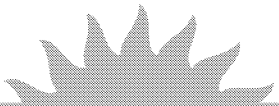


ACCESS, EQUITY & INTEGRATION INDICATORS FOR LOCAL HEALTH SYSTEM MONITORING IN ONTARIO

**Ontario District Health Councils
Local Health System Monitoring Technical Working Group**





LOCAL HEALTH SYSTEM MONITORING (LHSM) COMMITTEE

Scott Dudgeon, Toronto District Health Council (past chair)

Gwen DuBois-Wing, Northwestern Ontario District Health Council

Marion Emo, Hamilton District Health Council (chair)

David Harvey, Ministry of Health and Long-Term Care

Lynda Hessey, Durham Haliburton Kawartha & Pine Ridge District Health Council

Paul Huras, Thames Valley District Health Council

Ann Marie Strapp, Ministry of Health and Long-Term Care

Jim Whaley, Grey Bruce Huron Perth District Health Council (co-chair)

TECHNICAL WORKING GROUP

Chris Altmayer, Halton-Peel District Health Council

Sten Ardal, Central East Health Information Partnership (*chair & seat on LHSM*)

Kathleen Clements, Clements Consulting (*project support*)

Naomi Kasman, Central East Health Information Partnership (*project support*)

Agricola Odoi, Hamilton District Health Council

Joanna Oliver, Grand River District Health Council

Michaela Sandhu, Simcoe-York District Health Council

Graham Woodward, Institute for Clinical Evaluative Sciences

ACKNOWLEDGEMENTS

The Technical Working Group gratefully acknowledges the assistance of the many individuals who volunteered their time to this initiative. This report would not have been possible without the guidance and support of the Local Health System Monitoring Committee. Special thanks go to Marion Emo and Stephanie Loomer for their comments on our final draft, Dr. David McKeown and Dr. Michael Schull for assistance with indicator development, and to Dr. Adalsteinn Brown for his insightful advice and timely editorial comments.

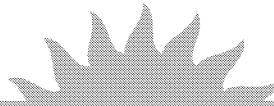
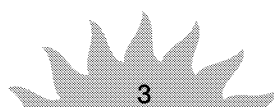
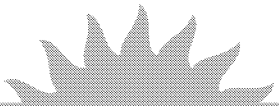


TABLE OF CONTENTS

LOCAL HEALTH SYSTEM MONITORING Committee and TECHNICAL WORKING GROUP members	2
EXECUTIVE SUMMARY	4
INTRODUCTION	4
DOMAINS	5
Access	5
Equity	5
Integration	6
TECHNICAL WORKING GROUP	7
SELECTION PROCESS	8
1. Purpose.....	8
2. Scope.....	8
3. Getting Potential Indicators.....	8
4. Criteria Definitions.....	9
5. Criteria Weights	10
6. Selection Strategy	10
7. Assign Indicator Scores	10
8. Rank Indicators	11
9. Refine Measures.....	12
10. Review & Re-rank.....	13
DISCUSSION.....	13
New indicators.....	13
Use and Interpretation	14
Equity Analysis.....	15
REFERENCES	17
APPENDIX A: INDICATOR RANKS	18
APPENDIX B: INDICATOR TEMPLATES	20





ACCESS, EQUITY & INTEGRATION INDICATORS

EXECUTIVE SUMMARY

This work is part of a provincial health system monitoring initiative undertaken by Ontario's District Health Councils. The document describes the activities of a Technical Working Group (TWG) given the task of indicator selection and development. While health indicators are increasingly being used to monitor and manage the health system there is often little information on why or how indicators are selected. By documenting their process, and describing some of the challenging issues faced, the TWG makes a unique contribution to evidence-based health planning.

This report identifies indicators that can be used by health planners to understand access, equity and integration issues in local communities. The process used to select the recommended indicators is described in greater detail in a companion report on indicator selection. A set of criteria were chosen and weighted to reflect relative importance. Indicators were then scored against these criteria, and ranked to create an ordered list. The top ranked indicators were identified as measures of access and integration that can be used for local health system performance measurement. Equity analysis is discussed, and examples of current approaches and options are presented.

Each proposed indicator is described in a template that identifies information sources, calculation methods, and if the indicator is currently available. New indicators were developed to fill information gaps, including an indicator to track emergency department use for conditions where alternate care may be available, an indicator that can be used to monitor access to complex hospital care, and measures of primary care integration. Many refinements and modifications are also proposed to existing indicators to accommodate changes in coding and data accessibility.

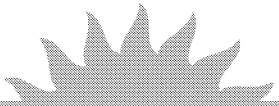
INTRODUCTION

This report identifies indicators that can be used by health planners to describe access, equity and integration issues in local communities. The process used to identify the recommended indicators is described, and reference is made to a companion report that outlines a generic indicator selection methodology. This work is part of a provincial health system monitoring initiative.

Ontario's District Health Councils (DHCs) have been working together through the Local Health System Monitoring (LHSM) Committee to identify and track health system performance measures since the fall of 2000. Indicators developed by this project have been used throughout Ontario in local health system reports. A symposium held in May 2003 reflected on LHSM accomplishments and explored future directions for this project.

The symposium reasserted the value of local system monitoring and identified the need for further coordinated indicator development. Domains considered for future study included access, equity, acceptability, continuity, effectiveness, efficiency, responsiveness, utilization, sustainability/adequacy, and integration. Many indicators were proposed for each domain, resulting in a large pool of potential measures. It was clear that domains needed to be prioritized and a method was required to select the most appropriate indicators. The LHSM Committee was charged with reviewing the symposium proceedings and identifying the priorities and methods that would focus and advance the project.⁽¹⁾

The Committee concluded that access, equity and integration were the domains most consistent with the unique mandate of DHCs to provide advice on how health care services can better meet the needs



of their communities. It was felt that access indicators would be fairly easy to identify, but equity presented more measurement challenges. Integration indicators were considered as measures of service coordination and continuity of care.

The following section provides an overview of the domains selected for indicator development.

DOMAINS

Access

Health planners are primarily interested in ensuring that needed services are available and accessible in their jurisdictions. Population access is often measured by focussing on health system, or supply factors.⁽²⁾ Definitions of access, however, consider both the supply side and the ability of the population to obtain services.

Access is “those dimensions which describe the potential and actual entry of a given population group to the health care delivery system.”⁽³⁾

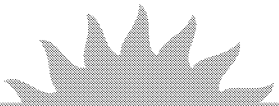
In this definition, the potential entry reflects the supply side, while actual entry may be influenced by factors other than supply. A full account of access requires an understanding of available services and identification of relevant barriers to those services, such as distance, language, or awareness. Understanding access also requires attention to delays in receiving service, typically described as waiting times. Since the impact of such variables can be difficult or impossible to measure, supply measures are commonly considered to be appropriate indicators of access. In most jurisdictions this may be quite reasonable, but local planners will need to be aware of population specific barriers in their communities when interpreting access with supply indicators.

Equity

Equity in health is a concept that cannot be directly measured. However, one can measure inequalities in health between more and less advantaged populations. Such inequalities are likely to reflect an underlying inequity in service provision.⁽⁴⁾ Equity in the health sector has been conceptualized using measures that reflect health status, distribution of resources, expenditures, utilization and access. Utilization and access are commonly used indicators of the equity of a health system, however these concepts do not incorporate need.^(5;6) Equity is conditional on the need for care, and what is appropriate to meet the needs of some may be different from that required by others. This distinction is captured in the following definition.

Equity is “equal opportunity to access and obtain appropriate health service.”⁽⁷⁾

To monitor equity in health and healthcare, three basic sets of research questions must be addressed. First, how do levels of health vary across different populations? Second, how do levels of key determinants of health vary across populations? And third, how have both levels of health and health determinants in different population groups, and gaps between the groups, changed over time? One needs to know both the actual absolute values of a given health status measure for each group and the relative distribution of those values across groups.⁽⁴⁾



Monitoring health equity requires indicators that reflect health status itself and major determinants of health, such as socio-economic status. All aspects of healthcare should be considered, such as utilization, quality of care, and means of payment. In investigating equity in healthcare, data from healthcare facilities alone will generally not be acceptable because groups who do not use health services will not be included.(4)

The following framework can help determine if equity in health care exists, and may guide the choice of specific indicators.(8)

1. **Equal access to available care for equal need** - equal access to available care for equal need implies equal entitlement to the available services for everyone, a fair distribution based on health care needs and ease of access in each geographical area, and the removal of other barriers to access
2. **Equal utilization for equal need** - differences in the rates of utilization of certain services by different population groups does not necessarily mean that the differences are inequitable, merely that further study is needed to ascertain why the utilization rates are different.
3. **Equal quality of care for all** - it is very important that every person has an equal opportunity of being selected for attention through a fair procedure based on need rather than social influence. Equal quality of care for everyone, also implies that providers will strive to put the same commitment into the services they deliver for all sections of the community, so that everyone can expect the same high standard of professional care.

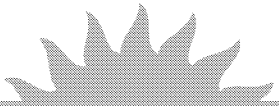
Equity is a complex concept that relies on information about barriers to access, population health needs, and quality of care provision. This report will focus on indicators of access, and suggest how barriers and population characteristics can be incorporated in analyses and interpretation of access indicators. Quality of care impacts on equity will not be explored, though it is acknowledged that this is a critically important clinical dimension.(9)

Integration

Measuring the extent to which health services are integrated is important in the current Ontario context. Ontario remains the only Canadian province that has not created regional bodies that direct, manage and fund local health providers. Such health authorities are presumed to be better able to integrate service delivery, and thereby may provide more seamless care. The LHSM initiative seeks to explore the extent to which services are integrated in Ontario, thereby providing some indication of continuity of care.

Integration (Continuity of Care) is...“the extent to which services are received as part of a coordinated and uninterrupted succession of events consistent with the medical needs of the patient.”(10)

Integrated systems are assumed to improve the flow of patients throughout the care system, and have been proposed to improve service delivery in Ontario.(11) While fully integrated regional systems have been resisted in Ontario, recently announced Local Health Integration Networks are expected to improve continuity by developing and promoting networks, guidelines, performance standards and plans that span delivery organizations.



Continuity of care may be realized through information sharing, patient-provider communications, or the consistency of care plans.(12) Similarly, integration may occur along these dimensions, and does not necessarily require the establishment of formal relationships or shared governance. Accordingly, indicators that measure integration can be used to estimate the extent of continuity in care provision. Better coordination between providers should result in improved health outcomes. While the definition and description here is focussed on medical care, a fully integrated system will include related social and support services.

