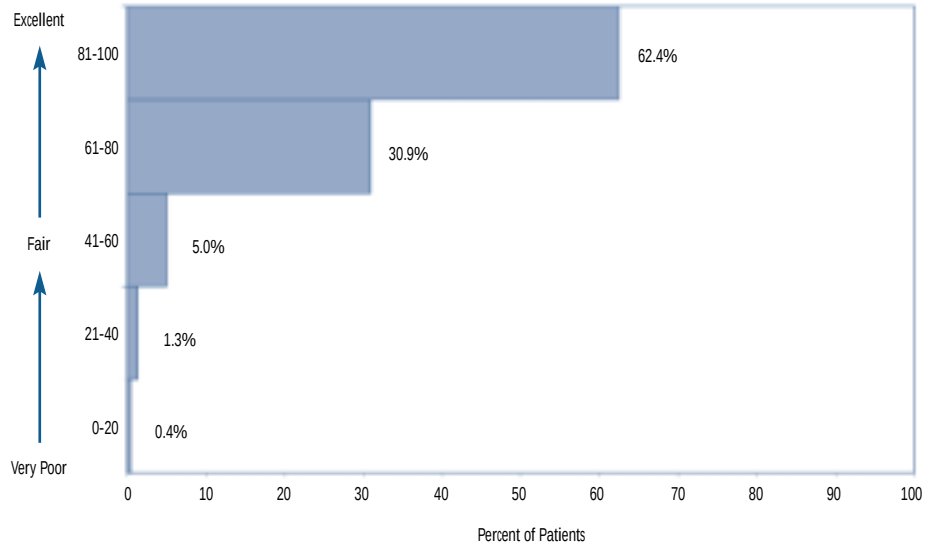
Other Caregivers

Nurses and doctors are not the only members of a health care team. A myriad of other health professionals – including radiology technicians, physiotherapists, and venopuncturists (people who draw blood) – may provide care to patients. The Other Caregivers indicator elicits patients' perceptions of the services provided by these other members of the health care team. It was called "Ancillary Patient Care Staff" in *Hospital Report '99*. As with the Unit-Based Care indicator, responses may reflect satisfaction with care processes in general, not just specific provider groups.

Over 93% of patients rated the Other Caregivers indicator as excellent or good. These results are similar to those found in 1999, when just over 93% of patients gave scores in this range.

FIGURE 2.12: HOW PATIENTS FEEL ABOUT OTHER CAREGIVERS

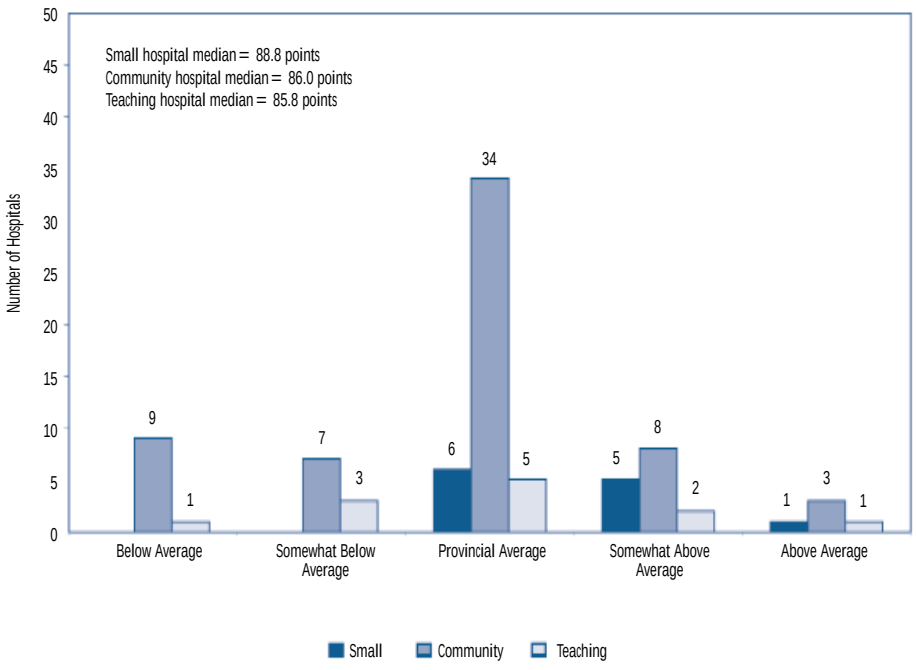
In addition to nurses and physicians, patients are treated by a variety of caregivers while in hospital, including x-ray technicians and physiotherapists. The graph below shows patient satisfaction ratings for the Other Caregivers indicator.



Source: Standardized Hospital Patient Satisfaction Survey, 2000

FIGURE 2.13: HOW ONTARIO HOSPITALS PERFORMED – OTHER CAREGIVERS INDICATOR

Performance distributions of small, community, and teaching hospitals across Ontario for the Other Caregivers indicator.

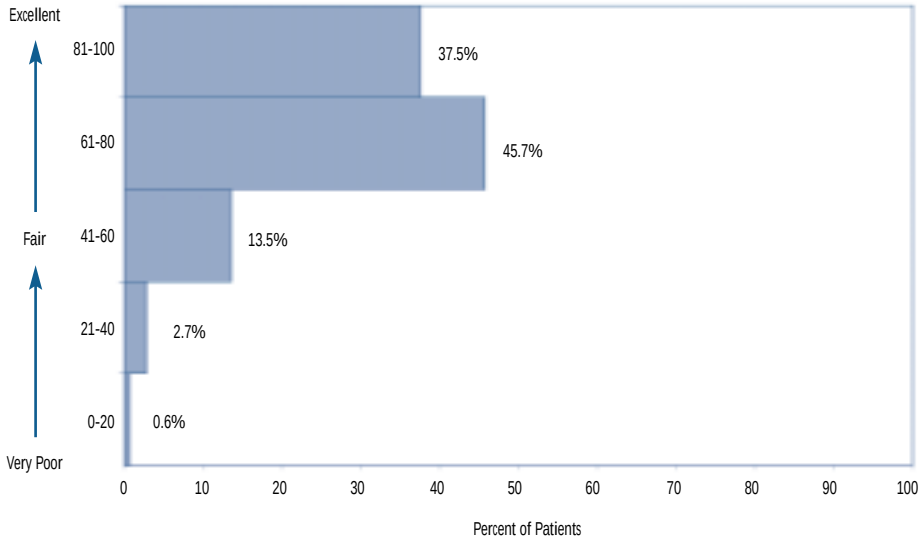


Source: Standardized Hospital Patient Satisfaction Survey, 2000

Figure 2.13 illustrates how hospitals scored for the Other Caregivers indicator. All small hospitals were in the "provincial average" category or above. Community and teaching hospitals are spread throughout the distribution.

FIGURE 2.14: HOW PATIENTS FEEL ABOUT SUPPORT SERVICES

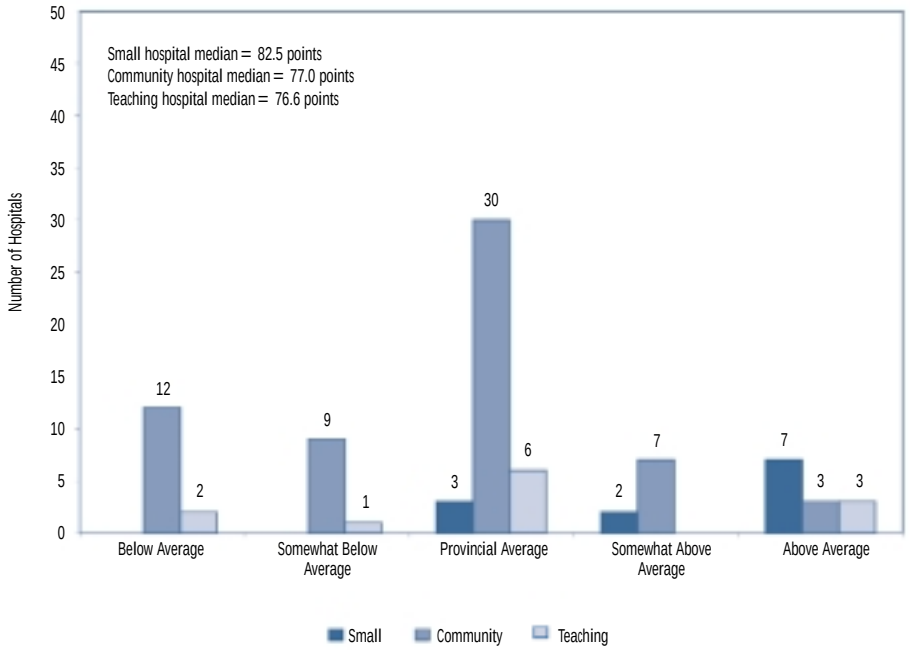
Throughout their hospital stay, patients interact with a variety of support workers including social workers, volunteers, intake receptionists, and food service providers. The graph below illustrates patient satisfaction ratings for the Support Services indicator.



Source: Standardized Hospital Patient Satisfaction Survey, 2000

FIGURE 2.15: HOW ONTARIO HOSPITALS PERFORMED - SUPPORT SERVICES INDICATOR

Performance distributions of small, community, and teaching hospitals across Ontario for the Support Services indicator.



Source: Standardized Hospital Patient Satisfaction Survey, 2000

Support Services

From the moment patients enter the hospital, they encounter a variety of hospital support workers. Social workers* are professionals who may talk to patients and their families about the challenges of patient care. Volunteers may visit patients to provide support or assistance. Secretaries or receptionists may greet them on arrival and process admissions "paperwork", and food delivery staff serve meals throughout a patient's stay. The Support Services indicator measures patients' satisfaction with these support services, as well as their perceptions of the food they were served.

Although only a fraction of patients thought that hospital support services were poor, this indicator received fewer high ratings than several other indicators. Only about 38% of patients thought that support services were excellent.

What Makes Up the Support Services Indicator?

The Support Services indicator is based on answers to five questions:

1. How would you rate the courtesy of the social workers?
2. How would you rate the courtesy of the volunteers?
3. How would you rate the courtesy of the receptionist/secretary?
4. How would you rate the courtesy of people who delivered your food?
5. What is your overall opinion of the food served during your stay?

* To ensure continuity between *Hospital Report 2001: Acute Care* and *Hospital Report '99*, social workers have been included in the Support Services indicator. In the future, an alternative approach may be considered for addressing satisfaction with these health care professionals.

In part, this is due to low scores for hospital food. Almost half (47%) of patients rated the quality of food served as fair, poor, or very poor. Rightly or wrongly, hospital food is often rated poorly in North American patient satisfaction surveys[5,6], perhaps because patients compare it to "home-cooked" meals.

Housekeeping

At home, people clean and dust as they see fit. In hospital, patients depend on housekeeping staff to ensure that their surroundings are clean. Different patients have varying expectations of cleanliness, and they may hold a hospital to higher cleanliness standards than what would be expected in their everyday lives. The Housekeeping indicator measures patients' satisfaction with the cleanliness of their surroundings in hospital.

As with support services, most patients were moderately to very satisfied with housekeeping services. Forty-one percent of patients gave ratings of excellent, and an additional 43% of patients gave ratings of good. This is similar to findings in *Hospital Report '99*, when 42% and 43% of patients gave scores in these ranges.

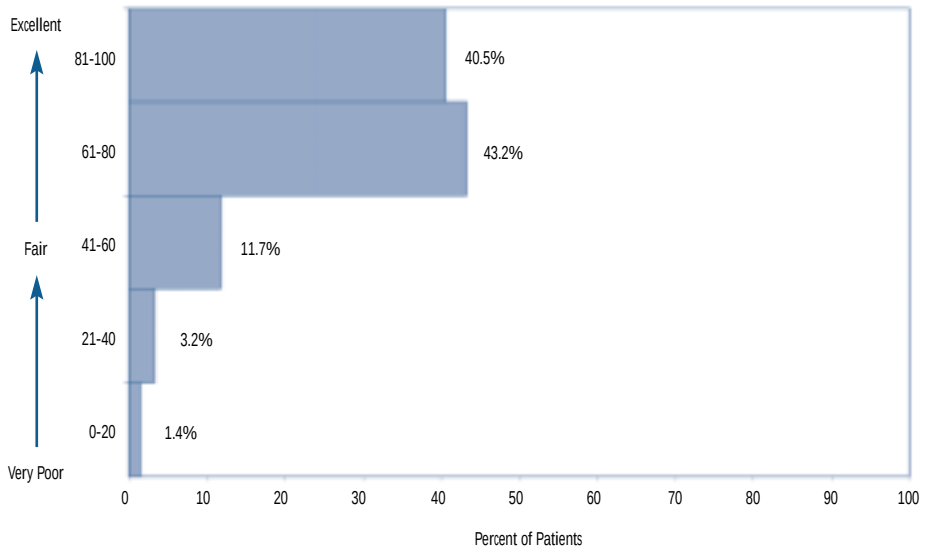
What Makes Up the Housekeeping Indicator?

The Housekeeping indicator is based on answers to five questions:

1. What is your overall opinion of housekeeping services?
2. How would you rate the cleanliness of your room?
3. How would you rate the cleanliness of your bathroom?
4. How would you rate the cleanliness of the hospital in general?
5. How would you rate the courtesy of housekeeping staff?

FIGURE 2.16: HOW PATIENTS FEEL ABOUT HOUSEKEEPING

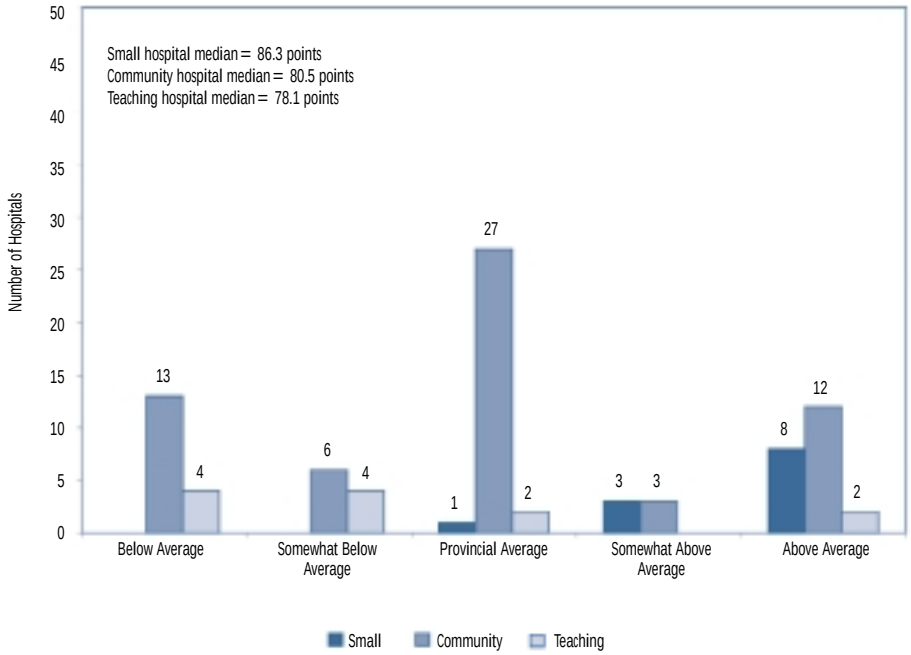
Housekeeping staff help to keep hospital rooms, bathrooms, and public areas clean. The graph below shows patient satisfaction ratings for the Housekeeping indicator.



Source: Standardized Hospital Patient Satisfaction Survey, 2000

FIGURE 2.17: HOW ONTARIO HOSPITALS PERFORMED – HOUSEKEEPING INDICATOR

Performance distributions of small, community, and teaching hospitals across Ontario for the Housekeeping indicator.



Source: Standardized Hospital Patient Satisfaction Survey, 2000

Is Smaller Better?

Ontario's small hospitals treat relatively few patients and so contribute relatively few surveys to the SHoPSS. Nevertheless, results suggest that patients in small hospitals report being more satisfied with many aspects of the quality of care and the services provided than patients in larger hospitals. For example, patients treated in small hospitals were more likely to rate Global Quality as excellent or good than those who received care in community and teaching hospitals. Patients treated in small hospitals also had more positive perceptions of their treatment outcomes than those in larger hospitals. These patterns were also evident for the Physician Care and the Housekeeping indicators. It's not clear, at this point, why these differences exist. Planned research to examine the relationship between Clinical Utilization and Outcomes and Patient Satisfaction results (where patients have agreed) may help to shed some light on this issue.

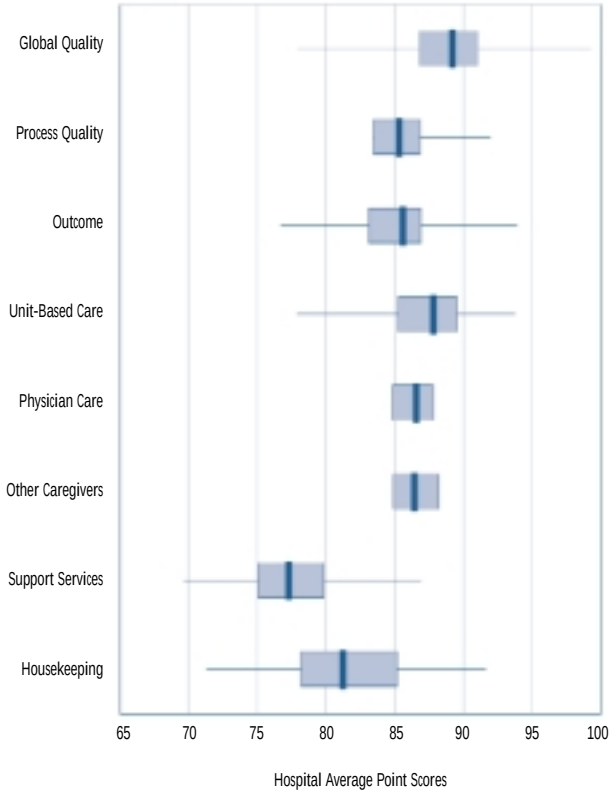
Indicator Results Compared

Although results vary from hospital to hospital, most are clustered around the provincial norm for all indicators, with some better and others worse than the Ontario average. For all but one indicator (Support Services), at least half of all hospitals had values ranging from 81 to 100 points (out of a total possible score of 100). Scores were generally higher for small hospitals than for community or teaching hospitals

Figure 2.18 compares hospital-level results for the different indicators.

FIGURE 2.18: HOSPITAL INDICATOR RESULTS COMPARED

This box plot shows how average risk-adjusted scores (on a scale of zero to 100 points) for each indicator vary from hospital to hospital. The thick vertical line in the middle of the box is the median. One half of hospitals have scores above this level, and one half have scores below.
The rectangular box shows the inter-quartile range. It contains 50% of the hospital scores (25% immediately above the median and 25% below). The "whiskers" are the lines that extend to the highest and lowest hospital scores.



Note: "Whiskers" for the Process Quality and Physician Care indicators were suppressed for confidentiality reasons.

Source: Standardized Hospital Patient Satisfaction Survey, 2000

Next Steps

Proven quality improvement methods require hospitals to make a commitment to change over the long term. The process is typically slow and incremental. Research suggests that, to have maximum effect, changes must be very specific and must generally be focused on patient care. Unfortunately, however, it is not yet known which specific initiatives will have the most impact on improving satisfaction levels.

Nevertheless, a year after receiving 1999 satisfaction results, two-thirds of Ontario hospitals reported having made some change based on the survey findings. On this year's System Integration and Change questionnaire, hospitals reported on two important areas where change occurred.

Areas commonly cited included:

- Improving **food services** with new food carts and food delivery systems so food is served hot, upgraded equipment, new menus and testing of new products, rotating the order in which rooms are served, and other changes;
- Addressing **cleanliness** problems through washroom renovations, replacing old carpeting, hiring additional housekeeping staff, more consistent cleaning of public areas, and other processes;
- Safeguarding **patient privacy and confidentiality** by reminding hospital staff about the importance of maintaining patient confidentiality, renovating waiting areas to segregate outpatient areas from emergency rooms, or creating privacy and confidentiality task forces;
- Supporting **better pain management**, including creating multidisciplinary pain management committees and developing and implementing pain assessment tools; and
- Helping inform patients about **waiting times** by putting up signs that explain factors affecting long waits.

How will these practices influence future patient satisfaction levels? Analysis suggests that overall satisfaction with hospital care is most influenced by improvements in Unit-Based Care and Physician Care scores. This is reflected by the large number of questions on the SHoPSS that combine to form these indicators (10 for each). Furthermore, Unit-Based Care and Physician Care together make up a large part of the Process Quality indicator (41%), the best overall measure of specific aspects of care.

Over time, it should be possible to use survey results to better understand the impact of specific hospital changes on patients' perceptions of their hospital experiences. Lessons may also be learned from new satisfaction surveys that are being introduced for care in emergency departments and complex continuing care facilities.

For more information

[1] Tucker J and Kelley V (2000). The influence of patient socio-demographic characteristics on patient satisfaction. *Military Medicine,* 165(1):72-6.
[2] Hall JA, Milburn MA, and Epstein AM (1993). A causal model of health status and satisfaction with medical care. *Medical Care,* 31(1):84-94.
[3] Tucker J and Kelley V (2000). The influence of patient socio-demographic characteristics on patient satisfaction. *Military Medicine,* 165(1):72-6.
[4] Rosenheck R, Wilson NJ, and Meterko M (1997). The influence of patient and hospital factors on consumer satisfaction with inpatient mental health treatment. *Psychiatric Services,* 48(12):1553-61.
[5] Lambert LG, Boudreaux J, Conklin M, and Yadrick K (1999). Are new meal distribution systems worth the effort for improving patient satisfaction with food service? *Journal of the American Dietetic Association,* 99(9):1112-4.
[6] Anonymous Challenge (1994).: how to improve patient satisfaction. *Food Management,* 29(1):67.

Clinical Utilization and Outcomes

Clinical Utilization and Outcomes

Providing quality patient care and seeking ways to improve this care are central goals of any hospital. One of the ways that hospitals may identify opportunities to improve the quality of the care that they provide is to compare their performance levels to those of other hospitals. This comparison can facilitate better care for all patients as hospitals benefit from the experiences of one another.

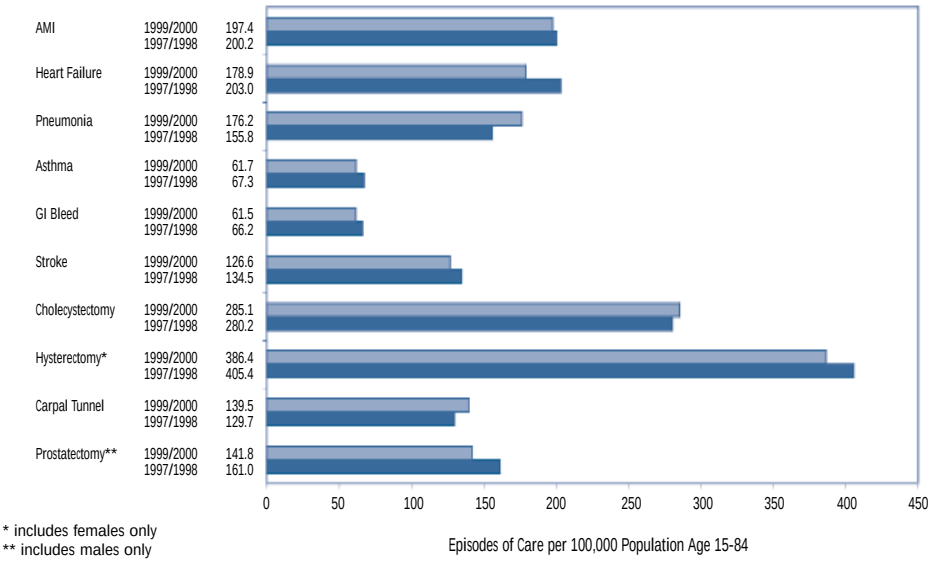
The Clinical Utilization and Outcomes quadrant of *Hospital Report 2001: Acute Care* is intended as a continuous quality improvement tool, helping hospitals to evaluate the clinical services they provide and to determine how they compare to similar hospitals within Ontario. Like its 1999 predecessor, this report uses province-wide hospital data to describe clinical utilization and outcomes in Ontario hospitals. While these indicators have remained relatively unchanged since the 1999 report, some methodological enhancements have been implemented to ensure that the results continue to be relevant and appropriate.

A Snapshot of Ontario Hospitals

For more than a decade, day-surgery use has increased while the number of patients staying overnight in Ontario hospitals has generally dropped. Similar patterns are evident for the specific patient groups covered in this report. These groups represent 10 common medical and surgical conditions that are treated in most Ontario hospitals.

FIGURE 3.1: HOSPITALIZATION RATES ACROSS PATIENT GROUPS

Between 1997/1998 and 1999/2000, the number of episodes of care in acute care hospitals per 100,000 Ontarians between the ages of 15 and 84 has decreased for most of the patient groups examined in this report.



* includes females only
** includes males only

Source: Discharge Abstract Database, 1997/1998 and 1999/2000

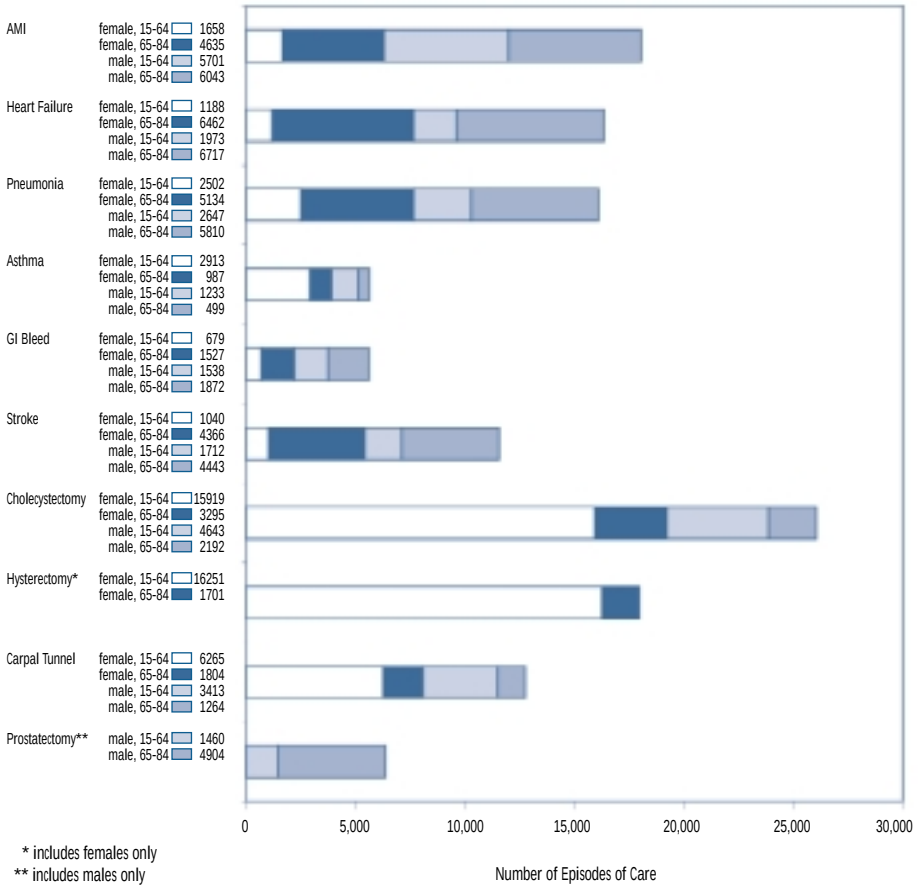
The number of episodes of care for patient groups that often require overnight stays generally declined between 1997/1998 and 1999/2000. This includes nearly all medical patient groups examined in this report, as well as hysterectomies and prostatectomies. In contrast, rates of cholecystectomy and carpal tunnel release – two procedures often performed as day-surgery – have increased.

Several factors have contributed to the decreases in hospitalization rates. For example, the total number of patients admitted to hospital has fallen. This decline may be, in part, because outpatient care has been substituted for inpatient care. At the same time, there has been a steady increase in the size of Ontario's population. It grew approximately 2.4% between 1997/1998 and 1999/2000.[1] And since the hospitalization rate is a fraction, as the numerator (the total number of patients) decreases and the denominator (the total population of Ontario) increases, the rate falls.

While fewer people are being admitted to hospitals for overnight stays, the demographics of patients in the medical and surgical groups included in this report have remained relatively stable. For example, men continue to account for nearly two-thirds of acute myocardial infarction (AMI) episodes of care. Likewise, most patients in the medical groups are between the ages of 65 and 84, whereas most surgical patients are younger – between 15 and 64 years old.

FIGURE 3.2: WHO WAS HOSPITALIZED IN 1999/2000?

The demographic characteristics of patients differ across the patient groups. For example, in 1999/2000, men accounted for almost two-thirds (65%) of all hospitalizations for AMIs, while women between the ages of 15 and 64 accounted for 61% of all cholecystectomies.



Source: Discharge Abstract Database, 1999/2000

The Medical and Surgical Patient Groups

Acute Myocardial Infarction (AMI), commonly known as a heart attack, is a condition that results from decreased or blocked blood flow to the heart.

Heart Failure is a disorder where damage to the heart limits its ability to pump sufficient blood through the body.

Community Acquired Pneumonia is an infection of the lungs acquired before the patient is admitted to hospital.

Asthma is a disease of the lungs with swelling and narrowing of the airways. It may lead to wheezing, shortness of breath, and other symptoms.

