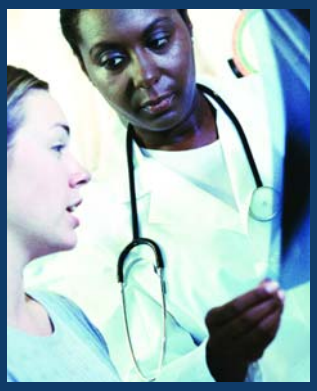
Hospital Report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ACUTE CARE

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

Canadian Institute
for Health Information

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Canadian Institute for Health Information
377 Dalhousie Street
Suite 200
Ottawa, Ontario
K1N 9N8

Telephone: (613) 241-7860
Fax: (613) 241-8120
www.cihi.ca

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Since 1994, the Canadian Institute for Health Information (CIHI), a pan-Canadian, independent, not-for-profit organization, has been working to improve the health of Canadians and the health system by providing quality, reliable health information. The Institute's mandate, as established by Canada's health ministers, is to develop and maintain a common approach to health information in this country. To this end, CIHI provides information to advance Canada's health policies, improve the health of the population, strengthen our health care system, and assist leaders in our health sector to make informed decisions.

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About the Hospital Report Research Collaborative

Beginning in 1997, members of the Department of Health Policy, Management and Evaluation, Faculty of Medicine at the University of Toronto have led a research collaborative, including faculty from Wilfrid Laurier University, the University of Western Ontario, and the University of North Carolina at Chapel Hill 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. In both 2001 and 2002, the same core team of investigators has supported CIHI to produce this acute care report, based on methods previously developed by the research team.

Since 2001, the Department of Health Policy, Management and Evaluation 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 Sciences and the Faculty of Nursing at the University of Toronto, the University Health Network Research Institute, Toronto Rehabilitation Institute, Wilfrid Laurier University, the University of Western Ontario, the Centre for Addiction and Mental Health, and the University of North Carolina at Chapel Hill. In the fall of 2001, the research collaborative produced system-level balanced scorecards for emergency care and complex continuing care, feasibility studies in mental health and rehabilitation, and reports focusing on nursing care, women's health, and population health. The goals of the research team are to support quality improvement efforts, enhance the accountability of Ontario's health system and to support original research into the measurement and determinants of hospital performance.

A Foreword from the Government of Ontario

It is my great pleasure to present Ontario's 2002 Hospital Report Series. Since its inception, the Series has proven to be a valuable showcase for the achievements of the province's hospitals including those that are most effective and the highest performing. Motivated by the goal of improving hospital care and services, our government supports the Series to indicate the quality level of those services. With this tool in hand, we continue to strengthen and expand our focus on performance reporting to both healthcare providers and the public.

Incorporating individual hospital report cards, the Series promotes accountability for tax-payer dollars and indicates where hospitals are excelling and where they need improvement. However, it is important to note that 2002 is a transition year. We are at the beginning of a continuing process to incorporate indicators on both women's health and nursing. As well, the Series reports will also incorporate trends, which will tell us how performance is changing over time. These components of the reports are in the early stages, but as we continue to build on this year's work, we will see these components become increasingly comprehensive.

Thanks to the continued partnership of the Ontario Hospital Association (OHA)–a partnership that encompasses the research community, particularly the Canadian Institute for Health Information and the University of Toronto, that produced the reports. The Series encourages stronger links among health planners, healthcare providers, and the research community as a whole.

I want to thank the many dedicated people who have provided their extensive expertise in designing the indicators that characterize the Series. Furthermore, I commend the province's hospitals and the OHA for once again demonstrating their steadfast commitment to the concept that accountability is intrinsic to quality healthcare.

Unquestionably, the many individuals and institutions that have worked in concert to produce the Series share our government's goal of promoting positive change in Ontario's health system, and their work is both significant and greatly appreciated. The end result for patients and the people of Ontario is the continued improvement of hospital care and services.

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

A Foreword from the OHA

At some time in their lives, most Ontarians will be touched by the need for acute care, either for themselves or their loved ones. This report assesses hospitals' performance in delivering that care to the communities they serve. Included in this report are the results of one of the largest patient satisfaction surveys in North America.

Patients are at the core of Ontario's health care system and hospitals' quest to strengthen accountability and improve performance in health care is intended to enhance care and services.

That is why, in 1997, Ontario hospitals announced their intent to initiate "report cards" on their performance.

When embarking on this ground-breaking venture, 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 additional areas of study.

University of Toronto researchers developed the methodology and produced Acute Care Reports in 1998 and1999. The Canadian Institute for Health Information (CIHI) produced the Acute Care Report in 2001, working closely with the Hospital Report Research Collaborative to develop and refine the methodologies.

System-level reports were released last year assessing emergency department care and complex continuing care in Ontario and feasibility studies were produced for rehabilitation, mental health, nursing, women's health and population health. The research was conducted by the Hospital Report Research Collaborative, a group of independent, third-party investigators from the University of Toronto, Wilfrid Laurier University, University of Western Ontario, University Health Network Research Institute, Toronto Rehabilitation Institute, the Centre for Addiction and Mental Health, and the Institute for Clinical Evaluative Sciences.

This substantive body of research represents one of the largest and most comprehensive hospital-level reviews and public accountability processes in the country, generating interest around the world.

Last year, we welcomed the Ministry of Health and Long-Term Care as a partner for the Hospital Report Series and this year we signed a five-year agreement to continue this joint initiative in the future.

David MacKinnon
President, Ontario Hospital Association

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Acknowledgements

The Canadian Institute for Health Information (CIHI) wishes to acknowledge and thank the many individuals and organizations who contributed to the development of this report.

Project management and coordination was done by Jennifer Rodgers, Grant Gillis, Jack Bingham and Jennifer Zelmer. The four balanced scorecard quadrants were prepared by: Matthew Alexander, Jeremy Chrystman, Nita Dharwarkar, Anyk Glussich, Jeff Green, Sarah Lenz, Cassandra Linton, Erik Markhauser, and Greg Zinck. Other members of the CIHI project team included Gary Bellamy, Judy Brown, Steve Brierley, Terry Campbell, Patricia Finlay, Lise Gagnon, Glenda Gagnon, Sandra Kopman, Francis Law, Anne Lauzon, Kira Leeb, Karen McCarthy, Mary Neill, Lise Poirier, Indra Pulcins, Karin Schoeberle, Cristina Tomsa, Eugene Wen, Scott Young, and Andrew Zuravels.

Special thanks to Adalsteinn D. Brown, Principal Investigator, Hospital Report Project, University of Toronto; Paula Blackstien-Hirsch, Project Director, Hospital Report Project, University of Toronto; Bill Kreutzweiser, Manager, Report Cards and Patient Satisfaction, Ontario Hospital Association (OHA); Sandra Conley, Director, Communications, OHA; and Susan Jacobs, Project Assistant, Report Cards, OHA for their commitment and dedication.

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.

This report also benefited from the generous assistance of Ontario's hospitals, the Ontario Hospital Association's Report Card Strategic 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 2002: Acute Care* appears in Appendix C of this report.

The methodologies used as a foundation for this year's report have been adapted from those published in 1999 by the university-based researchers responsible for developing the first volumes in the *Hospital Report* series. The team included GR Baker, PhD (Dept. of Health Policy, Management & Evaluation, University of Toronto), GM Anderson, PhD, (Dept of Health Policy, Management & Evaluation, University of Toronto); AD Brown, D Phil, (Dept. of Health Policy, Management & Evaluation, University of Toronto), I McKillop, PhD (School of Business and Economics, Wilfrid Laurier University), MM Murray, PhD (Dept. of Health Policy, Management & Evaluation, University of Toronto), and GH Pink, PhD (Dept. of Health Policy & Administration, University of North Carolina at Chapel Hill).

This year's report builds on concepts and methodologies developed by the researchers noted above. We continued to benefit from their extensive experience and invaluable advice. Advice for this year's report was also provided by Imtiaz Daniel, Consultant, Hospital Report Project, University of Toronto; Diane Doran, Associate Dean of Research and International Relations in the Faculty of Nursing, University of Toronto; Frank Markel, Assistant Professor, University of Toronto; Linda McGillis Hall, Assistant Professor, University of Toronto; and Heather K. Spence Laschinger, Professor, Associate Director Nursing Research at the University of Western Ontario, School of Nursing, and Faculty of Health Sciences.

Introduction

Introduction

Every day Ontario hospitals are called upon to provide high quality acute care services to people in need. In order to do so hospitals face various challenges, among them the necessities of keeping pace with advances in health service delivery methods and technology, securing qualified staff and other resources to provide care, and adapting to the changing demographics and health status of Ontario's population.

These challenges are constant and complex. To ensure that they are providing effective and efficient care, Ontario hospitals not only must continually manage and measure the use of resources but must also adopt innovative methods of delivering existing or new services. Using advancements in surgical technology, day-surgery has become a key example of how hospitals have successfully implemented an innovative and advantageous change to providing care.

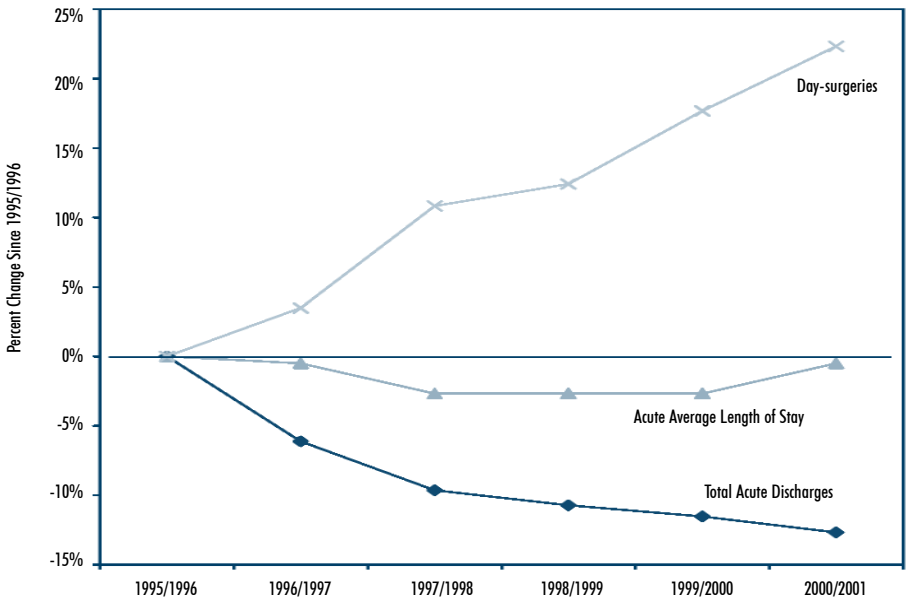
The introduction of more extensive day-surgery options has certainly benefited patients. In general, day-surgery is less invasive for patients and offers a quicker recovery with no overnight hospital stay being necessary. Hospitals have benefited also. With the use of advancements in surgical and clinical technology, hospitals have been able to treat more patients while reducing and potentially avoiding patient stays in hospital following surgery. These positive outcomes can be monitored through measures such as cost per weighted case, length of stay per surgical procedure, and patient satisfaction surveys.

The Changing Face of Ontario's Hospitals

Due to rapid advancements in medical technologies, patients and hospitals in Ontario have benefited from a shift to day-surgery. One of the consequences of this shift was a declining length of stay. However, the rate of decline in the length of stay appears to have recently slowed. Has it halted?

FIGURE 1.1: HAS THE DECLINE IN AVERAGE LENGTH OF STAY HALTED?

In recent years, Ontario hospitals have undertaken an increasing percentage of day-surgery cases. During that time, the acute average length of stay (ALOS) declined, as did total acute discharges. By 2000/2001, however, the decline in percent change of the acute ALOS appears to have halted, while the decline in percent change in total acute discharges also appears to be slowing. The graph below shows percent changes between 1995/1996 and 2000/2001 in day-surgeries, acute ALOS and acute discharges.



Source: Discharge Abstract Database; National Hospital Morbidity Database

And yet, recent data presented in Figure 1.1 suggest that the decrease in average length of stay has slowed, and may have halted. This raises many questions. If this is a trend, why is it happening? Would further increases in day-surgery volume create a further decline in length of stay or will the impact be more limited? Is it even desirable to focus on the achievement of further decreases in length of stay? How should this focus be balanced against an impact on clinical outcomes? While these recent data certainly raise important questions that must be answered by hospitals, they also serve to demonstrate the constant and complex challenges that confront hospitals.

Over the years, Ontario's acute care hospitals have responded to the challenges presented to them by advancing their care planning and service provision, as well as measurement and improvement activities. A large component of all these activities involves data collection and analysis of several dimensions of performance both within hospitals and between hospitals. Sound measurements of hospital performance, such as those found in the *Hospital Report* series, are and will continue to be useful, proven tools for understanding what hospitals are doing, how they are changing, what is working well, and what can be improved.

The Hospital Report Series

In 1997, the Ontario Hospital Association (OHA) made a public commitment to report on hospital performance. Also in that year, the *Hospital Report* series was introduced by investigators affiliated with the Department of Health Policy, Management & Evaluation at the University of Toronto. Significant funding and support of the initial research activities were provided by the OHA.

In 2000, the Government of Ontario joined the OHA in supporting the research initiative and the Hospital Report Research Collaborative was formed. The Collaborative is based at the Department of Health Policy, Management & Evaluation and includes CIHI, the Department of Rehabilitation Sciences and the Faculty of Nursing at the University of Toronto, the Institute for Clinical Evaluative Sciences of Ontario, Wilfrid Laurier University, Toronto Rehabilitation Institute, the University Health Network Research Institute, the Centre for Addictions and Mental Health, the University of Western Ontario, and the University of North Carolina at Chapel Hill. The Collaborative promotes research into advancing the science of performance measurement in the health sector.

The generous support of the OHA and the Government of Ontario allowed the Collaborative to expand the series beyond acute care, and in 2001 several new reports and studies were published:

- *Hospital Report 2001: Emergency Department Care*
- *Hospital Report 2001: Complex Continuing Care*
- *Hospital Report 2001 Preliminary Studies: Volume One. Exploring: Rehabilitation, Mental Health*
- *Hospital Report 2001 Preliminary Studies: Volume Two. Exploring: Nursing, Women's Health, Population Health.*

In 2000, the Canadian Institute for Health Information (CIHI) assumed responsibility for producing the Acute Care volumes in the *Hospital Report* series. CIHI is Canada's independent, not-for-profit health information organization. CIHI has worked closely with researchers from the Collaborative in the development and refinement of the methodologies presented in previous volumes. CIHI's substantial analytical, data management, and communication capabilities have benefited the project greatly.

Hospital Report 2002: Acute Care is not intended to serve as a guide to help patients choose a hospital when needing care. Its three main objectives, shared by all the reports in the *Hospital Report* series, are to support:

- Original research into the measurement and determinants of hospital performance;
- Quality improvement efforts within hospitals; and
- The accountability of the hospital system.

Future Directions in the *Hospital Report* Series

The following reflect some of the key initiatives underway in the *Hospital Report* series:

- **Benchmarking:** Several strategies for the establishment of benchmarks, each of which will proceed on a set of principles that define what constitutes a good benchmark, have been initiated (see *Next Steps* later in this chapter).
- **Nursing and Women's Health Perspectives:** The relevance and feasibility of integrating indicators proposed in the Nursing and Women's Health *Preliminary Studies* into future reports will continue to be explored.
- **Cross-Quadrant Analysis:** Cross-quadrant analysis – looking at relationships between indicators across different quadrants – for inclusion in future reports is underway.
- **Trending:** Where data permit, results over at least two fiscal years are presented in *Hospital Report 2002: Acute Care*. Future research will explore appropriate methodologies for trend analysis.
- **Rolling Redevelopment:** System Integration and Change was identified as the 2002 priority for redevelopment. Each year, one quadrant will be the focus of extensive redevelopment. This balances the need for consistency to allow comparisons over time with the need for ongoing development to ensure relevance.



A Balanced Scorecard

Hospital care is a complicated activity requiring a multitude of skills, experiences, and technologies. No one person or discipline causes poor or excellent hospital performance. For this reason, there is growing recognition among experts that performance-measurement activities must include a basket of measures that, when taken together, provide insights into the overall performance of a hospital. This approach better supports good management and stewardship purposes than many of the narrowly focused performance-measurement tools of the past such as report cards. Kaplan and Norton [1992][1] advocated such an approach when they proposed that organizations should develop a "balanced scorecard" of indicators.

In 1998, the *Hospital Report* project began by looking at the work of Baker and Pink [1995][2], which explored how the Kaplan and Norton approach could be adapted for use in Canadian hospital settings. It became apparent that an adaptation of the balanced scorecard approach was well suited for Ontario hospitals. This balanced scorecard approach describes performance across four dimensions or quadrants critical to the strategic success of any health care organization. These quadrants include System Integration and Change, Clinical Utilization and Outcomes, Patient Satisfaction, and Financial Performance and Condition.

Understanding the Four Quadrants

Hospital Report 2002: Acute Care measures hospital performance across four different dimensions or "quadrants".

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.

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.

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

Selecting Indicators

Each of the quadrants includes several measures of hospital performance. In developing the methodology for *Hospital Report '99*, 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, feedback from advisory groups comprised of experts from the hospital and community sectors, and a series of tests to validate the indicators. The same process of indicator selection was applied to *Hospital Report 2002: Acute Care.*

TABLE 1.1: QUADRANT SUMMARY

Quadrant	System Integration and Change	Clinical Utilization and Outcomes	Patient Satisfaction	Financial Performance and Condition
Data Source	Hospital Report Acute Care System Integration and Change Survey	CIHI Discharge Abstract Database (DAD)	Standardized Hospital Patient Satisfaction Survey (SHoPSS)	Ontario Hospital Reporting System (OHRS)
Data Period	FY 2000/2001	FY 2000/2001	August - October 2001	FY 2000/2001
Number of Indicators	10	12 at the provincial level; 8 at the hospital-specific level	8	9
Performance Allocations	All indicators use 5 performance categories.	3 indicators use 5 performance categories; 5 indicators use 3 categories.	All indicators use 5 performance categories.	7 indicators use 5 performance categories; 2 indicators use 3 categories.

To calculate these indicators, a variety of data was used. Sources, methods of collection, and time periods vary across the quadrants. Relevant adjustment factors have been used for each indicator to reflect the wide variations in the complexity of patients' problems, patient demographics, and characteristics of different hospital types. To ensure the most meaningful comparisons possible, the Clinical Utilization and Outcomes quadrant presents age- and sex-standardized results when presenting results for the three reported fiscal years of data.

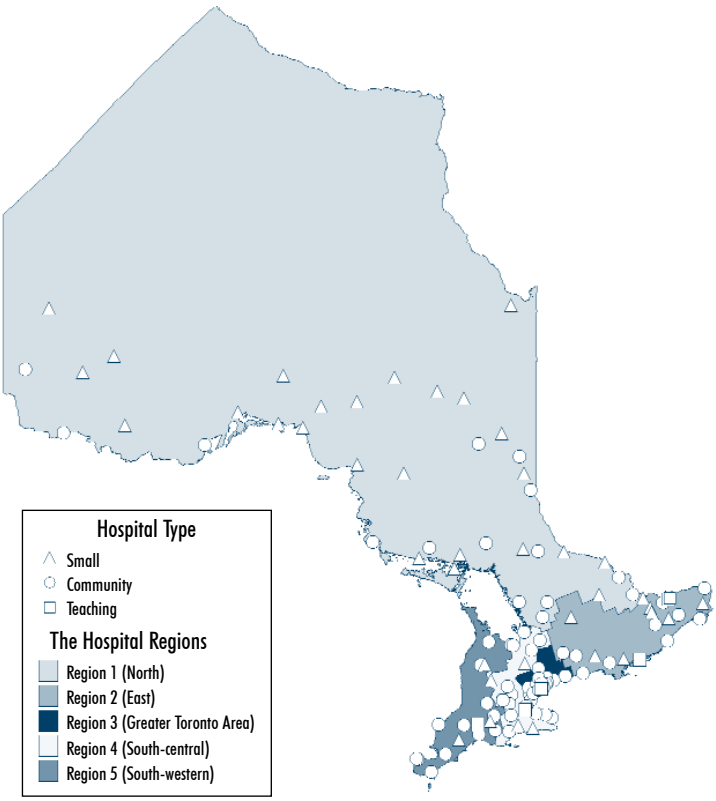
Hospital Participation in 2002

Hospital Report 2002: Acute Care includes summary findings across all participating hospitals as well as hospital-by-hospital results. Overall, 123 acute care organizations, representing 173 hospital sites, voluntarily agreed to participate in the province-wide analysis (Appendix A). Forty are small hospitals, as defined by the Joint Policy and Planning Committee (JPPC). These are facilities that generally had less than 3,500 weighted cases, have a referral population of less than 20,000 people, and are the only hospitals in their communities. Another 13 are acute or paediatric teaching hospitals, however one teaching hospital reports one of their sites separately. The remaining 69 are community hospitals.

Ninety-two of these 123 organizations elected to participate in the hospital-specific portion of this report, representing 97% of all acute care hospitalizations in Ontario. Most of the remaining hospitals were not eligible to participate because they did not take part in SHoPSS. Two facilities were eligible but chose not to participate in the hospital-specific report. Therefore, 98% of eligible hospitals participated in the hospital-specific portion of the report.

FIGURE 1.2: ONTARIO'S ACUTE CARE HOSPITAL CORPORATIONS

The map below illustrates the location of the 123 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

It's not easy to translate information about specific hospitals into performance scores. 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. In this report a hospital's performance allocation reflects its performance relative to those of other hospitals in the province.

When reviewing performance allocations in *Hospital Report 2002: Acute Care*, it is important to understand that, whether a given indicator describes the achievement of a successful outcome, or avoidance of an adverse event, a higher performance allocation (i.e. more stars) always reflects better performance.

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

In *Hospital Report 2002: Acute Care*, the process of determining an appropriate number of performance categories was based on the following principles and objectives:

- Enhance the use and usefulness of *Hospital Report 2002: Acute Care*
- Where possible, increase the number of performance categories but do not force a specific number of categories
- Focus on meaningful differences between categories 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 categories 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

Where to Find Hospital-Specific Performance Allocation Results

Performance allocations for each indicator by hospital type are summarized in Appendix B. In addition, hospital-by-hospital results for 92 hospitals corporations are available in the insert of this report.

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 28 of the 35 hospital-specific indicators in *Hospital Report 2002: 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 remaining 7 indicators, only three performance categories were used: "above average", "provincial average", "below average".

Based on how performance allocations are determined for *Hospital Report 2002: Acute Care*, the majority of hospitals fall into the "provincial average" category of performance allocations; fewer hospitals are below or above this "provincial average" category. This distribution is common across the indicators in all four quadrants.

Can a Hospital Improve its Performance Allocation for a Given Indicator?

Between the 2001 and 2002 acute care reports, the province-wide means increased for most indicators. Therefore, if a given hospital's particular indicator score remains the same from one year to the next, its actual performance allocation (one star, two stars etc.) may actually decrease. Why? Because, the province-wide mean is increasing, and the particular hospital is not keeping pace. Conversely, a hospital's indicator score may indeed improve year-over-year, but if the improvement only keeps pace with the province-wide mean, its actual performance allocation will remain the same. The overall point is that while it is possible for a hospital to improve its performance allocation, to do so, it must exceed, not just keep pace with, the improvement achieved by its peers.

Coding Variations and Data Quality

An ongoing challenge for any organization producing statistical information is to ensure that the information is suited for its intended use. To this end, CIHI has established a comprehensive and systematic data quality monitoring program as part of its corporate Data Quality Framework.

Recent data quality studies conducted jointly by CIHI, the Ontario Ministry of Health and Long-Term Care and the JPPC, have revealed evidence of a pattern of irregularities in the practice of coding patients' diagnoses by a group of

Ontario hospitals. This pattern involves variation in the use of specific diagnosis codes. These diagnosis codes are the basis of the CIHI Complexity Overlay, a tool used to group patients with similar clinical characteristics. Variations in the use of these codes can distort and impede the comparability of results across hospitals. It is important to note that the irregularities are with the data rather than with the indicator methodology.

CIHI and the Hospital Report Research Collaborative have evaluated the potential exposure and the impact on *Hospital Report 2002: Acute Care*, and found that five of the report's thirty-nine indicators are materially impacted, specifically one indicator (Unit Cost Performance) in the Financial Performance and Condition quadrant and four indicators (AMI, Pneumonia, Cholecystectomy, and Hysterectomy Complications) in the Clinical Utilization and Outcomes quadrant. While the effects of these occurrences are discussed more specifically in the appropriate quadrant sections, the decision was made to revise the results for the Unit Cost Performance indicator for inclusion in this report and to withhold reporting results for the four Complications indicators until further analysis, including possible changes in methodology to account for these data quality issues, has been completed. A supplementary report with the Complication results will be distributed in the near future.

More About This Report

Hospital Report 2002: Acute Care provides a "snapshot" of Ontario's acute care hospital system. It was designed specifically for hospital trustees, administrators, and others who want detailed information about the relative performance of hospitals across the province.

The report is composed of an introduction and four balanced-scorecard quadrant chapters that provide province-wide results for System Integration and Change, Clinical Utilization and Outcomes, Patient Satisfaction, and Financial Performance and Condition. This year, women's health, as well as several nursing-specific indicators, have been integrated into the quadrant chapters. The report also includes an insert with hospital-specific performance results. A companion document, *Hospital Report 2002: 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 of these reports are available free on the *Hospital Report* series partners' and sponsors' Web sites. For a list of Web sites see the back cover of this report. To order a copy by mail, please call the Ontario Ministry of Health and Long-Term Care's Infoline at 1-877-234-4343 (or TTY 1-800-387-5559).

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 2002: Acute Care provides, for the first time, data analysis of three fiscal years. Future acute care reports will explore trend analysis and will expand upon featured topics from province-wide and hospital-by-hospital perspectives.

Research into establishing Ontario-specific benchmarks in all quadrants will further support assessment of performance and improvement initiatives focusing on patient care and access to services in Ontario hospitals. The development strategy for each benchmark will be based upon a set of principles that define what constitutes a good benchmark, and will involve three steps:

- Analysis of available data to establish the benchmark, including identification of the actual range of performance, hospital-specific variation and perceived appropriateness
- Consensus panel or focus group adjudication of the benchmark to define the acceptable and achievable levels or ranges of performance
- Validation of the benchmark with data from scientific literature, health information organizations, and other sources.

There is also ongoing research into the relationships among indicators within a quadrant (intra-quadrant analysis) and between quadrants (inter-quadrant analysis). With respect to inter-quadrant analysis, there are a number of potential topics. Can specific hospital improvement efforts be linked to improved patient satisfaction? How are lengths of stay and outcomes of care affected by hospital-community relationships? Answers to these types of questions have the potential to help hospitals further refine and improve their performance.

Hospital Report 2002: Acute Care provides citizens of Ontario with information about their hospitals and the system in which they operate. If the full benefits of the report are to be realized, it is hoped that hospitals, communities, stakeholders and researchers will find ways to integrate the results into ongoing improvement plans and other initiatives.

Upcoming reports and studies in the *Hospital Report* series, including reports on emergency departments, complex continuing care, rehabilitation and mental health will aim to provide further, useful insights into the performance of Ontario's hospitals.

For more information

[1] Kaplan RS and DP Norton (1992). "The Balanced Scorecard – Measures that Drive Performance," *Harvard Business Review* 70(1), pp 71-80.

[2] Baker GR and GH Pink (1995). "A Balanced Scorecard for Canadian Hospitals," *Healthcare Management Forum*. 8(4), pp7-13.

System Integration and Change


System Integration and Change

Today's rapidly changing health care environment is challenging for hospitals in Ontario. In response, many are pursuing innovative solutions. This includes, among other initiatives, improving the use and transfer of information both within and outside their facilities, fostering new partnerships with other health care providers, developing relationships within their communities, and enhancing the skills and support of professionals and other staff.

What's New for 2002

Highlights for this year's System Integration and Change quadrant include:

- Redevelopment of the System Integration and Change indicators including new key areas of interest and a revised 2002 Hospital Report Acute Care System Integration and Change (Hospital Report Acute Care SIC) survey
- Incorporation of nursing content into the new System Integration and Change indicators
- New measures of staff-retention strategies and new data on protocol development related to women's health
- The latest patient satisfaction results presented by sex for two indicators–Coordination of Care and Continuity of Care

The ten indicators in the System Integration and Change quadrant were selected by the System Integration and Change Advisory Group to capture the extent to which Ontario hospitals are implementing these and other strategies. Two of these indicators are based on patients' ratings of their care as reported in the Standardized Hospital Patient Satisfaction Survey (SHoPSS). Patients were asked to score the coordination of their care while in hospital and secondly, following discharge, the continuity of their care.

The remaining eight System Integration and Change indicators are based on reports by hospitals regarding the implementation of innovative practices. These eight indicators can be broken down into three broad groups:

- Several of the indicators relate to **information use and clinical practices** in the hospital. For example, do clinicians have access to email, real time monitoring data (e.g. Electrocardiograms), and medical images (e.g. x-rays, computerized axial tomography scans)? Have hospitals developed and implemented standardized protocols to identify the best timing and combination of services for patients suffering from specific conditions? To what extent are hospitals using data on clinical outcomes and appropriateness measures to compare their results with their peers and/or to benchmark best practices? Do hospitals track their use of data–such as employee and patient surveys–to plan and manage hospital activities?
- Other indicators explore **hospital relationships with community partners and with the community-at-large**. They examine how hospitals work with the organizations that facilitate home care, community mental health, and other services (e.g. community care access centres (CCACs), long term care (LTC) facilities, and cancer centres). Many hospitals reported contributions made by volunteers and relationships with their communities. Hospitals also reported 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 non-acute services.
- The final indicator looks at **human resource issues**, relating to new staff roles in hospitals, how hospitals support staff through professional development activities, and a variety of health human resource practices.

Overall, Ontario hospitals are working to enhance the coordination of activity with community partners, to improve management through information utilization, and to implement new clinical and health human resource practices. Activities vary however 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

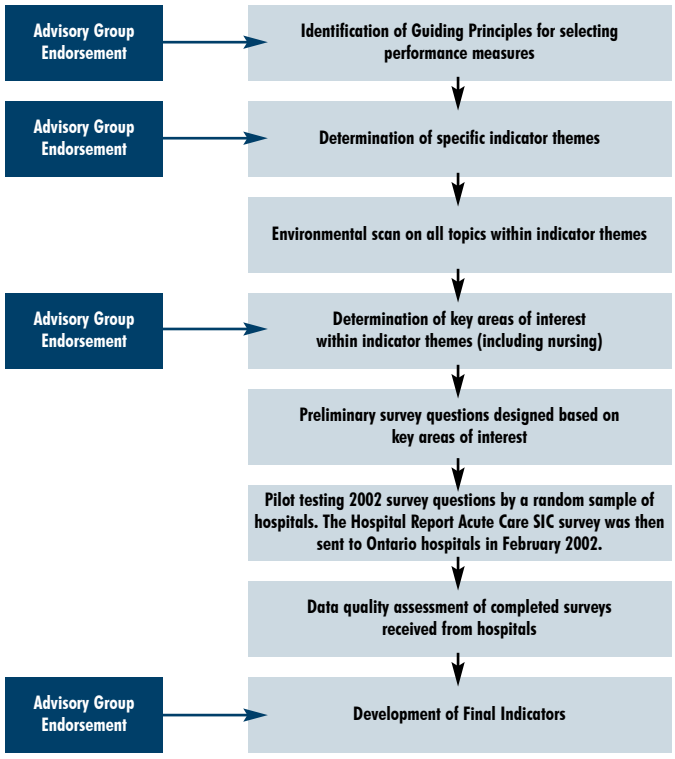
Selecting System Integration and Change indicators which are feasible, relevant, verifiable, and scientifically sound is a challenge. Unlike the other three quadrants, there are few applicable indicator selection criteria. For example, while some hospitals collect data on employee skills and training, few measures are available through existing standardized databases. Where standardized mechanisms do exist, they are often unusable because variations in data coding create difficulties in comparing performance across organizations.

Following *Hospital Report 2001: Acute Care*, it was determined that future reports should balance consistency (so that performance can be compared over time) with a staged evolutionary process to ensure quadrants remain meaningful over time. In this context, the System Integration and Change quadrant was identified as the priority for redevelopment in 2002. Building on the methodology that was developed by the University of Toronto for *Hospital Report '99* and *Hospital Report 2001: Acute Care*, an Advisory Group endorsed a similar framework for the new System Integration and Change indicators. An environmental scan within these themes was performed and potential areas of interest were put forth to the Advisory Group for their approval. This environmental scan was based on the 2001 Hospital Report Acute Care System Integration and Change (SIC) survey questions, additional suggestions garnered from past Hospital Report SIC surveys, balanced scorecards produced by individual hospitals, feedback received from previous reports, as well as a review of relevant research literature. The Advisory Group endorsed some new areas of interest as important for inclusion in the survey, and specific questions were developed to address these in the 2002 survey.