Measuring integration in an arena where provision of care is fragmented can be difficult, and integration of service management does not necessarily result in greater continuity. This remains a difficult area to define conceptually, and one with little history of indicator development.

TECHNICAL WORKING GROUP

The Steering Committee established a Technical Working Group to provide advice and facilitate completion of this second phase of the LHSM.

Members of the Technical Working Group (TWG):

Chris Altmayer, Halton-Peel District Health Council

Sten Ardal, Central East Health Information Partnership (chair)

Kathleen Clements, Clements Consulting (project support)

Naomi Kasman, Central East Health Information Partnership (project support)

Agricola Odoi, Hamilton District Health Council

Joanna Oliver, Grand River District Health Council

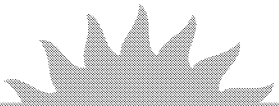
Michaela Sandhu, Simcoe-York District Health Council

Graham Woodward, Institute for Clinical Evaluative Sciences

The chair was also a member of the LHSM Project Committee, and provided regular updates on TWG activities to this Committee. Meetings were held about once a month between the summer of 2003 and 2004.

This TWG was charged with identifying indicators that would meet the needs identified in the Symposium and by the LHSM Committee. They were also instructed to consider the range of indicators now available and to identify the most efficient ways to advance the project. There has been a significant increase in the availability of health indicators, with Statistics Canada, the Canadian Institute for Health Information and Health Intelligence Units (HIUs) now providing ready access to many of the indicators used in LHSM Phase 1.(13) The main task for the TWG was to select the best indicators from an increasingly broad array of potential measures.

The TWG developed a method to guide the selection process. This method is more fully documented in a companion report.(14) The TWG adopted a consensus approach for decision-making. Lacking consensus the issue in question would be researched further, and carried forward. Eventually, consensus was reached for all of the indicators reviewed.



SELECTION PROCESS

1 Purpose

The purpose of the project was to identify indicators that could be used by local health planners to monitor access, equity & integration in their communities. This includes information on how to obtain the required data and calculate specific indicators.

2 Scope

Working group members began by reviewing definitions for access, equity and integration, and considering how these definitions could guide the indicator selection process.

Access was deemed to reflect the availability and use of the health services system, primarily reflected through supply measures and utilization, without considering if the level of service use in a community was appropriate. Indicators that captured volumes of activity and service capacity would therefore qualify as access indicators. The choice and ranking of specific indicators was driven by their importance to health system performance, and consistency with the defined ranking criteria.

Equity cannot be directly measured using health system indicators, however, access measures can be used to understand equity issues when associated with specific populations. This involves creation of groups, or population strata, defined by variables associated with differing needs for care, or barriers that limit access. Examples of how populations can be stratified by needs or identified barriers are provided in the discussion.

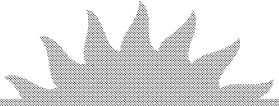
Measures of integration are assumed to reflect coordination and continuity of care. Integration indicators included measures of relationships between providers and activities that may be managed in alternate settings.

3 Getting Potential Indicators

TWG members identified many possible areas of measurement and specific indicators. Initial proposals went beyond available lists to include ideal indicators to ensure that the indicator selection process would not be restricted to existing measures. Ideas proposed were drawn from individual experiences and unique DHC initiatives.

The TWG then reviewed several lists currently in use and selected those measures that could be used to monitor access, equity or integration. The first lists considered were those generated for the initial LHSM project, and additions proposed at the LHSM Symposium in May 2003. District Health Councils throughout Ontario developed the LHSM indicators through extensive review of the literature and available measures. National initiatives were also reviewed, and consideration was given to both the Health Indicators,(13;15) and those agreed to in discussions between Federal, Provincial and Territorial levels of government.(16) A master list was compiled that would be the core set used for the selection process in the following meetings.

The working list comprised over eighty possible indicators, and their relative merits needed to be assessed objectively. Some indicators were subdivided, and new ones were added further expanding the list. Indicators were not finalized until later in the process when precise calculation methods were developed for those that were judged most promising.



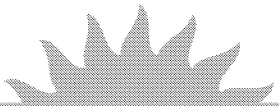
4 Criteria Definitions

An objective approach to indicator selection was needed. Criteria had to be identified that could be used to evaluate indicators and determine their relative value. Several different criteria and application methods were considered, and are documented in the companion report. Seven criteria judged to span areas relevant to health planning applications were selected for discussion. Table 1 shows the individual criteria definitions adopted by the TWG.

The application model used weights to account for differences in the relative importance of criteria (step 5). Each indicator would be scored against each of these weighted criteria (step 7). The result is a weighted matrix model that produces scores that can be ranked.

Table 1: Criteria and definitions used for evaluating health planning indicators.

Criteria & Weight	Definition
Validity (3)	The indicator appears to measure what is intended and is accepted by the community(face validity). The indicator covers relevant content or domains(content validity), and the indicator has predictive power (criterion validity).
Feasibility (2)	The data required for the indicator are readily available for the areas and times periods required. There are no unreasonable obstacles, or constraints on access, and the information can be used without restrictions.
Understandable (1)	The indicator can be readily interpreted and changes are generally understood.
Relevance to Planning (3)	The indicator provides information that advances the understanding of population health and the health services system, and can be used to monitoring and measure health and health services.
Comparability over time and place (3)	The measure can be compared over time and to other geographic areas, standards or benchmarks. The information must be recorded and reported in like manner over time and place.
Actionable by District Health Councils (2)	The information being collected can be used by DHCs to inform and influence policy or funding, to alter behaviour of health services providers, or to increase general understanding in a community that is relevant population health objectives.
Data Quality(2)	Information is collected in a predictable and consistent manner using reliable methods. Data integrity is maintained in storage, management and manipulation. Accuracy is monitored through regular audits and results are reported.



5 Criteria Weights

The matrix model requires two scoring assignments. The first involved weighting of the criteria themselves. A simple three level system was adopted, with low importance being assigned 1, medium importance 2, and high importance 3. For this project TWG members assigned the weights based on the importance of the criteria to health planners who would use and interpret the resulting indicators. For example, “understandable” was weighted with a low score since the indicators were to be interpreted in a professional context. If indicators were to be selected for public distribution then the “understandable” criteria would likely be weighted high.

6 Selection Strategy

Health Indicators are often categorized according to the information source (e.g. health surveys, hospital records), or the aspect of the health care system being measures (e.g. primary care, mental health). While the initial indicator lists were organized by category, these categories were ignored in the selection strategy. All indicators that fit the access, equity of integration domains were ranked against each other. This resulting ordered list helped identify areas with relatively weaker health information, and contrasts with most other selection strategies that chose indicators because they reflect on activity in specific areas of the health care system.

A method was needed to decide which indicators would be recommended from the weighted and ranked indicator list. Options considered were; (1) statistical analysis, (2) numeric thresholds, and (3) distribution visualization. Statistical methods were discussed, but were dismissed as no suitable method was identified. It was decided that the threshold method was the best way to initiate the sorting process. This simply required agreement on the minimum score required for an indicator to be recommended. In this case, the minimum score selected as the threshold was 36, out of a possible maximum score of 48. Distributional visualization would then be used to complete the categorization. By plotting scores in a histogram “natural breaks” are revealed that would help define discrete categories.

It was agreed that the ranked indicators would be sorted into categories that identified recommended indicators, those that should be used with caution, and those that could not be recommended.

7 Assign Indicator Scores

Table 2 provides the guidelines for evaluation of indicators against criteria. The list of indicators was divided up and individual members were asked to research their indicators, and propose possible scores. Justifications for individually assigned scores were required to ensure that there was sufficient information available during the scoring process to discuss and assign appropriate values. All scoring was from a health planning perspective using a consensus model. Where there were disagreements or requests for additional information the indicator would be flagged and tabled. Eventually agreement was reached and scores assigned for almost all indicators. There were a few areas that were deemed important, but where adequate source information was not identified. These indicators were not scored but were assigned to a “Parking Lot” to identify them as areas of importance requiring improved information. The ranking process took several meetings and was the most intensive and time-consuming part of the project.

Table 2: Indicator scoring matrix with definitions and weights used.

Indicator Criteria	Characteristics of Indicator assign corresponding score if indicator has the following characteristics:			
	Score = 0	Score = 1	Score = 2	Score = 3
Validity	Indicator does not measure what it purports to, fit within a theoretical construct or have predictive power (if 0 → discard)	Indicator does one of the following: - measures what it purports to - fits within a theoretical construct - has predictive power	Indicator measures what it intends to measure, and either fits within a theoretical framework or is predictive of external criteria	Indicator measures what it intends to measure, fits within a meaningful theoretical construct and is predictive of external criteria
Feasibility	Data are not accessible to local districts	Restricted data access to local districts (unreasonable cost or obstacles to obtain data)	Data accessible to local districts, and data not frequently available (only every 2 or more years)	Data accessible to local districts, and data will be frequently available (every year or less)
Understand-able	Indicator is not easily understood by the public and other users, and there is low likelihood of achieving agreement on concepts, method, and data among epidemiologists and data analysts	Indicator is not easily understood by the public and other users, and there is a moderate likelihood of agreement on concepts, method, and data among epidemiologists and data analysts	Indicator is easily understood by the public and other users, and there is a moderate likelihood of agreement on concepts, method, and data among epidemiologists and data analysts	Indicator is easily understood by the public and other users, and there is a high likelihood of agreement on concepts, method, and data among epidemiologists and data analysts
Relevance to Planning	Indicator is not important to the community	Indicator is important to the community, and applies to a small portion of the community or a medium to low-risk group	Indicator is important to the community, and applies to a considerable portion of the community or a high-risk group	Indicator is important to the community, and applies to a considerable portion of the community or a high-risk group, and is important to advance research
Comparable over time and place	Indicator is not comparable over time to other local districts, and to other standards/benchmarks	Indicator is comparable over time to other local districts, but not to other standards/benchmarks	Indicator is comparable over time to other local districts, and to other standards/benchmarks	Indicator is comparable over time to other local districts, larger geographic areas (provincial &/or national &/or international) and to other standards/benchmarks
Amenable to Action	Not amenable to action by local districts	Amenable to action by local districts, but requires significant effort, and may not result in expected outcome	Amenable to action by local districts, and requires some effort, with some certainty of outcome	Amenable to action at district level and can contribute to desired outcome
Quality Acceptable	Unknown quality, or known to be unacceptable	Known quality concerns	Known minor concerns	High quality

8 Rank Indicators

Seventy-three indicators were scored, with results ranging from 20 to 43 (maximum possible = 48). The Working Group felt that validity was essential since an indicator that did not measure the phenomenon of interest has no value for planning. Indicators with “Validity” values of “0” were excluded without further consideration.