Gastrointestinal (GI) Bleeding refers to bleeding into any part of the digestive system. It can occur as a result of a number of different conditions, such as ulcers.

Strokes, otherwise known as "brain attacks", result either from blood clots that decrease or stop blood flow to the brain or from bleeding following the hemorrhage (or bleeding) of a blood vessel in the brain. Both types can lead to brain damage.

Cholecystectomy is an operation to remove the gall bladder, often performed because gallstones are causing pain and other symptoms. The laparoscopic method (using small incisions in the abdomen) is most common. The gall bladder may also be removed through a larger incision in the upper abdomen (an 'open' cholecystectomy).

Hysterectomy is the removal of the uterus and sometimes also the ovaries and fallopian tubes. It can be performed using an abdominal incision or through the vagina.

Prostatectomy is the removal of all or a portion of the prostate gland. The procedure can be done using a device called a cystoscope that is inserted through the urethra or through an incision in the lower abdomen.

Carpal Tunnel Release (CTR) is a procedure on the wrist that relieves pressure on a nerve with the goal of relieving pain, numbness, or loss of function in the hand.

How was the Research Done?

The Data Source

Every time a patient is discharged from, or dies in, an Ontario acute care facility, the hospital records summary information about the hospitalization. This discharge abstract is then sent to the Canadian Institute for Health Information (CIHI). Hospital discharge abstracts contain coded information about hospital stays and are protected by CIHI's Privacy and Confidentiality Policies. CIHI publishes data only in aggregate formats, which do not allow any individual patient or caregiver to be identified.

Data used in the Clinical Utilization and Outcomes quadrant of this report are derived from discharge abstracts from the 1999/2000 fiscal year. For comparison purposes, data from the 1997/1998 fiscal year were also used in some cases. Trained abstractors in all acute care hospitals in Ontario collected the discharge abstracts using consistent guidelines. CIHI performs rigorous data quality checks on the abstracts and hospitals are asked to correct any errors found. Nevertheless, some inconsistencies may continue to exist.

Selecting Patient Groups and Indicators

For quality improvement and public reporting, it helps to focus on specific, well-defined patient groups. This year's report builds on the same Clinical Utilization and Outcomes measures used in *Hospital Report '99*. The six medical and four surgical groups chosen represent common conditions that are treated in most Ontario hospitals. They were selected by researchers from the University of Toronto on the advice of advisory panels composed of physicians, nurses, therapists, and health information experts.

Once the patient groups were selected, researchers defined 29 indicators of access to innovative technologies, clinical efficiency, and outcomes of care for Ontario-wide analysis. These indicators were selected based on the results of a comprehensive literature review and the advice of expert panels.

A subset of the indicators was then calculated for each hospital. How were these measures chosen? First, advice from an advisory committee and public focus groups suggested that community interest was strongest around length of stay, access to technologies, and outcomes. Second, statistical analyses identified measures with desirable properties for assessing performance. Third, preference was given to two clinical areas – AMI and hysterectomy – which are the focus of on-going educational activities.

Based on these criteria, the following 12 measures are used in the hospital-specific comparisons:

	QUALITY		EFFICIENCY	ACCESS
Patient Group	Complications	Readmissions	Length of Stay	Technology/Day-Surgery
AMI	✓	✓		✓
Stroke			✓	
Asthma		✓		
Pneumonia	✓			
Cholecystectomy	✓			✓
Hysterectomy	✓	✓	✓	
Prostatectomy		✓		

Results for these indicators are reported for each participating hospital. In order to protect patient and physician confidentiality, data are not reported for hospitals where there was a small number of cases or a limited number of physicians providing care in 1999/2000.

The Methods

The methodology used in this report is described in detail in the *Hospital Report 2001: Acute Care Technical Summary*. It is available free on *Hospital Report Series* partners' and sponsors' web sites, including www.cihi.ca. Important features of the methods include the following:

- The analysis includes all residents of Ontario between the ages of 15 and 84 who were discharged from, or died in, acute care hospitals in the province between April 1, 1999 and March 31, 2000.
- The unit of analysis is an "episode of care." Each episode can involve more than one hospital if a patient is transferred from one acute care hospital to another. When this occurs, data are attributed to individual hospitals as follows:
  - Complications → the hospital that was treating the patient when the complication occurred
  - Readmissions → the last hospital in the episode of care prior to the readmission
  - Length of stay → the hospital that accounted for the largest proportion of a patient's total length of stay
  - Technology use → the hospital the patient was admitted to at the beginning of the episode of care.
- Patients with some clinical conditions or characteristics have consistently longer lengths of stay or higher rates of complications or readmissions. To maximize comparability, all patients with a diagnosis of cancer, HIV/AIDS, or violent trauma are excluded from the analysis. In addition, there are unique exclusions for specific indicators and patient groups.
- Hospitals were sent preliminary, unadjusted raw indicator data for review in the spring of 2001. No changes were made to the data as a result of this process.

Interpreting the Results

This quadrant reports quantitative results for clinical utilization and outcomes. Factors that should be taken into account when interpreting the results include:

- A hospital's clinical utilization and outcomes are affected by many factors, including the characteristics of the patients served. Since different hospitals serve different populations, it can be difficult to compare these outcomes. In order to provide a more appropriate basis for comparison, a combination of statistical techniques was used to risk-adjust the comparisons of length of stay and outcomes for differences in the health status of patients treated by each hospital. There are limits, however, to any risk-adjustment strategy. Risk-adjustments reduce the effect of differences in the patient populations served by different institutions, but they cannot eliminate these differences.
- Some hospitals take care of very ill or very rare groups of patients. It is difficult to capture the complexity of these patient groups with current statistical techniques. This means that some hospitals, particularly some teaching and large community hospitals, may appear to be below average performers despite providing very good care.
- When considering the results presented in this report, the measures of clinical performance should be thought of as screening tests. Screening tests – such as pap smears or mammograms – are often used in medicine. They produce both false positives (women with a positive test result that do not have cancer) and false negatives (women with cancer that have negative test results). The same is true for measures of comparative hospital performance. An effort has been made to minimize false positives, but they cannot be eliminated. In medicine, screening tests do not provide a final diagnosis, but can help to identify cases that need follow-up. Likewise, the measures of clinical performance in this report should not be taken as a definitive assessment of access, clinical efficiency, or quality. Rather, they are a first step in a quality assessment and improvement process that should involve more detailed analysis.
- Trends over time are presented for some indicators. To ensure comparability, values from 1997/1998 have been recalculated to reflect updated methodologies. They will therefore differ slightly from those previously reported. Key changes in the methodologies include updates in the way an episode of care is defined and modifications to the diagnoses included or excluded in the case selection for various patient groups. As a result of these changes, hospital-specific indicator results are also not directly comparable to those published in previous hospital reports.

How Performance is Assigned

Participating Ontario acute care hospitals were compared on 12 indicators of access, efficiency, and outcomes. Depending on their results, each hospital received one of five possible performance allocations: "above average", "somewhat above average", "provincial average", "somewhat below average", and "below average".

For all indicators, there are no accepted benchmarks – provincially, nationally, or internationally – that define the "best" or "right" value for each indicator. A hospital's score, therefore, reflects its relative performance compared with other hospitals in the province in 1999/2000. Since the provincial average changes from year to year, a hospital's rating in one year is not directly comparable to previous years. For example, if most hospitals improve their performance over a year, but a specific hospital's performance stays the same, that hospital's score may be lower than in the previous year. The change from a three-point to a five-point performance scale also means that a hospital may have shifted performance categories even if its indicator value stayed the same.

In order to make comparisons between hospitals as fair as possible, a combination of statistical techniques was used to risk-adjust the lengths of stay and outcomes for differences in the health status of patients treated by each hospital. There are limits, however, to any risk-adjustment strategy. Risk-adjustments reduce the effect of differences in the patient populations served by different institutions, but they cannot eliminate them entirely.

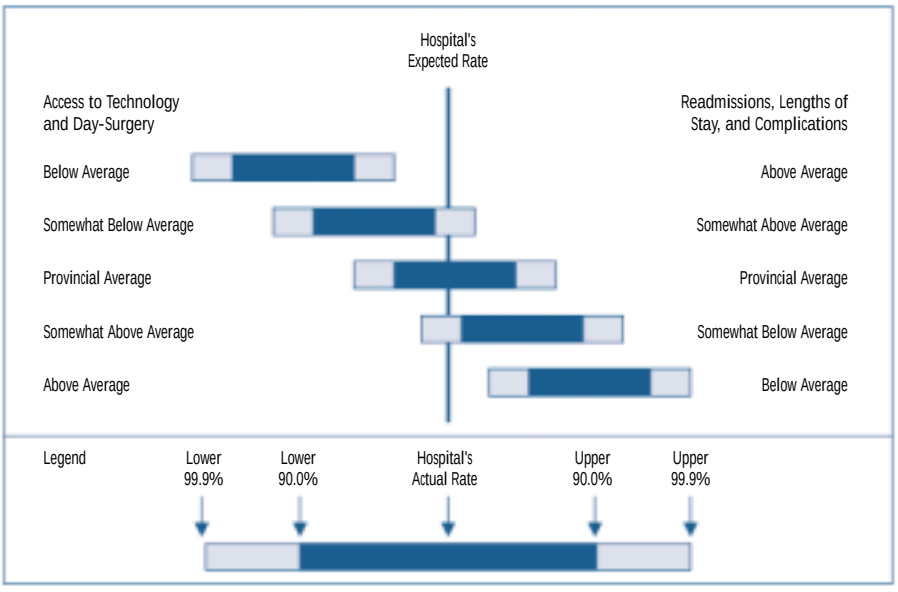
To protect patient and physician confidentiality, no results are reported where a hospital treated a small number of cases or a limited number of physicians provided care. A hospital may also receive a Non-Reportable (NR) score if there were data quality problems or if the number of eligible cases was small enough that one or two occurrences of a readmission, complication, or use of technology could have had a large impact on observed performance.

Hospital performance scores were assigned using a two-part process. First, 99.9% and 90.0% confidence intervals were calculated for each hospital based on a standard statistical technique. These intervals identify the range of values within which a hospital's scores will fall 999 times out of 1000 or 900 times out of 1000 respectively. These intervals were then compared to the expected performance of each hospital based on provincial averages. The goal was to identify differences that were unlikely to occur by chance. Because hospitals with larger patient volumes have narrower confidence intervals, estimates of expected performance are more precise and thereby lead to greater certainty. As a result, differences are more likely to be found among larger hospitals. Figure 3.3 illustrates how these performance scores were allocated.

The second step was designed to ensure meaningful differences among hospitals receiving different performance scores. For instance, differences in values may sometimes be statistically significant even if, from a clinical or administrative point of view, they are not sufficiently large to prompt further investigation or action. In addition, hospital results may be clustered in only two or three groups. As a result, clinical experts reviewed hospital scores and distributions for each of the five statistically different performance levels. Based on their advice, the middle three performance scores were collapsed, and a three-level performance scale ("above average", "provincial average", and "below average") was used where a five-level scale would be inappropriate. This occurred for five indicators: AMI, hysterectomy, and prostatectomy readmissions, as well as stroke and hysterectomy lengths of stay.

FIGURE 3.3: HOW CLINICAL UTILIZATION AND OUTCOME PERFORMANCE IS ASSIGNED

Confidence intervals for each hospital were calculated and compared to their expected rate to assign performance to one of five categories. See the sidebar "How Performance is Assigned" or the *Hospital Report 2001: Acute Care Technical Summary* for more detail on the performance allocation method for this quadrant.



Indicators of Clinical Utilization and Outcomes

Access to Technologies for AMI and Stroke Patients

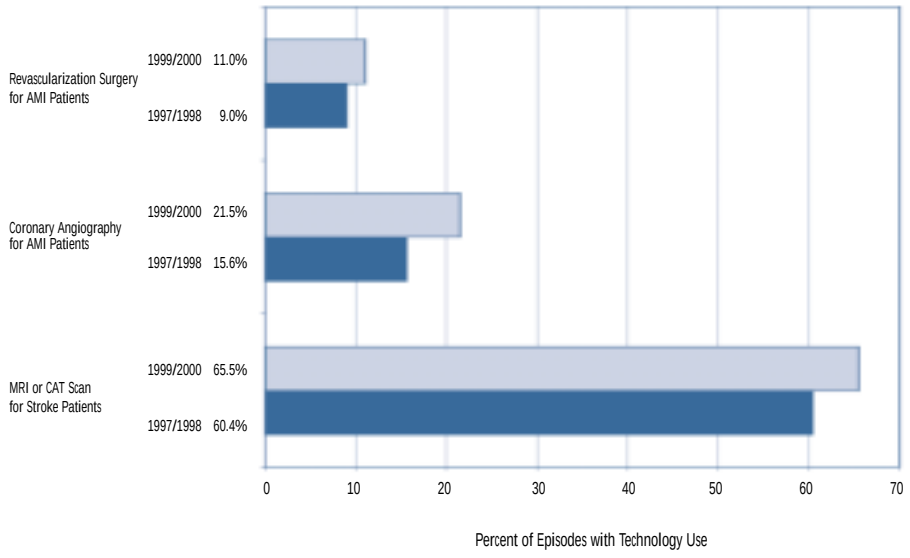
Health care, like many industries, is constantly evolving and changing as technology advances. The way in which care is provided today is significantly different than in the past. Innovative drug therapies, new diagnostic and therapeutic devices, and advanced techniques and treatments have all contributed to changes in the way patients receive care. But not all patients may benefit from these technologies – appropriateness must be assessed on an individual basis.

In this report, we focus on how often AMI and stroke patients received certain advanced diagnostic and therapeutic technologies:

- **Coronary angiography** is often used to assess blood flow for AMI patients. In this procedure, radio-opaque dyes are injected, allowing physicians to observe the flow of blood through the heart.
- **Revascularization surgeries** – such as coronary artery bypass graft surgery (CABG) and percutaneous transluminal coronary angioplasty (PTCA) – are therapeutic procedures used to increase blood flow to the heart muscle for some AMI patients.
- **Magnetic Resonance Imaging** (MRI) or **Computerized Axial Tomography** (CAT) scans provide images of the brain that can be useful in correctly diagnosing types of strokes.

FIGURE 3.4: USE OF TECHNOLOGY FOR AMI AND STROKE PATIENTS

Between 1997/1998 and 1999/2000 the use of medical technologies for AMI and stroke patients increased. The graph below shows the percentage of AMI patients who had revascularization (CABG) surgery and coronary angiography during their hospital stay. It also shows the percentage of stroke patients who had MRIs or CAT Scans during their hospital stay.



Source: Discharge Abstract Database, 1997/1998 and 1999/2000

We measured access to these technologies during a patient's hospitalization episode. Hospitals are asked to record whether a patient received these services on the discharge abstract.[2] We counted services received in the first hospital where the patient was admitted, as well as in other hospitals to which the patient was transferred. Access at other times (e.g. a month following discharge from hospital) was not included.

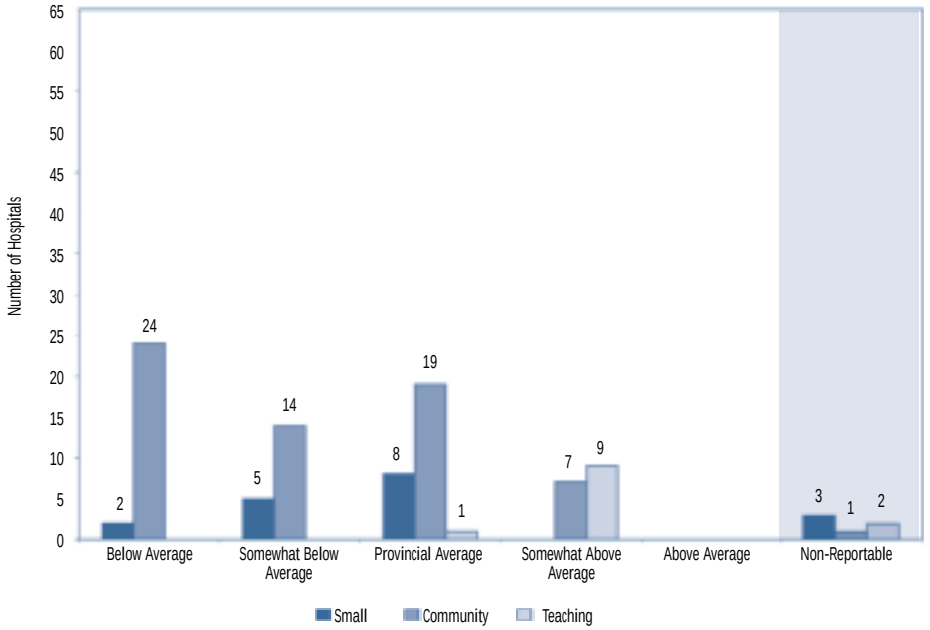
Although not all patients suffering from heart attacks or strokes require these technologies, their use has increased between 1997/1998 and 1999/2000. Over 21% of AMI patients in 1999/2000 received coronary angiography during their episode of hospital care. This is up from less than 16% two years before. Likewise, in 11% of AMI episodes, patients received a revascularization procedure (CABG or PTCA). This was up from about nine percent in 1997/1998. Finally, over 65% of stroke episodes received a MRI or CAT scan, an increase of five percentage points from 1997/1998, when 60% received these diagnostic procedures.

Some hospitals have the capability to provide these services on site during a patient's hospitalization. Others, particularly smaller hospitals, may transfer patients to other facilities to access the technology. This may occur, in part, because advanced equipment is expensive and often requires operation by trained technicians, a resource that many small hospitals do not have the volumes to support. It may also result from variations in government allocations and funding or in access to and use of fundraising campaigns to purchase equipment.

There are variations in use of these technologies across the province. For example, patients treated in large teaching hospitals were more likely to receive coronary angiography than those in most small or community hospitals.

FIGURE 3.5: HOW ONTARIO HOSPITALS PERFORMED – ACCESS TO CORONARY ANGIOGRAPHY INDICATOR

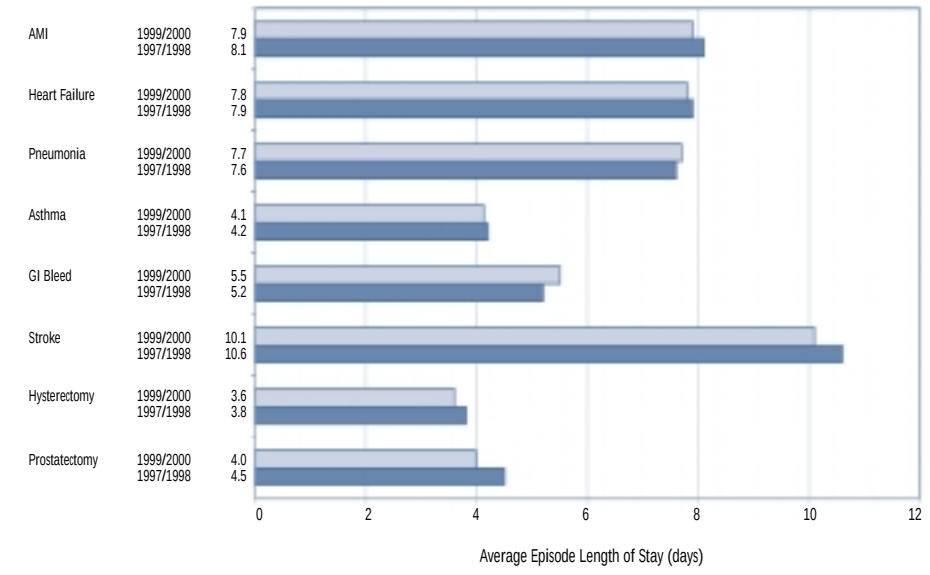
Performance distributions for small, community, and teaching hospitals across Ontario for the Access to Coronary Angiography indicator, also known as Access to Diagnostic Technology (for Heart Attack).



Source: Discharge Abstract Database, 1999/2000

FIGURE 3.6: AVERAGE LENGTH OF STAY ACROSS PATIENT GROUPS

Between 1997/1998 and 1999/2000, average lengths of stay in Ontario have remained relatively stable for most of the medical and surgical conditions examined in this report.



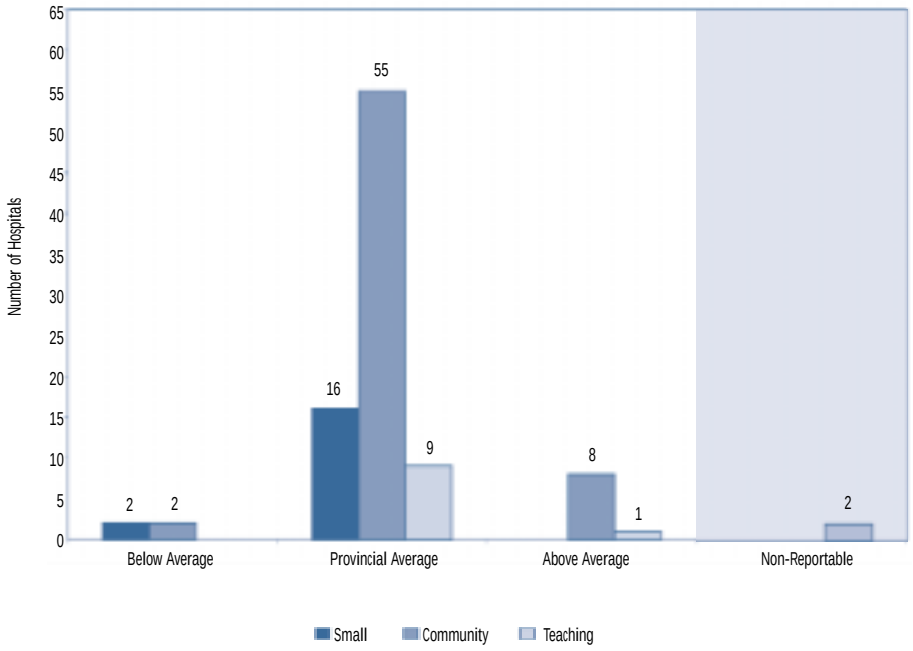
Source: Discharge Abstract Database, 1997/1998 and 1999/2000

Clinical Efficiency

The length of time that patients stay in hospital is one measure of clinical efficiency. Length of stay (LOS) is calculated as the number of days from admission to when the patient is discharged, dies, or could be appropriately treated in an alternate level of care (e.g. rehabilitation or long-term care). It is unclear what the appropriate length of stay is for different types of patients, so it is difficult to create benchmarks for hospitals to work towards. In particular, the shortest length of stay is not necessarily the "best" if it means the patient is being discharged too early.

FIGURE 3.7: HOW ONTARIO HOSPITALS PERFORMED – STROKE LENGTH OF STAY INDICATOR

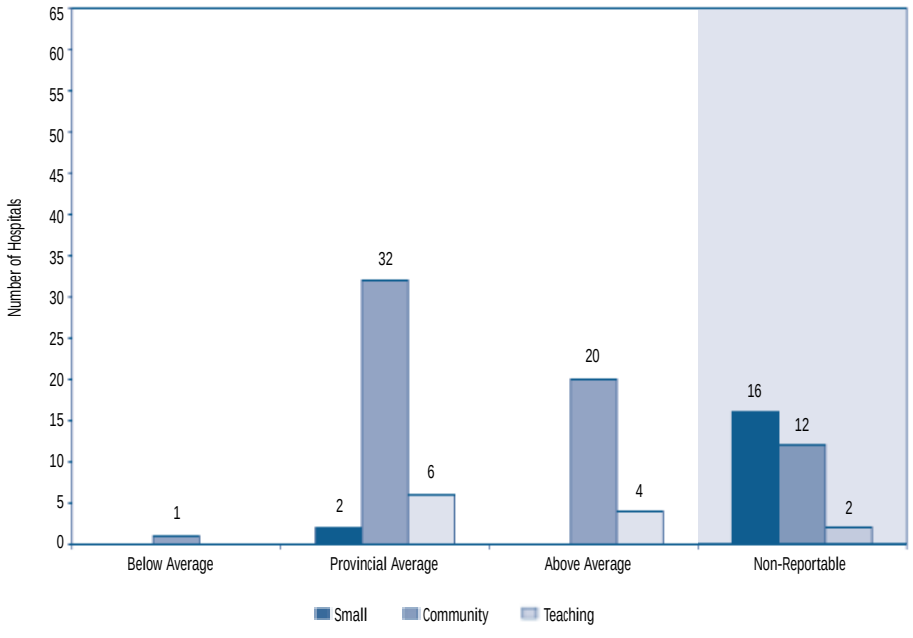
Performance distributions for small, community, and teaching hospitals across Ontario for the Stroke Length of Stay indicator, using a three-point performance scale ("below average" results indicate longer average lengths of stay).



Source: Discharge Abstract Database, 1999/2000

FIGURE 3.8: HOW ONTARIO HOSPITALS PERFORMED – HYSTERECTOMY LENGTH OF STAY INDICATOR

Performance distributions for small, community and teaching hospitals across Ontario for the Hysterectomy Length of Stay indicator, using a three-point performance scale ("below average" results indicate longer average lengths of stay).



Source: Discharge Abstract Database, 1999/2000

At just over 10 days, stroke patients have the longest average length of stay of all the patient groups tracked in this report. AMI, heart failure, and pneumonia patients also have relatively long lengths of stay – ranging from 7.7 to 7.9 days.

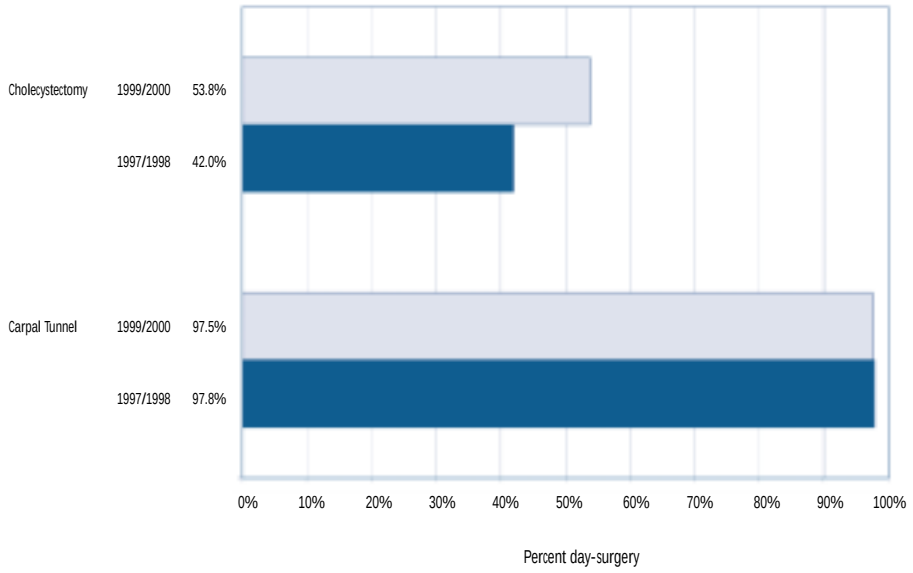
Average lengths of stay were relatively stable between 1997/1998 and 1999/2000. Changes for all patient groups were half a day or less. Both surgical groups – hysterectomy and prostatectomy – had shorter average lengths of stay. This may be a result of the use of less invasive surgical techniques. Most medical patients also had decreases in their average length of stay. Patients with GI bleeding and pneumonia, however, had slight increases (0.3 and 0.1 days, respectively).

Day-Surgery Use for Cholecystectomy and Carpal Tunnel Release Surgery

Ten years ago, patients who had their gall bladders removed could expect to stay in hospital for several days. Today, thanks to minimally invasive laparoscopic techniques, an increasing number of patients are treated in day-surgery programs. Not only do they spend less time in hospital, but these patients also tend to experience less pain after their surgery and to recover more quickly. Over half (54%) of all cholecystectomies were performed as day-surgery in 1999/2000, up from 42% in 1997/1998. Other types of procedures are also frequently provided in day-surgery programs. For example, carpal tunnel release is one of the most common procedures performed on a day-stay or outpatient basis. In 1999/2000, over 97% were done as day-surgery. This finding was consistent with rates in the two previous years.

FIGURE 3.9: CHOLECYSTECTOMY AND CARPAL TUNNEL RELEASE AS DAY-SURGERY

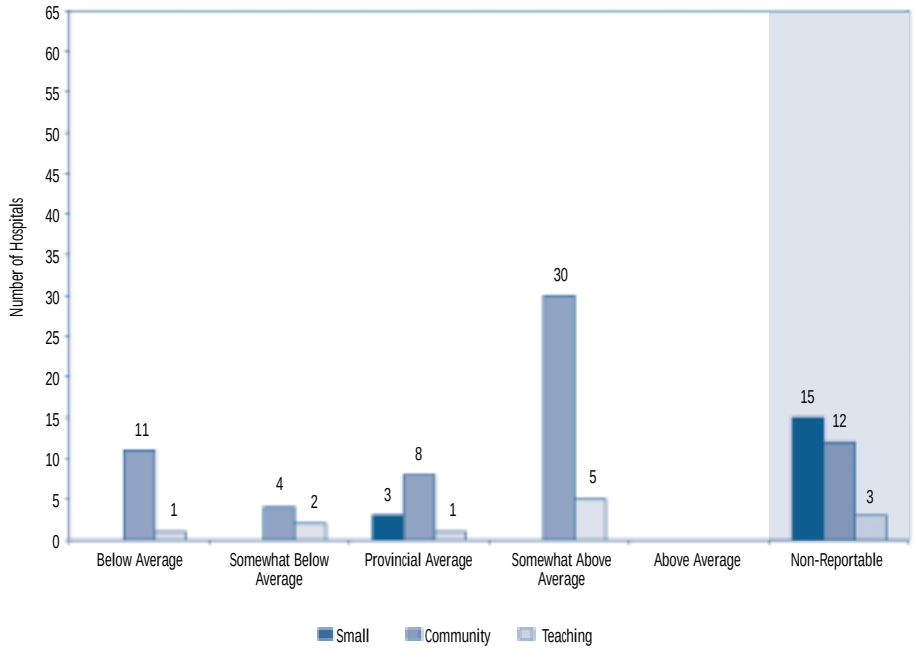
An increasing number of patients are now being treated in day-surgery programs. The graph below illustrates the percentage of cholecystectomy and carpal tunnel release patients treated in day-surgery in 1997/1998 and 1999/2000.



