

Hospital Report 2007: Complex Continuing Care
System Integration and Change Technical Summary

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Overview

The Complex Continuing Care System Integration and Change (SIC) quadrant reports on indicators that measure the initiatives undertaken by hospitals to improve the quality and client-centredness of care they provide to patients, integrate their services with other aspects of the health care system, use information and technology to support decision-making and planning, and ensure that staff have the skills and supports they need. This *SIC Technical Summary* presents additional details of the methodology and results not provided in *Hospital Report 2007: Complex Continuing Care*.

Unlike the other three quadrants, there are no standard data sources or appropriate standard measures to provide a basis for these indicators. Therefore, the SIC indicators were derived from hospital management survey data specifically collected for the report. The original design of the survey was based on a review of literature and consultation with stakeholders and experts. The survey respondents were hospital management personnel, in consultation with senior clinical staff, as required.

For each SIC indicator, this *SIC Technical Summary* provides a description of the calculations used to arrive at indicator values and performance categories for participating hospitals. In addition, data on the distribution of scores for each indicator are provided for the province as a whole.

Methodology

The following sections describe the methodology used to identify indicators for Hospital Report 2007: Complex Continuing Care, including the modification of the survey instrument, redevelopment of the indicators, the data collection process, a detailed description of how each indicator was constructed and the modified performance allocation method. There are seven SIC indicators presented in Hospital Report 2007: Complex Continuing Care.

Development of the 2007 Online System Integration and Change Survey

In 2005, Hospital Reports subscribed to an online survey tool to create two electronic surveys for the SIC quadrant. The first, a Board Governance Survey, was sent to Board Chairs for Acute Care hospitals in November 2005, and the second was an online version of the Acute Care SIC Survey: Healthy Workplace Environment section. Hospital Report contacts volunteered to pilot test the online survey and to act in an advisory capacity for the development and pilot testing process. A total of 22 hospitals completed the online Healthy Workplace Environment survey. Results from the pilot test showed a strong desire on the part of hospitals for an online survey process, but participants provided detailed requirements for development and implementation of a product with more functionality.

A thorough review of software products was conducted and an online vendor was chosen. The online survey software that was chosen provided the most flexibility and ability to customize the survey.

After the multi-sector survey, consisting of 102 questions, was entered into the survey tool, validation, skip logic, and workflow design were developed using the online software. A web-based demonstration and a sample pilot survey consisting of the SIC questions were conducted with eleven participating hospitals to receive feedback on question format and the online tool. The final survey was sent out to Ontario hospitals via email in December 2006. Participant satisfaction,

ease of use, and data quality were assessed by various qualitative and quantitative feedback methods.

Compared to previous years' manual data entry process, the online tool eliminated the need to create a MS Access database for data entry and validation, hire and train staff for a six-week data entry period, and perform significant manual quality checks and follow-up calls to hospitals. The online tool effectively reduced the administrative costs such as mailing and printing.

Survey Redevelopment

During the 2005 data verification process, Hospital Report contacts indicated that the SIC survey was lengthy and cumbersome, and that some of the questions were unclear. Over the year, CIHI worked with the HRRRC researchers and principle investigators to streamline and restructure the survey sections and questions. The objectives were to reduce the number of questions. Questions were considered for removal if they met one of the following criteria:

1. Questions not being used in an indicator calculation
2. Questions with potential problems with interpretation as indicated by low response rates and frequently asked questions from respondents
3. Response rates for specific questions were the same year after year
4. Questions that were being addressed in another section

Other changes were made to improve the survey such as clarification on questions and customizing questions to appropriate sectors/respondents. The 2007 SIC survey included 102 questions and nine sections. The assigned sections that all hospitals participating in the *Hospital Report 2007: Complex Continuing Care SIC survey* include:

- Management of Human Resources
- Investments in Information Technology
- Use and Dissemination of Information for Clinical Decision Making
- Use and Dissemination of Information for Quality Improvement
- Healthy Work Environment
- Complex Continuing Care
- Patient Safety

Describing the Survey Process

In general, the SIC survey was sent to 123 participating Ontario hospitals in mid-December 2006. A total of 103 hospitals completed and returned the surveys for a response rate of approximately 84%. 80 hospitals with complex continuing care completed the survey. Hospitals were asked to complete one survey for the entire corporation.

***NOTE:** While eighty (80) hospitals with complex continuing care services completed the CCC SIC survey and are included in the provincial and LHIN averages, hospital-specific results are shown publicly only for those hospitals participating in this report. Two hospitals do not have their results publicly shown in the performance allocation tables because they had no clinical assessment data for 2005-2006.

A web-based survey was distributed via email to the Hospital Report contact at each organization. The Hospital Report contact disseminated the sections of the survey (via the custom-designed workflow) to the person in the organization who possesses the most knowledge about topics covered in that section. At the end of each section, one individual was required to sign-off on a statement of accuracy. This statement required hospital personnel to confirm that their responses were accurate and reflected the current operating circumstances.

Hospitals were given approximately six weeks to complete the survey. One month after the initial distribution of surveys, reminder notices were sent to hospitals that had not yet completed the survey. Responses, by hospital type, are presented below.