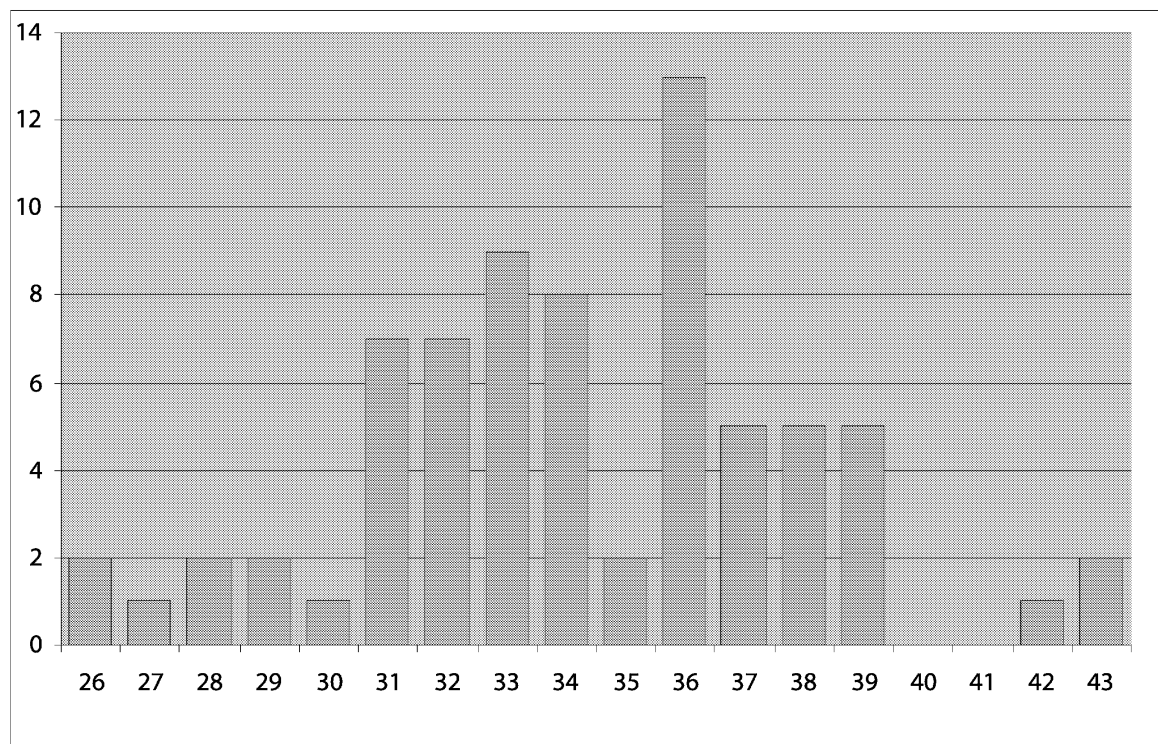
The indicators were from many different sources, and measured different aspects of the health system, such as primary care, acute care, etc. There was some concern that top ranked indicators may all be from similar sources, or reflect similar parts of the system. However, there was enough heterogeneity throughout to suggest a good mix of measures could be proposed from the top rankings.

Table 3: Threshold and breakpoint ranking outcomes.

RANKING CATEGORY	THRESHOLD METHOD		NATURAL BREAK METHOD	
	Range	Number	Range	Number
Access & Integration				
Recommended	> 35	31	> 35	31
Use With Caution	≤ 35	42	> 30 ≤ 35	33
Not Recommended			≤ 30	9

A list of the scored and ranked indicators is provided in appendix A. This list was used to establish the ranked indicator categories shown in Table 3. Note that the initial threshold method proved consistent with observed natural breaks. These breaks were defined by a large increase in measures for a given score. The histogram used for this analysis appears as figure 1.

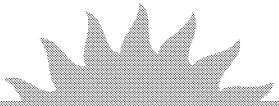
Figure 1: Histogram of ranking scores over 25.



9 Refine Measures

Specific calculation guidelines were developed for the recommended indicators. These were based on templates used in the LHSM PROJECT and by the Association of Public Health Epidemiologists of Ontario Population Health Indicators Working Group.⁽¹⁷⁾ The first stage in this process was to define the measures themselves, which were often more specific than the initial ranked indicator. The numerator source and selection criteria were specified, and characteristics of denominators addressed. Complete templates for all recommended indicators are included in appendix B.

The template process was far more arduous than anticipated. The required specificity raised many questions, and exposed shortcomings of measures that had previously seemed sound. In addition, some existing indicators had been defined using coding schemes that were no longer valid with the introduction of ICD-10. Further research was required to create new definitions, with some investigations leading to substantial changes and revisions. New indicators created in this process are described in the discussion, and detailed in the relevant templates.



10 Review & Re-Rank

A final review and re-ranking of all indicators completed the selection process. Initial ranking had raised many questions, and led to further research and greater understanding of the indicators. Reviewing the ranks also revealed some inconsistencies in criteria scores. There were also measures that failed to meet expectations when they were more fully defined, and others that were improved during the template development stages.

While this process is laid out in a very linear fashion it was more circular and iterative than the presentation suggests. A lot of revisiting occurred at every session where ranks were discussed. There were also questions raised about the measures, and refinements and clarifications were common throughout the latter stages. The group did not revise the criteria for ranking, but often revisited the criteria as part of the review process to ensure that the work remained consistent and true to the purpose and scope.

DISCUSSION

This indicator selection process is flexible and can be readily adopted for use in future LHSM iterations, by local DHCs, and by other planners and decision makers needing to select indicators that meet relevant criteria. The process was more involved and time consuming than initially anticipated, but resulted in a detailed understanding and description of the indicators that will make calculation and interpretation easier and more reliable.

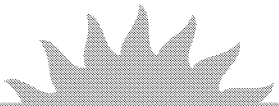
The remainder of the discussion deals with three themes that emerged in TWG deliberations. First, an overview of the new indicators and discussion of the data collection template are provided. This discussion is important as it provides the rationale for these novel approaches. Second are general notes on the use and interpretation of indicators for the domains identified. It is not possible to give more than a few guidelines here, but hopefully this will help ensure that the indicators are interpreted within an appropriate context. The third and final section deals with “equity”, and provides frameworks and contexts for addressing equity issues using access indicators.

New Indicators

New indicator – ***Emergency department (ED) visits for conditions that may be treated in alternative primary care settings.***

This integration indicator captures some of the higher volume conditions identified in emergency departments that could be managed in an alternative non-hospital setting. It is likely that some of the utilization captured here may be entirely appropriate for clinical reasons, or because alternatives, such as family practice options, are not available. It was, however, reasoned that tracking such cases would be important to monitor the impact of clinical alternatives intended to reduce the burden of cases presenting in emergency departments.

A review of existing ED indicators failed to identify an adequate measure for available data sources. An



ED indicator was needed that captures a high volume of activity to ensure a stable measure, and identifies activities that did not necessarily need ED resources for effective clinical management. Exploratory analysis of the National Ambulatory Care Data System produced a set of plausible conditions and potential selection criteria. Final selection criteria were developed in consultation with public health and ED physicians. The TWG is indebted to Dr. David McKeown, and Dr. Michael Schull for their assistance and insights in developing this indicator.

New indicator – ***Acute Inpatient Utilization: Key Tertiary Procedures.***

This indicator is designed to describe access to high levels of care that may only be available in regional referral centres.

This is an adaptation of an indicator used in the LHSM PROJECT to help understand referral patterns. The original indicator relied on algorithms that classified acute care discharges by levels of care and was based on a the Hay Level of Care Methodology (1999).(18) With the introduction of ICD-10, and challenges comparing to historical data, the TWG decided to choose some key high volume services that would be easier to identify, calculate, and compare over time. Variation in the adjusted rate of these tertiary procedures may reflect access issues.

Historical files were reviewed to identify previously coded tertiary and quaternary Case Mix Groups. All related procedures were identified as potential tertiary procedures if they were (1) never associated with primary or secondary CMGs, and (2) had annual volumes greater than 500. The qualifying procedures were associated with about forty thousand discharges annually when matched to the most recent available inpatient files. The list of procedures identified for this indicator is given in the calculation template (appendix B).

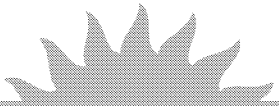
New indicators – ***Physicians in Family Health Networks, and Patients Enrolled in Family Health Networks.***

These indicators use recently collected information in measures of integration.

The MOHLTC has been tracking progress in development of family health networks. Information being collected in this process can be adapted to form indicators that will support local tracking and comparative analysis. Family Health Networks are designed to provide greater continuity of care through improved coverage, information sharing, and multidisciplinary care.

Use and Interpretation

Indicators are supposed to provide an indication of a phenomenon of interest. They are direct measures, but only of the specific information being measured. Specific indicators are interpreted as reflecting a broader reality. But how broad? The answer is not found through reflection of the properties of the indicator, but rather through an appreciation of other indicators, expert opinions, and observations. In other words, conclusions on what an indicator means depends on corroborating information. Indicators should be used to identify where you need to do further investigation, and are rarely robust enough in isolation to reach reliable conclusions about the domain of interest. The companion report on indicator selection provides a more detailed discussion of indicators, and their role in health planning and research.



Most indicators are designed to be comparable. This requires that the calculation take into account changes occurring over time and differences between places that could bias the numbers. Standardization, age weighting, and various ratios are created to yield numbers that can be compared. The indicator templates make these adjustments wherever possible so that any differences are unlikely to be related to factors such as differences in the population age structure. It is important to have an understanding of these adjustments when reporting comparisons.

The calculation methods listed for the indicators will, for the most part, provide population based results. They are designed to describe access and integration for residents, rather than service profiles of health care providers. Some information, however, can only be described from the provider perspective. For example, physician ratios describe practice locations of the physicians rather than the resident location of their patients. Users of these indicators need to be sensitive to this distinction.

In summary, interpretation of indicator values should (1) consider the context and related information, (2) identify any issues with comparisons, and (3) distinguish population-based from provider measures.

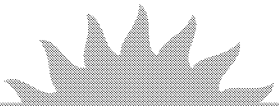
Equity Analysis

In the introduction the equity domain was identified as a way to stratify other indicators. Equity analysis relies on information about barriers to access and population health needs. This section describes some initiatives that combine populations in ways that would facilitate the use of recommended indicators in analysis of equity issues.