Source: Discharge Abstract Database, 1997/1998 and 1999/2000

FIGURE 3.10: HOW ONTARIO HOSPITALS PERFORMED – ACCESS TO CHOLECYSTECTOMY DAY-SURGERY INDICATOR

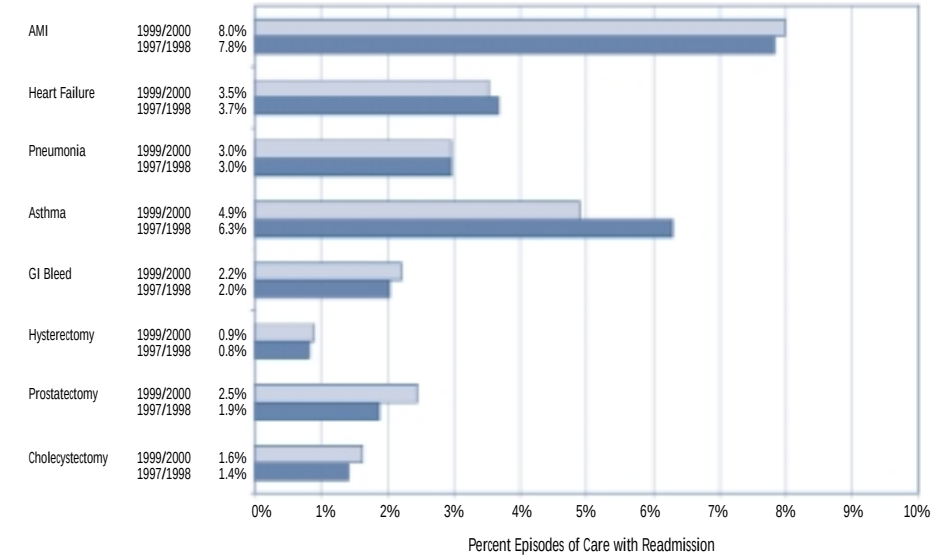
Performance distributions for small, community, and teaching hospitals across Ontario for the Access to Cholecystectomy Day-Surgery indicator on a five-point performance scale.



Source: Discharge Abstract Database, 1999/2000

FIGURE 3.11: READMISSION RATES ACROSS PATIENT GROUPS

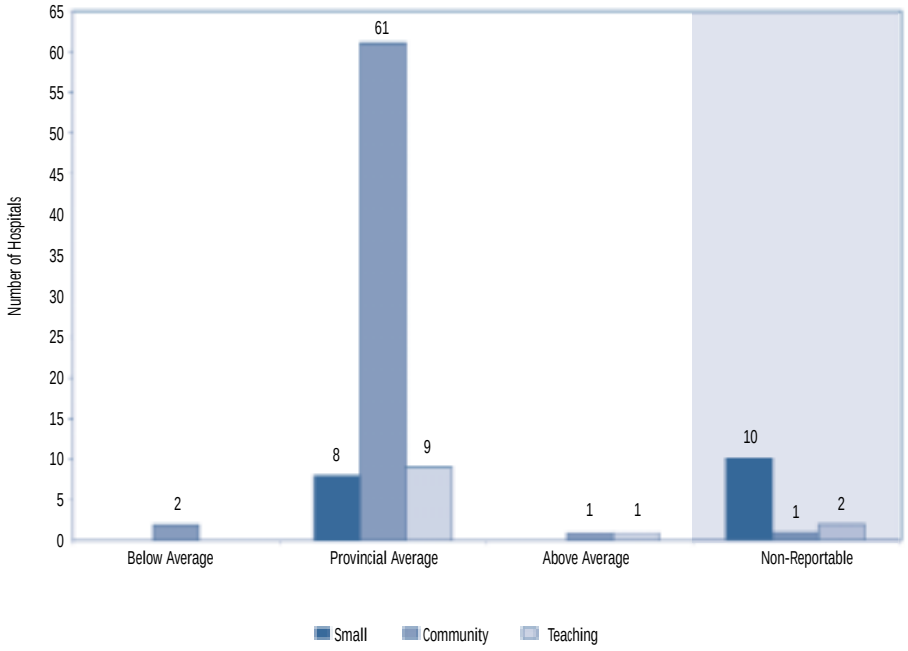
After patients are discharged from hospital, they are sometimes readmitted due to a related health problem. The graph below shows readmission rates in 1997/1998 and 1999/2000 for eight of the patient groups examined in this report.



Source: Discharge Abstract Database, 1997/1998 and 1999/2000

FIGURE 3.12: HOW ONTARIO HOSPITALS PERFORMED – AMI READMISSIONS INDICATOR

Performance distributions for small, community, and teaching hospitals across Ontario for the AMI Readmissions indicator, using a three-point performance scale ("below average" results indicate higher readmission rates).



Source: Discharge Abstract Database, 1999/2000

Readmission Rates for Medical and Surgical Patient Groups

Most patients recover at home or in other types of care facilities after they are discharged from hospital. But some are readmitted within a short period of time due to a related health problem.

What is a Readmission?

An episode of care is counted as having a readmission if the subsequent hospitalization (in either the same or another Ontario acute care hospital) meets all of the following criteria:

1. It is for a diagnosis or procedure associated with the reason for the initial hospital stay.
2. It does not follow a discharge where the patient signed him/herself out (or died).
3. It occurs within a specified time period after the initial discharge.
4. It was an emergent or urgent (not elective) admission.

Among the patient groups studied, readmissions were most common for AMI patients. Eight percent of AMI patients in 1999/2000 had a related condition requiring an urgent or emergent return to hospital within 28 days of discharge. In contrast, readmission rates for the surgical patient groups were much lower. They ranged from 0.9% for hysterectomy to 2.5% for prostatectomy.

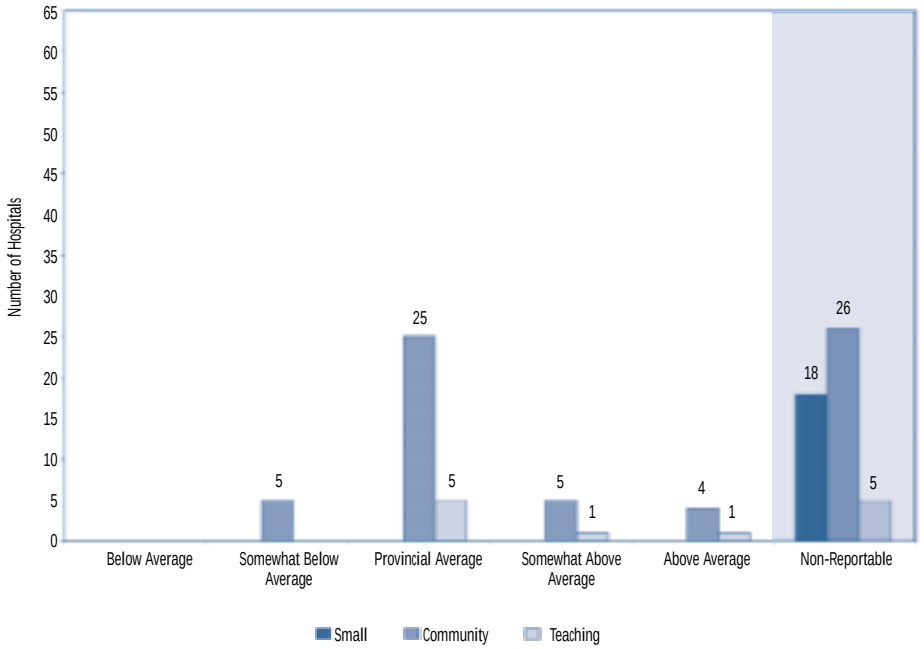
Readmission rates fluctuate slightly from year to year. Rates for most of the patient

groups remained stable or increased slightly (less than 0.6 percentage points) between 1997/1998 and 1999/2000. The two exceptions to this trend were for heart failure and asthma patients. Heart failure readmission rates decreased by 0.2 percentage points (from 3.7% in 1997/1998 to 3.5% in 1999/2000). Asthma rates decreased by 1.4 percentage points (from 6.3% in 1997/1998 to 4.9% in 1999/2000).

Although most readmission rates have been relatively stable over time, there are variations from hospital to hospital. Figures 3.12 and 3.13 show performance allocations for small, community, and teaching hospitals across Ontario for AMI and asthma readmissions. Results for prostatectomy and hysterectomy readmissions are not shown since readmissions for these operations are relatively rare. Consequently, results for many hospitals (67 and 61 respectively) were not reportable.

FIGURE 3.13: HOW ONTARIO HOSPITALS PERFORMED – ASTHMA READMISSIONS INDICATOR

Performance distributions for small, community, and teaching hospitals across Ontario for the Asthma Readmissions indicator ("below average" results indicate higher readmission rates).



Source: Discharge Abstract Database, 1999/2000

Readmission rates can be affected by a number of factors. Some are related to the quality of hospital care during the initial hospital stay, but many others are also important. For example, the risk of readmission after hospitalization for an AMI may be related to the availability of appropriate diagnostic or therapeutic technologies during the initial hospital stay, the type of drugs prescribed at discharge, patient compliance with post-discharge therapy, or the quality of follow-up care in the community. Further, chronic conditions such as asthma and heart failure require careful coordination and integration of care between hospital and community caregivers. Nevertheless, although readmissions for medical conditions can involve factors outside the direct control of the hospital, high rates can prompt hospitals to look more carefully at their own practices. For example, they may explore such factors as the risk of discharging patients too early or their relationship with community physicians and community-based care.

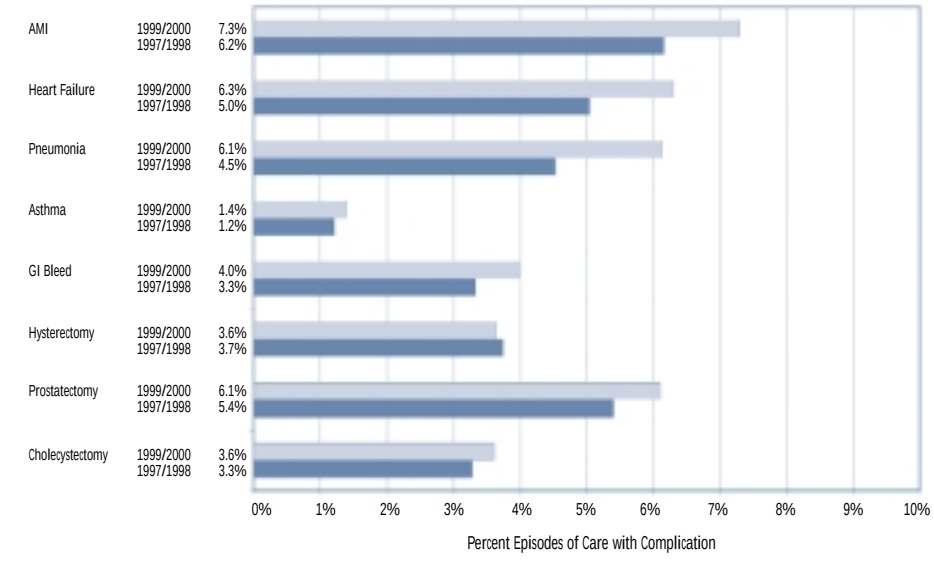
Complication Rates for Medical and Surgical Patients

The development of complications while in hospital can be related to the quality of care provided by the hospital and the health status of the patient upon admission. There are a number of key considerations when interpreting complication rates:

- Patients with other pre-existing health problems (co-morbidities) or more severe disease are more likely to develop complications in hospital, regardless of the quality of care. Risk-adjustment helps to reduce the effect of differences in patients' health status on comparisons, but it does not eliminate it.
- Complications can also occur with invasive diagnostic procedures and more aggressive therapies that are part of modern medical care. The long-term benefits of these advances may be accompanied by short-term risks. This trade-off emphasizes the need to look beyond single performance measures.
- The extent to which complications, disease severity, and co-morbidities are accurately recorded can have an impact on performance measurement. Hospitals with high rates of complications may record more detailed information about their patients. As such, both high and low rates of complications may signal the need for hospitals to look closely at the way that they provide care and record information about that care.

FIGURE 3.14: COMPLICATION RATES ACROSS PATIENT GROUPS

Between 1997/1998 and 1999/2000, complication rates increased for all patient groups except hysterectomy. Reasons for this increase might include changes in: the health status of patients upon admission, the quality of care provided in hospital, the extent to which complications are recorded by hospitals, and/or other factors.



Source: Discharge Abstract Database, 1997/1998 and 1999/2000

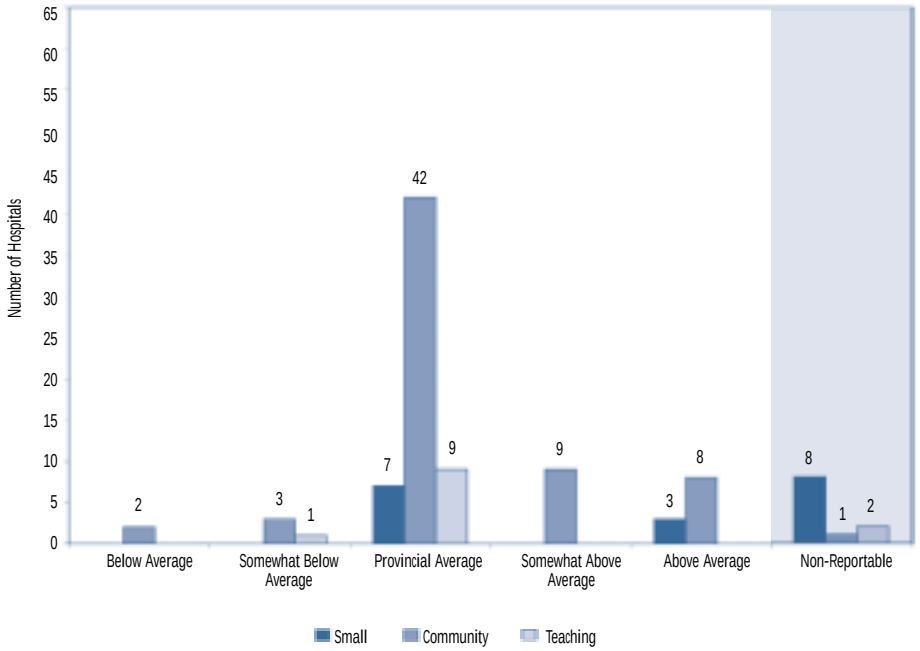
What is a Complication?

An episode of care is counted as having a complication if all of the following apply:

1. The discharge abstract for the case includes a diagnosis that has been defined by the advisory panel as relevant to the quality of care.
2. The hospital coded that diagnosis as occurring after admission to hospital and as having an impact on length of stay or treatment.
3. The length of stay for that case was longer than expected or the patient died in hospital.

FIGURE 3.15: HOW ONTARIO HOSPITALS PERFORMED – AMI COMPLICATIONS INDICATOR

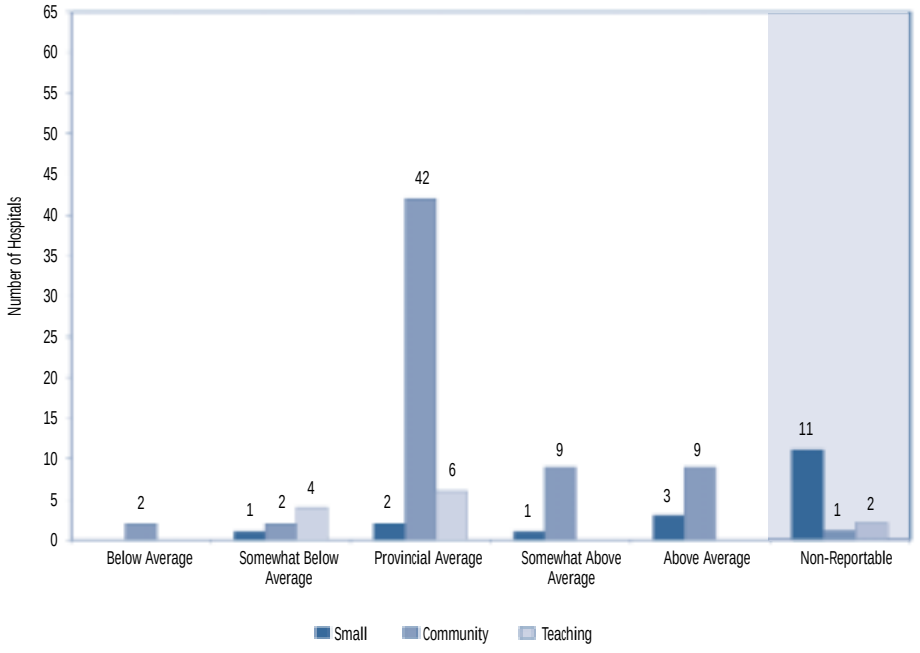
Performance distributions for small, community, and teaching hospitals across Ontario for the AMI Complications indicator ("below average" results indicate higher complication rates).



Source: Discharge Abstract Database, 1999/2000

FIGURE 3.16: HOW ONTARIO HOSPITALS PERFORMED – PNEUMONIA COMPLICATIONS INDICATOR

Performance distributions for small, community, and teaching hospitals across Ontario for the Pneumonia Complications indicator ("below average" results indicate higher complication rates).

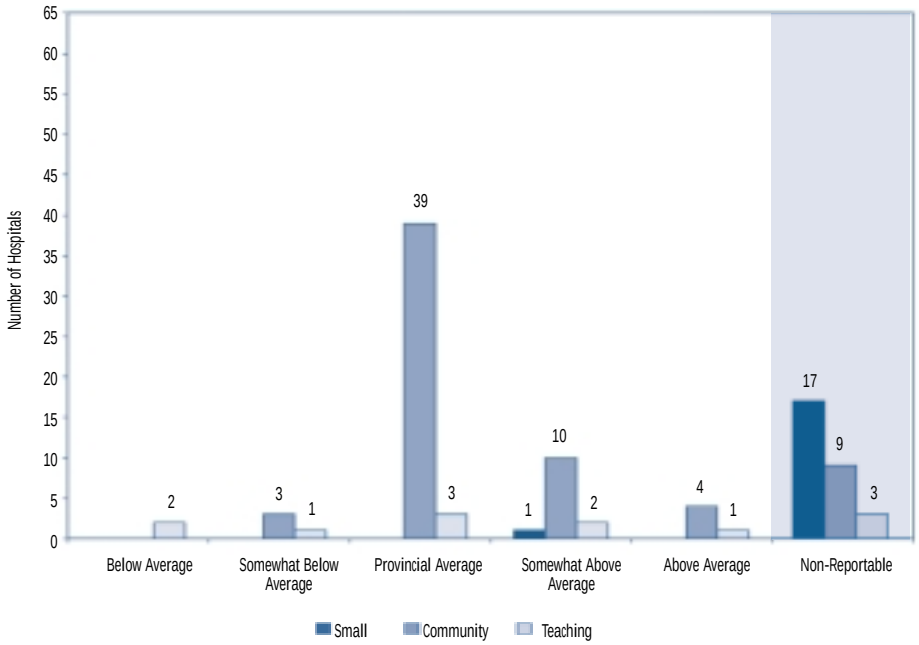


Source: Discharge Abstract Database, 1999/2000

Across the province, the proportion of cases with a complication decreased between 1997/1998 and 1999/2000 for hysterectomy patients. But it increased by 0.2 to 1.6 percentage points for the other patient groups studied. The largest proportional increase occurred for pneumonia patients. AMI and heart failure patient groups also saw larger than average increases. This is in contrast to trends seen in *Hospital Report '99*. That report found that between 1996/1997 and 1997/1998, complications increased in medical patients but decreased in surgical patients.

FIGURE 3.17: HOW ONTARIO HOSPITALS PERFORMED – CHOLECYSTECTOMY COMPLICATIONS INDICATOR

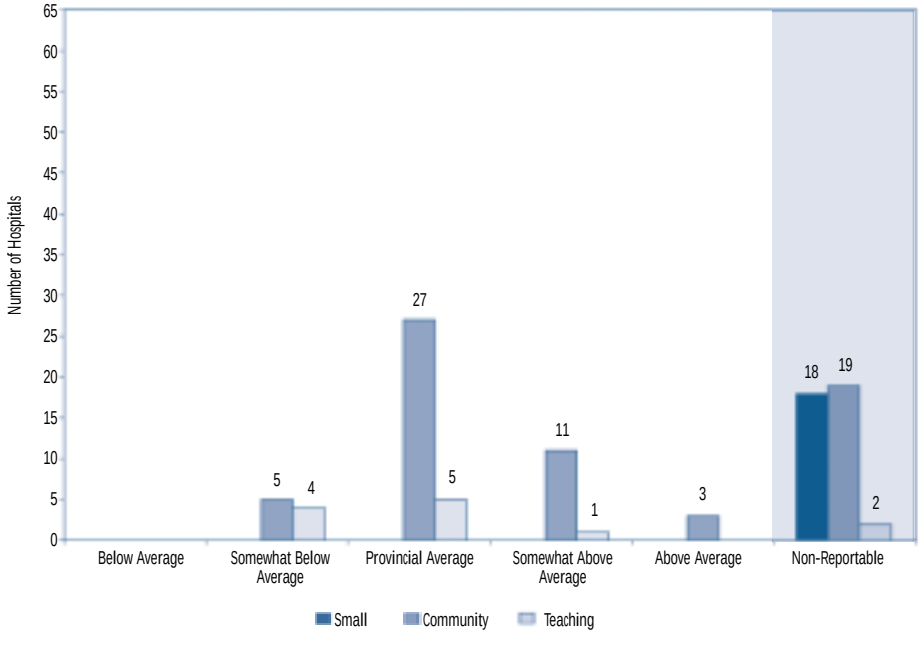
Performance distributions for small, community, and teaching hospitals across Ontario for the Cholecystectomy Complications indicator ("below average" results indicate higher complication rates).



Source: Discharge Abstract Database, 1999/2000

FIGURE 3.18: HOW ONTARIO HOSPITALS PERFORMED – HYSTERECTOMY COMPLICATIONS INDICATOR

Performance distributions for small, community, and teaching hospitals across Ontario for the Hysterectomy Complications indicator ("below average" results indicate higher complication rates).



Source: Discharge Abstract Database, 1999/2000

Next Steps

This year's analysis for the Clinical Utilization and Outcomes quadrant focuses on the same patient groups as in previous years. However, there were a number of modifications made to the selection criteria and other methodologies used for the clinical indicators in this report. This reflects the fact that the development of the methodologies used to calculate each indicator has been an evolutionary process. As such, it is expected that enhancements will continue as care practices change and knowledge increases. In addition, there is some interest in investigating other patient groups for analysis in future years.

There is also an interest in better understanding the relationship between Clinical Utilization and Outcomes indicators and measures from other quadrants in order to assist hospitals that are developing quality improvement strategies. For example, is patient satisfaction higher in hospitals where outcomes are above average? Do hospitals that have clinical pathways in place (an indicator from the System Integration and Change quadrant) have shorter average lengths of stay? Or, does resource availability within a hospital affect outcomes? Research at the University of Toronto and elsewhere is currently underway to help answer some of these questions.

For more information

[1] Statistics Canada (2000). *Updated Postcensal Population Estimates, October 1, 1997 and 1999*. Ottawa: Statistics Canada.
[2] Canadian Institute for Health Information (1999). *Canadian Coding Sourcebook*. Ottawa: Canadian Institute for Health Information.

Financial Performance and Condition

Financial Performance and Condition

Across Ontario, governments, insurance plans, individuals, and others were forecast to have spent about $37.3 billion on health in 2000. That's almost $3,200 per person. At just under a third of the total (29.5%), hospitals represented the largest single category of health expenditure. The vast majority of hospital spending comes from the public purse.[1]

Hospital managers, governments, and others have a strong interest in understanding how hospitals deploy and manage their financial and human resources. Measures of hospital financial performance and condition can help with this task, particularly when examined in conjunction with indicators of Clinical Utilization and Outcomes, Patient Satisfaction, and System Integration and Change. The Financial Condition and Performance indicators can be used both to validate successful management practices and to identify areas worthy of closer study and possible improvement.

This chapter examines how hospitals manage their total financial resources – whether from government or other sources. It presents data on the financial health, efficiency, liquidity, capital, and human resource use of Ontario hospitals from 1997/1998 to 1999/2000.

A Snapshot of Ontario Hospitals

Ontario acute care hospitals represent a large segment of the provincial economy. These organizations are often major employers in the communities they serve and are responsible for significant budgets. The level of funding has fluctuated over time. After sustained growth in the 1980s and early 1990s, total hospital spending per person fell in the mid-1990s. This trend appears to have reversed in recent years.[1]

In 1999/2000, Ontario hospitals received almost $9.6 billion in total revenue. This is up from $8.5 billion two years earlier, an increase of 13%. After adjusting for the province's population growth, the increase was approximately 10%. Over the same period, hospital debts have decreased. The combined long-term debt for all Ontario hospitals fell from $225 million in 1997/1998 to $208 million in 1999/2000.*

Hospitals receive most of their revenue from the Ontario Ministry of Health and Long-Term Care (MOHLTC). In 1999/2000, 85.1% of a hospital's revenue came from the provincial government. This ratio has remained relatively constant over the last two years. It was 84.7% in 1997/1998.

* Excludes bonds issued by one of the province's teaching hospitals.

How Was the Research Done?

The Data Sources

On a daily basis, Ontario hospitals collect and record data describing their financial activities. These data are grouped and summarized in the hospital's accounting system according to guidelines developed by the Canadian Institute for Health Information and adapted for use in Ontario. The guidelines embody generally accepted accounting principles.

Hospitals report information describing their financial activities in a variety of formats. One of these formats is a detailed listing of general ledger account balances as at the fiscal year end. This listing provides a snapshot of the financial position of all expense, revenue, asset, and equity accounts. This listing is submitted (in electronic form) to the MOHLTC. The submission is accompanied by a signed statement from the hospital certifying that the data submitted corresponds in all material aspects with the audited financial statements and that any differences can be explained. After applying a number of edit checks and other review processes, the data are added to the Ontario Hospital Reporting System (OHRS) – a provincial database of hospital financial data. The OHRS is used for many purposes by the MOHLTC, including informing funding decisions and monitoring the financial condition of hospitals. The data used in this quadrant were extracted from this database.

The Last Few Years

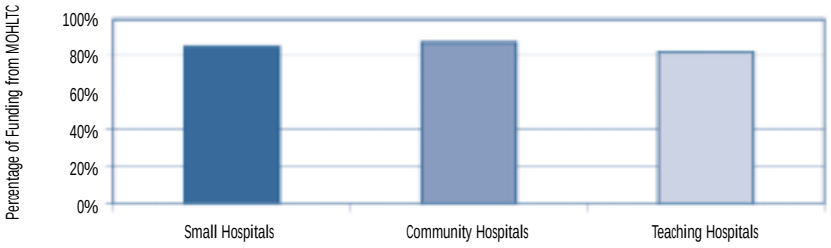
Hospital Report '99 provided an overview of the financial performance and condition of Ontario's hospitals in the 1997/1998 fiscal year. This year's report is based primarily on data for 1999/2000. A brief summary of key financial and operational indicators, aggregated for all acute care hospitals in Ontario, is provided below.

	1997/1998	1999/2000
Total hospital revenue	$8.5 billion	$9.6 billion
Share of revenue from provincial government	84.7%	85.1%
Long-term debt	$225 million	$208 million
Number of hospital employees (full-time equivalents)	105,000	111,000
In-patient acute care days	7.03 million	7.16 million
Average length of acute care stay	6.0 days	6.2 days
Day-surgery cases	1.03 million	1.09 million

Note: 1997/1998 figures were adjusted for comparability with later estimates. Accordingly, they may not be identical to figures published previously.
Sources: Ontario Hospital Reporting System and Discharge Abstract Database

FIGURE 4.1: UNDERSTANDING HOSPITAL FUNDING

Most hospital revenue comes from the Ministry of Health and Long-Term Care (MOHLTC), as shown below.



Source: Ontario Hospital Reporting System, 1999/2000

How Ontario's Hospitals are Funded

Most hospital revenue comes from the Ministry of Health and Long-Term Care (MOHLTC). Each year, a complex process is used to divide this funding among Ontario's hospitals. The starting point is usually the hospital's base budget for the previous year, adjusted for inflation in some years. Additional adjustments to base funding may also be made on a hospital-by-hospital basis using a model that measures relative efficiency among institutions. Under this program, hospitals that are more efficient than their peers – taking into account differences between hospitals that are beyond the control of management – receive additional funding.