For further information on the consensus building process among the University of Toronto, CIHI and the System Integration and Change Advisory Group for the redevelopment of the System Integration and Change quadrant, including details on the selection of key areas of interest, construction of the questionnaire, and

FIGURE 2.1: THE REDEVELOPMENT PROCESS OF THE SYSTEM INTEGRATION AND CHANGE INDICATORS

The following flow chart outlines the overall process used in the redevelopment of the System Integration and Change indicators for the *Hospital Report 2002: Acute Care*. The left-hand side of the chart indicates the level of involvement by the Advisory Group, and the right-hand side shows each individual step of the process in sequential order.



Nursing Content in the System Integration & Change Indicators

In keeping with the integration of the nursing perspective throughout *Hospital Report 2002: Acute Care*, and as part of the redevelopment process of the System Integration and Change quadrant, questions regarding nursing were incorporated into the survey. The following list indicates the areas in which the nursing dimension has been specifically captured.

Clinical Information Technology

- Percent of clinical workstations with access to nursing note applications
- Availability of internal/external email and on-line access to monitoring data and medical images for nurses
- Online library resources for clinical staff

Intensity of Information Use

- Strategies for disseminating patient satisfaction findings, employee satisfaction findings, and the results of *Hospital Report 2001: Acute Care* to nurses
- External benchmarking of satisfaction results of nurses

Strategies for Managing Alternate Level of Care (ALC) Patients

- Nurse education and involvement in care planning
- In-service education for nurses with specific regard to their role in early identification of patients with discharge challenges and early estimation of day/time of discharge

Supporting Hospital Staff

- Existence of nursing staff support roles: Nurse Practitioner, Clinical Nurse Specialist, and Nurse Educator
- Existence of performance enhancement practices for nurses (e.g. mentorship program, employee recognition programs, formal performance evaluations)
- Support for nurses in continuing education and professional development (e.g. reimbursement for education tuition, on-site courses)
- Existence of specific formal practices in the hospital for nurses (e.g. flexible job design, self-scheduling, staff nurses involved in internal governance)
- Recruitment and retention strategies for nurses (e.g. employee referral bonuses, staff recognition programs, general cost of living increases)
- Aspects of a formal orientation program for nurses (e.g. education in a clinical setting, preceptor program, etc.)
- Number of formal disputes, grievances, or complaints filed by nurses, other patient-care staff, and other hospital staff
- Number of Workplace Safety and Insurance Board (WSIB) lost-time claims submitted
- Strategies in place to deal with nursing shortages (e.g. voluntary overtime, agency nurses, float pools)

derivation of the indicators, see the *Hospital Report 2002: Acute Care Technical Summary*. Due to this redevelopment, except where specifically indicated, results presented in this report are not directly comparable to those in either *Hospital Report 2001: Acute Care* or *Hospital Report '99*.

The Data Sources

Eight of the ten System Integration and Change indicators are derived from a survey completed by Ontario acute care hospitals in February 2002. The Hospital Report Acute Care SIC survey was redeveloped this year based on the key areas of interest determined by the Advisory Group. Questions from the 2001 survey were revised and new questions were created to reflect these areas in the 2002 survey. Representatives from selected hospitals across Ontario were involved in pilot testing the new survey questions in order to confirm the utility and appropriateness of the content and form of the survey.

The redeveloped 2002 Hospital Report Acute Care SIC survey comprised 64 questions related to hospital practices between April 1, 2000 and March 31,2001 and was divided into nine sections. The survey was distributed to 123 acute care hospitals/corporations/partnerships. All Ontario hospitals were asked to complete one survey for their hospital corporation so that it was possible to obtain a picture of system integration and change activity for the province as a whole. Hospitals were given approximately six weeks to complete the survey. Overall, 118 acute care hospital corporations returned completed surveys, a 96% response rate, and 92 of these hospitals participated in the hospital-specific portion of the report.

As in 2001, *Hospital Report 2002: Acute Care* continues to include indicators of coordination and continuity of care derived from the SHoPSS. For details about the SHoPSS, please see the Patient Satisfaction quadrant chapter of this report.

The Data Quality Process

Eight of the System Integration and Change indicators are based on the Hospital Report Acute Care SIC survey questions, which may require responses that are more susceptible to individual interpretation. These questions may be subject to a "social desirability response bias". That is, consciously or unconsciously, respondents may answer questions in ways that tend to favour the hospital. To counteract this potential 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 Allocated

There are no accepted benchmarks–provincially, nationally or internationally–that define the "best" or "right" value for these indicators. A hospital's performance allocation, therefore, reflects its performance relative to that of other hospitals in the province. Since the provincial average changes from year to year, a hospital's rating in one year is not directly comparable to that of previous years. For example, if most hospitals improve their indicator score over a year, but a specific hospital's indicator score stays the same, that hospital's performance allocation may be lower than in the previous year.

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 the eight System Integration and Change indicators based on the Hospital Report Acute Care SIC 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 within that group. For some of the indicators, the total number of hospitals does not add up to 118 (the total number of hospitals that returned surveys) because of hospitals with non-reportable scores.

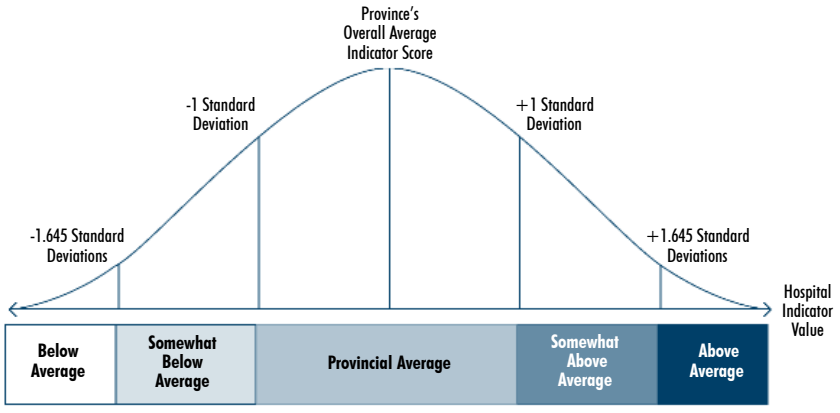
Based on their indicator values, hospitals were grouped into one of five performance categories for these indicators: "above average", "somewhat above average" "provincial average", "somewhat below average" and "below average". The System Integration and Change indicators were reviewed to ensure meaningful differences among the categories. All groupings were done using standard statistical techniques. For example, hospitals were said to be "above average" or "below average" if their indicator value was more than or less than 1.645 standard deviations (or a 90% confidence interval) from the province's overall average indicator value for all hospitals in their peer group. Figure 2.2 illustrates how performance allocations were made.

Based on how performance allocations are assigned, the majority of hospitals fall into the "provincial average" category of performance allocations while fewer hospitals are below or above this "provincial average" allocation. This distribution is common across the indicators in all four quadrants. This System Integration and Change quadrant chapter focuses on province-wide results whereas performance allocations are specific to each hospital based on its performance relative to that of its peers. Performance allocations for each indicator by hospital type are summarized in Appendix B. In addition, hospital-by-hospital results for 92 Ontario hospital corporations are available in the insert at the back of this report.

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 quadrant chapter of this report.

FIGURE 2.2: HOW PERFORMANCE SCORES ARE ALLOCATED

For indicators derived from the Hospital Report Acute Care SIC survey, hospitals were assigned one of five performance allocations based on how their indicator values compared with those of other similar hospitals (as shown below). See the sidebar, "How Performance Allocations are Assigned", or the *Hospital Report 2002: Acute Care Technical Summary* for more details 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. Preliminary indicator results were circulated to hospitals for validation. Where discrepancies were found or corrections were identified, changes were made to the data originally submitted. A note to this effect appears in the hospital-specific indicator results, where applicable. Finally, each questionnaire was independently entered twice into a secure database to ensure accurate data entry.

The data quality process and other methodology used in this report are described in more detail in *Hospital Report 2002: Acute Care Technical Summary*, available free on *Hospital Report* series partners' and sponsors' Web sites. For a list of Web sites please see the back cover of this report.

Indicators of System Integration and Change

What You Will Find in This Section

Each of the eight indicators derived from the Hospital Report Acute Care SIC survey was based on a number of different questions. For each indicator, the overall results are presented. As well, we highlight some of the interesting questions from the survey to provide more context to the indicator as a whole.

Clinical Information Technology

Information technology is an increasingly important tool in the enhancement of patient-care activities. Information systems have the potential to improve internal and external hospital communication, refine the quality of patient records, reduce the time it takes to receive diagnostic reports and order supplies, decrease the number of medication errors, facilitate timely patient follow-up, and improve access to educational materials.

Across all hospitals, the middle 50% of hospitals (hospitals whose scores fell between the 25th percentile and the 75th percentile) scored between 23.44 and 51.59 out of 100 on the Clinical Information Technology indicator. In general, small hospitals made less use of clinical information technology than community and teaching hospitals. The median small hospital score for the indicator was 21.61 points. A median score indicates the value at which half of the small hospitals fall below and the other half above it. Hospitals near this median score would generally have some electronic information available within one or some departments/programs of the hospital but not throughout the hospital. In comparison, the median for teaching/community hospitals was 45.56 points. Hospitals with scores around this median have access to some electronic information both within and outside the organization.

A high percentage of hospitals used paper records as the primary source of information for nursing histories (84%), nursing progress notes (83%), and nursing flow sheets (83%). Furthermore, a low percentage of hospitals indicated that their patient-care staff in all areas/programs of the hospital had

What Makes Up the Clinical Information Technology Indicator?

The Clinical Information Technology indicator was derived from five questions addressing the following areas of interest:

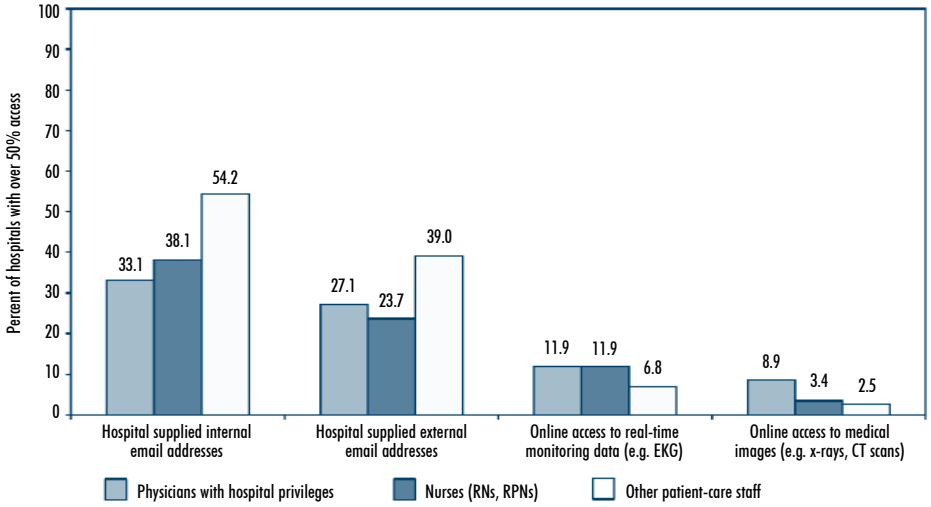
- Availability and use of electronic records/data in specific areas (e.g. ADT, pharmacy, medical images)
- Access to specific functions or components of an electronic health record system (e.g. clinical workstations with the ability to support order entry, results reporting, and decision support)
- Availability to clinical staff of internal/external email and on-line access to monitoring data and medical images
- Access to specific computerized patient information functions by clinical staff providing care
- Availability to full-time staff of desktop computers or workstations

electronic access to archived medical records (11%), literature search databases (36%), and other library resources/educational material (34%).

Information technology can play an important part in a hospital's daily operations. However, the scores on this indicator suggest that hospitals are not using information systems to their full potential. This may be due to the costs associated with developing effective clinical systems, which can hinder their rapid implementation in some settings.

FIGURE 2.3: ACCESS TO TECHNOLOGIES BY OVER 50% OF THREE PATIENT-CARE PROVIDER GROUPS

Direct patient-care groups have access to a variety of technologies to help improve patient care. The graph below shows the percent of hospitals that reported providing access to email, monitoring data, and medical images to over 50% of physicians with hospital privileges, nurses, and other patient care staff at the hospital.



Clinical Data: Collection, Dissemination, and Benchmarking

Data on clinical outcomes and appropriateness of care provides an important information source for assessing clinical performance and guiding improvement activities. Such data can assist in identifying variations – and thus 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 indicator score for all hospitals was 53.49 out of 100. This means that hospitals with scores around the median engage in about 53% of the activities related to the collection, dissemination, and benchmarking of clinical data. The middle 50% of hospitals scored between 40.63 and 68.75. Scores for teaching/community hospitals and small hospitals differed. The median for teaching/community hospitals was 60.94 whereas the median for small hospitals was 39.58.

There are several possible explanations for the differences among hospital groups. For example, large hospitals are likely to have more robust information systems and staff resources to collect, analyze, and use clinical data information. In addition, due to variations in the characteristics of patients

What Makes Up the Clinical Data Indicator?

This indicator is calculated based on responses from hospitals regarding their collection, dissemination, and benchmarking practices for 16 different clinical measures (including nine measures of clinical outcomes such as in-hospital mortality and seven measures of appropriateness of care such as functional status of one or more major patient groups). For each of these 16 measures, points were allocated based on the following collection, dissemination, and benchmarking strategies:

- Collection: data must have been collected in over 50% of the applicable cases
- Dissemination: data must have been shared with a senior medical staff group or the group responsible for quality of care
- Internal benchmarking: data must have been compared internally either across specialties and/or to past performance at least once per quarter
- External benchmarking: data must have been compared externally with other organizations

served in different hospitals, a clinical measure that is meaningful to one hospital may not be useful to another. For example, it may be an inefficient use of resources for small hospitals to benchmark data for particular measures when they have a low volume of cases. However, some may argue that benchmarking may be extremely important in low-volume situations. There may also be different communication strategies in small hospitals compared to large hospitals. For instance, the more intimate setting of a small hospital may allow for more informal ways to describe differentiation in clinical measures and therefore small hospitals may feel they do not need to collect data to the same extent as large hospitals in order to manage it.

FIGURE 2.4: EXTERNAL BENCHMARKING OF CLINICAL MEASURES

Hospitals tend to compare their clinical measures with those of other similarly sized organizations. Some of the clinical measures used to calculate the Clinical Data: Collection, Dissemination, and Benchmarking indicator are the same for three Hospital Report Acute Care SIC surveys (1999, 2001, and 2002). This allows for comparison of the data across all three years. The table shows the percent of Ontario hospitals, by hospital type, that compared specific clinical measures externally with other organizations.

	Teaching Hospitals			Community Hospitals			Small Hospitals		
Report Year	1999	2001	2002	1999	2001	2002	1999	2001	2002
Hospital-acquired infection or sepsis	64%	39%	71%	23%	29%	39%	8%	19%	29%
Adverse drug reaction	21%	22%	14%	11%	15%	16%	4%	6%	6%
Unplanned readmission to the same hospital	29%	50%	57%	25%	29%	42%	8%	10%	11%
In-hospital mortality	36%	39%	43%	18%	21%	23%	6%	19%	6%
Hospital-acquired injury (e.g. falls)	21%	22%	21%	29%	29%	33%	10%	8%	6%
In-hospital complication rates	7%	39%	29%	18%	21%	20%	2%	6%	6%

Intensity of Information Use

It is difficult to manage what is not measured. 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 in the allocation of resources, the planning of new programs, and assessments of patient care. Likewise, understanding the views of physicians and employees may help a hospital recruit and retain competent staff and design change strategies. The Intensity of Information Use indicator was designed to reflect the extent to which hospitals are reporting and using (as opposed to just collecting) these and other types of information.

What Makes Up the Intensity of Information Use Indicator?

The Intensity of Information Use indicator was based on a hospital's answers to questions in the following key concept areas:

- Dissemination of information about patient satisfaction data to physicians with hospital privileges, staff (including nurses), and the hospital board
- Extent to which hospitals engaged in internal benchmarking of variations in physician-specific clinical practices and outcomes
- Dissemination of results of *Hospital Report 2001: Acute Care* throughout the hospital (e.g. to physicians with hospital privileges, nurses, other patient-care staff)
- Staff roles within the organization that relate to information use
- External benchmarking of physician and employee (e.g. nurse) satisfaction data
- Dissemination of information about employee satisfaction data to physicians with hospital privileges, staff (including nurses), and the hospital board

Across the middle 50% of all Ontario hospitals, scores for the Intensity of Information Use indicator ranged from 35.63 to 65.13 out of 100. The teaching/community median was 54.41. Teaching/community hospitals with scores around this median value are carrying out nearly half of the information sharing and benchmarking activities captured in this indicator. Small hospitals tend to make less use of these information tools. Their median value was 38.25.

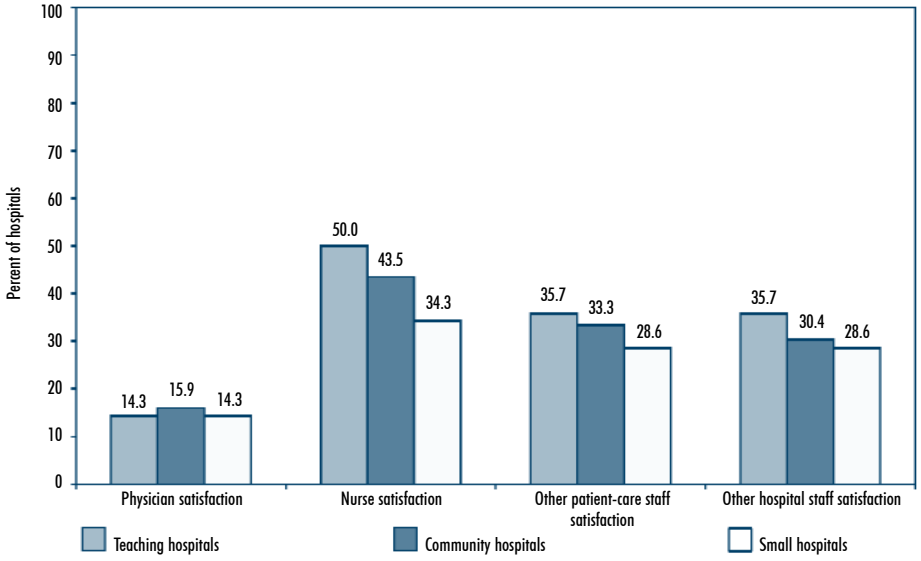
Differences between hospital peer groups may be due in part to the availability of financial and human resources. For example, some small hospitals reported not having enough employees to warrant a quantitative employee

satisfaction survey. Furthermore, the costs associated with collecting and interpreting the information can be high. It may also be difficult for some hospitals to find staff with the appropriate analytical skills to analyze the information. Notwithstanding these limitations, 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 a variety of sources and to take advantage of benchmarking opportunities.

Overall, between April 1, 2000 and March 31, 2001, 65% of Ontario hospitals compared variations in physician-specific clinical practices and outcomes within their organization, and an additional 5% began to do so after March 31, 2001. Almost all (95% or more) Ontario hospitals shared patient satisfaction data and results from *Hospital Report 2001: Acute Care* in some way within their organizations, while 80% of hospitals did the same with employee satisfaction data.

FIGURE 2.5: COMPARISON OF PHYSICIAN AND EMPLOYEE SATISFACTION DATA AMONG ONTARIO HOSPITALS

Ontario hospitals may compare the results of their physician and employee satisfaction data with those of other hospitals. The graph below shows the percent of hospitals, by hospital type, that reported engaging in external benchmarking across two or more organizations between April 1, 2000 and March 31, 2001.



Note: The Hospital Report Acute Care SIC survey asked only whether hospitals were engaged in benchmarking practices and not what type of benchmarking was done. Also, some hospitals indicated that satisfaction surveys were completed every three years, therefore they were not benchmarking the results during the specified timeframe. Future Hospital Report Acute Care SIC surveys will be able to accurately reflect this type of cycle.

Development and Use of Standardized Protocols

Standardized clinical protocols aim to improve patient outcomes and achieve efficiencies. Examples of standardized protocols include pre-printed orders, clinical practice guidelines, and care pathways. These "action plans" are typically developed by a multi-disciplinary group of health professionals using the most current medical evidence. They identify and outline comprehensive plans and procedures for patients with specific health conditions. Standardized clinical protocols can lead to better identification of patient needs and better coordination of activities among members of the care team.

What Makes Up the Development and Use of Standardized Protocols Indicator?

The Development and Use of Standardized Protocols indicator was based on questions addressing the following key areas of interest:

- Extent to which standardized protocols for selected medical and surgical conditions/procedures were developed and used in the hospital
- Extent to which standardized protocols included aspects of care provided by other health care organizations
- Strategies for developing and/or updating standardized protocols

The median value for all hospitals for the Development and Use of Standardized Protocols indicator was 43.84. Scores for teaching/community hospitals were higher than for small hospitals. Scores for the middle 50% of small hospitals ranged from 10.25 to 40.32 whereas the middle 50% of teaching/community hospitals scored between 36.93 and 57.04.

Part of the Development and Use of Standardized Protocols indicator reflects the degree to which hospitals developed and used standardized protocols within their organization for the following 12 common conditions and procedures between April 1, 2000 and March 31, 2001:

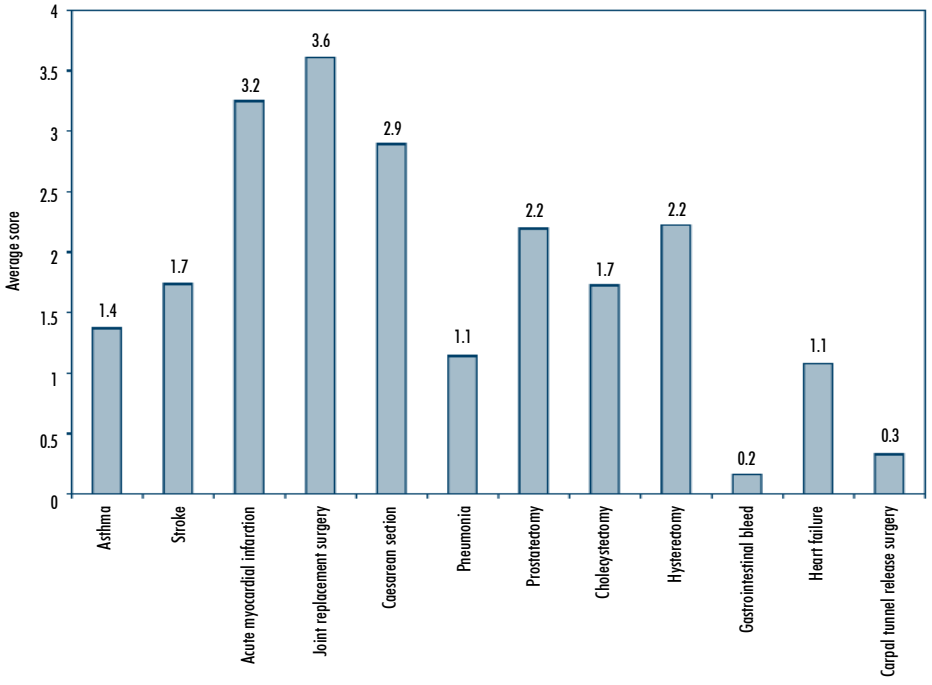
- Asthma
- Stroke
- Acute myocardial infarction (AMI), otherwise known as heart attack
- Joint replacement surgery
- Caesarean section
- Pneumonia
- Prostatectomy
- Cholecystectomy
- Hysterectomy
- Gastrointestinal bleed
- Heart failure
- Carpal tunnel release surgery

Together, these twelve areas accounted for about 10.4% of acute hospitalizations in Ontario in 2000/2001.

Nearly half (48%) of qualifying hospitals (those hospitals that had 12 or more cases for a given condition/procedure in 2000/2001) reported that they have developed at least five standardized protocols within their organization among the 12 clinical areas. However, no hospital reported having a standardized protocol for each of the 12 common conditions/procedures.

FIGURE 2.6: USE OF STANDARDIZED PROTOCOLS

Hospitals were asked to indicate the extent to which standardized protocols were developed and in use in the hospital between April 1, 2000 and March 31, 2001. Protocol development among those hospitals that qualified (had 12 or more cases/procedures in a particular clinical area in 2000/2001) for a given clinical condition varied. The graph below shows the average (mean) score for the 12 common conditions and procedures for all hospitals.



Women's Health and Standardized Protocols

There was variation in protocol development for women-specific procedures, both within and between different hospital types. The average score for utilization of caesarean section protocols was higher for teaching/community hospitals (3.0 out of 4.0) than for small hospitals (2.4). Conversely, the mean for hysterectomy protocols was lower for teaching/community hospitals (2.2) than for small hospitals (2.3). Note, however, that to qualify for a given clinical area, a hospital must have had 12 or more cases/procedures in 2000/2001. For hysterectomies, fewer small hospitals than teaching/community hospitals qualified. The average scores among teaching/community hospitals for hysterectomy and prostatectomy protocols within the hospital were the same (2.2).

Although Ontario hospitals appear to be in the early stages of protocol development, 75% of hospitals reported having a formal process in place for developing and/or updating standardized protocols. Hospitals are also trying to extend their standardized protocols to include aspects of care provided by such health care providers as other acute care hospitals, LTC facilities, and complex continuing care hospitals. For instance, 24% of qualifying hospitals reported including other acute care hospitals in the development of standardized AMI protocols.

Given that, overall, Ontario hospitals are still developing protocols, the Hospital Report Acute Care SIC survey explored the key barriers to the development of standardized protocols. The most common obstacles identified were similar to those reported in *Hospital Report 2001: Acute Care*:

- Clinician time commitment required (88% of hospitals)
- Financial resources or support staff required (68%)
- More pressing issues faced the organization (59%)
- Physician resistance to standardized approaches to care, or their belief that individual patient needs cannot be addressed with standardized protocols (53%)

In contrast, only 17% of hospitals reported that nurses' resistance to standardized approaches to care, or their belief that individual patient needs cannot be addressed with standardized protocols, constituted a barrier to the development of standardized protocols.

Coordination of Care

During their stay in hospital, patients encounter a variety of physicians, nurses, other health care professionals and other hospital employees. Efforts by hospitals to plan patient 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.

In the SHoPSS results for *Hospital Report 2002: Acute Care*, about 68% of Ontario patients rated the coordination of their care as excellent. This is consistent with the findings of *Hospital Report 2001: Acute Care* and *Hospital Report '99*. Who was most satisfied?

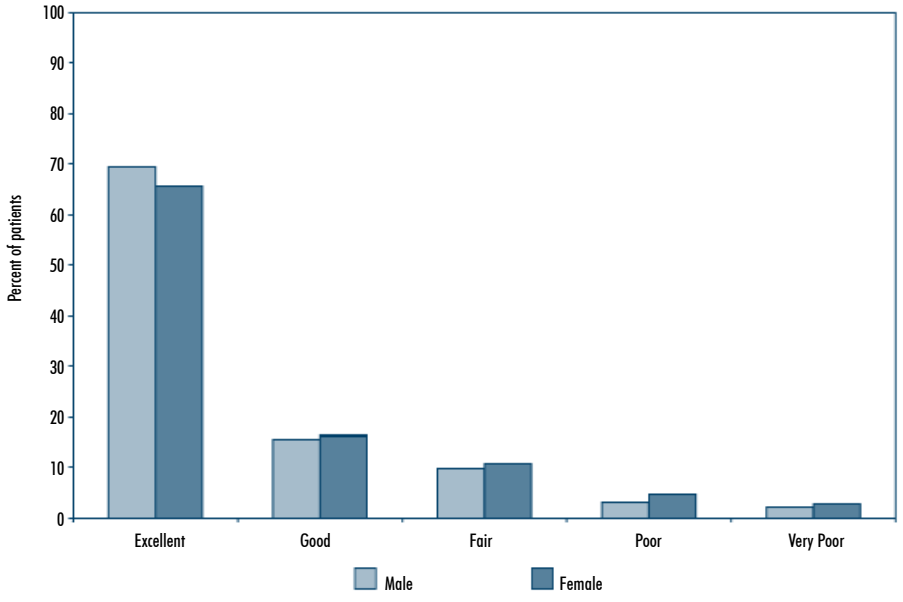
What Makes Up the Coordination of Care Indicator?

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?

FIGURE 2.7: PATIENTS' PERCEPTIONS OF COORDINATION OF CARE

Patient satisfaction ratings by sex on the Coordination of Care indicator from the SHoPSS results for *Hospital Report 2002: Acute Care*, by sex.



Patients' satisfaction with the coordination of their care seems to be related to age. Excellent ratings of satisfaction with their coordination of care were given by 73% of patients aged 65 to 84, compared with 63% 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 the Coordination of Care indicator. However, on average, patients treated in small hospitals reported significantly greater satisfaction than patients treated in community or teaching hospitals. This difference is reflected in the allocation of "provincial average" or greater for all small hospitals.

Hospitals in the Community

Hospitals are an integral component of any community. A positive hospital-community relationship is based on strong interactions and community involvement, including hospital volunteer programs, fundraising initiatives, dissemination of patient satisfaction results to the community, availability of multilingual staff, and existence of community-driven staff roles. The Hospitals in the Community indicator captures the strength of the hospital-community relationship through these types of measures.

What Makes Up the Hospitals in the Community Indicator?

To calculate the Hospitals in the Community indicator, hospitals were asked about a number of key areas, including:

- Accessible Web site for the community
- Dissemination of information about patient satisfaction data to the community
- Accessibility of services to patients with special communication needs
- Dissemination of results of *Hospital Report 2001: Acute Care* to volunteers and the community
- Number of new volunteers trained
- Total number of volunteer hours contributed
- Community-based committee board representation by senior management
- Existence of joint-fundraising campaigns with other health care organizations
- Existing community-related staff roles in the hospital

Across hospitals, the median value for the Hospitals in the Community indicator was 38.51 out of 100. In general, small hospitals (the middle 50% ranged from 18.80 to 39.64) scored lower than teaching/community hospitals (the middle 50% ranged from 31.73 to 49.64).

Fifty percent of hospitals indicated that they had disseminated information regarding the nature and changes, made as a result of patient satisfaction feedback, to the community at large in the form of newsletters/email (25%), presentation/discussion of results (20%), or hospital bulletin boards (18%). Only 12% of hospitals used a hospital Web site for this purpose, although 67% of hospitals overall reported that they had a Web site that targeted the community.

Most hospitals indicated that they had disseminated last year's *Hospital Report 2001: Acute Care* to volunteers (78%) and/or the community at large (57%). The most common way of disseminating the report to volunteers was through internal newsletters (53%) while the least common methods were through email (12%) and hospital Web sites (16%). Hospital bulletin boards (25%) were the most commonly used tool for disseminating the report to the community at large.

Almost all hospitals indicated that they had used the media as a means of informing the public about the results of their patient satisfaction data and about *Hospital Report 2001: Acute Care*. However, use of the media was not included in the indicator calculation as it did not vary across hospitals; instead, the indicator focused on identifying other dissemination strategies.

Community-related staff roles are common among Ontario hospitals. Most hospitals (76%) had a volunteer co-ordinator as a permanent position between April 1, 2000 and March 31, 2001, and another 4% of hospitals indicated that this role had been introduced since March 31, 2001 or was under development. Similarly, many hospitals (74%) indicated they had a fundraising co-ordinator during the specified time period. A further 3% indicated that they had introduced a fundraiser co-ordinator role since March 31, 2001 or were currently developing the role. More large hospitals (19%) than small hospitals (11%) indicated that a telehealth co-ordinator was a permanent role in their organization. However, a greater percent of small hospitals (34%) than large hospitals (8%) indicated that this type of role had been introduced since March 31, 2001 or was under development.

The scores on this indicator suggest there is more that hospitals could be doing to integrate into the community and reach out to their neighbors. Future System Integration and Change surveys will be revised to help identify potential outreach activities.

Working with Other Health Care Partners

Ontario's health care system is large and complex. At different times, in different ways, the people of Ontario come into contact with various parts of the system–in physicians' offices, pharmacies, hospitals, public health, community care access centres (CCACs), nursing homes, and other places. Ideally, these providers and organizations work together to provide a continuum of high quality care. Within the province a variety of joint

FIGURE 2.8: AVERAGE VOLUNTEER HOURS

Volunteers are an important component of hospitals, assisting in many aspects of day-to-day hospital functions. The graph below shows the average number of volunteer hours contributed per patient day between April 1, 2000 and March 31, 2001.