The Toronto Equity Analysis (2001) used measures of socioeconomic status (SES) and ethno-cultural composition to create subgroups.⁽⁶⁾ Census variables used for SES were age, gender, income and education, while recent immigration was used as the ethno-cultural proxy measure. Several population health and health services utilization measures are reported and stratified by these equity dimensions. This report found that health status and the use of health services varied by SES within Toronto. Effects associated with the ethno-cultural indicator were less pronounced. Findings were described as consistent with other research in that subpopulations that were hypothesized to have greater needs had lower health status and higher utilization.

Statistics Canada created Peer Groups to aid comparisons between jurisdictions.^(19;20) Information is obtained for twenty-four variables to create profiles for each Canadian Health Region, represented by public health unit boundaries in Ontario. A cluster analysis procedure is used to create ten groupings. Regions within the same group are considered comparable, while different groups vary on characteristics such as aboriginal population, urban/rural, unemployment rate, age structure and income inequity. Since this is a national grouping strategy comparisons within Ontario may not be possible. While this approach can be adapted to stratify populations for equity analysis the groupings were not specifically designed as predictors of service needs or utilization.

The Hamilton District Health Council has developed a population stratification model using eighteen socio-demographic variables.⁽²¹⁾ Cluster analysis identified five different neighbourhood types, differentiated by factors such as age distribution, income, population density, immigration, education and property values. All of the variables are from the Statistics Canada, 2001 Census, with analysis at the Census Tract (CT) level. While these census variables are common throughout Canada, only large

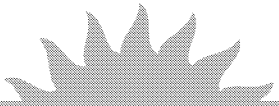


urban areas have CT geographies. Generalization throughout Ontario would therefore require some adaptation. The next phase of this project is to look at how patterns of health services utilization vary in relation to the identified neighbourhood types.

The Halton-Peel District Health Council developed a socio-economic risk index at the census tract level using seven demographic variables from the Statistics Canada 2001 Census. Variables were adapted from the living and/or working condition domain from the Statistics Canada and Canadian Institute for Health Information Health Indicators Framework. The index was created using weights from a principle components analysis of the data. Although a multi-indicator approach would provide a detailed view of socio-economic risk, a single measure describing the overall socio-economic risk of a population may be easier to interpret and apply in equity studies. Furthermore, as socio-economic risk is conceptualized to have several domains, a single index that incorporates various indicators should improve the validity of the index. The socio-economic risk index represents one means to estimate where needs for health care are likely to be higher, and can be used in future equity studies.

Statistics Canada and the Canadian Institute for Health Information collaborate on a national Health Indicators initiative. Together, they produce a compilation of selected indicators measuring health status, non-medical determinants of health, health system performance, and community and health system characteristics. Indicators have been developed that capture different domains within each of these areas, creating a comprehensive Health Indicator Framework. While equity is not a domain within the initial Framework it has recently been identified as a cross-cutting theme throughout the model. Specific plans for measuring equity in this context are under development.(22)

While the TWG had initially hoped to be able to address equity issues through indicator selection, it became apparent that equity cannot be directly measured by the indicators proposed. Equity must be understood as an interaction between such measures and properties of the population itself.(23) There are many ways to define the population to support equity analysis, and the choice of method may depend on the objective. Many of the indicators proposed do stratify and accommodate age and sex differences between populations, however current interests in equity tend towards factors such as income, education, ethnicity, and social structures.



Reference List

- (1) Ontario District Health Councils. Proceedings - Symposium on Indicators. 2003.
- (2) Shengelia B, Murray CJL, Adams OB. Beyond access and utilization: defining and measuring health system coverage. In: Murray CJL, Evans DB, editors. Health system performance assessment: debates methods and empiricism. Geneva: World Health Organization; 2003. p. 221-34.
- (3) Aday LA, Anderson RM. Equity of access to medical care: a conceptual and empirical overview. Medical Care 1981;12:5-6.
- (4) Braveman PA. Monitoring equity in health and healthcare: a conceptual framework. J Health Popul Nutr 2003 Sep;21(3):181-92.
- (5) Waters HR. Measuring equity in access to health care. Soc Sci Med 2000 Aug;51(4):599-612.
- (6) Damba C, Vahabi M. Toronto health system monitoring: equity analysis. 2001. Toronto, Toronto District Health Council. Ref Type: Generic
- (7) Pink G, Vayda E, Leatt P. Models of funding health services in metropolitan Toronto: A discussion document. Toronto: Department of Health Administration, University of Toronto; 1993.
- (8) Whitehead M. The concepts and principles of equity and health. Int J Health Serv 1992;22(3):429-45.
- (9) Woo JK, Ghorayeb SH, Lee CK, Sangha H, Richter S. Effect of patient socioeconomic status on perceptions of first- and second-year medical students. CMAJ 2004 Jun 22;170(13):1915-9.
- (10) Shortell SM. Continuity of medical care: conceptualization and measurement. Med Care 1976 May;14(5):377-91.
- (11) Ontario Health Services Restructuring Commission. Looking back, looking forward. Ottawa: Canadian Health Services Research Foundation; 2000.
- (12) Reid R, Haggerty J, McKendry R. Defusing the confusion: concepts and measures of continuity of healthcare. Ottawa: Canadian Health Services Research Foundation; 2002.
- (13) Canadian Institute for Health Information. Health care in Canada. Ottawa: Canadian Institute for Health Information; 2004.
- (14) Ardal S. Process guide for indicator selection. Toronto: Ontario District Health Councils; 2004.
- (15) Statistics Canada. Statistical report on the health of Canadians. Ottawa: Statistics Canada; 1999.
- (16) Ontario Ministry of Health and Long-Term Care. Ontario's health system performance report. 2002.
- (17) Association of Public Health Epidemiologists in Ontario, Population Health Indicators Working Group. Core population health indicators for Ontario. www.apheo.ca/indicators/index.html 2004
- (18) Hay Health Care Consulting Group, Joint Policy and Planning Committee. The Hay Group level of care methodology: CMG 1999. 2001. Toronto, JPPC Secretariat. Ref Type: Generic
- (19) McNabb L. Health region peer groups: Technical document. Ottawa: Statistics Canada; 2002.
- (20) McLeod L. Health Region Peer Groups 2003. Ottawa: Statistics Canada; 2004.
- (21) Hamilton District Health Council. A neighbourhood approach to population health planning. Hamilton: Hamilton District Health Council; 2004.
- (22) Statistics Canada, Canadian Institute for Health Information. Second consensus conference on population health indicators. Ottawa 2004.
- (23) Wolfson M, Rowe G. On measuring inequalities in health. Bull World Health Organ 2001;79(6):553-60.

APPENDIX A: INDICATOR RANKS

Indicator	Category	Domain	Validity	Feasibility	Understandable	Relevance	Comparability	Actionable	Quality	Score	Category
Criteria Weight			3	2	1	3	3	2	2		*
Mammography Screening	Prim Care	Access	2	3	3	3	3	2	3	43	R
Cervical Cancer (Pap Smear) Screening	Prim Care	Access	2	3	3	3	3	2	3	43	R
Cancer Treatment: Radiation	Acute	Access	2	3	2	3	3	2	3	42	R
Patients Receiving Radiation Therapy Within One Year Of Diagnosis	Acute	Access	3	2	3	3	2	2	2	39	R
Inflow: Specific Inpatient Conditions	Acute	Access	2	3	2	2	3	2	3	39	R
Outflow: Specific Inpatient Conditions	Acute	Access	2	3	2	2	3	2	3	39	R
Average Time On Waiting List For Admission To An LTC Facility	Com & LTC	Access	3	1	2	3	3	2	2	39	R
Occupancy In LTC By Structural Classification And Type Of Bed	Com & LTC	Access	3	1	2	3	3	2	2	39	R
Acute Inpatient Utilization: Specific Conditions	Acute	Access	2	3	3	2	3	1	3	38	R
Cancer Treatment: Surgical	Acute	Access	2	2	2	3	3	2	2	38	R
Nursing Ratio By Class, Employment Sector And Status	HR	Access	2	3	3	3	2	2	2	38	R
Contact With MH Professionals	MH	Access	2	3	3	2	3	2	2	38	R
Unmet Health Care Needs (Unclassified)	Prim Care	Access	1	3	3	3	3	1	3	38	R
Acute Inpatient Utilization Overall	Acute	Access	2	3	2	2	3	1	3	37	R
Readmission Rates (Asthma)	Acute	Integration	2	3	2	2	3	1	3	37	R
Readmission Rates (AMI)	Acute	Integration	2	3	2	2	3	1	3	37	R
May Not Require Hospitalization	Acute	Integration	2	3	2	2	3	1	3	37	R
Readmission Rates (Mental Health)	MH	Integration	2	3	2	2	3	1	3	37	R
Waiting Time For CABGS And % Performed Within The RMWT	Acute	Access	2	2	3	3	2	2	2	36	R
Acute Inpatient Utilization: Key Tertiary Procedures	Acute	Access	2	3	1	2	3	1	3	36	R
Overall Inpatient Inflow	Acute	Access	2	3	1	2	3	1	3	36	R
Overall Inpatient Outflow	Acute	Access	2	3	1	2	3	1	3	36	R
Inflow: Specific Outpatient Condition	Acute	Access	2	3	2	2	2	2	3	36	R
Outflow: Specific Outpatient Condition	Acute	Access	2	3	2	2	2	2	3	36	R
Waiting Time For Percutaneous Coronary Interventions	Acute	Access	2	2	3	3	2	2	2	36	R
Waiting Time For Cardiac Cath. And % Performed Within The RMWT	Acute	Access	2	2	3	3	2	2	2	36	R
Ratio Of Licensed Physicians To Population	HR	Access	2	3	3	3	2	1	2	36	R
Ambulatory Care Sensitive Conditions	Acute	Integration	2	3	1	2	3	1	3	36	R
Physicians Enrolled In FHNs, PCNs Or FHGs	HR	Integration	2	2	2	3	3	1	2	36	R
Patients Enrolled In FHNs, PCNs Or FHGs	Prim Care	Integration	3	2	3	3	1	2	2	36	R
ED Visits For Conditions That May Be Treated In Alternate Settings	Prim Care	Integration	2	3	3	3	2	1	2	36	R
Number Waiting For Bypass Surgery	Acute	Access	3	2	3	2	1	2	3	35	C
Mental Health ED Visits	MH	Integration	2	3	3	2	2	2	2	35	C
Day Surg Utilization (E.g. Cataract Surgery)	Acute	Access	2	3	2	2	2	1	3	34	C
Day Surgery Utilization Rates Overall	Acute	Access	2	3	2	2	2	1	3	34	C
Hospital Bed Rates By Category	Acute	Access	2	3	2	2	2	2	2	34	C
Stroke Beds Per Population	Acute	Access	2	2	2	2	2	2	3	34	C
Rehab Inpatient Utilization Rates	Acute	Access	2	1	2	3	3	2	1	34	C
Self-Reported Depression Without Consult	MH	Access	2	3	2	2	2	2	2	34	C
Self-Reported Serious MH Without Consult	MH	Access	2	3	2	2	2	2	2	34	C
GP/FPs Accepting New Patients	Prim Care	Access	2	2	3	3	2	1	2	34	C
Cancer Treatment: Chemotherapy	Acute	Access	2	1	2	3	2	2	2	33	C
Inflow/Outflow Ratio For Specific Conditions	Acute	Access	1	3	2	1	3	2	3	33	C
Inflow/Outflow Ratio Overall	Acute	Access	1	3	1	2	3	1	3	33	C
Physiotherapist Rate	HR	Access	2	3	3	3	1	2	1	33	C
Prenatal Care/All Pregnancies	Prim Care	Access	2	2	3	2	2	3	1	33	C
Post Natal Care/Live brths	Prim Care	Access	2	2	3	2	2	3	1	33	C
ALC Separation & Day Rates	Acute	Integration	1	3	1	2	3	1	3	33	C
CCAC Ratio Acute Admit To Caseload	Com & LTC	Integration	2	1	2	3	2	2	2	33	C
Patients Registered In Family Health Networks	Prim Care	Integration	2	2	2	3	2	1	2	33	C
Home Care Utilization	Com & LTC	Access	2	2	2	3	1	2	2	32	C
CCAC Waitlist	Com & LTC	Access	2	2	2	3	1	2	2	32	C
OT Rate	HR	Access	1	3	3	3	1	2	2	32	C
Other Diagnostic (MRI, CT)	Prim Care	Access	2	2	2	2	2	2	2	32	C
Well Baby Physician Visits/Live Birth	Prim Care	Access	2	2	2	2	2	3	1	32	C
"ACTT" Team Availability	HR	Integration	2	2	2	2	2	2	2	32	C
Inpatient Psych Utilization (Conditions)	MH	Integration	2	3	1	1	2	2	3	32	C
Number Waiting For PCI	Acute	Access	2	2	2	2	1	2	3	31	C
Number Waiting For CATH	Acute	Access	2	2	2	2	1	2	3	31	C
Number Waiting For Cancer Surgery(s)	Acute	Access	2	1	3	3	1	2	2	31	C
Number Waiting for Cancer Chemotherapy (s)	Acute	Access	2	1	3	3	1	2	2	31	C
Waiting Time For Hip/Knee Replacements	Acute	Access	2	2	3	2	2	1	2	31	C
GP/FP Visits For Non-Urgent Acute Conditions	Com & LTC	Integration	2	2	2	3	2	1	1	31	C
Telehealth - Vol & Disposition	Prim Care	Integration	2	1	3	2	2	2	2	31	C
Physician Claims Rate	Prim Care	Access	2	2	2	2	2	1	2	30	NR
Available & Staffed ICU Bed Rates	Acute	Access	2	2	1	2	2	2	1	29	NR
Visits To More Than One GP	Prim Care	Access	2	2	1	2	2	1	2	29	NR
CCAC Utilization	Com & LTC	Access	2	1	2	3	1	2	1	28	NR
Placement Coordinator (Ratio)	HR	Integration	1	3	2	2	1	2	2	28	NR
Waiting Time For Cataract Surgery	Acute	Access	2	1	3	2	2	1	1	27	NR
Number Waiting For Hip/Knee Replacements	Acute	Access	1	2	3	2	2	1	1	26	NR
CHC Availability (Roster Or budget/LICO Pop)	HR	Integration	2	2	1	2	1	1	2	26	NR
Number Waiting For Cataract Surgery	Acute	Access	1	0	3	2	2	1	0	20	NR
PARKING LOT (Discussed but not ranked)											
Multimedication Rates											
Information Technologies											
HR Rate For S&L, Clinical & Lab Diagnostics											