Some funds may also be provided for specific targeted areas. These are determined on a yearly basis and are policy-driven. Much of the recent new funding in hospitals has come in the form of year-end adjustments and targeted funding in areas such as:

- Increased nursing resource support
- Additional dollars for priority programs – such as dialysis, chemotherapy, hip and knee replacements, and end stage renal disease
- Resources to promote improved access to emergency services
- Growth funding to address population increases

Financial statements are another format often used to distribute financial information. These statements are examined by auditors who provide an opinion on whether the statements fairly portray the financial condition and position of the organization. These statements are used by stakeholders who require access to independently verified aggregated information about hospital performance. While the underlying accounting data is identical in both formats, the aggregated format of data presented in financial statements make these data unsuitable for use in this study. For example, when using audited financial statements, it is impossible to distinguish between nursing costs related to care provision and nursing costs incurred in providing patient care.

Selecting the Indicators

The financial indicators used in *Hospital Report 2001: Acute Care* are the same as those used in *Hospital Report '99*. For the earlier report, members of two influential working groups of the Joint Policy and Planning Committee (JPPC) – the Hospital Funding Committee and the Data Quality Review Team – acted as a Financial Advisory Group in the indicator selection process. This group was composed of senior hospital and Ministry executives, as well as other experts familiar with hospital finances and reporting requirements in Ontario.

The research team from the University of Toronto conducted literature reviews and, with the advice of the Financial Advisory Group, selected a pool of possible indicators. An iterative process was used to identify, consider, and evaluate indicators. This included providing statistical information to the Financial Advisory Group to assist in their deliberations, particularly when choosing between indicators with overlapping content. Ultimately, nine measures of financial performance and condition were selected for reporting in 1999. The *Hospital Report 2001: Acute Care* research team confirmed the continued relevance of these indicators with members of the JPPC Hospital Funding Committee in the spring of 2001.

The Methods

The methodology used in this report is described in detail in the *Hospital Report 2001: Acute Care Technical Summary*. It is available free on *Hospital Report Series* partners' and sponsors' web sites, including www.cihi.ca. Important features of the methods include:

- To ensure the accuracy of the data, all hospitals were provided with verification reports. These reports highlighted individual hospitals' preliminary indicator values and summarized data elements used to calculate the indicators. Hospitals were also advised of the provincial average result for each indicator. As with *Hospital Report '99*, hospitals were asked to review the material and identify any necessary changes in data originally submitted to the MOHLTC. As a result, in 2001, a change was implemented for only one hospital (participating in the system-wide analysis only). Nevertheless, some data quality issues may remain. For example, variations in interpretations of reporting guidelines and coding practices, cost/asset sharing relationships between hospitals and affiliated research institutes or foundations, and other factors may affect the comparability of the data.

- Outlier values, those considered to be either significantly above or below the normal range of values for a given indicator, were identified and analyzed. All hospitals with outlier values were contacted to verify the findings and facilitate any necessary adjustments to improve data quality and comparability.

How Performance is Assigned

When assessing financial performance, comparisons are most meaningful when hospitals are compared with like hospitals. One reason is that the mandate and size of a hospital can significantly affect its underlying financial structure. For example, teaching hospitals' mandates include high-end tertiary care, training of health professionals, and research. As a result, their underlying financial structure is fundamentally different from other hospitals. Likewise, small hospitals face different cost structures from large hospitals because of the differences associated with low service volumes and other factors.

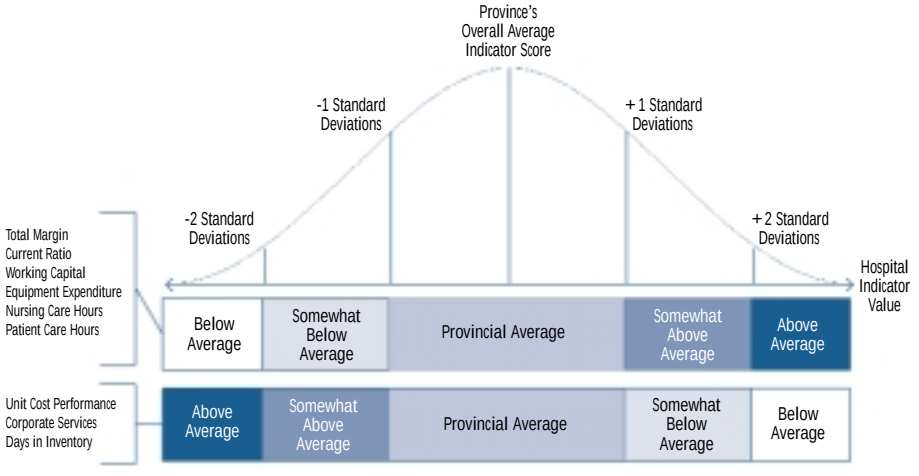
For these reasons, relative comparisons of financial performance and condition presented in *Hospital Report 2001: Acute Care* were made among hospitals of similar type. Small hospitals were compared with other small hospitals. Larger hospitals were compared with each other, adjusting for levels of teaching activity.

In *Hospital Report 2001: Acute Care*, participating hospitals were grouped into one of five financial performance categories: "above average", "somewhat above average", "provincial average", "somewhat below average", and "below average". Experts then reviewed the financial indicators to ensure meaningful differences among categories. For the Working Capital indicator, the middle three performance categories were collapsed and a three-level performance scale ("above average", "provincial average", and "below average") was used, as a five-level scale would be inappropriate. All groupings were done using standard statistical techniques. For example, small and community hospitals were reported as being "above average" or "below average" if their indicator value was more than two standard deviations from the provincial average indicator value for all small or community hospitals. Figure 4.2 illustrates this process.

With only 13 in the province, teaching hospital performance could not be compared using the same methodology. Instead, a regression model that controlled for teaching activity was used to obtain actual and expected indicator values for each hospital. Performance was determined based on the extent to which a hospital's actual indicator value differed from its expected value.

FIGURE 4.2: HOW FINANCIAL PERFORMANCE IS ASSIGNED

Hospitals were assigned one of five performance allocations based on how their indicator values compared with those of other similar hospitals (as shown below for small and community hospitals). See the sidebar, "How Performance is Assigned," or the *Hospital Report 2001: Acute Care Technical Summary* for more detail on the performance allocation method for this quadrant.



Indicators of Financial Performance and Condition

Financial Health

Hospitals' budgets fluctuate each year as funding from the MOHLTC and other revenues shift. Patient volumes, the mix of services provided by the hospital, local prices, and management practices also change over time. These factors (and others) can all affect whether a hospital runs a surplus, breaks even, or has a deficit.

Total Margin

The Total Margin indicator, also known as the Financial Health indicator, measures the financial health of a hospital. It is the degree to which a hospital's total revenues exceed its total expenses in a given year. A positive value indicates a surplus; a negative value indicates a deficit. Facility amortization (e.g. depreciation of buildings) is excluded from the calculation of expenses. Including amortization would reduce the total margin.

After adjusting for excluded revenues (see formula), Ontario's hospitals reported almost $8.5 billion in revenues in 1999/2000. This was more than total expenses across the province. As a result, Ontario hospitals reported a net surplus of almost $131 million for an overall total margin of 1.55%. That compares to 0.22% in 1997/1998. In that year, the net surplus was almost $16 million with revenues of $7.2 billion. The data suggest that recent improvements in the financial health of hospitals provincially are due to both reductions in expenses and increases in revenues.

Although Ontario hospitals had a net surplus in 1999/2000, financial health varies from hospital to hospital. Eighty-six hospitals reported surpluses (for a total of almost $209 million) and 35 reported deficits (total: $78 million). Small hospitals tended to have larger total margins (3.79%) than did teaching (1.50%) or community (1.45%) hospitals.

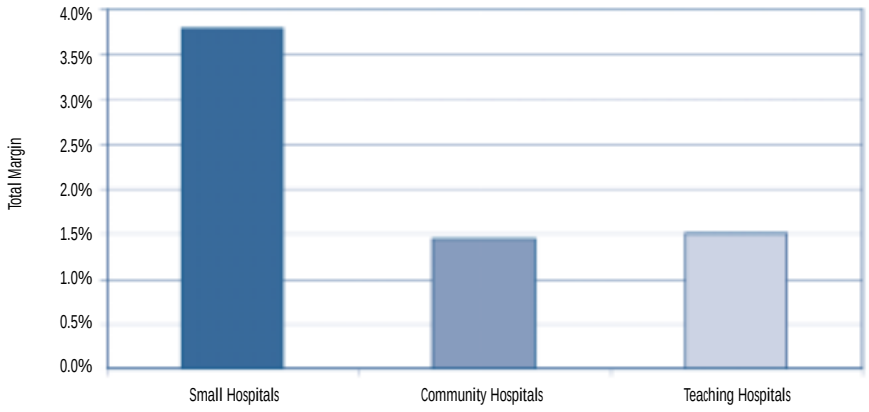
Calculating Total Margin

The Total Margin indicator is calculated as follows:

$$\frac{[\text{Total Revenues} - (\text{Total Expenses} - \text{Facility Amortization}), \text{excluding Externally Funded Research Revenues and Expenses}] \times 100}{\text{Total Revenues, excluding Other Vote (Ministry of Health funding specifically for the use by approved programs), OHIP Revenue, Grants, Donations, Interdepartmental Recoveries (the effect of internal business activity), and Externally Funded Research Revenues}}$$

FIGURE 4.3: HOW TOTAL MARGIN VARIES

Total margin reflects the degree to which a hospital's total revenues exceed its total expenses excluding facility amortization. While results vary from hospital to hospital, small hospitals generally appear to have higher total margins than do community or teaching hospitals. Values below show weighted averages by hospital type.



Source: Ontario Hospital Reporting System, 1999/2000

Efficiency

Efficiency indicators compare hospital "outputs" to the resources ("inputs") required to produce them. Three measures of efficiency are used in this report: unit cost performance, days in inventory, corporate services and days in inventory.

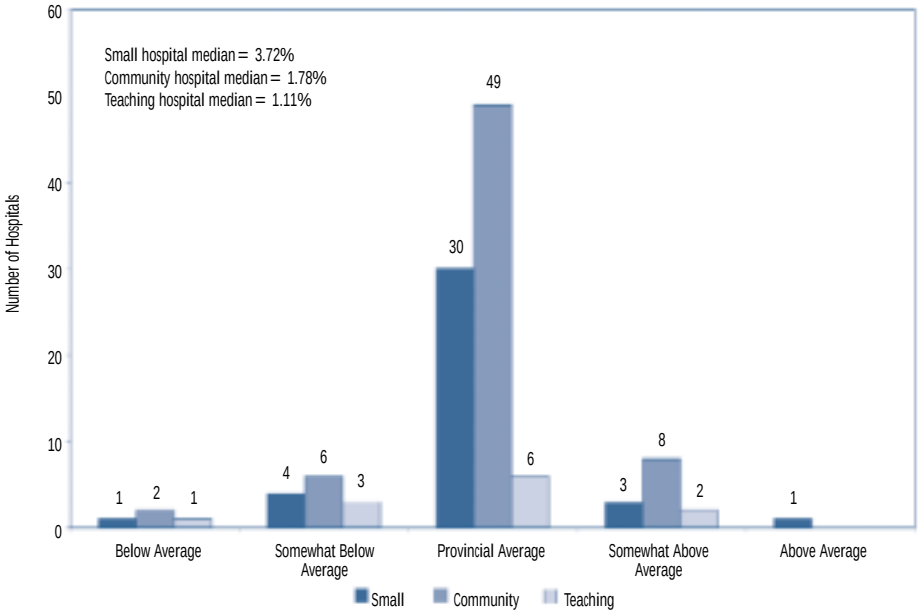
Unit Cost Performance

The Unit Cost Performance indicator, also known as Actual vs. Expected Costs, uses a standard statistical technique (regression analysis) to compare a hospital's actual inpatient costs to its expected costs. The calculation takes into account provincial cost patterns, the types of patients treated in each hospital, and other factors, such as how much medical student training occurs in each hospital. Why is this important? Since different hospitals treat different numbers and types of patients, overall costs will vary from place to place. Similarly, the extent of teaching activity in a hospital may affect its costs. Taking these factors into account improves hospital to hospital comparisons of efficiency.

The Unit Cost Performance indicator measures technical efficiency, not service quality, timeliness, or sustainability. A negative unit cost performance value simply indicates that services cost less than expected. A positive value suggests lesser unit cost efficiency. Unit cost performance results were used to directly allocate a small proportion of provincial government funding in 1999/2000.

FIGURE 4.4: HOW ONTARIO HOSPITALS PERFORMED – TOTAL MARGIN INDICATOR

The graph below shows performance distributions of small, community, and teaching hospitals across Ontario for the Total Margin indicator. It also includes the median total margin by hospital type. Half of all hospitals had results below the median. The other half had higher values.



Note: Data for teaching and community hospitals not participating in the hospital-specfic report are suppressed for confidentiality reasons.

Source: Ontario Hospital Reporting System, 1999/2000

Calculating Unit Cost Performance

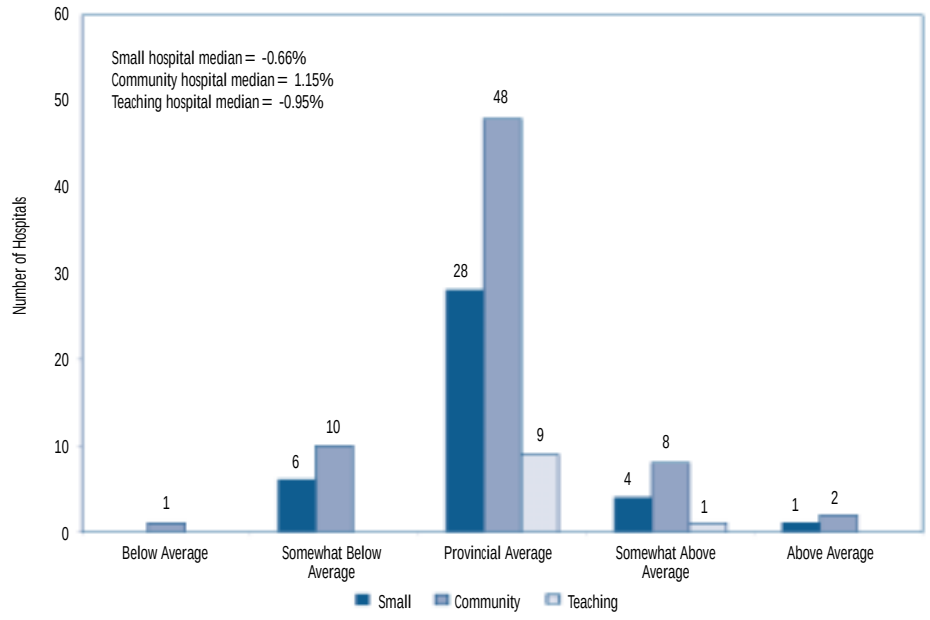
1998/1999 values for the Unit Cost Performance indicator were obtained from the JPPC. They were calculated as follows based on the large and small acute hospital funding formula:

$$\frac{[\text{Actual Cost per Weighted Case} - \text{Expected Cost per Weighted Case}] \times 100}{\text{Expected Cost per Weighted Case}}$$

Note: Specialty acute hospitals such as the Children's Hospital of Eastern Ontario and the Hospital for Sick Children are not included in the JPPC large acute hospital funding formula; therefore, it was not possible to produce the Unit Cost Performance indicator for these two hospitals.

FIGURE 4.5: HOW ONTARIO HOSPITALS PERFORMED – UNIT COST PERFORMANCE INDICATOR

Performance distributions of small, community, and teaching hospitals across Ontario for the Unit Cost Performance indicator ("below average" results indicate lesser unit cost efficiency).



Note: Data for a teaching hospital not participating in the hospital-specific report are suppressed for confidentiality reasons.

Source: Joint Policy and Planning Committee, 1998/1999

A hospital's ability to achieve greater unit cost efficiency is influenced by a number of factors. These include staff mix, productivity, local prices, community linkages, and management practices. Hospital-by-hospital variations for this indicator may also reflect reporting differences. For example, some hospitals calculate total acute inpatient, newborn, and qualifying day surgery expenses differently than others. This can affect the matching of costs to patient activity. Variations in the reporting of patient data can also affect the calculation of inpatient and day-surgery weighted cases.

Corporate Services

Most hospital staff provide services directly to patients. Others are also needed to manage the hospital's operations, hire staff, pay its bills, and perform other corporate service functions. The Corporate Services indicator measures how much hospitals spend in these areas, relative to their operating expenses. A higher value for this indicator suggests that a greater share of hospital operating expenses is spent on corporate services. To improve comparability of results, cash discounts, compensation for physicians, and amortization are excluded from the calculation.

Calculating Corporate Services

$$\frac{\text{[Expenses for Administration Services (General Administration, Finance, Human Resources, System Support, and Communication Expenses), Net of Recoveries except Cash Discounts and excluding Medical Compensation and all Amortization]} \times 100}{\text{Operating Expenses, Net of Recoveries and excluding Medical Compensation and all Amortization}}$$

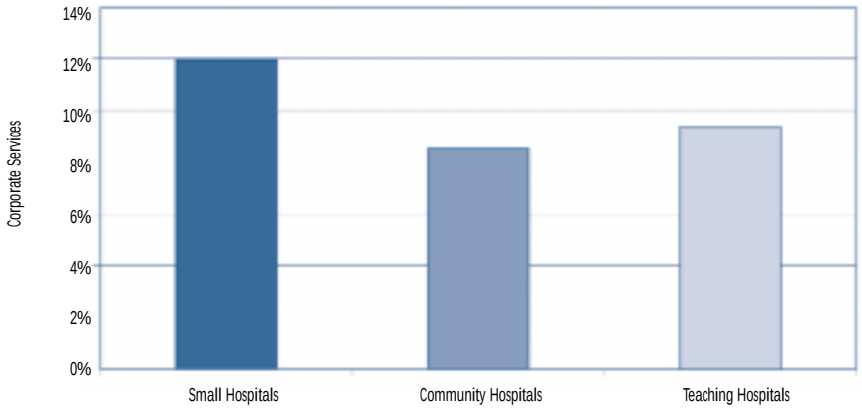
Across the province, Ontario hospitals reported spending about $683 million on corporate services in 1999/2000. That represented 8.98% of hospital operating dollars, up slightly from 1997/1998 (8.59%). Small hospitals tend to report higher values for this indicator than do community or teaching hospitals.

A variety of factors may explain variations in corporate services costs from hospital to hospital. For instance, larger hospitals might achieve a lower manager-to-staff ratio than would be possible in smaller hospitals. Variations in defining patient care and corporate service costs are another possible explanation for differences in indicator values across hospitals.

Corporate service costs may also be affected by the complexity of a hospital's services, as well as its management practices, information systems, and recruitment strategies. This demonstrates why it is important to consider results for each indicator in context with others in the balanced scorecard. For example, a hospital making significant investments in information technology systems that allow doctors to securely but easily access important information about a patient's care might report higher spending on corporate services. But it might score well on the System Integration and Change indicators that reflect the availability of these types of services both within and outside a hospital.

FIGURE 4.6: HOW CORPORATE SERVICES VARY

In 1999/2000, small hospitals reported spending more on corporate services as a percentage of their operating expenses than community or teaching hospitals. Values below show weighted averages by hospital type.



Source: Ontario Hospital Reporting System, 1999/2000

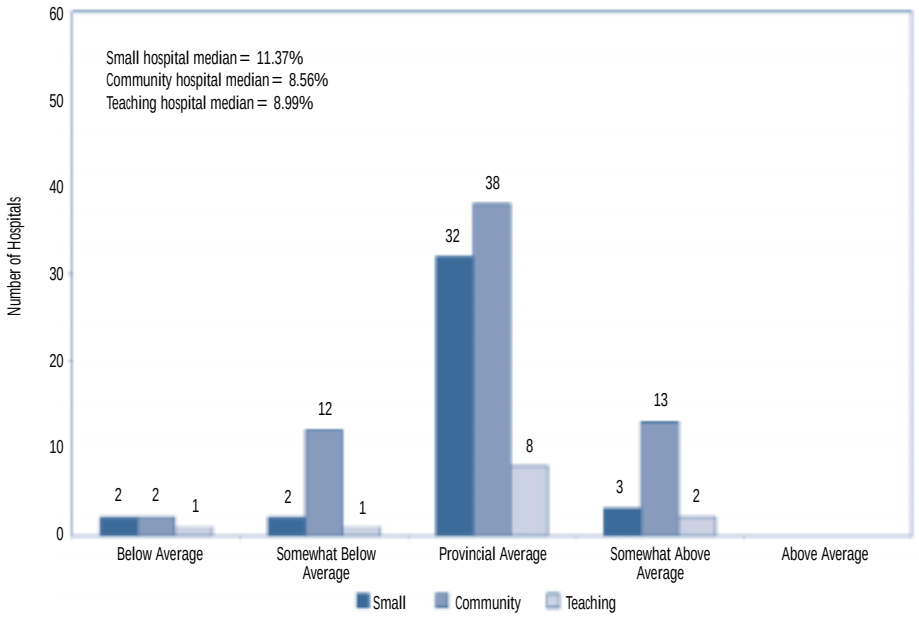
Days in Inventory

From bandages and basins to tongue depressors and toilet paper, hospitals must maintain an inventory of the supplies they need to treat patients and operate the facility. Having enough supplies available to meet daily needs is important, but keeping too much inventory on-hand ties up money that might otherwise be available for other purposes.

As a result, the Days in Inventory indicator is a measure of efficiency. It reflects the average number of days supplies are held in inventory. A higher value means a greater investment in inventory; a lower one indicates a smaller

FIGURE 4.7: HOW ONTARIO HOSPITALS PERFORMED – CORPORATE SERVICES INDICATOR

Performance distributions of small, community, and teaching hospitals across Ontario for the Corporate Services indicator ("below average" results indicate a higher proportion of operating dollars spent on corporate services).



Note: Data for teaching and community hospitals not participating in the hospital-specfic report are suppressed for confidentiality reasons.

Source: Ontario Hospital Reporting System, 1999/2000

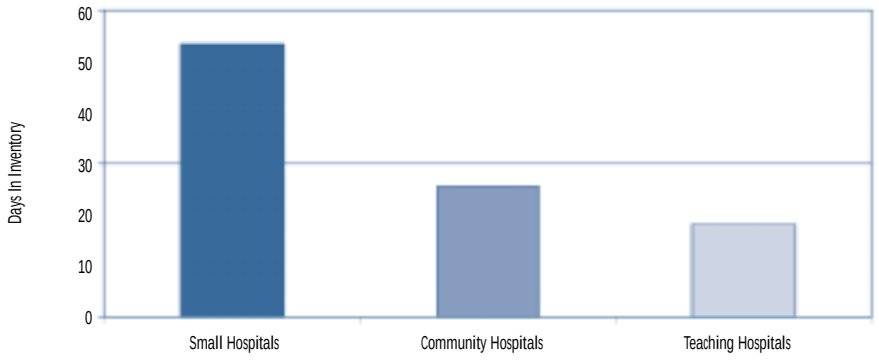
investment. For comparability, equipment, building and grounds, costs of services referred-out, and sundry (miscellaneous) expenses are not included in this indicator.

Overall, Ontario hospitals reported 22.42 days in inventory in 1999/2000, down 7.02% from 24.11 days in 1997/1998. But there was significant variation from hospital to hospital. Days in inventory ranged from eight to 100 days.

Why is this range so large? In general, the ability of a hospital to maintain as small an inventory as possible is influenced by a host of factors including materials management practices, physical space, supplier relations, and the geographic location of the hospital. For example, remote hospitals that are further from suppliers or those that experience larger seasonal variations in demand may need to keep larger inventory reserves. This may be reflected in the fact that small hospitals tend to have larger days in inventory values than teaching or community hospitals.

FIGURE 4.8: HOW DAYS IN INVENTORY VARIES

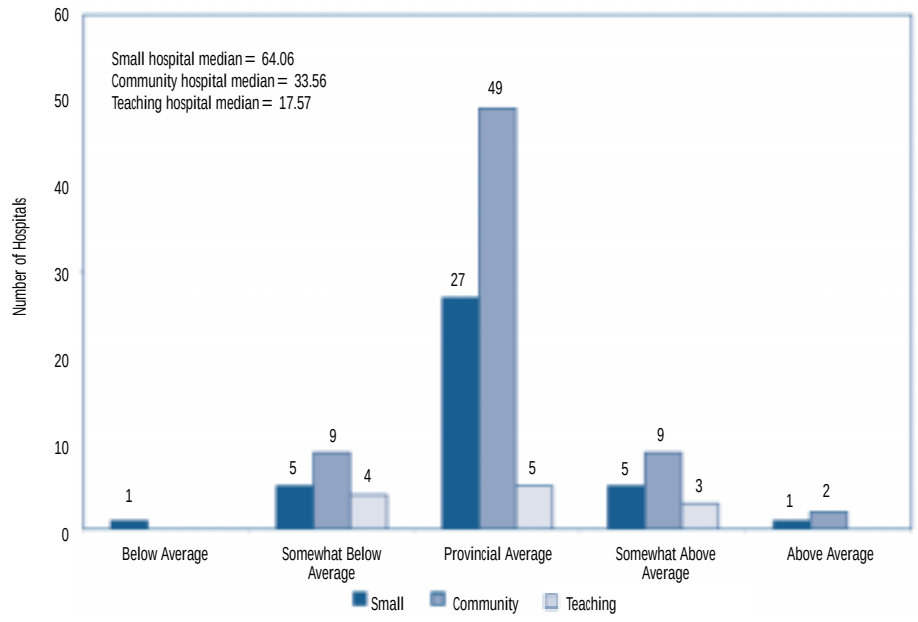
In 1999/2000, small hospitals tended to invest more in inventory than did community or teaching hospitals. Values below show weighted averages by hospital type.



Source: Ontario Hospital Reporting System, 1999/2000

FIGURE 4.9: HOW ONTARIO HOSPITALS PERFORMED – DAYS IN INVENTORY INDICATOR

Performance distributions of small, community, and teaching hospitals across Ontario for the Days in Inventory indicator ("below average" results indicate more days in inventory).



Note: Data for a teaching hospital not participating in the hospital-specific report are suppressed for confidentiality reasons.

Source: Ontario Hospital Reporting System, 1999/2000

Calculating Days in Inventory

Year-End Inventory Balance (the cost of all supplies in inventory on March 31st)

Total General and Patient-Specific Supplies Expense/366 days

Liquidity

Liquidity indicators measure how a hospital is managing its current assets (those that could be converted to cash within a year) and liabilities (wages, suppliers' bills, and other expenses that must be paid within a year). Hospitals with greater liquidity may have more financial flexibility, particularly with respect to buying equipment. In *Hospital Report 2001: Acute Care*, there are two measures of liquidity: Current Ratio and Working Capital.

Current Ratio

A hospital's current ratio represents the number of times its short-term obligations can be paid using the hospital's short-term assets. It is calculated by dividing current assets by current liabilities. A higher value indicates greater liquidity, and a lower value indicates lesser liquidity. If a hospital's ratio is less than one (1.00), it has insufficient liquid assets to cover its current liabilities. On the other hand, very high values may indicate under-investment in longer-term assets that usually yield greater returns. Payer practices, payment policies, credit arrangements, investment policies, management strategies, and other factors can all affect a hospital's liquidity.

Across the province, Ontario hospitals reported having current assets of approximately $2.1 billion in 1999/2000. Their current liabilities were almost $1.9 billion. After adjusting for deferred revenues (dollars that are received in one fiscal year for activity that takes place in another year) and other factors, the overall current ratio was 1.15.

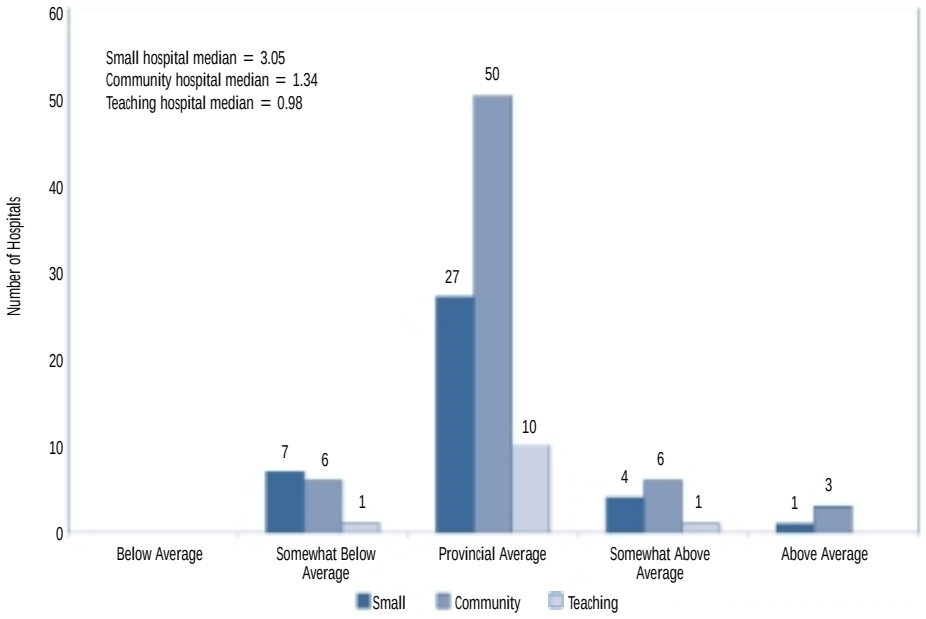
There was a slight decrease in the current ratio between 1997/1998 and 1999/2000 (in 1997/1998, the current ratio was 1.21, based on current assets of over $1.6 billion and liabilities of almost $1.4 billion). This decline is mostly explained by the fact that current liabilities grew at a greater pace than did current assets. This trend is particularly evident for small hospitals. In part, variations between small, community, and teaching hospitals may be explained by differences in the willingness of hospitals to invest in longer-term assets that typically yield greater returns.