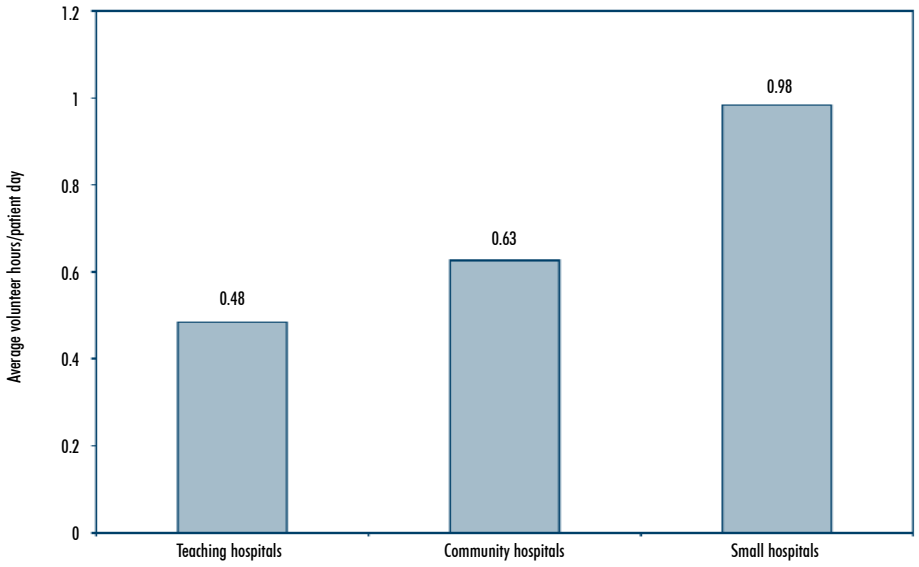
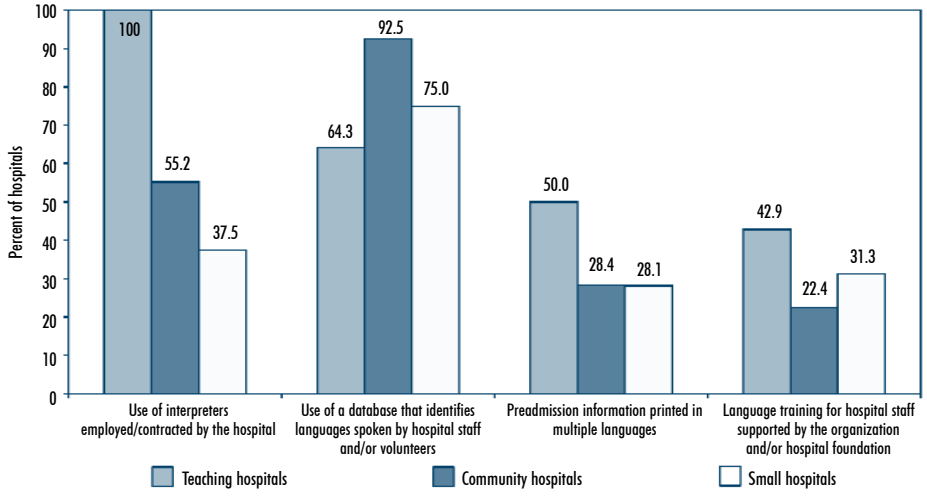


FIGURE 2.9: SERVING PATIENTS WITH SPECIAL COMMUNICATION NEEDS

Many hospitals in Ontario serve patients with a wide variety of special communication needs including speech, language, and hearing disorders as well as patients who are not fluent in the language spoken by the majority of hospital staff. The graph below shows the percent of hospitals, by hospital type, that had specific mechanisms in place to serve the requirements of patients with special communication needs between April 1, 2000 and March 31, 2001.



ventures, strategic alliances, corporate strategies, and other working relationships have emerged to improve links between acute care services and other health care partners. The Working with Other Health Care Partners indicator explores the extent to which hospitals are working with other health care providers to improve common approaches to patient care.

What Makes Up the Working with Other Health Care Partners Indicator?

The Working with Other Health Care Partners indicator is based on a number of questions addressing six different areas of interest from the Hospital Report Acute Care SIC survey. It measures:

- Specific partnership arrangements including strategic alliances and joint ventures
- Senior management board representation on health-related organizations
- Participation in regional programs with other hospitals
- Extent to which management in hospital and health care organizations met to discuss issues related to their relationship
- Corporate strategies in which hospital and health care organization staff were engaged
- The presence of hospital staff dedicated to promoting hospital-community integration

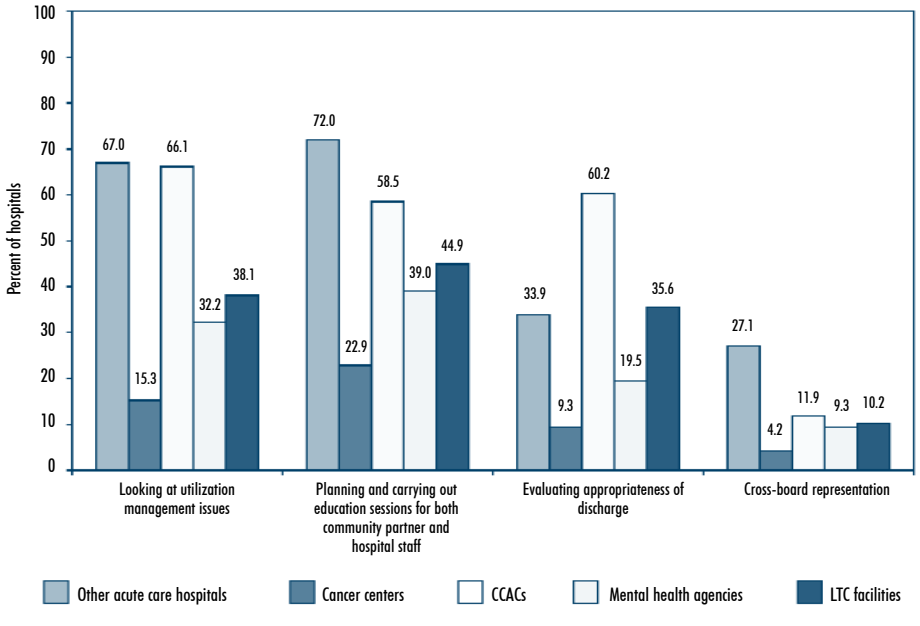
The Ontario hospital median value for the Working with Other Health Care Partners indicator was 53.91. However, the scores differed for teaching/community hospitals and small hospitals. The median for teaching/community hospitals was 57.15 while the median for small hospitals was 41.75.

Most hospitals (91%) indicated that they had participated in at least one regional program either designated and funded by the Ministry of Health and Long-Term Care (MOHLTC) or independent of the MOHLTC. A regional program is defined as a formal, written agreement between one or more hospitals to provide shared care and/or to refer all patients with a given condition to a single site and/or to contribute staff time to support program initiatives. Furthermore, almost all hospitals (94%) reported that they were engaged in a joint venture and/or a strategic alliance with another health care organization. A majority of Ontario acute care hospitals (69% or greater) reported having strategic alliances and/or joint ventures with other acute care hospitals. Only some hospitals (33%) reported having a strategic alliance relationship with a complex continuing care hospital. Even fewer (17%) indicated having a joint venture with a rehabilitation hospital.

Teaching/community hospitals were somewhat more likely to report having formed these types of relationships. This may be due, in part, to differences in the way that services are organized in urban and rural settings. For example, in smaller communities, the same people who work in the hospitals may also work in other health care

FIGURE 2.10: JOINT CORPORATE STRATEGIES WITH OTHER HEALTH CARE PROVIDERS

Hospital participation in corporate strategies with other health care providers is important to the improvement of hospital-health care provider relationships. Ontario acute care hospitals reported engaging in a number of different strategies with a variety of health care providers. The graph below shows the variation in some joint corporate strategies with other health care providers.



settings. As a result, formal partnerships between health care providers may not be as important or necessary. In contrast, hospitals in larger metropolitan centres may specifically hire staff to interact with community-based agencies.

Although the scores for this indicator suggest that there are still opportunities for most hospitals to improve ties with other health care providers, it is possible that Ontario hospitals have informal relationships with these groups which were not captured in the survey but which may contribute to hospital-health care partner relationships.

Continuity of Care

Patients' care needs often extend beyond their discharge from hospital. Because of the increasing use of day-surgery and shorter hospital stays, communication between hospitals and community agencies is 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 to home following a stay in hospital.

What Makes Up the Continuity of Care Indicator?

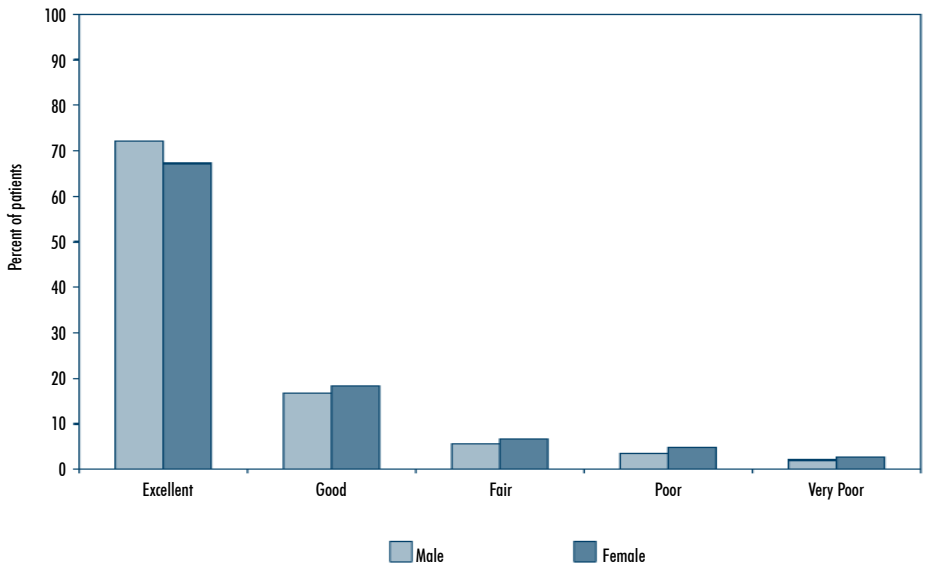
The Continuity of Care indicator, derived from the SHoPSS, is based on patients' answers to four questions:

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 SHoPSS for *Hospital Report 2002: Acute Care* said that they were satisfied with the continuity of their care. Consistent with the findings of *Hospital Report 2001: Acute Care* and *Hospital Report '99,* about 70% of patients gave a rating of excellent. More specifically, 83% of patients felt their discharge from hospital had been handled smoothly and 78% stated that they were ready to go home when they were discharged. Among patients who required follow-up care at the hospital, 85% reported receiving the necessary care. Conversely, almost one in three patients said that they or their caregivers had not been prepared by hospital staff (or prepared only to some extent) to manage care at home. While these results are favourable overall, there are still opportunities for hospitals and health care workers to enhance coordination of patient care among providers, inform and engage patients and families regarding the course of clinical management, and educate patients and families on the necessary support activities upon discharge.

FIGURE 2.11: PATIENTS' PERCEPTIONS OF THEIR CONTINUITY OF CARE

Patient satisfaction ratings by sex on the Continuity of Care indicator from the SHoPSS results for *Hospital Report 2002: Acute Care*, by sex.



Strategies for Managing Alternate Level of Care Patients

Patients' care needs change through the course of their illness. The appropriate settings for receiving the care that they need may therefore also change. For instance, certain services are only provided in acute care hospitals, but other services are also available in other settings. In 2000/2001, Ontario hospitals reported that patients awaiting an alternate level of care (ALC) accounted for 9% 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 care in a complex continuing care facility, nursing home, or rehabilitation centre, but these services or beds were not immediately available.

The Strategies for Managing 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.

What Makes Up the ALC Indicator?

This indicator was derived from hospital responses to questions about their strategies to decrease the number of ALC days, including:

- Strategies for managing ALC patients in the organization (e.g. focusing on deferring admissions from the emergency room, creation of specialized units for ALC patients)
- Strategies for transferring patients into the appropriate setting more quickly (e.g. the development of partnerships with community health agencies and retirement homes)

FIGURE 2.12: TOP STRATEGIES FOR MANAGING ALC PATIENTS

Hospitals across Ontario are engaging in a wide range of strategies designed to help reduce the number of ALC days. The table below shows the five most common strategies for teaching, community, and small hospitals as reported in two separate Hospital Report Acute Care SIC surveys used in the 2001 and 2002 Hospital Reports.

Strategies for Managing ALC Patients	Teaching Hospitals		Community Hospitals		Small Hospitals	
	2001	2002	2001	2002	2001	2002
Conducting a daily utilization review to determine appropriateness of admission and readiness of discharge			✓	✓	✓	
Developing closer working relationships with community agencies	✓	✓	✓	✓	✓	✓
Focusing on deferring admissions from the emergency room	✓			✓		
Having a policy where patients must choose multiple LTC facilities and they must go to the first available facility from that list	✓	✓	✓	✓	✓	✓
Increased family education and involvement in care planning		✓	✓	✓	✓	✓
Increased nurse education and involvement in care planning		✓				✓*
Increased physician education and involvement in care planning	✓	✓	✓			✓*
Providing in-service education for nurses specifically regarding their role in early identification of patients with discharge challenges and early estimation of day/time of discharge	✓					
Providing temporary passes and in-home assessments					✓	✓

* For small hospitals, the number engaged in the strategies "increased nurse education and involvement in care planning" and "increased physician education and involvement in care planning" was the same, so both are noted.

In general, small hospitals appear to have engaged in fewer strategies than teaching/community hospitals to manage ALC days. However, there was a range of activity among hospitals: the middle 50% of small hospitals' scores ranged from 23.51 to 45.06 points. In contrast, indicator values for the middle 50% of teaching/community hospitals ranged from 44.55 to 66.39 points. ALC days may not be distributed evenly across hospital types and small hospitals may have less strategies in place because they have to deal with fewer ALC days than teaching/community hospitals.

Supporting Hospital Staff

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 future challenges. As a result, many hospitals are offering professional development support for staff, employing innovative human resource practices and related strategies, implementing employee mentorship and recognition programs, offering formal performance evaluations, and tracking employee turnover rates. The Supporting Hospital Staff indicator is designed to reflect the extent to which a hospital has introduced these types of practices.

Across all hospitals, the median score for the Supporting Hospital Staff indicator was 53.53 out of 100.00. However, small hospitals scored lower (median value of 46.32) than teaching/community hospitals (median value of 56.46).

According to the Hospital Report Acute Care SIC survey results, nearly every hospital in Ontario provided some form of professional development for staff. Across the province, over 80% of hospitals provided professional development support for nurses and other patient-care staff through such mechanisms as paid and/or unpaid time off to take courses, on-site courses, and reimbursement of education tuition. The most common kinds of professional development offered to physicians with hospital privileges included on-site courses (56%) and reimbursement of education tuition (47%). Thirty-eight percent of hospitals reported that they provided bursaries/scholarships towards continuing education or professional development support for either some or all groups, including physicians with hospital privileges, nurses, and other patient-care staff.

What Makes Up the Supporting Hospital Staff Indicator?

The Supporting Hospital Staff indicator was based on the following areas of focus:

- Staff roles in the hospital
- Employee mentorship and recognition programs
- Percent of full-time, non-managerial hospital staff that had formal annual performance evaluations (including face-to-face meetings and written feedback)
- Support for continuing education and professional development
- Organizations' expenditure for in-service and professional education
- Specific formal practices in the hospital for non-managerial employees including self-scheduling and flexible job design for nurses
- Strategies for recruitment/retention of staff
- Formal orientation program
- Formal interviewing process for physician leadership positions
- Formal succession planning
- Tracking turnover rate of hospital staff
- Number of formal disputes, grievances, or complaints filed by non-managerial staff (including nurses, other patient-care staff, and other hospital staff)
- WSIB lost-time claim submissions made by non-managerial staff
- Strategies in place to deal with nursing shortages

In the survey, Ontario hospitals reported spending on average less than one percent of their operating expenses (6.30 dollars per 1000 operating dollars) on in-service and professional education, which included tuition fees for courses at schools and/or educational institutions, training materials, and trainers' salaries for the majority of hospitals.

The median number of formal disputes, grievances or complaints filed by Ontario hospitals per non-managerial staff was 0.05 and the median number of WSIB lost-time claims submitted per non-managerial staff was 0.03. Many hospitals (88%) tracked turnover rate in some way. However, less than half of the hospitals were able to separate turnover rates for different employee groups.

Succession planning for leadership positions varied. For example, 64% of hospitals had a formal interviewing process in place for physician leadership positions (e.g. Chief of Staff), and 58% of hospitals had formal succession plans in place between April 1, 2000 and March 31, 2001 for Board of Directors' Chair. Fewer hospitals (19%) reported having formal succession plans for senior management (Vice President and above).

Innovative staff roles are emerging in hospitals to improve both patient care and operational efficiency. For example, 31% of hospitals had a physician recruitment co-ordinator as a permanent role and 12% of hospitals were working on developing such a role in their hospital. Some hospitals (36%) indicated that they had a nurse practitioner (extended class) or a clinical nurse specialist (44%). Forty-three percent of teaching/community hospitals reported having a pathology assistant. More hospitals (68%) indicated that a nurse educator was a permanent role in their organization. A higher percent of teaching/community hospitals had these staff roles than small hospitals.

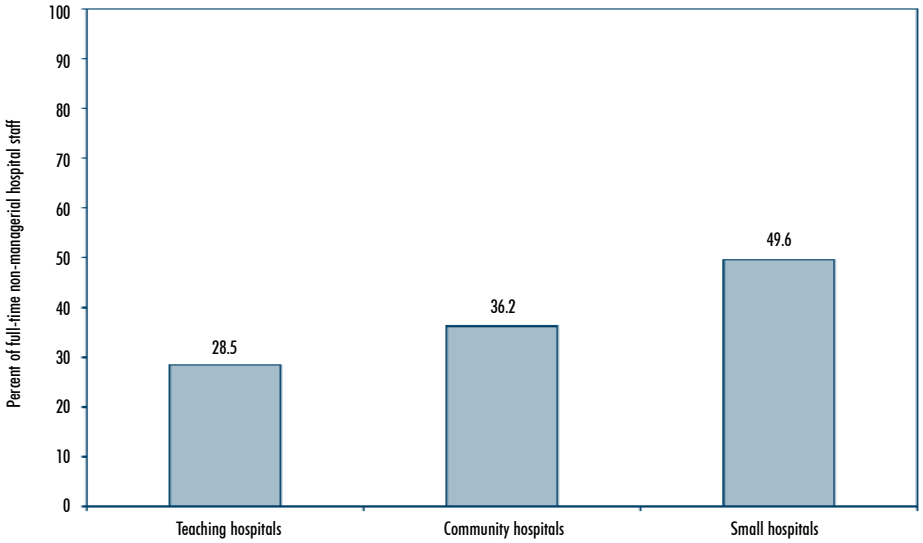
Thirty-nine percent of Ontario hospitals reported having a mentorship program in place for nurses where mentors had their other workload reduced in order to allow time to guide and support. Fewer hospitals reported having such programs in place for other patient-care staff (12%), physicians with hospital privileges (10%) and other hospital staff (2%). Almost the same percent of hospitals reported having a recognition program for nurses (82%), other patient-care staff (81%) and other hospital staff (81%), but a smaller percentage (40%) reported having such a program for physicians with hospital privileges. There was also variation across hospital type, with more teaching/community hospitals (87%) than small hospitals (about 70%) having an employee recognition program for nurses and/or other patient-care staff.

All of the 87% of hospitals that reported having a nursing shortage had strategies in place to deal with it. The most common strategies included voluntary overtime (89%), greater use of casual nurses than the previous fiscal year (45%), use of agency nurses (30%) and float pools (32%). The least-used strategy to address nursing shortages was mandatory overtime (18%).

Hospitals also used a variety of recruitment and retention strategies that were not directly related to professional development. For example, over 60% of hospitals were represented at job fairs for nurses or other patient-care staff. More hospitals (73%) had formed committees designated to address the

FIGURE 2.13: AVERAGE PERCENT OF HOSPITAL STAFF WHO RECEIVED A PERFORMANCE EVALUATION

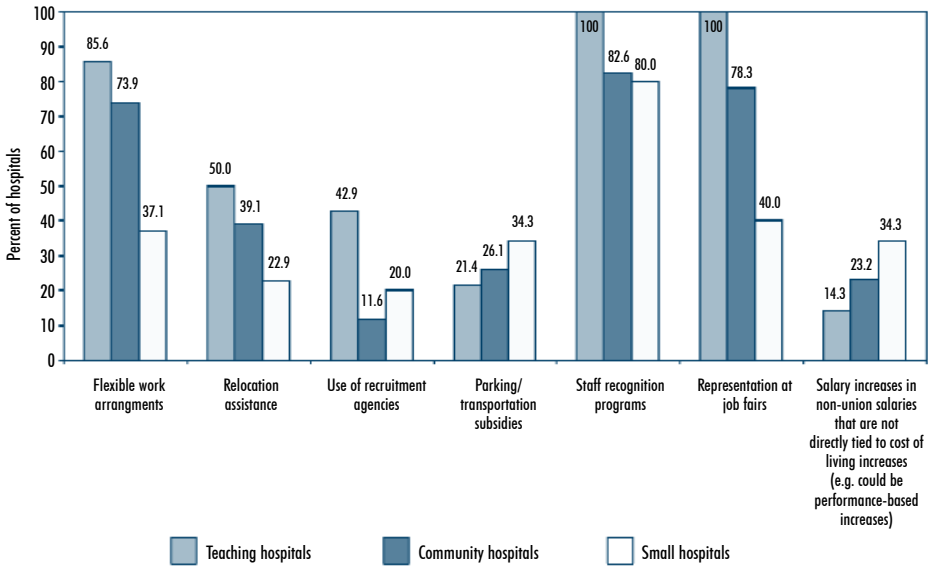
One possible strategy for retaining hospital staff is providing formal performance evaluations. The graph shows the average percent of full-time non-managerial hospital staff who had performance evaluations, including a face-to-face meeting and written feedback, by hospital type between April 1, 2000 and March 31, 2001.



Note: It was reported by many hospitals that performance evaluations occur in a three-year cycle. Hopefully future Hospital Report Acute Care SIC surveys will be able to accurately reflect this type of cycle.

FIGURE 2.14: NURSING RECRUITMENT AND RETENTION STRATEGIES

Hospitals may try to recruit and retain their staff using a number of different methods. The graph below shows the variation in some recruitment and retention strategies for nurses by hospital type.



quality of nurses' work life–including scheduling and workload issues–than that of other patient-care staff (42%) or other hospital staff (39%). Forty-seven percent of hospitals reported having a staff lounge on each unit for nurses; 32% of hospitals provided one for other patient-care staff, and 25% for other hospital staff. However, the percent of hospitals that used recruitment agencies to obtain nursing staff (18%) or offered nurses signing bonuses upon employment (5%) was lower than the percent of hospitals using these strategies to recruit and retain other patient-care staff (24% and 13% respectively) and other hospital staff (27% and 11% respectively).

Supporting Hospital Staff: Women's Health

Women frequently have major care-giving responsibilities in their personal lives. Workplace initiatives to support employees in their roles as caregivers may help to reduce stress and therefore help attract and retain prospective female employees. The Hospital Report Acute Care SIC survey looked at the types and availability of programs aimed at supporting care-giving responsibilities. It found that few hospitals had either daycare or eldercare programs in place. Of teaching/community hospitals, 8.4% had implemented daycare programs and 2.4% had eldercare programs for nurses, other patient-care staff and/or other hospital staff. No small hospitals had either of these kinds of programs in place for these groups.

Summary

This quadrant provides Ontario hospital stakeholders with province-wide and hospital-specific measures of system integration and change performance. 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 extent to which Ontario's hospitals are implementing innovative strategies.

In this report, we presented data based on new indicators of System Integration and Change. Findings include:

- A low percentage of hospitals indicated that their patient-care staff in all areas/programs of the hospital had electronic access to archived medical records (11%), literature search databases (36%), and other library resources/educational material (34%).
- Nearly half (48%) of qualifying hospitals (those hospitals that had 12 or more cases for a given condition/procedure in 2000/2001) reported that they have developed at least five standardized protocols within their organization among the 12 clinical areas. However, no hospital reported having a standardized protocol for each of the 12 common conditions/procedures.
- Approximately 68% of Ontario patients rated the coordination of their care as excellent.
- Fifty percent of hospitals indicated that they had disseminated information regarding the nature and changes made as a result of patient satisfaction feedback to the community at large through a variety of channels, though few (12%) used a hospital Web site for this purpose.
- Almost all hospitals (94%) reported that they were engaged in a joint venture and/or a strategic alliance with another health care organization.
- Across the province, over 80% of hospitals provided professional development support for nurses and other patient-care staff through such mechanisms as paid and/or unpaid time off to take courses, on-site courses, and reimbursement of education tuition.
- Ontario hospitals reported spending on average less than one percent of their operating expenses (6.30 dollars per 1000 operating dollars) on in-service and professional education, which included tuition fees for courses at schools and/or educational institutions, training materials, and trainers' salaries for the majority of hospitals.
- All of the 87% of hospitals that reported having a nursing shortage had strategies in place to deal with it.

Next Steps

The System Integration and Change quadrant assesses the types of initiatives undertaken by hospitals across the province to improve linkages with community agencies and other providers of care, to develop and disseminate better information both within and outside the hospital for decision-making, and to further the skills of health professionals.

By its very nature, the measurement of change is a dynamic process. As such, measures of change used in the past may not be appropriate for the present. For this reason, the System Integration and Change quadrant was chosen as the quadrant to begin the cycle of redevelopment and it will continually be reviewed for opportunities to better capture the key concepts.

Although the Hospital Report Acute Care SIC survey tried to capture differences among patient-care groups and hospital employees, hospitals had difficulty reporting the information for each group separately (e.g. nurses, other patient-care staff, other hospital staff). This hampered the development of a specific nursing indicator as originally planned. Hopefully, in future years, tracking mechanisms that allow for the differentiation among the groups will be in place. Although the new survey questions were tested by a sample of hospital representatives, additional feedback received throughout the survey process revealed areas of improvements for next year's survey. Some questions may be removed, others may be added, and some questions will be improved to ensure that true concepts are being accurately measured. Over the next few years, System Integration and Change surveys will build on this year's existing data so that enhanced comparisons over a number of years will be possible.

Clinical Utilization and Outcomes

Clinical Utilization and Outcomes

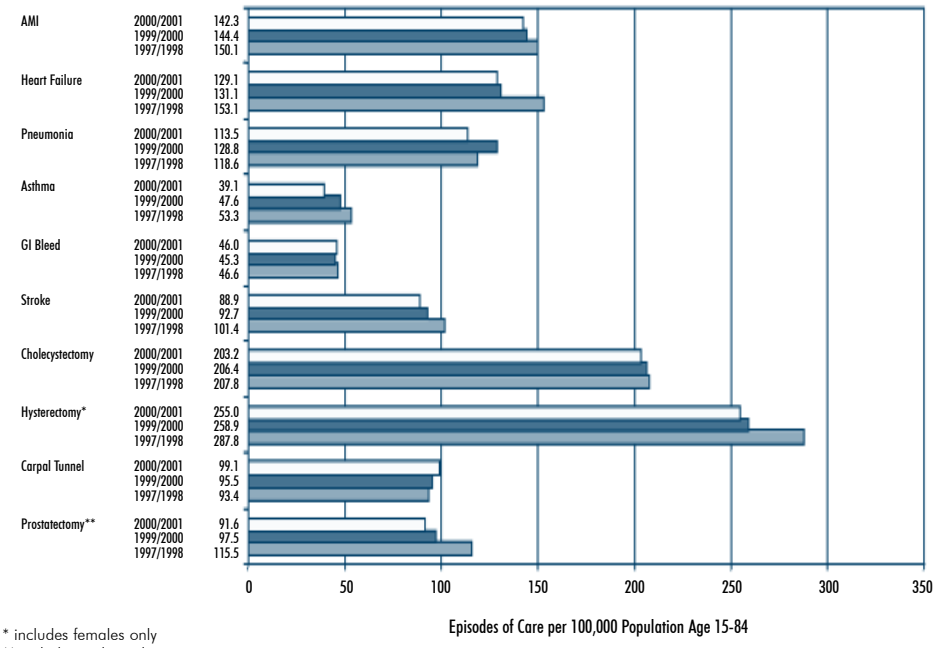
What's New in 2002?

There are a number of new elements and features in the Clinical Utilization and Outcomes quadrant this year. These include:

- Presentation of age- and sex-standardized results for three reported fiscal years of data: 1997/1998, 1999/2000, and 2000/2001
- Two new indicators that focus on nursing-related outcomes: hospital-acquired pneumonia rates and urinary tract infection rates following specific surgical procedures
- Sex-specific analysis of indicators, plus the integration of two women's health focused indicators: primary caesarean section rates, and vaginal vs. abdominal hysterectomy rates
- Enhanced methodologies for calculating some of the core Clinical Utilization and Outcomes indicators. For further detail on these enhancements, please refer to the *Hospital Report 2002: Acute Care Technical Summary*.
- Recent studies of the hospital discharge data that form the basis of the clinical utilization and outcome measures indicates problems with the consistency and quality of coding for complications and comorbidities. Preliminary analysis suggests that these data quality issues could have an important impact on the comparability of the complication rates for each hospital. For this reason, hospital-level results for the four complication indicators have been removed from this report. Further analysis will be done to determine the extent and impact of these data coding issues and the results of that analysis will be made public. For more information on this issue, refer to the 'Coding Variations and Data Quality' sidebar in this chapter.

FIGURE 3.1: HOSPITALIZATION RATES ACROSS PATIENT GROUPS

Between 1997/1998 and 2000/2001, the number of episodes of care in acute care hospitals per 100,000 Ontarians between the ages of 15 and 84 decreased for all but one of the patient groups examined in this report.



* includes females only
** includes males only

Source: Discharge Abstract Database, 1997/1998, 1999/2000, and 2000/2001

Hospitals are often the setting for some of the most important events of our lives. Births, deaths, emergencies, and major surgeries occur every day in acute care facilities throughout Ontario. Hospitals not only strive to provide the best quality patient care possible, but also seek ways to improve this care. One of the ways by which hospitals may identify opportunities to improve their quality of care is to compare their performance levels with those of other hospitals.

The Clinical Utilization and Outcomes quadrant chapter of *Hospital Report 2002: Acute Care* is intended as a mechanism to support continuous quality improvement, helping hospitals to evaluate the clinical services they provide and determine how they compare to those of similar hospitals within Ontario. Like its predecessors, *Hospital Report '99* and *Hospital Report 2001: Acute Care*, this year's report uses hospital data to describe clinical utilization and outcomes in Ontario hospitals. While the indicators have remained relatively unchanged from year to year, the methodology is refined on an ongoing basis to ensure that the results continue to be relevant and appropriate. For details on changes to this year's methodology, please refer to the *Hospital Report 2002: Acute Care Technical Summary*.



A Snapshot of Ontario Hospitals

As technologies advance and change, and patterns of care evolve, so too does the Ontario acute care health system. For more than a decade, day-surgery use has increased, while the number of patients staying overnight in Ontario hospitals has declined. Over the three reported years covered in this report, the percentage of day-surgery patients as a proportion of all acute care patients in Ontario has increased from less than 47% to around 50%. Similar patterns are evident for the specific patient groups covered in this report. These groups represent ten common medical and surgical conditions that are treated in most Ontario hospitals. For eight of the ten patient groups, hospitalization rates decreased. The two exceptions were carpal tunnel release surgery patients, for whom hospitalization rates increased over the three reported years, and pneumonia cases, for whom rates increased from 118.6 per 100,000 to 128.8 per 100,000 between 1997/1998 and 1999/2000, but decreased to 113.5 per 100,000 in 2000/2001.

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, sometimes referred to 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 and paralysis.

Cholecystectomy is an operation to remove the gall bladder, often performed because gallstones are causing pain and other symptoms. The laparoscopic, or 'closed', 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.

