

Financial Performance and Condition

Overview

In this section of *Hospital Report 2003: Emergency Department* we provide the methodology used to select and calculate the measures of financial performance and condition for complex continuing care hospitals. A brief overview of data sources used, together with the steps taken to verify and validate data prior to calculating indicators, is provided. The role of the Advisory Panel is discussed, together with the process used to select the measures of financial performance and condition presented in *Hospital Report 2003: Emergency Department*. The methods used to assign relative performance allocations are then outlined. This document concludes with a presentation of descriptive statistics for the indicators used in *Hospital Report 2003: Emergency Department*.

Participating Hospitals

Hospital Report 2003: Emergency Department includes hospital-specific data for 89 hospital corporations (125 comprehensive EDs and eight (8) Urgent Care Centers) of the 121 hospital corporations in Ontario that provided emergency services on March 31, 2002 (the year-end date for the 2001/02 fiscal year). The participating hospitals reported 89.4% of the emergency visits recorded in this fiscal year. The following table highlights participating and non-participating hospital corporations by peer group.

Hospital Corporations	Hospital Type			Total
	Teaching	Community	Small	
# Participating	12	62	15	89
# Not Participating	1	7	24	32
Total	13	69	39	121

The aggregate results presented in the Financial Performance and Condition quadrant of *Hospital Report 2003: Emergency Department* include data from all 121 hospital corporations in the Province.

Hospital Report 2003: Emergency Department divides hospitals into three peer groupings — small, community, and teaching hospitals — defined in Appendix A in *Hospital Report 2003: Emergency Department*. Because the mandate and size of a hospital affect the hospital's underlying financial structure, the Financial Performance and Condition quadrants in the *Hospital Report* series only compare hospitals with like hospitals. For example, the mandate of teaching hospitals (which includes high-end tertiary care, training of health professionals, and research) results in the underlying financial structure of teaching hospitals being fundamentally different from the structure of non-teaching hospitals. Similarly, the diseconomy of scale associated with low service volume means that the underlying financial structure of small hospitals also differs from that of large hospitals. For these reasons, the financial performance and condition indicators presented in *Hospital Report 2003: Emergency Department Care* are compared

among hospitals of similar type. Definitions for each of the peer groups are included in Appendix A in *Hospital Report 2003: Emergency Department*.

In this report, the term “emergency department” (ED) refers to both comprehensive EDs and urgent care centres (UCCs). Comprehensive EDs are open 24 hours a day, seven days a week and provide care to patients arriving by ambulance and by other means. UCCs are located in hospitals, but have restricted hours and do not generally care for patients arriving by ambulance.

Methods

Preparation of the financial quadrant of *Hospital Report 2003: Emergency Department Care* required two research activities: - identifying appropriate financial and statistical indicators; and collecting, organizing and validating the data needed to calculate values for the indicators.

Identification and Selection of Financial Performance and Condition Indicators

An extensive review of the literature pertaining to emergency department financial performance was undertaken during the preparation of the *Hospital Report 2001: Emergency Department Care*. To investigate whether any additional ED financial indicators had been published since the 2001 Report, a literature search was conducted for articles using HealthStar (2001 to 2003) and Medline (2001 to 2003) databases. Articles were selected for review if they met either of the following criteria: 1) the article examined financial performance measurement issues related to emergency department care; or 2) the article described or discussed the financial analysis of emergency department care. Although a number of articles were examined, no additional financial indicators were identified as a result of this literature review.

Advisory Panel

An Advisory Panel with membership drawn from hospital executives, emergency department administrators, clinical directors and managers with extensive knowledge of financial issues related to EDs in Ontario assisted the research team with the evaluation and assessment of indicators presented in this quadrant. Members of the Advisory Panel are listed in Appendix E.

The Advisory Panel began by adopting the financial indicator categories used in previous *Hospital Reports*. These categories are:

- **Financial Viability** – defined as positive financial outcomes that ensure long-term financial health;
- **Efficiency** – defined as a comparison of hospital output with the cost of inputs required to produce that output;
- **Liquidity** – defined as the management of current assets and liabilities, and determination of whether the organization is able to meet its short-term obligations;

- **Capital** – defined as the acquisition and management of long-term assets such as major equipment;
- **Human Resources** – defined as the allocation of human resources to patient care and non-patient care activities

As its first task in preparing the *Hospital Report 2003: – Emergency Department Care*, the Advisory Panel reviewed lessons learned from *Hospital Report 2001*. This involved assessing the relevance of the *Hospital Report 2001* indicators two years later and reflecting on feedback received from the hospitals after the release of the earlier report.