Calculating the Current Ratio

$$\frac{\text{Current Assets + Debit Current Liability Balances, excluding Deferred Revenues}}{\text{Current Liabilities, excluding Deferred Revenue Balances + Credit Current Assets, except Current Asset Contra Accounts}}$$

FIGURE 4.10: HOW ONTARIO HOSPITALS PERFORMED – CURRENT RATIO INDICATOR

Performance distributions of small, community, and teaching hospitals across Ontario for the Current Ratio indicator (sometimes referred to as the Short-Term Assets vs. Short-Term Liabilities indicator).



Note: Data for teaching and community hospitals not participating in the hospital-specfic report are suppressed for confidentiality reasons.

Source: Ontario Hospital Reporting System, 1999/2000

Working Capital

A hospital's liquidity can also be measured by how much capital it has available ("Working Capital"), after liabilities have been taken into account. The Working Capital indicator measures what current assets remain after paying all of the current liabilities. To improve hospital-to-hospital comparability, this value is then adjusted for the size of the hospital's total revenues. A larger positive value indicates a greater supply of working capital relative to its total revenues. These hospitals are likely to have greater financial flexibility. A negative value means that there is no working capital available. The financial flexibility of a hospital in this situation tends to be more limited.

Calculating Working Capital

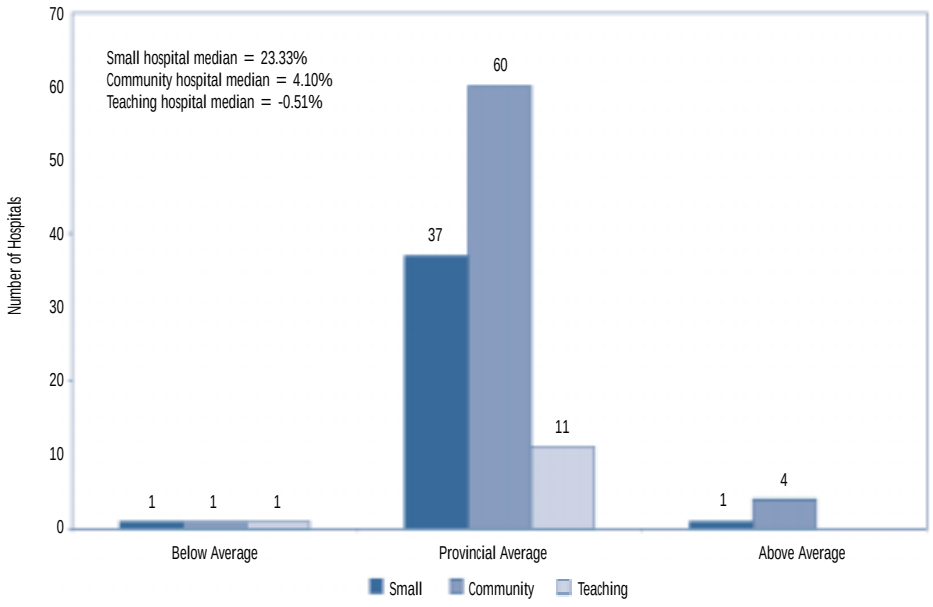
$$\frac{[\text{Current Assets} - \text{Current Liabilities, excluding Deferred Revenues}] \times 100}{\text{Total Revenues, excluding Internal Recovery Revenue}}$$

Working capital was 2.82% of hospital revenues in 1999/2000. As for other indicators, working capital values differed by hospital type. Small hospitals reported the largest amount of working capital (22.11%). This compares to 4.93% for community hospitals. Ontario's teaching hospitals had a negative combined working capital ratio (–1.17%).

Many of the factors that can affect a hospital's current ratio may also influence its ability to generate working capital. Examples include payer practices, payment policies, credit arrangements, investment policies, and management practices. Differences in working capital across hospital types may also be explained by the extent to which hospitals use working capital – instead of donations by hospital foundations or other funding sources – to pay for capital expenditures or long-term investments. To better understand these and other factors, future research might continue to develop this measure by examining historical trends and exploring relationships between working capital ratios and hospitals' spending on equipment and their physical plants/construction.

FIGURE 4.11: HOW ONTARIO HOSPITALS PERFORMED – WORKING CAPITAL INDICATOR

Performance distributions of small, community, and teaching hospitals across Ontario for the Working Capital indicator, based on a three-point scale: "above average", "provincial average", and "below average".



Note: Data for teaching and community hospitals not participating in the hospital-specfic report are suppressed for confidentiality reasons.

Source: Ontario Hospital Reporting System, 1999/2000

Spending on Equipment

Ontario acute care hospitals are capital intensive. They are estimated to own assets, such as major equipment, worth almost eight billion dollars. Hospitals may upgrade current equipment or purchase new technology for many reasons. Perhaps the old equipment no longer meets safety standards. Maybe new tools are needed because the hospital is starting a different care program. Or, perhaps there have been advances in technology. Patients may also be demanding more up-to-date equipment. Or, there may be new options that either improve the quality of care or reduce costs.

Calculating Equipment Expenditure

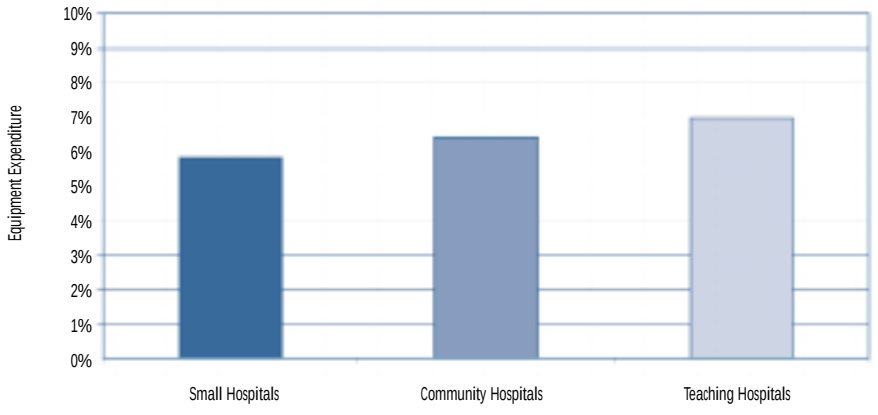
Total Expenses related to the acquisition and use of equipment (calculated as Equipment Maintenance + Replacement of Major Equipment + Amortization on Major Equipment + Net Gain/Loss on Disposal + Interest on Major Equipment Loans + Rental/Lease of Equipment + Minor Equipment Purchases + Equipment Expense not Elsewhere Classified) x 100

Total Expenses, Net of All Recoveries

The Equipment Expenditure indicator measures how much a hospital spends in a given year on computer systems, x-ray machines, and other capital equipment costing more than $1,000 as a share of its total expenses. Ontario hospitals reported spending $591 million on equipment in 1999/2000. That's 6.61% of total expenses, up from 5.78% in 1997/1998. The increase occurred because equipment spending rose faster than total hospital expenses.

FIGURE 4.12: HOW EQUIPMENT EXPENDITURE VARIES

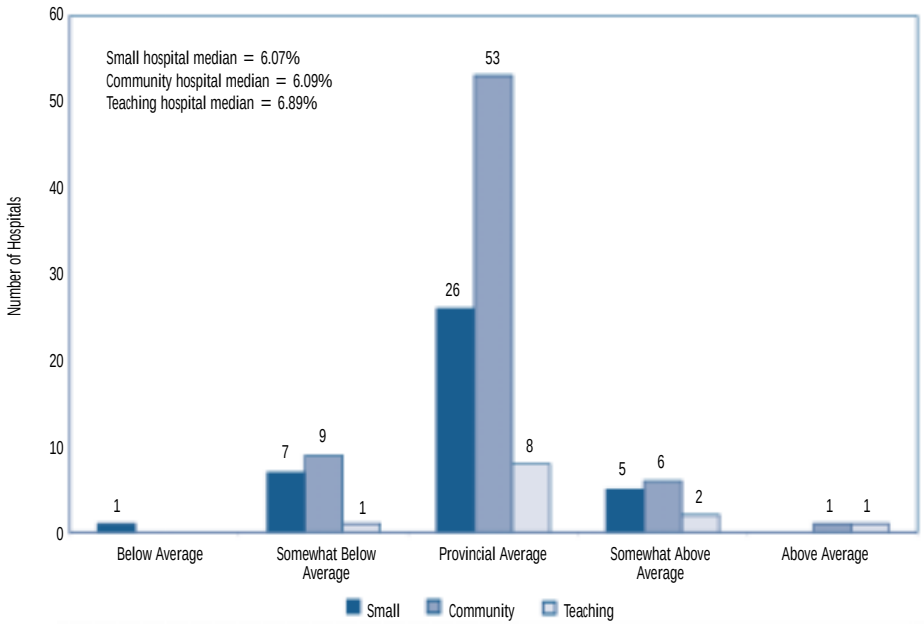
In 1999/2000, teaching hospitals reported spending more on equipment as a percentage of total expenses than small or community hospitals. Values below show weighted averages by hospital type.



Source: Ontario Hospital Reporting System, 1999/2000

FIGURE 4.13: HOW ONTARIO HOSPITALS PERFORMED – EQUIPMENT EXPENDITURE INDICATOR

Performance distributions of small, community, and teaching hospitals across Ontario for the Equipment Expenditure indicator.



Note: Data for a teaching hospital not participating in the hospital-specific report are suppressed for confidentiality reasons.

Source: Ontario Hospital Reporting System, 1999/2000

Teaching hospitals tended to spend more on equipment as a percent of total expenses (6.96%) than other hospitals. This compares to 6.38% for community hospitals and 5.82% for small hospitals. In part, this finding may reflect equipment requirements related to the highly specialized types of care, teaching activities, and research that often occur in teaching hospitals.

Many factors affect a hospital's need and ability to purchase equipment. For example, need can be influenced by the types of services provided, teaching activities, and research programs. A hospital's ability to purchase new equipment is influenced by factors such as its fundraising ability, total margin, working capital, and management practices. Variations in this indicator may also be caused by differences in hospital accounting practices used to record the cost of the equipment.

Human Resources

The equivalent of approximately 111,000 full-time employees (FTEs) worked in Ontario hospitals in 1999/2000. That's up 4.88% since 1997/1998. This report includes two indicators that measure how hospitals allocate their staff's time to patient care and non-patient care activities.

Time Nursing Staff Spent on Patient Care

Registered nurses, registered nursing assistants, and other hospital nursing staff split their time between patient care and other activities. The Nursing Care Hours as a Percent of Total Inpatient Nursing Hours indicator measures how much time inpatient nursing staff spend on patient care activities as a percentage of their total hours.

The data show that most staff time, 77.61% in 1999/2000, is spent on patient care. Nursing management and non-worked time (e.g. holidays, sick time, maternity leave, and educational time) accounted for just under a quarter of inpatient nursing hours.

This has remained true for several years, even though there were 6.85% more total inpatient nursing hours in 1999/2000 than in 1997/1998. Nursing staff still spent about the same amount of their time on patient care activities (78.27% in 1997/1998 and 77.61% in 1999/2000). Small hospitals had substantially higher values than their larger counterparts in both years. There were also variations between hospitals of the same type.

A hospital's ability to have a higher percentage of nursing hours spent on patient care may be influenced by staff mix, collective agreements, the supply of nurses, management practices, and other factors. Hospital to hospital differences might

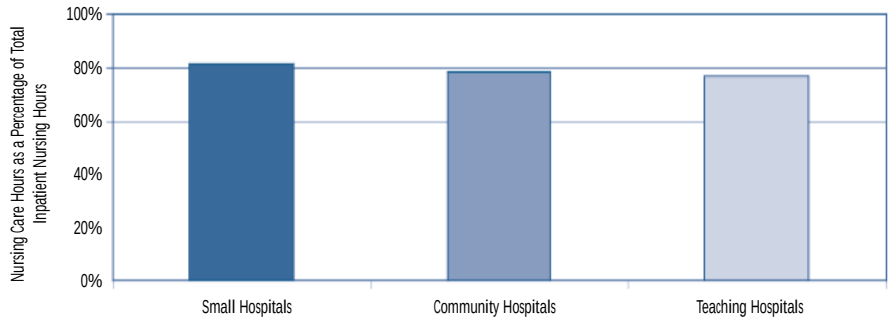
Calculating Nursing Care Hours

Inpatient Nursing Unit Producing Personnel Worked and Purchased Service Hours x 100

Total Inpatient Nursing Earned Hours, excluding Medical Compensation Hours

FIGURE 4.14: HOW NURSING CARE HOURS VARY

In 1999/2000, small hospitals reported spending more hours on patient care as a percent of total nursing hours than did community or teaching hospitals. Values below show weighted averages by hospital type.

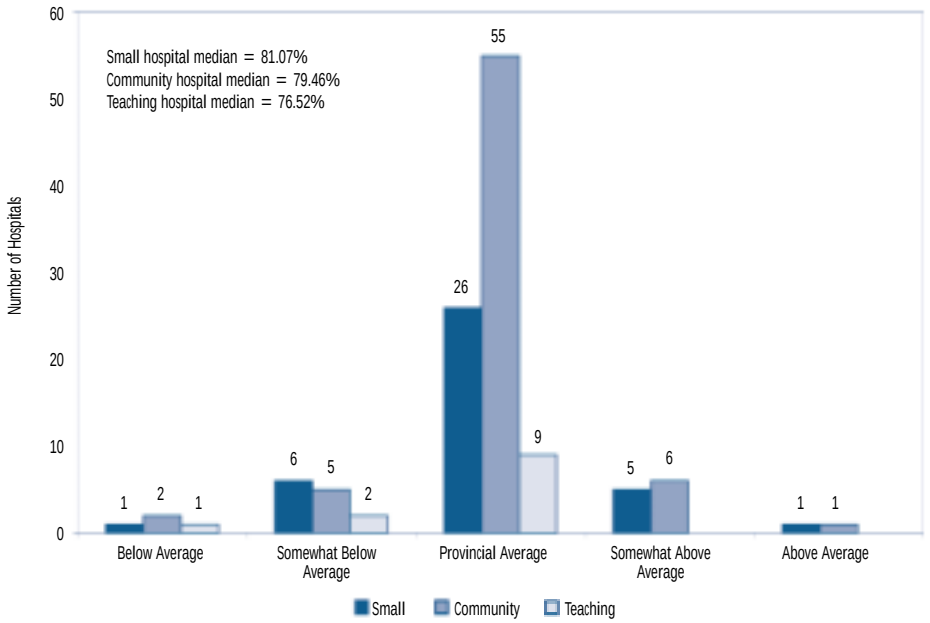


Source: Ontario Hospital Reporting System, 1999/2000

also be explained by variations in the types of personnel recorded as working in different departments. For example, one hospital may consider hours worked by information systems personnel in a nursing unit to be a part of total nursing hours. In another hospital hours worked by information systems staff in a nursing unit might be treated as administrative hours. Both hospitals could have exactly the same number of nurses and other hospital nursing staff, but nursing hours will appear higher at the first hospital.

FIGURE 4.15: HOW ONTARIO HOSPITALS PERFORMED – NURSING CARE HOURS AS A PERCENTAGE OF TOTAL INPATIENT NURSING HOURS INDICATOR

Performance distributions of small, community, and teaching hospitals across Ontario for the Nursing Care Hours as a Percentage of Total Inpatient Nursing Hours indicator.

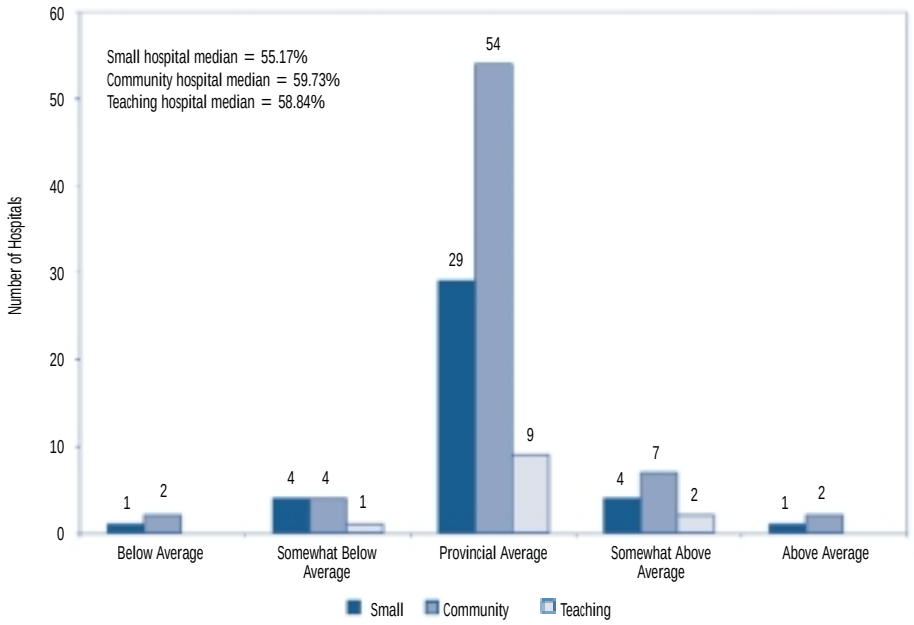


Note: Data for a teaching hospital not participating in the hospital-specific report are suppressed for confidentiality reasons.

Source: Ontario Hospital Reporting System, 1999/2000

FIGURE 4.16: HOW ONTARIO HOSPITALS PERFORMED – PATIENT CARE HOURS AS A PERCENTAGE OF TOTAL STAFF HOURS INDICATOR

Performance distributions of small, community, and teaching hospitals across Ontario for the Patient Care Hours as a Percentage of Total Staff Hours indicator.



Note: Data for a teaching hospital not participating in the hospital-specific report are suppressed for confidentiality reasons.

Source: Ontario Hospital Reporting System, 1999/2000

Patient Care Hours

Most hospital staff members are available to provide patient care; some perform other functions. The Patient Care Hours indicator (also known as Time on Patient Care) measures the percent of all hospital-worked hours for staff available to carry out activities which contribute directly to patient care. A higher value indicates more worked time for patient care and less for support and corporate services. A hospital's ability to achieve a higher ratio of worked time for patient care is influenced by factors such as staff mix, collective agreements, labour supply, management practices, and other factors.

Ontario hospital staff worked a total of 177 million staff hours in 1999/2000. Of these, over half (59.41% or 105 million hours) were for staff who were available to provide patient care. This figure is relatively consistent with results from 1997/1998. In that year, the ratio was 60.32% (based on 99 million patient care hours and 164 million total staff hours). In both years, small hospitals typically reported somewhat lower patient care hour ratios relative to teaching and community hospitals.

Calculating Patient Care Hours

$$\frac{\text{Inpatient Nursing, Ambulatory Care, and Diagnostic \& Therapeutic Worked and Purchased Service Hours} \times 100}{\text{Total Operating Worked Hours, excluding Medical Compensation Hours}}$$

Next Steps

This report attempts to provide Ontario hospital stakeholders with system-wide and hospital-specific measures of financial performance and condition. When used in combination with the indicators in the other quadrants, these measures can help managers, board members, care providers, government officials, and others to better understand the financial situation of Ontario's hospitals.

For example, performance indicators can be useful in understanding how the finances of Ontario hospitals have – or have not – changed in recent years. In this report, we compare results for 1999/2000 (the latest data available) to 1997/1998 (the year reported on in *Hospital Report '99*). Findings include:

- Together, Ontario hospitals' combined annual surpluses grew slightly (total margin increased by 1.33 percentage points) and long-term debt fell.
- Corporate services spending as a percent of total operating expenses rose slightly (from 8.59% to 8.98%).
- Days in inventory dropped to 22.42 days in 1999/2000, down from 24.11 in 1997/1998.
- Liquidity fell slightly (the current ratio dropped from 1.21 to 1.15)
- There appeared to be a greater investment in capital (equipment expenditures rose from 5.78% to 6.61%)
- The proportion of hours worked by hospital staff who contribute to patient care to total hospital worked hours remained fairly constant (60.32% in 1997/1998 compared to 59.41%).
- The proportion of patient care to total hours for nursing staff also remained fairly constant (78.27% versus 77.61% in 1999/2000).

In order to ensure that the report continues to be a useful tool, future measures of financial performance and condition may need to be adapted. Possible areas for consideration may include:

- Exploring whether hospital performance could be compared to standardized benchmarks, as opposed to how other hospitals in the province perform.
- Examining historical patterns of financial condition and performance.
- Exploring the continued relevance of current indicators, the possibility of adding important new indicators, and options for refining the measurement and interpretation of existing indicators.

For more information

[1] Canadian Institute for Health Information (Dec. 2000). *National Health Expenditure Trends 1975-2000*, Ottawa: Canadian Institute for Health Information

System Integration and Change

System Integration and Change

Keeping pace in today's rapidly changing health care environment is a challenge. To adapt, hospitals may integrate their services with community partners and develop innovative practices. This includes improving the use and transfer of information both within and outside their facilities, fostering relationships with community agencies and other health care providers, and developing the skills of professionals and other staff.

The 10 indicators in the System Integration and Change quadrant capture the extent to which Ontario hospitals are implementing these and other strategies. Two indicators are based on patients' perceptions of their care. Patients were asked to score hospitals on the coordination of their care while in hospital and on the continuity of care after discharge. Over half of all patients surveyed in 2000 said that the coordination and continuity of their care was excellent. In both cases, these ratings are similar to last year.

The other eight System Integration and Change indicators are based on the extent to which hospitals report implementing innovative practices. Some relate to clinical practices in the hospital. For example, have they developed and implemented clinical pathways or "Care Maps" (These "action plans", based on the most current medical information, identify the best timing and combination of services for patients suffering from specific conditions)? Do clinicians have access to up-to-date patient information, such as test results, throughout the hospital and off-site? And to what extent are hospitals using data on clinical outcomes and appropriateness measures to benchmark their results against other facilities? As in 1999, community and teaching hospitals tend to have higher scores on these indicators than small hospitals do.

Another set of indicators explores hospital relationships with community partners. These indicators examine how hospitals work with the organizations that facilitate home care, community mental health, and other services. Almost all Ontario hospitals report at least one joint activity with a community care access centre (CCACs). Many had five or more. Hospitals also report using a variety of strategies to reduce the number of patients waiting in a hospital bed for home care, complex continuing care, rehabilitation, or other services.

The final group of indicators tracks use of data – such as employee surveys – to plan and manage hospital activities, as well as to implement a variety of health human resource practices.

Thus, many hospitals are working to coordinate activities with community partners; use information about patients, physicians, and employees to manage hospital activities; and, implement new clinical and health human resource practices. Yet practices vary from hospital to hospital across the province. This suggests that there are still opportunities to improve system integration and responsiveness to change.

How was the Research Done?

Selecting the Indicators

Selecting System Integration and Change indicators that are feasible, relevant, and scientifically sound is a challenge. Unlike the other three quadrants, there are few standard measures that are applicable to this area. For example, while some hospitals collect measures of employee skills and training, few measures of organizational learning are available through existing databases. Even where measures do exist, they are often unusable because variations in data coding create difficulties in comparing performance across organizations.

Accordingly, University of Toronto researchers identified nine indicators of system integration and change in 1999. Their selection was based on comprehensive literature reviews and the guidance of an advisory panel composed of experts from hospital and community agencies.

But indicators designed to measure change and integration must themselves move with the times, reflecting emerging innovations and the evolving hospital system. Although all nine indicators used in *Hospital Report '99* were carried forward to this report, minor methodological updates were made to several indicators. For details, see the *Hospital Report 2001: Acute Care Technical Summary*. Due to these changes, except where otherwise indicated, results presented in this report are not directly comparable to those in *Hospital Report '99*.

A tenth indicator, Health Human Resources, is new for *Hospital Report 2001: Acute Care*. It was added based on the advice of the advisory panel and feedback from Ontario hospitals. It was also added to reflect the hospitals' growing recognition of the importance of recruitment, retention, and staff development, as well as their desire to develop creative health human resource approaches.

The Data Sources

Eight of the 10 System Integration and Change indicators are derived from a survey completed by Ontario acute care hospitals in January 2001. This Hospital Report System Integration and Change Survey was adapted by the Canadian Institute for Health Information based on the 1999 System Integration and Change Survey developed by University of Toronto researchers. The 2001 survey was composed of 59 questions, divided into nine thematic sections. It was distributed to 121 acute care hospitals/corporations/partnerships. Hospitals were given approximately six weeks to complete the survey. Overall, 118 acute care hospitals returned completed surveys, representing a 98% response rate.

Multi-site hospitals were given the option of completing questionnaires for each site or for the corporation as a whole. In 2001, 30% of multi-site organizations sent back surveys for each site.

As in 1999, *Hospital Report 2001: Acute Care* also includes indicators of coordination and continuity of care derived from the Standardized Hospital Patient Satisfaction Survey (SHoPSS). Details about the SHoPSS are provided in the Patient Satisfaction section of this report.

Hospital Survey Data Quality

Most of the System Integration and Change indicators are based on hospital survey results. These indicators are inevitably subject to a "social desirability bias". That is, consciously or unconsciously, respondents may answer questions in ways that make the hospital have a good score. To counteract this bias, researchers made an effort to construct survey questions that focused on specific behaviours, rather than attitudes. Nevertheless, a degree of interpretation may still be reflected in answers to many questions.

How Performance is Assigned

Small hospitals face different opportunities and challenges than do teaching or community hospitals. For example, it might be more difficult for a small hospital to conduct formal patient or employee satisfaction surveys when they have limited patient numbers and a relatively small staff complement.

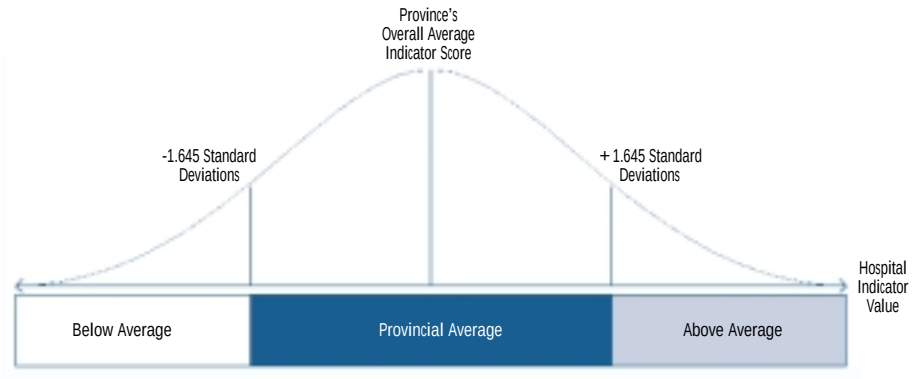
For this reason, hospital relative ratings of System Integration and Change for eight of the 10 indicators (those calculated from hospital survey results) are calculated separately by "peer group". Small hospitals are compared with other small hospitals. Teaching and community hospitals, whose scores were generally not significantly different, were combined and compared with other teaching and community hospitals. For some of the indicators, the total number of hospitals does not add up to 118 (the number of hospitals that returned surveys) because of hospitals with non-reportable scores.

Based on their indicator values, hospitals were grouped into one of three performance categories for these indicators: "above average", "provincial average", and "below average". Based on a normal distribution, hospitals were said to be "above average" or "below average" if their indicator value was more than or less than 1.645 standard deviations from the province's overall average indicator value for all hospitals in their peer group. The decision to group hospitals into three categories (rather than five as for most indicators in other quadrants) was made based on the characteristics of the responses to the hospital survey. Figure 5.1 illustrates how performance allocations were made.

Hospital performance scores for the Coordination and Continuity of Care indicators were assigned in the same way as for other indicators based on the SHoPSS. For details, please refer to the Patient Satisfaction section of this report.

FIGURE 5.1: HOW SYSTEM INTEGRATION AND CHANGE PERFORMANCE IS ASSIGNED

For indicators derived from the Hospital Report System Integration and Change Survey, hospitals were assigned one of three performance allocations based on how their indicator values compared with those of other similar hospitals (as shown below). See the sidebar, "How Performance is Assigned," or the *Hospital Report 2001: Acute Care Technical Summary* for more detail on the performance allocation method for this quadrant.



Other measures were also taken to ensure the data quality of survey results. For example, surveys were examined for missing information. When questions used to derive indicators were left blank, hospitals were prompted for answers. Questions that had more than a small percentage of missing answers (which might indicate problems in interpretation) were not used in the construction of the indicators. Finally, preliminary indicator results were circulated to hospitals for validation. In particular, hospitals were asked to re-examine the results when there were large shifts in indicator values from 1999. Where problems were found, changes were made to the data originally submitted. A note to this effect appears in the hospital-specific indicator results, where applicable. Accurate data entry is also important. Each questionnaire was coded twice and entered into a secure database.

The methodology used in this report is described in detail in *Hospital Report 2001: Acute Care Technical Summary*. It is available free on *Hospital Report Series* partners' and sponsors' web sites, including www.cihi.ca.

Indicators of System Integration and Change

Use of Information Technology

Information technology is increasingly becoming an important part of patient care. Information systems have the potential to refine the quality of patient records, reduce the time it takes to receive diagnostic reports, decrease the number of medication errors, and facilitate timely patient follow-up. However, the costs of developing effective clinical information systems may hinder their implementation in some settings.