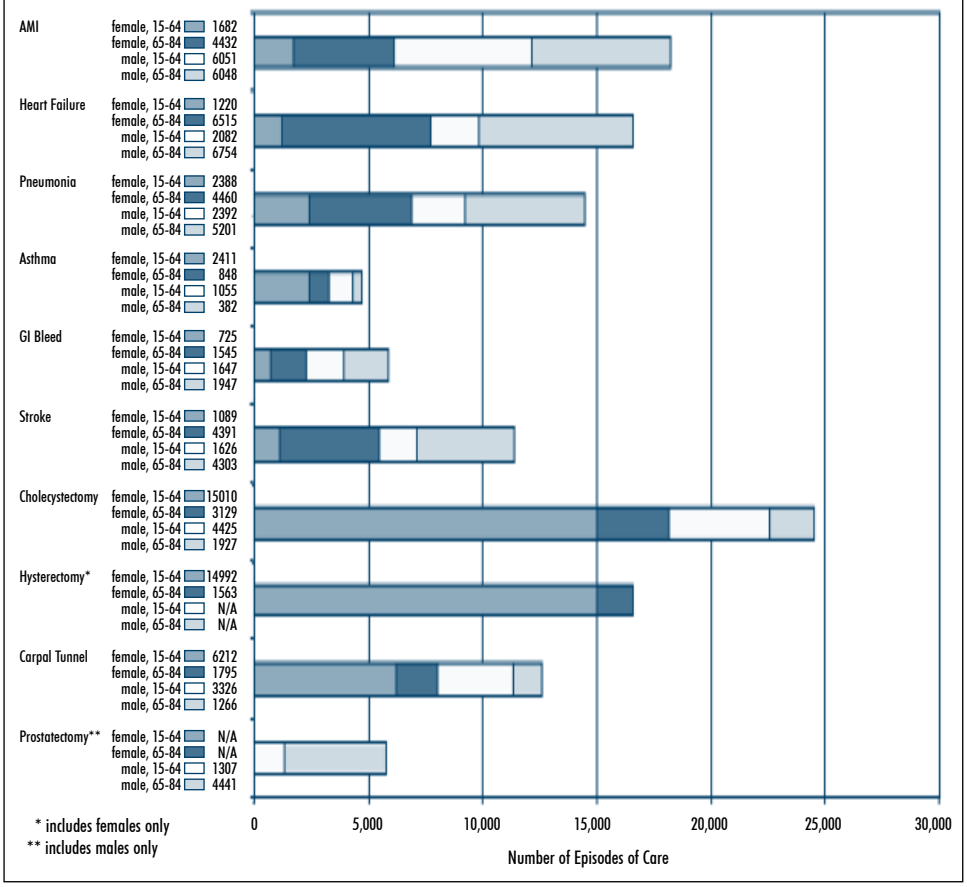
Prostatectomy is the removal of all or a portion of the prostate gland. The procedure can be done using a device called a cystoscope that is inserted through the urethra or through an incision in the lower abdomen.

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

Although Ontario's population has increased by about 3.9% between 1997/1998 and 2000/2001,[1] hospitalization rates have declined. Several factors may be responsible. For example, the total number of patients admitted to hospital has fallen, which may be attributable in part to the fact that outpatient care has displaced inpatient care among certain medical and surgical groups. Furthermore, because the hospitalization rate is a fraction, as the numerator (total number of patients) decreases, and the denominator (total population) rises, the rate falls.

FIGURE 3.2: WHO WAS HOSPITALIZED IN 2000/2001?

The demographic characteristics of patients differ across the patient groups. For example, in 2000/2001 men accounted for almost two-thirds (66%) of all hospitalizations for AMIs, while women between the ages of 15 and 64 accounted for 61% of all cholecystectomies.



Source: Discharge Abstract Database, 2000/2001

However, 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 between 15 and 64 years old.

How was the Research Done?

The Data Source

Every time a patient is discharged from, or dies in, an Ontario acute care hospital, that hospital records summary information about the hospitalization. This information, known as a discharge abstract, is then sent to the Canadian Institute for Health Information

Coding Variations and Data Quality

The Clinical Utilization and Outcomes quadrant analysis is dependent on the consistent coding of data on patient health status across all Ontario hospitals. Although numerous studies have identified some error in this data, recent studies conducted jointly by CIHI, JPPC, and MOHLTC have identified patterns in the practice of coding patients' comorbidities at certain Ontario hospitals. These variations may reduce the comparability of indicator calculations across Ontario hospitals.

A preliminary analysis by CIHI and the Hospital Report Research Collaborative has indicated that these variations in coding are unlikely to have major implications for hospital-level comparisons of average lengths of stay, readmission rates, or access to day-surgery or angiography. However, coding variations may have a large impact on hospital-level comparisons of the complication rate indicators for AMI, Pneumonia, Cholecystectomy, and Hysterectomy patients. It is important to note that the decision to exclude the hospital-specific complication indicators from this report is based on concerns over the consistency of data submitted, not with the methodologies used to calculate the indicator values. Hospitals that are confident that their data are accurate should be able to use the complication indicators measures for their quality improvement efforts. The provincial complication rates that are reported here provide some comparative standards for these hospitals.

These variations in the coding of data introduce substantial differences in the picture of patients' health and prevent both the description of each hospitals' performance and the accurate and valid comparison of performance across hospitals. Based on current concerns, CIHI and the Hospital Report Research Collaborative have decided not to include hospital-level complication indicators in this report. CIHI and the Hospital Report Research Collaborative have agreed to work together to complete a more comprehensive analysis on the extent and impact of coding variations and to develop a strategy to ensure that these variations and their impact on hospital comparisons will be minimized. A full report on the analysis of coding irregularities and the strategy to improve data quality will be made public at a later date.

(CIHI) for compilation and analysis. 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 2000/2001 fiscal year. The discharge abstracts contain data that provide a window into the clinical services provided by Ontario hospitals. For comparison purposes, abstract data from the 1997/1998 and 1999/2000 fiscal years were also used in most cases. Trained personnel ('abstractors') in all acute care hospitals in Ontario collect the discharge abstracts using CIHI guidelines as a framework. CIHI performs rigorous data quality checks on the abstracts and hospitals are asked to correct any errors found. Nevertheless, some inconsistencies 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 most of the Clinical Utilization and Outcomes measures used in *Hospital Report '99* and *Hospital Report 2001: Acute Care*. 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 province-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 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 were the focus of on-going educational activities at a select group of hospitals. Based on these criteria, eight "core" measures were used in the hospital-specific comparisons. These eight measures, based on seven of the ten patient groups used for the province-wide analysis, are identified in the table to the right.

Patient Group	QUALITY Readmissions	EFFICIENCY Length of Stay	ACCESS 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 patients or a small number of physicians providing care in 2000/2001.

In addition, this year the Clinical Utilization and Outcomes quadrant integrates expanded analysis and additional indicators that focus on nursing-related care and women's health. For the most part, these new indicators were calculated at the province-wide level only.

These nursing and women's health indicators were developed using a similar process to the core Clinical Utilization and Outcomes indicators. The nursing-related care indicators were identified through a critical appraisal of the literature and consultation with key stakeholders.[2,3] The objectives of the literature review were to determine the state of research related to nursing report cards, identify indicators that have demonstrated sensitivity to nursing care, identify essential characteristics defining each indicator, and assess the congruency of the indicators with the

balanced-scorecard framework.[4] Eight indicators were selected based on this review: functional status, self-care status, symptom control, patient falls, urinary tract infections, pneumonia, pressure ulcers, and 'failure to rescue'. Although these outcomes may be affected by a number of different professional groups within a hospital, consultations with key stakeholders and leaders in nursing in Ontario confirmed the relevance of these clinical outcome indicators to nursing care.[4]

In this year's report, two of the above mentioned indicators are presented at the province-wide level: urinary tract infections following the surgical procedures included in this report, and hospital-acquired pneumonia. These two clinical indicators were selected for integration into the acute care report this year because of the availability of routinely collected province-wide data from CIHI.

The process for developing the women's health indicators mirrored that of the nursing-related care indicators. A list of indicators was developed using a literature review and consensus panel. A subset of these indicators was then selected on the basis of feasibility for calculation. The indicators are:

- Core Clinical Utilization and Outcomes indicators presented by sex
- Hospital-level ranges of female:male ratios for core Clinical Utilization and Outcomes indicators
- Primary caesarean section rate
- Vaginal to abdominal hysterectomy ratio

The Methods

The methodology used in this report is described in detail in *Hospital Report 2002: Acute Care Technical Summary*. It is available free on *Hospital Report* series partners' and sponsors' Web sites. For a list of Web sites, see the back cover of this report. Important features of the methodology 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, 2000 and March 31, 2001.
- 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 (province-wide results only)
  - 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 to which the patient was admitted 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, human immunodeficiency virus (HIV), acquired immune deficiency syndrome (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 the 12 core Clinical Utilization and Outcomes indicators in the summer of 2002. Hospitals verified these data, and no changes were made as a result of this process.

Interpreting the Results

This quadrant reports quantitative results for clinical utilization and outcomes. To arrive at the final results, the data went through a multi-staged process involving case selection, episode-of-care building, and risk-adjustment. Some aspects of this process 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. Because 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 cannot eliminate these differences.
- Some hospitals care for patients who are very ill or have very rare conditions. 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 can 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 totally 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 all core indicators. To ensure comparability, values from 1997/1998 and 1999/2000 have been recalculated to reflect updated methodologies. Further, the results have been age- or age- and sex-standardized as appropriate. This standardization allows for more meaningful comparisons of results across multiple years by creating a "standard" population, and applying the age- and sex-specific rates from the comparison years to this standard population. The results for 1997/1998 and 1999/2000 data presented in this report will therefore differ slightly from those reported in previous *Hospital Reports*.

How Performance is Assigned

Participating Ontario acute care hospitals were compared on eight 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".

There are no accepted benchmarks–provincially, nationally, or internationally–that define the "best" or "right" value for any of the indicators. A hospital's allocation, therefore, reflects its performance relative to that of other hospitals in the province in 2000/2001. Since the provincial average changes from year to year, a hospital's rating in one year is not directly comparable to that of 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 allocation may be lower than in the previous year.

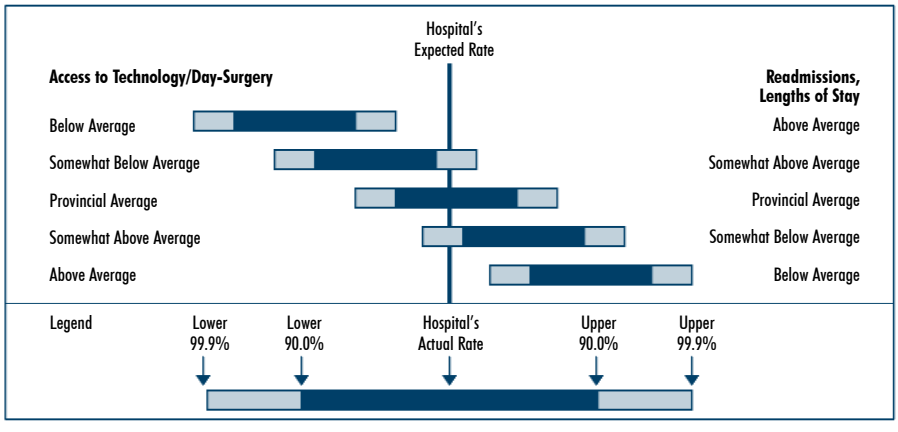
Based on how performance allocations are assigned, the majority of hospitals fall into the "provincial average" category of performance allocations while fewer hospitals are below or above this "provincial average" allocation. This distribution is common across the indicators in all four quadrants. The Clinical Utilization and Outcomes quadrant chapter focuses on province-wide results, whereas performance allocations presented in the report insert are specific to a hospital based on its performance relative to that of all other hospitals in the province. Performance allocations for each indicator by hospital type are summarized in Appendix B. In addition, hospital-by-hospital results for 92 Ontario hospital corporations are available in the insert at the back of this report.

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; while risk-adjustments reduce the effect of differences in the patient populations served by different institutions, 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 between actual and expected rates are more likely to be found among larger hospitals. Figure 3.3 illustrates how these performance scores were allocated.

FIGURE 3.3: HOW CLINICAL UTILIZATION AND OUTCOMES PERFORMANCE IS ASSIGNED



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 performance allocation categories. 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.

Indicators of Clinical Utilization and Outcomes

Use of Technologies for AMI and Stroke Patients

The ways in which health care is provided today are very different than in the past. Innovative drug therapies, new diagnostic and therapeutic devices, and advanced techniques and treatments are all contributing to changes in the ways patients receive care. But not all patients may benefit from these changes–diagnostic and treatment options must be assessed on an individual basis.

In this section, the report focuses on how often AMI and stroke patients received certain advanced diagnostic and therapeutic technologies:

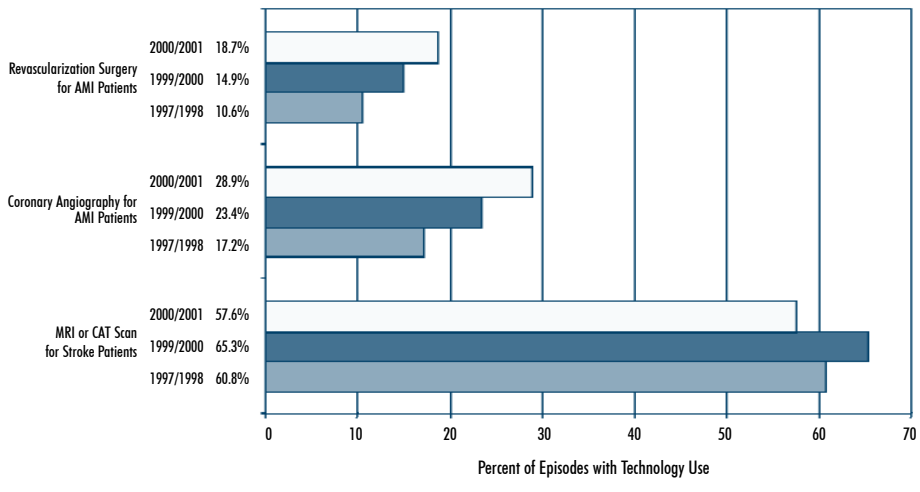
- **Coronary angiography** is often used to assess blood flow for AMI patients. In this procedure, radio-opaque dyes are injected, allowing physicians to observe the flow of blood through the heart.
- **Revascularization surgeries**—such as coronary artery bypass graft surgery (CABG) and percutaneous 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 and guiding treatment.

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.[5] 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. Patients with access at other times (e.g. a month following discharge from hospital) were not included.

Although not all patients suffering from heart attacks or strokes require these technologies, their use has generally increased over the three reported years. Almost 29% of AMI patients in 2000/2001 received coronary angiography during their episode of hospital care. This is up from less than 24% one year before. Likewise, nearly 19% of AMI patients received a revascularization procedure (CABG or PTCA) in 2000/2001. This was up from less than 11% in 1997/1998. Conversely, about 58% of stroke episodes in 2000/2001 received a MRI or CAT scan, a decrease of seven percentage points from 1999/2000, when just over 65% received these diagnostic procedures. Overall rates of MRI or CAT scan use for all patients have also declined slightly from 1999/2000 to 2000/2001. However, these results must be interpreted with caution, as it is not mandatory to report the use of MRI on a

FIGURE 3.4: USE OF TECHNOLOGY FOR AMI AND STROKE PATIENTS

Over the three reported years, use of medical technologies for AMI patients has progressively increased. The graph below shows the percentage of AMI patients who had revascularization (CABG) surgery and coronary angiography during their hospital stay. Conversely, there has been a decline in MRI or CAT scan use from 1999/2000 to 2000/2001.



Source: Discharge Abstract Database, 1997/1998, 1999/2000 and 2000/2001

patient's abstract. This may have an impact on the comparability of rates from one year to the next.

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

Some hospitals have the capability to provide these services on site during a patient's hospitalization. Others, particularly smaller hospitals, need to 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 clinical volumes to support. The ability to provide access to these technologies on-site may also be affected by variations in government allocations and funding, or the use of fundraising campaigns to purchase equipment.

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). Hospitals may be impacted by the availability of these alternative levels of care in the community. As the 'appropriate' length of stay for different types of patients is unclear, 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.

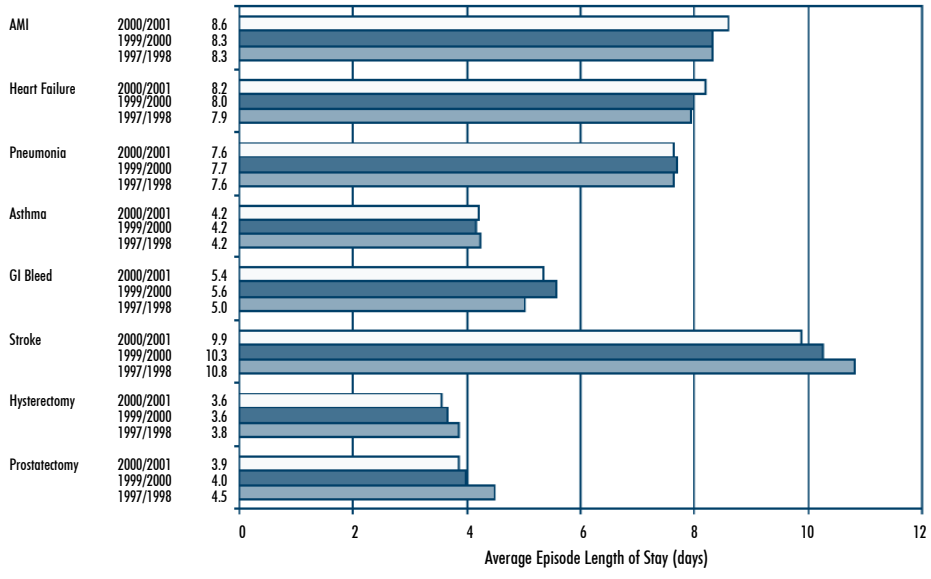
At just under ten days, stroke patients have the longest average length of stay of all the patient groups included in this quadrant. AMI, heart failure, and pneumonia patients also have relatively long lengths of stay–ranging from 7.6 to 8.6 days in 2000/2001.

Average lengths of stay for most patient groups were relatively stable across the reported years. All changes from one reported year to the next were half a day or less. Both surgical groups—hysterectomy and prostatectomy—had progressively shorter average lengths of stay over the three reported years. 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 AMI and heart failure, however, had slight increases (0.3 and 0.2 days, respectively).

Across the different hospital types (teaching, community, and small), there was some variation in average lengths of stay. For example, the average length of stay for stroke patients was 11.0 days in small hospitals, 8.5 days in teaching hospitals, and 7.7 days in community hospitals.

FIGURE 3.5: AVERAGE LENGTH OF STAY ACROSS PATIENT GROUPS

Over the three reported years, 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, 1999/2000 and 2000/2001

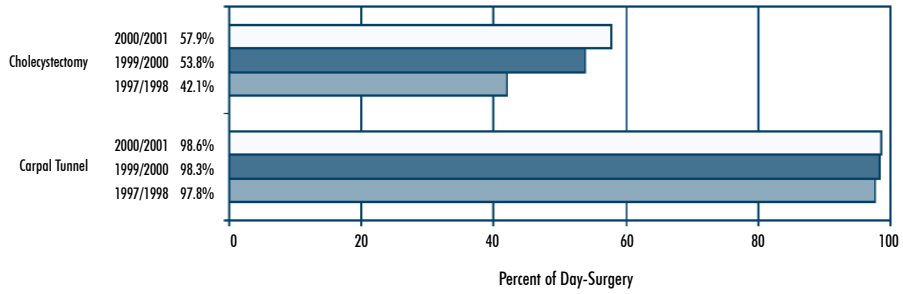
These rates have been risk-adjusted to account for differences in health status of patients at the different hospitals. There were much smaller differences in average length of stay for hysterectomy patients: 3.8 days in teaching hospitals, 3.6 days in community hospitals, and 3.5 days in small hospitals.

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–never having to spend a night in hospital. Not only do they spend less time in hospital, but these patients also tend to experience less pain after their surgery and recover more quickly. Over half (57.9%) of all cholecystectomies were performed as day-surgeries in 2000/2001, an increase of almost 16 percentage points over the three reported years. 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 2000/2001, over 98% were done as day-surgeries. This finding was consistent with rates in the two previous reported years.

FIGURE 3.6: 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, 1999/2000 and 2000/2001.



Source: Discharge Abstract Database, 1997/1998, 1999/2000 and 2000/2001

Readmission Rates for Medical and Surgical Patient Groups

Following their discharge from hospital, most patients recover at home or in other types of care facilities. But some are readmitted within a short period of time due to a related health problem.

Among the patient groups studied, readmissions were most common for AMI patients. Seven percent of AMI patients in 2000/2001 had a related condition requiring an urgent or emergent return to hospital within 28 days of their original discharge. In contrast, readmission rates for the surgical patient groups were much lower at 1.0% for hysterectomy, 1.7% for cholecystectomy, and 2.3% for prostatectomy.

Readmission rates fluctuate slightly from year to year. Rates for most of the patient groups remained stable or increased slightly (less than 0.5 percentage points) between 1999/2000 and 2000/2001. The three exceptions to this trend were for AMI, GI bleed, and prostatectomy patients.

Readmission rates varied between teaching and community hospitals. Small hospitals cannot be included in the comparison of average readmission rates because too few of the participating small hospitals had large enough patient

What is a Readmission?

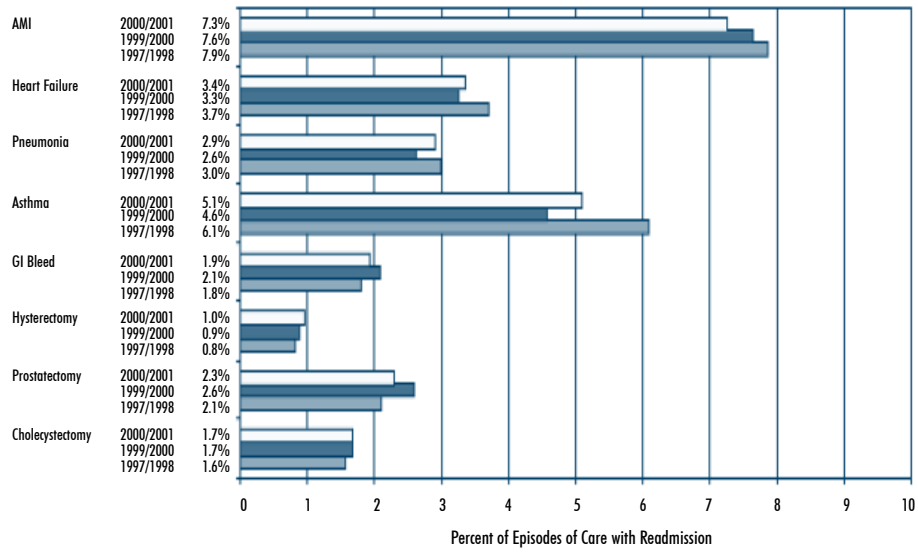
An episode of care is counted as having a readmission if the subsequent hospitalization (in either the same or another Ontario acute care hospital) meets all of the following criteria:

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

volumes to provide meaningful results. The surgical patient groups saw relatively small differences in rates. For example, average hysterectomy readmission rates for community and teaching hospitals were both around 1.0%. Average prostatectomy readmission rates were 2.2% for community hospitals, and 2.9% for teaching hospitals. Conversely, the medical patient groups saw larger differences between the two hospital types: for asthma patients, the readmission rate in teaching hospitals was 4.5%, and in community hospitals was 10.5%; for AMI patients, teaching hospitals had a readmission rate of 5.0%, and in community hospitals the rate was 8.3%. These rates have been risk-adjusted to account for differences in the health status of patients at the different hospitals.

FIGURE 3.7: 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, 1999/2000 and 2000/2001 for eight of the patient groups examined in this report.



Source: Discharge Abstract Database, 1997/1998, 1999/2000 and 2000/2001

Readmission rates can be affected by a number of factors related to the quality of hospital care during the initial hospital stay. For example, the availability of appropriate diagnostic or therapeutic technologies, or the types of drugs prescribed on discharge. Many other factors are also important, including patient compliance with post-discharge therapy, or the quality of follow-up care in the community. Further, treatment of chronic conditions such as asthma and heart failure requires 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 (the hospital's) relationship with community physicians and community-based care. The Working with Other Health Care Partners and Continuity of Care indicators in the System Integration and Change quadrant chapter of this report measure some of these community relationships.

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 episode 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 episode was longer than expected or the patient died in hospital

Complication Rates for Medical and Surgical Patients

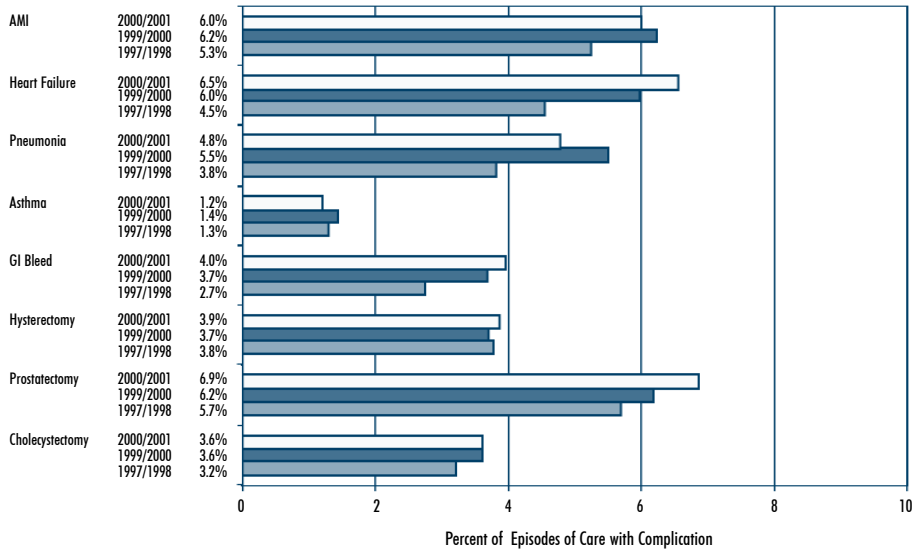
The development of complications while in hospital can be related to the quality of care provided by health professionals while the patient is in hospital, and the health status of the patient upon admission. There are a number of key considerations to take into account when interpreting complication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

- Patients with other pre-existing health problems (co-morbidities) or more severe diseases 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 result from 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 how they provide care and record information about that care.

FIGURE 3.8: COMPLICATION RATES ACROSS PATIENT GROUPS

Complication rates have increased for most patient groups over the three reported years. 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, 1999/2000 and 2000/2001

Generally, complication rates have risen between 1997/1998 and 2000/2001. However, across the province the proportion of cases with a complication decreased between 1999/2000 and 2000/2001 for AMI, pneumonia, and asthma patients. For the five other patient groups, the complication rates increased by 0.1 to 0.7 percentage points. The largest proportional increase occurred for prostatectomy patients.

It is possible that these rises in complication rates are due to an overall increase in patient acuity in Ontario hospitals over the three reported years. The risk-adjustment models used in the clinical utilization and outcomes analysis, which attempt to minimize differences in the health status of patients admitted to different hospitals, only adjust the data within a year, not across years. As such, differences in patients' acuity from one year to the next are not addressed.

Where are the Hospital-Specific Complication Results?

Due to some data quality issues, the four complication indicators have been removed from the hospital-specific results for this year (province-wide results are still included). For more information on this issue, refer to the 'Coding Variations and Data Quality' sidebar in this chapter.

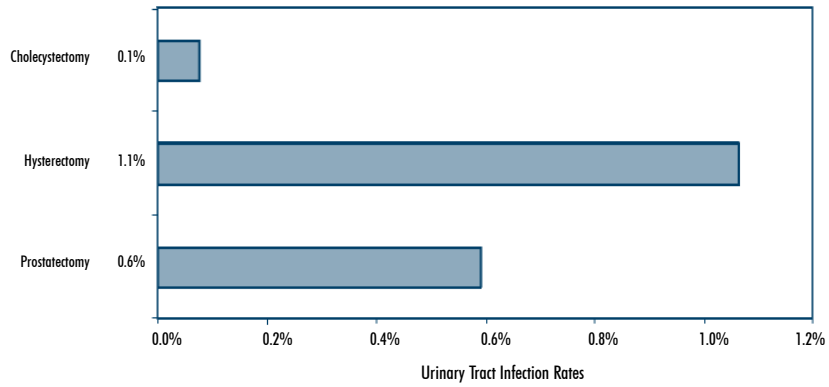
Nursing-Related Outcomes

The Clinical Utilization and Outcomes quadrant includes two nursing-related indicators: urinary tract infection rates following surgery, and hospital-acquired pneumonia rates.

Infections acquired while a patient is staying in a hospital, known as nosocomial infections, are widely considered an indicator of quality of hospital care.[6] While nurses are not solely responsible for the control of infections, they are the only professional group in the hospital close to the patient every hour of the day and night, and thus can provide continuous assessment with respect to infection control.[7] Furthermore, basic hygiene, such as hand washing, is considered the most effective preventive practice with respect to nosocomial infections.[6] Urinary tract infection, a common nosocomial infection, can occur because of inattention

FIGURE 3.9: URINARY TRACT INFECTION RATES FOLLOWING SPECIFIC SURGICAL PROCEDURES

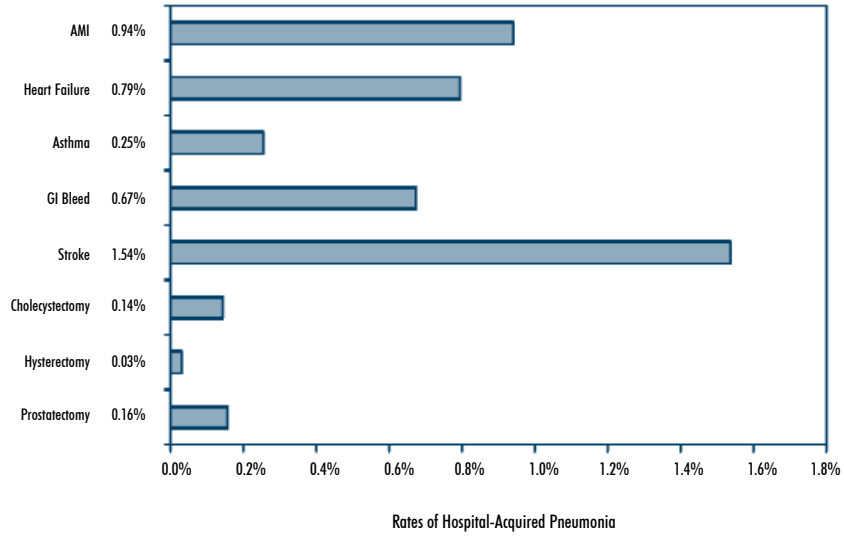
The quality of nursing care in Ontario hospitals is positively reflected by the low urinary tract infection rates for hysterectomy, prostatectomy, and cholecystectomy patients.



Source: Discharge Abstract Database, 2000/2001

FIGURE 3.10: HOSPITAL-ACQUIRED PNEUMONIA RATES ACROSS PATIENT GROUPS

Hospital-acquired pneumonia rates are much higher for the medical patients than the surgical patients.



Source: Discharge Abstract Database, 2000/2001

to sterile techniques developed for placing indwelling urinary catheters or to hygiene related to the care of an indwelling urinary catheter.[8] The placement and care of urinary tract catheters is largely a nursing function.

The Ontario rates for urinary tract infections for the three surgical groups are lower than those in a recently published study.[9] This reflects positively on the quality of nursing care in these areas. There are some differences, however, between the methods used in this report and those used in the other study. As such, further investigation is necessary to ensure comparability of the two results. The higher rates for the hysterectomy and prostatectomy group may reflect a greater use of indwelling urinary catheters following surgery for these patients than that for the cholecystectomy group.

The two key risk factors for hospital-acquired pneumonia are prolonged immobility and inappropriate (or failure to perform) pulmonary hygiene techniques. Nursing care can reduce both these risk factors[8] by encouraging movement and by teaching and promoting pulmonary exercises to facilitate adequate ventilation of the lungs. The rates of hospital-acquired pneumonia among the specific patient groups examined are low. The rates are higher in the medical groups (e.g. stroke, AMI) than the surgical groups, which may in part reflect a greater propensity for immobility for these types of patients.

Women's Health

Canadians want to know that when they need care, they will receive appropriate, timely, and high quality services. 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

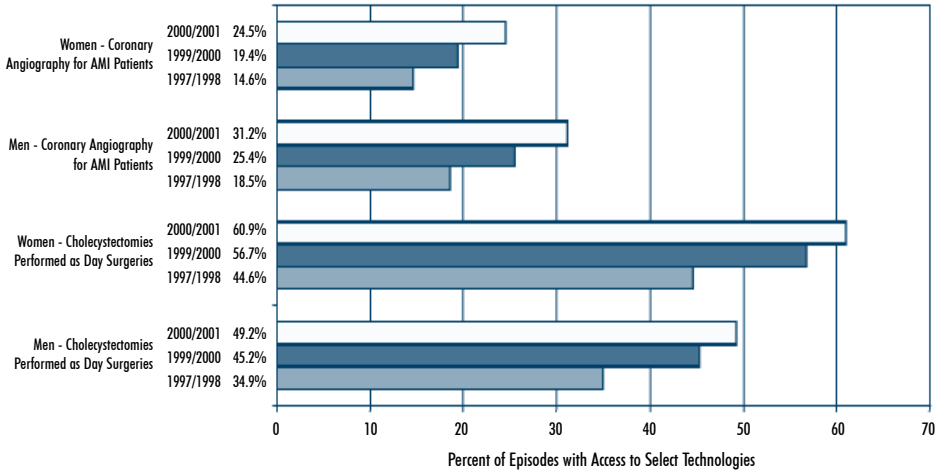
benefit from health care differently.[9] This women's health section reports on how women's and men's access to hospital care and outcomes of care vary across the province.