* R = Recommended, C = Use With Caution & NR = Not Recommended

APPENDIX B: INDICATOR TEMPLATES

Indicator	Domain	Category
1. Cancer Treatment: Radiation	Access	Acute
2. Patients Receiving Radiation Therapy Within One Year Of Diagnosis	Access	Acute
3. Inflow: Specific Inpatient Conditions (Bypass Surgery, Hip Replacement, Knee Replacement)	Access	Acute
4. Outflow: Specific Inpatient Conditions (Bypass Surgery, Hip Replacement, Knee Replacement)	Access	Acute
5. Acute Inpatient Utilization: Specific Conditions (Coronary Artery Bypass Graft Surgery (CABGS), Hip Replacement, Knee Replacement)	Access	Acute
6. Cancer Treatment: Surgical	Access	Acute
7. Acute Inpatient Utilization Overall	Access	Acute
8. Waiting Time For Coronary Artery Bypass Graft Surgery (CABGS) And Percentage (%) Performed Within The Recommended Maximum Waiting Time (RMWT)	Access	Acute
9. Acute Inpatient Utilization: Key Tertiary Procedures	Access	Acute
10. Overall Inpatient Inflow	Access	Acute
11. Overall Inpatient Outflow	Access	Acute
12. Inflow: Specific Outpatient Conditions (Lens Extraction)	Access	Acute
13. Outflow: Specific Outpatient Conditions (Lens Extraction)	Access	Acute
14. Waiting Time For Percutaneous Coronary Interventions (PCI) (Regular PCI, PCI With Stent, Ad-hoc PCI, Ad-hoc PCI With Stent)	Access	Acute
15. Waiting Time For Cardiac Catheterization And Percentage (%) Performed Within The Recommended Maximum Waiting Time (RMWT)	Access	Acute
16. Average Time On Waiting List For Admission To A Long Term Care (LTC) Facility	Access	Community & Long Term Care
17. Occupancy In Long Term Care (LTC) By Structural Classification And Type Of Bed	Access	Community & Long Term Care
18. Nursing Ratio By Class, Employment Sector And Employment Status	Access	Human Resources
19. Ratio Of Licensed Physicians (General Practitioners (GPs), Specialists & Psychiatrists) To Population	Access	Human Resources
20. Contact With Mental Health (MH) Professionals	Access	Mental Health
21. Mammography Screening	Access	Primary Care
22. Cervical Cancer (Pap Smear) Screening	Access	Primary Care
23. Unmet Health Care Needs (Unclassified)	Access	Primary Care
24. Readmission Rates (Asthma)	Integration	Acute
25. Readmission Rates (Acute Myocardial Infarction (AMI))	Integration	Acute
26. May Not Require Hospitalization (MNRH)	Integration	Acute
27. Ambulatory Care Sensitive Conditions (ACSC)	Integration	Acute

28. Physicians Enrolled In Family Health Networks (FHNs), Primary Care Networks (PCNs), Or Family Health Groups (FHGs)	Integration	Human Resources
29. Readmission Rates (Mental Health)	Integration	Mental Health
30. Patients Enrolled In Family Health Networks (FHNs), Primary Care Networks (PCNs), Or Family Health Groups (FHGs)	Integration	Primary Care
31. Emergency Department (ED) Visits For Conditions That May Be Treated In Alternative Primary Care Settings	Integration	Primary Care

<u>Indicator:</u> Cancer Treatment: Radiation Overall Breast Cancer Colon Cancer
<u>Measure:</u> $\frac{(\text{Number of patients having undergone radiation for treatment of cancer})}{(\text{Total incident cases of cancer})} \times 100$ $\frac{(\text{Number of patients having undergone radiation for treatment of breast cancer})}{(\text{Total breast cancer incident cases})} \times 100$ $\frac{(\text{Number of patients having undergone radiation for treatment of colon cancer})}{(\text{Total colon cancer incident cases})} \times 100$
<u>Data Source:</u> Cancer Care Ontario (CCO)
<u>Methodological Notes:</u> • 'The conventional treatment of cancer can involve a single treatment or several types of treatment, such as surgery, chemotherapy or radiation therapy. • Patients will receive treatment that is specific to their cancer and that treatment will depend on the location of the tumour and the stage of the disease at diagnosis. • All treatment will be guided by Cancer Care Ontario's treatment guidelines
<u>Time & Place:</u> • By patient residence (DHC, county) and year
<u>Known Existing Indicator Source(s):</u> • Cancer Care Ontario

Access: Acute Care

<u>Indicator:</u> Patients Receiving Radiation Therapy Within One Year Of Diagnosis
<u>Measure:</u> $\frac{(\text{Number of patients receiving radiation therapy within one year of diagnosis})}{(\text{Total annual incident cases})} \times 100$
<u>Data Source:</u> Cancer Care Ontario (CCO)
<u>Methodological Notes:</u> • 'The conventional treatment of cancer can involve a single treatment or several types of treatment, such as surgery, chemotherapy or radiation therapy. • Patients will receive treatment that is specific to their cancer and that treatment will depend on the location of the tumour and the stage of the disease at diagnosis • All treatment will be guided by Cancer Care Ontario's treatment guidelines
<u>Time & Place:</u> • By patient residence (county) and year
<u>Known Existing Indicator Source(s):</u> • Cancer Care Ontario

Indicator:

Inflow: Specific Inpatient Conditions
 Bypass Surgery
 Hip Replacement
 Knee Replacement

Measure:

$$\frac{\left(\text{Total number of discharges for bypass surgery from acute care hospitals within a given region for residents outside of that region} \right)}{\left(\text{Total number of discharges for bypass surgery from acute care hospitals within a given region} \right)} \times 100$$

$$\frac{\left(\text{Total number of discharges for hip replacements from acute care hospitals within a given region for residents outside of that region} \right)}{\left(\text{Total number of discharges for hip replacements from acute care hospitals within a given region} \right)} \times 100$$

$$\frac{\left(\text{Total number of discharges for knee replacements from acute care hospitals within a given region for residents outside of that region} \right)}{\left(\text{Total number of discharges for knee replacements from acute care hospitals within a given region} \right)} \times 100$$

Data Source:

Provincial Health Planning Database, Ministry of Health and Long-Term Care

Methodological Notes:

- Bypass Surgery
 - CCP code 48.1; ICD-9-CM procedure code 36.1; CCI code 1.IJ.76
- Hip replacement
 - CCP codes 93.51, 93.52, 93.53, or 93.59; ICD-9-CM procedure codes 81.50, 81.51 or 81.53; CCI codes 1.VA.53.LA-PN, 1.VA.53.PN-PN
- Knee replacement
 - CCP codes 93.40 or 93.41; ICD-9-CM procedure codes 81.54 or 81.55; CCI code of 1.VG.53
- Adapt definition from Statistics Canada and Canadian Institute for Health Information's Health Indicators Framework.

