

Evidence *in* Context

Issue: Community-Based Service Models for Seniors
Released: December 2013

Health research — synthesized and contextualized for use in Newfoundland & Labrador

Community-Based Service Models for Seniors in Newfoundland & Labrador

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This contextualized health research synthesis report was prepared by the Newfoundland and Labrador Centre for Applied Health Research (NLCAHR), Memorial University. It was developed through the analysis, interpretation and synthesis of scientific research and/or health technology assessments conducted by other parties. It also incorporates selected information provided by experts in the subject areas and synthesis methodologies. This document may not fully reflect all the scientific evidence available at the time this report was prepared. Other relevant scientific findings may have been reported since completion of this synthesis report.

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About This Report

About NLCAHR

The Newfoundland and Labrador Centre for Applied Health Research, established in 1999, contributes to the effectiveness of health and community services in Newfoundland and Labrador and to the physical, social, and psychological well-being of its population. NLCAHR accomplishes this mandate by building capacity in applied health research, supporting high-quality research, and fostering the effective use of research evidence by decision makers and policy makers in the provincial healthcare system.

About the Contextualized Health Research Synthesis Program

In 2007, NLCAHR launched the Contextualized Health Research Synthesis Program (CHRSP) to provide research evidence that would help guide decision makers in the provincial health system on issues of pressing interest to Newfoundland and Labrador. Instead of conducting original research, CHRSP analyzes findings from high level research already conducted in the subject area, such as systematic reviews, meta-analyses and health technology assessments. Findings are then synthesized and subjected to a systematic process of contextualization: they are analyzed in terms of their applicability to the conditions and capacities of the unique context of Newfoundland and Labrador. Our contextual analysis includes assessing the specific forms an issue may take in this province as well as the applicability of any proposed solutions and methods to locally available resources, infrastructure, human resources, cultural conditions and financial capacities. CHRSP uses a combination of external experts and local networks to carry out and contextualize the research synthesis and to facilitate the uptake of the results by research users. CHRSP focuses on three types of projects: health services/ health policy projects, health technology assessment (HTA) projects, and projects that combine the two to examine processes for the organization or delivery of care involving a health technology.

About Our Partners

For this project, NLCAHR partnered with the Department of Health and Community Services, Government of Newfoundland and Labrador. Senior administrators from the Department proposed the original research topic and participated on the CHRSP Project Team through the contextualization of the synthesis results to the drafting of the final report. The other members of the CHRSP Project Team, including senior decision makers from the four provincial Regional Health Authorities, researchers and practitioners, provided additional contextualization analysis and contributions to the writing of the report.

Possible Uses of the Report

This report provides a synthesis of the relevant research-based evidence on the clinical and cost effectiveness of integrated care models for seniors and their caregivers living in the community. The report also provides a synthesis of several less complex interventions for the same patient/client populations, including caregiver support, fall prevention programs, home visits, respite care, transitional care and end-of-life care. In addition to the synthesis of research-based evidence, this report also provides an analysis of local contextual factors and the impact they may have on the reported clinical and cost effectiveness of different interventions, programs, and approaches. This report is intended to inform and assist decision makers in the Department of Health and Community Services of Newfoundland and Labrador and the province's Regional Health Authorities who are involved in the planning, implementation, and delivery of services for older patients/clients who live at home and for their caregivers. This report is also intended for practitioners, researchers, and other stakeholders involved in providing services to both caregivers and to older patients/clients who live at home.

Decision makers from other jurisdictions, especially those with similar geography, resources and potential client populations, may also find the content helpful. The report includes explanations of research terms and technical language; accordingly, there is no need to have a specialized medical or health background in order to understand its content.

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The CHRSP Project Team

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Acronyms

AMSTAR	Assessment of Multiple Systematic Reviews
ADLs	Activities of Daily Living
CCC	Computerised Clinical Chart
CHOICE	Comprehensive Home Option for Integrated Care of the Elderly
CHRSP	Contextualized Health Research Synthesis Program
CI	Confidence Interval
CBSMS	Community-Based Service Models for Seniors
CRMS	Client Referral Management System
DHCS	Department of Health and Community Services
EICP	Enhancing Interdisciplinary Collaboration in Primary Healthcare
EMR	Electronic Medical Record
ES	Effect Size
FAO	Financial Assessment Officer
GMD	Group Mean Differences
HTA	Health Technology Assessment
IADLs	Instrumental Activities of Daily Living
ICER	Incremental Cost-Effectiveness Ratio
InterRAI	Inter-Resident Assessment Instrument: <ul style="list-style-type: none"> • InterRAI HC: Inter-RAI Home Care • InterRAI CH: Inter-RAI Community Health
MDS	Minimum Data Set
OR	Odds Ratio
OT	Occupational Therapy/Therapist
PACAS	Provincial Advisory Council on Aging and Seniors
PICO	Population, Intervention, Comparator, Outcome
PRISMA	Program of Research to Integrate the Services for the Maintenance of Autonomy
PT	Physiotherapy/therapist
QALY	Quality-Adjusted Life Year
RCT	Randomized Controlled Trial
RHA	Regional Health Authority
RN	Registered Nurse
RR	Relative Risk
SAP	Special Assistance Program
SIPA	System of Integrated Care for Older Persons
SLP	Speech-Language Pathologist
SRC-NL	Seniors' Resource Centre of Newfoundland and Labrador
SW	Social Worker
VON	Victorian Order of Nurses

Glossary

AMSTAR	An 11-item instrument used to assess the methodological rigor of systematic reviews.
Confidence Interval	A measure of the reliability of an estimate. A CI specifies a range within which the true value of the estimated parameter is expected to lie. For ratios, if the CI spans the 1 value, e.g. 0.8 to 1.3 for a relative risk, the comparison in question is not statistically significant. Likewise, if the CI spans the 0 value, e.g. -2.4 to 3.2 for the difference in a test score, then the comparison in question is also not statistically significant. When the CI spans those critical values, the studied groups cannot be considered different from one another on the measure in question.
Cost-effectiveness study	A study in which the monetary costs of an intervention are considered in terms of a single common health outcome that is measured in natural units. Examples of such outcomes include: the number of years with full mobility gained or the number of placements in long-term care deferred.
Cost-utility study	A study in which the monetary costs of an intervention are considered in terms of a single outcome, or considered in terms of multiple outcomes that are weighted or valued in relative terms. The combined outcome is measured in units that capture both the quantity and quality of the effects of the intervention, with the most common measure being the quality-adjusted life-year or QALY.
Effect size	A measure of the strength of a relationship between two variables, for example between a treatment for a health condition and recovery from that health condition. Effect sizes may be quantified by a range of different measures, including correlations, differences in means and relative risks.
Effectiveness	The ability of an intervention to produce the desired beneficial effect in actual usage.
Efficacy	The ability of an intervention to produce the desired beneficial effect in expert hands and under ideal circumstances.
Grey literature	Research that is published non-commercially, that may include reports carried out by governments, health authorities and not-for-profit associations.
Health technology assessment	A multidisciplinary field of policy analysis that studies the medical, social, ethical and economic implications of development, diffusion, and use of health technology.
Home support services	Non-professional services that aim to preserve independence of older persons and those with disabilities.
Home care services	Home care is an array of services, provided in the home and community setting, that encompasses health promotion and teaching, curative intervention, end-of-life care, rehabilitation, support and maintenance, social adaptation and integration and support for the family caregiver.
Incremental cost-effectiveness ratio	The ratio of the difference in costs between an intervention group and a control group to the difference in outcomes or effects between the two groups. Costs are most often measured in monetary units, while outcomes or effects are most often measured in terms of QALYs.

Integrated care	A concept bringing together inputs, delivery, management and organization of services related to diagnosis, treatment, care, rehabilitation and health promotion. Integration is a means to improve the services in relation to access, quality, user satisfaction and efficiency (1).
InterRAI	<p>An integrated and standardized suite of assessment tools, including several tools for older patient/client populations. These tools are used by clinicians, healthcare administrators and decision makers in the planning and implementation of services for patients/clients. The Inter "Resident Assessment Instrument" was originally designed for older patients/clients in long-term care facilities, and was made up of a core set of assessment items called the Minimum Data Set (MDS) and a series of more focused and specific assessment items called the Resident Assessment Protocols (RAPs) (2). Since its initial development, the InterRAI has expanded to include a range of patient/client populations living in different settings, including:</p> <ul style="list-style-type: none"> • InterRAI Community Health: The InterRAI CH consists of a core assessment instrument, the Community Health Assessment (CHA) and four supplemental instruments designed for specific problems. The InterRAI CH instruments are designed for a range of settings from independent living to assisted living, and are designed for a range of patient/client populations including older people. The instruments focus on assessing the needs and preferences of patients/clients with typically higher levels of need (3). • InterRAI Home Care: The InterRAI HC is an assessment tool for patients/clients who are living at home, including but not limited to older people, and who have chronic needs and post-acute care needs. It focuses on the patient/client's functioning and quality of life with the objective of identifying and facilitating appropriate referrals for services (4).
Meta-analysis	A type of systematic review that uses statistical techniques to quantitatively combine the findings from previous primary research studies.
Minimum Data Set	A part of the initial Resident Assessment Instrument (RAI) for nursing homes on which the current InterRAI is based, it contains the core assessment items required for a comprehensive assessment of a long-term care resident, covering a wide range of functional domains, including status in terms of cognition, communication, activities of daily living, continence, psychosocial well-being, disease diagnoses, and health conditions (2).
Partially integrated care	Interventions of varying types and duration that are delivered by one or more health professionals and that may include: an initial assessment, education and counselling, fall prevention, and community-based care post-hospital discharge.
Primary care	A division of primary healthcare (see below) that focuses on the provision of healthcare services that relate to the diagnosis and treatment of illness, illness and injury prevention, and health promotion (5).
Primary healthcare	An approach to health that encompasses all health-related services, including income, housing, environment and education, that were traditionally not considered part of the healthcare system (5). Primary purposes are to provide first-contact services such as family physicians and to coordinate patient movement throughout the system (5).

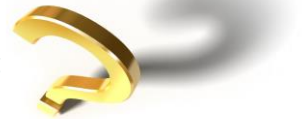
Odds ratio	The ratio of the likelihood of one outcome occurring in one group compared to the likelihood of it happening in another group. An odds ratio of 1 indicates that there is no difference in the likelihood of the outcome happening in one group or another.
QALY	A measure that combines time and an assessment of quality of life. QALY stands for “quality adjusted life year.” A QALY unit is based on a scale that considers one year of life lived in perfect health worth 1 QALY. A year of life that is lived in a state of less than perfect health is worth less than 1 QALY. The quality of life is quantified as “the utility value,” a measure of the state of health of the person in question. To get a QALY value, the utility value is multiplied by the years lived in that state: UTILITY x TIME = QALY. QALYs are expressed in terms of “years lived in perfect health.” For example, half a year lived in perfect health is equivalent to 0.5 QALYs, the same as 1 year of life lived in a compromised state of health with utility 0.5 (6).
Randomized controlled trial	A type of primary research in which participants are randomized with regard to treatment, with the objective of balancing the impacts of confounding factors that may exist among the participants.
Relative risk	<p>A measure of the likelihood that an exposure will have a particular outcome. In the case of health services, RR is the ratio of the probability of an outcome occurring in a group that received the health service compared to the probability of its occurring in a control group that did not receive the health service. For example, one group of seniors living in the community receive intensive home visits as a part of their community health services and living at home at a follow up of one year is the outcome of interest. In this case, an RR is ratio of the probability that this group of seniors will be living at home in a year's time to the probability that another matched group of seniors, who are not receiving home visits, will be at home:</p> <ul style="list-style-type: none"> • RR of 1 means that there is no difference between the two groups of seniors; • RR of more than 1 means the seniors who received the home visits are more likely to still be living at home in the community; • RR of less than 1 means the seniors who received the home visits are less likely to still be living at home in the community.
Respite care	<p>A short-term (one day) to medium-term (up to two weeks) service in which a patient/client is cared for by someone other than the caregiver. Respite care may be provided in several settings:</p> <ul style="list-style-type: none"> • Day care: The patient/client spends the day in a program administered in a centre, which may be in a hospital or long-term care facility, and returns home in the evening. • In-home: Personal attendants care for the patient/client in the home of the latter. • Institutional: The patient/client lives for a short to medium term outside of their home. The setting may be an acute care hospital, a long-term care facility or another institutional facility. Patients/clients may also live in private institutions including a personal care home or a private long-term care facility (retirement home/nursing home).

Standard care	The usual services and treatments a patient/client would receive from their health and social services system. This term refers to the comparison group in a research study where the experimental design compares an intervention group against a group drawn from the larger population. The services and treatments involved in 'standard care' may vary between studies, and as a result the term tends to mean a heterogeneous set of services and treatments.
Systematic review	A literature review, focused on a specific and explicit research question that tries to identify, select, appraise and synthesize published and unpublished research evidence relevant to that question.
Usual care	Another term for 'standard care.'