With access to an additional two years of data, a better understanding of indicator measurement issues, and an increased awareness of data quality limitations, the Advisory Panel engaged in an iterative process to identify indicators that could potentially be included in *Hospital Report 2003*. The Advisory Panel also re-evaluated the continued relevance of the indicators first reported in *Hospital Report 2001*. The Advisory Panel's deliberations were influenced by the *Hospital Report* First Principles that have been adopted by the *Hospital Report* Research Collaborative. (See Appendix J).

The Advisory Panel reviewed the list of thirteen financial indicators identified as relevant and scientifically valid at the time of the *Hospital Report 2001*, but not reported in 2001 because the data needed to calculate the indicators was not available. In general, it was not feasible to calculate these indicators because most required access to weighted visit information that did not exist. The Advisory Panel re-visited these indicators to determine whether the data limitations present in 2001 had been overcome sufficiently to allow these indicators to be included in *Hospital Report 2003: Emergency Department Care*.

After careful consideration, the Advisory Panel's recommendation was that it remained unfeasible to calculate these indicators for the following reasons:

- In the 2002 grouper, produced by the Canadian Institute for Health Information (CIHI), patients having major investigative procedures, such as Magnetic Resonance Imaging or CT, were grouped together in a single group called Major Investigative Technology, regardless of main problem. The Advisory Panel had concerns about the lack of clinical homogeneity of these groups. Some of these concerns have apparently been resolved in the 2003 grouper to be released by the CIHI. However, the 2003 grouper is being developed using ICD-10 and no cross-walk is available at this time to apply this grouper to the 2001/02 ICD-9 data.
- Although a methodology for calculating weighted visits now exists, there is limited evidence on whether the methodology can reliably group patients with similar conditions. These concerns are expected to abate as experience with applying the methodology is gained.
- Cost data for some indicators, (e.g. Diagnostic and Therapeutic Services Cost per Weighted Visit), are not available for the emergency department.
- While emergency department data have been collected for two years, initial assessments of their validity are still underway.

Notwithstanding this decision, the Advisory Panel continues to feel that there will be considerable utility in calculating financial performance measures based on weighted visits in future reports. The Next Steps section in this quadrant discusses this issue in more detail, and outlines research activities currently underway to address the data shortcomings that currently limit making this determination. However given continuing data limitations with respect to case-mix measurement, the Advisory Panel continues to encourage a focus on indicators that measure human resource and productivity issues in the interim.

Indicators

Based on the principles for selection of indicators (relevance, scientific soundness, and feasibility), the four indicators of financial performance and condition reported in *Hospital Report 2001: Emergency Department Care* were retained for this year. These human resources indicators are:

- Total worked hours
- Management and operational support hours
- Patient care worked hours
- Registered nursing (RN) staff hours

The Panel was concerned about variation in reporting practices with respect to management and operational support hours in Ontario's emergency departments. To gain a better understanding of the underlying reasons for this variation, a questionnaire was sent to all participating hospitals. Key findings from this activity are reported in the Results section of the *Management and Operational Support Hours* indicator.

Collecting, Organizing and Validating the Data Used

Data Sources

The data used to calculate the indicators presented in this quadrant are submitted annually to the Ontario Ministry of Health and Long-Term Care using formats specified by the Ontario Hospital Reporting System (OHRS). The OHRS is a comprehensive, multi-year database of financial and statistical information describing the activities of Ontario's hospitals. The Financial Performance and Condition quadrants in all volumes in the *Hospital Report* series use data extracted from the OHRS. The financial data included in this Report are for the 2001/02 fiscal year. These data represent the most recent data available at the time of analysis. Comprehensive indicator definitions, account codes and account definitions are provided in Appendix I for each of the indicators reported in this quadrant. Account descriptions have been added for completeness.