Time & Place:

- By patient residence (DHC, county) and year

Known Existing Indicator Source(s):

<u>Indicator:</u> Outflow: Specific Inpatient Conditions Bypass Surgery Hip Replacement Knee Replacement
<u>Measure:</u> $\frac{\left(\begin{array}{c} \text{Total number of discharges for bypass surgery for residents of a given region from acute care} \\ \text{hospitals outside of that region} \end{array} \right)}{\left(\text{Total number of discharges for bypass surgery for residents of a given region} \right)} \times 100$ $\frac{\left(\begin{array}{c} \text{Total number of discharges for hip replacements for residents of a given region from acute care} \\ \text{hospitals outside of that region} \end{array} \right)}{\left(\text{Total number of discharges for hip replacements for residents of a given region} \right)} \times 100$ $\frac{\left(\begin{array}{c} \text{Total number of discharges for knee replacements for residents of a given region from acute care} \\ \text{hospitals outside of that region} \end{array} \right)}{\left(\text{Total number of discharges for knee replacements for residents of a given region} \right)} \times 100$
<u>Data Source:</u> Provincial Health Planning Database, Ministry of Health and Long-Term Care
<u>Methodological Notes:</u> • Bypass Surgery ○ CCP code 48.1; ICD-9-CM procedure code 36.1; CCI code 1.IJ.76 • Hip replacement ○ CCP codes 93.51, 93.52, 93.53, or 93.59; ICD-9-CM procedure codes 81.50, 81.51 or 81.53; CCI codes 1.VA.53.LA-PN, 1.VA.53.PN-PN • Knee replacement ○ CCP codes 93.40 or 93.41; ICD-9-CM procedure codes 81.54 or 81.55; CCI code 1.VG.53 • Adapt definition of conditions from Statistics Canada and Canadian Institute for Health Information's Health Indicators Framework.
<u>Time & Place:</u> • By patient residence (DHC, county) and year
<u>Known Existing Indicator Source(s):</u>

Indicator:

Acute Inpatient Utilization: Specific Conditions
Coronary Artery Bypass Graft Surgery (CABGS)
Hip Replacement
Knee Replacement

Measure:

$$\frac{(\text{Total number of CABGS performed at acute care hospitals})}{(\text{Total mid - year population \{age adjusted\}})} \times 100,000$$

$$\frac{(\text{Total number of hip replacement surgeries performed at acute care hospitals})}{(\text{Total mid - year population \{age adjusted\}})} \times 100,000$$

$$\frac{(\text{Total number of knee replacement surgeries performed at acute care hospitals})}{(\text{Total mid - year population \{age adjusted\}})} \times 100,000$$

Data Source:

Provincial Health Planning Database, Ministry of Health and Long-Term Care

Methodological Notes:

- CABGS
 - CCP code 48.1; ICD-9-CM procedure code 36.1; CCI code 1.IJ.76
- Hip replacement
 - CCP codes 93.51, 93.52, 93.53, or 93.59; ICD-9-CM procedure codes 81.50, 81.51 or 81.53; CCI codes 1.VA.53.LA-PN, 1.VA.53.PN-PN
- Knee replacement
 - CCP codes 93.40 or 93.41; ICD-9-CM procedure codes 81.54 or 81.55; CCI code 1.VG.53
- Acute care hospitals include those coded as AP (acute care treatment hospital with psychiatric unit) or AT (acute care treatment hospital without psychiatric unit)

Time & Place:

- By patient residence (DHC, county) and year

Known Existing Indicator Source(s):

- Statistics Canada/CIHI's Health Indicators Framework (www.statcan.ca/english/freepub/82-221-XIE/free.htm)

<u>Indicator:</u> Cancer Treatment: Surgical
<u>Measure:</u> $\frac{(\text{Number of patients having undergone surgery for treatment of cancer})}{(\text{Total incident cases})} \times 100$ $\frac{(\text{Number of patients having undergone surgery for treatment of breast cancer})}{(\text{Total breast cancer incident cases})} \times 100$ $\frac{(\text{Number of patients having undergone surgery for treatment of colon cancer})}{(\text{Total colon cancer incident cases})} \times 100$
<u>Data Source:</u> Cancer Care Ontario (CCO)
<u>Methodological Notes:</u> • The conventional treatment of cancer can involve a single treatment or several types of treatment, such as surgery, chemotherapy or radiation therapy. • Patients will receive treatment that is specific to their cancer and that treatment will depend on the location of the tumour and the stage of the disease at diagnosis. • All treatment will be guided by Cancer Care Ontario's treatment guidelines
<u>Time & Place:</u> • By patient residence (DHC, county) and year
<u>Known Existing Indicator Source(s):</u> • Cancer Care Ontario, Annual Reports and Quality Council Publications (reporting areas and methods may not be identical)

<u>Indicator:</u> Acute Inpatient Utilization Overall
<u>Measure:</u> $\frac{(\text{Total number of discharges from acute care hospitals})}{(\text{Total mid - year population \{age adjusted\}})} \times 100,000$
<u>Data Source:</u> Provincial Health Planning Database, Ministry of Health and Long-Term Care
<u>Methodological Notes:</u> • Acute care hospitals include those coded as AP (acute care treatment hospital with psychiatric unit) or AT (acute care treatment hospital without psychiatric unit) • Diagnoses exclude discharges for mental health diagnostic codes and for newborns
<u>Time & Place:</u> • By patient residence (DHC, county) and year
<u>Known Existing Indicator Source(s):</u>

<u>Indicator:</u> Waiting Time For Coronary Artery Bypass Graft Surgery (CABGS) And Percentage (%) Performed Within The Recommended Maximum Waiting Time (RMWT)
<u>Measure:</u> Monthly median waiting time in days $\frac{(\text{Total number of CABGS performed within the RMWT})}{(\text{Total number of CABGS performed})} \times 100,000$
<u>Data Source:</u> Cardiac Care Network of Ontario (CCN)
<u>Methodological Notes:</u> • CABGS ○ CCP code 48.1; ICD-9-CM procedure code 36.1; CCI code 1.IJ.76 • Should be calculated by category of patient: emergency, urgent, semi-urgent, non-urgent (elective). Emergency and urgent categories may be combined. • RMWTs by patient category are: ○ Emergency patients: surgery should be done without delay ○ Urgent patients: surgery should be done within 14 days ○ Semi-urgent patients: surgery should be done within 42 days ○ Elective patients: surgery should be done within 180 days • This waiting time does not include the period between referral by Family Physician/General Practitioner and appointment with a specialist. • CCN does not use ICD procedure codes
<u>Time & Place:</u> • Comparison over time is possible from 1994 to present • Cardiac Centres
<u>Known Existing Indicator Source(s):</u> • Cardiac Care Network of Ontario: http://www.ccn.on.ca/access/waittimes.html • Fraser Institute – Waiting Your Turn: Hospital Waiting Lists in Canada http://www.fraserinstitute.ca/shared/readmore.asp?sNav=pb&id=587

<u>Indicator:</u> Acute Inpatient Utilization: Key Tertiary Procedures
<u>Measure:</u> $\frac{(\text{Total number of procedures requiring tertiary level of care by region})}{(\text{Total mid - year population})} \times 100,000$
<u>Data Source:</u> Provincial Health Planning Database, Ministry of Health and Long-Term Care
<u>Methodological Notes:</u> - Procedures requiring tertiary level of care: - Arthroplasty of knee (CCP 93.41-93.47) - Bone Marrow transplant (CCP 53.0) - Colostomy (CCP 58.1) - Coronary Artery Bypass Graft Surgery (CCP 48.1) - Craniotomy/craniectomy (CCP 14.1) - Gastrotomy (CCP 55.0, 55.1, 55.2) - Heart transplant (CCP 49.5) - Hip replacement (CCP 93.5) - Liver transplant (CCP 62.4) - Lung transplant (CCP 45.5) - Resection of lung (CCP 44.3) - Spinal fusion (CCP 93.0) - Surgical collapse of lung (CCP 45.2) - Temporary/permanent tracheostomy (CCP 43.1,43.2)
<u>Time & Place:</u> By patient residence (DHC, county) and year
<u>Known Existing Indicator Source(s):</u>

<u>Indicator:</u> Overall Inpatient Inflow
<u>Measure:</u> Total number of discharges from acute care hospitals within a given region for residents outside of that region
<u>Data Source:</u> Provincial Health Planning Database, Ministry of Health and Long-Term Care
<u>Methodological Notes:</u>
<u>Time & Place:</u> • By patient residence (DHC, county) and year
<u>Known Existing Indicator Source(s):</u>

<u>Indicator:</u> Overall Inpatient Outflow
<u>Measure:</u> Total number of discharges for residents of a given region from acute care hospitals outside of that region
<u>Data Source:</u> Provincial Health Planning Database, Ministry of Health and Long-Term Care
<u>Methodological Notes:</u>
<u>Time & Place:</u> • By patient residence (DHC, county) and year
<u>Known Existing Indicator Source(s):</u>

<u>Indicator:</u> Inflow: Specific Outpatient Conditions Lens Extraction
<u>Measure:</u> $\left(\frac{\text{Total number of lens extraction procedures from acute care hospitals within a given region for residents outside of that region}}{\text{Total number of lens extraction procedures from acute care hospitals within a given region}} \right) \times 100$
<u>Data Source:</u> Provincial Health Planning Database, Ministry of Health and Long-Term Care
<u>Methodological Notes:</u> • Lens Extraction (Note: CCP & CCI codes are not fully comparable) ○ CCP codes 27.4-27.6; CCI codes 1.CL.89, 1.CL.59 • Adapt definition of conditions and qualifiers from Institute for Clinical Evaluative Sciences Practice Atlas.
<u>Time & Place:</u> • By patient residence (DHC, county) and year
<u>Known Existing Indicator Source(s):</u>

Access: Acute Care

<u>Indicator:</u> Outflow: Specific Outpatient Conditions Lens Extraction
<u>Measure:</u> $\frac{\left(\begin{array}{l} \text{Total number of lens extraction procedures for residents of a given} \\ \text{region from acute care hospitals outside of that region} \end{array} \right)}{\left(\begin{array}{l} \text{Total number of lens extraction procedures for residents} \\ \text{of a given region} \end{array} \right)} \times 100$
<u>Data Source:</u> Provincial Health Planning Database, Ministry of Health and Long-Term Care
<u>Methodological Notes:</u> • Lens Extraction (Note: CCP & CCI codes are not fully comparable) ○ CCP codes 27.4-27.6; CCI codes 1.CL.89, 1.CL.59 • Adapt definition of conditions and qualifiers from Institute for Clinical Evaluative Sciences Practice Atlas.
<u>Time & Place:</u> • By patient residence (DHC, county) and year
<u>Known Existing Indicator Source(s):</u>