The Research Question

“ What does the scientific literature tell us about the characteristics of models of integrated primary medical care and community services for supporting community-dwelling older persons in Newfoundland and Labrador with ADL/IADL disabilities and mild to complex chronic health conditions (including dementia) and their caregivers and about the effectiveness of these models in terms of health and economic outcomes for clients, caregivers, and the health system? ”*

*ADL= Activities of Daily Living | IADL= Instrumental Activities of Daily Living



Key Messages from this Report

The following summarizes findings in this report for which the research-based evidence indicated a **very high** level of certainty:

Very High Level of Certainty

- **Geriatric Assessment**, as an activity of integrated care or as a stand-alone intervention, is consistently and significantly effective for maximizing the time older adults live at home and for reducing hospitalizations among frail older adults.
- **Case management**, when implemented with appropriate patients/clients, is significantly and consistently effective for older adults living in the community, in terms of enabling them to remain in the community, improving appropriate service use, and prolonging autonomy.
- Several well-established **community-based fall prevention exercise programs**, including individual and group exercise programs, have been shown to significantly reduce the occurrence of falls among seniors living at home. Environmental fall prevention programs that focus on home safety and personal mobility are also effective for high-risk older adults.

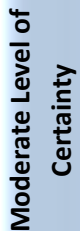
The following summarizes findings in this report for which the research-based evidence indicates a **high** level of certainty



High Level of Certainty

- The evidence indicates that models of **Partially Integrated Care** have been shown to help older adults stay in their homes and to reduce hospital admissions whereas the evidence concerning Fully Integrated Care is unclear or of low quality.
- Some forms of **support group**, including psycho-educational and educational training, are consistently effective at reducing caregiver burden. These support groups, in addition to mutual support groups, can also improve caregiver health and wellbeing.
- Community-based models of **respite care** have been shown to be beneficial for some, but not all, caregivers and for some, but not all, outcomes of interest. Respite care appears to be of limited effectiveness in supporting caregivers and patients/clients with dementia
- Preventive **home visits** that include health promotion reduce the risk of mortality among at risk older adults.

The following summarizes findings in this report for which the research-based evidence indicates a **moderate** level of certainty:



Moderate Level of Certainty

- **Facilitated access** to health and social services appears to be a critical component of effective integrated care programs.
- The **involvement of primary care health service providers**, including family physicians and community-based nurses, appears to be a critical component of effective integrated care programs.

Introduction

About the Topic

The Department of Health and Community Services (DHCS) initiated the Community-Based Service Models for Seniors (CBSMS) project by proposing the topic as a priority for study under the Contextualized Health Research Synthesis Program (CHRSP). The DHCS sought evidence from CHRSP concerning the effectiveness of various service models that support seniors living at home and their caregivers. The study focused particularly on 'integrated care' models as recommended by the Health Council of Canada (7), where integrated care was understood to mean coordinated primary medical and community care that includes both health and social services. The key objective of the project was to discover strategies and approaches that will enable and empower seniors to stay in their communities, or to return to them for as long as they wish, provided that they have a safe home environment and an acceptable quality of life.

In January, 2012, the CBSMS Project Team met to finalize the CHRSP research question and to establish the parameters for the study. Following a preliminary search of the research evidence and consultations among team members, the research question was finalized as:

What does the scientific literature tell us about the characteristics of models of integrated primary medical care and community services for supporting community-dwelling older persons in Newfoundland and Labrador with ADL/IADL disabilities and mild to complex chronic health conditions (including dementia) and their caregivers and about the effectiveness of these models in terms of health and economic outcomes for clients, caregivers, and the health system?

Decision makers and practitioners on the CBSMS Project Team prioritized three general outcomes as being of particular interest:

1. **Residency status of the patient/client:**

Does the intervention increase the time that the patient/client remains at home and, if so, by how much?

1. **Quality of life:**

Does the intervention maintain or improve quality of life measures for the patient/client (and caregiver)?

2. **Healthcare utilization:**

Does the intervention change the type, frequency or intensity of the patient/client's utilization of healthcare services and, if so, in what ways and to what extent?

This study takes special notice of any variables that are metrics for the above outcomes, and how a given intervention will have an impact on those variables.

In addition to a primary focus on integrated care for older adults living in the community, the CHRSP Project Team also conducted *contextualized* syntheses on the following individual elements of community-based services for seniors:

1. Caregiver supports: caregivers of seniors with dementia
2. Caregiver supports: respite care
3. End-of-life care
4. Fall prevention programs
5. Home visits
6. Transitional care

Each of these services has been developed in Canada and other countries independently of integrated models of care. These services have also been implemented, to varying degrees, within the Regional Health Authorities (RHAs) of Newfoundland and Labrador. By including these services in the current project, we were able to:

- assess the available research-based evidence for these existing services for seniors;
- compare each of these services to fully integrated models of care in terms of their reported health effectiveness and cost effectiveness; and
- consider the impacts of local contextual factors on each of these services.

Background

Certain demographic trends currently evident in Newfoundland and Labrador prompted this study on Community-Based Service Models for Seniors (CBSMS). Older persons in the province are living longer than they did in previous generations. They are also living with more frailty and chronic disease than ever before. Meanwhile, community-based medical support technologies have advanced considerably and are increasingly available to patients/clients across the province. These technologies can help extend the time that senior citizens are able to remain in their homes.

At the same time, the proportion of older persons in the province's overall population is increasing—particularly in rural and remote parts of the province. Young people are migrating, most often for work, from small and medium-sized communities to larger population centres in Newfoundland and Labrador or they are leaving the province altogether. Older adults tend to remain in small and medium-sized communities, while others are now returning to these communities from outside the province to retire (8-11). Seniors in the province have traditionally relied on younger family members for unpaid or informal care. This informal style of care provides an estimated 80% of the community-based care that seniors have traditionally received (10), but this component of care is now eroding.

These factors, combined with traditionally high rates of home ownership by seniors in the province—estimated to be as high as 84% (10)—and the desire of people in Newfoundland and Labrador to remain in their homes as long as possible (12), mean that seniors in the province are both able to, and want to, remain at home in their own communities for increasing periods of time. As a result of these factors, the health system recognizes the need to assist healthy seniors, as well as those with mild-to-moderate disabilities, to age in place, at home.

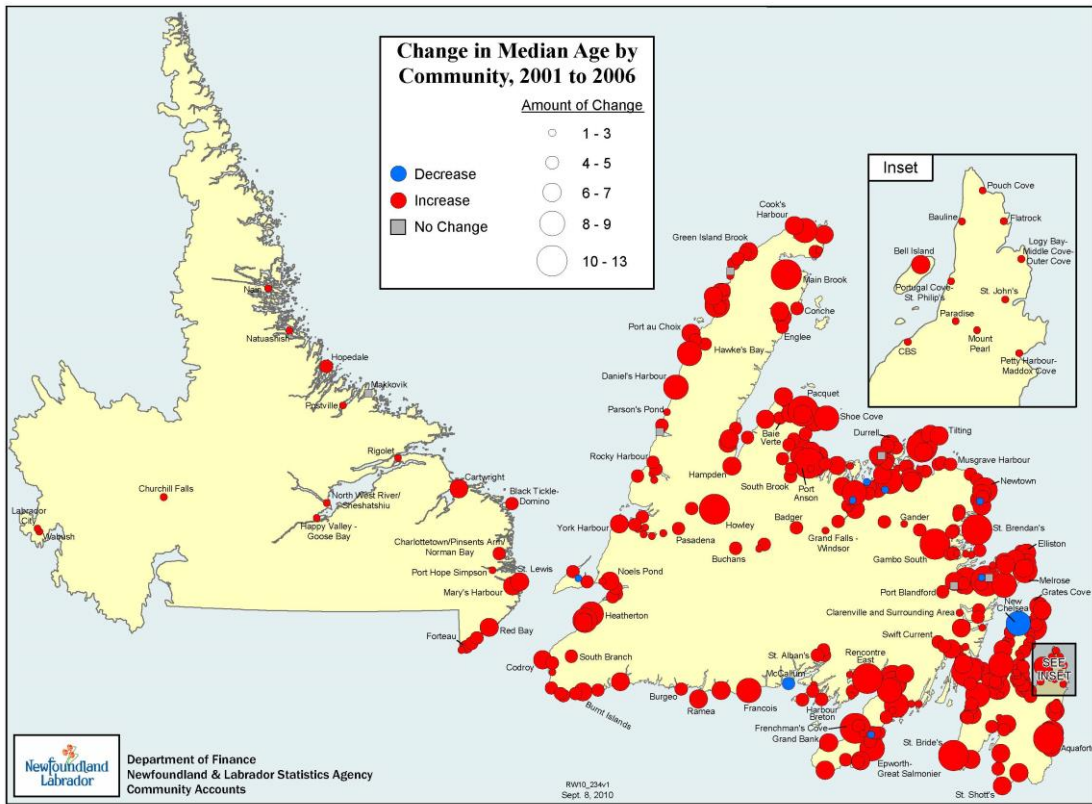


Figure 1: Change in Median Age by Community, in Newfoundland & Labrador: 2001 to 2006
 Source: Government of Newfoundland and Labrador Department of Finance, NL Statistics Agency

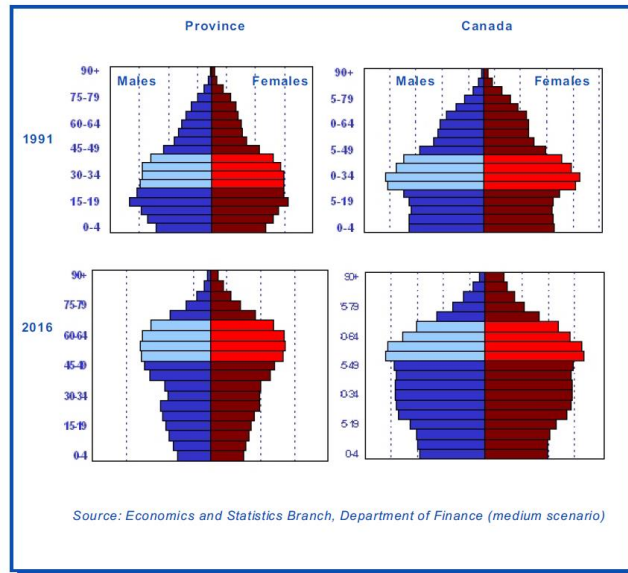


Figure 2: Projected Demographic Trends for an Aging Population: Newfoundland & Labrador vs. Canada: 1991 and 2016
 Source: Government of Newfoundland & Labrador Department of Finance/Economics and Statistics

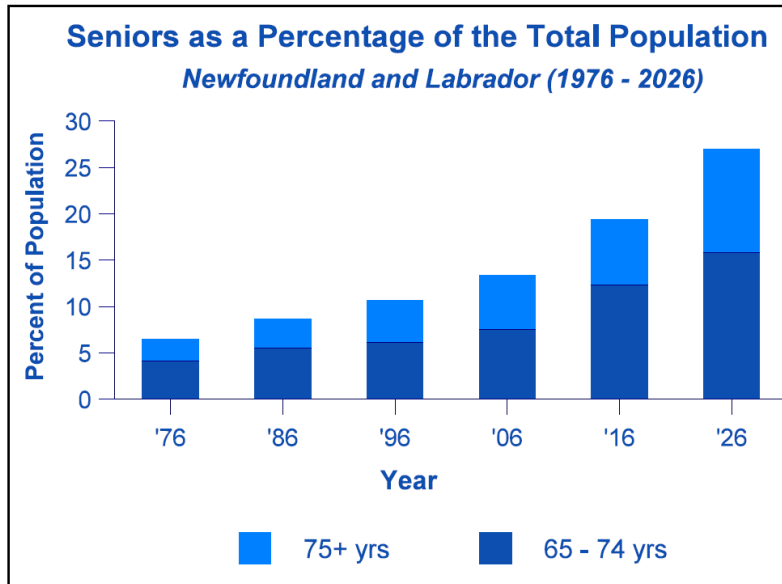


Figure 3: Seniors as a Percentage of the Total Population Newfoundland and Labrador: 1976 to 2026 Medium Scenario as of January 2004 Source: Government of Newfoundland and Labrador Department of Finance/ Economics and Statistics