Table 1.1: Complex Continuing Care SIC Surveys Completed

	Completed Surveys	Surveys Not Returned/ Non-participating	Total
Freestanding CCC facilities	12	4	16
CCC hospitals with Acute Care	68	22	90
All CCC Hospitals	80	26	106

Data Quality

The indicators for this quadrant are based on hospital survey data that are inevitably subject to a "social desirability bias". That is, consciously or unconsciously, respondents may answer questions in a way that puts their organization in the best possible light. To counteract this bias, an effort was made to construct survey questions that focused on specific behaviours rather than attitudes. Despite this focus, opportunities remained for varying interpretations, and some degree of interpretation may still be reflected in answers to many of the questions.

CIHI analysts performed data quality checks on the completed surveys to ensure that all mandatory questions were answered and that skip logic, validation and question masking were performed correctly by the online survey. We found two causes for follow-up which affected ten hospitals. The first technical issue was that if there was a midterm change in participation status in a sector, there was a possibility that some sector-specific questions were not shown to the respondents, and therefore were left unanswered. The other technical issue was that the custom-built validation on one of the questions did not catch all possible answer choices, leaving impossible responses. We followed-up with the ten hospitals via email and asked the Hospital Report contact to complete the missing questions in a hard copy document. Analysts then entered this data into the populated database. Two analysts then developed SAS code for the indicator calculations independently of each other and compared results. Once the SIC indicator scores were produced, random manual checks of hospitals' scores were done by examining the original surveys to ensure a high level of reliability.

Developing the Indicators

The seven SIC indicators used in *Hospital Report 2007: Complex Continuing Care* are:

1. Evidence-Based Practice
2. Evidence of Client-Centred Care
3. Integration of Care
4. Use of RAI-Minimum Data Set in Quality Improvement and in Clinical and Utilization Management Applications
5. Use of Information Technology
6. Use of Staff Skills/Competencies Descriptions Specific to Complex Continuing Care

7. Healthy Work Environment (corporate-level indicator)

Once the surveys were completed, the process of confirming the questions to be used in the SIC indicator calculations for *Hospital Report 2007: Complex Continuing Care* began. Response distributions were calculated for each question in the *2007 SIC survey*. Hospital-specific data for all CCC SIC indicators are available to hospitals in the e-Scorecard.

During the 2007 survey redevelopment process, modifications were made to *Hospital Report 2007: Complex Continuing Care* SIC indicators such as recalculation and reweighing of indicators, and adding new or deleting survey indicator questions. Therefore, please note that caution should be taken when comparing indicator results with previous years. Please see Appendix A for list of indicator changes.

Comparability of Indicator Results

No changes were made to two of the existing indicators, therefore, year-over-year comparisons can be made in specific areas for the following indicators: Evidence of Client-Centred Care and Use of Information Technology. For the other indicators, please review the indicator descriptions to identify the changes. Caution should be taken when comparing the indicators with previous report's results due to the changes in the calculation of indicator questions and weights.

Scoring of the Indicator

A detailed description of the questions used and points allocated in the construction of each of the seven indicators is provided below. To calculate the indicator score, each question must be multiplied by the specified weighting. For example:

Hospital A received 18 points for Question **X** out of a possible total of 25 points. To calculate the contribution of this question to the indicator score, divide hospital A's score (18) by the total possible points (25) and multiple by the specified weighting for Question **X** (23%). Therefore, hospital A received 16.56% of the total indicator score for question **X**.

The weights for each question are provided in tables at the end of each indicator. The weighted scores are then summed for each question to get the overall score for that component of the indicator. For example:

Component Score =

$$\left\{ \left(\frac{HospitalQuestionScore}{MaximumQuestionScore} \times QuestionWeight \right) + \left(\frac{HospitalQuestionScore}{MaximumQuestionScore} \times QuestionWeight \right) + \dots \right\}$$

The overall indicator scores are then calculated by summing the scores for each component. When a question is not applicable to a hospital, the question is removed from the denominator for that component.

Detailed Description of the Indicator Calculations

Indicator 1: Evidence-Based Practice

The Evidence-Based Practice indicator measures the extent to which hospitals use and integrate one of several specified practice guidelines, and the number of clinical issues for which hospitals have guidelines. This indicator is comprised of three questions from section 8.

Component 1: Depth of Guideline Use (one selected clinical issue) (50%)

Responses to Question 70, 71, 72, and 73 are linked. The same clinical issues are listed in Questions 70 and 71. In Question 72b, hospitals are asked to select up to three of the clinical issues from Question 70 upon which to base their responses. Component 1 is scored based on only one clinical issue across Questions 70, 71, and 72.

Section 8, Question 72c: This question inquired about the method of recording guideline adherence or exception, and about the frequency of reporting back to clinical staff. In part A, 0.5 points are allocated to “On paper – in progress notes”, 1.5 points are allocated to “On paper – in permanent care plan or guideline-related form”, and 1.5 points are allocated to “Electronically – in permanent care plan or guideline-related form”. Multiple options can be checked per row. There was a maximum of 1.5 points for part A. In part B, 0 points were given for “Never”, 0.5 points are allocated to “Once per year”, and 1 point is allocated to “At least twice per year (for different time periods)”. Only one option can be checked per row in part B. The row with the highest points becomes the selected clinical issue for Component 1. There was a maximum of 1 point for part B. This question was out of a total of 2.5 points.