Access: Acute Care

Indicator:

Waiting Time For Percutaneous Coronary Interventions (PCI)

Regular PCI

PCI with stent

Ad-hoc PCI (i.e. PCI with cardiac catheterization)

Ad-hoc PCI with stent

Measure:

Monthly median waiting time in days for regular PCI

Monthly median waiting time in days for PCI with stent

Monthly median waiting time in days for ad-hoc PCI (i.e. PCI with cardiac catheterization)

Monthly median waiting time in days for ad-hoc PCI with stent

Data Source:

Cardiac Care Network of Ontario (CCN)

Methodological Notes:

- Waiting periods are counted from the date a patient is accepted for PCI. Therefore, the waiting periods do not include time spent investigating heart disease before a patient is accepted for the procedure
- Perform separate analyses for patients receiving only PCI and those receiving both PCI and cardiac catheterization at the same time.
- CCN does not use ICD procedure codes

Time & Place:

- Comparison over time is possible from 1994 to present
- Cardiac Centres

Known Existing Indicator Source(s):

<u>Indicator:</u> Waiting Time For Cardiac Catheterization And Percentage (%) Performed Within The Recommended Maximum Waiting Time (RMWT)
<u>Measure:</u> Monthly median waiting time (days) $\frac{(\text{Total number of cardiac catheterizations performed within the RMWT})}{(\text{Total number of cardiac catheterizations performed})} \times 100$
<u>Data Source:</u> Cardiac Care Network of Ontario (CCN)
<u>Methodological Notes:</u> • RMWT for each patient category are: ○ Emergency patients: procedure should be performed without delay ○ Urgent patients: procedure should be performed within 7 days ○ Semi-urgent patients: procedure should be performed within 28 days ○ Elective: procedure can be performed after 28 days • All calculations should be performed by category of patient: emergency, urgent, semi-urgent, non-urgent (elective). Emergency and urgent categories may be combined. • CCN does not use ICD procedure codes
<u>Time & Place:</u> • Comparison over time is possible from 1994 to present • Cardiac Centres
<u>Known Existing Indicator Source(s):</u> • Cardiac Care Network of Ontario: http://www.ccn.on.ca/access/waittimes.html • Fraser Institute – Waiting Your Turn: Hospital Waiting Lists in Canada http://www.fraserinstitute.ca/shared/readmore.asp?sNav=pb&id=587

<u>Indicator:</u> Average Time On Waiting List For Admission To A Long Term Care (LTC) Facility
<u>Measure:</u> $\frac{(\text{Total length of time (months) on waiting list})}{(\text{Total number of transfer and non - transfer clients on waiting list to an LTC facility})}$
<u>Data Source:</u> Long-Term Care Redevelopment Project, Ministry of Health and Long-Term Care
<u>Methodological Notes:</u> • Clients are grouped into 'transfer client' or 'non-transfers client' based on the location of the client at the moment in time (i.e. while waiting). A 'transfer client' is a client who is waiting for access to one or more long-term care facility, but is a resident of another facility. As such, this client is on the waiting list, but represents 'met' demand in that the client may move from one facility to another, but does not represent a net increase in the number of residents in a certain area. A 'non transfer client' is an eligible client who is waiting for access to one or more long-term care facility and who is not a resident of a long-term care facility at the time. These clients may be waiting at home, in hospital, in a retirement home, in supportive house, etc.
<u>Time & Place:</u> • By Community Care Access Centre (CCAC) • Can be trended along with the number and type of beds available and new beds approved for development
<u>Known Existing Indicator Source(s):</u>

<u>Indicator:</u> Occupancy In Long Term Care (LTC) By Structural Classification And Type Of Bed
<u>Measure:</u> $\frac{(\text{Total number of occupied beds (by structural classification) in long term care facilities})}{(\text{Total number of beds in operations (by structural classification)})} \times 100,000$
<u>Data Source:</u> Long-Term Care Redevelopment Project, Ministry of Health and Long-Term Care
<u>Methodological Notes:</u> • Indicator of LTC utilization that measures level of in-resident care that an area population is receiving, specifically targeted to population 75 years of age and older. • Indicator is calculated for population 75 years of age and older, although some LTC beds and spaces are used by patients younger than 75 years. • Beds are categorized as basic, semi-private or private. Basic beds are typically located in rooms with two to four residents (depending on the structural classification), while private beds are single-occupancy rooms. The co-payment of the client varies depending on the type of accommodation, and the amount of money they are willing to spend. Facilities are restricted in the proportion of rooms that they can 'declare' or charge as semi-private or private. Each facility must offer at least 40% basic accommodation, even though many of the new facilities have 100% structurally identical rooms. • The utilization calculation used by the LTC Redevelopment Project gives an indicator of the occupancy rate and it is calculated on the last day of every month
<u>Time & Place:</u> • Provincial, regional, district, CCAC and individual facility level. • Allows for comparisons over time (extended and residential care) and place. • Can be trended along with the number of clients on waitlist for LTC facility and the number and types of beds available.
<u>Known Existing Indicator Source(s):</u>

<u>Indicator:</u> Nursing Ratio By Class, Employment Sector And Employment Status
<u>Measure:</u> $\frac{(\text{Total number of nurses by class in region})}{(\text{Total mid - year population of region})} \times 100,000$ $\frac{(\text{Total number of nurses by employment sector in region})}{(\text{Total mid - year population of region})} \times 100,000$ $\frac{(\text{Total number of nurses by employment status in region})}{(\text{Total mid - year population of region})} \times 100,000$
<u>Data Source:</u> College of Nurses of Ontario
<u>Methodological Notes:</u> • Nursing classes: RN, RPN, EC • Nursing employment sector: hospital, community, long term care facility • Nursing employment status: full time, part time, casual • Nursing is the largest workforce in the Canadian health system • Useful for human resources planning and development • Age breakdowns allow for profession addition and attrition analyses • Data are collected from individual member registration forms. Information is self- reported with little verification or editing done by the college.
<u>Time & Place:</u> • Comparison over time is possible from 1996- present • County level data available
<u>Known Existing Indicator Source(s):</u> • Nursing Effectiveness Utilization and Outcomes Research Unit http://www.fhs.mcmaster.ca/nru/ • College of Nurses of Ontario http://www.cno.org/about/stats.html

<u>Indicator:</u> Ratio of Licensed Physicians (General Practitioners (GPs), Specialists & Psychiatrists) To Population
<u>Measure:</u> $\frac{(\text{Total number of licensed physicians actively in practice})}{(\text{Total mid - year population})} \times 100,000$
<u>Data Source:</u> Ontario Physician Human Resources Data Centre (OPHRDC)
<u>Methodological Notes:</u> • Useful for human resources planning and development • Indicates physician availability to area resident populations • Age breakdowns allow for profession addition and attrition analyses • Per capita comparisons may not demonstrate physician availability as physicians serve non-area resident populations • Physicians “actively in practice” may not accurately reflect availability as there is not indication of full time or part time employment
<u>Time & Place:</u> • Eleven years of “Physician in Ontario” reports allow for time trending • Region and county level data available
<u>Known Existing Indicator Source(s):</u> • Physicians In Ontario reports, OPHRDC 1992-2002 (http://www.ophrdc.org/)

<u>Indicator:</u> Contact With Mental Health (MH) Professionals
<u>Measure:</u> $\frac{\left(\begin{array}{c} \text{Weighted estimate for individuals aged 20 and over who reported} \\ \text{consulting with a health professional about their mental health in} \\ \text{the past 12 months} \end{array} \right)}{\left(\text{Weighted population aged 20 and over} \{ \text{age and sex adjusted} \} \right)} \times 100$
<u>Data Source:</u> Canadian Community Health Survey (CCHS), Statistics Canada
<u>Methodological Notes:</u> • CCHS Cycle 1.1 Variable CMHA_01K, CCHS Cycle 2.1 Variable CMHC_01K • Mental health professionals include: family doctors or general practitioners, psychiatrists, psychologists, nurses, social workers and counsellors
<u>Time & Place:</u> • Data are reported by DHC and PHU in main surveys, supplement valid at larger geographies
<u>Known Existing Indicator Source(s):</u> • Statistics Canada/CIHI's Health Indicators Framework www.statcan.ca/english/freepub/82-221-XIE/free.htm

<u>Indicator:</u> Mammography Screening
<u>Measure:</u> $\frac{\left(\begin{array}{c} \text{Total number of women aged 50 - 69 reporting a mammogram} \\ \text{in the past two years} \end{array} \right)}{\left(\text{Total number of women aged 50 - 69} \right)} \times 100$
<u>Data Source:</u> Canadian Community Health Survey (CCHS), Statistics Canada
<u>Methodological Notes:</u> • CCHS Cycle 1.1 Variable MAMA_032, CCHS Cycle 2.1 Variable MAMC_022 • Use "Mammography" methods described in APHEO Indicators Project at www.apheo.ca/indicators • Adapt definition for screening as described by CEHIP in "Ontario Region and Public Health Unit Screening Rates" at www.cehip.org • This definition excludes mammography that may be considered diagnostic
<u>Time & Place:</u> • By patient residence (DHC, county) and year
<u>Known Existing Indicator Source(s):</u> • Statistics Canada/CIHI's Health Indicators Framework www.statcan.ca/english/freepub/82-221-XIE/free.htm

<u>Indicator:</u> Cervical Cancer (Pap Smear) Screening
<u>Measure:</u> $\frac{\left(\text{Weighted estimate for women aged 18 - 69 reporting cervical cancer screening within the last three years} \right)}{\left(\text{Weighted population of women aged 18 - 69} \right)} \times 100$
<u>Data Source:</u> Canadian Community Health Survey (CCHS), Statistics Canada
<u>Methodological Notes:</u> • To define the population of women who have had a Pap smear in the past 3 years, use CCHS Cycle 1.1 Variable PAPA_022, CCHS Cycle 2.1 Variable PAPC_022 • Consult APHEO Indicators for other analytic notes, including definitions for previous surveys • Information is based on the number of women aged 18-69 who have had a Pap Smear test within the past three years
<u>Time & Place:</u> • Data are reported by DHC & PHU • Trends should be consistent for CCHS years, previous surveys (OHS 96/07, OHS 90) provide similar estimates
<u>Known Existing Indicator Source(s):</u> • Statistics Canada/CIHI's Health Indicators Framework www.statcan.ca/english/freepub/82-221-XIE/free.htm