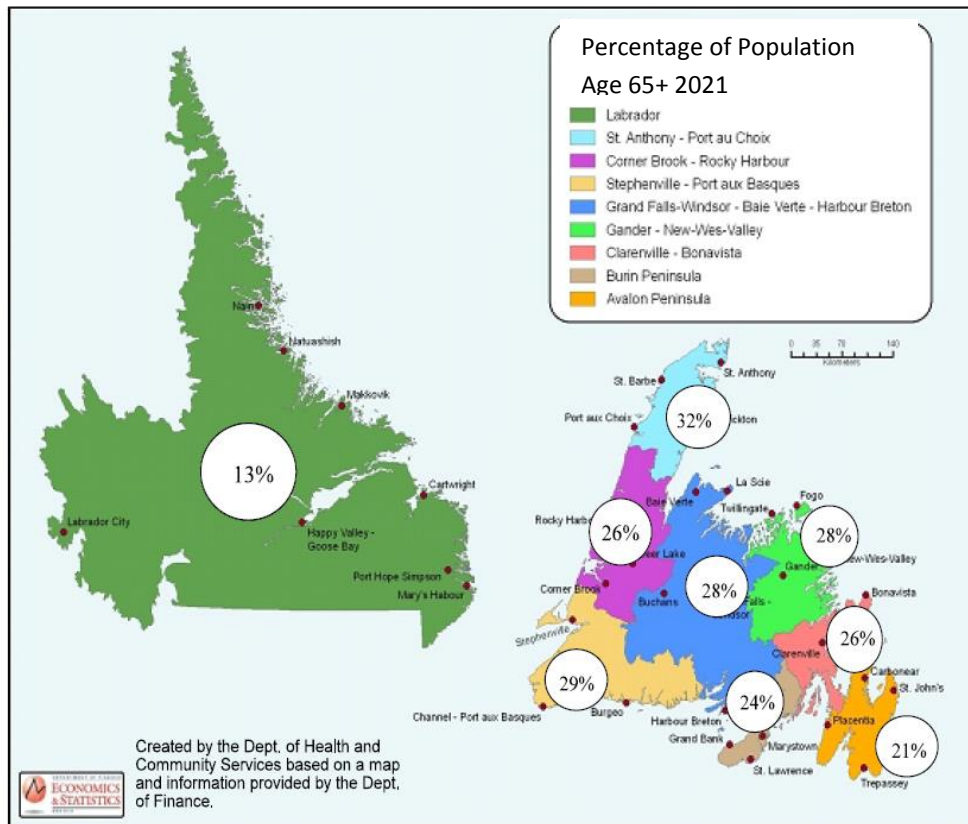


Figure 4: Percentage of Population Aged 65+ by 2021 Medium Scenario as of January 2004 | Source: Government of Newfoundland & Labrador Department of Health and Community Services, based on a map and information provided by the Department of Finance

The province's four Regional Health Authorities provide support services for seniors living at home (i.e., "living in the community"¹). Through the *Home Support Program*, patients/clients

Through the Home Support Program, patients/clients may access home-support services such as respite care and household management. Additionally, the Special Assistance Program provides medical equipment and supplies. Under these programs, patients/clients may be eligible for subsidies for equipment and services, up to a limit, contingent on a financial assessment.

may access home-support services such as respite care and household management. Additionally, the *Special Assistance Program (SAP)* provides medical equipment and supplies. Under these programs, patients/clients may be eligible for subsidies for equipment and services, up to a limit, contingent on a financial assessment. In December, 2009, changes to the financial assessment eligibility guidelines resulted in a significant increase in the number of seniors who were financially eligible for subsidies. Patients/clients undergo a clinical assessment to determine eligibility for services based on their needs. The clinical assessment determines the types of service that are considered appropriate and the number of hours of each service that the patient/client should receive. Patients/clients with high levels of ability and functionality may be deemed ineligible for services, or may be eligible for fewer services overall.

¹ For more details on community-based services for seniors in Newfoundland and Labrador, including clinical and financial assessments and emergency criteria, please see the online [CBSMS Companion Document](#) on Community-Based Services for Older Adults in Newfoundland and Labrador, p. 6.

Methodology

This synthesis is based primarily on high-level review literature. Evidence for this study was identified through a comprehensive search for systematic review studies, meta-analyses, health technology assessments (HTAs) and any grey literature (i.e., not commercially published literature) that included a systematic review component. The evidence synthesized in this study also included high-quality primary research carried out recently and not yet captured by the systematic review literature. To be included in our synthesis, reviews and studies had to be published between 2007 and 2012, in either English or French.

Since the scope of this project included multiple interventions, as described above, we designed and carried out topic-specific searches for each intervention reviewed in this report.

What We Looked For

We conducted two sets of searches for each type of intervention. One set of searches focused on **clinical health outcomes** and was carried out using four periodical indexes (PubMed, CINAHL, Embase, and Scopus) and two databases that catalogue review literature in health research (Cochrane Library/DARE and Health-Evidence.ca). The second set of searches focused on **health economic outcomes** and was carried out using some of the same sources (PubMed, Embase and Cochrane Library/DARE), as well as the EconLit periodical index of economic research.²

The selection of eligible references was carried out independently by two members of the CHRSP research team, with discrepancies resolved through discussion. In total, our searches initially yielded over 10,000 articles. We then screened the articles by title and abstract and reduced the number of potentially relevant articles to 326. We retrieved the full texts of these articles and selected 47 for inclusion. Articles were excluded for a variety of reasons:

- Study design: the article was not a systematic review;
- Study population: the article focused on different study populations, for example, adults (18-55 years) with developmental delays;
- Duplication: the article was based on another that was already included, or it was already captured in an included HTA, meta-analysis or systematic review;
- Language: the article was not published in English or French.

The 47 articles selected were: : three HTA's (13-15), ten meta-analyses (16-25), sixteen systematic reviews (26-41), five systematic reviews of economic research only (42-46), and thirteen primary research articles in health economic research (47-59). See Figure 5 below.

² A full description of our search methodologies and details of the results of our searches are available in the online [CBSMS Companion Document](#), p. 14

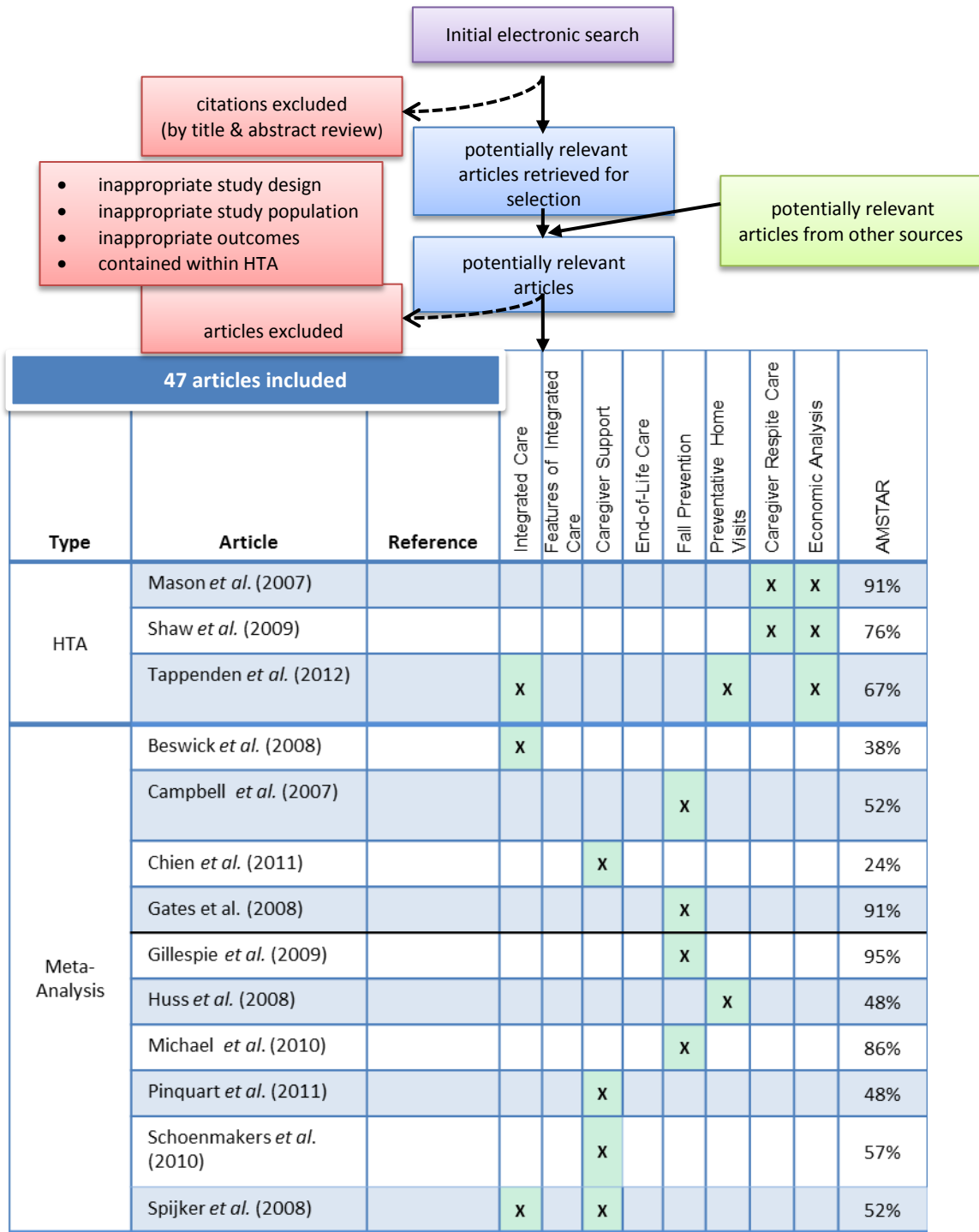


Figure 5: QUOROM Chart and Summary of Included Articles (continued next page)

Type	Article	Reference	Integrated Care	Features of Integrated Care	Caregiver Support	End-of-Life Care	Fall Prevention	Preventative Home Visits	Caregiver Respite Care	Economic Analysis	AMSTAR
Systematic Review	Bouman <i>et al.</i> (2008)							x		x	76%
	Costello <i>et al.</i> (2008)						x				50%
	Dickens <i>et al.</i> (2011)		x								52%
	Eklund <i>et al.</i> (2009)		x								52%
	Etters <i>et al.</i> (2008)				x						5%
	Goodman <i>et al.</i> (2010)				x	x					20%
	Johansson <i>et al.</i> (2010)		x								52%
	Liebel <i>et al.</i> (2009)							x			52%
	Low <i>et al.</i> (2011)		x								50%
	MacAdam (2008)			x							5%
	MacAdam (2009)				x						5%
	Oeseburg <i>et al.</i> (2009)			x						x	57%
	Smits <i>et al.</i> (2007)			x		x					38%
	Thompson <i>et al.</i> (2008)								x		52%
	Van Mierlo <i>et al.</i> (2012)					x					5%
Winterton <i>et al.</i> (2011)					x					20%	

Figure 5 (continued): QUOROM Chart and Summary of Included Articles

What We Found

Following the screening and filtering of identified publications, we categorized the evidence according to the type of intervention studied.

The results of our search for evidence, grouped by intervention type, are as follows:

- **Activities of Integrated Care**
 - 1 Health Technology Assessment (15)
 - 2 Meta-Analyses (16,25)
 - 6 Systematic Reviews (28,29,32,34,37,38)
 - 5 Primary Research Health Economic Studies (48-50,58,59)
 - 1 Economic Review (53)
- **Organizational Features of Integrated Care**
 - 2 Systematic Reviews (35,36)
- **Caregiver Support**
 - Caregivers of seniors without dementia:
 - 1 Meta-analysis (23)
 - 1 Systematic Review (41)
 - 1 Primary Research Health Economic Study (47)
 - Caregivers of seniors with dementia:
 - 3 Meta-Analyses (18,24,25)
 - 4 Systematic Reviews (30,38,40,45)
 - 1 Economic Review Paper (45)
- **Caregiver Respite Care**
 - 2 Health Technology Assessments (13,14)
- **End-of-life care**
 - 1 Systematic Review (31)
- **Fall prevention**
 - 5 Meta-Analyses (16,17,19,20,22)
 - 1 Systematic Review (27)
 - 5 Primary Research Health Economic Studies (51,52,54,56,57)
 - 4 Economic Review Papers (42-44,46)
- **Preventive home visits**
 - 1 Health Technology Assessment (15)
 - 1 Meta-Analysis (21)
 - 3 Systematic Reviews (26,33,39)
 - 1 Primary Research Health Economic Study (55)

Overall, the 29 systematic reviews of clinical health outcomes synthesized evidence from a total of 900 individual primary research studies. These primary research studies were published between 1971 and 2011, with nearly 75% of the studies published after 1997.

Assessing the Evidence

CHRSP researchers Pablo Navarro and Stephanie O'Brien critically appraised the methodology of the included systematic reviews using the AMSTAR instrument (60,61), a validated instrument for assessing the methodology of a systematic review. The researchers recorded both the overall AMSTAR score for each included study as well as the score on the five specific items that CHRSP considers key methodological criteria because they assess thorough searching, transparent reporting, and the appropriate synthesis of evidence.³ Discrepancies were resolved through discussion, and if required, consultations with a third colleague. The inter-rater reliability score for the AMSTAR instrument, measured by Cohen's Kappa value, is 0.69; this is considered "good" strength of agreement (62).