Section 8, Question 70: This question inquired about the extent to which practice guidelines are available for patient care. The following points are assigned to the one selected clinical issue from Question 72c: 0 points for “No practice guideline is available”, 0.5 points for “Our organization is developing a practice guideline for this clinical issue”, and 1 point for “A practice guideline is available and expected to be used in the care of all eligible patients for this clinical issue”. Only one option can be checked per row. The maximum number of points for this question was 1.

Section 8, Question 71: This question asked about the source and application of clinical practice guidelines available in the hospitals’ complex continuing care services. The following points are assigned to the one selected clinical issue from Question 72c: 1 point allocated to “Practice guideline available on CCC units to inform staff about current best practice”, 1 point allocated to “Practice guideline includes standardized tools to be used for patient assessment”, and 1 point allocated to “Practice guideline recommendations are linked to expected decision-making and care processes through use of decision-tree(s) and/or algorithm or protocols”. Multiple options can be checked per row. The maximum number of points for this question was 3.

Component 2: Breadth of Guideline Use (remaining clinical issues) (50%)

Section 8, Question 70: This question inquired about the extent to which practice guidelines are available for patient care. The following points are assigned to the 13 remaining clinical issues: 0 points for “No practice guideline available”, 0.5 points allocated for “Our organization is developing a practice guideline for this clinical issue”, and 1 point allocated for “A practice guideline is available and expected to be used in the care of all eligible patients for this clinical issue”. Only one option can be checked per row. **Note:** Points are not allocated to the selected clinical issue used in Component 1. The maximum number of points per row for this question was 1. This question was out of a total of 13 points.

Section 8, Question 71: This question asked about the source and application of clinical practice guidelines available in the hospitals’ complex continuing care services. The following points are assigned to the 13 remaining clinical issues: 1 point allocated to “Practice guideline available on CCC units to inform staff about current best practice”, 1 point allocated to “Practice guideline includes standardized tools to be used for patient assessment”, and 1 point allocated to “Practice guideline recommendations are linked to expected decision-making and care processes through use of decision-tree(s) and/or algorithm or protocols”. Multiple options can be checked per row.

Note: Points are not allocated to the selected clinical issue used in Component 1. The maximum number of points was 3 per row. The total possible points is determined by Question 70 because Question 71 is only completed for rows whereby if hospitals indicated that a practice guideline is available and expected to be used in the care of all eligible patients for the clinical issues (last column) in Question 70.

Table 1.2: Evidence-Based Practice Indicator Summary

Question	Total Possible Points	Weighting	Overall Weighting
Component 1: Depth of Guideline Use (50%)			
Section 8, Question 72c	2.5	40%	50%
Section 8, Question 70	1	30%	
Section 8, Question 71	3	30%	
Component 2: Breadth of Guideline Use (50%)			
Section 8, Question 70	13	50%	50%
Section 8, Question 71	Based on Q70	50%	
Total Score			100%

Indicator 2: Evidence of Client-Centred Care

The Evidence of Client-Centred Care indicator examines the extent to which hospitals are providing patient care in a client-centred manner at the individual client level. Four main components form this indicator: patient/family education; family involvement in patient care; patient involvement in decision-making; and emotional support for patients/families. This indicator is comprised of five questions from section 8.

Component 1: Patient/Family Information and Education (28%)

Section 8, Question 88: This question inquires about information that is available to patients and families regarding services and opportunities in the hospitals' complex continuing care services. 0 points are allocated if information is not provided, 1 point is allocated if information is provided prior to admission, and an additional 1 point is allocated if information is readily accessible within the CCC. The maximum number of points for this question is 10.

Section 8, Question 89: This question assesses whether CCC services customize educational activities to the individual needs of patients and families. 0 points are allocated if there is no process in place, 1 point is allocated if there is an informal process, and 2 points are allocated if there is a formal process. The maximum number of points for this question is 8.

Component 2: Family Involvement (14%)

Section 8, Question 90: This question looks at processes in which to involve families in patient care. 0 points are allocated if there is no process in place, 1 point is allocated if there is an informal process, and 2 points are allocated if there is a formal process. The maximum number of points for this question is 4.

Component 3: Involving Patients in Decision-Making (34%)

Section 8, Question 91: This question looks at how patient input is incorporated into decision-making about care, goals, treatment and discharge planning. For all rows except E (i.e., evaluation by the patient of progress toward goal achievement), 0 points are allocated if there is

no process in place, 1 point is allocated if there is an informal process, and 2 points are allocated if there is a formal process. Row E is scored as follows: 0 points allocated if there is no process in place, 2 points if there is an informal process, and 4 points if there is a formal process. The maximum number of points for this question is 18.

Component 4: Emotional Support for Patients/Families (24%)

Section 8, Question 92a and b: This question asks whether there is a process to assess and document patients’ and families’ emotional support needs. For part A, 4 points are allocated if there was a formal process for patients, and 2 points are allocated if there was a formal process for families. For part B, 2 points are allocated if there was one-to-one counseling for patients and 1 point if there was one-to-one counseling for families. 2 points are allocated for providing either group counseling or a formal buddy system for patients and 1 point for providing either group counseling or a formal buddy system for families. 1 point is allocated for providing printed information for patients, and 0.5 points for providing printed information for families. The maximum number of points for this question is 13.5.