<u>Indicator:</u> Unmet Health Care Needs (Unclassified)
<u>Measure:</u> $\frac{\left(\text{Weighted estimate for individuals aged 20 and over who reported unmet health care needs} \right)}{\left(\text{Weighted population aged 20 and over \{age adjusted\}} \right)} \times 100$
<u>Data Source:</u> Canadian Community Health Survey (CCHS), Statistics Canada
<u>Methodological Notes:</u> • Proportion of population 20 years and older who needed health care or advice in the past 12 months, but did not receive it • This indicator does not provide a full picture of the extent of lack of accessibility to health services, since people who are most likely to have problems accessing health services, e.g., the homeless and those without health cards are less likely to be captured in telephone health surveys • Does not capture the type of services that were required but not received • In CCHS Cycle 1.1, Variable HCUA_06, CCHS Cycle 2.1, Variable HCUC_06 • Stratify by age groups 20-44, 45-64, 65+
<u>Time & Place:</u> • Data are reported by DHC & PHU • Trends should be consistent for CCHS years, previous surveys (OHS) provide similar estimates • National comparison and US comparison (02/03 Joint Survey of Health)
<u>Known Existing Indicator Source(s):</u>

Integration: Acute

Indicator:

Readmission Rates
Asthma

Measure:

$$\frac{\left(\begin{array}{c} \text{Total number of individuals with an admission for asthma within} \\ \text{12 months of being discharged for the same diagnosis} \end{array} \right)}{\left(\text{Total mid - year population \{age adjusted\}} \right)} \times 100,000$$

Data Source:

Provincial Health Planning Database, Ministry of Health and Long-Term Care

Methodological Notes:

- Risk adjusted rate of unplanned readmission following discharge for asthma. A case is counted as a readmission if it is for a relevant diagnosis and occurs within 12 months after the index episode of care.
- Asthma:
 - ICD-9 or ICD-9 CM diagnosis code 493; ICD-10 diagnosis code J45

Time & Place:

- By patient residence (DHC, county) and year

Known Existing Indicator Source(s):

Integration: Acute

Indicator:

Readmission Rates
Acute Myocardial Infarction (AMI)

Measure:

$$\frac{\left(\begin{array}{c} \text{Total number of individuals with an admission for an AMI within} \\ \text{28 days of a discharge for the same diagnosis} \end{array} \right)}{\left(\text{Total mid - year population \{age adjusted\}} \right)} \times 100,000$$

Data Source:

Provincial Health Planning Database, Ministry of Health and Long-Term Care

Methodological Notes:

- Risk adjusted rate of unplanned readmission following discharge for AMI. A case is counted as a readmission if it is for the same diagnosis and occurs within 28 days after the index AMI episode of care.
- AMI:
 - ICD-9 or ICD-9 CM diagnosis code 410; ICD-10 diagnosis code I21

Time & Place:

- By patient residence (DHC, county) and year

Known Existing Indicator Source(s):

- Statistics Canada/CIHI's Health Indicators Framework
<http://www.statcan.ca/english/freepub/82-221-XIE/00604/defin3.htm#ef>

<u>Indicator:</u> May Not Require Hospitalization (MNRH)
<u>Measure:</u> $\frac{(\text{Total number of inpatient hospital admissions with an MNRH Case Mix Group (CMG)})}{(\text{Total mid - year population \{age adjusted\}})} \times 100,000$
<u>Data Source:</u> Provincial Health Planning Database, Ministry of Health and Long-Term Care
<u>Methodological Notes:</u> • Percentage of patients hospitalized in acute care facilities for conditions or procedures that experts say often allow outpatient treatment not requiring admission. These hospitalizations are derived from the CMG methodology. • MNRH CMGs include: ○ 055, 057, 063, 088-093, 113-116, 229, 232-234, 266, 271, 378, 380-382, 409, 411, 413, 414, 512, 514, 534-536, 538, 554, 555, 563, 585-587, 596, 619, 791-797, 852, 893, 906, 909 • CMGs associated with MNRH do not suggest that a patient must be treated in an outpatient setting, as these patients may have a justifiable reason for inpatient admission
<u>Time & Place:</u> • By patient residence (DHC, county) and year
<u>Known Existing Indicator Source(s):</u> • Statistics Canada/CIHI's Health Indicators Framework www.statcan.ca/english/freepub/82-221-XIE/free.htm

Indicator:

Ambulatory Care Sensitive Conditions (ACSC)

Measure:

$$\frac{(\text{Total number of hospital admissions for ACSC})}{(\text{Total mid - year population \{age adjusted\}})} \times 100,000$$

Data Source:

Provincial Health Planning Database, Ministry of Health and Long-Term Care

Methodological Notes:

- Age-standardized acute care hospitalization rate for conditions where appropriate ambulatory care prevents or reduces the need for admission to hospital
- ACSC:
 - *Most responsible* diagnoses of ICD-9/ICD-9 CM diagnosis codes 250, 291, 292, 300, 303-305, 311, 401-405, 493; ICD-10 diagnosis codes E10, E11, E13, E14, F10, F11, F40-F42, F44, F48, F55, F99, I1, J45, F32.0, F32.9, F34.1, F45.0-F45.2, F53.0, F68.0, F12-F19 (excluding F12.6, F13.6, F14.6, F15.6, F16.6, F17.6, F18.6, F19.6)
- While not all admissions for ACSCs are avoidable, it is assumed that appropriate prior ambulatory care could prevent the onset of this type of illness or condition, control an acute episodic illness or condition, or manage a chronic disease or condition. A disproportionately high rate is presumed to reflect problems in obtaining access to primary care.

Time & Place:

- By patient residence (DHC, county) and year

Known Existing Indicator Source(s):

- Statistics Canada/CIHI's Health Indicators Framework www.statcan.ca/english/freepub/82-221-XIE/free.htm

Indicator:

Physicians Enrolled In Family Health Networks (FHNs), Primary Care Networks (PCNs), Or Family Health Groups (FHGs)

Measure:

$$\frac{\left(\begin{array}{c} \text{Total number of family physicians in FHNs, PCNs, or FHGs} \\ \text{by region of employment} \end{array} \right)}{(\text{Total regional mid - year population})} \times 100,000$$

Data Source:

Ministry of Health and Long Term Care, Primary Health Care and Physician Policy Branch
(note: Until August, OFHN is arm's length, but will be transferred to above branch)

Methodological Notes:

- FHNs, PCNs, and FHGs provide access to primary care treatment and advice 24-hours/day, 7 days/week
- The goals of these networks include improved access, quality and continuity of care; increased patient and provider satisfaction; and increased cost-effectiveness of health care services.
- Total number of FHNs, PCNs and FHGs does not accurately reflect availability of primary care delivery as there are other primary care delivery models not included in the above networks (such as health service organizations, community health centres, etc.)

Time & Place:

- By provider county (OFHN uses their own regions, but should be able to convert using PCCF)
- The evolution of, and new development of primary care delivery models do not allow for trending over time

Known Existing Indicator Source(s):

<u>Indicator:</u> Readmission Rates Mental Health
<u>Measure:</u> $\frac{\left(\text{Total number of individuals with an admission for a mental health - related diagnosis within 12 months of being discharged for the same diagnosis} \right)}{\left(\text{Total mid - year population \{age adjusted\}} \right)} \times 100,000$ $\frac{\left(\text{Total number of individuals with an admission for depression within 12 months of being discharged for the same diagnosis} \right)}{\left(\text{Total mid - year population \{age adjusted\}} \right)} \times 100,000$
<u>Data Source:</u> Provincial Health Planning Database, Ministry of Health and Long-Term Care
<u>Methodological Notes:</u> • Risk adjusted rate of unplanned readmission following discharge for MI or depression. A case is counted as a readmission if it is for a relevant diagnosis and occurs within the 12-month period following discharge. • Mental Illness: ○ ICD-9 Chapter 5; ICD-10 Chapter 5 • Depression: ○ ICD-9 diagnosis codes 2961, 311, 2980, 3004; ICD-10 diagnosis codes F32.0-F32.3, F32.8, F32.9, F33.0-F33.4, F33.8, F33.9
<u>Time & Place:</u> • By patient residence (DHC, county) and year
<u>Known Existing Indicator Source(s):</u>

Integration: Primary Care

<u>Indicator:</u> Patients Enrolled In Family Health Networks (FHNs), Primary Care Networks (PCNs), Or Family Health Groups (FHGs)
<u>Measure:</u> Number of patients registered with FHNs, PCNs, and FHGs
<u>Data Source:</u> Ministry of Health and Long Term Care, Primary Health Care and Physician Policy Branch (NB until August, OFHN is arm's length, but will be transferred to above branch)
<u>Methodological Notes:</u> • FHNs, PCNs, and FHGs provide access to primary care treatment and advice 24-hours/day, 7 days/week • The goals of these networks include improved access, quality and continuity of care; increased patient and provider satisfaction; and increased cost-effectiveness of health care services • Total number of FHNs, PCNs and FHGs does not accurately reflect availability of primary care delivery as there are other primary care delivery models not included in the above networks (such as health service organizations, community health centres, etc.)
<u>Time & Place:</u> • By provider county(OFHN uses their own regions, but should be able to convert using PCCF) • The evolution of, and new development of primary care delivery models do not allow for trending over time
<u>Known Existing Indicator Source(s):</u>

Integration: Primary Care

Indicator:

Emergency Department (ED) Visits For Conditions That May Be Treated In Alternative Primary Care Settings

Measure:

$$\frac{\left(\begin{array}{c} \text{Total number of ED visits for conditions that may be treated} \\ \text{in alternative primary care settings} \end{array} \right)}{(\text{Total mid - year population age 1- 74 \{age adjusted\}})} \times 100,000$$

Data Source:

Provincial Health Planning Database, Ministry of Health and Long-Term Care

Methodological Notes:

- Conditions that may be treated in alternative primary care settings where available:
 - Otitis Media: ICD-9 codes 381.0–381.4, 382
 - Cystitis: ICD-9 codes 595, 599.0
 - Upper Respiratory Infections (URI): ICD-9 codes 460–464.1, 465, 472–474
 - Conjunctivitis: ICD-9 codes 372.0–372.3, 077.9
- Exclude ages < 1 year and >74 years
- Exclude ED visits with triage level of 1, 2 or 3
- Exclude scheduled/planned ED visits
- Exclude ED visits resulting in an inpatient admission

Time & Place:

- By patient residence (DHC, county) and year

Known Existing Indicator Source(s):