

Identifying Outcome Indicators for Evaluating Services
Provided by Community Care Access Centres (CCACs)*

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Summary Paper

Identifying Outcome Indicators for Evaluating Services Provided by Community Care Access Centres (CCACs)

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1.0 Introduction

The objectives of this report are to propose a conceptual framework to evaluate the effectiveness of home care services in Ontario, and to identify potentially appropriate measures to assess the effectiveness of such services.

The need to identify outcome and performance measures and a framework for evaluation of home care services arises because of a number of different pressures. Health system restructuring, improvements in drugs and technology, and the aging of the population have dramatically increased the current and future demand and utilization of home care services. As a result, care has shifted into an arena where effectiveness research is in its infancy. Moreover, the decrease in care covered by the *Canada Health Act (CHA)* and the consequent increase in care not covered by the national standards enunciated under the *Act*, necessitate the introduction of some form of accountability for the continued safety and accessibility of care for Canadians. At the same time, a growing distrust of governments and the increase in consumerism has given rise to citizen demands for better public accountability of spending and reporting of service quality. Lastly, Ontario's reformed home care sector which relies on competitive contracting out of services to not-for-profit and for-profit provider agencies requires the identification and development of performance and outcome measures for the fair and effective selection of home care provider organizations by Ontario's Community Care Access Centres.

Home health managers, providers and policy-makers have a need for the development of performance and outcome measures on which to inform and base decisions. They continue to be frustrated by the lack of data concerning the costs and consequences of in-home services. This lack of evidence means: home care managers are limited in their ability to undertake evidence-based decisions; home care health professional and providers are limited in their ability to practice evidence-based care; and provincial and federal policy makers are limited in their ability to develop evidence-based health policy.

2.0 Data Sources

A comprehensive review of the research and grey literature on outcome indicators for services provided in the home, a collation of information on the development of in-home service outcome indicators currently underway in Canada and the U.S., and information gathered from contacts with key individual stakeholders form the information sources for this report.

3.0 Measuring Health and Effectiveness of Care

Outcome measures are necessary components for the evaluation of health and social care as well as individual and organizational performance. Outcomes are the results, changes in a given state (which also includes the prevention of decline) attributable to a given intervention. To obtain a measure of an outcome, one needs to take measures at two or more points in time to determine a change or lack of change that may be attributable to the particular intervention, or we take one measure and compare it to some population or condition-based norm.

Health outcomes can be defined as "...states or conditions of individuals and populations attributed or attributable to antecedent healthcare. They include changes in health

states, changes in knowledge or behaviour pertinent to future health states, and satisfaction with healthcare.”¹ Health outcomes are not only changes in health states but also include the maintenance or slower rate of decline of health status. Health outcomes provide a measure of the effectiveness of an intervention.

Performance measures have to do with the workings of the system or to do with the mechanics of providing care, as well as outcomes of interventions. “Performance measures are a broad managerial tool that encompass measurement of inputs (indicators of the resources essential to provide a service), processes or activities (indicators of how the resources are used), outputs (indicators of the services resulting from the use of those resources, and impacts (the effect of these outputs on other variables or factors).”²

Assessment tools are designed to measure outcomes and/or performance. While assessment tools may consist of a single-item, they usually contain multiple items. A multi-item tool may measure the amount of pain experienced by the care recipient, or measure the recipient’s physical functioning, e.g., range of motion, or measure the recipient’s ability to participate at a psycho-social level, e.g. to participate in leisure activities, or all three. Each item more or less represents an element of the overall concept to be measured. Numerical scores are assigned to the indicators which may be combined to form an overall score. One of the purposes of this paper is to review and appraise assessment tools used to evaluate services provided in the home.

4.0 Conceptual Framework

The conceptual framework we have developed for the assessment of home care services incorporates the range of in-home professional and non-professional services contracted by CCACs to service the needs of care recipients in Ontario. The framework is

sufficiently general that it provides an opportunity to assess outcomes and performance at multiple levels. The three dimensional cube in Figure 1 represents the home care services provided to care recipients under the responsibility of a particular CCAC as represented by $CCAC_1$. For Ontario there would be 43 “cubes” one for each CCAC as Figure 2 demonstrates.

On the vertical axis of the cube in Figure 1 are all the care recipients cared for by a single CCAC, grouped by health and social conditions, for example, diabetes, oncology, nephrology, etc. Included in this dimension are informal caregivers since some of the services provided in the home have an impact on them in alleviating the burden of their role.