Table 1.3: Evidence of Client-Centred Care Indicator Summary

Question	Total Possible Points	Weighting	Overall Weighting
Component 1: Patient/family information and education (28%)			
Section 8, Question 88	10	9%	28%
Section 8, Question 89	8	19%	
Component 2: Family Involvement (14%)			
Section 8, Question 90	4	14%	14%
Component 3: Involving patients in decision-making (34%)			
Section 8, Question 91	18	34%	34%
Component 4: Emotional support for patients/families (24%)			
Section 8, Question 92	13.5	24%	24%
Total Score			100%

Indicator 3: Integration of Care

The Integration of Care indicator measures the extent to which CCC services are collaborating on a range of activities with other levels of care and other service providers. These activities include formal consultations on the development of standardized admission and discharge criteria; integrated development and application of practice guidelines; and joint initiatives with other service providers. This indicator is comprised of four questions from section 8.

Component 1: Stakeholder Consultation in Standardized Admission Criteria Development (20%)

Section 8, Question 75a: This question asks about the types of stakeholders that are formally consulted in the development of standardized admission criteria. 0 points are allocated for “Standardized admission criteria do not exist”, 0.5 points for “Representatives of other levels of care within our organization”, 2 points for “Other organizations that refer patients”, 1 point for “Other CCC providers”, and 0.5 points for “Patients and families”. Responses are weighted according to number of CCC programs offered in Question 74. The maximum number of points for

this question is 4.

Component 2: Stakeholder Consultation in Standardized Discharge Criteria Development (20%)

Section 8, Question 75b: This question asks about the types of stakeholders that are formally consulted in the development of standardized discharge criteria. 0 points are allocated for “Standardized discharge criteria do not exist”, 0.5 points for “Representatives of other levels of care within our organization”, 2 points for “Other organizations that refer patients”, 1 point for “Other CCC providers”, and 1 point for “Patients and families”. Responses are weighted according to number of CCC programs offered in Question 74. The maximum number of points for this question is 4.5.

Component 3: Extent of Practice Guideline Use and Development Spanning Other Levels of Care (30%)

Section 8, Question 73d: This question asks about selected practice guidelines that span across levels of care and about staff involvement from different levels of care in the development and adoption of the guidelines. 1 point is allocated for “guiding care for any level of care within the organization”, 2 points are allocated for “guiding care for any level of care external to the organization”, 1 point is allocated for “formally developing/adapting within the organization for any level of care”, and 2 points are allocated for “formally developing/adapting external to the organization for any level of care”. Multiple options can be checked per row. The maximum number of points for this question is 6.

Component 4: Extent of Joint Initiatives with Other Service Providers (30%)

Section 8, Question 93b: This question asks about joint initiatives with other service providers. 1 point is allocated for any one check per row, and 2 points are allocated for any 2 or more checks per row. The maximum number of points for this question was 16.

Table 1.4: Integration of Care Indicator Summary

Question	Total Possible Points	Overall Weighting
Component 1: Stakeholder Consultation in Standardized Admission Criteria Development (20%)		
Section 8, Question 75a	4	20%
Component 2: Stakeholder Consultation in Standardized Discharge Criteria Development (20%)		
Section 8, Question 75b	4.5	20%
Component 3: Extent of Practice Guideline Use and Development Spanning Other Levels of Care (30%)		
Section 8, Question 73d	6	30%
Component 4: Extent of Joint Initiatives with Other Service Providers (30%)		
Section 8, Question 93b	16	30%
Total Score		100%

Indicator 4: Use of RAI-Minimum Data Set in Quality Improvement and in Clinical and Utilization Management Applications

This indicator examines the extent to which hospitals utilize RAI-MDS data with respect to level of reporting detail, dissemination of results, and decision-making about clinical care and quality improvement. This indicator is comprised of eight questions from section 8.

Component 1: MDS Reporting – Level of Reporting Detail (25%)

Section 8, Question 79: This question inquires about the source of MDS Quality Indicator reports. 0 points are allocated for MDS-QI reports from CIHI, 0.5 points are allocated for either one of the options: MDS-QI Reports from an analyst at the hospital, from MDS vendors, or from external data analysis services. Multiple options can be checked for this question but there is a maximum point allocation of 0.5.

Section 8, Question 80: This question inquires about the reporting level of MDS-QI reports. 0 points are allocated for reporting at the level of the entire CCC service, 0.5 points are allocated for sub-level reporting, and 1 point is allocated for individual patient level reporting. The maximum number of points for this question is 1.5.

Section 8, Question 83: This question asks about the source of the Resource Utilization Groups-III reports. 0 points are allocated for RUG-III reports from CIHI, 1 point is allocated for any of the options checked: RUG-III reports from an analyst at the hospital, from an MDS vendor, or from external data analysis services. The maximum number of points for this question is 1.

Component 2: MDS Reporting – Dissemination (25%)

Section 8, Question 81: This question asks about dissemination of MDS-QI report results. 0 points are allocated for “Results are not shared with this group of stakeholders” and “Written reports circulated but not presented to this group of stakeholders”. 0.5 points are allocated if “Results presented and discussed” with at least three groups of stakeholders, 0.5 points are allocated if “Specific results further discussed” with at least three groups of stakeholders, and an additional 0.5 points are allocated if “Specific results further discussed” with patients and families. The maximum number of points for this question is 1.5.