Data Extraction

CHRSP researchers Pablo Navarro and Stephanie O'Brien identified and coded the synthesis findings from the included systematic reviews. A synthesis finding is defined as *a conclusion from an included review paper that is based on a combination of primary research evidence*. The data extraction yielded 376 synthesis findings. Each synthesis finding was coded using the PICO framework:⁴

- the **Population** that was included in the review;
- the **Intervention** that was tested;
- the **Comparator** that was used to evaluate differences; and
- the **Outcome** that was measured.

This coding system allowed us to classify each synthesis finding and establish which pieces of evidence were comparable. Our synthesis findings reported on 32 separate interventions and measured 69 separate outcomes. We also extracted, if available, statistical information for each synthesis finding that included: the sample size, the measure used to estimate the outcome (e.g., odds ratios (ORs) or group mean differences (GMDs)) and its score or value, confidence intervals and statistical significance, and the heterogeneity of the data used to generate the synthesis finding.⁵

³ See details about the AMSTAR instrument and the scores in the online [CBSMS Companion Document](#), p.36

⁴ The PICO framework was developed in order to frame effective questions in the field of evidence-based medicine, and has been adopted as a standard in systematic review methods.

⁵ See detailed description of the data extraction, coding and analysis methods in the online [CBSMS Companion Document](#) p. 41

Integrated Care

At present, there is no standardized or even generally accepted definition of 'integrated care' for older adults (35). Models of integrated care for seniors combine primary care, community-based healthcare, and social services, bringing together individual providers of health and social care. The primary goal of models of integrated care for seniors is to improve the health and quality of life of patients/clients through enhanced access to care in a cost-effective manner (35). One key objective of integration is to bridge gaps that may exist between primary healthcare and social services. The principal characteristics of integrated care are enhanced communication and augmented

collaboration within and between the healthcare and social-care sectors.

In so doing, integrated care aims to provide less fragmented care for seniors with complex health needs and/or seniors who access these services on a regular basis. While integrated care does attempt to address many administrative and organizational challenges, its primary objective is to achieve better clinical outcomes for individual patients.

Integrated care for seniors typically involves most or all of the following **activities**:

- an assessment of the patient/client's health and social needs conducted by one or more health professionals ;
- some level of case management based on the results of the needs assessment; and
- ongoing follow-up that includes management of patient/client needs by multiple professions and that may involve education and social supports.

The principal characteristics of integrated care are enhanced communication and augmented collaboration within and between the healthcare and social-care sectors. In so doing, integrated care aims to provide less fragmented care for seniors with complex health needs and/or seniors who access these services on a regular basis.

In addition to these activities, models of integrated care may involve **organizational features**, although these are less common because they can involve major changes in how a healthcare system is structured and can also require a great deal of financial investment and support from health system leaders. These organizational features exist along a continuum (63) ranging from activities at a single organizational level to activities that flow across multiple organizational levels and systems. At one end of the spectrum, integration can simply involve primary care providers referring seniors to specialized medical or social care, when needed. Although collaboration takes place across sectors, providers still work within their own jurisdictions, and under their own organizational policies and funding (35,63,64). At the other end of the spectrum, integration can involve the formation of a single structure in which funds, resources, and responsibilities that were previously allocated to multiple individual health and social-care providers are pooled together. This vertically and horizontally integrated structure provides for full accountability, as it consolidates the responsibility for clinical, financial, and managerial responsibility for outcomes (64).

Primary-care service providers are at the centre of most integrated care programs; these include family physicians, community health nurses, and, increasingly, nurse practitioners. In most models of integrated care, nurses work closely with primary-care physicians to assess and design service plans for older patients. Nurses may be case managers and may provide most of the community-based care that a patient/client receives. As such, nurses are the principal contacts, along with primary-care physicians, in a network of service providers that a patient/client will see, including for medical care, community-based medical supports, personal care, home care and home supports. Our Project Consultants have advised that in Newfoundland and Labrador, primary-care physicians tend to lead referral and care-coordination services for older patients and their caregivers. In addition, primary-care physicians are often considered the central, most trusted health system contacts for older patients and their families.

In theory, older adults with chronic and complex health conditions who are experiencing social issues and who require frequent access to healthcare and social-care services have the most to gain from access to integrated care. The service delivery objectives of integrated models of care are to improve efficiency and accessibility, to reduce fragmentation of services by bridging the gaps between services, and to facilitate communication and coordination between health and social care providers. The overall goal is to enhance health and quality-of-life outcomes among patients/clients, provide more support for their caregivers, and decrease unnecessary acute and long-term care admissions in a cost-effective manner.

In the next section of this report, **Activities of Integrated Care**, we present a contextualized synthesis of the evidence for activities that have been commonly used in models of integrated care.

The subsequent section, **Organizational Features of Integrated Care**, presents the available evidence for how different models of integrated care may be organized.

Summary of Evidence

The evidence for *activities of integrated care* includes:

- 1 Health Technology Assessment (15)
- 2 Meta-Analyses (16,25)
- 6 Systematic Reviews (28,29,32,34,37,38)

These reviews synthesized the evidence from 209 primary studies, of which 86% were cited only once—indicating little overlap of cited primary research among the review papers. All nine review papers had AMSTAR scores indicating moderate methodologies. One review paper satisfied four out of five of the key methodological criteria (15), six satisfied three of the criteria (25,28,29,32,34,37) and the remaining review papers (16,38) satisfied two of the criteria.⁶

⁶ See full details on included systematic reviews and primary studies in the online [CBSMS Companion Document](#), p. 23, p. 39.

The evidence for ***organizational features of integrated care*** includes two systematic reviews (35,36). Both of these reviews synthesized the evidence from the same 19 primary studies. The primary research on models of integrated care at a structural level, for example in terms of funding systems or macro-organizational features, is observational in nature.

The reliability of observational evidence is lower and its potential for bias is higher than that of pooled evidence from randomized controlled or case-controlled studies. However, since it is not feasible to carry out research with experimental designs on these aspects of health service organization, we have used this observational evidence as the best research-based evidence available.

Activities of Integrated Care

The available review literature covers a range of activities used in models of integrated care for seniors living at home. These activities have been studied individually and in combination with other activities. Evidence from the review literature consistently supports the use of two individual activities in particular: Geriatric Assessment and Case Management.

Geriatric Assessment

Geriatric assessment is a multidimensional and multidisciplinary type of assessment commonly used in integrated models of care. It is a diagnostic instrument designed to capture information about the medical, psychosocial and functional capabilities of elderly patients. It is similar to a generic medical evaluation but differs in three important ways:

1. Geriatric Assessment focuses on older adults with complex problems;
2. Geriatric Assessment underscores the functional abilities and quality of life of the patient/client; and
3. Geriatric Assessment is designed for use by a multidisciplinary team of care providers (35).

The evidence indicates that, for community-dwelling seniors who are not yet identified as being at-risk or otherwise frail, Geriatric Assessment, compared to usual care, has a significant beneficial effect on improving physical function, reducing the number of falls, reducing the risk of nursing home admission, and reducing the risk of not living at home (16). Among the frail elderly living at home, Geriatric Assessment also has a significant beneficial effect on reducing hospital admissions (16).

Geriatric Assessment has been demonstrated to reduce the risk of not living at home better than any other intervention studied in this report. It has been demonstrated to reduce falls and improve functionality among the elderly in general and to reduce the rates of hospital admission among the frail elderly more effectively than any other intervention studied in this report. Among the individual activities studied in this project, Geriatric Assessment has the most consistent and substantive impacts on clinical health outcomes for older patient/clients living at home.

Key Message:

Geriatric Assessment, as an activity of integrated care or as a stand-alone intervention, is consistently and significantly effective for maximizing the time older adults live at home and for reducing hospitalizations among frail older adults.

**Case Management**

Case management interventions coordinate services for older patients/clients. These interventions also monitor and follow up on health outcomes, quality of life, functional status, and well-being. In the research literature, case management may include one or more methodologies such as telephone-based case management, computer program-assisted case management, and case management in combination with cost subsidies (34). Case management is often a central part of integrated care programs.

Case management methods, in general, have been found to have positive effects on improved functionality, improved health (in terms of medication use and clinical outcomes), reduced hospital admissions, reduced nursing home admissions, and increased use of community services (34). Case management has been demonstrated to be an effective intervention for increasing the time older patients/clients spend living at home in the community.

While the available evidence consistently supports the use of case management for seniors living at home, a word of caution is warranted. The systematic reviews on case management on which these conclusions are drawn emphasize recent primary research studies rather than earlier research evidence on case management. As a result, our synthesis may understate or ignore problems with case management that had been identified by primary studies published in the 1980s and 1990s. Some of these older studies found that case management interventions could significantly increase the inappropriate use of healthcare services and healthcare utilization rates and that they were not effective at improving seniors' health outcomes (65).

One possible explanation for this change in findings over time is that the underlying healthcare and social-care systems themselves have changed in the interim. For example, in the initial phases of research into case management for seniors, case managers may have responded to a real lack of community-care options with inappropriate hospital referrals, thus increasing the inappropriate use of acute healthcare services. A second issue was that case management was being used indiscriminately with all types of patients, including patients with little or no chronic disease or disability, for whom case management was not warranted. These findings bear some relevance to Newfoundland and Labrador, and are further discussed in this report in the section titled "The Newfoundland and Labrador Context."

The online [CBSMS Companion Document](#) contains additional and more detailed findings from our synthesis for Geriatric Assessment (p. 110), Case Management (p.96) and Partially Integrated Care (p. 122).

Key Message:

Case management, when implemented with appropriate patients/clients, is significantly and consistently effective for older adults living in the community, in terms of helping them stay in the community, improving appropriate service use, and prolonging autonomy.

**Other Activities of Integrated Care**

In addition to Geriatric Assessment and Case Management, several additional activities have been studied in the research literature. The following interventions are identified as being potential components of models of integrated care for which research-based evidence exists. However, the evidence for the effectiveness of these interventions is inconclusive because of mixed results (some significant and some not) or uncertain results (the primary research evidence does not specify whether the intervention was effective). The following is a brief summary of the evidence on these activities.⁷

In addition to the geriatric assessment and case management activities described above, the following activities were also identified in the evidence on integrated care models, with findings that were mixed, inconclusive or inconsistent:

- **Education/Training Support:** There is some evidence to suggest that education and training provided to community-dwelling older adults, compared to usual care, may be effective in reducing the risk of nursing home admission (16). However, these findings are not statistically significant, while other evidence contradicts these findings (16).
- **Mixed Caregiver Support:** The evidence is inconsistent in terms of the effectiveness of mixed, non-pharmacological interventions, e.g., family training in dementia care or expanded community care programs, in preventing or delaying institutionalization for seniors with dementia (25).
- **Social and Physical Support:** Evidence for the effectiveness of social and physical support interventions⁸ is inconsistent in terms of improving health outcomes of older adults identified as being socially isolated as compared to control groups. While there is evidence that these support programs can significantly improve physical health (28), there is no indication that there are improvements in depressive symptoms or mental/psychological well-being (28). The evidence is also mixed in terms of the effectiveness of these interventions for improving care recipients' quality of life in terms of structural and functional social supports, or reducing loneliness (28).

⁷ For additional details, as well as information on services for which there was no clear evidence of effectiveness, see the online [CBSMS Companion Document](#) p.43.

⁸ The term "Social and physical support interventions" refers to Participatory Group Activities that involve "active input from participants involving social contact (not necessarily face to face)" (28)

- **Group Support for Seniors without Dementia:** Evidence regarding participatory group support⁹ programs for adults assumed to be socially isolated is mixed in terms of the effectiveness on care recipient health outcomes. While evidence indicates that there may be significant improvements in physical health outcomes (28), no significant improvements were seen in depressive symptoms or mental/psychological well-being. (28)

Please refer to the online [CBSMS Companion Document](#) for details on those interventions identified in the literature that lacked strong evidence to support the effectiveness for or against activities of integrated/complex models of multi-disciplinary care for specific populations and outcomes (p. 93).

There were no unintended effects reported in the evidence for any aspect of integrated/complex models of multi-disciplinary care.

Economic Evidence

One systematic review of models of integrated care for seniors synthesized health economic evidence for geriatric assessment and case management, as well as other activities and organizational features of integrated care (36). The three studies cited, including one study carried out in Canada, found that integrated care including geriatric assessment and case management was cost-effective (36). In two studies, carried out in Italy and Australia, the interventions were found to have succeeded in decreasing healthcare utilization costs by lowering hospital admissions and emergency room visits by older people.¹⁰ The Canadian study found integrated care to be cost-effective by increasing care-recipient satisfaction and decreasing caregiver burden for the same costs to the system and carers.¹¹

Organizational Features of Integrated Care Systems

In addition to individual activities, models of integrated care for seniors living at home have organizational features that determine how those activities are coordinated and overseen (35).

Partially Integrated Care

In addition to geriatric assessment and case management, the available evidence supports ‘Partially Integrated Care.’ For this report, we define Partially Integrated Care as consisting of interventions of varying types and varying durations that are characterized as being delivered by one or more health professional(s) and that may include multiple activities: an initial assessment, education and counselling, fall prevention, and post-hospital discharge community-based care. Partially Integrated Care includes a needs assessment for community-based care that is conducted by one or more health professionals. Follow-up takes place in the community, as appropriate (16).