On the horizontal axis of the cube in Figure 1 are all the home care services provided by $CCAC_1$, grouped according to type of service, for example, homemaking and personal support care, nursing, speech language therapy, case management, etc. The informal caregiver can technically be considered a provider of care, the impact of whose services theoretically should be assessed and evaluated. However, the purpose of this report is to review and assess outcome and performance measures of care provided by the formal home care system. Therefore, care provided by the informal caregiver is not included as a type of service.

On the third axis of the cube, the depth dimension running from front to back, are all the agencies contracted with $CCAC_1$ to provide in-home services. Each “slice” of the three dimensional cube represents a single provider organization that holds a contract with $CCAC_1$ and the recipients to whom that agency provides care. The whole “cube” represents the particular CCAC, the provider agencies with whom they hold contracts and all the care

recipients to whom care is provided. (Note, some residents may receive care from multiple CCACs.)

The Ontario home care system is represented by 43 “cubes”, one for each CCAC, its service agencies and care recipients as shown in Figure 2.

In Figure 1, ‘ E_{ns} ’ represents the measure of service effectiveness (or outcomes) of services ‘s’ for a particular condition ‘n’ provided by Provider Agency 1. The intersection of the row representing Condition 3 and the column representing nursing would represent the effectiveness of nursing services provided by Provider Agency 1 to care recipients who have Condition 3 (e.g. diabetes).

‘ E_n ’ represents the measure of the effectiveness of the care provided by entire health and social care team of Provider Agency 1 for Condition ‘n’. E_s represents the measure of effectiveness of a particular type of care (e.g., nursing) provided by Provider Agency 1 across all conditions. Finally ‘E’ represents the measure of effectiveness of all services provided by Provider Agency 1 across all types of care recipients, while ‘ E_T ’ represents the measure of effectiveness for all services provided by all the agencies contracted by CCAC₁ to all of its care recipients.

In evaluating the effectiveness of services, we need to be clear whether we are assessing the effectiveness of services provided by, and to individuals or groups. For example, ‘ E_n ’ could represent the effectiveness of services provided by the complete health and social service team of Provider Agency 1 for all care recipients with Condition ‘n’, or it could represent the effectiveness of the members of a particular health and social service team providing care to a particular care recipient with condition ‘n’.

Similarly, 'E_s' could represent the effectiveness of care provided by all care providers 's' in Provider Agency 1 who provide care to care recipients across all conditions, or it could represent the effectiveness of care provided to all care recipients regardless of condition by an individual service provider.

Moreover, Figure 1 allows us to measure the effectiveness of all nursing care provided by all agencies contracted with CCAC₁ for Condition 1, or the team of health and social services provided by all agencies contracted with CCAC₁ for Condition 1. Indeed, the conceptual framework allows us to measure effectiveness of care at the micro (individual) level, the meso (agency or CCAC) level, or the macro (regional or provincial) level.

5.0 Criteria for Evaluating Indicators and Assessment Tools

Five criteria are used to assess the utility of particular tools identified in the literature. Three of these criteria are psychometric properties of the tools; that is, validity (does the tool measure what it purports to measure?), reliability (refers to the stability or consistency of the measure), and responsiveness (the ability of the tool to measure changes in health and social care outcomes or performance over time or across organizations). The last two criteria are feasibility (the administrative burden and financial cost of implementing the tool) and scope (the range of measures that the tool collects). Table 1 provides working definitions for the five criteria.

6.0 Current Initiatives

A number of initiatives are currently underway in both Canada and the US. In Canada, the project, Development of a National Indicators and a Reporting System for Home Care, mounted by the Canadian Institute for Health Information is the most ambitious one. While the CIHI initiative is very important, its objective is for the development of indicators

for reporting and comparison at the provincial and national level. The framework developed in this paper allows for assessments and comparisons at the micro, meso and macro level.³

The Canadian Council on Health Services Accreditation has launched the Achieving Improved Measurement (AIM) Program, the vision of which is to develop a better quality measurement system which allows for consistency of the accreditation process, comparability of results and sharing of good practice. In the AIM framework, quality is measured by four factors: responsiveness, client/community focus, system competency, and work life.⁴

In the U.S. in 1997, the Health Care Financing Administration required Medicare-certified Home Health Agencies (HHAs) to submit information necessary to develop a reliable case mix system. Home Health Agencies are required to implement the Outcome and Assessment Information Set (OASIS) tool and to collect OASIS outcomes data in order to qualify for reimbursement under Medicare. The Health Care Financing Administration's objective was to ensure quality outcomes for home health care recipients through the collection and use of standardized data. The OASIS system collects a vast array of information including personal identifiers, demographic information, financial information, health and social conditions, medical treatment, risk factors, living arrangements, safety hazards in a care recipient's residence, sanitation of residence, identity of people assisting the care recipient, and more.⁵