Component 3: Applications of MDS data in Decision-Making (50%)

Section 8, Question 82: This question asks about the application of MDS-QIs to quality improvement. 0 points are allocated if the hospital has not applied MDS-QI in quality improvement work, 0.75 points are allocated if the hospital applied MDS-QIs in one way, and 1.5 points are allocated if the hospital applied MDS-QIs in more than one way. The maximum number of points for this question is 1.5.

Section 8, Question 84b: This question asks about the use of RUG-III reports. 0.75 points are allocated if there is only one use of RUG-III reports, and 1.5 points are allocated for two or more uses of RUG-III reports. The maximum number of points for this question is 1.5.

Section 8, Question 85a: This question asks about clinical applications of MDS data for individual patients. 0.75 points are allocated for one or more responses under “Targeting interventions to individual patients”, and 0.75 points are allocated for one or more responses under “Measuring intervention/care plan outcomes for individual patients”. The maximum number of points for this question is 1.5.

Section 8, Question 85b: This question asks about administrative applications of MDS data for patient groups or populations. 0.75 points are allocated for one or more responses under

“Identifying patient populations for service program/planning”, and 0.75 points are allocated for one or more responses under “Measuring outcomes of care for patient populations”. The maximum number of points for this question is 1.5.

Table 1.5: Use of RAI-MDS in Quality Improvement and in Clinical and Utilization Management Applications Indicator Summary

Question	Total Possible Points	Overall Weighting
Component 1: MDS Reporting-Level of Reporting Detail (25%)		
Section 8, Question 79	0.5	25%
Section 8, Question 80	1.5	
Section 8, Question 83	1	
Component 2: MDS Reporting-Dissemination (25%)		
Section 8, Question 81	1.5	25%
Component 3: Applications of MDS data in decision-making (50%)		
Section 8, Question 82	1.5	12.5%
Section 8, Question 84b	1.5	12.5%
Section 8, Question 85a	1.5	12.5%
Section 8, Question 85b	1.5	12.5%
Total Score		100%

Indicator 5: Use of Information Technology

The Use of Information Technology indicator measures the extent to which CCC services are performing clinical functions “online” in real time, and the extent to which hospitals use electronic records/data as a primary source of information. This indicator is comprised of two questions from section 8.

Component 1: Performing Clinical Functions Online (50%)

Section 8, Question 86b: This question asks about the clinical functions that are performed “online” in real time. 1 point is allocated for each clinical function performed “online”. The maximum number of points for this question is 12.

Component 2: Use of Electronic Records and Data as Primary Source of Information (50%)

Section 8, Question 87b: This question asks about the use of electronic records and data as the primary source of clinical information. 1 point is allocated for each type of clinical information where electronic records and data are used as the primary source of information. The maximum number of points for this question is 13.

Table 1.6: Use of Information Technology Indicator Summary

Question	Total Possible Points	Overall Weighting
Component 1: Performing Clinical Functions Online (50%)		
Section 8, Question 86b	12	50%
Component 2: Use of Electronic Records and Data as Primary Source of Information (50%)		
Section 8, Question 87b	13	50%
Total Score		100%

Indicator 6: Use of Staff Skills/Competencies Descriptions Specific to Complex Continuing Care

This indicator measures the extent to which staff skills/competencies descriptions have been (a) developed and address various categories of patient care needs within CCC services; and (b) applied to staff development and training, performance appraisals, and hiring processes. This indicator is comprised of two questions from section 8.

Component 1: Extent of Descriptions Developed to Meet Categories of Care Needs (50%)

Section 8, Question 76b, c, d: This question inquires about the extent to which skill/competencies descriptions have been developed and currently address the listed categories of patient care needs. For Part 1 (b, d), 0 points are allocated for “Our skill/competency descriptions do not include specific skills or competencies relating to this patient care need” for each staff group, and 1 point is allocated for “Our skill/competency descriptions do include specific skills or competencies relating to this patient care need” for each staff group. For Part 2 (c, e), 1 point is allocated for every patient care need checked off. There are 11 rows with a maximum of four points per row. The maximum number of points for this question (all parts) is 44.

Component 2: Incorporation of Descriptions into Hiring/Training/Performance Appraisals (50%)

Section 8, Question 77b and 78: This question inquires about incorporating skill/competency descriptions into the hiring and staff development/training processes. It also looks at whether staff are evaluated against these skills/competencies. For Part 1 (Hiring – first 4 response options), 1 point is allocated for any one option checked, and 2 points are allocated if more than one option is checked. For Part 2 (Education – next 4 response options), 1 point allocated for any one option checked, and 2 points are allocated if more than one option is checked. For Part 3 (Performance – final response option in 77b and response to Question 78), 1 point is allocated if either last row checked in Q77b or answer is “Yes” in Q78, and 2 points are allocated if both are checked. The maximum number of points in each part is 2, allowing for a maximum number of points of 6 for the question.