Partially Integrated Care is characterized as having services that are formally linked and coordinated, but that are provided by distinct organizations. This differentiates Partially Integrated Care from what we refer to in this report as ‘Fully Integrated Care’: multiple services and interventions that are

⁹ The term “Participatory Group Support” refers to group sessions that have “active input from participants involving social contact (not necessarily face to face)” (28)

¹⁰ It should be noted that the dramatic results from these studies have not been successfully reproduced. The results may have been, in part, a result of initial conditions that were particularly severe and that are relatively uncommon in developed countries.

¹¹ See economic analysis in the online [CBSMS Companion Document](#) p. 143

delivered by a single, vertically-integrated organization such as Kaiser Permanente (KP) or Program of All-Inclusive Care for the Elderly (PACE), both delivered in the United States (34,37,38). If we consider the earlier description of integrated care occurring along a continuum, Partially Integrated Care would be located somewhere in the middle of that continuum.

The evidence indicates that Partially Integrated Care had consistent, significant, beneficial effects, compared to usual care, on the risk of not living at home and on hospital admissions (16). However, the evidence is mixed regarding the effect of Partially Integrated Care, compared to usual care, on falls, functionality, and mortality (16).

The evidence did not indicate consistent beneficial effects for Fully Integrated Care; however, the quality of available evidence for Fully Integrated Care was characterized as poor, so it is unclear whether the lack of beneficial outcomes reported results from the quality of the existing research or from the lack of true effect (34).

Key Message:

The evidence indicates that models of Partially Integrated Care have been shown to help older adults stay in their homes and to reduce hospital admissions whereas the evidence concerning Fully Integrated Care is unclear or of low quality.



Effectiveness

Evidence pertaining to organizational features of effective models of integrated healthcare for seniors is, at this point, still only inductive and is thus limited in its ability to lead to strong conclusions. The research summarized below sought to correlate features of integrated care models with outcomes of interest. This method is not experimental in nature and precludes determining causality. However, it is possible to use this body of evidence to infer lessons for the development and implementation of effective and efficient models of integrated care based on organizational features of some models already implemented.

Table 1: Features of Successful Integrated Care Models Associated with Improved Health, Quality of Life and Access to Care

Feature	Description
Umbrella Organizational Structure	Resources from individual health and social services are combined; the new organization has full accountability for outcomes
Organized Provider Networks	Common ownership of assessment, care-planning and decision tools between providers; shared access to client records; facilitates access to health and social services
Financial Incentives	Promote and support service integration and cooperation
Multidisciplinary Case Management	Single entry point into the healthcare system; more effective assessment and monitoring of clients

The evidence indicates that the four features most strongly associated with the success of integrated care models are umbrella organizational structures, organized provider networks, financial incentives, and multidisciplinary case management.

These features are correlated with improved physical and mental health as well as with quality of life for seniors living in the community and their caregivers while at the same time being associated with reduced hospital and long-term care admissions (35,66).

All-encompassing umbrella organizations increase efficiency by gathering human and financial resources from separate health and social services under one roof. Organizational strategies and policies are developed that promote collaboration across sectors and the organization has full responsibility for outcomes achieved. One key effect of having umbrella organizations is that it promotes facilitated access to health and social service providers and reduces fractionated services (35,66).

Organized provider networks enable members of the multidisciplinary care team to collaborate and communicate more easily. This is possible through shared information systems, shared access to client records, and sharing of resources such as geriatric assessment, care-planning and decision tools. Similar to umbrella organization structures, organized provider networks also promote facilitated access to health and social service providers. The organization of provider networks is considered an essential feature of any model of integrated care.

Key Message:

Facilitated access to health and social services appears to be a critical component of effective integrated care programs.



Financial incentives are extremely important for models of integrated care. If correctly designed, they serve to promote integration and cooperation from healthcare providers. However, if financial incentives among the various actors in a model of integrated care are not aligned, they can have the potential to incentivize choices that do not contribute to integration (35,66).

Multidisciplinary case management is highly correlated with successful integrated care for seniors. As a feature of integrated care, multidisciplinary case management is understood to orient the coordination and organization of services to meet the older patient's individual clinical health goals. Whereas the older population is heterogeneous in terms of functionality, frailty, chronic disease and so forth, case management helps to ensure that the needs of individual patients are matched with appropriate services. It also allows seniors easier access to the healthcare system via a single-entry point – the case manager. The case manager organizes the evaluation and monitoring of client's needs by overseeing the multidisciplinary team and facilitating access to health and social care services.

The care team may involve any combination of primary-care physicians, nurses, social workers, physiotherapists, occupational therapists, dietitians and other healthcare, social-care and home-support providers. The most successful models have strong physician involvement either from a family physician or a geriatrician (35,66). Other research on integrated care teams underscores the critical need to bring together primary-care physicians with community-based care (where a nurse and/or case manager play the key role of coordinating community-based services) and specialty medical care (mainly geriatric medicine) (67,68).

Key Message:

The involvement of primary-care health service providers, including family physicians and community-based nurses, appears to be a critical component of effective integrated care programs



Collectively, these features may act synergistically to achieve desired results whereas, individually, they may not be as beneficial. One example of successful integrated care systems highlights some of the key components and methods of integration. Kaiser Permanente (KP) is very large non-profit integrated healthcare system operating in parts of the United States. Within the American context, with its high average healthcare costs, KP has been recognized as one of the more cost-efficient models for senior care (69), with a strong focus on prevention and health promotion (Porter, 2008). The key features of KP's integration include a thorough integration of primary-care physicians with specialists and case management methods that are tailored to the needs of each patient through a comprehensive assessment. KP also reports that key organizational features include integrated facilities where patients are able to access a range of services and shared information systems under a single roof.

The Newfoundland and Labrador Context



The available evidence did not study or report any differences in the effectiveness of Geriatric Assessment, Case Management or any form of integrated care for any population sub-groups that are relevant to Newfoundland and Labrador. These include older adults living in isolation; older adults living in rural or remote areas; or older adults from ethnic, linguistic or cultural minorities. Interviews with multiple key informants did, however, provide insights into many contextual factors that may have an impact on the effectiveness, feasibility or acceptability of Geriatric Assessment, Case Management or Partially Integrated Care in Newfoundland and Labrador.

Contextual Factors Affecting Geriatric Assessment

The province is in the process of having all RHAs move to using the Resident Assessment Instrument – Home Care (RAI-HC) for geriatric assessment of eligible recipients. The RAI-HC will allow for a more standardized procedure than that used previously; however, it is understood that the assessment process will initially take longer than the assessment tool currently being used, the *Long-Term Care and Community Support Program: Adult Needs Assessment* which takes approximately 1.5- 2 hours to complete. As a result, processing times may initially increase, with subsequent delays in waiting times for assessment and for receiving home-support services. It is expected that, as assessors become more familiar with the RAI-HC, they will be able to administer it more efficiently.

The implementation of a model of integrated care for seniors would, ideally, have all at-risk older adults undergo an assessment. This would mean that there would be, initially, a very high number of

assessments that would then taper off to match the yearly addition of at-risk older adults to the population. Such an effort would require training for available health workers such as registered nurses, community health nurses, occupational therapists, physiotherapists and social workers. As a result, the province may need to make arrangements to provide specialized training to local health workers and allied health professionals that will enable these trained personnel to then train others in the use of the assessment tool.

Language and literacy are two additional contextual factors that may influence the effectiveness, feasibility, and acceptability of geriatric assessment. In this province, these contextual factors apply mainly to aboriginal patients/clients. Language and literacy issues for aboriginal patients/clients are mitigated by the fact that the RAI-HC has been validated for aboriginal populations, that there are bilingual patient navigators, and that there are now medical glossaries for both Innu and Inuit patients/clients. All this implies that using the RAI-HC with aboriginal patients/clients should not be any less effective, feasible or acceptable when compared to using the tool for the rest of the population.

Contextual Factors Affecting Case Management

A key contextual factor affecting case management is the availability of trained professionals who can act as case managers. A model of integrated care with extensive case management would mean increased workloads for health providers acting as case managers. Where case management is being used in Newfoundland and Labrador, it is being carried out mostly by community-care nurses. Allied health professionals such as occupational therapists, physiotherapists, and social workers could act as case managers, since case management is typically part of their training. However, there are few existing positions for allied health professionals in all four RHAs and those that exist are focused on post-acute care.

Another key contextual factor affecting case management is patient/client information-sharing. While information sharing is a problem that affects all areas of the province to some degree, several project consultants have noted that it is worse in some high-population centres. The implementation of case management would be expected to help improve information coordination and sharing.

Contextual Factors Affecting Integration of Care

In the Newfoundland and Labrador context, as several key informants noted, some RHA sub-regions in rural areas have an 'organic' form of service integration that has developed by circumstance rather than by design. In these health sub-regions, small numbers of health and social service providers work in close proximity to one another, over long periods of time, often in the same building or close by within the same community, and with nearly identical patient/client populations. These professionals are incentivized to coordinate their actions and engage in ongoing communication because it enables them to see a greater number of patients/clients in a given period of time. As a result, there is less fragmentation of services, in practice, than in more populated urban centres where the service providers do not necessarily know each other or consistently work with each other.

Our project consultants suggested that since these service providers already have considerable experience with collaboration and team approaches, the implementation of a more formalized system of integration may be expected to occur more readily and to be accepted with relatively little difficulty. Consequently, these rural sub-regions may yield better outcomes in terms of implementation and execution, as well as of patient/client outcomes and health service process outcomes.

Major Challenges to Integrated Care in Newfoundland and Labrador

Most patients/clients in the province do not live in rural areas where integration of services has developed informally. Based on discussions with key informants in the healthcare and social service systems, the major challenges to implementing any formal model of integrated care in most parts of Newfoundland and Labrador are:

Communication: Service providers experience significant challenges in meeting together to discuss, assess and make decisions concerning older patients/clients living in the community.

Scheduling: There are particular challenges for family physicians who work in larger urban centres in coordinating and scheduling time to communicate with other service providers.

Remuneration: The payment structure for fee-for-service physicians (who are still the majority among family physicians in the province) does not currently act as an incentive for participation in team meetings to discuss patients, to make decisions about them and to follow up on these decisions.

According to data from the Canadian Institute for Health Information (CIHI), Newfoundland and Labrador ranks 8th in Canada for the number of occupational therapists per 100,000 clients and 10th for the number of physiotherapists per 100,000.

Information Sharing: The province has multiple, non-integrated medical information systems. None of these is comprehensive on its own, and they are not exhaustive when pooled together. A single electronic health record is being developed by the province, but it is still some years away from completion.

Human Resources: A focus group of local physicians indicated that community-based care teams for seniors living at home would need approximately three to four of the existing health service providers from the community (including family physicians and nurses), as well as one or more occupational therapists, physiotherapists or social workers. However, there is a significant dearth of allied health professionals working in the Newfoundland and Labrador health

system, particularly occupational therapists and physiotherapists.

According to data from the Canadian Institute for Health Information (CIHI), Newfoundland and Labrador ranks 8th in Canada for the number of occupational therapists per 100,000 clients and 10th for the number of physiotherapists per 100,000. In the past, Eastern Health has hired private occupational therapists and physiotherapists on contract to help with staff shortages. Currently, there are no community rehabilitation services available for rural areas and only a one-day program at the Leonard A. Miller Center in St. John's.

There is also a lack of board-certified geriatricians in the province, i.e., physicians who have received accreditation through a geriatric medicine residency program certified by the Royal College of Physicians and Surgeons of Canada. This scarcity of geriatric specialists could be partially alleviated by encouraging family physicians to complete the Healthcare of the Elderly program offered through the Faculty of Medicine at Dalhousie University. Physicians working in primary-care or community settings, or medical students just completing their residency in family medicine, are eligible to complete this 6-to-12 month program in order to enhance their skills in caring for frail elderly patients (70).

Furthermore, it is well-understood that recruiting and retaining health and allied health professionals in rural and remote areas of the province is a challenge. Our consultants noted that even if there were additional funding and positions, a more efficient model of care would still be required in order to use these new resources effectively, i.e., an upstream approach that focused on prevention and health promotion rather than on acute care.

Patient/Client-Related Factors

The number of community-dwelling older patients/clients is expected to increase at a greater rate than that of the resources required to provide services to them in the community. Recent changes to long-term care facility admissions mean that only those seniors with higher levels of needs will be admitted. As a result, a larger number of seniors with low and moderate levels of need, but who will require some level of care, will rely on community supports at home or admittance to personal care homes. In December 2009, changes were made to the financial assessment eligibility guidelines for home support and to the special assistance program; these changes have resulted in a significant increase in the number of seniors eligible for these services. At the same time, there have been relatively few increases in human resources associated with these changes. This imbalance may challenge the feasibility of an integrated model of care.