In February 1997 the American Joint Commission on Accreditation of Healthcare Organizations (JCAHO) introduced the ORYX (not an acronym) initiative which integrates outcomes and other performance measurement data into the accreditation process. The goal of this initiative is to create a more continuous, data-driven, comprehensive accreditation

process which not only evaluates a health care organization's methods of standards compliance but also the outcomes of these methods.^{6 7}

7.0 Overview of Assessment Tools

Table 2 provides a summary of assessment tools which have been used to measure and evaluate the health and social care outcomes provided in the home and the performance of agencies providing that care. For each tool, the table provides an assessment against the five evaluative criteria. Although many more assessment tools and indicators have been used in the evaluation of health and social care, this report only focuses on those already applied in the home setting.

8.0 Conclusions

The need to develop indicators and tools to evaluate the effectiveness of home care in Canada has been widely identified. While many indicators already exist to assess the care provided to acute care patients in institutions, these may not be appropriate for evaluating care in the home. Unlike acute care services provided in hospitals, care provided in the home presents many challenges and complexities. Home care currently lacks identifiable and measurable national or provincial standards. It is provided in a sector where care is funded by a mix of public and private financing, is delivered by not-for-profit and for-profit provider agencies, and where the major allocation of public resources is performed through competitive contracts. Moreover, unlike institutional settings, each home is different, varying in its appropriateness as a setting for care.

Nevertheless, despite these complexities, it is incumbent on governments and providers of home care to ensure the provision of safe, effective, and equitable care. The development of appropriate indicators and tools should guide policy development, evaluate

performance, enhance clinical practice, allow governments and agencies to plan and manage service provision.

9.0 Next Steps

The first steps in the development of home care indicators and assessment tools have been provided in this report. There are a number of stages that must follow. Because these tools are to be used by a number of different stakeholders for differing purposes, this report will be broadly disseminated to key interests. It is our intention to solicit feedback to further refine our thinking.

In February, a focus group with key stakeholders (home care provider organizations, CCACs, officials from the Ministry of Health and Long-Term Care, care recipient groups, and researchers) will be brought together to discuss the issues raised in this paper. In particular, discussion will focus on the indicators thought to be most useful to include in the evaluation of Ontario home care services and the priority in which these tools should be developed.

Appendix 1

HMRU Advisory Committee

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Figure 1: Conceptual Framework for the Evaluation of Home Care Services for Care Recipients and Care Provider Organizations Under A Single CCAC