Hospital Report 2001: Acute Care contained a separate chapter for Women's Health. This year the analysis has been integrated into the different quadrant chapters as appropriate. Much of the analysis performed last year was repeated for this year's report, with very similar findings. For example, the ratio of vaginal to abdominal hysterectomies performed in Ontario improved from 0.44 in 1999/2000 to 0.46 in 2000/2001. The provincial primary caesarean section rate, calculated for the first time this year, was 16.0%.

Figures 3.11, 3.12, and 3.13 compare men's and women's access to two specific types of care and the outcomes following this care over the three reported years. Figure 3.11 shows that the percent of both men and women who received angiography after being admitted for heart attack has consistently increased each year. However, after adjusting for age, the proportion of women receiving angiography remains lower and the difference between men and women continues to increase even after adjusting for age. There are a number of reasons why women are less likely to receive angiography including, but not limited to, their overall health status, clinical aspects of their

FIGURE 3.11: DIFFERENCES IN SELECTED MEASURES OF ACCESS TO CARE

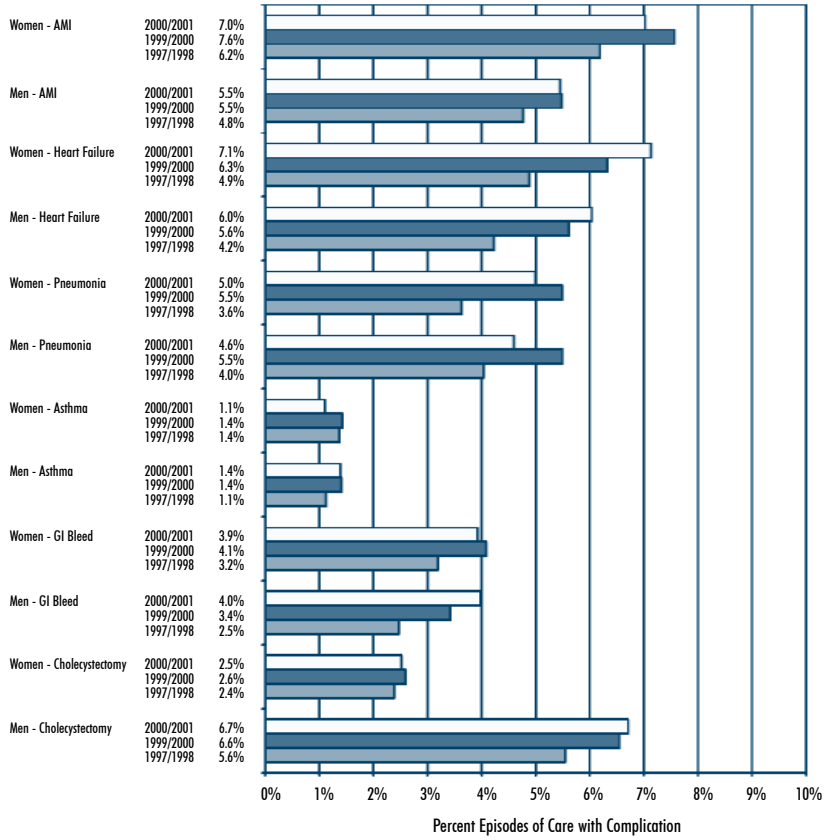
Men have consistently higher rates of coronary angiography for AMI patients, while women have consistently higher rates of cholecystectomies performed as day-surgery.



Source: Discharge Abstract Database, 1997/1998, 1999/2000 and 2000/2001

FIGURE 3.12: COMPLICATION RATES BY SEX ACROSS PATIENT GROUPS

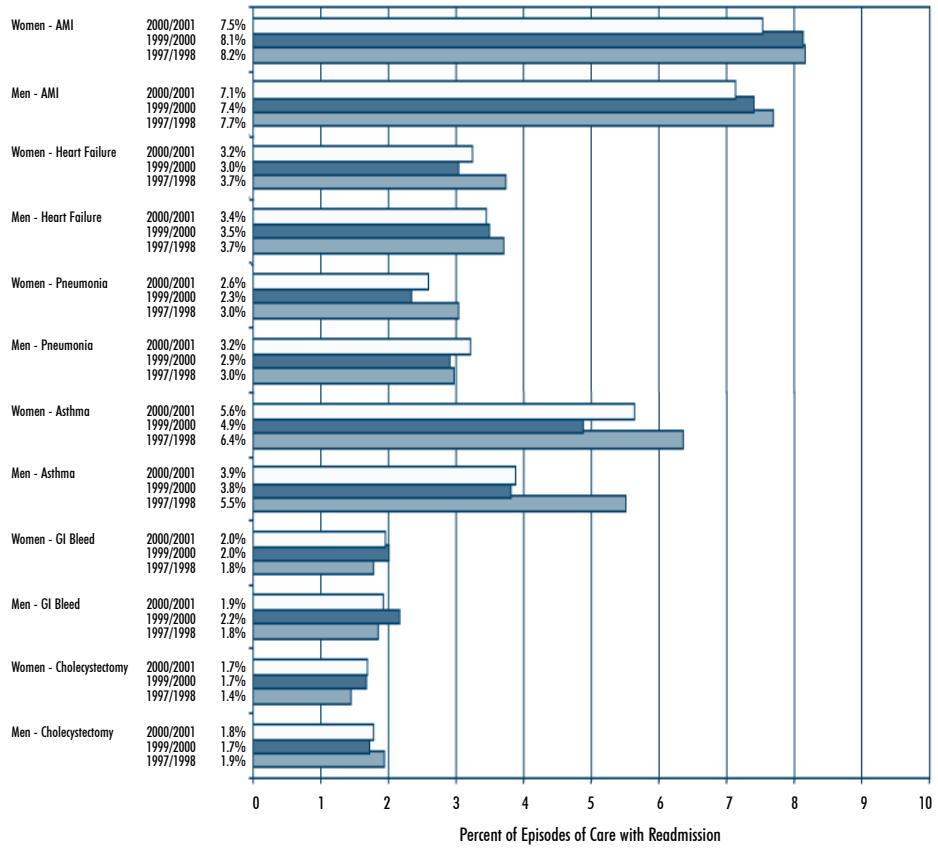
Complication rates vary for men and women in the different patient groups. The largest difference between the sexes is for cholecystectomy patients.



Source: Discharge Abstract Database, 1997/1998, 1999/2000 and 2000/2001

FIGURE 3.13: READMISSION RATES BY SEX ACROSS PATIENT GROUPS

For both males and females, AMI cases have the highest readmission rates over the three reported years.



Source: Discharge Abstract Database, 1997/1998, 1999/2000 and 2000/2001

disease, and providers' ability to diagnose heart disease. A number of researchers in Ontario have studied this phenomenon and their findings suggest that improvements may result from several approaches, including better prevention efforts and better education on the signs and symptoms of heart disease.[10, 11] As in the case of angiography, the proportion of both men and women who undergo cholecystectomy as day patients has increased every year, but women are much more likely than men to undergo the surgery as day patients.

Figure 3.12 shows complication rates over the three reported years for men and women. For both sexes, complication rates are higher in 2000/2001 than in 1997/1998 for most causes or purposes of hospitalization. However, rates are higher for women than men for heart attack and heart failure. On the other hand, women have fewer cholecystectomy complications than men. The complication rates shown in Figure 3.12 include those for both inpatient and day-surgery cases. As stated above, women have a higher proportion of cholecystectomies performed in day-surgery than men, which suggests that the complexity of the surgery may be higher, on average, for men.

Figure 3.13 shows that changes in readmission rates over the three reported years by sex are more variable than they are for complication rates. For example, rates increased in women but decreased in men for some causes of hospitalization, such as pneumonia. In order to understand changes in complication and readmission rates, it is important to study more closely the differences in health status of men and women and the factors that can influence the way that men and women seek, receive, and benefit from hospital care.

One way to begin developing a better understanding of these factors is to look at the differences in access and outcomes for men and women at the hospital-level. Table 3.14 provides a first attempt at such an investigation. It shows the interquartile range across hospitals for the ratio of certain indicator rates in women compared to the same indicator rates in men at the hospital level. The inter-quartile range describes the range in which the middle 50 per cent of hospitals lie and gives a good idea of the range of differences in

performance across Ontario hospitals. The number in parentheses after each inter-quartile range describes the number of hospitals included in the analysis. In order to get the most reliable estimates of these numbers, the results for hospitals with very low numbers are not considered in the analysis.

Table 3.14 shows that there are differences across hospitals in the way that women and men access care. Hospitals can use these sorts of comparisons as a starting point for quality improvement efforts by joining together with hospitals in their region or peer group to compare their own performance and identify those practices that are leading to better outcomes in both men and women.

TABLE 3.14: VARIATION IN WOMEN'S HEALTH PERFORMANCE ACROSS ONTARIO HOSPITALS

This table shows the range between the 25th and 75th percentiles for female:male ratios of the rates for six core clinical indicators. Ratios of less than one mean that women's rates are lower than men's rates.

Clinical Outcome	Female to Male Ratios		Number of Eligible Hospitals
	25th Percentile	75th Percentile	
Access to Coronary Angiography	0.75	0.84	86
AMI Complications	1.24	1.36	58
AMI Readmissions	1.07	1.10	58
Cholecystectomy Complications	0.35	0.40	56
Pneumonia Complications	1.08	1.18	50
Cholecystectomy Day-surgery	1.21	1.26	75

Source: Discharge Abstract Database, 2000/2001

Summary

In this report, we compare results for 2000/2001 (the latest data available) to 1999/2000 (the year reported in *Hospital Report 2001: Acute Care*) and 1997/1998 (the year reported on in *Hospital Report '99*). Findings include:

- The percentage of day-surgery patients as a proportion of all acute care patients in Ontario has increased from about 47% to 50% over the three reported years covered in this report.
- For eight of the ten patient groups, hospitalization rates decreased. The two exceptions were carpal tunnel release surgery patients and pneumonia cases.
- Almost 29% of AMI patients in 2000/2001 received coronary angiography during their episode of hospital care. This is up from less than 24% one year before. Likewise, nearly 19% of AMI patients received a revascularization procedure (CABG or PTCA) in 2000/2001. This was up from less than 11% in 1997/1998.
- At just under ten days, stroke patients have the longest average length of stay of all the patient groups included in this quadrant. AMI, heart failure, and pneumonia patients also have relatively long lengths of stay—ranging from 7.6 to 8.6 days in 2000/2001.
- Among the patient groups studied, readmissions were most common for AMI patients. Seven percent of AMI patients in 2000/2001 had a related condition requiring an urgent or emergent return to hospital within 28 days of their original discharge.
- Generally, complication rates have risen between 1997/1998 and 2000/2001. This may be due to increased acuity of patients in Ontario acute care hospitals. However, across the province the proportion of cases with a complication decreased between 1999/2000 and 2000/2001 for AMI, pneumonia, and asthma patients. For the five other patient groups for which complication rates are calculated, the rates increased by 0.1 to 0.7 percentage points.

- The quality of nursing care in Ontario hospitals is positively reflected by low urinary tract infection rates for hysterectomy, prostatectomy, and cholecystectomy patients.
- The percent of both men and women who receive angiography after being admitted for heart attack has consistently increased over the three reported years. However, the overall rates of women receiving angiography are consistently lower than the rates for men, and the difference between the men's and women's rates is increasing, even after adjusting for age.

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 methodologies that underlie the clinical indicators in this year's report. This reflects the fact that the development of the methodologies used to calculate each indicator is an ongoing evolutionary process.

Due to data quality issues, the complication indicators have not been included in the hospital-specific results of this report. Further analysis investigating the impact of these issues will be completed over the next few months, and the results of this analysis will be made public.

Over the next two years, the Clinical Utilization and Outcomes quadrant will undergo a major redevelopment, as part of the ongoing "rolling redevelopment" strategy for future acute care hospital reports (see sidebar 'Future Directions' in the introduction of this report for further details on the rolling redevelopment strategy). This redevelopment will include a comprehensive review of current indicators to ensure their ongoing relevance to hospitals. It will also examine new approaches, new outcome and utilization measures, and the inclusion of new patient groups. Finally, it will further incorporate women's health and nursing-related care indicators into the quadrant. The redevelopment team will include technical and clinical experts who will be guided by advisory groups composed of physicians, nurses, hospital administrators, and health information specialists.

While the redevelopment work will begin this fall, next year's report will contain primarily the same set of measures as presented this year. The new Clinical Utilization and Outcomes quadrant will be launched in *Hospital Report 2004: Acute Care.*

For more information

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Patient Satisfaction

Patient Satisfaction

How effective are Ontario's acute care hospitals in meeting the needs of their patients? The hospital balanced-scorecard approach uses four different, but interconnected, perspectives to address this question by dividing measures of performance into four quadrants: System Integration and Change, Clinical Utilization and Outcomes, Patient Satisfaction, and Financial Performance and Condition. While the three other quadrants present data on how hospitals are responding to opportunities for change, inpatient clinical outcomes, and how finances are managed, the Patient Satisfaction quadrant provides an indispensable measure of the patients' perspectives by asking them what they think about the quality of care and services provided.

The Standardized Hospital Patient Satisfaction Survey (SHoPSS) is the largest patient satisfaction survey in Canada. Now in its third year, the survey asks patients across Ontario for their opinions of the care they received. It also asks patients to rate 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 expectations. The survey information also provides hospitals with insights about where they might focus to improve satisfaction levels.

What's New for 2002

This year's findings continue to build on the patient satisfaction indicators presented in *Hospital Report 2001: Acute Care*. Highlights for this year include:

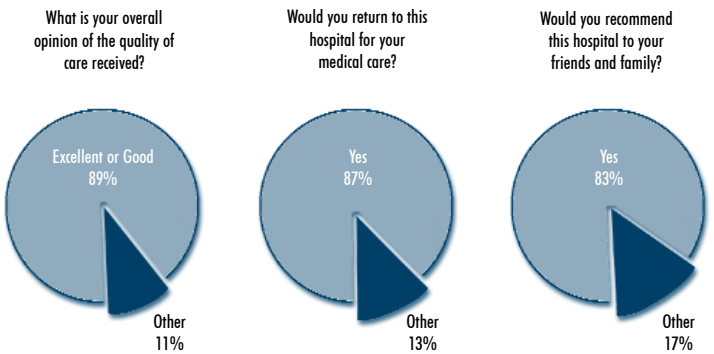
- The latest patient satisfaction results presented by sex for each indicator
- Detailed analysis on how indicator scores and performance allocations have changed
- Inter-quadrant analysis of actions taken by hospitals to improve patient satisfaction based on the findings of last year's patient satisfaction survey
- New developments in the focused measurement of satisfaction with nursing care

What are Ontario hospitals doing with this new information? One year after Ontario acute care hospitals received their 2001 SHoPSS results, 90% of hospitals reported having made some change based on the survey findings. This year's System Integration and Change quadrant survey identified five themes common to the kinds of actions taken by Ontario hospitals to address patient satisfaction concerns. See the 'Listening to Patients' section at the end of this quadrant for more details on these initiatives.

Patient Satisfaction: A Snapshot of Ontario Hospitals

With the introduction of SHoPSS, comparisons between hospitals have become possible. Of the 65 questions in the survey, three ask patients about their hospital experience in general. These questions provide an overall impression of how patients feel about their hospital care. They are considered 'bottom-line' questions and together they make up the Global Quality indicator.

FIGURE 4.1: QUESTIONS MAKING UP THE GLOBAL QUALITY INDICATOR



Source: Standardized Hospital Patient Satisfaction Survey, 2001/2002

In results consistent with previous reports, 89% of patients indicated that their overall quality of care was excellent or good. An overwhelming majority of

patients (87%) also affirmed that they would return to the hospital, and 83% said that they would recommend the hospital to friends and family.

While the Global Quality indicator is a good measure of patients' overall perception of their care, it can be influenced not just by a hospital's efforts to improve care, but by factors such as patients' medical condition, encounters with health care providers, room assignments (e.g. a private or shared room) or media reports.

Other questions from the SHoPSS are also combined to provide summary measures, or indicators, of unique dimensions of patient satisfaction. These indicators can serve as guideposts to help shape hospital goals and measure progress in the improvement of care and satisfaction. In total, 10 indicators are calculated from patient responses to the SHoPSS. Eight of the indicators are presented in the Patient Satisfaction quadrant; the other two indicators are discussed in the System Integration and Change quadrant chapter.

Figure 4.2 presents province-wide indicator scores, weighted for differences in patient volumes. The weighting of hospital indicator scores by patient volume reflects the actual discharge pattern of each hospital on the province-wide indicators. For example, teaching hospitals generally have larger patient volumes than small hospitals, and therefore will contribute more to the province-wide indicator score. In fact for hospitals

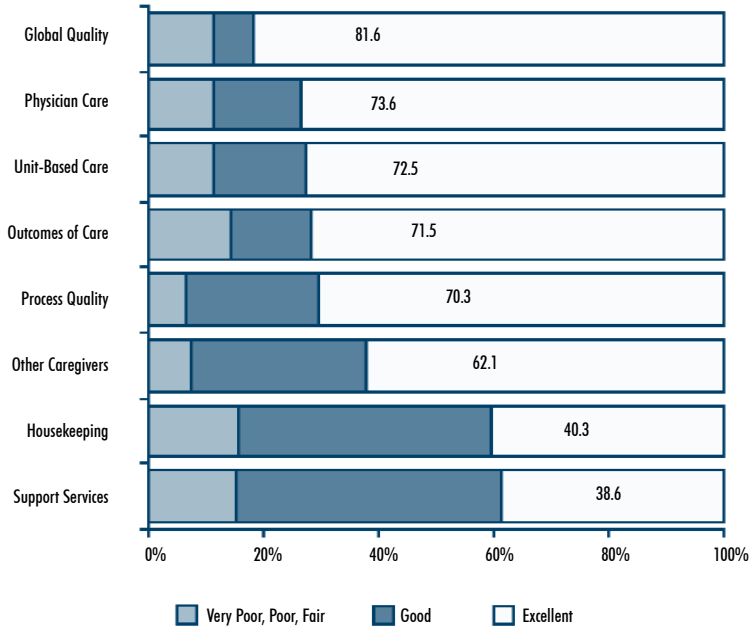
What Makes Up the Eight Indicators of Patient Satisfaction †

- **Global Quality**–three questions dealing with the overall quality of care received at the hospital and whether patients would return to the hospital or recommend the hospital to others who need care
- **Process Quality**–the best overall comprehensive indicator of patient satisfaction as it includes most aspects of quality of care and services, this indicator is based on 55 questions and nine subscales
- **Unit-Based Care**–ten questions about patients' perceptions as to the skill, courtesy, sensitivity, level of communication, and efficiency of unit-based care providers, e.g. nurses
- **Physician Care**–ten questions about patients' perceptions as to the skill, courtesy, sensitivity, level of communication, and efficiency of care provided by physicians
- **Support Services**–five questions about the courtesy of hospital support staff (social workers, volunteers, and receptionists) as well as the quality of food served
- **Housekeeping**–five questions about the patients' overall impression of housekeeping services provided in the hospital, including cleanliness of the hospital and courtesy of housekeeping staff
- **Other Caregivers**–four questions about patients' satisfaction with the skill and courtesy of individuals in the hospital who drew blood, the radiology personnel, and physiotherapists
- **Outcomes of Care**–three questions related to patients' satisfaction with the outcome of their hospital care

† The Coordination of Care and Continuity of Care indicators based on the SHoPSS are presented in the System Integration and Change quadrant chapter.

FIGURE 4.2: PROVINCE-WIDE PATIENT SATISFACTION

Province-wide results for the eight indicators of patient satisfaction are presented below. Indicator scores are divided into three groups: very poor/poor/fair, good, and excellent. In five of the eight indicators over 70% of patients reported high levels of satisfaction (a rating of excellent). The Global Quality indicator had the highest percentage of patients reporting excellent satisfaction (81.6%). In contrast, only 38.6% of patients reported the Support Services indicator as excellent, with 15.3% indicating that these services were either very poor, poor or fair.



Source: Standardized Hospital Patient Satisfaction Survey, 2001/2002

There's More...

Patient satisfaction indicators addressing Coordination and Continuity of Care are presented in the System Integration and Change quadrant chapter. This quadrant captures the extent to which Ontario hospitals integrate their services with community partners and develop innovative practices. As well, the Intensity of Information Use and Hospitals in the Community indicators in the System Integration and Change quadrant chapter measure hospital dissemination of patient satisfaction data to physicians, staff, hospital boards, and the community.

participating in this survey, teaching hospitals treated twice as many patients on average than did community hospitals, which in turn treated approximately seven times more patients than small hospitals.

Just as there are differences in patient volume among small, community, and teaching hospitals, so are there consistent differences in average indicator scores of satisfaction among these three hospital types. On average, patients treated in small hospitals reported higher levels of satisfaction than those treated in community or teaching hospitals. The greatest difference was for the Housekeeping indicator: it was seven indicator points higher for small hospitals than for teaching or community hospitals. See the *Hospital Report 2002: Acute Care Technical Summary* for more details summarizing provincial comparisons by the three hospital types.

Province-wide scores are discussed in detail for each of the eight indicators of patient satisfaction, including the presentation of results by sex. For each indicator, males reported slightly higher patient satisfaction scores than females. For five of the eight indicators this difference was greater than two indicator points (Note: the indicator specific sections that follow discuss the differences for these five indicators in more detail). The greatest difference between males and females was for the Unit-Based Care indicator, which was approximately one standard deviation, or 3.2 indicator points higher for males. Patient satisfaction with hospital care also seems to be related to age:[1] male seniors 65 years of age and older reported the highest satisfaction levels for all indicators.

How Was the Research Done?

The Data Source

Standardized surveys were mailed to just under 75,000 patients who stayed at least overnight in Ontario acute care hospitals and were discharged between August and October of 2001. Approximately 50% were completed and returned. For a hospital's performance allocation to be presented at the hospital-specific level (see the insert at the back of this report), at least 100 valid survey responses from general medical and surgical inpatients (excluding psychiatry and obstetrics patients) were required. Hospitals that did not reach this minimum requirement received a Non-Reportable (NR) rating, meaning that hospital-specific values were not calculated.

Selecting Indicators

This year's patient satisfaction indicators are the same as those used in previous *Hospital Report: Acute Care* reports. In developing the patient satisfaction quadrant for *Hospital Report '99*, an advisory group of hospital representatives, in consultation with researchers from the University of Toronto, 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, questions were converted to scores out of 100 and results for questions that made up an indicator scale were then averaged.

The Methods

The methodology used in this report is described in detail in *Hospital Report 2002: Acute Care Technical Summary*. It is available free on *Hospital Report* series partners' and sponsors' Web sites. For a list of Web sites, see the back cover of this report. Important features of the methodology include the following:

- Patients from three types of hospitals were surveyed: 16 small, 65 community, and 12 teaching hospitals, however one teaching reports one of their sites separately, for a total of 94 hospitals. Three small hospitals and two community hospitals did not meet the hundred-survey response level required for hospital-specific reporting in the patient satisfaction quadrant; a further two declined to participate

How Performance is Allocated

There are no accepted benchmarks–provincially, nationally or internationally–that define the "best" or "right" value for these indicators. A hospital's performance allocation, therefore, reflects its performance relative to that of other hospitals in the province. Since the provincial average changes from year to year, a hospital's rating in one year is not directly comparable to that of previous years. For example, if most hospitals improve their indicator score over a year, but a specific hospital's indicator score stays the same, that hospital's performance allocation may be lower than in the previous year.

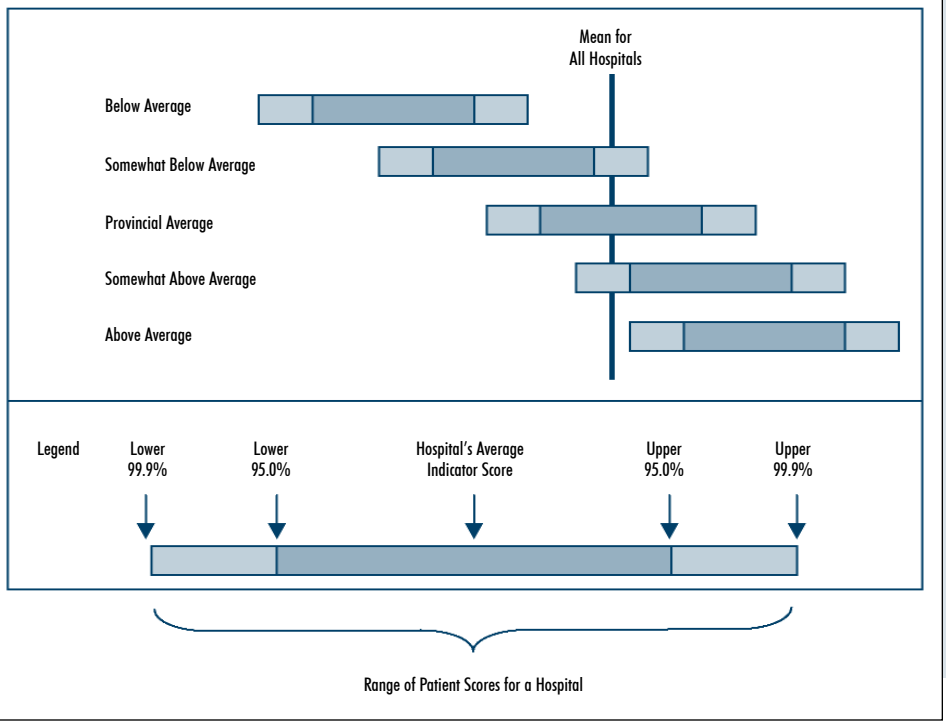
Based on how performance allocations are assigned, the majority of hospitals fall into the "provincial average" category of performance allocations, while fewer hospitals are below or above this "provincial average" allocation. This distribution is common across the indicators in all four quadrants. The Patient Satisfaction quadrant focuses on province-wide results whereas performance allocations presented in the insert of this report are specific to each hospital. These hospital-by-hospital performance allocations for 87 Ontario hospitals are available in the insert at the back of this report. Performance allocations for each indicator are also summarized by hospital type in Appendix B.

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

Based on how a hospital's score compares with the average of all hospitals, each hospital receives one of five performance allocations, ranging from "below average" to "above average". These scores were assigned using a standard statistical technique: 99.9% and 95.0% confidence intervals were calculated for each hospital (the range of values within which a hospital's scores would be expected to fall 999 times out of 1000 and 950 times out of 1000, respectively). As shown in Figure 4.3, a hospital's performance allocation depends on how these ranges compare to the average for all hospitals participating in the survey. The goal is to identify differences (higher or lower indicator scores) that are unlikely to occur by chance alone.

FIGURE 4.3: HOW PATIENT SATISFACTION PERFORMANCE IS ASSIGNED

Confidence intervals for each hospital were calculated and compared to the mean for all hospitals in order to assign performance to one of five categories. As discussed in the *Hospital Report 2002: Acute Care Technical Summary*, a low cut-off point was applied to ensure comparable performance allocations when considering the relationship between sample size and the hospital's confidence interval.



in hospital-specific reporting. Therefore the performance allocations of 87 hospitals are presented in the Patient Satisfaction hospital-specific portion of this report.

- Not all questions on every survey were answered. Eight hundred and seventy-nine surveys (approximately 2%) were dropped from the analysis because fewer than half of the questions were completed for each survey.
- Research has shown that a patient's age, sex, and self-assessed health tend to make a difference in satisfaction levels.[2,3] To make comparisons as fair as possible, a statistical "risk-adjustment" technique was used to control for pre-existing influences.

There's More in the Technical Summary

- History of the survey tool
- How the categorical responses are translated into numerical scores
- Risk-adjustment techniques and multiple regression analysis
- Weighting of indicator scores by patient volume
- Assigning performance allocations

Global Quality

The Global Quality indicator measures patients' overall response to their hospital care after their stay. The Global Quality indicator consistently has the highest scores for patient satisfaction and continues to show the greatest increases year after year.

The province-wide Global Quality indicator score was 87.8 points out of 100. When the Global Quality indicator was analyzed by sex, males reported moderately higher scores than females: 88.9 compared to 86.7 points out of 100, respectively. In fact, 81.6% of Ontario patients reported levels of high satisfaction (a rating of excellent). The Global Quality indicator is the only indicator for which more than 80% of hospital patients (both males and females) report excellent satisfaction. See the 'Snapshot of Ontario Hospitals' section at the beginning of this quadrant for more details on these 'bottom-line' questions.

Between the 1999 and 2002 *Acute Care Hospital Reports*, the Global Quality indicator had a province-wide increase of more than two indicator points. This was the

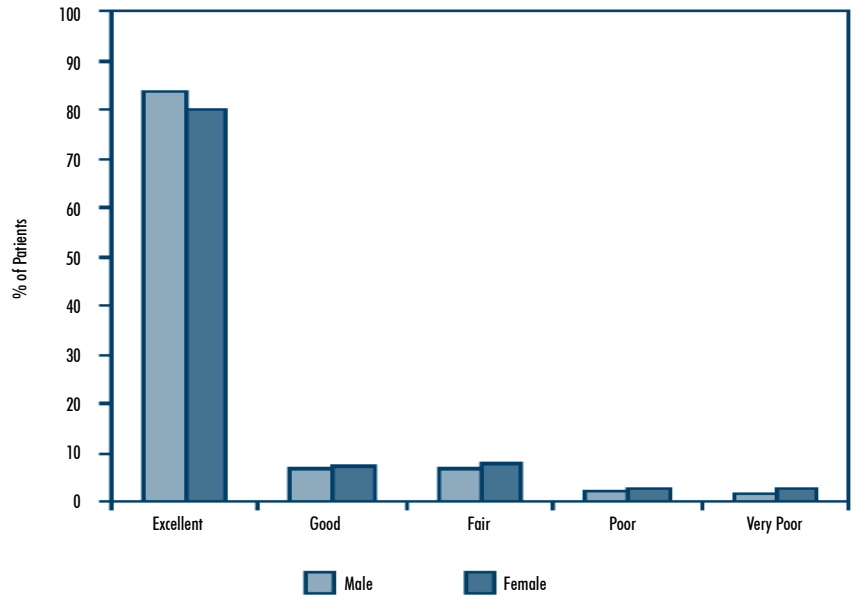
What Makes Up the Global Quality Indicator?

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?

FIGURE 4.4: PATIENTS' GLOBAL PERCEPTIONS

The graph below shows the percent of male and female patients giving ratings in each of the five response categories for the Global Quality indicator.



Source: Standardized Hospital Patient Satisfaction Survey, 2001/2002

largest province-wide increase of all the patient satisfaction indicators. See the 'Increasing Patient Satisfaction' section for more details on how scores have changed over time and how changes in the province-wide sample and the period over which these patients are surveyed may impact the ability to compare these variations year to year.

Process Quality

The Process Quality indicator is considered the best overall comprehensive indicator of patient satisfaction. It is more closely linked to actual care received than the Global Quality indicator. The Process Quality indicator is a measure made up of nine subscales that includes most aspects of patient satisfaction relating to the quality of care and services.

What Makes Up the Process Quality Indicator?

The Process Quality indicator is made up of nine subscales. Six of the nine subscales are also presented as individual indicators in this report*, while three subscales are used only for calculating this indicator. The table below shows the weight out of 100 that each of the nine subscales contributes towards the Process Quality indicator.

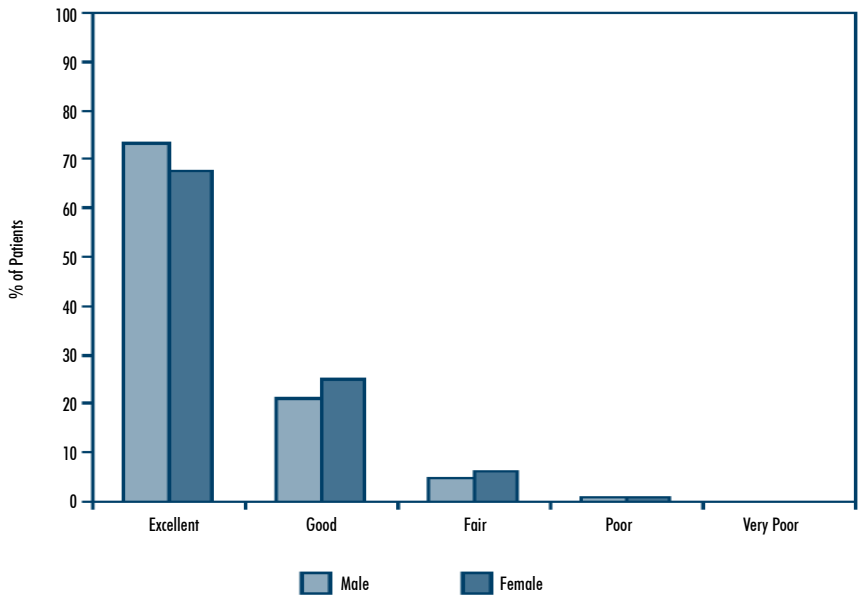
TABLE 1: INDICATOR SUBSCALES

Indicator Subscales	Weight
Unit-Based Care*	26
Physician Care*	15
Support Services*	13
Housekeeping*	11
Pain Management	10
Other Caregivers*	9
Continuity of Care*	9
Admissions	5
Finance	2

Source: Standardized Hospital Patient Satisfaction Survey, 2001/2002

FIGURE 4.5: PATIENTS' OVERALL PERCEPTIONS OF PROCESS QUALITY

The graph below shows the percent of male and female patients giving ratings in each of the five response categories for the Process Quality indicator.