Factors Related to the Design of Service

Any model of integrated care introduced in Newfoundland and Labrador will need to address present gaps in service availability in some RHAs for seniors requiring post-acute care in the short term. For RHAs that have short-term home-support services available, home support is offered under programs that vary from two to six weeks in duration. To be eligible for the long-term home support program, clients need to be assessed as having a need for long-term home-support. This can leave a gap for hospital-discharged patients who need more time and care than what is offered through short-term home-support programs but for whom ongoing long-term home support is not required beyond the acute-recovery period. In these situations, public funding is not available through community programs. Current guidelines for the home-support program were developed when the average length of stay in hospital was longer, averaging seven-to-ten days after surgery. Today, seniors are typically discharged sooner; hence, they have longer recuperation and reconditioning periods at home and require post-acute home-support services for longer periods of time.

Factors Related to Health Human Resources

The available evidence did not refer to potential problems of acceptance for models of integrated care among health human resources, particularly physicians. Our interviews indicated that there may be some resistance to models of integrated care from physicians in some parts of the province, partly because their training focused on physician-led care rather than emphasizing multi-disciplinary care teams and inter-professional collaboration. For example, physicians accustomed to a physician-led model of care may not have a clear understanding of the roles of other healthcare professionals in coordinated care or of the roles of specific members within a team; such physicians may not want to share responsibility for their patients/clients with others. This form of resistance could potentially hinder the acceptance of an integrated multi-disciplinary care model.

While the issue of physician resistance is an important contextual factor for Newfoundland and Labrador, it is also an issue that has also been reported in other parts of the country. As a result, several efforts have been launched within Canada to both study and address this challenge. For example, at the national level, the Enhancing Interdisciplinary Collaboration in Primary Healthcare (EICP) initiative has been implemented (83) and Ontario has initiated “Family Health Teams” with guidelines for team members (84).

From our interviews, it also appears that a critical element for collaborative team approaches is to build and maintain professional relationships over long periods of time in an effort to establish integrated care teams that have a low turnover rate among members. The issue of team longevity will therefore be an important contextual factor for the effectiveness and feasibility of a model of integrated care for seniors.

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care model would be advantageous to their practice. They see the main advantage as enabling them to provide care more efficiently and helping clients achieve better health outcomes. The involvement of case managers would help reduce the number of the non-clinical tasks physicians undertake at present (such as finding follow-up information for clients that were referred to community supports). Case-management support would, therefore, be expected to increase the acceptability of integrated care in the province.

A crucial contextual factor for a model of integrated care appears to be the support and active participation of family physicians in Newfoundland and Labrador. Family doctors are the primary healthcare contact for most seniors and these doctors have typically established trusting relationships with their patients. As such, our

advisors noted that physicians will need to be consulted about, and involved in, the formulation of any proposed interdisciplinary teams; further, they will need to contribute to the development and organization of integrated care services. For family physicians to accept models of integrated care, caseload management will need to be considered, as will requirements for training. These considerations will have an important impact on the acceptability of an integrated care model from the health human resources perspective.

Health System Factors

The provincial government has endorsed the principles of integrated care for example in *Close to Home: A Strategy for Long-Term Care and Community Support* (2012). As part of this strategy, the province has implemented a pilot project for Community Rapid Response Teams with a focus on highly vulnerable people, including seniors and younger adults with complex needs. In the pilot program, services will be available 24-hours a day, seven days a week to provide enhanced health services and home support to seniors in their homes, thus reducing the need for admission to a hospital.¹² The four project teams for this pilot program are multi-disciplinary: they consist of family physicians, RNs, occupational therapists and physiotherapists. This pilot program has adopted the principles of integrated care. A full program based on this pilot would help normalize integrated models of care within the health system and could potentially provide important lessons for any future models of integrated care.

In addition to the informal integrated care that exists in smaller communities, there is at least one example in Newfoundland and Labrador of an existing practice that could inform a model for integrated care or provide a template for the design and implementation of an integrated care model. Our contextualization interviews revealed that Western Health is developing a model of integrated care for diabetes care that will span primary, secondary, and tertiary care. This initiative is developing approaches to an integrated care model that are appropriate to Western Health's strengths and capacities in terms of coordinating multiple disciplines, sharing information, aligning financial incentives, etc. The development and implementation of this integrated model for diabetes care will provide valuable experience within the health sector in Newfoundland and Labrador that could also provide both examples and valuable lessons for the development of community-based service models for seniors. It is hoped that the experience at Western Health may contribute to increasing the feasibility of an integrated model of care for seniors, and if successful, the acceptability of such models.

Economic and Political Factors

The research literature indicates that a successful model of integrated care for older adults requires an alignment of financial incentives and resources, so that funds from individual programs or departments are re-directed towards planning and implementing integrated care models. To this end, the province has initiated *Close to Home: A Strategy for Long-Term Care and Community Support* (2012) that aims to keep seniors at home for as long as possible.

The current physician remuneration schedule poses a challenge to physician acceptance of community-based service models for seniors. Currently, most physicians are remunerated based on the number of clients they see or in a blended approach that includes a significant fee-for-service component. This remuneration structure is a disincentive to making house calls, to having a nurse conduct patient follow-up, or to spending time discussing patients/clients with other members of coordinated care teams. Our key informants suggested that one result of this remuneration structure is that senior patients/clients living at home are often not seen until a crisis situation has

¹² As described in the Department of Health and Community Services. Budget 2013: A Sound Plan, A Secure Future backgrounder. (Available at <http://www.releases.gov.nl.ca/releases/2013/health/0326n16.htm>)

occurred. Changing the current fee schedule to address these issues would better align financial incentives with more integrated models of care for seniors.

Our interviews with key informants suggest that the public is eager to see an integrated model of care for seniors. However, we were also told that the public will want to see that any proposed model is financially sustainable and that it still allows for some choice of services and providers by patients/clients and their families.

Community-Based Interventions for Seniors

As noted in the introduction to this report, the Project Team, in addition to examining models of integrated care, also examined evidence on less complex interventions that may or may not exist within a given model of integrated care. The interventions we examined have already been developed and implemented to varying degrees in Newfoundland and Labrador. A contextual synthesis for these interventions allows us to compare their reported effectiveness and cost-effectiveness as individual interventions against models of integrated care, and to consider the impacts of local contextual factors on each of these interventions.

Caregiver Supports

Approximately 80% of community-based care received by seniors in Canada is provided by informal caregivers including family, friends or neighbours (10). Caregivers play an important role in maintaining seniors' independence in the community while at the same time preventing or delaying hospital or long-term care admissions. Caregiving, while personally fulfilling, can simultaneously cause a great deal of psychological and physical stress, anxiety, and burden for the caregiver. These effects are more pronounced when the care recipient is a close family member such as a spouse or parent (23,30) or when the care recipient suffers from dementia. Caregiver supports are interventions that aim to reduce the negative effects of caregiving.

Summary of the Evidence

We found the following evidence that examined caregivers of seniors without dementia:

- 1 Meta-Analysis (23)
- 1 Systematic Review (41).

We found the following studies that examined caregivers of seniors with dementia:

- 3 Meta-Analyses (18,24,25)
- 4 Systematic Reviews (30,38,40,45).

These reviews synthesized the evidence from a total of 332 primary studies, of which 89% were cited only once—indicating very little overlap of primary research among the review papers. Five of the nine review papers had AMSTAR scores indicating moderate methodologies with three (24,25) or

two (23,38,45) out of the five key methodological criteria satisfied. The remainder of the included reviews (18,30,40,41) had AMSTAR scores indicating weak methodologies.¹³

The available review literature included evidence involving a broad range of caregiver supports, including:

- counselling, individual psychotherapy, family therapy (30,37,39)
- professionally led support groups, e.g., mutual support, psycho-educational, educational groups (18,25,30,39)
- direct caregiver skills training (25,30,39)
- professional psychosocial interventions (24,30)
- caregiver skills training not led by professionals (25,39)
- programs to reduce social isolation (40)
- in-home environmental strategies (30,39)
- telephone, online and enhanced technology systems (30,39)
- exercise, recreation and outings (37,39)
- combined intervention programs (37)

The synthesis findings on respite care for caregivers are discussed separately in the next section.

Effectiveness

The evidence on support for caregivers compared these supports with control groups providing minimal or no support, education only (through videos or literature), or ‘traditional’ unstructured support groups (18). The evidence indicates that the various types of support groups, when combined, can significantly improve caregiver burden, caregiver well-being, and caregiver health, and improvements occur in the areas of mental health, coping ability, and quality of life. When implemented separately, psycho-education groups are also effective in improving caregiver burden and mental health outcomes, while educational training is effective in improving caregiver burden only (18).

- *Psycho-educational groups* provide “practical information on patient care, but also focus on caregivers’ psychological and emotional status as well as establishing a social, supportive network, and are more effective at improving caregivers’ psychological well-being and depression” (18).
- *Educational training* “provides useful information, such as caregiving skills, ways of self-adjustment, knowledge for handling legal issues, role play, and discussion, and thus facilitates caregivers finding available resources that can reduce their burden in patient care quickly” (18).

The evidence indicates that psycho-educational groups and educational training significantly reduce caregiver burden (18) and that psycho-educational training also improves caregiver well-being and health in terms of mental health and depressive symptoms (18). The evidence indicates that mutual

¹³ See full details on included systematic reviews and primary studies in the online [CBSMS Companion Document](#), p. 23, and p. 39, respectively.

support groups may significantly improve caregiver well-being and health in terms of coping skills, mental health, and quality of life outcomes (18).

Key Message:

Some forms of support groups, including psycho-educational and educational training, are consistently effective at reducing caregiver burden. These support groups, in addition to mutual support groups, can also improve caregiver mental health and well-being.



Other Key Outcomes of Interest

The included research evidence is inconsistent regarding the effect of caregiver supports on other quality-of-life outcomes for caregivers. Two systematic reviews (23,40) indicate that caregiver supports in general have uncertain effects on caregiver quality-of-life outcomes, while a third reported that caregiver support groups are "associated with a significant positive effect on the outcome" (18).

None of the included systematic reviews reported patient/client residence status outcomes for any caregiver support interventions. Likewise, they did not report on any changes in healthcare utilization by patients/clients or caregivers as an outcome of caregiver support interventions. No unintended effects were reported.

Economic Issues

Most of the identified health economic research on caregivers is focused on respite care programs rather than on services provided directly to the caregiver like those described above. One systematic review did study interventions for caregivers of people with dementia living in the community (45). Some of the included primary research studies evaluated interventions that included caregiver supports; however, the authors concluded that the evidence for such supports was weak as a result of small effect sizes and/or poor methodologies (45).¹⁴

The Newfoundland and Labrador Context

Although there are few formal caregiver support programs in Newfoundland and Labrador, caregivers can and do receive support from healthcare and social-care providers, including primary-care physicians, community health nurses and social workers. The most extensive caregiver support programs in the province are administered by the Seniors Resource Centre of Newfoundland and Labrador (SRC-NL), which is a non-profit organization.¹⁵ The SRC-NL offers a province-wide "Caregivers out of Isolation" program that includes regional networks, a toll-free information phone line, and peer support groups. The SRC-NL also provides several written resources for caregivers. Western Health has recently developed a support toolkit designed for caregivers of seniors with dementia. In addition, Western Health offers a service to caregivers to organizations and resources within their community.

¹⁴ See economic analysis in the online [CBSMS Companion Document](#), p. 143

¹⁵ The SRC-NL receives approximately a quarter of its funding from the Department of Health & Community Services, and the remainder through fundraising and grants (some of which are from the Government of Newfoundland and Labrador).

With the exception of Innu and Inuit coastal communities in Labrador (8,9,11,71), a major contextualization factor for caregiver supports in Newfoundland and Labrador is the continuing outmigration of younger people from smaller towns in rural and remote areas. As a result of outmigration, seniors and their caregivers in rural areas have fewer informal supports available than they had in the past. In addition, outmigration is contributing to personnel shortages for caregiver services including daycare or homecare services. The overall result of outmigration has been an increasing demand and a decreasing supply of support services for seniors and their caregivers in rural and remote areas of the province. Any support services for seniors will need to be designed with these demographic patterns in mind.

Another important contextualization factor for caregiver supports is that informal caregivers in Newfoundland and Labrador have few financial incentives to provide care other than a few limited forms of tax relief. In its 2013 budget,¹⁶ the provincial government proposed a *Paid Family Caregiver Option* pilot study that would allow seniors to pay family members who are informal caregivers. Such a program may be expected to help alleviate gaps in caregiver supports by providing a source of income to younger informal caregivers who currently work instead of providing care or who may move to find work. A program that remunerates family members who are caregivers may also provide increased opportunities for them to continue in a caregiving role by boosting their earning capacity, thereby making caregiving more affordable for them.

At present, the RHAs do not provide caregiver training programs. However, the SRC-NL coordinates and supports two programs for caregivers: *Regional Caregiver Networks* and the *Caregivers out of Isolation* project. Both programs provide some measure of psycho-educational training and educational training, as well as peer support and informal mechanisms to identify and recruit caregivers. These programs are well-established and provide a framework that could be used to model or build future services. The Office for Aging and Seniors in the Department of Health and Community Services also provides knowledge resources, e.g., pamphlets and information sheets, to individual seniors and to seniors' associations and social groups.