The OHRS is a useful source of information concerning staff hours. Details within the OHRS distinguish direct patient care hours from corporate hours; registered nursing hours from other categories of nurses; and worked hours from other non-worked hours, such as benefits. These data are reported through the hospital payroll system.

Data Quality

Although OHRS data submissions are subjected to a variety of edit routines before being added to the provincial database, inconsistencies in hospital reporting practices can create data quality issues. The ability of a hospital to address the following data quality issues may affect the consistency of indicators calculated in this Report:

- *Allocation & Reporting Issues*
A hospital's internal organizational structure may not match the organizational reporting structure implicit in the OHRS framework. Hospitals compensate for these differences by mapping and re-allocating costs and activities when preparing their internal records for submission to the OHRS. For example, if an emergency department manager spends 25% of his/her time managing an ambulatory care clinic, the OHRS requires that the hospital remove 25% of this manager's worked and non-worked hours from the emergency department and associate these hours with the ambulatory care clinic. Data quality issues with some indicators occur if this re-allocation is not performed correctly.
- *Linkages with Hospital Payroll Systems*
Another reporting variation can be caused by the inability of a hospital payroll system to accurately identify professional, non-professional and unregulated staff. Data quality issues occur with some indicators in situations where payroll systems are unable to make this distinction.

Assessing Provincial Performance

The results for each indicator are reported in the following section of *Hospital Report 2003: Emergency Department*. The provincial and peer group mean value for each indicator was calculated using data based on the complete population of hospital organizations in Ontario.

For multi-site organizations, the corporate entity was classified into a peer group based on the designation of the largest single hospital in the organization. For example, if five small hospitals and one community hospital belonged to the same organization, the relative performance of the group was determined by comparing the aggregated data of the group with the indicator average for the community hospital group. As a result, there may be an issue of comparability for those organizations that have a mix of small and community hospitals in their organizational structure.

To better understand the system changes, the rates of change for the provincial mean for each indicator were calculated, for example, (Provincial Mean for 2001/02 - Provincial Mean for 1999/00) / Provincial Mean for 1999/00. These results can be found in the Results section for each indicator.

In the absence of broadly accepted and validated benchmarks of "good" and "bad" performance for each of the financial indicators presented in *Hospital Report 2003: Emergency Department*, the research team decided to use quintile ranges to report hospital performance. The use of quintiles: 1) show ranges of actual indicator values instead of indicator values relative to a mean value and: 2) more appropriate for

indicators where a particular band of values represent better performance and values on either side of this band represents poor performance.

For each of the four hospital-specific indicators, the quintile range in which a hospital's indicator value lies is displayed. Quintiles were preferred over other percentiles (such as deciles) because the groupings were large enough to ensure there are meaningful differences between hospitals that have indicator values in different quintile ranges. Quintile ranges were calculated using indicator values from all 121 Ontario emergency departments.

System-Level Findings

Table 1 shows descriptive statistics for each of the four hospital-specific indicators of Financial Performance and Condition, including mean, standard deviation, and quintile values (0th, 20th, 40th, 60th, 80th and 100th percentiles). Just as the median is the value above and below which 50% of hospitals fall, percentiles provide the same information for different percentages of observations. For example, at the 20th percentile, twenty percent of hospitals had indicator values at or below that value in terms of performance evaluation and 80% of hospitals had indicator values above.

Table 1 – Descriptive Statistics for Hospital-Specific Indicators of Financial Performance and Condition

	Total Worked Hours	Management & Operational Support Staff Hours	Patient Care Worked Hours	Registered Nursing (RN) Staff Hours
Number of Hospitals	121	97	121	121
Mean [†]	87.5%	15.5%	87.5%	89.2%
Standard Deviation	4.0%	8.0%	4.2%	11.0%
0 th percentile	77.4%	0.0%	75.3%	43.5%
20 th percentile	86.0%	4.2%	85.6%	82.8%
40 th percentile	87.9%	8.9%	88.0%	90.3%
60 th percentile	89.2%	14.3%	89.4%	96.4%
80 th percentile	90.8%	18.8%	91.3%	99.8%
100 th percentile	100.0%	35.5%	100.0%	100.0%

[†] This is a weighted mean of Ontario hospitals indicator values, not an arithmetic mean.