Source: Standardized Hospital Patient Satisfaction Survey, 2001/2002

The Unit-Based Care and Physician Care subscales combined contribute 41% of the weight towards the Process Quality indicator. Support Services, Housekeeping, Other Caregivers and Continuity of Care account for almost 42% of the Process Quality indicator. These six subscales are also presented as individual indicators in this report. Admissions, Pain Management, and Finance account for the remaining 17% of the Process Quality indicator score. In total there are 55 questions contained within these nine subscales.

The province-wide Process Quality indicator score was 83.6 points out of 100, with 70.3% of Ontario patients overall reporting levels of high satisfaction (a rating of excellent). When the Process Quality indicator was analyzed by sex, males reported moderately higher scores than females, 84.6 compared to 82.6 points out of 100, respectively.

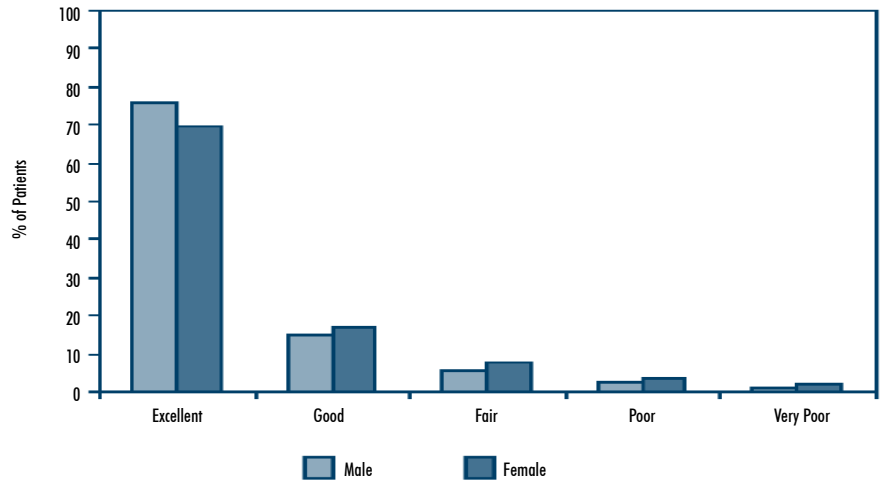
How have hospital indicator scores changed over the last year? Of those hospitals that participated in the previous reporting year, 42% showed an increase of more than one indicator point. For more detail on these changing scores and how they relate to hospital-specific performance allocations see the "How Do Hospital Scores Change" section at the end of this quadrant.

Satisfaction with Unit-Based Care

During a hospital stay, patients come into contact with a variety of staff. Responses to the questions that comprise this indicator reflect evaluations of many different types of front-line staff, not just nurses. Staff providing unit-based care include Registered Nurses (RNs), Registered Practical Nurses (RPNs), aides, and multi-skilled workers of many kinds. Nurses do, however, provide the bulk of this care.

FIGURE 4.6: HOW PATIENTS FEEL ABOUT UNIT-BASED CARE

The graph below shows the percent of male and female patients giving ratings in each of the five response categories for the Unit Based Care indicator.



Source: Standardized Hospital Patient Satisfaction Survey, 2001/2002

The province-wide Unit-Based Care indicator score was 84.8 points out of 100. When the Unit-Based Care indicator was analyzed by sex, males reported moderately higher scores than females, 86.5 compared to 83.3 points out of 100, respectively. Across all patient satisfaction indicators, the greatest difference between males and females reporting excellent satisfaction was for Unit-Based Care, with males reporting excellent satisfaction levels of over six indicator points higher than females. More than 14 in 20 patients rated Unit-Based Care as excellent, while less than one in 20 patients reported poor or very poor satisfaction levels.

What Makes Up the Unit-Based Care Indicator?

The Unit-Based Care indicator is based on ten survey 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?

Nursing Indicator Initiatives

Feedback gathered from professional nursing groups across the province during development of the two *Preliminary Studies* in 2001 suggested that a more comprehensive measure of patient satisfaction with nursing care is needed in Ontario hospitals. An extensive evaluation of the 29 instruments available in the literature on the measurement of patient satisfaction with nursing care identified two instruments for modification and testing in future studies. The two instruments were reviewed with nursing groups across the province, and a consensus was reached to utilize the Patient Judgements of Hospital Quality (PJHQ) survey as a measure of patient satisfaction with nursing care in future *Hospital Report* projects. Please see the "Next Steps" section for future developments on patient satisfaction with nursing care and the modified PJHQ survey.

Satisfaction with Physician Care

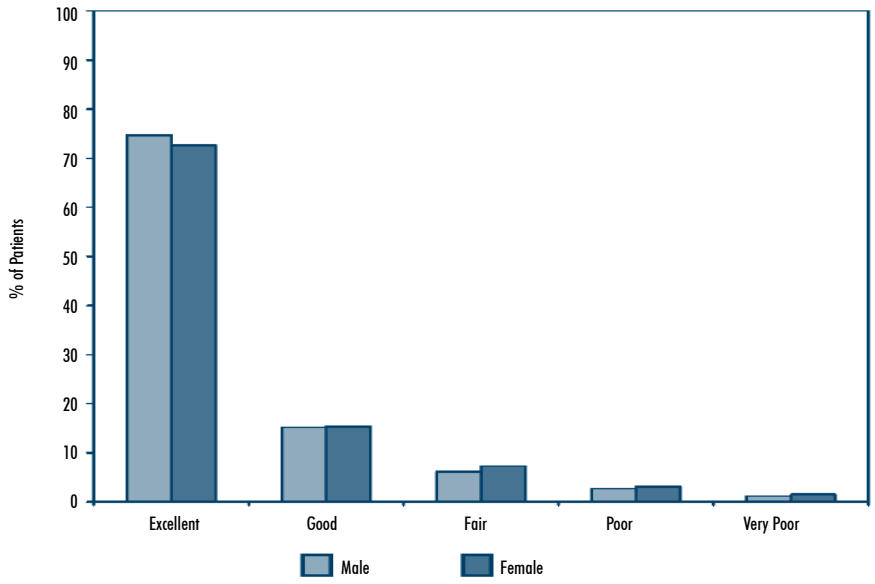
Although physicians are usually not hospital employees, the care they provide is an important contributor to overall patient satisfaction. This indicator had the second highest satisfaction score after the Global Quality indicator.

The province-wide Physician Care indicator score was 85.7 points out of 100. Satisfaction with Physician Care was rated excellent by 76.3% of patients.

In particular, 94% of patients rated the skill of their physician as good or excellent. Conversely, 22% of patients responded that their physician did not keep them informed about their medical condition or did so only to some extent. This same percent of patients indicated that their questions regarding tests and treatments had not been answered in a manner that they could understand. More details concerning how hospitals are addressing the opportunity to improve interpersonal communication between patients and health care providers are provided in the "Listening to Patients" section at the end of this quadrant chapter.

FIGURE 4.7: HOW PATIENTS FEEL ABOUT PHYSICIAN CARE

The graph below shows the percent of male and female patients giving ratings in each of the five response categories for the Physician Care indicator.



Source: Standardized Hospital Patient Satisfaction Survey, 2001/2002

Are there differences in patient satisfaction scores among small, community, and teaching hospitals? For all indicators, the smallest difference between the average score by hospital type was for Physician Care. Less than two and half points separate the average scores for small, community, and teaching hospitals. A detailed summary of indicator scores by hospital type is available in the *Hospital Report 2002: Acute Care Technical Summary*.

The Physician Care indicator is the only indicator for which all teaching hospitals have performance allocations of "provincial average" or greater. All small hospitals, on the other hand, have allocations of "provincial average" or greater for all indicators except for Physician Care, where there is one small hospital which scored beneath the "provincial average" allocation for this one indicator.

What Makes Up the Physician Care Indicator?

The Physician Care indicator is based on ten survey 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?

Support Services

From the moment patients enter a hospital, they encounter a variety of hospital support workers. The Support Services indicator measures the courtesy of social workers, receptionists and volunteers, as well as the patients' perceptions of the food they were served.

The province-wide Support Services indicator score was 76.1 points out of 100. This is the lowest of the eight patient satisfaction indicator scores. In fact, a greater percentage of patients report satisfaction scores of good rather than excellent for the Support Services and Housekeeping indicators.

One of the questions in the Support Services indicator asks patients' for their overall opinion of food served. More than four in ten patients had either a very poor, poor, or fair opinion of the food served. Traditionally this is a very low scoring satisfaction question for most North American health care facilities. The courtesy of staff delivering food to the patient, which tends to be rated separately from and more positively than food quality,[4] was rated as good or excellent by more than eight in ten patients.

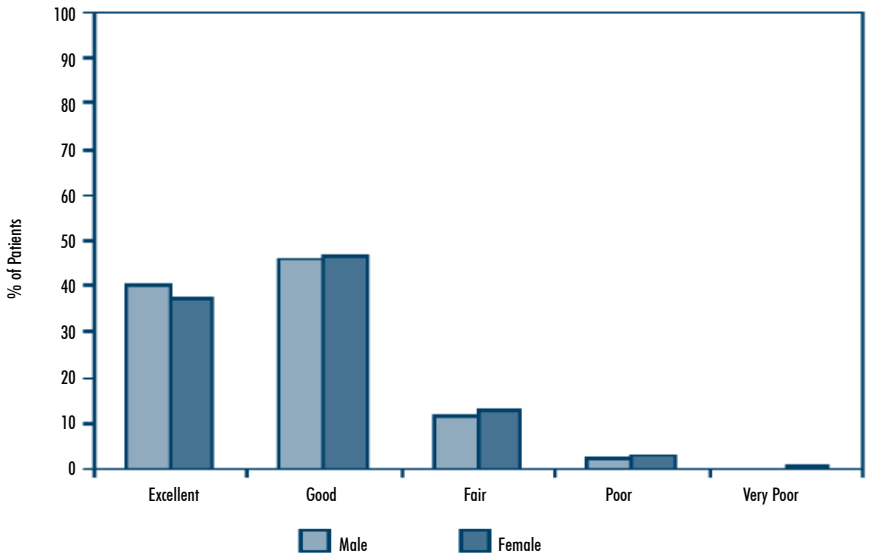
What Makes Up the Support Services Indicator?

The Support Services indicator is based on five survey questions:

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

FIGURE 4.8: HOW PATIENTS FEEL ABOUT SUPPORT SERVICES

The graph below shows the percent of male and female patients giving ratings in each of the five response categories for the Support Services indicator.



Source: Standardized Hospital Patient Satisfaction Survey, 2001/2002

Housekeeping

Patients in hospital depend on housekeeping staff to ensure that their surroundings are clean. The Housekeeping indicator measures patients' satisfaction with the cleanliness of their hospital surroundings and is influenced by varying sanitary expectations.

The province-wide Housekeeping indicator score was 78.3 points out of 100. When the Housekeeping indicator was analyzed by sex, males once again reported moderately higher scores than females—79.8 compared to 76.9 points out of 100, respectively.

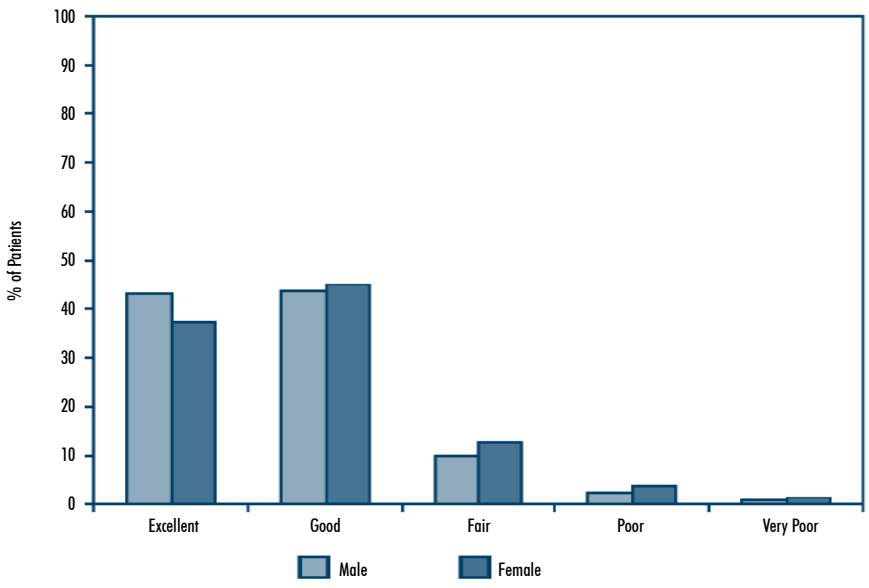
The Housekeeping indicator has the second lowest satisfaction score of all the indicators. Only for the Housekeeping and Support Services indicators do a greater percentage of patients report satisfaction scores of good than excellent. In the case of the Housekeeping indicator, the scores were 42% (good) and 40% (excellent). For all other indicators besides Support Services, the majority of respondents reported satisfaction levels of excellent.

More than 20% of respondents indicated that the cleanliness of the hospital in general and their bathroom in particular was either very poor, poor, or fair. That being said, 89% of patients rated the courtesy of the housekeeping staff as good or excellent.

Patients treated in different types of hospitals reported varying levels of satisfaction with the Housekeeping indicator. Average indicator scores for small hospitals were seven points higher than for community or teaching hospitals. Such a large difference in indicator scores between hospital types is reflected in the performance allocation assignment. While 73% of small hospitals had an "above average" allocation, approximately 15% of teaching and community hospitals had "above average" allocations.

FIGURE 4.9: HOW PATIENTS FEEL ABOUT HOUSEKEEPING

The graph below shows the percent of male and female patients giving ratings in each of the five response categories for the Housekeeping indicator.



Source: Standardized Hospital Patient Satisfaction Survey, 2001/2002

What Makes Up the Housekeeping Indicator?

The Housekeeping indicator is based on five survey 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?

Other Caregivers

In addition to nurses and physicians, patients are treated by a variety of caregivers while in hospital, including radiology technicians, physiotherapists, and venopuncturists (people who draw blood). The Other Caregivers indicator reflects patients' perceptions of the services provided by these other members of the health care team. As patients often do not distinguish among different types of caregivers, this indicator may be more a measure of satisfaction with care processes in general rather than with specific provider groups.

The province-wide Other Caregivers indicator score was 84.4 points out of 100. As well, 62.1% of Ontario patients' surveyed report excellent satisfaction levels with Other Caregivers.

While half of all hospitals received a performance allocation of "provincial average", 91% of small hospitals are "above average" or "somewhat above average".

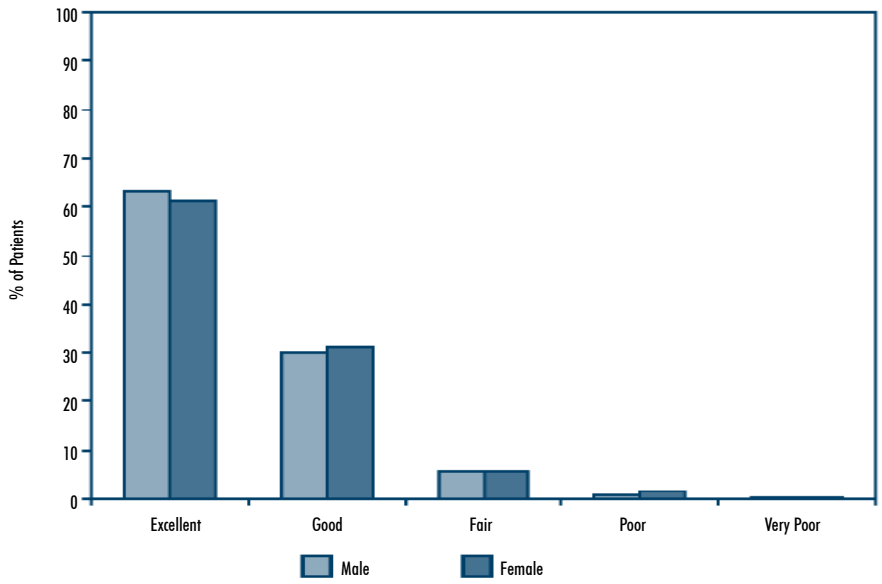
What Makes Up the Other Caregivers Indicator?

The Other Caregivers indicator is based on four survey questions:

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

FIGURE 4.10: HOW PATIENTS FEEL ABOUT OTHER CAREGIVERS

The graph below shows the percent of male and female patients giving ratings in each of the five response categories for the Other Caregivers indicator.



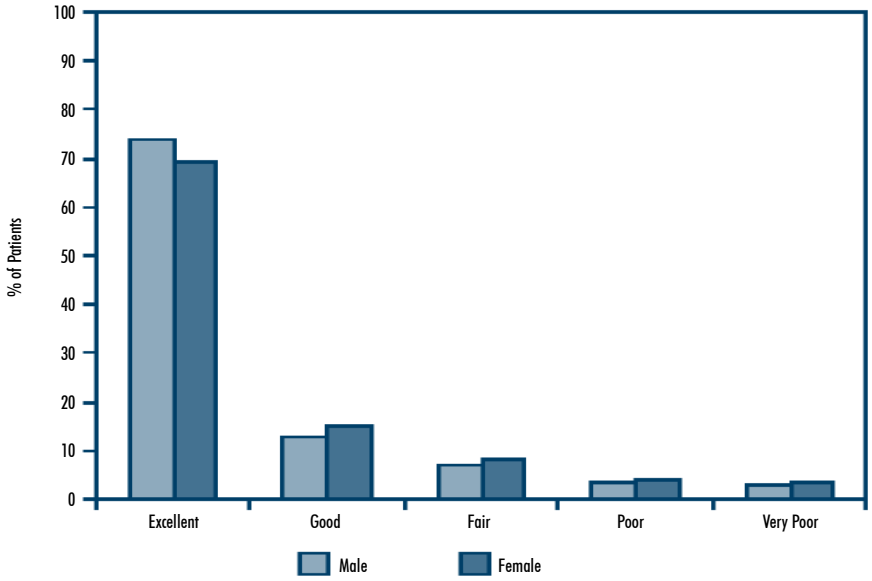
Source: Standardized Hospital Patient Satisfaction Survey, 2001/2002

Outcomes of Care

The Outcomes of Care indicator allows quality of care to be judged based on patients' perceptions. As a complement to this, indicators in the Clinical Utilization and Outcome quadrant chapter measure patient outcomes, such as readmissions, using clinical data.

FIGURE 4.11: HOW PATIENTS FEEL ABOUT OUTCOMES OF CARE

The graph below shows the percent of male and female patients giving ratings in each of the five response categories for the Outcomes of Care indicator.



Source: Standardized Hospital Patient Satisfaction Survey, 2001/2002

What Makes Up the Outcomes of Care Indicator?

The Outcomes of Care indicator is based on three survey 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?

The province-wide Outcomes of Care indicator score was 83.4 points out of 100. Since findings from the SHoPSS were first released in *Hospital Report '99*, almost three in four patients have reported excellent satisfaction for this indicator. When the Outcomes of Care indicator was analyzed by sex, males reported moderately higher scores than females–84.6 compared to 82.3 points out of 100, respectively. However, while 83% of patients were satisfied with the outcome of their hospital care, only 68% felt they had a better understanding of their condition upon leaving the hospital.

For the Outcomes of Care indicator, 68% of hospitals received a performance allocation of "provincial average". Of all the patient satisfaction indicators, this indicator had the largest number of hospitals receiving a "provincial average" allocation. This is twice that of the Housekeeping indicator, which had a greater distribution of scores.

Relating Patient Satisfaction to Clinical Outcomes of Care

Do patients who have positive clinical outcomes report greater satisfaction on the Outcomes of Care indicator? With appropriate consent of patients, future inter-quadrant analysis will allow the linking of patient satisfaction and clinical data where informed consent has been given. In the Clinical Utilization and Outcomes quadrant chapter variations by medical and surgical patient groups are discussed for measures of complications, readmissions, access to technology, and length of stay.

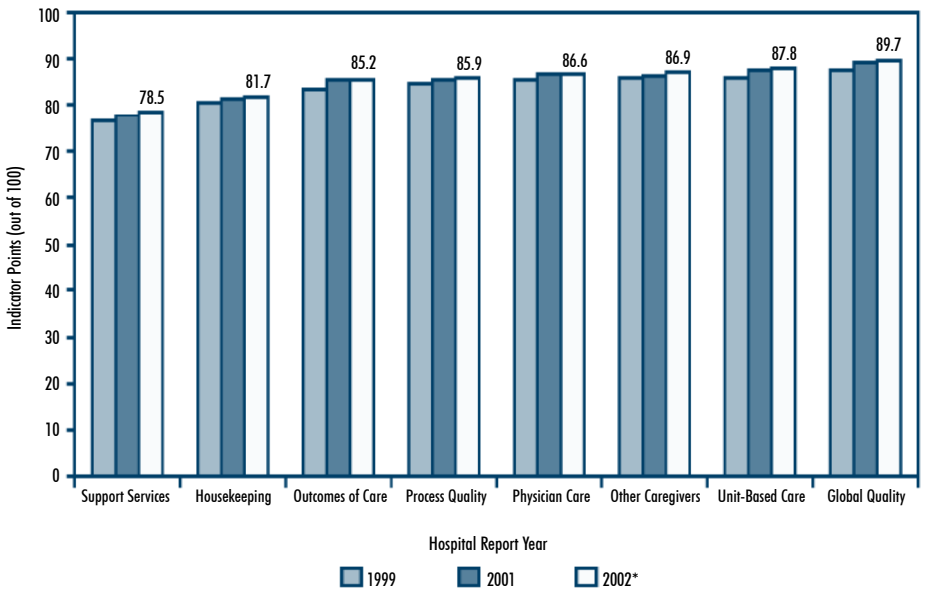
Increasing Patient Satisfaction

Three years of surveying the satisfaction of patients treated in Ontario's acute care hospitals provides an opportunity to examine how scores have changed over time. Since 1999, the SHoPSS has been used to report on the satisfaction of patients' care and services at a province-wide and hospital level. While changes in hospital-level scores and performance allocations are discussed in the next section–"How Do Hospital Scores Change"–the mean indicator score for all hospitals is presented below. The mean for all hospitals is the standard against which hospital scores are compared in assigning one of five performance allocations. See the 'How Performance is Allocated' section at the beginning of this quadrant for more details.

There are variations in the province-wide sample from year to year based on hospital participation in the SHoPSS. It is also important to note that the three years of data presented reflect the variations in the time of year that patients were discharged and subsequently surveyed. This impact of seasonality may influence the ability to compare variations in the sample from year to year, including the impact on the types of patients sampled and the response rate of these patients over different periods of the year. For more details on the discharge and survey dates of patients sampled for the three reporting years, see the *Hospital Report 2002: Acute Care Technical Summary*.

FIGURE 4.12: HOW HAVE PROVINCE-WIDE INDICATOR SCORES CHANGED?

Ontario's hospitals continue to achieve increasingly higher levels of patient satisfaction. Over the three reporting years, the greatest increase in the mean score of all hospitals was for the Global Quality indicator (up more than two indicator points). It was also consistently rated as the highest indicator of satisfaction (89.7). In contrast, Support Services (78.5) and Housekeeping (81.7) continued to lag behind the other indicators of patient satisfaction. The Physician Care and Other Caregivers indicators achieved the smallest increase of 1.3 indicator points.



* Only data labels for the mean indicator scores for 2002 have been shown.

Source: Standardized Hospital Patient Satisfaction Survey, 2001/2002

How Do Hospital Scores Change?

How much do patient satisfaction scores change year over year? The Process Quality indicator was selected for analysis because, overall, it is considered the most comprehensive and reliable measure of patient satisfaction. This year's scores were compared to those presented in last year's report in which the five star performance allocation system was first introduced.

In total, 78 hospitals participated in both *Hospital Report 2001: Acute Care* and *Hospital Report 2002: Acute Care*. Of these hospitals, more reported an increase (42%) of one indicator point for Process Quality than a decrease (27%). This reflects the data presented in Figure 4.12, which shows that the Process Quality indicator average of all hospitals increased by three-quarters of an indicator point since *Hospital Report 2001: Acute Care*.

To describe how scores have changed for this indicator, these 78 hospitals were divided into quartiles. Hospitals with the greatest improvement in score were assigned to the top quartile (76% to 100%) while those with the greatest decrease in score were assigned to the bottom quartile (0% to 25%). The range of scores within each quartile is presented in the columns identifying the least and most improvement in score. The average change in score and the change in performance allocation for each quartile are also shown.

TABLE 2: CHANGING HOSPITAL SCORES

Quartile of Improvers	# of Facilities	Least Improvement	Most Improvement	Average Change in Indicator Score	Average Change in Performance Allocation
0-25%	19	-5.71	-1.24	-2.46	-1.37
26-50%	20	-1.03	0.24	-0.39	-0.35
51-75%	20	0.37	2.05	1.35	0.15
76-100%	19	2.15	8.34	3.75	1.00

Source: Standardized Hospital Patient Satisfaction Survey, 2001/2002

The bottom quartile (0-25%) had an average decrease of almost 2.5 indicator points, resulting in an average change of more than one performance allocation lower. The majority of hospitals in this bottom quartile shifted downwards from the performance allocation of "provincial average", and a few moved from the higher categories to "provincial average".

The average improvement for the top quartile (76-100%) was 3.75 indicator points. This translated into an average change of one performance allocation higher. The majority of hospitals in this top quartile shifted upwards from the "provincial average" performance allocation, with a few improving from the "somewhat below average" allocation over last year's reported results.

As mean indicator scores for all hospitals increase, a greater change in indicator score is required to improve a hospital's performance allocation. This is evident in the greater average change in score for the top quartile compared to the bottom quartile. As the standard against which hospitals are compared for the assignment of performance allocations rises, hospitals must continue to make efforts to increase the satisfaction of their patients in order to keep pace.

Listening to Patients

What changes have hospitals initiated to improve patient satisfaction? In this year's System Integration and Change questionnaire, over 90% of hospitals reported having made changes based on an examination of the patient satisfaction data presented in *Hospital Report 2001: Acute Care*. Generally, there were five themes common to the kinds of actions taken by Ontario hospitals to address patient satisfaction concerns.

Clinical processes was most often cited as an area where changes were made. In particular, access to clinical services was frequently identified as the chief clinical process issue. Efforts to improve access included monitoring and improving waiting times (e.g. emergency room triage, admission preparation, and lab results), more flexible hours of operation, and the introduction of on-site clinical services such as chemotherapy and cataract surgery. Other changes included the support of better pain management enabling greater patient control and family involvement; the use of clinical protocols to improve efficiency and sensitivity to patient needs; and the revision of delivery-of-care models.

Interpersonal communication between the health care team and the patient was identified as an important issue. In response, hospitals implemented patient-service programs for professional staff and volunteers. They also introduced patient education programs with the aim of ensuring that patients received relevant information about their condition prior to discharge. Concern with response time to patient call bells was addressed through the implementation of new call-bell systems, revised protocols to improve response time to patient requests, and ongoing monitoring of response time. In some instances, new roles, such as patient representatives or resource nurses, were introduced to improve communication between patients and the health care team.

The **physical environment** in which patients were treated was also a key aspect considered. Hospitals improved accessibility for the physically challenged and undertook cosmetic renovations to patient surroundings. Relocation of units within the hospital also improved function. Efforts to improve the cleanliness of patient rooms resulted in the implementation of new standards, including improved frequency of cleaning services, and scheduling aimed at minimizing disruptions to patients.

Hospitals also made efforts to better address patient expectations and **information needs**. Some hospitals posted signs in emergency waiting rooms to clarify the triage process. Some developed tools such as general information booklets for inpatients concerning processes and protocols within the hospital, and program-specific medical information pamphlets and information sheets.

Hospitals addressed poor satisfaction with **hospital food** by increasing patient choice and by revising food-service delivery models in order to improve the quality and quantity of food, as well as the temperature at which it is served. The courtesy of food delivery staff was also recognized as a factor that can influence patient satisfaction.[5,6]

Summary

Measuring how effective Ontario's hospitals are in meeting the needs of their patients is a complex process. Research suggests that for maximum effect, changes to improve patient satisfaction must be very specific and focused on patient care. The Patient Satisfaction quadrant provides a crucial perspective on what patients have to say about the quality of the care and services provided. The eight indicators presented in this quadrant serve as guideposts to help direct the attention of hospitals toward possible areas for improvement. Indicator specific findings for the most recent data include:

- The high **Global Quality** indicator score of approximately 88 points out of 100 was a province-wide increase of more than two indicator points over that reported in *Hospital Report '99.*
- Of those hospitals that participated in the previous reporting year, 42% showed an increase in the **Process Quality** indicator score of more than one indicator point.
- Across all patient satisfaction indicators, the greatest difference between males and females reporting excellent satisfaction was for the **Unit-Based Care** indicator, with males reporting excellent satisfaction levels of over six indicator points higher than females.
- Of the questions making up the **Physician Care** indicator, 94% of patients rated the skill of their physician as good or excellent; conversely 22% of patients responded that their physician did not keep them informed about their medical condition or did so only to some extent.
- In contrast to the other indicators of patient satisfaction, the **Support Services** and **Housekeeping** indicators showed a greater percentage of patients reporting satisfaction scores of good rather than excellent.
- Of the questions making up the **Outcomes of Care** indicator, 83% of patients were satisfied with the outcome of their hospital care, while only 68% felt they had a better understanding of their condition upon leaving the hospital.

Although Ontario hospitals continue to achieve higher ratings from patients regarding satisfaction, large differences in scores between indicators and across hospitals remain. However, analysis of the Process Quality indicator demonstrates that hospital-level improvements in patient satisfaction are possible. The province-wide increases in patient satisfaction have raised the bar against which hospitals are compared for the assignment of performance allocations. Hospitals must make efforts to increase the satisfaction of their patients in order to keep pace.

Next Steps

The ongoing challenge to increase the satisfaction of Ontario's acute care patients requires going beyond global indicators of patient satisfaction. Over time, it will be possible to use additional survey results and to connect the relationships between quadrants to better understand patient satisfaction improvement. Next steps include:

- Future reports will examine how results from the three other quadrants relate to overall patient satisfaction. For example:
  System Integration and Change–survey refinement may allow changes in patient satisfaction to be related to specific efforts hospitals are taking to improve the quality and processes of care.
  Clinical Utilization and Outcomes–inter-quadrant analysis may provide opportunities to investigate how patient satisfaction varies by patient groups and clinical outcomes.
  Financial Performance and Condition–patient satisfaction with Unit-Based Care and Housekeeping could also be related to hospital staffing.

- Acute care patient satisfaction findings will be supplemented by continuing work to develop nursing-specific indicators. This year, the researchers in the Hospital Report Research Collaborative are pilot-testing a modified version of the *Patient Judgments of Hospital Quality* (PJHQ) survey. The objective is to conduct pilot studies within hospitals from the five OHA regions in Ontario to assess the psychometric properties of the instrument and to compare patient satisfaction with nursing care across regions of the province. The PJHQ will also be compared with a generic patient satisfaction tool to examine the relative predictive value of the two instruments with regard to outcome variables. Based on the results of this year's pilot testing, the researchers may conduct a larger study across the province to determine the generalizability of the measures across settings. Future work might include comparative analysis of satisfaction with service quality across hospital sectors and between provinces.
- Other patient satisfaction tools may also supplement the findings of the SHoPSS to help guide future improvement processes for Ontario hospitals. For example, findings from Statistics Canada's Canadian Community Health Survey (CCHS) identify variations in acute care hospital patient satisfaction across Canada. Results indicate that Ontario patient satisfaction with the quality of their hospital care is below the Canadian average. Future research may help explain the basis of variation.
- It will be important to understand variation in hospital-level patient satisfaction scores for men and women. This will be explored further in the upcoming Women's Health excerpt.

For more information

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Financial Performance and Condition

Financial Performance and Condition

Financial performance and condition are important components of overall hospital performance. Strong financial performance and sound financial condition are critical to a hospital's ability to provide necessary services. Information describing the financial performance and condition of Ontario hospitals is required by many stakeholders, including hospital management, governments, unions and the Ministry of Health and Long-Term Care. These parties make important decisions regarding health care in Ontario and must understand how hospitals manage their financial and human resources. Indicators of financial performance and condition can help accomplish this task, especially when examined in conjunction with indicators of Clinical Utilization and Outcomes, Patient Satisfaction, and System Integration and Change.