Transportation is another critical issue for caregivers seeking support services. In fact, transportation is a major issue for both caregivers and patients/clients alike, especially those who live in rural areas in the province. Furthermore, the issue of transportation applies across the full range of services covered in this report. The province has initiated an *Age-Friendly NL Transportation Project* that is intended to help solve some of the travel accessibility issues. This project guarantees \$1.5 million over three years to municipal governments and non-governmental organizations to find ways of increasing transportation options for seniors.

Caregiver Respite Care

In the context of this report, respite care is defined as any one of a number of health services or programs that aim to provide caregivers a break from their caregiving responsibilities. Respite care aims to reduce the pressure and anxiety associated with caregiving duties while minimizing stress on the care recipient (13,14). In Newfoundland and Labrador, respite care may either be publicly-

¹⁶ See: Budget 2013, <http://www.budget.gov.nl.ca/budget2013/speech/default.htm>

funded through subsidies or families may privately contract agencies to provide additional respite care, as required.

Summary of Evidence

We found two Health Technology Assessments (13,14) examining the effects of respite care. These reviews synthesized evidence from 207 primary studies, of which 100% were cited only once—indicating no overlap of primary research among the review papers. The two included reviews had AMSTAR scores indicating strong methodologies; the study by Mason (13) satisfied four out of the five of the key methodological criteria and the study by Shaw (14) satisfied all five.

Types of respite identified in the literature include day care, institutional respite (overnight), in-home respite (day or overnight), host family respite, video respite and mixed versions of respite care (13,14). The caregivers in the primary research studies were caring for seniors with frailty, disability, dementia and/or cancer.¹⁷

Effectiveness

The evidence for respite care, as compared to usual care,¹⁸ is not consistent in terms of effects across all variables that measure the health and well-being of caregivers. The evidence indicates that community-based models of respite care have significant beneficial effects for *some* outcomes: mental health generally, physical health generally and some quality-of-life outcomes (13). However, respite care produces mixed effects on other outcomes, including: caregiver anger, hostility, quality-of-life, anxiety, morale, and depression (14). The evidence indicates that respite care is not consistent in its ability to reduce caregiver burden among different types of caregivers, including several findings of potential *increases* in burden for caregivers of older adults with dementia (13,14). The evidence also indicated that there was an increase in rates of institutionalization after respite care; “however, this does not establish a causal relationship as it may be a result of respite being provided late in the caregiving career” (14).

The available review literature combines different types of respite care as well as different types of patients/clients and thus limits our ability to isolate the effects of specific types of respite care on specific groups of caregivers. However, the combined findings strongly suggest that respite care has different effects for different groups of caregivers. One explanation for this is that there are unmeasured or uncontrolled selection factors among caregivers in the systematic review literature. For example, long-term caregivers of older adults with consistently high levels of need may be using respite services as a transitional service as they prepare to move the care recipient into an institutional facility instead of using respite care as a support service to help extend the care recipient’s community residence as long as possible.

There is considerable complexity in the implications of the evidence on the effectiveness of respite care. Respite care may be better suited for patients/clients who do not have dementia or other moderate to severe cognitive impairments. While respite care may have the potential to help extend the community residence of some older adults by providing their caregivers relief from their duties,

¹⁷ See full details on included systematic reviews and primary studies in the online [CBSMS Companion Document](#), p. 23, and p. 39, respectively.

¹⁸ The term 'usual care' is taken from the research literature where treatment groups are compared against groups receiving the usual or standard care they would have received without the treatment. See Glossary for definition.

the evidence also indicates that caregivers are using respite care services only after the care recipient has developed significant levels of need and the caregiver has developed significant levels of burden. Thus, in order to prolong the community residence of the patient/client and improve the quality of life of their caregiver, the evidence suggests that respite care is most effective for caregivers who have not yet developed high levels of burden or stress, and for patients/clients without dementia. Respite care may play an important role in the transition into long-term care of patients/clients with high levels of need in general and/or moderate to severe dementia specifically, but this function of respite care will not support outcomes of interest for this project; namely, supporting the ability of seniors to age in place. There is no available evidence to support or contradict generalizing these findings to Newfoundland and Labrador.

Key message:

Community-based models of respite care have been shown to be beneficial for some, but not all, caregivers and for some, but not all outcomes of interest. Respite care appears to be of limited effectiveness in supporting caregivers and patients/clients with dementia.



Economic Issues

The available health economic research does not provide evidence to support or contradict respite care for any groups of older adults.¹⁹

The Newfoundland and Labrador Context

In Newfoundland and Labrador, publicly-funded programs for respite care include in-home services, facility-based respite care, and day programs (72). In-home services involve a home-support worker visiting the senior's home to temporarily replace the caregiver. Receipt of a subsidy for this type of service is dependent on a needs and financial assessment and covers a limited amount of time, up to a maximum subsidy of \$2,810 per month (72). Facility-based respite involves the care recipient living temporarily in a long-term care centre or a personal-care home for periods of up to a month per year (longer periods are occasionally approved). Typically, caregivers of seniors who require a high degree of care will use this service (72). Finally, day programs are available that provide collection and transportation for patients/clients to a facility, and provide meals and personal-care services. Day programs are typically for seniors that have some form of physical disability (72).

We have been told by project consultants that the RHAs may have some unused capacity in long-term care facilities that is available for short-term respite care (see Figure 6). On rare occasions, unused acute-care beds in smaller hospitals may also be used for brief respite care. The Province is also in the process of developing a respite care policy that would provide respite care placements in private personal-care homes. It is our understanding from our project consultants that respite care capacity will increase but that it is not yet clear to what extent this is the result of financial considerations, of feasibility (e.g., distance to access) or of acceptability on the part of caregiver or care recipient.

¹⁹ See economic analysis in the online [CBSMS Companion Document](#), p. 143

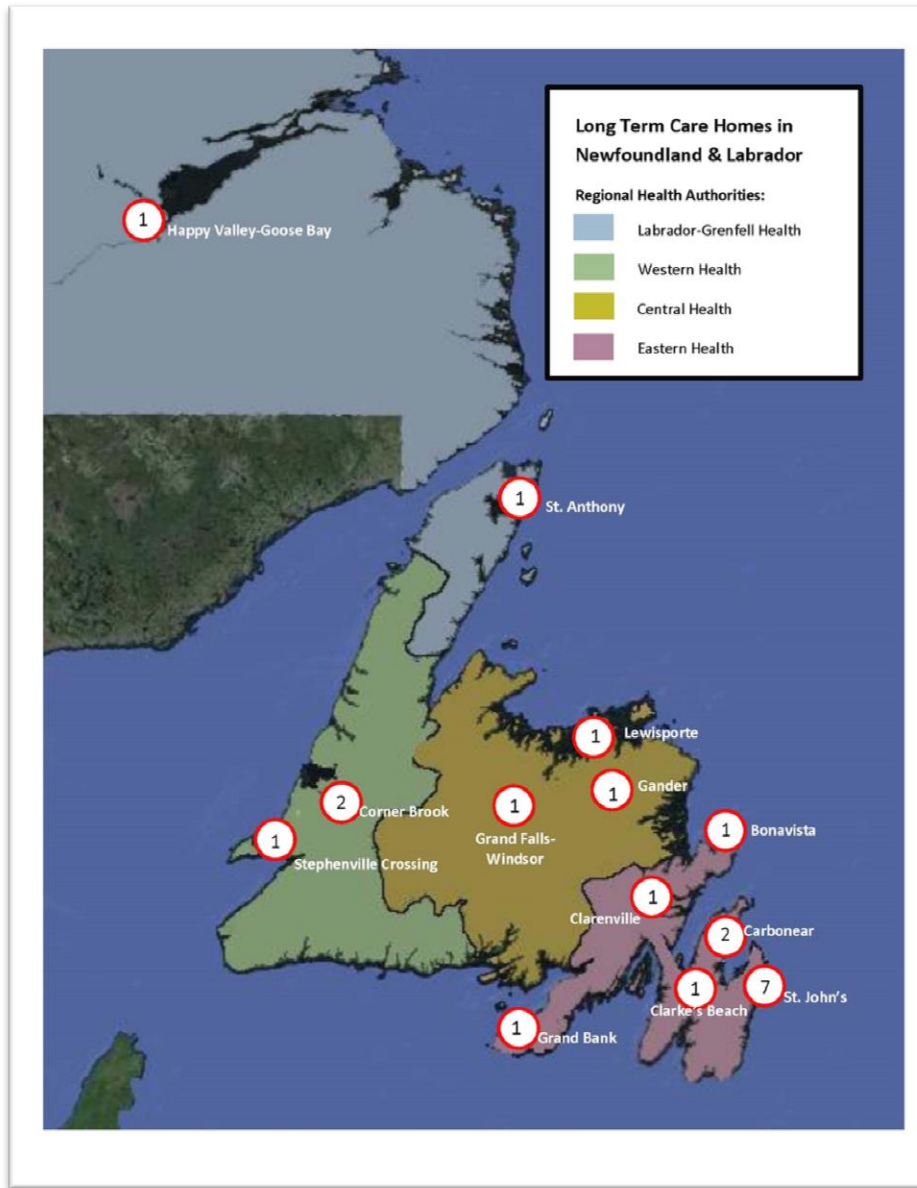


Figure 6: Long-Term Care Homes in NL. Project consultants noted that these facilities may have capacity for short-term respite care.

End-of-Life Care

In Newfoundland and Labrador, the four RHAs provide end-of-life care in the community that includes one or more of the following services:

- medication/pain management,
- personal care,
- respite care, and
- home visits.

Several organizations including the Victorian Order of Nurses (VON) and private agencies such as In-Home Healthcare also offer community-based palliative care services.

Summary of the Evidence

One systematic review examining end-of-life care was identified (31); it synthesized 29 primary research studies. The one included review had an AMSTAR score indicating a weak methodology with one out of five key methodological criteria satisfied.²⁰

The evidence for end-of-life care focuses on whether interventions—particularly prognostic indicators—are effective in predicting time of death and in improving the quality of life for seniors with dementia (31).

Effectiveness

The single systematic review was not able to identify a sufficient base of primary research evidence from which to draw any strong conclusions regarding the effectiveness of different end-of-life care interventions for any of the studied conditions. However, according to the authors, older people with dementia tend to receive a poorer quality of care compared to those without dementia. As well, patient outcomes appear to be influenced by symptoms, timing of physician responses, location of care, and types of care services (31). Culture was identified as a significant factor in determining how both formal and informal care providers perceive the patient/client's quality of life (31).

Economic Issues

No health economic evidence for end-of-life care was identified.

Fall Prevention

In the context of this report, fall prevention programs are categorized into four different types: *exercise*, *environmental*, *supplementation* and *multiple component* interventions. Exercise interventions include individual or group sessions that focus on strength, aerobic endurance, flexibility and/or balance training, and may include Tai Chi. Environmental interventions involve adaptations of the physical environment to improve personal mobility and home safety. Supplementation includes vitamin D with or without calcium co-supplementation. Multiple component interventions address more than one risk category and clients receive a tailored combination of interventions based on their individual assessment.

Summary of Evidence

Evidence for fall prevention strategies for community-dwelling seniors was identified in the following studies:

- 5 Meta-Analyses (16,17,19,20,22)
- 1 Systematic Review (27)

These reviews synthesized the evidence from 294 primary studies, of which 51% were cited only once—indicating a significant level of shared primary research evidence among the review papers. Three of the six review papers had AMSTAR scores indicating strong methodologies fulfilling all five of our key methodological criteria (19,20,22). The remainder of the included reviews had AMSTAR

²⁰ See full details on included systematic reviews and primary studies in the online [CBSMS Companion Document](#). p. 23, and p. 39, respectively.

scores indicating moderate methodologies fulfilling three (17,27) or two out of five (16) key methodological criteria.²¹

Effectiveness

Exercise

The evidence for fall prevention indicates that exercise programs have a significant beneficial effect on reducing the occurrence of falls in community-dwelling older adults compared to usual care, in terms of the total number of falls for a group of seniors (20,22,27) as well as the rate of falls per person over time (20). In particular, individual home-based and group exercise programs targeting two or more of the following parameters: strength, balance, flexibility, or endurance (20,27), as well as group Tai Chi (20), demonstrated a reduced occurrence of falls for seniors. Compared to usual care, exercise programs that focus on only one of these parameters were also found to have a significant beneficial effect on reducing the rate of falls (17).

Environmental

Environmental interventions that provide home-safety adaptations and aids for personal mobility have been shown to be significantly effective for older adults at high risk of falls, in terms of number of fallers and rate of falls (20). In this context, older adults at high risk for falls were identified by having a history of falls. Similar findings have not been shown for older adults who are not identified as being at risk of falling (20,27).