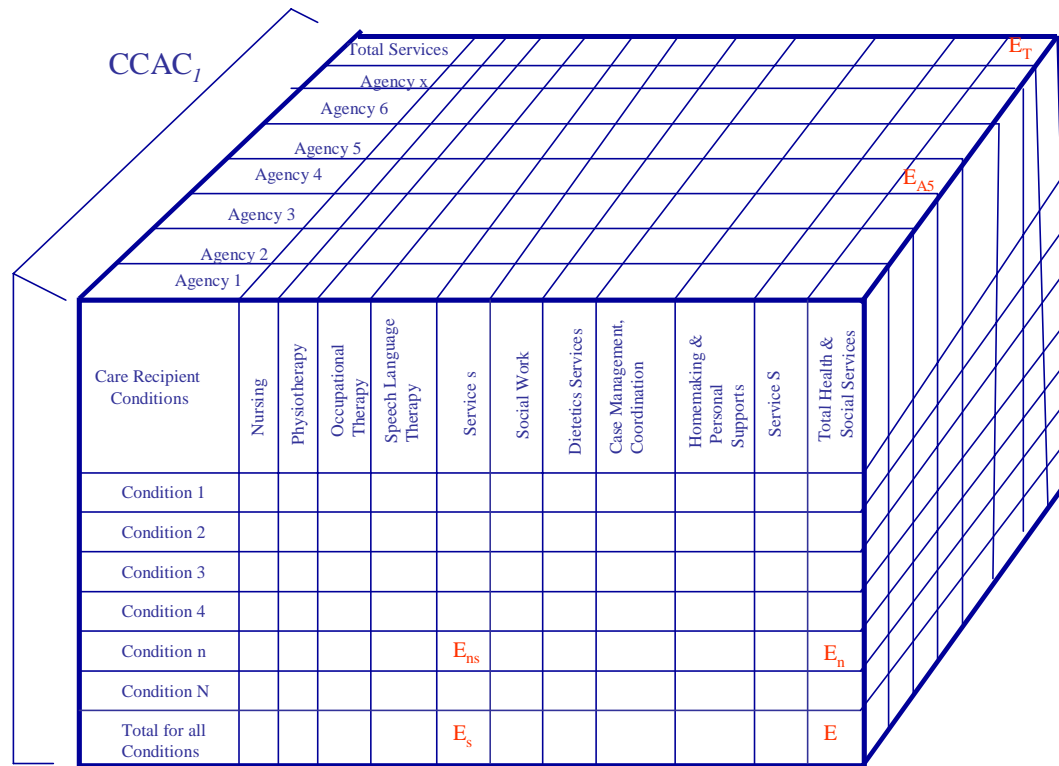


Figure 2: Conceptual Framework for the Evaluation of Home Care Services Across All CCACs