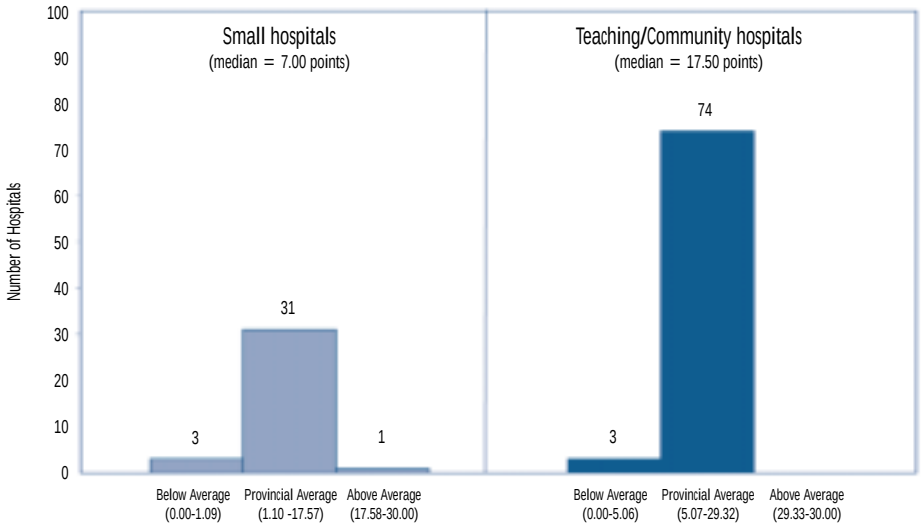
Calculation of the Clinical Information Technology Indicator

The Clinical Information Technology indicator was based on answers to three questions (maximum possible score of 30 points):

- To what extent are patient registration/admission, discharge, and transfer (ADT) information; diagnostic imaging results; medical images; diagnostic lab results; transcribed reports; and drug profiles available electronically?
- To what extent can clinicians inquire about patient record information, in real time, by computer within the hospital?
- Is patient information available electronically to any health care providers outside the hospital?

FIGURE 5.2: HOW ONTARIO HOSPITALS PERFORMED – CLINICAL INFORMATION TECHNOLOGY INDICATOR

The graph below shows performance distributions of small and teaching/community hospitals across Ontario for the Clinical Information Technology indicator (sometimes referred to as the Electronic Patient Information indicator). Hospitals are assigned to one of three performance categories: "below average", "provincial average", or "above average". It also shows the median indicator points by "peer group" and the ranges for each performance category. Half of all hospitals had results below the median. The other half had higher values.



Note: Data for teaching/community hospitals not participating in the hospital-specific report are suppressed for confidentiality reasons.

Source: Hospital Report System Integration and Change Survey, 2001

Some hospitals indicated that they only have paper records. They scored zero on this indicator. This means that these hospitals have no clinical information available electronically. Others have almost all systems and access mechanisms in place. For example, some teaching/community hospitals have scores of 29 out of 30. These organizations have fully electronic patient information available throughout and outside the hospital.

Overall, almost all hospitals (92%) have some form of clinical information at least partially available electronically throughout the hospital. Forty-five percent of hospitals in 2001 (as opposed to 27% in 1999) also have patient information available to other health care providers outside the hospital, such as clinicians in local clinics, physicians' offices, or community care access centres. Lab test results are the most common type of information available both throughout and outside the hospital, closely followed by the results of diagnostic imaging procedures and patient registration information/admissions, discharge, and transfer systems.

In general, small hospitals make less use of clinical information technology than community and teaching hospitals. A "typical" (median) small hospital score is seven points. Half of the small hospitals score below this level and the other half score above this level. This "typical" small hospital would generally have some electronic information available within a department of the hospital but not throughout the hospital. A "typical" teaching/community hospital has a score of 17.50 points. This "typical" hospital has access to some electronic information both within and outside the organization.

Using Data to Improve Clinical Processes

Data on clinical outcomes and appropriateness of care may provide an important source of information to assess clinical performance and to guide improvement activities. Such data can assist in identifying variations — and opportunities for improvement — in outcomes among practitioners, medical services, and hospitals. In this way, clinical data can be used to help improve the quality of care.

The median clinical data score for all hospitals is 1.64 out of 4.00. This means that a "typical" hospital engages in an average of 1.64 out of four activities related to the collection, dissemination, and benchmarking of clinical data. The 1999 median score was 1.36, suggesting that many hospitals have increased their use of clinical data over this period. Nevertheless, as in 1999, small hospitals tend to collect, disseminate, and benchmark clinical data to a lesser extent than teaching and community hospitals.

There are several possible explanations for the differences between hospital groups. For example, large hospitals may be more likely to have the resources to collect, analyze, and use this type of information. In addition, due to variations in the characteristics of patients served in different hospitals, a clinical measure that is valuable to one hospital may not be useful to another. For example, it may be inefficient for small hospitals to benchmark data when they have a low volume of cases for particular measures.

Calculation of the Clinical Data Indicator

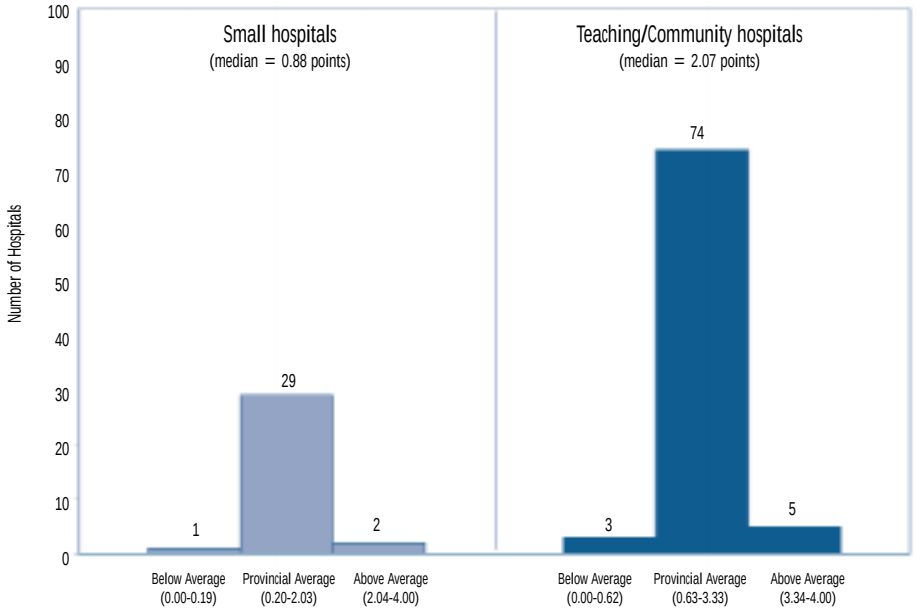
This indicator is calculated based on responses from hospitals on their collection, dissemination, and benchmarking practices for 14 different clinical measures (including nine measures of clinical outcomes and five measures of appropriateness of care). For each of these 14 measures, points were allocated if data were:

- collected in over 50% of the applicable cases (one point)
- shared with a senior medical staff group or the group responsible for quality of care (one point)
- compared internally either across specialties or over time (one point)
- compared externally with other/similar organizations (one point)

A hospital's indicator score was its average (out of four) for all 14 clinical measures. Results are not reported for organizations with responses for fewer than 10 of the 14 clinical measures.

FIGURE 5.3: HOW ONTARIO HOSPITALS PERFORMED – CLINICAL DATA-COLLECTION, DISSEMINATION AND BENCHMARKING INDICATOR

Performance distributions of small and teaching/community hospitals across Ontario for the Clinical Data-Collection, Dissemination, and Benchmarking indicator. Hospitals are assigned to one of three categories: "below average", "provincial average", or "above average".



Source: Hospital Report System Integration and Change Survey, 2001

Information Intensity

It is difficult to manage what you don't measure. But measurement alone is not enough. Data on patients, physicians, and employees are increasingly being used to plan and manage hospital activities. For example, data on patient care can help to allocate resources, plan new programs, and assess patient care. Likewise, understanding the views of physicians and employees may help a hospital to recruit and retain competent staff and design change strategies. The Intensity of Information Use indicator was designed to reflect the extent to which organizations are reporting and using (as opposed to collecting) these and other types of information.

Overall, 61% of Ontario hospitals compare clinical practice and outcomes of physicians within their organization. More (73%) compare these data with other organizations. Similarly, most Ontario hospitals (86%) share patient satisfaction data with their senior management team. Over half of all hospitals (64%) give senior managers employee satisfaction results.

The teaching/community median indicator value is five out of eight. This means that a "typical" teaching/community hospital is carrying out five of the eight information sharing and benchmarking activities from a variety of sources. But there is variation within this peer group. Hospital scores range from one to eight points. Small hospitals tend to make less use of these information tools. Their median value is two.

Differences between hospital peer groups may, in part, be due to the availability of financial and human resources. For example, small hospitals may not have enough employees to warrant a quantitative employee satisfaction survey. Furthermore, the costs associated with collecting and interpreting the information may be high. It may also be difficult for some hospitals to find staff with the appropriate analytical skills to analyze the information. Nevertheless, the median values and the range of scores for this indicator suggest that there continues to be room for hospitals to do more to capture and make use of feedback from their stakeholders and take advantage of clinical practice benchmarking opportunities.

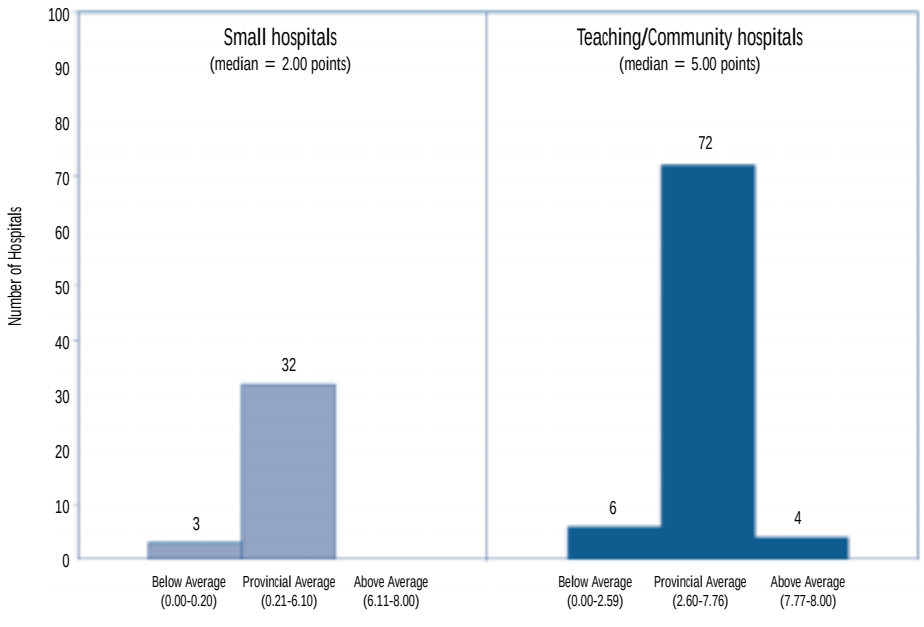
Calculation of the Intensity of Information Use Indicator

The Intensity of Information Use indicator (maximum score of eight points) is based on a hospital's answers to specific questions about:

- the use of employee and patient satisfaction measures
- the extent of internal and external benchmarking of clinical practice data
- the use of concurrent utilization tools (such as InterQual, MCAP, or ACTIV) to identify reactivation and chronic care needs of patients
- the purchase or creation of utilization reports

FIGURE 5.4: HOW ONTARIO HOSPITALS PERFORMED – INTENSITY OF INFORMATION USE INDICATOR

Performance distributions of small and teaching/community hospitals across Ontario for the Intensity of Information Use indicator. Hospitals are assigned to one of three performance categories.



Source: Hospital Report System Integration and Change Survey, 2001

Clinical Innovation

Clinical pathways or "Care Maps" aim to improve patient outcomes and achieve efficiencies. These "action plans" are typically developed by a multi-disciplinary group of health professionals, based on the most current medical evidence. They are intended to identify the optimal timing and combination of services for patients with specific health conditions. Pathways have the potential to lead to better identification of patient needs and better coordination of activities among members of the care team.

The Clinical Pathways indicator, also known as Care Plans, reflects the degree to which hospitals are developing and using clinical pathways for six common conditions and procedures – asthma; stroke; acute myocardial infarction (AMI), otherwise known as heart attack; joint replacement surgery; caesarean section; and pneumonia. Together, these six areas accounted for about 8.5% of acute hospitalizations in Ontario in 1999/2000.

About two-thirds (68%) of qualifying hospitals reported that they have developed at least one clinical pathway in one of the six clinical areas. Nevertheless, when pathways have been developed, they are not always widely used. For example, 16% of hospitals reported that few eligible patients are cared for using a developed pathway.

Calculation of the Clinical Pathways Indicator

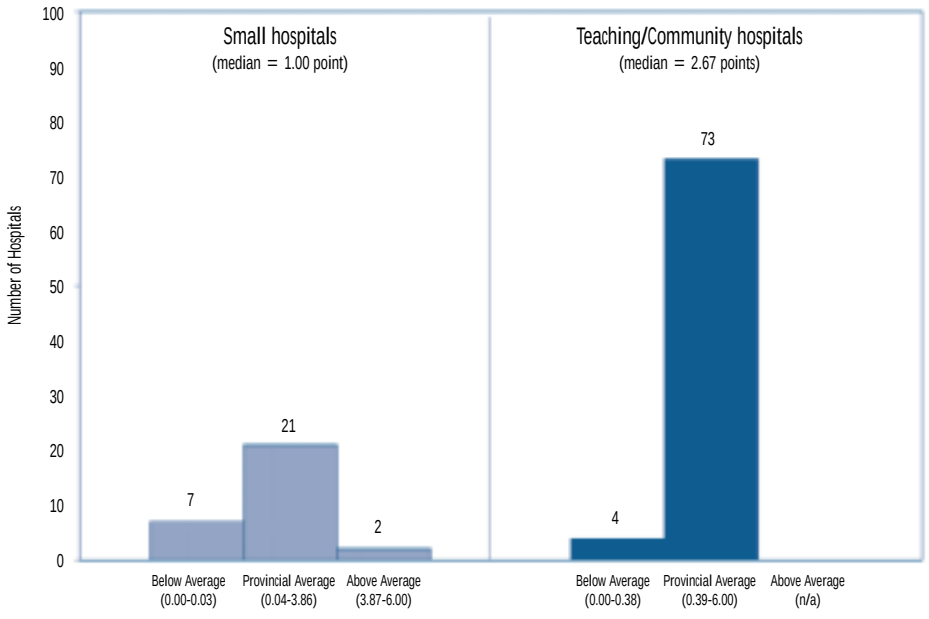
For each of the six conditions and procedures, hospitals were assigned a score of zero to six based on their survey responses. Scores were assigned as follows:

- Service offered but no pathways currently exist for this population (zero points)
- In the early stages of pathway development for this population (one point)
- Pathways for this population are being developed and should be implemented in the next six months (two points)
- Pathways are developed and few eligible patients are cared for using the pathway (three points)
- Some eligible patients are cared for using the pathway (four points)
- Most eligible patients are cared for using the pathway (five points)
- All or nearly all eligible patients are cared for using the pathway (six points)

The Clinical Pathways indicator score is an average of a hospital's reported clinical pathway development and use for all six clinical conditions and procedures. A hospital had to have 12 or more cases/procedures in 1999/2000 in no fewer than two of the six conditions/procedures to receive a score for this indicator.

FIGURE 5.5: HOW ONTARIO HOSPITALS PERFORMED – DEVELOPMENT AND USE OF CLINICAL PATHWAYS INDICATOR

Performance distributions of small and teaching/community hospitals across Ontario for the Development and Use of Clinical Pathways indicator. Hospitals are assigned to one of three performance categories.



Note: Data for teaching/community hospitals not participating in the hospital-specific report are suppressed for confidentiality reasons.

Source: Hospital Report System Integration and Change Survey, 2001

With a median Clinical Pathway score for all hospitals of 2.20, it might appear as if Ontario hospitals are in the early stages of pathway development. But pathway use is higher for some conditions than others. For example, the mean (average) pathway score for AMI is 3.20, compared to 1.45 for asthma. Joint replacement surgery has a mean pathway score of 4.59 among qualifying hospitals. This reflects practices in the 56 hospitals that had 12 or more of these procedures in 1999/2000.

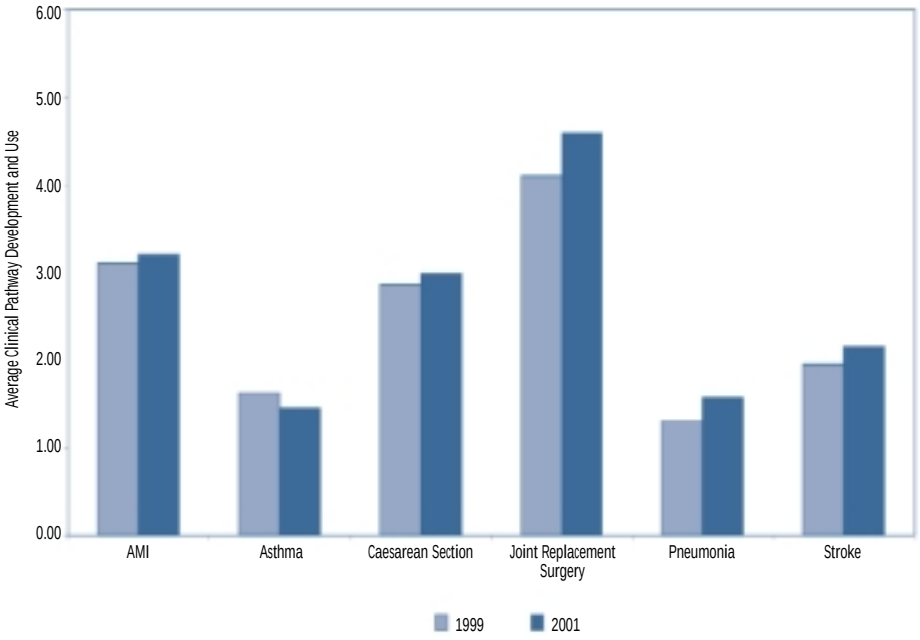
Since 1999 (when the median pathway score was 2.00), the development and use of clinical pathways for all six conditions/procedures has increased slightly, except for asthma (where pathway use has decreased). Findings in the upcoming report on emergency departments may determine if this is due to a shift in asthma management in the emergency department.

Given that, overall, Ontario hospitals are still developing pathways, what are the key barriers to moving forward? The hospital survey asked this question. The most common issues cited are:

- the clinical time commitment required (81% of hospitals)
- the financial resources or support staff needed (69%)
- physician resistance to standardized approaches to care or their belief that individual patient needs cannot be addressed with standardized pathways (57%)
- not enough physician leadership (56%) or management staff leadership (47%) to champion pathway development

FIGURE 5.6: COMPARISON OF CLINICAL PATHWAY DEVELOPMENT AND USE BETWEEN 1999 AND 2001

This figure shows the differences in average pathway scores for six conditions/procedures in 1999 and 2001.



Note: Due to changes in methodologies, the average pathway scores for 1999 are slightly different than the average pathway scores reported in *Hospital Report '99*.

Sources: Hospital Report System Integration and Change Survey, 2001
Hospital Report System Integration and Change Survey, 1999

Coordinating Patient Care

During their stay in hospital, patients may encounter many different physicians and hospital employees. Efforts by hospitals to plan care and improve communication among caregivers may contribute to greater patient satisfaction. The Coordination of Care indicator reflects the extent to which hospitals are successful, in the eyes of patients, in ensuring that information is transferred among caregivers and that care is provided in a timely manner.

About 68% of Ontario patients rated the coordination of their care as excellent on the 2000 patient satisfaction survey, compared to 67% in 1999. Who was most satisfied? Men tended to give higher ratings than women (71% vs. 66% gave excellent ratings, respectively). So did seniors. Regardless of

What makes up the Coordination of Care Indicator?

The Coordination of Care indicator is based on answers to four questions in the SHoPSS:

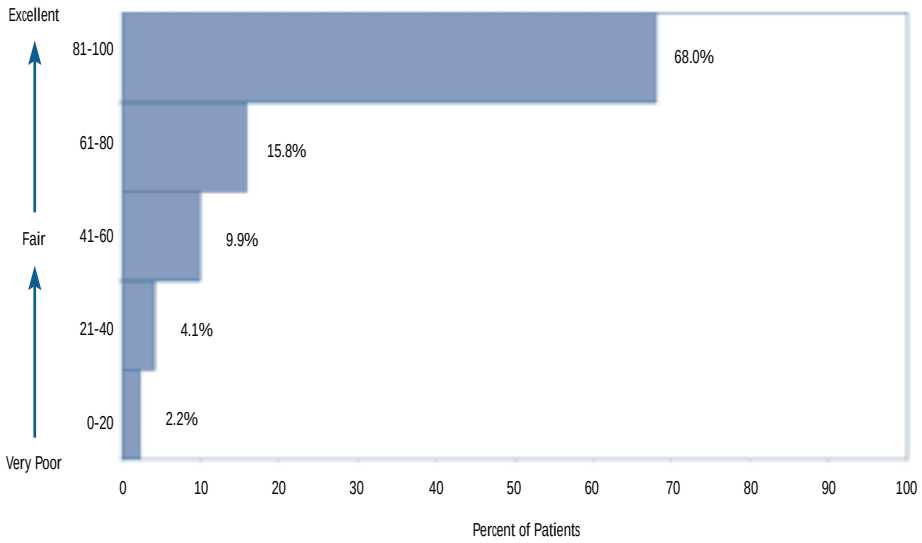
1. What is your overall opinion of the coordination of your care?
2. Did you feel there was adequate communication among all your caregivers concerning your care?
3. If you stayed on more than one nursing unit, was the transfer between units handled well?
4. Were things done in the hospital within a reasonable amount of time?

gender, 75% of patients aged 65 to 84 and 71% of patients 85 and over gave excellent ratings. This compared with less than 64% of patients under age 65. Future research may begin to explain these differences.

At the hospital-level, most facilities fell in the "provincial average" performance category for their coordination of care.

FIGURE 5.7: PATIENTS' PERCEPTIONS OF THEIR COORDINATION OF CARE

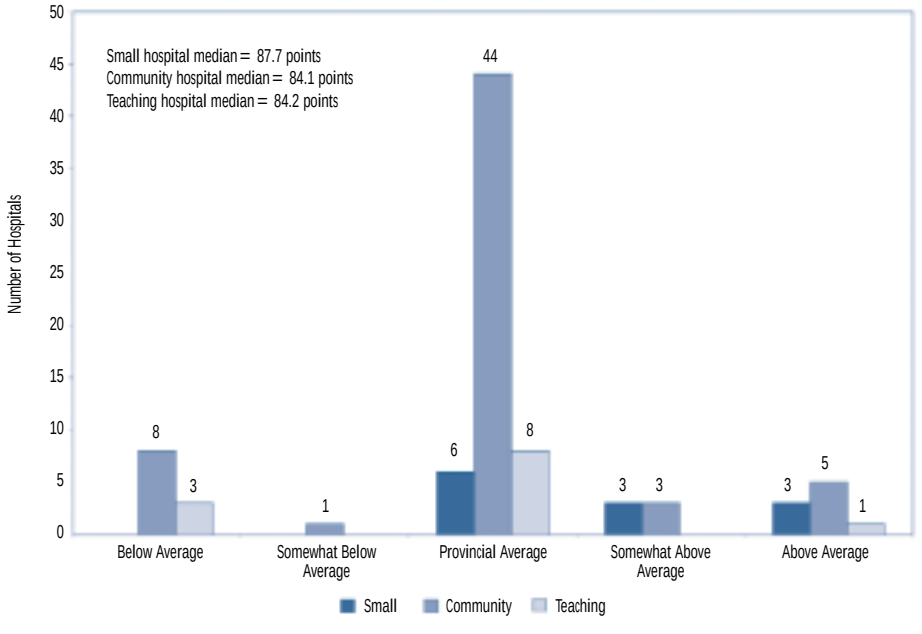
Patient satisfaction ratings on the Coordination of Care indicator from the 2000 patient satisfaction survey, shown by percent of patients falling into each of five-point ranges.



Source: Standardized Hospital Patient Satisfaction Survey, 2000

FIGURE 5.8: HOW ONTARIO HOSPITALS PERFORMED – COORDINATION OF CARE INDICATOR

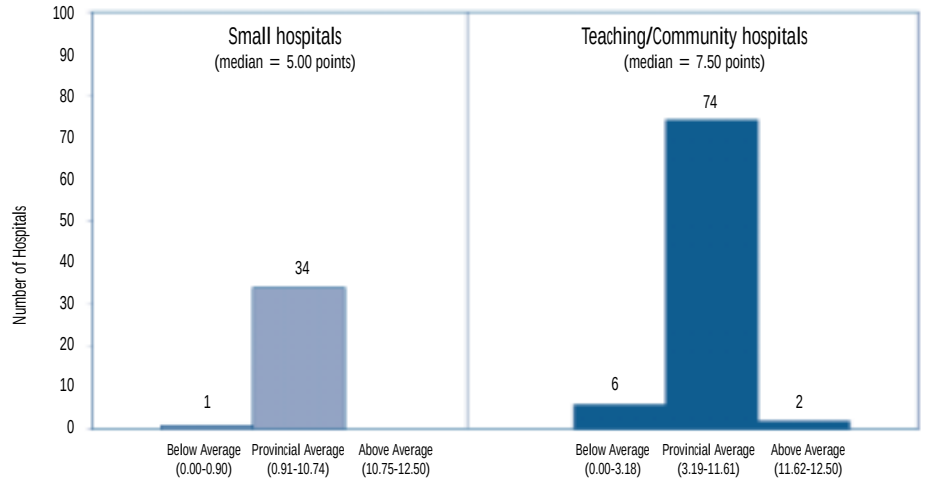
Performance distributions of small, community, and teaching hospitals across Ontario for the Coordination of Care indicator based on responses to the 2000 patient satisfaction survey, as shown by five performance levels: "below average", "somewhat below average", "provincial average", "somewhat above average", and "above average", as well as median point scores.



Source: Standardized Hospital Patient Satisfaction Survey, 2000

FIGURE 5.9: HOW ONTARIO HOSPITALS PERFORMED – HOSPITAL-CCAC RELATIONSHIPS INDICATOR

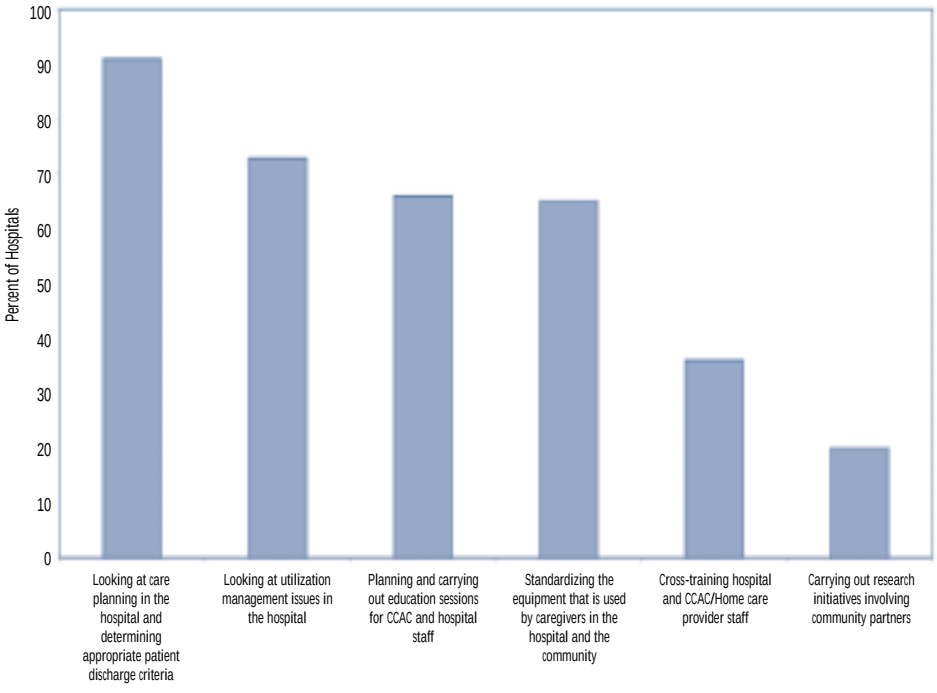
Performance distributions of small and teaching/community hospitals across Ontario for the Hospital-CCAC indicator. Hospitals are assigned to one of three categories: "below average", "provincial average", or "above average".



Source: Hospital Report System Integration and Change Survey, 2001

FIGURE 5.10: JOINT HOSPITAL-CCAC PRACTICES ACROSS ONTARIO

Hospitals are engaging in a variety of initiatives with CCACs. The following graph identifies how common different types of joint-initiatives between hospitals and CCACs are, as reported by hospitals on the 2001 survey.



Source: Hospital Report System Integration and Change Survey, 2001

Working with Community Care Access Centres

Many patients require help from home care programs after they are discharged. As lengths of stay decrease, a smooth transfer and a common approach between hospital and home care services may be particularly important. CCACs were established in 1996 to improve the assessment and placement of patients requiring home services. Strong interactive relationships between hospital managers, who are

Calculation of the Hospital-CCAC Indicator

To calculate the Hospital-CCAC indicator (maximum 12.5 points), hospitals were asked about a variety of practices they jointly undertake with CCACs, including:

- planning and carrying out education sessions for CCAC and hospital staff
- examining utilization management issues in the hospital
- standardizing equipment used by caregivers in the hospital and the community
- implementing pain symptom management initiatives for palliative and non-palliative care
- examining care planning in the hospital and determining appropriate patient discharge criteria

increasingly moving patients to community-based care, and CCAC managers are important to ensure that patients' needs are met along the care continuum.