This quadrant chapter of *Hospital Report 2002: Acute Care* examines financial indicators that measure the viability, liquidity, efficiency and human resource use of Ontario's hospitals for the three reported years of 1997/1998, 1999/2000 and 2000/2001 (no report was issued for 1998/1999 data). These indicators help describe how this sector of Ontario's economy is being managed.

A Snapshot of Ontario Hospitals

Ontario acute care hospitals are major employers in the communities they serve and are responsible for significant budgets. In 2000/2001, Ontario hospitals received almost $10.4 billion in total revenue, an amount that includes funding revenue, patient revenue, donations, grants and investment revenue. This is up from $9.6 billion in 1999/2000, an increase of 9.0%. After adjusting for the province's population growth, this increase translates to a 7.2% increase per Ontario resident.

Hospitals receive most of their revenue from the Ontario Ministry of Health and Long-Term Care (MOHLTC). In 2000/2001, the revenue from MOHLTC accounted for an average of 85.4% of all hospitals' revenue. This percent has increased over the three reported years from 84.7% in 1997/1998.

As revenue has increased over the three reported years, so too have hospital debts. The combined long term debt for all Ontario hospitals rose from $225 million in 1997/1998 to $276 million in 2000/2001 (excluding bonds issued by one of the province's teaching hospitals).

How Was the Research Done?

The Data Source

Ontario hospitals collect data describing their financial activities on a daily basis. The data are grouped and summarized in the hospital's accounting system according to guidelines developed by the Canadian Institute for Health Information (CIHI) 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, liability and equity accounts. The listing is submitted (in electronic form) to the MOHLTC, accompanied by a signed statement from the hospital certifying that the data submitted correspond 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 submitted 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 monitoring the financial condition of hospitals and making informed funding decisions. The data used in this quadrant were extracted from this database.

The Last Few Years

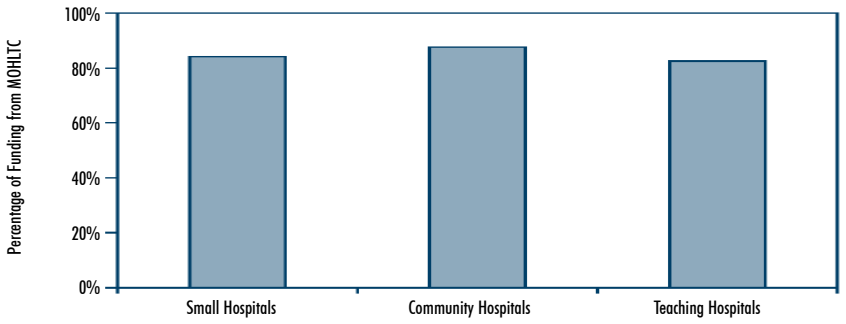
Hospital Report 2002: Acute Care provides an overview of the financial performance and condition of Ontario's hospitals for the 2000/2001 fiscal year. The previous report was *Hospital Report 2001: Acute Care*, which reported on 1999/2000 data. *Hospital Report '99* was based on data for 1997/1998. A brief summary of key financial and operational indicators, aggregated for all acute care hospitals in Ontario, is provided below.

	2000/2001	1999/2000	1997/1998
Total hospital revenue	$10.4 billion	$9.6 billion	$8.5 billion
Share of total revenue from provincial government	85.4%	85.1%	84.7%
Long term debt	$276 million	$208 million	$225 million
Number of hospital employees (full-time equivalents)	115,000	111,000	105,000
Inpatient acute care days	6.97 million	7.16 million	7.03 million
Average length of acute care stay	6.1 days	6.2 days	6.0 days
Day-surgery cases	1.14 million	1.09 million	1.03 million

Source: Ontario Hospital Reporting System and Discharge Abstract Database.
Note: 1997/1998 figures have been reclassified to conform with the current methodologies. Accordingly, they may not be identical to figures published previously.

FIGURE 5.1: 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, 2000/2001

How Ontario's Hospitals are Funded

The significant majority of hospital revenue for Ontario hospitals 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 a hospital's base funding may also be made using a model that measures relative efficiency and service volumes among institutions (for further information see the Joint Policy and Planning Committee (JPPC) Web site at www.jppc.org).

Hospitals also receive additional funding for priority programs of the MOHLTC. Priority program funding is provided annually, and re-allocated as necessary during the year based on demand, provincial health care policy, recommended population targets and the ministry's planning process. Examples of these programs include selected cardiac services, sexual assault treatment centres and end stage renal disease programs.


What's New in 2002?

- Indicator results are presented using data from the three reported years, 1997/1998, 1999/2000 and 2000/2001.
- New indicators of nursing financial performance are being examined and will potentially be used in future editions of this report.
- The Hospital Funding Formula Committee of the JPPC accepted improvements to the Rate formula[i]. This means that the Unit Cost Performance indicator is calculated differently this year than in previous years.
- Recent studies of the hospital discharge data that are used to calculate the Unit Cost Performance indicator have revealed evidence of considerable variation in the practice of coding patient diagnoses in Ontario hospitals. This variation could affect the reliability of the complexity assignment which forms part of the method for assigning Resource Intensity Weights. For this reason, the JPPC has recalculated hospital-specific values for the Unit Cost Performance indicator using a revised methodology, which makes no use of complexity information.
- To avoid inappropriate comparisons, hospital-specific performance allocations for the Unit Cost Performance indicator were produced using a three-level scale (compared to the five-level scale used for the majority of the Financial Performance and Condition indicators). For more information on this issue, refer to the 'Coding Variations and Data Quality' sidebar in this chapter.

Selecting the Indicators

The financial indicators used in *Hospital Report 2002: Acute Care* are the same as those used in *Hospital Report 2001: Acute Care* and *Hospital Report '99*. For *Hospital Report '99*, members of two working groups of the JPPC – the Hospital Funding Committee and the Data Quality Review Team – acted as a Financial Advisory Group in the indicator selection process. These groups are 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 these indicators. This process 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 inclusion in *Hospital Report '99*. The *Hospital Report 2002: Acute Care* research team confirmed the continued relevance of these indicators with members of the JPPC Hospital Funding Committee in the spring of 2002.

Developing Indicators of Nursing Financial Performance

This year the Financial Performance and Condition quadrant of *Hospital Report 2002: Acute Care* planned to include new nursing indicators that focus on the contribution of nursing worked hours to patient care. These indicators were identified through a critical appraisal of the literature and consultation with key stakeholders as part of *Hospital Report 2001 – Preliminary Studies Volume 2– Exploring: Nursing; Women's Health; Population Health*.[1] The objectives of the literature review were to determine the state of research concerning financial performance measurement in nursing report cards, and to identify specific indicators with definitions that have been previously utilized for monitoring the financial performance and condition of nursing services. The financial performance indicators identified were:

- total nursing hours per inpatient weighted case
- individual staff mix hours per inpatient weighted case
- Registered Nurse (RN) hours per inpatient weighted case
- percent of total inpatient nursing hours utilized for direct nursing care
- percent of professional nursing staff hours utilized for RNs
- percent of direct nursing care hours utilized for non-professional staff
- percent of nursing care hours utilized for full time, part-time and casual nursing staff
- percent of staff hours used for orientation, absenteeism, ongoing education, overtime, and for agency staff

Consultations with approximately 140 key stakeholders and leaders in nursing across Ontario confirmed the relevance of these nursing financial performance indicators.

The Nursing Research team recommended that indicators reflecting nursing cost performance, utilization and efficiency measures at the system level (and eventually at the hospital-specific level) be integrated into future acute care *Hospital Reports*. At the time that *Hospital*

[i] JPPC Reference Document 10-2, "Hospital Funding Report Using 2000/2001 Data" May 2002, JPPC Web site (www.jppc.org).

Report 2001 - Preliminary Studies Volume 2 Exploring: Nursing; Women's Health; Population Health was generated it was believed that the nursing cost performance and utilization indicators could be feasibly calculated, while the efficiency indicators would need to be developed in the future due to issues related to data availability. Initial assessments revealed that significant data quality issues need to be addressed before nursing cost performance and utilization indicators can be integrated into the acute care report. Work to address these issues will continue in the coming year.

Coding Variations and Data Quality

One indicator in the Financial Performance and Condition quadrant (Unit Cost Performance) requires consistent coding of data on patient diagnoses in Ontario hospitals. Although earlier studies had identified variation in these data, recent studies conducted jointly by CIHI, JPPC, and MOHLTC have identified differences in the patterns in the practice of coding patients' comorbidities at certain Ontario hospitals. These differences are sufficiently large that the value of the information derived from the complexity assignment for use in the Unit Cost Performance indicator may be questionable.

To mitigate the effect that these variations may have on the Unit Cost Performance indicator, the JPPC decided to recalculate hospital-specific values for the Unit Cost Performance indicator for *Hospital Report 2002: Acute Care* using a revised methodology. The primary change in the methodology is the replacement of CIHI's Complexity Overlay model with a 'collapsed' complexity model, which does not relate the assigned Resource Intensity Weight to the complexity level of the individual patient. This adjustment should reduce the effects of the data quality issues on this indicator. In addition, the revised methodology takes into account other recent decisions made with respect to the Rate formula. For more information on the revised methodology, please refer to the *Hospital Report 2002: Acute Care Technical Summary*.

CIHI and the Hospital Report Research Collaborative have agreed to work together to complete a more comprehensive analysis on the extent and impact of coding variations and to develop a strategy to ensure that these variations and their impact on hospital comparisons will be minimized. A full report on the analysis of coding irregularities and the strategy to improve data quality will be made public at a later date.

The Methods

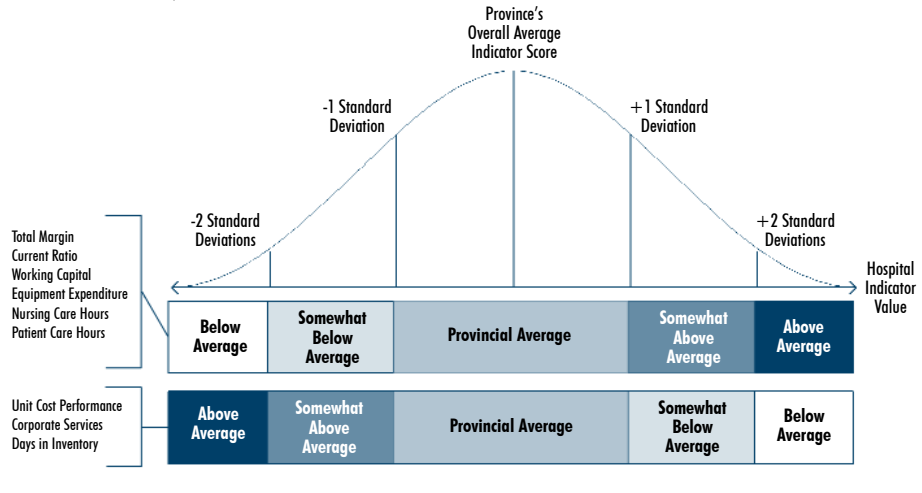
The methodology used in this report is described in detail in the *Hospital Report 2002: Acute Care Technical Summary*. It is available free on *Hospital Report* series partners' and sponsors' Web sites. For a list of Web sites, see the back cover of this report.

Important elements of the methodology 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. They were asked to review the material and identify any necessary changes in data

FIGURE 5.2: 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 2002: Acute Care Technical Summary* for more detail on the performance allocation method for this quadrant.



originally submitted to the MOHLTC. As a result, in 2002, data submission changes were implemented for twelve hospitals. Specific cases in which hospital performance allocations changed due to data resubmission were noted with a footnote in the insert found at the back of this report. Despite this precaution, 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, i.e. 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 than teaching and community 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 2002: 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 2002: 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 reviewed the financial indicators to ensure meaningful differences among categories. For the Unit Cost Performance indicator and the Working Capital indicator the middle three performance scores 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. These 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 5.2 illustrates this process.

With only thirteen teaching hospitals in the province (plus an additional site reported distinctly for one organization), their performance could not be compared using the same methodology. Instead, a regression model that controlled for teaching activity was used to obtain the expected indicator values for each hospital. Hospital-specific performance allocations were then determined based on the extent to which a teaching hospital's actual indicator value differed from its expected value.

Performance allocations by hospital type are summarized in Appendix B of this report. In addition, hospital-by-hospital results for 92 hospital corporations are available in the insert at the back of this report.

Indicators of Financial Performance and Condition

Financial Viability

Financial viability refers to a hospital's ability to fund growth, new programs, working capital needs and new equipment through an excess of revenues over expenses.[2] One indicator of financial viability is Total Margin.

Total Margin

The Total Margin indicator measures the relative 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 that revenue exceeded expenses; a negative value indicates the reverse.

After adjusting for excluded revenues (see formula), Ontario's hospitals reported almost $9.2 billion in revenues in 2000/2001. This was more than total reported expenses across the province. As a result, Ontario hospitals reported revenue in excess of expenses of almost $125 million for an overall total margin of 1.35%. This indicator has changed by just over one percentage point between fiscal years 1997/1998 and 2000/2001. The Total Margin was 1.55% in 1999/2000 and 0.22% in 1997/1998.

Although Ontario hospitals had revenue in excess of expenses in 2000/2001, the financial health of hospitals varied. Ninety-five hospitals reported revenue in excess of expenses (for a total of almost $185 million) and 28 reported expenses in excess of revenue (for a total of almost $60 million). Small hospitals tended to have larger total margins (3.78%) than teaching (0.89%) or community (1.58%) hospitals.

Calculating Total Margin

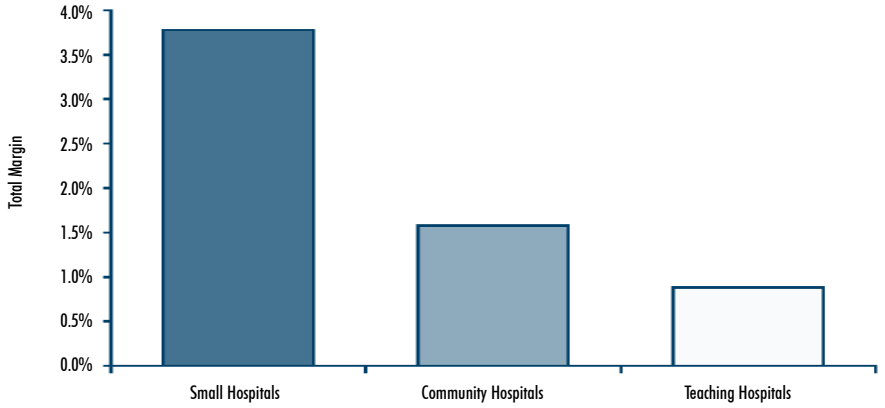
The Total Margin indicator is calculated as follows:

[Total Revenues – (Total Expenses – Facility Amortization), excluding Externally Funded Research Revenues and Expenses] x 100

Total Revenues, excluding Other Vote (Ministry of Health funding specifically for the use of approved programs), OHIP Revenue, Grants, Donations, Interdepartmental Recoveries (the effect of internal business activity), and Externally Funded Research Revenues

FIGURE 5.3: HOW TOTAL MARGIN VARIES BY HOSPITAL TYPE

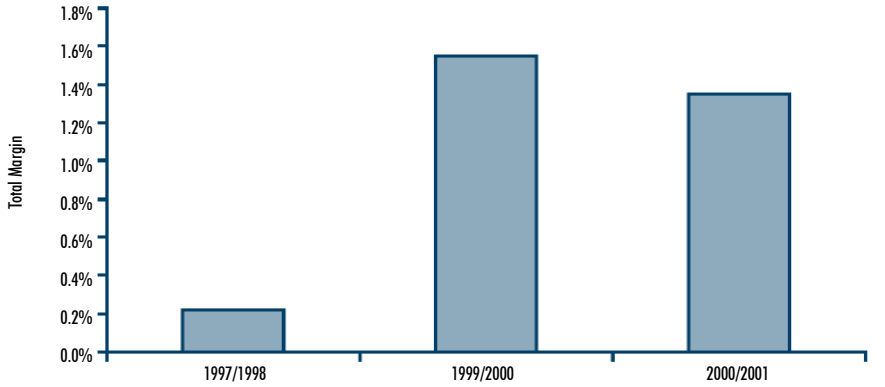
Total Margin reflects the degree to which a hospital's total revenues exceed its total expenses excluding facility amortization. While results vary between hospitals, small hospitals generally appear to have higher total margins than do community or teaching hospitals. Values below show weighted averages by hospital type for fiscal year 2000/2001.



Source: Ontario Hospital Reporting System, 2000/2001

FIGURE 5.4: HOW TOTAL MARGIN VARIES BY FISCAL YEAR

The graph below shows how Total Margin has changed over the three reported years. The values reported in this graph are the weighted province-wide averages for each year.



Source: Ontario Hospital Reporting System, 1997/1998, 1999/2000 and 2000/2001

Efficiency

Three indicators of efficiency are presented in this report: Unit Cost Performance, Corporate Services, and Days in Inventory. Unit Cost Performance measures efficiency by comparing services provided to a hospital's patients ("outputs") to the resources ("inputs") required to produce them. Corporate Services and Days in Inventory measure efficiency in terms of how a hospital's resources are used.

Calculating Unit Cost Performance

2000/2001 values for the Unit Cost Performance indicator were obtained from the JPPC.

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

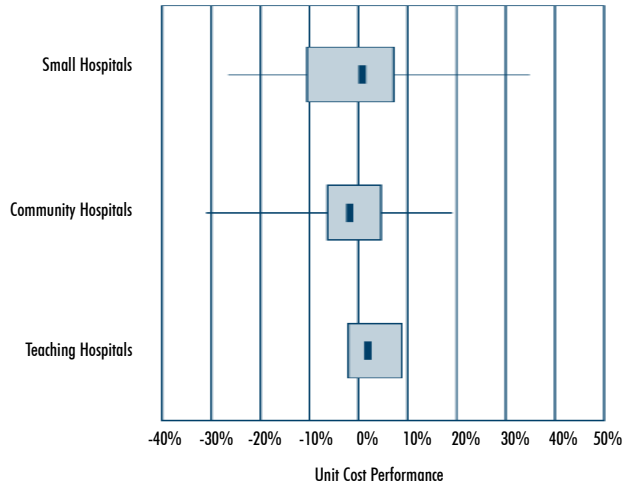
Note: Specialty acute hospitals such as the Children's Hospital of Eastern Ontario and the Hospital for Sick Children are not included in the formula; therefore, it was not possible to produce the Unit Cost Performance indicator for these two hospitals.

Unit Cost Performance

The Unit Cost Performance indicator uses a standard statistical technique (regression analysis) to compare a hospital's actual costs to its expected costs. The calculation takes into account provincial cost patterns, the types of patients treated in each hospital, as well as other factors, such as the amount of medical student training that occurs in each hospital. Why is this important? Because different hospitals treat different numbers and types of patients, overall costs will vary from hospital to hospital. The prediction of expected costs partially depends on a hospital's size, teaching role, chronic care activity, provision of clinically advanced care and the extent to which the hospital is isolated from other institutions. Taking these factors into account improves hospital-to-hospital comparisons of efficiency.

FIGURE 5.5: UNIT COST PERFORMANCE RESULTS COMPARED

This box plot describes the distribution of Unit Cost Performance indicator values by peer group. 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 interquartile range. It contains 50% of the indicator values (25% immediately above the median and 25% below). The "whiskers" are lines that extend to the highest and lowest indicator scores.



Note: "Whiskers" for the Teaching Hospital peer group were suppressed for confidentiality reasons.

Source: Joint Policy and Planning Committee, 2000/2001

The Unit Cost Performance indicator measures technical efficiency, not service quality, timeliness, or sustainability. A negative Unit Cost Performance value indicates that services cost less than expected and a positive value suggests that services cost more than expected. Unit Cost Performance results were used to allocate a substantial proportion of new provincial government funding to hospitals in 2001/2002 and 2002/2003.

A hospital's ability to achieve greater unit cost efficiency is influenced by a number of factors. These include staff mix, productivity, local prices of goods and services, community linkages, and management practices. Variations among hospitals for this indicator may also reflect reporting differences.

This year, differences in the practice of coding patient diagnoses in Ontario hospitals necessitated a recalculation of the hospital-specific values for Unit Cost Performance using a revised methodology. For more information, please read the 'Coding Variations and Data Quality' sidebar.

Corporate Services

Most hospital staff provide services directly to patients. Other staff are needed to manage hospital operations, hire employees, pay bills, and perform other corporate service functions. The Corporate Services indicator measures how much a hospital spends in areas of administrative service relative to its total

operating expenses. A higher value for this indicator suggests that a greater share of a hospital's operating expenses is spent on corporate services. To improve comparability of results, cash discounts, compensation for physicians, and amortization are excluded from the calculation. Across the province, Ontario hospitals reported spending about $723 million on corporate services in 2000/2001. That represented 8.76% of hospital operating dollars, down from 1999/2000 (8.98%). In 1997/1998, the corresponding value was 8.59%.

In 2000/2001, small hospitals tended to report higher values for the Corporate Services indicator than did community or teaching hospitals. A variety of factors may explain differences in corporate services costs among hospitals. For instance, larger hospitals might be able to achieve a lower manager-to-staff ratio than would be possible in smaller hospitals. Hospitals may also vary in the way they define patient care and corporate service costs.

Corporate services costs may also be affected by the complexity of a hospital's services, as well as by its management practices, information systems, and recruitment strategies. For these reasons it is important to consider results for each indicator in context with others in the balanced scorecard. For example, a hospital with sophisticated information technology allowing doctors to securely but easily access important information about a patient's care might perform below average on the corporate services indicator, but might score well on the System Integration and Change Clinical Information Technology indicator.

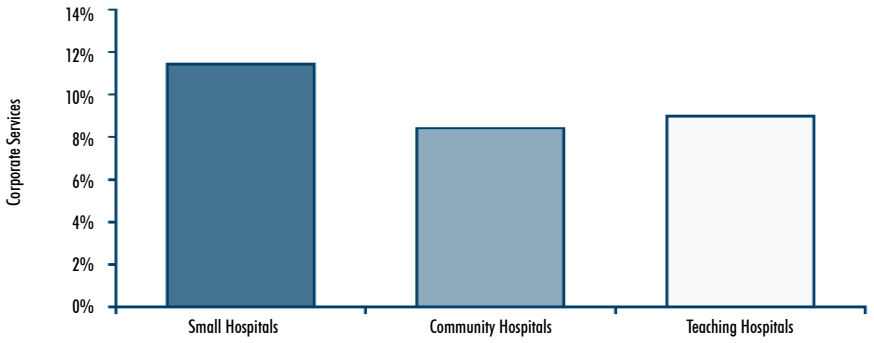
Calculating Corporate Services

[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]* 100

Operating Expenses, Net of Recoveries and excluding Medical Compensation and all Amortization

FIGURE 5.6: HOW CORPORATE SERVICES VARY BY HOSPITAL TYPE

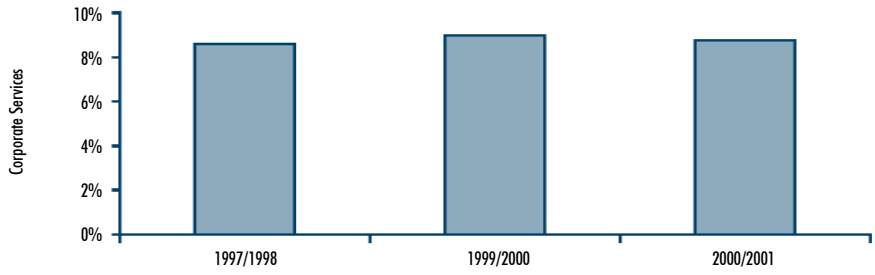
In 2000/2001, small hospitals reported spending more on corporate services as a percentage of their operating expenses than community or teaching hospitals. Values below show weighted averages by hospital type.



Source: Ontario Hospital Reporting System, 2000/2001

FIGURE 5.7: HOW CORPORATE SERVICES VARY BY FISCAL YEAR

The graph below shows how the Corporate Services indicator has changed over the three reported years. The values reported in this graph are the weighted province-wide averages for each year.



Source: Ontario Hospital Reporting System, 1997/1998, 1999/2000 and 2000/2001

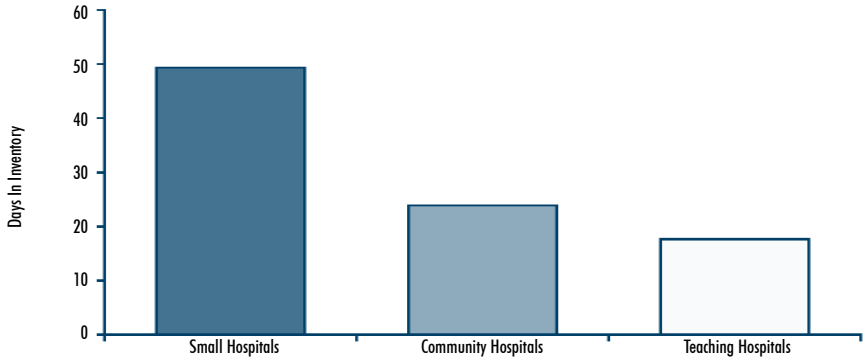
Calculating Days in Inventory

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

Total General and Patient-Specific Supplies Expense/365 days

FIGURE 5.8: HOW DAYS IN INVENTORY VARY BY HOSPITAL TYPE

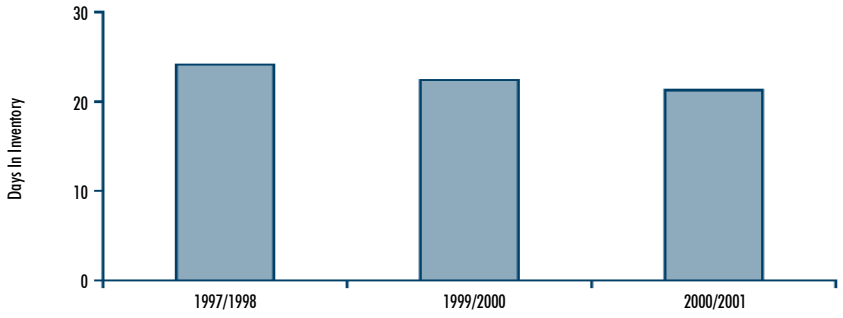
In 2000/2001, small hospitals on average tended to have longer periods between supply purchase and use than community or teaching hospitals. Values below show weighted averages by hospital type.



Source: Ontario Hospital Reporting System, 2000/2001

FIGURE 5.9: HOW DAYS IN INVENTORY VARY BY FISCAL YEAR

The graph below shows a decline in the Days in Inventory indicator over the three reported years. The values reported in this graph are the weighted province-wide averages for each year.



Source: Ontario Hospital Reporting System, 1997/1998, 1999/2000 and 2000/2001

Days in Inventory

Having enough supplies available to meet daily needs is important for hospitals, but holding too much inventory on-hand ties up money that might otherwise be available for other purposes. The Days in Inventory indicator measures the average number of days supplies are held in inventory. A higher value indicates a longer period between purchase and use of supplies; a lower value indicates a shorter period. For the purposes of comparability, equipment, building and grounds, costs of services referred-out, and sundry (miscellaneous) expenses are not included in this indicator. Data from the three reported years for Days in Inventory suggest that there is a trend in hospitals toward managing lower inventory levels. This indicator value has fallen every year since 1997/1998 when the value was 24.11 days. In 1999/2000 the indicator value was 22.42 days, and in 2000/2001 it fell to 21.29. This represents a 12% decrease in the Days In Inventory value over this period. However, despite this decrease, there was still significant variation among individual hospitals in 2000/2001, with days in inventory ranging from 7 to 89.

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 or those that experience larger seasonal variations in demand may need to maintain larger inventories.

Liquidity

Liquidity indicators measure how a hospital is managing its current assets (those that could be converted to cash within a year) and current 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 2002: Acute Care*, there are two measures of liquidity: Current Ratio and Working Capital.

Current Ratio

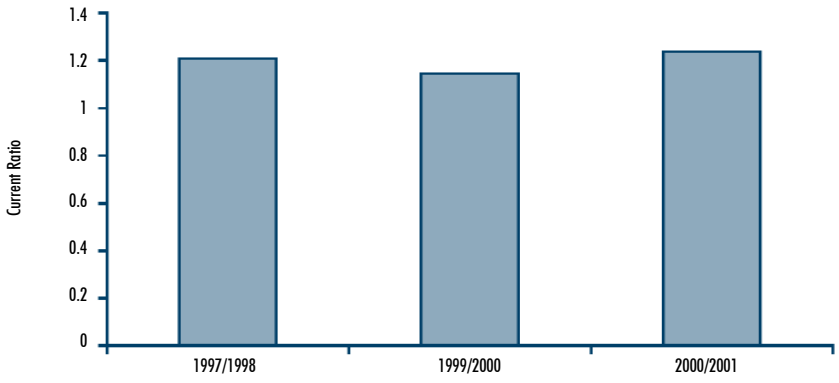
A hospital's current ratio represents the number of times its short-term obligations can be paid using the hospital's short-term assets. It is calculated by dividing current assets by current liabilities. A higher value indicates greater liquidity, and a lower value indicates lesser liquidity. If a hospital's ratio is less than one, it has insufficient current 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.

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 5.10: HOW CURRENT RATIO VARIES BY FISCAL YEAR

The graph below suggests that Ontario hospitals continued to remain liquid during the three reported years. The values reported in this graph are the weighted province-wide averages for each year.



Source: Ontario Hospital Reporting System, 1997/1998, 1999/2000 and 2000/2001

Across the province in 2000/2001, Ontario hospitals reported current assets of approximately $2.5 billion and current liabilities of almost $2 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 province-wide average current ratio was 1.24. The current ratio in 1999/2000 and 1997/98 were 1.15 and 1.21, respectively. These data suggest that Ontario hospitals, on average, continue to remain liquid.

Working Capital

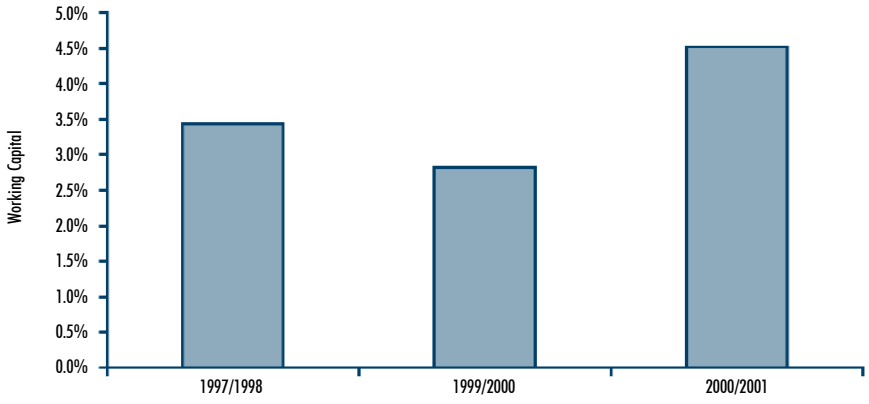
A hospital's liquidity can also be measured by how much capital is available in the short term ("Working Capital"), after liabilities have been taken into account. The Working Capital indicator measures what current assets remain after paying all of the current liabilities and adjusting for the size of the hospital's total revenues. A larger positive value indicates a greater supply of working capital relative to total revenues. Hospitals with a positive value 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

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

FIGURE 5.11: HOW WORKING CAPITAL VARIES BY FISCAL YEAR

The Working Capital indicator measures what current assets remain after paying all of the current liabilities, adjusted for the size of the hospital's total revenues. The values reported in this graph are the weighted province-wide averages for each year.



Source: Ontario Hospital Reporting System, 1997/1998, 1999/2000 and 2000/2001

In Ontario hospitals, Working Capital as a percentage of total revenue declined in the period between 1997/1998 and 1999/2000 from 3.44% to 2.82%. Between 1999/2000 and 2000/2001 this indicator value increased to 4.52%, indicating that hospitals have been able to accumulate some of their increased surplus in the form of current assets or have been able to use the surplus to pay down their current liabilities. As with other indicators, working capital values differed by hospital type. Small hospitals reported the largest working capital ratio at 23.18%. This compares to 9.58% for community hospitals. Ontario's teaching hospitals had a negative combined working capital ratio (- 3.38%).

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 spending by hospitals on equipment and physical plants.

Calculating Equipment Expenditure

$$\frac{\text{Total Expenses related to the acquisition and use of equipment (calculated as Equipment Maintenance + Replacement of Major Equipment Parts + Amortization on Major Equipment + Net Gain/Loss on Disposal + Interest on Major Equipment Loans + Rental/Lease of Equipment + Minor Equipment Purchases + Equipment Expense not Elsewhere Classified) * 100}{\text{Total Expenses, Net of All Recoveries}}$$

Spending on Equipment

In 2000/2001 hospitals reported that they owned approximately $12 billion of plant, buildings and equipment. Hospitals expend substantial sums every year to operate and maintain all of this equipment.