Table 1.7: Use of Staff Skills/Competencies Descriptions Specific to CCC Indicator Summary

Question	Total Possible Points	Overall Weighting
Component 1: Extent of Descriptions Developed to Meet Categories of Care Needs (50%)		
Section 8, Question 76b, c, d	44	50%
Component 2: Incorporation of Descriptions into Hiring/Training/Performance Appraisals (50%)		
Section 8, Question 77b and 78	6	50%
Total Score		100%

Indicator 7: Healthy Work Environment

The Healthy Work Environment indicator was designed to measure the extent to which hospitals have mechanisms in place to support and promote a healthy work environment and thereby contribute to employee’s physical, social, mental and emotional well-being. Eleven questions from section 5 were used to calculate this indicator.

This year, the Healthy Work Environment indicator is calculated across all sectors.

Note: Hospitals who participated in multiple sectors would have the same Healthy Work Environment score across all sectors. However, the provincial average and performance allocation for that indicator would vary because it is based on participating hospitals within that sector only.

Component 1: Healthy Workplace Policy/Plan (30%)

Section 5, Question 31a: Organizations were asked about their workplace policy/plan. Three points were given to organizations that had a policy/plan that extended beyond policies mandated by health and safety legislation. The total point allocation for this question was 3 points.

Section 5, Question 31b: This question asked if the organization's healthy workplace policy/plan was based on an employee needs assessment. Organizations with an informal assessment process in place to evaluate employee needs, attitudes and preferences in regard to healthy workplace programs were given 1 point and 2 points were assigned to organizations with a formal assessment. The total point allocation for this question was 2 points.

Component 2: Accountability & Responsibility (10%)

Section 5, Question 32a: This question asked if accountability and responsibility for healthy workplace initiatives were formally assigned within the organization. Organizations were given 3 points if accountability and responsibility were formally assigned. The total point allocation for this question was 3 points.

Section 5, Question 32b: If accountability and responsibility for healthy workplace initiatives were formally assigned within the organization, they were then asked to specify which group was accountable and responsible for healthy workplace initiatives. Organizations that chose senior management received 1 point. If accountability and responsibility were shared broadly throughout the organization, organizations were given 2 points. The total point allocation for this question was 3 points.

Component 3: Assessment, Analysis, & Improvement (20%)

Section 5, Question 33a: Organizations were asked if there were processes in place to assess and analyze the organization's approach to healthy workplace issues. Three points were given if there were ongoing processes in place. The total point allocation for this question was 3 points.

Section 5, Question 33b: Organizations were asked to identify which of the following outcomes associated with developing a healthy workplace were collected and analyzed within the organization. There were 11 outcomes provided in the question. Organizations who indicated there was an informal process received 1 point and those with a formal process received 2 points. The total point allocation for this question was 22 points.

Section 5, Question 33c: This question asks organizations how they disseminated information about the outcomes associated with their healthy workplace policy/programs. For each of the 4 groups, organizations received 1 point if an internal written report was circulated about key highlights. If either a verbal presentation and discussion of results occurred or results were reviewed beyond the initial verbal presentation for a specific initiative, organizations received 3 points. The total point allocation for this question was 16 points.

Component 4: Key Dimensions (40%)

Section 5, Question 35: Organizations were asked about 7 processes in place to support a positive psychosocial environment. Hospitals with a process in place to encourage the participation of front-line employees in decision-making and overall control of their jobs were given 2 points for an informal process and 4 points for a formal process. Additionally, hospitals with a process in place to create innovative schedules, hours of work and job sharing arrangements to meet the needs of work settings is allocated 2 points for an informal process and 4 points for a formal process. Hospitals received 1 point for an informal process and 2 points for a formal process for the 5 other processes in place. The total point allocation for this question was 18 points.

Section 5, Question 36a: This question asked if there were one or more healthy lifestyle programs offered by your organization. If organizations answered yes, they received 3 points. The total point allocation for this question was 3 points.

Section 5, Question 36b: If an organization indicated there was a healthy lifestyle program offered, they were asked which of the healthy lifestyle program(s) included any of the 4 components (e.g. formal approach to education and skill development, assessment of behaviour change, monitoring/evaluation of utilization of programs, long term planning). 1 point is allocated to each of the 4 components. The total point allocation for this question was 4 points.

Section 5, Question 36c: Organizations were asked if their program(s) were developed (or lack thereof) based on an employee needs assessment. If an organization identified yes, they were given 3 points. The total point allocation for this question was 3 points. If organizations answered Q36a='NO' and Q36c='YES', then Q36 was removed from the component and the key dimensions component was composed of Q35 only.

Table 1.8: Healthy Work Environment Indicator Summary

Question	Total Possible Points	Overall Weighting
Component 1: Healthy Workplace Plan/Policy (30%)		
Section 5, Question 31a	3	30%
Section 5, Question 31b	2	
Component 2: Accountability & Responsibility (10%)		
Section 5, Question 32a	3	10%
Section 5, Question 32b	3	
Component 3: Assessment, Analysis, and Improvement (20%)		
Section 5, Question 33a	3	20%
Section 5, Question 33b	22	
Section 5, Question 33c	16	
Component 4: Key Dimensions (40%)		
Section 5, Question 35	18	27%
Section 5, Question 36a	3	13%
Section 5, Question 36b	4	
Section 5, Question 36c	3	
Total Score		100%

Verification

Hospitals were not sent preliminary values for the survey questions that were used in the calculations of the SIC indicators. This is because there were phone calls made and emails were sent after the surveys were received, where hospitals were given ample time to respond to any data quality issues or missing answers that were detected.