Hospitals were also asked about the extent to which they have worked with CCAC staff to develop clinical pathways that span into the community and how often senior level people at the hospital and the CCAC meet to discuss issues of common concern.

Survey results suggest that hospital managers are working closely with CCAC personnel. In fact, 98% of hospitals reported having engaged in at least one initiative with a CCAC. Almost two-thirds (64%) are involved in five or more joint initiatives.

Regardless of their size, hospitals and CCACs most often work together on hospital care planning and appropriate patient discharge criteria. Although the vast majority of Ontario hospitals have adopted this practice, scores for this indicator suggest that there are still opportunities for most hospitals to improve ties with CCACs.

Partnering with the Community

Our health care system is large and complex. At different times, in different ways, all of us come into contact with parts of the system — in physicians' offices, pharmacies, community health centres, hospitals, home care, nursing homes, and other places. Ideally, these various providers and organizations work together to provide a continuum of high quality care.

In Ontario, a variety of networks, strategic alliances, partnerships, and other working relationships have emerged to improve links between acute care services and community and home-based care. The Hospital-Community Relationships indicator explores the extent to which hospitals are working with other agencies in their communities, either directly or indirectly.

Most hospitals reported that they are engaged in some type of partnership with community agencies. For example, 41% of Ontario hospitals indicate that they are working with home care agencies to assess patient needs in the community. Even more (73%) are doing so with community mental health agencies. Teaching and community hospitals are most likely to report having formed these types of

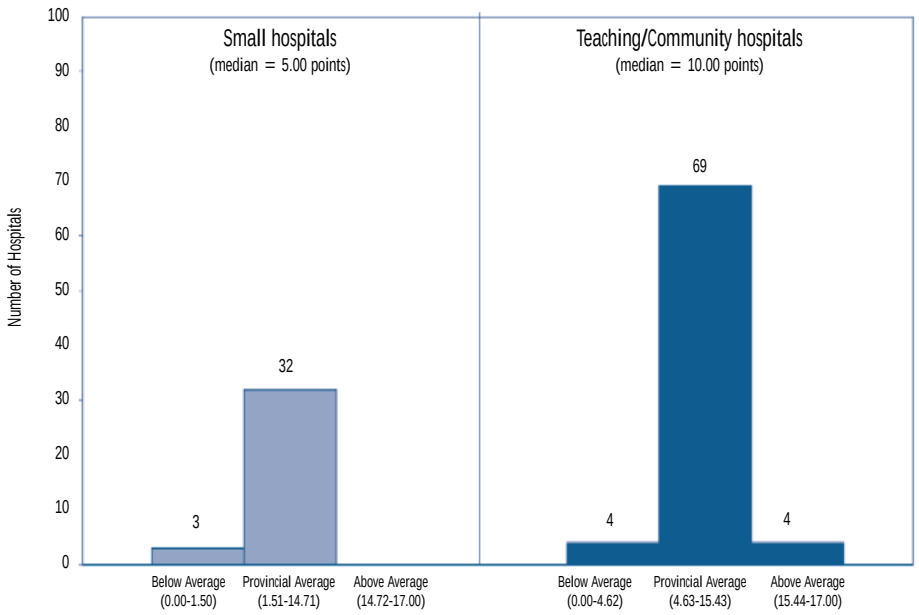
Calculation of the Hospital-Community Relationships Indicator

The Hospital-Community indicator (maximum 17 points) is based on four questions from the System Integration and Change Survey. It measures:

- hospital activities to understand and improve the health care needs of their community, either directly or through collaboration with public health agencies
- hospital partnerships with other community agencies (home care, mental health, and support service agencies) that engage in assessing patient needs, research initiatives, and patient and/or family education
- the presence of dedicated hospital staff who promote hospital-community integration

FIGURE 5.11: HOW ONTARIO HOSPITALS PERFORMED – HOSPITAL-COMMUNITY RELATIONSHIPS INDICATOR

Performance distributions of small and teaching/community hospitals across Ontario for the Hospital-Community Relationships indicator. Hospitals are assigned to one of three performance categories.



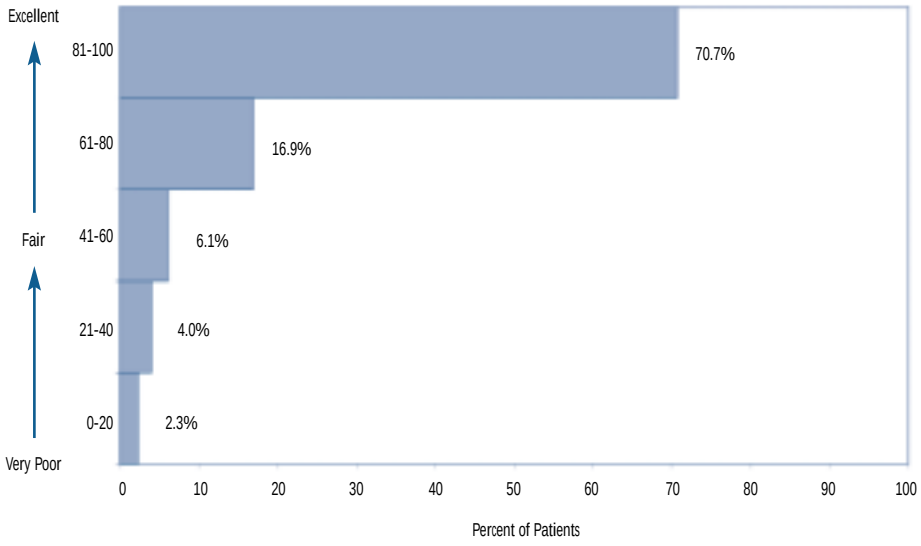
Note: Data for teaching/community hospitals not participating in the hospital-specific report are suppressed for confidentiality reasons.

Source: Hospital Report System Integration and Change Survey, 2001

relationships. This may be due, in part, to differences in the way that services are organized in urban and rural settings. For example, in small communities, the same people who work in the hospitals may also work directly in the community. As a result, formal partnerships between agencies may not be as important or as necessary. In contrast, hospitals in larger metropolitan centres may specifically hire staff to interact with community-based agencies.

FIGURE 5.12: PATIENTS' PERCEPTIONS OF THEIR CONTINUITY OF CARE

Patient satisfaction ratings on the Continuity of Care indicator from the 2000 SHoPSS, shown by percent of patients falling into each of five-point ranges.



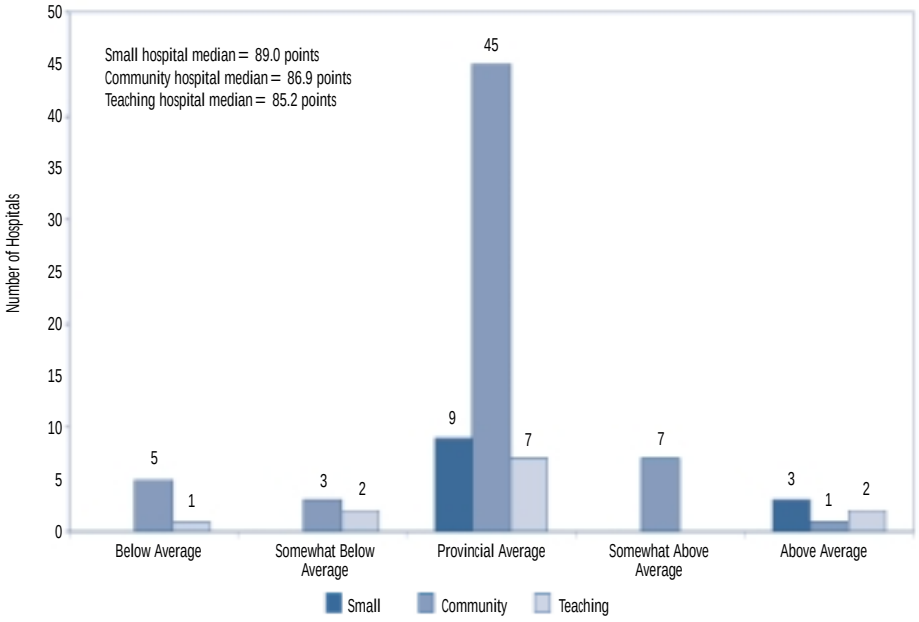
Source: Standardized Hospital Patient Satisfaction Survey, 2000

Patient Perceptions of Continuity of Care

Patients' needs for care often do not end when they are discharged from hospital. With shorter hospital stays, communication between hospitals and community agencies can be particularly important to ensure smooth transitions for patients. The Continuity of Care indicator measures how patients feel about their preparation for discharge, follow-up care, and the transition back home after a stay in hospital.

FIGURE 5.13: HOW ONTARIO HOSPITALS PERFORMED – CONTINUITY OF CARE INDICATOR

Performance distributions of small, community, and teaching hospitals across Ontario for the Continuity of Care indicator based on responses to the 2000 patient satisfaction survey, as shown by five performance levels: "below average", "somewhat below average", "provincial average", "somewhat above average", and "above average".



Source: Standardized Hospital Patient Satisfaction Survey, 2000

What makes up the Continuity of Care Indicator?

The Continuity of Care indicator, derived from the SHoPSS, is based on patients' answers to four questions:

1. Before you were discharged, did the hospital staff prepare you or your caregiver to manage your care at home?
2. Was your discharge from the hospital handled smoothly?
3. If follow-up care was needed at the hospital, was it provided?
4. Were you sent home from the hospital before you felt ready?

Overall, most patients who responded to the 2000 survey said that they were satisfied with the continuity of their care. Over 70% of patients gave a rating of excellent. This is similar to *Hospital Report '99*, when 69% of patients gave the same rating. More specifically, 84% of patients in 2000 felt their discharge from hospital had been handled smoothly, 78% stated that they were ready to go home when they were discharged, and 72% said that they or their caregivers were prepared by hospital staff to manage care at home. Among patients that required follow-up care at the hospital, 87% reported receiving the necessary care.

Alternatives to Acute Care

Patients' care needs change through the course of their illness. The appropriate settings for receiving the care that they need may also change. For instance, certain services are only provided in acute care hospitals, yet other services are also available in other settings. In 1999/2000, Ontario hospitals reported that patients awaiting an alternate level of care used eight percent of all inpatient days. These patients' doctors indicated that they still needed some type of care, but not necessarily in an acute care hospital. For example, they might have needed home care or could have been cared for in a complex continuing care facility, nursing home, or rehabilitation centre, but these beds were not immediately available.

The Strategies for Managing Alternate Level of Care (ALC) Patients indicator measures the extent to which hospitals have implemented strategies to reduce the number of acute care patients awaiting these types of alternate services.

Hospitals in Ontario reported engaging in a wide range of strategies designed to help reduce the number of ALC days. The most common strategies are:

- Developing closer working relationships with community agencies, including CCACs, long-term care facilities, nursing homes, and in-home service providers
- Having a policy where patients must choose multiple long-term care facilities and go to the first available facility from that list
- Increased family education and involvement in care planning and placement decisions
- Conducting a daily utilization review to determine appropriateness of admission and readiness for discharge
- Increased physician education and involvement in care planning

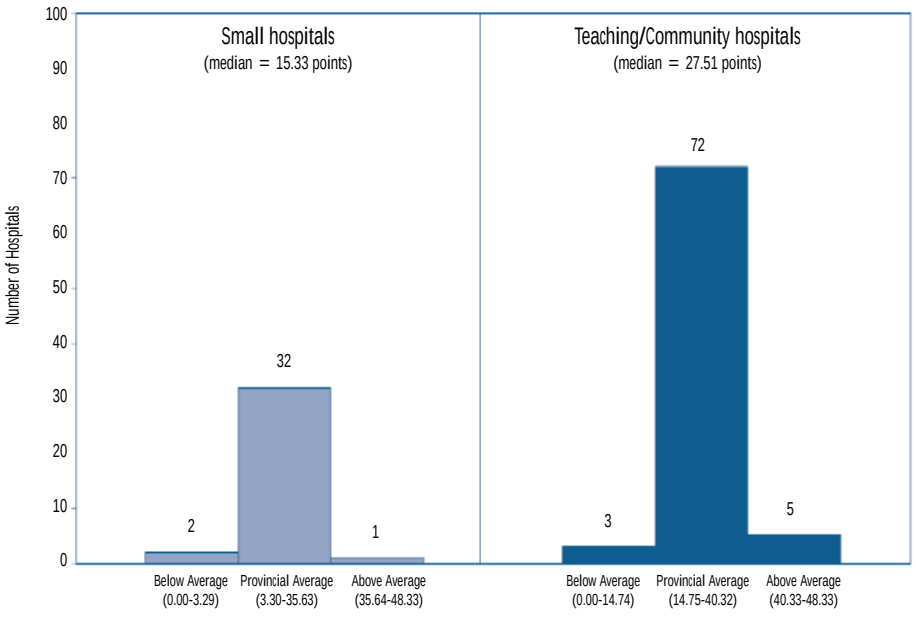
Calculation of the ALC Indicator

This indicator (maximum possible score of 48.33 points) was derived from hospital responses to questions about their strategies to decrease the number of ALC days. Hospitals received one to three points for each strategy that a hospital had implemented (the point values were assigned based on the average of expert group rankings). Examples include:

- Focusing on deferring admissions from the emergency room (e.g. quick response team, increased social work)
- Providing appropriate reactivation services
- Creation of specialized units for ALC patients
- The development of partnerships with community agencies and retirement homes

FIGURE 5.14: HOW ONTARIO HOSPITALS PERFORMED – STRATEGIES FOR MANAGING ALC PATIENTS INDICATOR

Performance distributions of small and teaching/community hospitals for the Strategies for Managing ALC Patients indicator. Hospitals are assigned to one of three categories: "below average", "provincial average", or "above average".



Source: Hospital Report System Integration and Change Survey, 2001

Calculation of the Health Human Resources Indicator

The Health Human Resource indicator (maximum possible score of 6.75 points) is based on the extent to which hospitals:

- Provide on-the-job training for staff on topics such as utilization management; group decision-making or problem solving; education for physicians about services available in the community; and data management and interpretation
- Have the following practices in place, on a formal basis, for non-managerial employees:
  - Flexible job design
  - Problem-solving teams
  - Joint labour-management committees
  - Self-directed work groups
- Have a nurse practitioner as a defined/piloted or permanent role in the hospital

In general, small hospitals appear to engage in fewer strategies than teaching/community hospitals to manage ALC days. However, there is a range of activity among small hospitals – the highest scores are above 30 points while the lowest scores are below four. In contrast, indicator values for teaching/community hospitals range from 13.67 to 41.33 points.

Health Human Resource Practices

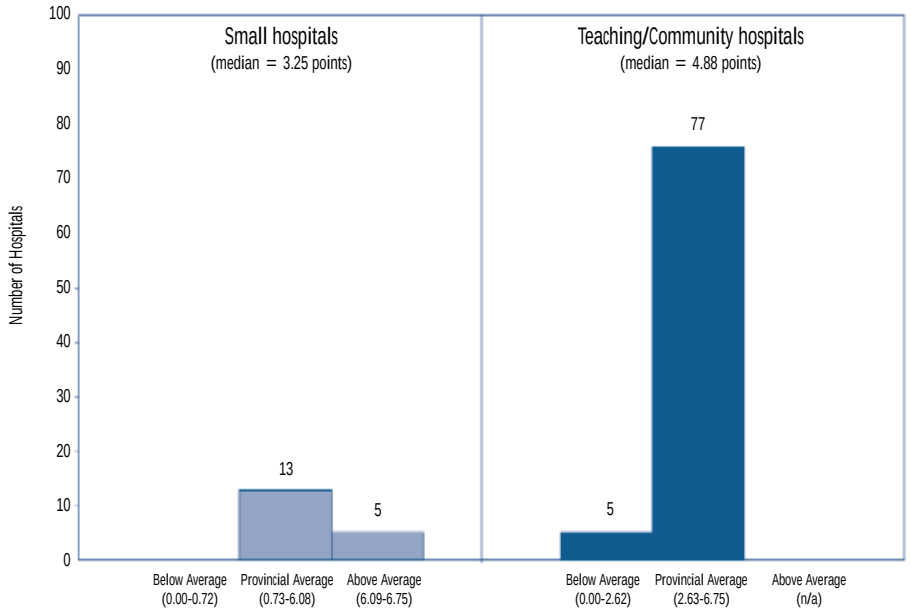
Hospital staff are the backbone of the hospital system. Recruiting, developing, and retaining top employees is key to a hospital's ability to deliver quality services while addressing the challenges of the future. As a result, many hospitals are offering training programs for staff and implementing innovative human resource practices and related strategies. The Health Human Resources indicator is designed to reflect the extent to which a hospital has introduced these types of practices.

According to Survey results, every hospital in Ontario provides some form of on-the-job training for staff. The most common on-the-job training areas used to calculate the indicator were:

- Occupational health and safety and environmental protection
- Managerial/supervisory skills
- Team-building, leadership, and communication
- Quality improvement tools
- Education for hospital staff other than physicians on services available in the community

FIGURE 5.15: HOW ONTARIO HOSPITALS PERFORMED – HEALTH HUMAN RESOURCES INDICATOR

Performance distributions of small and teaching/community hospitals across Ontario for the Health Human Resources indicator using three performance levels.



Note: Data for small hospitals not participating in the hospital-specific report are suppressed for confidentiality reasons.

Source: Hospital Report System Integration and Change Survey, 2001

In general, teaching and community hospitals reported offering more on-the-job training opportunities than small hospitals.

Many hospitals have also implemented other formal human resources practices. For example, 97% have joint labour-management committees, and 79% have problem-solving teams. Fewer hospitals report having flexible job design (45%) and self-directed work groups (40%).

Next Steps

The System Integration and Change quadrant provides a snapshot of the types of initiatives that hospitals across the province are engaged in to improve linkages with community agencies and other providers of care, to invest in better information both within and outside the hospital for decision-making, and to develop the skills of health professionals and other staff. But no limited set of indicators could possibly capture all of the "system integration and change" activities in which hospitals are engaged. Those selected for reporting here were chosen to be representative and to reflect the latest research. Nevertheless, measures of change today may not be appropriate tomorrow. As a result, there will be a need to continue to explore options for updating these measures in future reports.

A hospital's System Integration and Change performance also needs to be understood in the context of the resources available to it and its community partners. For *Hospital Report 2001: Acute Care*, hospitals were asked to complete a preliminary survey of their diagnostic and treatment programs/services (called a "Resource Inventory"). In the future, the Resource Inventory may become an important tool to provide a context for individual hospital performance, helping to explain differences across Ontario hospitals.

Women's Health

Women's Health

Canadians want to know that they will receive appropriate, timely, and high quality services when they need care. But there are differences in how our health care system, including hospitals, responds to the needs of specific populations. For example, women and men often appear to seek, receive, and benefit from health care differently.[1]

This chapter of *Hospital Report 2001: Acute Care* reports on how women's and men's access to hospital care and outcomes of care vary across the province. It also explores variations in the appropriateness of women's health care.

Developing the Women's Health Measures

Selecting Patient Groups and Indicators

This chapter presents the first results of the *Hospital Report Series'* women's health research program. The research began with a review of studies on performance measurement, quality improvement research, and clinical practice guidelines. Researchers focused on studies that were relevant to women's health issues, that were applicable to the practice of medicine in Canada, and that clearly described the research methods used.

A panel of clinicians with expertise in women's health then helped the researchers to select a few measures to be used in this report. Each measure had to:

- Reflect an important aspect of hospital system performance, such as health outcomes, satisfaction, or access
- Be relevant and useful to quality improvement and education efforts within hospitals
- Be feasible, that is, recorded reliably in available data sources

Most often, the panel excluded measures because hospitals do not collect the necessary data. In other cases, data are available, but the indicators better reflect the performance of care providers other than hospitals. The panel also excluded these measures.

The Data Sources

Parts of this chapter compare the hospital experiences of men and women using some of the indicators from the Clinical Utilization and Outcomes quadrant of *Hospital Report 2001: Acute Care*. These measures use data from the Discharge Abstract Database maintained by the Canadian Institute for Health Information (CIHI). The data cover Ontario residents who were discharged from or died in acute care hospitals in the province between April 1, 1999 and March 31, 2000. The caesarean section and hysterectomy indicators also come from this source.

Other indicators measure the availability of care. These indicators are based on the results of a survey. It was completed by about 82% of acute care hospitals/corporations/partnerships in the spring of 2001.

Dividing Ontario Into Five Regions…

In the rest of *Hospital Report 2001: Acute Care*, results are presented for Ontario as a whole and for individual hospitals. In contrast, the indicators in this chapter are shown for each region of the province. Why the difference? This process allows researchers and hospitals to test new indicators and suggest improvements before hospital-specific results are calculated. It is also consistent with the approach to research in this area. A number of the current and proposed measures for women's health describe access to, and use of, care. But women may receive care at a number of different hospitals both within and outside the community where they live. Any indicators must take this into account. Future women's health reports may include measures at both the community and institution level.

The five hospital regions used in this chapter are:

- Region 1 (North) includes Sudbury, Thunder Bay, and communities from Kenora and Rainy River through to Parry Sound.
- Region 2 (East) includes Ottawa, Peterborough, and communities from Stormont through to Haliburton.
- Region 3 (Metro Toronto) includes Toronto, Mississauga, and communities in Durham, Peel, and York.
- Region 4 (Central West) includes Hamilton, Kitchener-Waterloo, and communities from Simcoe through to Niagara.
- Region 5 (West) includes London, Windsor, and communities from Grey and Bruce through to Kent.

The Methods

A detailed description of the methods used for the Women's Health indicators presented here, as well as others, will be released in December 2001. Some important features include:

- As in the Clinical Utilization and Outcomes quadrant, many indicators are based on an 'episode of care'. Episodes group together continuous admissions to different hospitals.
- Indicator results are attributed to the regions where patients lived, not where they were hospitalized.
- The population described by each measure differs. For example, some apply only to women giving birth in a particular year. Others are based on broader groups.

Interpreting the Results

This chapter reports quantitative results for Women's Health. However, a number of factors should be considered in interpreting these results, including:

- Use of services and outcomes of care vary from region to region. There are many possible reasons for these variations. Examples include differences in the ages of women and men across regions, their health status, and other factors. To make comparisons as fair as possible, rates are age-standardized. This takes into account the impact of different age structures from region to region. Nevertheless, as with any form of risk-adjustment, this only reduces the effect of differences across regions. It does not eliminate all differences. Further risk-adjustment will be necessary before hospital-specific results are reported.

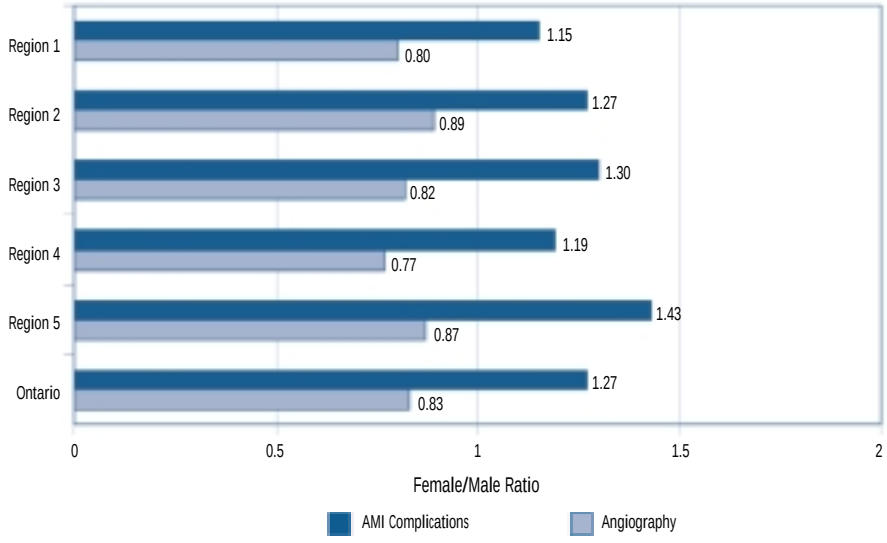
- As for all of the results in this report, the Women's Health measures are "screening tests". This means that variations across regions should be interpreted with caution. Factors that we were not able to control for – such as differences in health status or in the quality of hospital data – may contribute to the variations observed. As noted in the Clinical Utilization and Outcomes quadrant, these measures are a first step in a quality assessment and improvement process that should involve more detailed analysis.
- Not all of the factors that affect the Women's Health indicators are within a hospital's control. Actions of community-based providers, governments, and others account for some of the results.
- Some of the indicators in this chapter are based on self-report data from a survey to which 82% of Ontario's acute care hospitals responded. As a result of the incomplete coverage, they may under or over-estimate the availability of health care resources. In addition, the survey may not provide a comprehensive picture of resource availability. For example, women may also access services like mammography through other channels, such as the Ontario Breast Screening Program.

Women's Health Indicator Results

Hospital Report 2001: Acute Care is organized around a set of indicators, placed within the balanced scorecard framework. This chapter offers the first results from a new research program that will provide a women's health perspective on the province's hospital system. For example, it highlights how men and women compare on some of the standard indicators currently used in the Clinical Utilization and Outcomes quadrant. In addition, it includes other indicators that reflect care processes and resources that are only relevant to women.

FIGURE 6.1: ANGIOGRAPHY USE AND AMI COMPLICATIONS BY SEX

Men and women with heart attacks tend to be treated differently. The graph below illustrates gender differences in access to angiographies and the differences in AMI complications across the province and for each of the regions of the province. Ratios of less than one mean that women's rates are lower than men's rates.



Source: Discharge Abstract Database, 1999/2000

How Care for Women and Men with Heart Attacks Compares

Acute myocardial infarctions (AMI), or heart attacks, are one of the most common causes of hospitalization for both sexes. However, the use of high-technology services and the outcomes of care differ for men and women.

To demonstrate this, researchers compared technology use and outcome rates for women to the rates for men. Generally, ratios closer to one (1.00) indicate similar rates for male and female patients and greater equity. Ratios of less than one mean that women's rates were lower than men's rates.

Technology use was measured by angiography rates. Angiography is a technique to observe the flow of blood through the heart. Outcomes were evaluated through rates of in-hospital complications. Sex-specific rates are calculated in the same way as those presented for both sexes in the Clinical Utilization and Outcomes quadrant.

Across the province, men were more likely than women to receive angiography in the same episode of care following a heart attack (20% of women vs. 24% of men). The ratio for Ontario was 0.83. There was relatively little variation across regions of the province. For complications, women had higher rates than men did. The ratio across the province was 1.26. There was more variation across regions for this indicator than for the angiography use ratios.

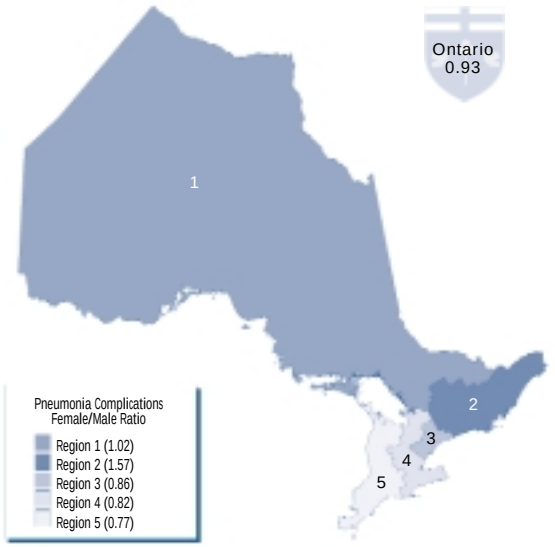
How Care for Women and Men Compares

Complications, length of stay, readmissions, and access to technology are important indicators of hospital care for both women and men. The chart below shows the ratio between Ontario-wide indicator results for women and men for selected additional indicators from the Clinical Utilization and Outcomes quadrant. A ratio close to one (1.00) indicates that both sexes have about the same rates. For indicators where women have higher rates than men, the ratio is greater than one. The ratio is less than one when female patients have lower rates than male patients do. For example, ratios for complication rates following pneumonia varied across the province. In some regions, women experience relatively more complications than men. In others, men had relatively higher rates than women. In contrast, women across the province who received cholecystectomies were consistently more likely to be treated in day-surgery programs. And women's length of stay for stroke was higher than men's in all regions of the province.

Indicator	Ratio
In-hospital complications for patients with pneumonia	0.93
Use of day-surgery (typically less invasive) for cholecystectomy, an operation to remove the gall bladder	1.29
Average length of stay for patients with strokes	1.06

FIGURE 6.2: PNEUMONIA COMPLICATIONS BY SEX

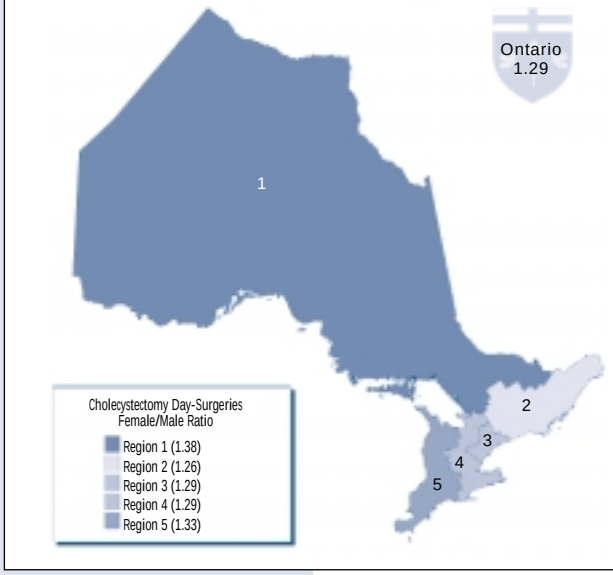
The ratio of pneumonia complication rates in women compared to men, shown for the province as a whole and for each of the five regions of the province. Ratios higher than one indicate that women have higher rates of pneumonia complications.