The Equipment Expenditure indicator measures how much a hospital spends in a given year to operate its computer systems, x-ray machines, and other capital equipment, and compares this amount to its total expenses. Ontario hospitals reported spending $641 million on equipment expenses (including amortization) in 2000/2001. That's 6.54% of total expenses, down from 6.61% in 1999/2000. In 1997/1998, Ontario hospitals reported spending 5.78% of total expenses on equipment expenses.

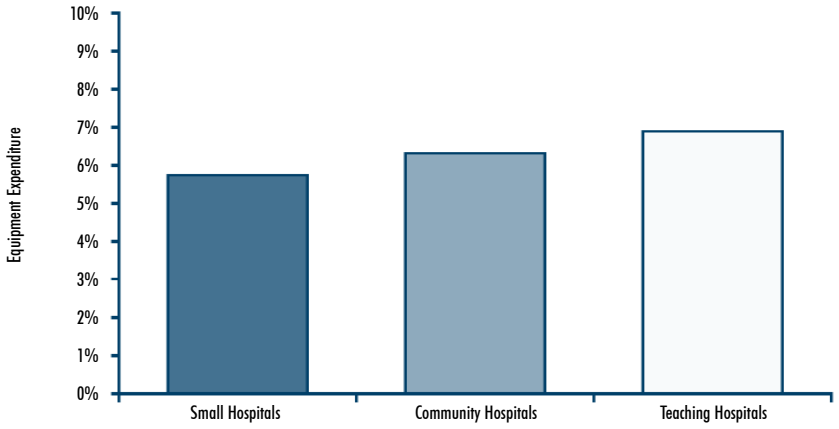
Teaching hospitals spent more to operate equipment as a percent of total expenses (6.89%) than community (6.32%) or small

(5.75%) hospitals. In part, this finding may reflect equipment requirements related to the highly specialized types of care, teaching activities, and research initiatives that occur more frequently in teaching hospitals.

Many factors, such as the types of services provided, teaching activities, and research programs, affect a hospital's need for equipment and therefore their equipment-related expenses. The age of equipment can also have an impact on operating costs. Newer equipment often requires less maintenance thereby allowing for substantial operational savings and increased productivity.

FIGURE 5.12: HOW EQUIPMENT EXPENDITURE VARIES BY HOSPITAL TYPE

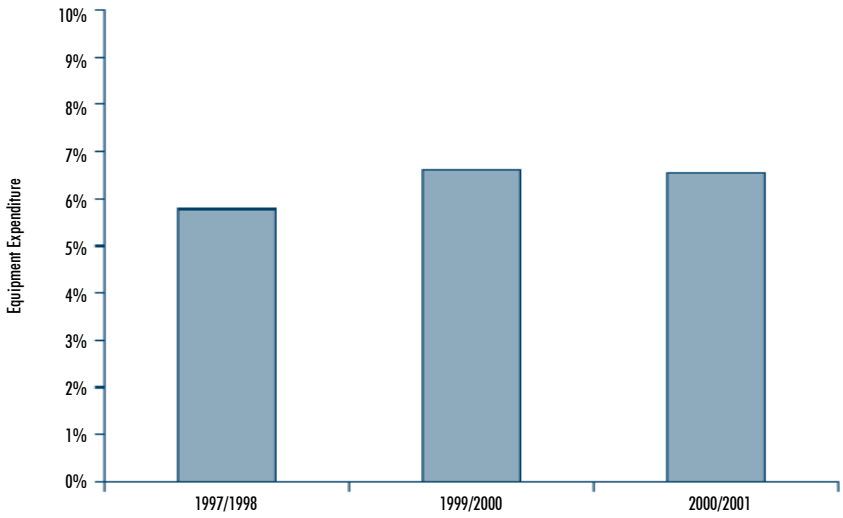
In 2000/2001, teaching hospitals reported spending more to operate equipment as a percentage of total expenses than small or community hospitals. Values below show weighted averages by hospital type.



Source: Ontario Hospital Reporting System, 2000/2001

FIGURE 5.13: HOW EQUIPMENT EXPENDITURE VARIES BY FISCAL YEAR

The graph below shows how the Equipment Expenditure indicator has changed over the three reported years. The values reported in this graph are the weighted province-wide averages for each year.



Source: Ontario Hospital Reporting System, 1997/1998, 1999/2000 and 2000/2001

Human Resources

The equivalent of approximately 115,000 full-time employees worked in Ontario hospitals in 2000/2001, an increase of 3.60% since 1999/2000. This report includes two indicators that measure how hospitals allocate their staff's time to patient care and non-patient care: Nursing Care Hours and Patient Care Hours.

Calculating Nursing Care Hours

Nursing Inpatient Services Unit Producing Personnel Worked and Purchased Service Hours *100

Total Nursing Inpatient Services Earned Hours, excluding Medical Compensation Hours

Nursing Care Hours

Registered Nurses, Registered Practical Nurses, and other hospital nursing staff split their time between patient care and other activities. The Nursing Care Hours indicator measures how much time inpatient nursing staff spend on patient-care activities as a percentage of their total hours.

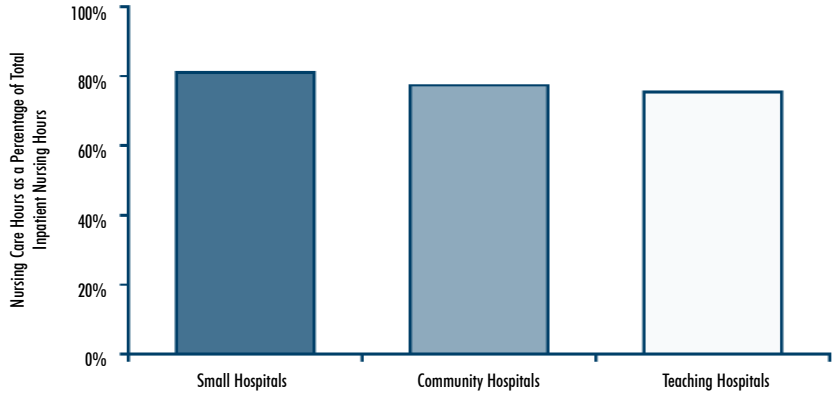
The data show that most nursing staff time, 76.78% in 2000/2001, is spent on patient care. Nursing management and non-worked time (e.g. holidays, sick time, maternity leave, and educational time) accounted for just under a quarter of nursing inpatient services hours.

This percentage relationship has remained true for several years (78.27% in 1997/1998, 77.61% in 1999/2000). Small hospitals had higher values than their community and teaching hospital counterparts for all of these 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. Differences among hospitals may also be attributable to 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 as a part of total nursing hours, while 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 the number of nursing hours would appear higher at the first hospital.

FIGURE 5.14: HOW NURSING CARE HOURS VARY BY HOSPITAL TYPE

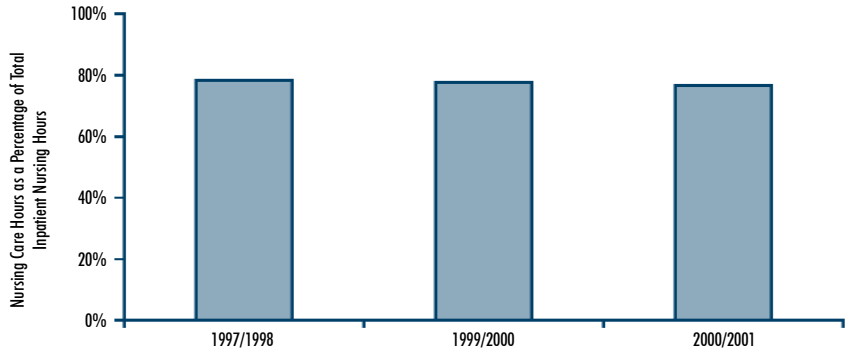
In 2000/2001, small hospitals reported spending more hours on patient care as a percent of total nursing hours than did community or teaching hospitals. Values below show weighted averages by hospital type.



Source: Ontario Hospital Reporting System, 2000/2001

FIGURE 5.15: HOW NURSING CARE HOURS VARY BY FISCAL YEAR

The graph below illustrates that hospitals are utilizing a consistent percentage of nursing hours for nursing care over the three reported years. The values reported in this graph are the weighted province-wide averages for each year.



Source: Ontario Hospital Reporting System, 1997/1998, 1999/2000 and 2000/2001

Patient Care Hours

Most hospital staff provide patient care, but some perform other functions. The Patient Care Hours indicator measures the percent of all hospital-worked hours for staff theoretically available to carry out activities that 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 183 million staff hours in 2000/2001. Of these, over half (59.38% or 108 million hours) were worked by staff who provided patient care. In 1999/2000, the ratio was 59.41%, and in 1997/1998, the ratio was 60.32%. During the three reported years, small hospitals typically reported lower patient-care hour ratios relative to teaching and community hospitals.

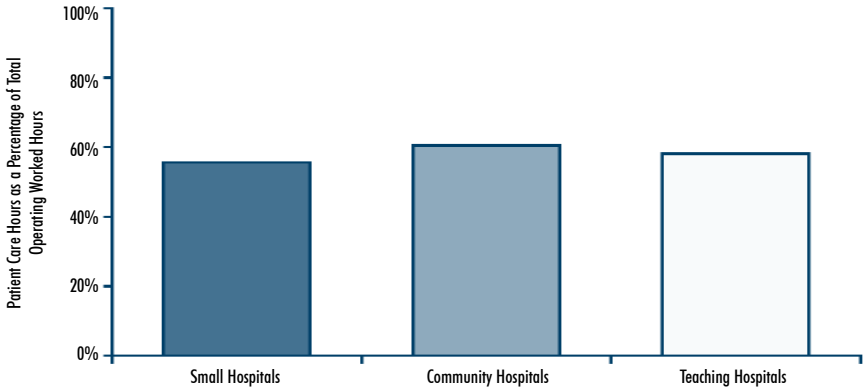
Calculating Patient Care Hours

Nursing Inpatient Services, Ambulatory Care, and Diagnostic & Therapeutic Worked and Purchased Service Hours *100

Total Operating Worked Hours, excluding Medical Compensation Hours

FIGURE 5.16: HOW PATIENT CARE HOURS VARY BY HOSPITAL TYPE

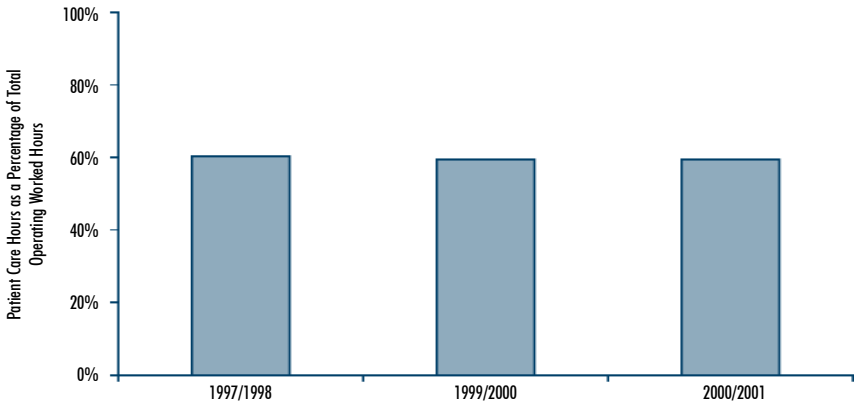
In 2000/2001, small hospitals reported spending fewer hours on patient care as a percent of total operating worked hours than did community or teaching hospitals. Values below show weighted averages by hospital type.



Source: Ontario Hospital Reporting System, 2000/2001

FIGURE 5.17: HOW PATIENT CARE HOURS VARY BY FISCAL YEAR

The graph below shows a relatively consistant percentage of total operating worked hours devoted to patient care over the three reported years. The values reported in this graph are the weighted province-wide averages for each year.



Source: Ontario Hospital Reporting System, 1997/1998, 1999/2000, 2000/2001

Summary

This quadrant chapter provides Ontario hospital stakeholders with province-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.

In this report, we compare results for 2000/2001 (the latest data available) to 1999/2000 (the year reported in *Hospital Report 2001: Acute Care*) and 1997/1998 (the year reported on in *Hospital Report '99*). Findings include:

- Together, Ontario hospitals' combined revenue in excess of expenses decreased slightly–total margin decreased by 0.2 percentage points and long term debt increased by almost $70 million from 1999/2000 to 2000/2001
- Corporate services spending as a percent of total operating expenses fell slightly–from 8.98% in 1999/2000 to 8.76% in 2000/2001
- Days in inventory dropped to 21.29 days in 2000/2001, down from 22.42 in 1999/2000
- Liquidity rose slightly–the current ratio increased from 1.15 in 1999/2000 to 1.24 in 2000/2001
- There appeared to be a slightly smaller investment in capital–equipment expenditure decreased from 6.61% in 1999/2000 to 6.54% in 2000/2001
- The proportion of hours worked by hospital staff who contribute to patient care to total hospital-worked hours remained fairly constant–59.41% in 1999/2000 compared to 59.38% in 2000/2001
- The proportion of patient care hours to total hours for nursing staff also remained fairly constant–77.61% in 1999/2000 versus 76.78% in 2000/2001

Next Steps

In order to ensure that the Financial Performance and Condition quadrant 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 the continued relevance of current indicators, investigating the possibility of adding important new indicators, and considering options for refining the measurement and interpretation of existing indicators.
- Conducting further analysis of potential new nursing indicators. These indicators relate to specifying nurses' contribution to patient care. It is hoped that the new nursing indicators will be validated for inclusion in *Hospital Report 2003: Acute Care*.

For more information

[1] McGillis Hall L, Doran D, Spence Laschinger H, Mallette C, O'Brien-Pallas L, Pedersen C. (2001). *Nursing Report 2001: Preliminary study for Hospital Report 2001*. Toronto: The Hospital Research Collaborative. Faculty of Nursing, University of Toronto and Ontario Hospital Association/Ontario Ministry of Health and Long-Term Care.

[2] Suver JD, Boles KE, Neumann BR. (1995). *Management Accounting for Healthcare Organizations, 4th ed*. Chicago: Precept Press.

Appendix A: Ontario Hospitals included in *Hospital Report 2002: 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		System Wide	Small	1
Blind River District Health Centre		System Wide	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		System Wide	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	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	Small	1
Espanola General Hospital		System Wide	Small	1
Four Counties Health Services		Hospital Specific	Small	5
Geraldton District Hospital		System Wide	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		Hospital Specific	Community	4
Guelph General Hospital		Hospital Specific	Community	4
Haldimand War Memorial Hospital		Hospital Specific	Small	4
Haliburton Highlands Health Services Corporation		System Wide	Small	2
	Haliburton Hospital Site			
	Minden Hospital Site			
Halton Healthcare Services		Hospital Specific	Community	4
	Milton Site			
	Oakville/Trafalgar Site			
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
Hôpital Notre-Dame Hospital (Hearst)		System Wide	Small	1
Hornepayne Community Hospital		System Wide	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	Teaching	2
Humber River Regional Hospital		Hospital Specific	Community	3
	Church St. Site			
	Finch Avenue Site			
	Keele St. Site			
Huntsville District Memorial Hospital		System Wide	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			
Huronia District Hospital (North Simcoe Hospital Alliance)		Hospital Specific	Community	4
James Bay General Hospital		System Wide	Small	1
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		System Wide	Community	1
Lady Dunn Health Centre		System Wide	Small	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	Small	2
London Health Sciences Centre		Hospital Specific	Teaching	5
	London Health Sciences Children's Campus			
	University Campus			
	Victoria Campus			
Manitoulin Health Centre		System Wide	Small	1
	Little Current			
	Mindemoya			
Manitouwadge General Hospital		System Wide	Small	1
Markham Stouffville Hospital		Hospital Specific	Community	3
Mattawa General Hospital		System Wide	Small	1
McCausland Hospital		System Wide	Small	1
MIC's Group of Health Services		Hospital Specific	Small	1
	Anson General Hospital			
	Bingham Memorial Hospital			
	The Lady Minto 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 County General Hospital Site			

Hospital Organization/Corporation Name	Sites Included	Participation Level	Peer Group	Region
Nipigon District Memorial Hospital		System Wide	Small	1
Norfolk General Hospital		Hospital Specific	Community	4
North Bay General Hospital		Hospital Specific	Community	1
	McLaren Site			
	Scollard Site			
North York General Hospital		Hospital Specific	Community	3
	Branson Division			
	General Division			
Northumberland Health Care Corporation		Hospital Specific	Community	2
North Wellington Health Care		Hospital Specific	Small	4
	Louise Marshall Hospital			
	Palmerston and District Hospital			
Orillia Soldiers' Memorial Hospital		Hospital Specific	Community	4
The Ottawa Hospital		Hospital Specific	Teaching	2
	Civic Campus			
	General Campus			
	Riverside Campus			
	University of Ottawa Heart Institute			
	*Reported distinctly in the hospital-specific results			
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
	Belleville General Site			
	North Hastings Site			
	Prince Edward County Memorial Site			
	Trenton Memorial Site			
RHSJ Health Centre of Cornwall		Hospital Specific	Community	2
Red Lake Margaret Cochenour Memorial Hospital		System Wide	Small	1
Renfrew Victoria Hospital		Hospital Specific	Community	2
Riverside Healthcare		System Wide	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	Small	1
Services de Sante de Chapleau		System Wide	Small	1
Sioux Lookout District Health Centre		System Wide	Small	1
Smooth Rock Falls Hospital		System Wide	Small	1
South Bruce Grey Health Centre		System Wide	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 (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 Health Science Centre			
Temiskaming Hospital		Hospital Specific	Community	1
The West Nipissing General Hospital		System Wide	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		Hospital Specific	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 Site			
	Toronto General Hospital Site			
	Toronto Western Hospital Site			
West Haldimand General Hospital		System Wide	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	Small	1
Winchester District Memorial Hospital		Hospital Specific	Community	2
Windsor Regional Hospital		Hospital Specific	Community	5
	Metropolitan Campus Site			
	Western Campus Site			
Woodstock General Hospital		Hospital Specific	Community	5
York Central Hospital		Hospital Specific	Community	3

Appendix B: Performance Allocations for Hospitals Participating in the Hospital-Specific Portion of the Report

System Integration and Change Quadrant

All Hospitals

Indicator	Province-Wide Median	Performance Allocations					
		★	★★	★★★	★★★★	★★★★★	NR
Clinical Information Technology	35.39	2	14	59	10	7	0
Clinical Data: Collection, Dissemination, and Benchmarking	53.49	1	7	67	12	5	0
Intensity of Information Use	46.82	2	10	64	12	4	0
Development and Use of Standardized Protocols	43.84	7	6	66	9	4	0
Coordination of Care	84.67	8	6	48	7	18	5
Hospitals in the Community	38.51	4	7	65	11	5	0
Working with Other Health Care Partners	53.91	5	9	62	12	4	0
Continuity of Care	86.97	2	12	54	8	11	5
Strategies for Managing ALC Patients	48.89	2	9	60	10	7	4
Supporting Hospital Staff	53.53	2	11	65	8	6	0

Small Hospitals

Indicator	Province-Wide Median	Performance Allocations					
		★	★★	★★★	★★★★	★★★★★	NR
Clinical Information Technology	21.61	1	0	10	3	0	0
Clinical Data: Collection, Dissemination, and Benchmarking	39.58	0	0	10	3	1	0
Intensity of Information Use	38.25	0	1	10	2	1	0
Development and Use of Standardized Protocols	27.67	0	1	11	2	0	0
Hospitals in the Community	28.26	0	0	10	2	2	0
Working with Other Health Care Partners	41.75	0	0	9	5	0	0
Strategies for Managing ALC Patients	30.77	0	0	8	3	2	1
Supporting Hospital Staff	46.32	0	2	10	0	2	0

Teaching/Community Hospitals

Indicator	Province-Wide Median	Performance Allocations					
		★	★★	★★★	★★★★	★★★★★	NR
Clinical Information Technology	45.56	1	14	49	7	7	0
Clinical Data: Collection, Dissemination, and Benchmarking	60.94	1	7	57	9	4	0
Intensity of Information Use	54.41	2	9	54	10	3	0
Development and Use of Standardized Protocols	48.03	7	5	55	7	4	0
Hospitals in the Community	43.32	4	7	55	9	3	0
Working with Other Health Care Partners	57.15	5	9	53	7	4	0
Strategies for Managing ALC Patients	55.94	2	9	52	7	5	3
Supporting Hospital Staff	56.46	2	9	55	8	4	0

Clinical Utilization and Outcomes Quadrant

All Hospitals

Indicator	Performance Allocations					
	★	★★	★★★	★★★★	★★★★★	NR
Acute Myocardial Infarction						
Access to Coronary Angiography	31	14	24	18	0	5
Readmissions*	0	N/A	72	N/A	7	13
Asthma						
Readmissions	0	0	30	3	4	55
Cholecystectomy						
Access to Day-Surgery	16	4	12	40	0	20
Hysterectomy						
Readmissions*	0	N/A	30	N/A	4	58
Length of Stay*	1	N/A	33	N/A	40	18
Prostatectomy						
Readmissions*	0	N/A	27	N/A	1	64
Stroke						
Length of Stay*	2	N/A	77	N/A	12	1

Small Hospitals

Indicator	Performance Allocations					
	★	★★	★★★	★★★★	★★★★★	NR
Acute Myocardial Infarction						
Access to Coronary Angiography	2	3	5	1	0	3
Readmissions*	0	N/A	2	N/A	2	10
Asthma						
Readmissions	0	0	0	0	0	14
Cholecystectomy						
Access to Day-Surgery	0	1	1	2	0	10
Hysterectomy						
Readmissions*	0	N/A	0	N/A	0	14
Length of Stay*	1	N/A	3	N/A	3	7
Prostatectomy						
Readmissions*	0	N/A	0	N/A	0	14
Stroke						
Length of Stay*	0	N/A	14	N/A	0	0

Clinical Utilization and Outcomes Quadrant continued…

Community Hospitals

Indicator	Performance Allocations ★	★★	★★★	★★★★	★★★★★	NR
Acute Myocardial Infarction						
Access to Coronary Angiography	29	10	17	9	0	0
Readmissions*	0	N/A	62	N/A	2	1
Asthma						
Readmissions	0	0	27	3	2	33
Cholecystectomy						
Access to Day-Surgery	16	1	9	33	0	6
Hysterectomy						
Readmissions*	0	N/A	21	N/A	4	40
Length of Stay*	0	N/A	26	N/A	31	8
Prostatectomy						
Readmissions*	0	N/A	21	N/A	1	43
Stroke						
Length of Stay*	2	N/A	52	N/A	11	0

Teaching Hospitals

Indicator	Performance Allocations ★	★★	★★★	★★★★	★★★★★	NR
Acute Myocardial Infarction						
Access to Coronary Angiography	0	1	2	8	0	2
Readmissions*	0	N/A	8	N/A	3	2
Asthma						
Readmissions	0	0	3	0	2	8
Cholecystectomy						
Access to Day-Surgery	0	2	2	5	0	4
Hysterectomy						
Readmissions*	0	N/A	9	N/A	0	4
Length of Stay*	0	N/A	4	N/A	6	3
Prostatectomy						
Readmissions*	0	N/A	6	N/A	0	7
Stroke						
Length of Stay*	0	N/A	11	N/A	1	1

* Performance allocations for these indicators are based on a three-level scale ('★', '★★★', and '★★★★★').

Patient Satisfaction Quadrant*

All Hospitals

Indicator	Median	Performance Allocations ★	★★	★★★	★★★★	★★★★★	NR
Global Quality	90.2	8	7	42	13	17	5
Process Quality	85.8	14	15	29	7	22	5
Unit-Based Care	88.0	9	4	43	11	20	5
Physician Care	86.4	3	7	55	8	14	5
Support Services	78.0	9	16	36	9	17	5
Housekeeping	82.0	15	18	26	8	20	5
Other Caregivers	87.1	10	8	45	10	14	5
Outcomes of Care	84.9	3	5	59	9	11	5

Small Hospitals

Indicator	Median	Performance Allocations ★	★★	★★★	★★★★	★★★★★	NR
Global Quality	92.4	0	0	3	3	5	3
Process Quality	89.8	0	0	2	1	8	3
Unit-Based Care	91.3	0	0	2	2	7	3
Physician Care	89.5	0	1	3	4	3	3
Support Services	83.6	0	0	2	2	7	3
Housekeeping	87.3	0	0	1	2	8	3
Other Caregivers	90.2	0	0	1	4	6	3
Outcomes of Care	89.0	0	0	4	2	5	3

Community Hospitals

Indicator	Median	Performance Allocations ★	★★	★★★	★★★★	★★★★★	NR
Global Quality	89.7	8	5	33	8	9	2
Process Quality	85.4	10	13	24	6	10	2
Unit-Based Care	87.6	6	3	36	8	10	2
Physician Care	85.8	3	6	44	3	7	2
Support Services	77.5	8	14	28	5	8	2
Housekeeping	81.0	13	13	21	6	10	2
Other Caregivers	86.9	8	5	39	5	6	2
Outcomes of Care	84.5	3	3	47	7	3	2

Teaching Hospitals

Indicator	Median	Performance Allocations ★	★★	★★★	★★★★	★★★★★	NR
Global Quality	89.6	0	2	6	2	3	0
Process Quality	85.1	4	2	3	0	4	0
Unit-Based Care	87.6	3	1	5	1	3	0
Physician Care	86.5	0	0	8	1	4	0
Support Services	77.2	1	2	6	2	2	0
Housekeeping	79.1	2	5	4	0	2	0
Other Caregivers	85.7	2	3	5	1	2	0
Outcomes of Care	83.9	0	2	8	0	3	0

*Five hospitals did not meet the minimum 100 valid survey response criteria and therefore were excluded from the analysis.

Financial Performance and Condition Quadrant

All Hospitals

Indicator	Province-Wide Median	Performance Allocations ★	★★	★★★	★★★★	★★★★★	NR
Corporate Services	9.19%	4	7	65	16	0	0
Current Ratio	1.63	0	12	67	8	5	0
Days in Inventory	35.86	2	11	63	15	1	0
Equipment Expenditure	6.18%	2	16	62	8	4	0
Nursing Care Hours	78.98%	1	11	69	10	1	0
Patient Care Hours	58.77%	1	6	68	15	2	0
Total Margin	1.54%	2	8	73	5	4	0
Unit Cost Performance*	-0.98%	0	N/A	86	N/A	3	3
Working Capital*	7.16%	0	N/A	88	N/A	4	0

Small Hospitals

Indicator	Province-Wide Median	Performance Allocations ★	★★	★★★	★★★★	★★★★★	NR
Corporate Services	11.34%	0	1	10	3	0	0
Current Ratio	3.09	0	3	9	1	1	0
Days in Inventory	51.33	0	0	10	4	0	0
Equipment Expenditure	5.87%	0	6	6	1	1	0
Nursing Care Hours	82.19%	0	2	10	2	0	0
Patient Care Hours	55.47%	0	1	10	3	0	0
Total Margin	1.80%	0	1	12	1	0	0
Unit Cost Performance*	0.59%	0	N/A	12	N/A	2	0
Working Capital*	19.79%	0	N/A	14	N/A	0	0

Community Hospitals

Indicator	Province-Wide Median	Performance Allocations ★	★★	★★★	★★★★	★★★★★	NR
Corporate Services	8.54%	3	5	47	10	0	0
Current Ratio	1.52	0	7	48	6	4	0
Days in Inventory	28.50	2	8	46	9	0	0
Equipment Expenditure	6.07%	1	9	47	6	2	0
Nursing Care Hours	78.76%	1	7	48	8	1	0
Patient Care Hours	60.14%	1	4	48	10	2	0
Total Margin	1.57%	1	6	52	3	3	0
Unit Cost Performance*	-1.93%	0	N/A	64	N/A	1	0
Working Capital*	6.39%	0	N/A	61	N/A	4	0

Teaching Hospitals

Indicator	Province-Wide Median	Performance Allocations ★	★★	★★★	★★★★	★★★★★	NR
Corporate Services	8.73%	1	1	8	3	0	0
Current Ratio	1.00	0	2	10	1	0	0
Days in Inventory	18.76	0	3	7	2	1	0
Equipment Expenditure	6.58%	1	1	9	1	1	0
Nursing Care Hours	75.44%	0	2	11	0	0	0
Patient Care Hours	58.66%	0	1	10	2	0	0
Total Margin	0.52%	1	1	9	1	1	0
Unit Cost Performance*	1.75%	0	N/A	10	N/A	0	3
Working Capital*	-0.70%	0	N/A	13	N/A	0	0

* Performance allocations for the working capital and unit cost performance indicators are based on a three-level scale ('★', '★★★' and '★★★★★').

Appendix C: Advisory Membership for *Hospital Report 2002: Acute Care*

Hospital Report 2002: Acute Care Advisory Committee

Bonnie Adamson	North York General Hospital
Frank Bagatto	Hotel Dieu Grace Hospital
Jill Barber	Ministry of Health and Long-Term Care
Wayne Coveyduck	Temiskaming Hospital
Elma Heidemann	Canadian Council on Health Services Accreditation
Christina Hoy	Ministry of Health and Long-Term Care
Gordon Key	Huronia General Hospital
Bill Kreutzweiser	Ontario Hospital Association
Brian Lemon	Lakeridge Health Corporation
Lorna Macdonald	Ontario Hospital Association
David McLeod	Ontario Hospital Association
Cliff Nordal	St. Joseph's Health Centre
Mark Rochon	Toronto Rehabilitation Institute
Jean Simpson	Centre for Addiction and Mental Health
Rosalind Smith	Ontario Hospital Association
Ann Marie Strapp	Ministry of Health and Long-Term Care
Marian Walsh	Bridgepoint Health

Hospital Report 2002: Acute Care Steering Committee

Bonnie Adamson	North York General Hospital
Carrie Hayward	Ministry of Health and Long-Term Care
Brian Lemon	Lakeridge Health Corporation
David McLeod	Ontario Hospital Association
David Mercer	Ministry of Health and Long-Term Care
Rosalind Smith	Ontario Hospital Association
Allison Stuart	Ministry of Health and Long-Term Care

Clinical Utilization and Outcomes Advisory Panel

Dimitri Anastakis	University Health Network
Brian Gamble	Chatham-Kent Health Alliance

Financial Performance and Condition Advisory Panel

Howard Baker	Joint Policy and Planning Committee
Paul Barker	Ministry of Health and Long-Term Care
Don Benoit	Ministry of Health and Long-Term Care
Michel Bilodeau	SCO Health Service
Dan Carriere	South Lake Regional Health Centre
Kenneth Deane	Hamilton Health Sciences Corporation
Sister Constance Joann Gefvert	St. John's Rehabilitation Hospital
Murray Glendining	Ministry of Health and Long-Term Care
Marc Joyal	Montfort Hospital
Bruce Laughton	Quinte Healthcare Corporation Belleville
John Lott	Kingston General Hospital
Frank Lussing	York Central Hospital
Bill MacDonald	Hotel Dieu Grace Hospital
Norman Maciver	West Perry Sound Health Centre
Frank Markel	Joint Policy and Planning Committee
Peter Marshall	Ministry of Health and Long-Term Care
John McKinley	Ministry of Health and Long-Term Care
David McLeod	Ontario Hospital Association
David Mercer	Ministry of Health and Long-Term Care
John Oliver	Halton Health Care Services
Bob Pike	Ministry of Health and Long-Term Care
Lou Reidel	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

Ross Baker	University of Toronto
Rheta Fanizza	The Scarborough Hospital
Keary Fulton-Wallace	Huron Perth Hospitals Partnership
Lydia Lee	London Health Sciences Centre
James MacLean	Markham Stouffville Hospital
Norine Martin	Carleton Place & District Memorial
Ken McGeorge	Red Lake Margaret Cocheneur
Peter W. Munt	Kingston General Assoc.
Sid R. Stacey	Halton Healthcare Services
Polly Stevens	The Hospital for Sick Children
John Woods	St. Joseph's Healthcare, Hamilton
Jennifer Zelmer	Canadian Institute for Health Information (CIHI)

We welcome comments and suggestions on *Hospital Report 2002: 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:

Hospital Report 2002: Acute Care Feedback
Canadian Institute for Health Information
90 Eglinton Avenue East, Suite 300
Toronto, Ontario
M4P 2Y3

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
System Integration and Change	❑ Very useful	❑ Somewhat useful	❑ Not useful	❑ Did not read
Clinical Utilization and Outcomes	❑ Very useful	❑ Somewhat useful	❑ Not useful	❑ Did not read
Patient Satisfaction	❑ Very useful	❑ Somewhat useful	❑ Not useful	❑ Did not read
Financial Performance and Condition	❑ Very useful	❑ Somewhat useful	❑ Not useful	❑ Did not read
Insert of 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 2002: 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?

_____

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7. How would you improve this report?

_____

_____

_____

_____

_____

8. Do you have any suggestions for future reports?

_____

_____

_____

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_____

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