Methodology to Determine Relative Performance in Hospital Report 2007: Complex Continuing Care

In *Hospital Report 2007: Complex Continuing Care*, two methods are used to present hospital-specific performance: (a) three-colour shading system to describe performance in terms of above average, average, or below average and (b) actual numeric scores. These values were reviewed to ensure meaningful differences among hospitals in the three categories. The criteria used to determine relative performance in each peer group is described below.

In Hospital Report 2005, the method of assigning performance allocation was based on the interval of the mean +/- 1.645 standard deviations. The end-points of this interval are the upper and lower cut-point for “above” and “below” average classification. With an assumption that the indicator values are approximately normal, this interval should capture roughly 90% of the indicator values. However, in 2007, the high degree of variability in indicator scores and/or relatively high mean resulted in upper cut value to excess 100 or a lower cut value below 0 for several indicators. This made it impossible for hospitals to achieve the “above average” or “below average” status for those indicators.

A new performance allocation method was applied to Hospital Report 2007 SIC indicators to resolve this issue. This new method determines the upper and lower cut points based on the 95th percentile as above average and the 5th percentile as below average. Similar to the original method, this interval should capture roughly 90% of the indicator values. This method does not require normality and bounded the cut points within 0 to 100. This method is consistent among all sectors of the System Integration and Change quadrant.

Hospitals with a score that is the same or higher than the upper cut point are classified as “above average”, hospitals with a score that is less than the lower cut point are classified as “below average”, and hospitals with a score that is within the interval between these cut points are “average”. Using this method, approximately 90% of the hospitals would be classified as “average” and have potential opportunity for improvement and achieve higher standing.

The following table shows the cut off values correspond for each of the indicators. Hospitals with scores above or below these cut points were respectively identified as hospitals with above or below average levels of performance.

Table 1.9: Indicator cut points

Indicator	Below Average Cut-Off Point	Above Average Cut-Off Point
1. Evidence-Based Practice	16.0	92.3
2. Evidence of Client-Centred Care	28.5	93.7
3. Integration of Care	4.9	83.4

4. Use of RAI-Minimum Data Set in Quality Improvement and in Clinical and Utilization Management Applications	0.0	89.6
5. Use of Information Technology	0.0	87.8
6. Use of Staff Skills/Competencies Descriptions Specific to Complex Continuing Care	0.0	98.9
7. Healthy Work Environment	22.4	97.6

It is important to consider the meaning and value of these cut points. The methodology used for identifying these cut points (which subsequently mark an organization as having average, or above, or below average performance in each of these areas) is reasonable, scientifically sound, and conservative. Because the range of scores that capture "average" performance on these indicators is quite large, hospitals with scores close to the upper or lower cut points can gain an increased understanding of their performance levels upon receipt of their hospitals' results.

System-Level Findings

For each of the seven SIC indicators, the following statistics are displayed: the valid N (number of hospitals that received a score for this indicator), the mean, and the standard deviation. In addition, three percentile rankings are displayed: the 25th, 50th, (median), and 75th. Just as the median is the value above and below which 50% of cases fall, percentiles provide the same information for different percentages of cases. For example the value in the 25th percentile is the value that 25% of hospitals scored at or below (and the value above which 75% of hospitals scored). The statistics in each indicator table are displayed for all 80 hospital corporations that returned a Complex Continuing Care survey. Combined, these statistics provide important measures of central tendency, as well as detailed information about the dispersion of scores for each indicator.

Table 1.10: Indicator System-level findings

Indicator	N	Mean	Standard Deviation	Min.	25 th Percentile	median	75 th Percentile	Max.
Evidence-Based Practice	80	59.1	28.2	0.0	35.3	73.4	86.0	95.2
Evidence of Client-Centred Care	80	63.8	21.4	8.0	47.1	68.8	79.5	100.0
Integration of Care	80	44.8	22.9	0.0	27.6	46.6	59.0	93.1
Use of RAI	80	51.2	29.9	0.0	30.2	57.3	77.1	93.8
Use of Information Technology	80	40.7	29.7	0.0	19.7	32.4	72.1	91.7

Use of Staff Skills/Competencies Descriptions Specific to CCC	80							
		54.1	31.0	0.0	41.7	57.4	74.4	100.0
Healthy Work Environment	80	68.9	26.3	11.2	43.5	79.4	92.9	100.0

Table 1.11: Average Indicator Scores by LHIN

LHIN	Healthy Work Environment	Evidence-Based Practice	Evidence of Client-Centred Care	Integration of Care
LHIN 1 (Erie St. Clair)	81.5	56.7	53.4	45.4
LHIN 2 (South West)	57.3	68.0	70.0	45.9
LHIN 3 (Waterloo Wellington)	70.5	55.3	62.7	51.0
LHIN 4 (Hamilton Niagara Haldimand Brant)	88.4	50.9	73.1	45.6
LHIN 5 (Central West)	59.3	89.9	77.1	71.8
LHIN 6 (Mississauga Halton)	93.7	88.2	87.8	58.6
LHIN 7 (Toronto Central)	85.8	67.4	74.6	57.2
LHIN 8 (Central)	45.3	84.0	63.9	48.9
LHIN 9 (Central East)	70.4	63.1	75.5	52.2
LHIN 10 (South East)	57.6	85.8	59.7	57.8
LHIN 11 (Champlain)	70.7	53.2	60.5	35.5
LHIN 12 (North Simcoe Muskoka)	78.9	59.2	61.1	56.2
LHIN 13 (North East)	56.6	40.6	48.9	29.4
LHIN 14 (North West)	51.8	37.5	45.1	23.6