Source: Discharge Abstract Database, 1999/2000

FIGURE 6.3: CHOLECYSTECTOMY DAY-SURGERIES BY SEX

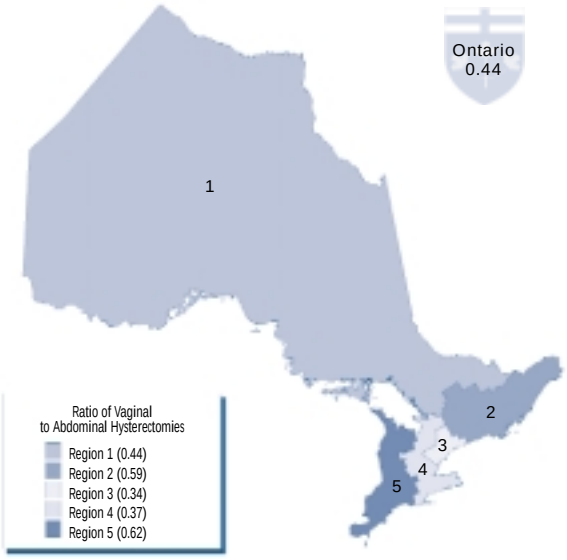
The ratio of cholecystectomies performed as day-surgeries for female versus male patients for the province as a whole and for each of the five regions. Ratios greater than one indicate that women have higher rates of day-surgery than men.



Source: Discharge Abstract Database, 1999/2000

FIGURE 6.4: RATIO OF VAGINAL TO ABDOMINAL HYSTERECTOMIES

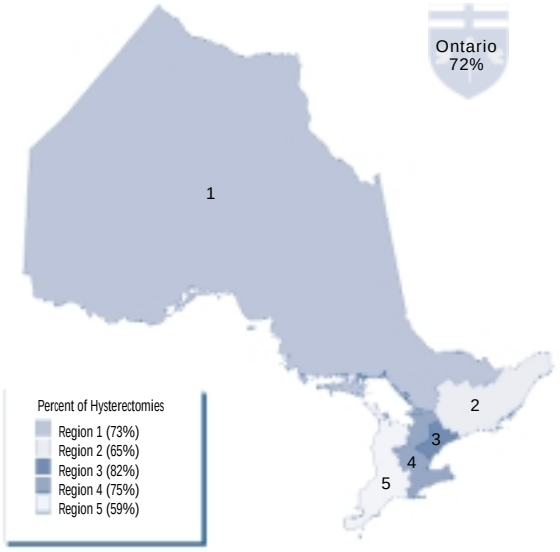
Across Ontario, more women are having abdominal than vaginal hysterectomies. A ratio less than one means that women have fewer vaginal hysterectomies.



Source: Discharge Abstract Database, 1999/2000

FIGURE 6.5: HYSTERECTOMIES IN WOMEN LESS THAN 40 YEARS OLD

Percentage of all hysterectomies for women less than 40 years old that are total or include oopherectomy, shown for the province as a whole and for each of the regions of the province.



Source: Discharge Abstract Database, 1999/2000

How Hysterectomies are Performed

Every year, hundreds of women across Ontario have hysterectomies. This surgery removes their uterus, either through the vagina or through an incision in the abdomen. Research suggests that women who have vaginal hysterectomies tend to have fewer complications after their surgery. They also usually recover faster.

This indicator reflects the frequency of the two types of surgery. A ratio of one (1.00) indicates that equal numbers of women receive each type of operation. A ratio less than one (1.00) means that fewer women have vaginal hysterectomies. Generally, higher ratios are considered to be better. For comparability, women who were diagnosed with cancer, HIV/AIDS or violent trauma are excluded from the ratios.

Across Ontario, vaginal hysterectomies were roughly half as common as abdominal hysterectomies. The provincial average ratio was 0.44.

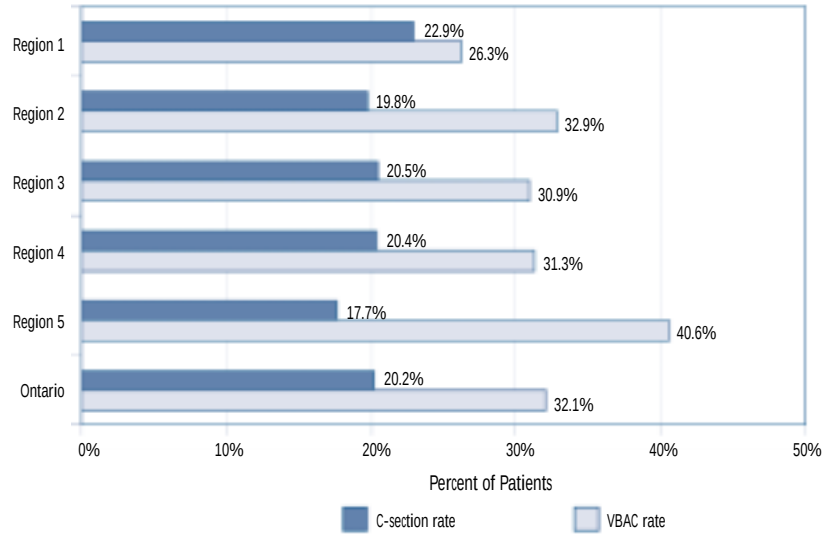
Giving Birth

On average, over 350 babies are born in Ontario hospitals every day. Experts have weighed the evidence and developed a series of guidelines for appropriate care before, during, and after birth.[2] They note that, while caesarean sections (c-sections) are essential in some cases, most women can safely deliver vaginally. In fact, c-sections are often associated with increased health risks for mothers and babies. They are also more costly than normal vaginal deliveries. In many cases, vaginal birth is even possible for many women who have had a previous c-section.

Across Ontario, 20.2% of mothers had c-sections in 1999/2000. Of women who previously had a c-section for an earlier child, 32.1% delivered vaginally. This is the vaginal birth after caesarean or VBAC rate. The other 67.9% had a repeat c-section. C-section rates for mothers who had never previously had a c-section (including first-time mothers) were much lower at 14.8%.

FIGURE 6.6: HOW BABIES ARE BORN

Percentage of caesarean sections and vaginal births after caesarean sections across Ontario and for each of the five regions of the province.



Source: Discharge Abstract Database, 1999/2000

What Resources are Available for Women's Health

Acute care hospitals across the province were asked to complete a survey regarding the availability of resources relevant to women's health. Eighty-two percent of hospitals responded. Findings include:

- Almost two-thirds of responding hospitals (65%) offered one-to-one support between nurses and mothers during childbirth. The Ontario Women's Health Council has identified one-to-one support as an important factor in reducing c-section rates.
- The Canadian Association of Radiologists has developed national standards for radiology equipment. Across Ontario, 65% of mammography machines in reporting hospitals were accredited by the Association.
- About 13% of responding hospitals reported providing childcare facilities for patients. Because women continue to provide the majority of childcare in Ontario, having these facilities may improve women's ability to access services in a timely manner.

Conclusions and Future Directions

This chapter provides important evidence about women's health services in Ontario hospitals. First, there is some evidence of differences in the way that women and men use the system or are able to benefit from accessing it. For example, in 1999/2000, women were more likely to experience complications following hospitalization with a heart attack. Futher, female patients who had their gallbladders removed were substantially more likely to be treated in day-surgery programs than male patients. In contrast, there were smaller differences between men and women for some other indicators, such as average lengths of stay for stroke patients.

Second, there are large variations from region to region for several indicators. For example, among women who received hysterectomies, vaginal surgery was almost twice as common in western Ontario as in Metro Toronto. However, hysterectomy rates were approximately 50% higher. We need to better understand the reasons for these and other regional differences. Further research might explore variations in risk factors across regions, the reliability of the underlying data, and other possible explanations for the results.

In some cases, the data in this chapter may also be used by hospitals – both individually and as a group – to identify potential opportunities for improvement strategies. For example, researchers have noted regional differences across Ontario in the rate of c-sections for many years. The Ontario Women's Health Council recently released a report on attainable best practices around c-section rates that may help hospitals to reduce their own rates of c-sections and the regional variations.[3]

What else is coming? This report is the first in a series that will provide a women's health perspective on the evaluation of hospital performance. Some sex-specific measures and province-wide analysis will also be included in upcoming reports on emergency departments and complex continuing care hospitals. They are scheduled for release in November 2001. A more comprehensive report of the methodology and findings of the research on women's health will be available in December 2001. Together, these reports will provide a foundation for describing women's health care performance. They also provide a starting point for examining the way that the hospital system responds to specific populations.

This research is only one part of current work on the quality and appropriateness of women's health care in Ontario. Work is underway across the province to describe and explain differences in the way women and men experience the health care system.

For more information

[1] Statistics Canada (2001) How Healthy are Canadians? 2001 Annual Report. *Health Reports* 12(3). Ottawa: Statistics Canada.
[2] Society of Obstetricians and Gynecologists of Canada (SOGC). (1997). *Vaginal Birth After Previous Caesarean Birth*. Canada: SOGC.
[3] Caesarean Section Working Group. (June 2000). *Attaining and Maintaining Best Practices in the Use of Caesarean Sections.* Toronto: Ontario Women's Health Council.

Appendix A: Ontario Hospitals included in *Hospital Report 2001: Acute Care*

Hospital Organization/Corporation Name	Sites Included	Participation Level	Peer Group	Region
Alexandra Hospital		Hospital Specific	Small	5
Almonte General Hospital		Hospital Specific	Small	2
Arnprior & District Memorial Hospital		Hospital Specific	Small	2
Atikokan General Hospital		Hospital Specific	Small	1
Brant Community Healthcare System		Hospital Specific	Community	4
	Willett Hospital			
	Brantford General Hospital			
Brockville General Hospital		Hospital Specific	Community	2
Cambridge Memorial Hospital		Hospital Specific	Community	4
Campbellford Memorial Hospital		Hospital Specific	Small	2
Carleton Place & District Memorial Hospital		Hospital Specific	Small	2
Chatham-Kent Health Alliance		Hospital Specific	Community	5
	Public General Hospital			
	St. Joseph's Hospital			
	Sydenham District Hospital			
Children's Hospital of Eastern Ontario		Hospital Specific	Teaching	2
Collingwood General & Marine Hospital		Hospital Specific	Community	4
Cornwall General Hospital		Hospital Specific	Community	2
Credit Valley Hospital		Hospital Specific	Community	3
Deep River & District Hospital		System Wide Only	Small	2
Dryden Regional Health Centre		Hospital Specific	Small	1
Dufferin-Caledon Health Care Corporation		Hospital Specific	Community	4
	Headwaters Health Care Centre			
Englehart & District Hospital		System Wide Only	Small	1
Espanola General Hospital		System Wide Only	Small	1
Four Counties Health Services		Hospital Specific	Small	5
Geraldton District Hospital		System Wide Only	Small	1
Glengarry Memorial Hospital		Hospital Specific	Small	2
Grand River Hospital		Hospital Specific	Community	4
	Kitchener-Waterloo Health Centre			
Grey Bruce Health Services		Hospital Specific	Community	5
	Markdale Site			
	Meaford Site			
	Owen Sound Site			
	Southampton Site			
	Bruce Peninsula Sites			
Groves Memorial Community Hospital		System Wide Only	Community	4
Guelph General Hospital		Hospital Specific	Community	4
Haldimand War Memorial Hospital		Hospital Specific	Small	4
Haliburton Highlands Health Services Corporation		System Wide Only	Small	2
	Haliburton Hospital Site			
	Minden Hospital Site			
Halton Healthcare Services		Hospital Specific	Community	4
	Milton District Hospital			
	Oakville Trafalgar Memorial Hospital			
Hamilton Health Sciences Corporation		Hospital Specific	Teaching	4
	Hamilton General Site			
	Henderson General Site			
	McMaster Site			
Hanover & District Hospital		Hospital Specific	Small	5
Hawkesbury & District General Hospital		Hospital Specific	Community	2
Hôpital Montfort		Hospital Specific	Community	2
Hornepayne Community Hospital		System Wide Only	Small	1
Hospital for Sick Children		Hospital Specific	Teaching	3

Hospital Organization/Corporation Name	Sites Included	Participation Level	Peer Group	Region
Hotel Dieu Health Science Hospital (Niagara)		Hospital Specific	Community	4
Hotel-Dieu Grace Hospital (Windsor)		Hospital Specific	Community	5
	Windsor Salvation Army Grace			
	Windsor Hotel Dieu			
Hotel Dieu Hospital, Kingston		System Wide Only	Teaching	2
Humber River Regional Hospital		Hospital Specific	Community	3
	Humber Memorial (Church St. Site)			
	York Finch General Hospital (Finch Site)			
	Northwestern (Keele St. Site)			
Huntsville District Memorial Hospital		Hospital Specific	Community	1
Huron Perth Hospitals Partnership		Hospital Specific	Community	5
	Alexandra Marine & General Hospital			
	Clinton Public Hospital			
	Listowel Memorial Hospital			
	Seaforth Community Hospital			
	South Huron Hospital			
	St. Marys Memorial Hospital			
	Stratford General Hospital			
	Wingham & District Hospital			
Joseph Brant Memorial Hospital		Hospital Specific	Community	4
Kemptville District Hospital		Hospital Specific	Small	2
Kingston General Hospital		Hospital Specific	Teaching	2
Kirkland & District Hospital		Hospital Specific	Community	1
Lake of the Woods District Hospital		Hospital Specific	Community	1
Lakeridge Health Corporation		Hospital Specific	Community	3
	Lakeridge Health Bowmanville			
	Lakeridge Health Oshawa			
	Lakeridge Health Port Perry			
	Lakeridge Health Uxbridge			
	Lakeridge Health Whitby			
Lambton Hospitals Group		Hospital Specific	Community	5
	Charlotte Eleanor Englehart Hospital			
	St. Joseph's Health Centre of Sarnia			
	Sarnia General Hospital			
Leamington District Memorial Hospital		Hospital Specific	Community	5
Lennox and Addington County General Hospital		System Wide Only	Small	2
London Health Sciences Centre		Hospital Specific	Teaching	5
	University Hospital Campus			
	Victoria Hospital Campus			
	London Health Sciences Children's Campus			
Manitoulin Health Centre		Hospital Specific	Small	1
	Little Current			
	Mindemoya			
Manitouwadge General Hospital		System Wide Only	Small	1
Markham Stouffville Hospital		Hospital Specific	Community	3
Mattawa General Hospital		System Wide Only	Small	1
McCausland Hospital		System Wide Only	Small	1
MIC's Group of Health Services		Hospital Specific	Small	1
	The Lady Minto Hospital			
	Bingham Memorial Hospital			
	Anson General Hospital			
Mount Sinai Hospital		Hospital Specific	Teaching	3
Niagara Health System		Hospital Specific	Community	4
	Douglas Memorial Hospital Site			
	Greater Niagara General Site			
	Niagara-on-the-Lake Hospital Site			
	Port Colborne General Site			
	St. Catharines General Site			
	Welland Hospital Site			

Hospital Organization/Corporation Name	Sites Included	Participation Level	Peer Group	Region
Nipigon District Memorial Hospital		System Wide Only	Small	1
Norfolk General Hospital		Hospital Specific	Community	4
North Algoma Health Organization		System Wide Only	Small	1
North Bay General Hospital		Hospital Specific	Community	1
	North Bay General Hospital (McLaren Site)			
	North Bay General Hospital (Scollard Site)			
North Simcoe Hospital Alliance		Hospital Specific	Community	4
	Huronia District Hospital			
North York General Hospital		Hospital Specific	Community	3
	North York General Hospital Site			
	North York Branson Hospital Site			
Northumberland Health Care Corporation		Hospital Specific	Community	2
Notre Dame Hospital		System Wide Only	Small	1
Orillia Soldiers' Memorial Hospital		Hospital Specific	Community	4
Ottawa Hospital		Hospital Specific	Teaching	2
	Civic Campus			
	General Campus			
	Riverside Campus			
	University of Ottawa Heart Institute			
	*As of April 1, 2000 Ottawa Heart has been separate from Ottawa Hospital			
Louise Marshall/Palmerston & District Hospitals Alliance		Hospital Specific	Small	4
	Louise Marshall Hospital			
	Palmerston & District Hospital			
Pembroke General Hospital		Hospital Specific	Community	2
Perth & Smith Falls District Hospital		Hospital Specific	Community	2
	Great War Memorial Hospital of Perth			
	Smith Falls Community Hospital			
Peterborough Regional Health Centre		Hospital Specific	Community	2
	Peterborough Civic Hospital			
	St. Joseph's Health Centre of Peterborough			
Queensway-Carleton Hospital		Hospital Specific	Community	2
Quinte Healthcare Corporation		Hospital Specific	Community	2
	North Hastings Site			
	Belleville General Site			
	Prince Edward County Memorial Site			
	Trenton Memorial Site			
RHSJ Health Centre of Cornwall		System Wide Only	Community	2
Red Lake Margaret Cochenour Memorial Hospital		System Wide Only	Small	1
Renfrew Victoria Hospital		Hospital Specific	Community	2
Riverside Healthcare		System Wide Only	Community	1
Ross Memorial Hospital		Hospital Specific	Community	2
Rouge Valley Health System		Hospital Specific	Community	3
	Ajax and Pickering Health Centre			
	Centenary Health Centre			
Royal Victoria Hospital		Hospital Specific	Community	4
Sault Area Hospitals		Hospital Specific	Community	1
	Sault Ste. Marie General Hospital			
	Plummer Memorial Public Hospital			
Scarborough Hospital		Hospital Specific	Community	3
	Scarborough General Site			
	Scarborough Grace Site			
Sensenbrenner Hospital		System Wide Only	Small	1
Services de Sante de Chapleau		System Wide Only	Small	1
Sioux Lookout District Health Centre		System Wide Only	Small	1
Smooth Rock Falls Hospital		System Wide Only	Small	1
South Bruce Grey Health Centre		Hospital Specific	Community	5
	Chesley			
	Durham			
	Kincardine			
	Walkerton			

Hospital Organization/Corporation Name	Sites Included	Participation Level	Peer Group	Region
South Muskoka Memorial Hospital		Hospital Specific	Community	1
Southlake Regional Health Centre		Hospital Specific	Community	3
St. Francis Memorial Hospital		Hospital Specific	Small	2
St. Joseph's General Hospital Elliot Lake		Hospital Specific	Community	1
St. Joseph's Health Care London		Hospital Specific	Teaching	5
	St. Joseph's Hospital			
St. Joseph's Health Centre (Blind River)		System Wide Only	Small	1
St. Joseph's Health Centre (Toronto)		Hospital Specific	Community	3
St. Joseph's Healthcare Hamilton		Hospital Specific	Teaching	4
St. Mary's General Hospital (Kitchener)		Hospital Specific	Community	4
St. Michael's Hospital		Hospital Specific	Teaching	3
St. Thomas-Elgin General Hospital		Hospital Specific	Community	5
Stevenson Memorial Hospital		Hospital Specific	Small	4
Strathroy Middlesex General Hospital		Hospital Specific	Community	5
Sudbury Regional Hospital		Hospital Specific	Community	1
	Laurentian Hospital			
	Sudbury Memorial Hospital (Memorial Site)			
	St. Joseph's Health Centre Site			
Sunnybrook & Women's College Health Sciences Centre		Hospital Specific	Teaching	3
	Orthopaedic and Arthritic Institute			
	Women's College Ambulatory Care Centre			
	Sunnybrook Campus			
Temiskaming Hospital		Hospital Specific	Community	1
The West Nipissing General Hospital		System Wide Only	Small	1
Thunder Bay Regional Hospital		Hospital Specific	Community	1
	McKellar Site			
	Port Arthur Site			
Tillsonburg District Memorial Hospital		Hospital Specific	Community	5
Timmins & District Hospital		System Wide Only	Community	1
Toronto East General Hospital		Hospital Specific	Community	3
Trillium Health Centre		Hospital Specific	Community	3
	Mississauga Site			
	Queensway Site			
University Health Network		Hospital Specific	Teaching	3
	Princess Margaret Hospital			
	Toronto General Hospital Site			
	Toronto Western Hospital Site			
West Haldimand General Hospital		Hospital Specific	Small	4
West Lincoln Memorial Hospital		Hospital Specific	Community	4
West Parry Sound Health Centre		Hospital Specific	Community	1
	Parry Sound District General Hospital			
	St. Joseph's Hospital (Church St. Site)			
William Osler Health Centre		Hospital Specific	Community	3
	Etobicoke Hospital Campus			
	Georgetown Hospital Campus			
	Brampton Memorial Hospital Campus			
Wilson Memorial General Hospital		System Wide Only	Small	1
Winchester District Memorial Hospital		Hospital Specific	Community	2
Windsor Regional Hospital		Hospital Specific	Community	5
	Metropolitan Site			
	Western Site			
Woodstock General Hospital		Hospital Specific	Community	5
York Central Hospital		Hospital Specific	Community	3

Appendix B: Advisory Membership for *Hospital Report 2001: Acute Care*

Hospital Report 2001: Acute Care Advisory Committee

Bonnie Adamson	Huron Perth Hospitals Partnership
Frank Bagatto	Hotel Dieu Grace Hospital
Adalsteinn Brown	University of Toronto
Judy Brown	The Ottawa Hospital
Paula Blackstien-Hirsch	University of Toronto
Kathleen Clements	Metro District Health Council
Sandra Conley	Ontario Hospital Association
Bruce Cunningham	Manitoulin Health Centre
Joseph de Mora	Kingston General Hospital
Robert Devitt	Peterborough Regional Health Centre
Linda Gordon	Ministry of Health and Long-Term Care
Jane Hutchison	Canadian College Health Services Accreditation
Susan Jacobs	Ontario Hospital Association
Kim Jarvi	Registered Nurses Association of Ontario
Deborah Kaskavaltzis	Ministry of Health and Long-Term Care
Gordon Key	Huronia General Hospital
Vickie Kaminski	Sudbury Regional Hospital
Brian Lemon	Lakeridge Health Corporation
Paula McColgan	Ontario Hospital Association
Cliff Nordal	St. Joseph's Health Care, London
Lynn Raskin	Ontario Hospital Association
Mark Rochon	Toronto Rehabilitation Institute
Jennifer Shapiro	Canadian Institute for Health Information
Marian Walsh	The Riverdale Hospital
Georgina White	Ontario Association of CCAC
Robert Williams	Timmins and District Hospital
Jennifer Zelmer	Canadian Institute for Health Information

Hospital Report 2001: Acute Care Steering Committee

Colin Anderson	Ministry of Health and Long-Term Care
Paula Blackstien-Hirsch	University of Toronto
Adalsteinn Brown	University of Toronto
Sandra Conley	Ontario Hospital Association
Scott Dudgeon	Toronto District Health Council
Elma Heidemann	Canadian College Health Services Association
Phil Jackson	Ministry of Health and Long-Term Care
Brian Lemon	Lakeridge Health Coporation
Paula McColgan	Ontario Hospital Association
Mike McEwen	Ministry of Health and Long-Term Care
Dorothy Pringle	University of Toronto
Lynn Raskin	Ontario Hospital Association
Allison Stuart	Ministry of Health and Long-Term Care
Rosalind Smith	Ontario Hospital Association
Donna E. Stewart	University Health Network Women's Health Program
Ann Marie Strapp	Ministry of Health and Long-Term Care
Jennifer Zelmer	Canadian Institute for Health Information

Clinical Utilization and Outcomes Advisory Panel

Dimitri Anastakis	University Health Network
Brian Gamble	

Financial Performance and Condition Advisory Panel

Randy Belair	Lake of the Woods District Hospital
Don Benoit	Ministry of Health and Long-Term Care
Nan Brooks	Joint Policy and Planning Committee
Kenneth Deane	Hamilton Health Sciences Corporation
Linda Hunter	Ministry of Health and Long-Term Care
Bruce Laughton	Quinte Healthcare Corporation Belleville

John Lott	Kingston General Hospital
Mimi Lowi-Young	St. Johns Rehabilitation Hospital
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John McKinley	Ministry of Health and Long-Term Care
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John Oliver	Halton Health Care Services
George Pink	University of Toronto
Lou Reidel	Ontario Hospital Association
Rosalind Smith	Ontario Hospital Association
John Sutherland	Huron Perth Hospitals Partnership
Adam Topp	Sunnybrook & Women's College Health Sciences Centre
Anthony Vines	Ross Memorial Hospital
Ken White	Trillium Health Centre

System Integration and Change Advisory Panel

Helena Axler-Glazer	Helena Axler and Associates
Paul Collins	St. Thomas Elgin General Hospital
Dan Gordon	T4G
Anu MacIntosh-Murray	
Keary Fulton-Wallace	Huron Perth Hospitals Partnership

Women's Health Advisory Panel

Mary Addison	Sunnybrook & Women's College Health Sciences Centre
Heather Arthur	McMaster University
Anne Biringer	University of Toronto/Mount Sinai Hospital
Angela Cheung	University Health Network
Mary Jane Esplen	University of Toronto/Mount Sinai Hospital
Wendy Graham	
Ellen Hodnett	University of Toronto
Moira Kapral	University of Toronto/University Health Network/Institute for Clinical Evaluative Sciences
Guylaine Lefebvre	St. Michael's Hospital
Vaska Micevski	University Health Network
Joan Murphy	University Health Network/Mount Sinai Hospital
Paula Rochon	Baycrest Centre for Geriatric Care/Institute for Clinical Evaluative Sciences/University of Toronto
Donna E. Stewart	University Health Network/University of Toronto
Meir Steiner	McMaster University
Ruth Wilson	Queen's University

We welcome comments and suggestions on *Hospital Report 2001: Acute Care*, and on how to make future reports more useful and informative. Please complete this feedback sheet, or email ideas to hospitalreport@cihi.ca.

Please complete and return this questionnaire to:

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Canadian Institute for Health Information
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Toronto, Ontario
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Instructions

For each question, please put an "X" beside the most appropriate response. There are no right or wrong answers, we are simply interested in your opinions about this report. Our goal is to improve future reporting efforts. Individual responses will be kept confidential.

Overall Satisfaction with the Report

For each question, please place an X beside the most appropriate response.

1. How did you obtain your copy of the report?
   - ❑ It was mailed to me
   - ❑ From a colleague
   - ❑ Through the Internet
   - ❑ I ordered my own copy
   - ❑ Other, please specify _____

2. To what extent have you read through the report?
   - ❑ I have read through the entire document
   - ❑ I have read certain chapters and browsed through the entire report
   - ❑ I have browsed through the entire document

3. Please indicate how useful you found each of the following sections of the report by putting an "X" in the *most appropriate* category:

Introduction	❑ Very useful	❑ Somewhat useful	❑ Not useful	❑ Did not read
Patient Satisfaction	❑ Very useful	❑ Somewhat useful	❑ Not useful	❑ Did not read
Clinical Utilization and Outcomes	❑ Very useful	❑ Somewhat useful	❑ Not useful	❑ Did not read
Financial Performance and Condition	❑ Very useful	❑ Somewhat useful	❑ Not useful	❑ Did not read
System Integration and Change	❑ Very useful	❑ Somewhat useful	❑ Not useful	❑ Did not read
Women's Health	❑ Very useful	❑ Somewhat useful	❑ Not useful	❑ Did not read
Hospital-Specific Results	❑ Very useful	❑ Somewhat useful	❑ Not useful	❑ Did not read

4. How satisfied are you with the following aspects of the report?

a.	Clarity/readability	❑ Excellent	❑ Good	❑ Fair	❑ Poor
b.	Organization/format	❑ Excellent	❑ Good	❑ Fair	❑ Poor
c.	Use of figures	❑ Excellent	❑ Good	❑ Fair	❑ Poor
d.	Quality of analysis	❑ Excellent	❑ Good	❑ Fair	❑ Poor
e.	Level of detail presented	❑ Too much	❑ About right		❑ Too little
f.	Length of the report	❑ Too long	❑ About right		❑ Too short

5. The overall goal of *Hospital Report 2001: Acute Care* is to aid in understanding and assessing the performance of the province's hospital system as a whole, as well as individual hospital performance.

   a) How successful were we in providing useful information on the performance of Ontario's hospital system as a whole?
   - ❑ Very successful
   - ❑ Successful
   - ❑ Somewhat Successful
   - ❑ Not at all Successful

   b) How successful were we in providing useful information on the performance of specific hospitals?
   - ❑ Very successful
   - ❑ Successful
   - ❑ Somewhat Successful
   - ❑ Not at all Successful

6. How do you plan on using the information presented in this report?

7. How would you improve this report?

8. Do you have any suggestions for future reports?

Reader Information

9. What is your main position or role?
   - ❑ Health services manager or administrator
   - ❑ Board member
   - ❑ Health care provider
   - ❑ Other hospital staff
   - ❑ Researcher
   - ❑ Policy analyst
   - ❑ Elected official
   - ❑ Student
   - ❑ Other, please specify _____

Thank you for your feedback