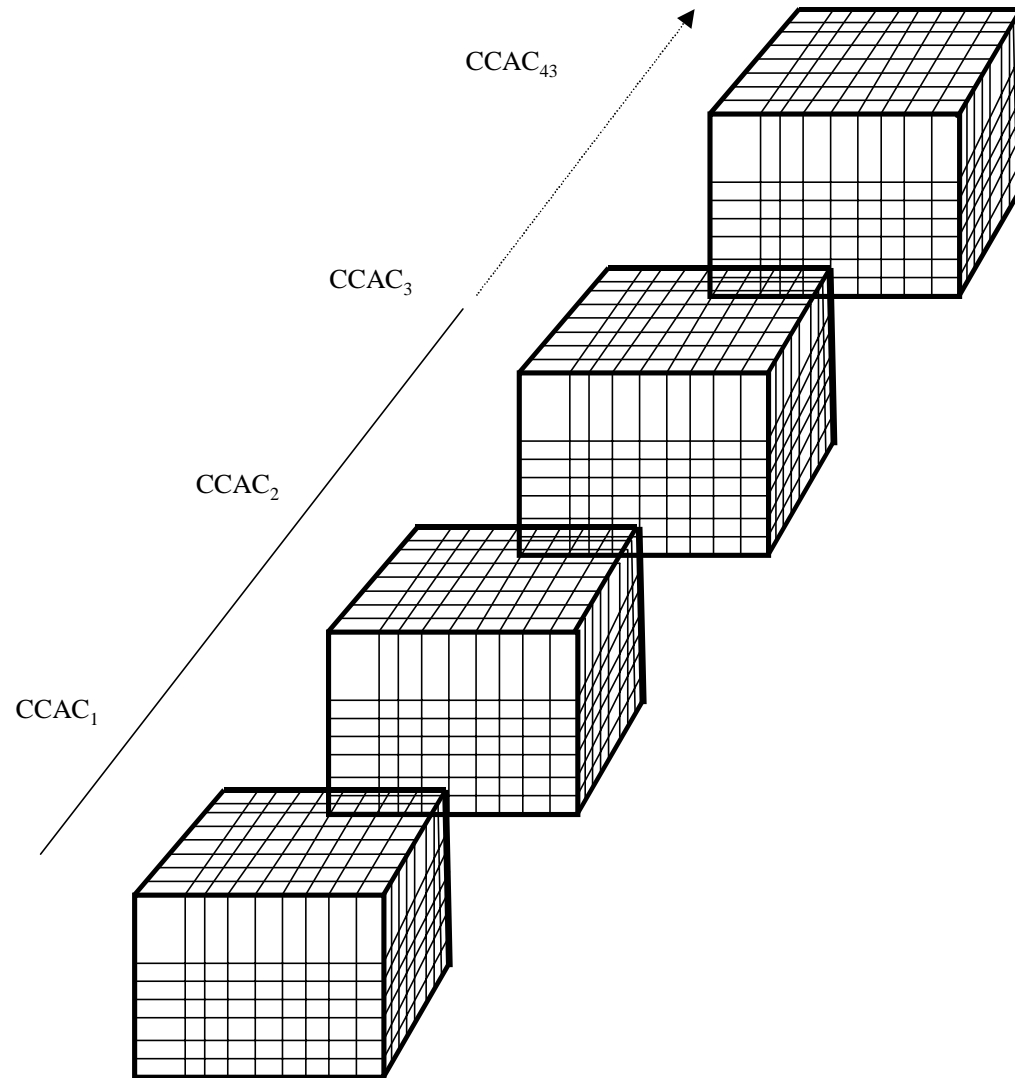


Table 1: Criteria for Evaluating Assessment Tools

Validity	<p>Validity refers to the ability to measure what is intended. There are four major types of validity:</p> <ul style="list-style-type: none"> • Face Validity: refers to the appearance that the test is indeed measuring what it intends to measure. • Content Validity: relies on judgements (rather than statistical properties) about whether items accurately represent the thing or universe being measured. • Construct validity: is used to describe a scale, index, or other measure of a variable that correlates with measures of other variables in ways that are predicted by, or make sense according to a theory of how the variables are related. • Criterion Validity: refers to the extent to which the ... measure predicts or agrees with a gold standard for the measure.
Reliability	<p>Reliability refers to the stability or consistency of a measure, i.e., consistency of items within the tool, or the consistency of a measure from one time to another or across raters.</p> <ul style="list-style-type: none"> • Inter-rater Reliability: examines the equivalence of the information obtained by different data gathers on the same or comparable groups of respondents. • Internal Consistency Reliability: This is used primarily for constructing and evaluating summary scales. It reflects the extent to which individual items of the same scale measure the same thing. • Test-Retest Reliability: reflects the degree of correspondence between answers to the same question asked of the same respondents at different points in time. This measure is less reliable when measuring health outcomes.
Responsiveness	<p>Responsiveness measures the ability of an instrument to measure changes in health and social outcomes over time or in performance outcomes between different providers, organizations, regions or systems over time or in comparison. It can be assessed by the effect size (mean change score / standard deviation of baseline score).</p>
Feasibility	<p>Feasibility identifies the resources (financial, human resources) and complexity (time, ease) involved in administering a particular tool. For example, the type of training that is required to conduct and score the assessment tools and the costs associated with implementing the tool (including the time to complete and the ease of interpreting the too).</p>
Scope of Outcomes Measured by the Tool	<p>Scope of outcomes reflects the breadth or range of measures that the tool collects. For instance, a generic measure with multiple dimensions or a specific tool relevant to only one population.</p>

Table 2: Summary of Assessment Tools

Assessment Tools	Reliability	Validity	Responsiveness	Feasibility	Scope
Criteria	✓ = tests have been conducted	✓ = tests have been conducted	✓ = tests have been conducted	Low (too difficult to administer, too difficult to train, too costly, too time consuming etc.) Medium (test is comprehensive but very time-consuming/ average cost/ no real training issues, test does not take too long to administer) High , (test can be used in the home setting – although it may also be used in other settings, easy to train to administer, cost is not too high, test is short)	Micro (limited to specific conditions, examines more than one disease condition, multi-dimensional across disease conditions) Meso (limited to specific organizations, somewhat comprehensive across organizations) Macro (limited to specific organizations, enables system level comparison)
Diagnostic Cost Group	✓	✓	✓	High	Macro -- enables system level comparison
Barthel Index	✓	✓	✓	Medium	Micro –limited to specific conditions
Stroke Rehabilitation Assessment of Movement	✓	✓	N/A	High	Micro – limited to specific conditions
Katz Index of Activities of daily Living	✓	✓	N/A	N/A	Micro – limited to specific conditions
Functional Independence Measure	✓	✓	✓	Medium	Micro –limited to specific conditions
PULSES	✓	✓	✓	High	Micro – examines more than one disease condition
Quality of Life Index	✓	✓	✓	High	Micro –limited to specific conditions
Functional Status Questionnaire	✓	✓	✓	High	Micro— examines more than one disease condition
Mc Master Health Index Questionnaire	✓	✓	✓	High	Micro – examines more than one disease condition
Caregiver Strain Index	✓	✓	N/A	N/A	Micro— examines more than one disease condition

Assessment Tools	Reliability	Validity	Responsiveness	Feasibility	Scope
OARS Questionnaire	✓	✓	N/A	Low	Micro – Limited to specific disease conditions
RAI-HC	✓	✓	N/A	Medium	Micro – multidimensional across disease conditions
OASIS	✓	✓	✓	Medium	Micro – multidimensional across disease conditions
SF-36	✓	✓	✓	High	Micro – multidimensional across disease conditions
Quality of Life Profile (QOLPSV)	✓	✓	✓	Medium	Micro – multidimensional across disease conditions
Dartmouth COOP Charts	✓	✓	✓	High	Micro – multidimensional across disease conditions
Goal Attainment Scoring	✓	✓	✓	Medium	Micro – multidimensional across disease conditions

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