LHIN	Use of RAI-MDS	Use of Information Technology	Use of Staff Skills/Competencies Descriptions
LHIN 1 (Erie St. Clair)	48.4	56.9	36.6
LHIN 2 (South West)	55.1	51.0	48.2
LHIN 3 (Waterloo Wellington)	48.3	35.2	49.6
LHIN 4 (Hamilton Niagara Haldimand Brant)	63.1	45.1	58.7
LHIN 5 (Central West)	74.0	84.0	90.9
LHIN 6 (Mississauga Halton)	59.0	76.4	90.5
LHIN 7 (Toronto Central)	79.4	38.9	85.7
LHIN 8 (Central)	70.1	52.2	52.5
LHIN 9 (Central East)	60.4	51.7	65.0
LHIN 10 (South East)	45.1	56.0	74.6
LHIN 11 (Champlain)	50.2	14.5	47.6
LHIN 12 (North Simcoe Muskoka)	57.3	56.1	63.1
LHIN 13 (North East)	28.8	24.4	32.2
LHIN 14 (North West)	12.5	19.1	25.2

Summary of Results

The results from this year's system integration and change survey highlight the collaborative efforts between Complex Continuing Care (CCC) and other facilities to coordinate and improve care. This year's results indicate that hospitals with CCC services tend to collaborate frequently with Acute Care Hospitals and CCACs in order to develop clinical practice guidelines for in-hospital and community care and determine appropriate patient admission and discharge criteria. CCC facilities also reported that they often participated in interdisciplinary team meetings with members from the hospitals and other agencies. However, there is potential to increase inter-agency collaboration among other LHIN partners. For example, partnerships with mental health agencies and cancer centres were less frequently reported this year. Partnerships and collaboration provide an opportunity to share best practices and discuss strategies for improvement.

The indicators of SIC provide a performance profile reflecting efforts by hospitals with CCC programs in Ontario to meet these challenges. These indicators capture four broad but key areas:

- Increase collaboration with other providers
- Improve coordination of care
- Invest in better information for decision-making to improve levels of care and health services
- Levels of hospital integration with other LHIN partners in joint initiatives

Overall, hospitals have made considerable improvements in the several indicators. The highest overall scores were in the area of healthy work environments, although there was a high degree of variation between facilities. Hospitals report that they are increasingly implementing programs to support and promote healthy work environments. The lowest performance rating was seen in relation to the use of information technology. This suggests that there may be opportunities to increase the extent to which various clinical functions can be performed online in the future such as giving or receiving consultation by telehealth, making referrals to clinical providers, record nursing workload data, etc. However, there continues to be variation in performance for all indicators, indicating opportunities for improvement in targeted areas for some hospitals.

Appendix A: 2007 Methodology Changes

During the 2007 SIC survey redevelopment phase of the survey, questions were reviewed by both the HRRC researchers and CIHI staff. The methodology changed for five indicators. Wording changes were made to better clarify the questions and provide more defined answer choices. The table below indicates the major changes to the questions where the changes effected the indicator calculation and scoring.

INDICATOR NAME	<i>Hospital Report 2007 SIC Survey</i>
Evidence-based practice	<p>Q.70: One condition was dropped during redevelopment (Infection Control). Total points=13 -----</p> <p>Q.71: One condition was dropped during redevelopment (Infection Control). Total points=39 (but dependent on number of rows in Q.70 where last column is checked)</p>

<p>Integration of Care</p>	<p>Q.93b: Five initiatives were dropped during redevelopment (Clinical information flow between health care providers, Community staff represented on a hospital standing committee on patient care and/or discharge planning, Creating/implementing joint manager/director services, Providing community partner staff with desk/office space, computer, phone and/or email on your organization's property, and Other). New initiatives were added during redevelopment (Developing clinical practice guidelines that span patient care in the hospital and the community, Interdisciplinary team meetings with members of the team from your hospital and another agency). Total points=16</p>
<p>Use of RAI-Minimum Data Set in Quality Improvement and in Clinical and Utilization Management Applications</p>	<p>Dropped Q.41 from previous year's survey. ----- Q.82: Point allocation changed; 0.75 points if applied MDS-QIs in one way, 1.5 points if applied in more than one way. Total points=1.5 ----- Q.84b: Point allocation changed; 0.75 points if one use of RUG-III reports, 1.5 points if two or more uses for RUG-III reports. Total points=1.5</p>
<p>Use of Staff Skills/Competencies Descriptions Specific to Complex Continuing Care</p>	<p>Q.76: Other regulated staff and unregulated staff are merged into Other patient care staff. Also, this year all 11 rows were used in scoring. Total points=44</p>
<p>Healthy Work Environment</p>	<p>Changed methodology to be consistent with previous year's Corporate survey</p>