Key Message:

Several well-established community-based fall prevention exercise programs, including individual and group exercise programs, have been shown to significantly reduce the occurrence of falls among seniors living at home. Environmental fall prevention programs that focus on home safety and personal mobility are effective for high-risk older adults.



Supplementation

The evidence for vitamin D supplementation with or without calcium co-supplementation indicates that this may be an effective intervention in reducing number of fallers, (15,17) and rate of falls (15) in subgroups of the population identified as having low serum vitamin D levels (15).

Multi-Component Fall Prevention Interventions

The evidence for the effectiveness of multi-component fall prevention interventions is mixed. Some research indicates significant beneficial effects on reducing falls as measured by the rate of falls, (17,20) number of falls, (27) or number of fallers, (16) but other evidence indicates a lack of statistical significance for those same outcomes (19,22) or for fall-related injuries (19).

Evidence from a single comprehensive meta-analysis on complex interventions that included analyses of multi-component fall prevention programs indicates a significant improvement in physical functioning of older adults (16). Effects on mortality also showed mixed results with one

²¹ See full details on included systematic reviews and primary studies in the online [CBSMS Companion Document](#), p. 23, and p. 39, respectively

review indicating a significant reduction in risk of mortality (16) and another review showing no significant protective effect (19).

The inconsistent nature of the evidence appears to be related to heterogeneity in program design and implementation as well as in the types of patients/clients studied. At present there is insufficient evidence in the included literature to determine which aspects of multi-component fall prevention programs will be most effective for particular groups of patients/clients.

Other Key Outcomes of Interest

While, one systematic review reported that fall prevention programs did not result in any significant difference in patient/client place of residence or rates of healthcare utilization (19), other evidence including an exhaustive report from the Public Health Agency of Canada²² has demonstrated that the occurrence of a fall is a strong predictor of hospital admission and long-term care admission. Consequently, it is reasonable to assume that any fall prevention interventions that lead to significantly fewer falls may be expected to have some positive impact on maintaining community residence and decreasing healthcare utilization rates.

The included systematic reviews did not measure quality of life outcomes for fall prevention programs. There were no unintended effects reported in the evidence for fall prevention interventions.

Economic Issues

Two systematic reviews of health economic research evidence for fall prevention programs were identified (43,44). Both reviews included a range of different fall prevention programs that were administered in the home, were characterized as mostly environmental or multi-component with at least one environmental component.

Both reviews agree that the incremental cost-effectiveness ratios (ICERs) for the studied fall prevention programs indicate that the programs are cost-effective. However, one review paper stresses that ICER is heavily context-dependent, particularly in terms of the performance of the personnel who deliver the intervention (43). Both reviews suggest that fall prevention programs targeting higher risk patients/clients are more cost-effective than those that do not.²³

The Newfoundland and Labrador Context

In Newfoundland and Labrador, fall prevention programs have already been implemented (Eastern Health, Western Health and Labrador Grenfell Health) or are currently being planned (Central Health). In addition, several community groups and organizations operate fall prevention initiatives including Avalon East Safe Communities, Mount Pearl Senior Independence Group, the Labrador Friendship Centre and the SRC-NL (73).

Fall prevention programs with an exercise component have a better chance of being implemented in cities and larger towns than in smaller rural communities. This is the result of the availability of more occupational therapists and physiotherapists to oversee the operation of such programs in the more populated areas of the province.

²² See this [link](#) for the Public Health Agency of Canada report, 2005.

²³ See economic analysis in the online [CBSMS Companion Document](#), p. 143

In order for smaller rural communities to implement an exercise-based fall prevention program, there would need to be recruitment and training of community individuals in order to compensate for the lack of available health professionals such as occupational therapists and physiotherapists in these areas. For instance, a permanent resident of the community, or community group member, would be an ideal choice so as to prevent high turn-over rates in these positions.

The provincial *Long-Term Care and Community Support Program: Adult Needs Assessment* already includes a sub-section regarding home safety. This would support the implementation of an environmental fall prevention program but would add additional responsibilities for the assessor or a third party, if a senior is identified as being at risk for falls. For example, the assessor would be responsible for providing basic education on fall prevention and would be required to submit a referral for home modifications, if they are needed. Additionally, the scarcity in some parts of the province of contractors and skilled workers available for the installation of safety and home-modification equipment would be considered an obstacle to successful implementation; therefore, training in the installation of safety and home-modification equipment would be required for a full environmental fall prevention program to be put in place.

The Newfoundland and Labrador Housing Corporation does offer a provincial *Home Repair Program* and a *Home Modification Program* to provide financial assistance to low-income home owners for essential repairs and changes to enhance accessibility. Eligible homeowners may receive forgivable grants up to \$7,500 or repayable loans to a maximum of \$10,000 in Newfoundland or \$13,000 in Labrador (74). Seniors who are ineligible for these programs must pay out-of-pocket for any modifications needed. All RHAs are experiencing financial constraints that limit human resource capacities, such as a shortage of occupational therapists and physiotherapists; these human resources challenges constrain the development and implementation of fall prevention programs. To overcome these challenges, it has been suggested that community programs could be 'piggy-backed' onto programs already being conducted in long-term care institutions.

Preventive Home Visits

Preventive home visits are programs of structured visitations to seniors living in the community by a community health nurse or allied healthcare worker whose goal is to "maintain the health and autonomy of older adults and to prevent disability and subsequent nursing home admission"(21). Preventive home visits may include multidimensional assessment of a client's medical, psychosocial, functional and/or environmental needs that occur in the home environment (21,26). They may also include education and follow-up via personal visits or telephone contact (15,21,26).

Summary of Evidence

We found the following evidence that examined preventive home visit programs for community-dwelling seniors:

- 1 Health Technology Assessment (15)
- 1 Meta-Analysis (21)
- 3 Systematic Reviews (26,33,39)

These reviews synthesized the evidence from 62 primary studies, of which 87% were cited only once—indicating very little overlap of primary research among the review papers. One of the five review papers had an AMSTAR score indicating a strong methodology that satisfied four out of five of our key methodological criteria (26). The remainder of the included reviews had AMSTAR scores indicating moderately strong methodologies that satisfied four, (15) three, (33,39) or two (21) of our key methodological criteria.²⁴

Effectiveness

Preventive home visits with health promotion components are complex interventions that usually include:

- specialist training for the health promotion professional (most often a community health nurse);
- education for patient/client, caregiver or family;
- additional assessments and planning; and
- connecting patients/clients with, or giving referrals to, additional specialists, as appropriate.

The evidence indicates that home-based health promotion programs, compared to usual care, significantly reduce mortality in community-dwelling older adults who have been identified as being at risk for admission to hospital, residential home, or nursing home (15). These findings contrast with those from two other studies that examined multidimensional preventive home visits, without a health promotion component, and found inconclusive results for reducing mortality (21,26).

Community-dwelling older adults who had an identified disability and who received multidimensional preventive home visit interventions had significant improvements in functionality in terms of Activities of Daily Living (ADLs) and Instrumental Activities of Daily Living (IADLs), compared to usual care (33). Post-hoc²⁵ analyses suggest that the following key features are associated with successful in-home programs:

- being led by a community health nurse with strong community and/or geriatric experience;
- frequent follow-up visits;
- a comprehensive individually-tailored program that identifies and targets risk factors for disability; and
- strong communication between the nurse and multi-disciplinary care team (33).

Key Message:

Preventive home visits that include health promotion reduce the risk of mortality among at-risk older adults.



²⁴ See full details on included systematic reviews and primary studies in the online [CBSMS Companion Document](#) p. 23, and p. 39, respectively

²⁵ A post-hoc analysis looks for patterns in data that have not been specified prior to the experiment. As such, post-hoc analyses indicate relationships between variables that are correlational but may not be causal.

Other Key Outcomes of Interest

The available evidence indicates that there are no significant differences in the length of community residence between older adults who receive preventive home visits and those who receive usual care (21). Likewise, the evidence indicates no significant difference in healthcare utilization (26). The available evidence did not report on any research measuring quality of life outcomes for preventive home visit interventions. There were no unintended effects reported in the evidence for home-based health promotion interventions.

Economic Issues

The available evidence did not report on the cost effectiveness of preventive home visits. However, it should be noted that, in research authored by Chappell and colleagues (75), a consistent finding is that preventive home care visits are cost effective for older patients/clients who have mild to moderate disability or frailty. These articles fell outside of our inclusion criteria either because of date (80) or type of publication (81), but warrant attention since they were Canadian in focus and have been used to inform decision makers at the national level.

The Newfoundland and Labrador Context

At present, the province does not have a preventive home visit program outside of rehabilitation programs where community health nurses, occupational therapists, physiotherapists or other allied healthcare workers follow up with patients who have recently been discharged from hospital. The Department of Health and Community Services is considering a short-term supportive visit program for seniors, following either hospitalization or referral by a family physician, family members or the senior themselves. Several private organizations do provide some types of home visits for seniors living alone but these are not preventive as defined above.²⁶

Older adults in the province, for the most part, remember when healthcare providers made house calls; our project consultants felt that preventive home visits would be quite easily accepted by patients/clients. The major challenge in providing preventive home visits in Newfoundland and Labrador is the limited number of personnel available to carry out the assessment and/or home visit combined with the large distances required to provide this service for older populations in rural and remote areas.

²⁶ Provincial Health & Home Care offers companionship services in which a home healthcare worker will visit a senior in his or her home to help reduce feelings of loneliness and isolation (76). The Seniors Resource Centre of Newfoundland and Labrador offers a Friendly Visiting program in which a volunteer will visit with a senior who has limited social contact once per week (77). This service is currently offered to seniors in the St. John's, Mount Pearl and surrounding areas. The Victorian Order of Nurses also offers home visits for seniors in the St. John's, Gander and Corner Brook areas (78).

Conclusion

Newfoundland and Labrador will see a growing demand by older adults to live at home for longer periods of time. A broad range of services has been developed and implemented for older adults to support their ability to live at home safely and with an acceptable quality of life. At the same time, the province's current system of health and social care for seniors is more fragmented, less efficient, and more expensive than it needs to be, particularly in more highly-populated urban centres. The evidence indicates that appropriate levels of patient/client case management and a more integrated form of health and social care for seniors can address many of these issues effectively.

Professional relationships across disciplines are of crucial importance to any model of integrated care for seniors. In some of the more rural and remote health sub-regions of the province, a de facto version of integrated care is already being practiced by health and social care providers, by virtue of the fact that they have the same client base, work in close physical proximity to one another, have easily shared information and have worked together for long periods of time.

...in order to effectively support seniors living in the community and their caregivers, services need to be targeted to appropriate patient/client groups, or else they will not be effective and will be too expensive.

Central to any form of integrated care will be the participation of family physicians and community care nurses. The research literature indicates that without their participation, it is unlikely that an integrated care program will succeed. We have been told by local care providers that well supported and enduring relationships between family physicians and community care nurses, as well as with other allied healthcare providers and social workers, are the framework upon which coordinated services may be efficiently and effectively delivered.

The potential gains from integrated care should not cast doubt on existing services for seniors in the community that are both effective overall and cost-effective in particular. The evidence strongly indicates that fall prevention programs, particularly exercise and environmental programs, result in significant improvements in health status among seniors. Moreover, fall prevention programs such as strength training or Tai Chi training can be delivered efficiently across most of the province.

The evidence also sounds a cautionary note regarding the use of respite care. The results of this synthesis indicate that respite care may not be effective in prolonging community residence for all seniors nor in effectively supporting their caregivers. In fact, this cautionary note may be generalized to all interventions and models of integrated care: in order to effectively support seniors living in the community and their caregivers, services need to be targeted to appropriate patient/client groups, or else they will not be effective and will be too expensive. Therefore, a clear understanding of the health and functional status of the patient/client is indispensable and underscores the importance of implementing a standardized geriatric assessment.

This report indicates that effective models of integrated care share certain essential elements; decision makers are encouraged to understand these essential elements, to avoid trying to implement a “one-size-fits-all” approach, and to work towards flexible approaches that recognize the differences between urban, rural and remote areas. A sensible first step would be to use the findings of this review to assess the effectiveness of current care delivery (i.e., primary, medical, community and social care) to seniors and their caregivers now living in the community. The second step would be to use the report’s findings to set targets for more effective care. Based on the solutions that would emerge from these exercises, the next step would be to design and launch implementation projects in several diverse areas in order to progressively scale up services to the rest of the province.

References

- (1) Gröne O, Garcia-Barbero M. Integrated care: a position paper of the WHO European office for integrated health care services. *International Journal of Integrated Care* 2001;1. URL: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1525335/>.
- (2) Fries BE, Fund MM. Implementing the Resident Assessment Instrument: Case studies of policymaking for long-term care in eight countries. *Milbank Memorial Fund*; 2003. URL: <http://www.milbank.org/uploads/documents/interRAI/030222interRAI.html>.
- (3) Community Health Assessment (CHA). 2012; Available at: <http://www.interrai.org/community-health.html>. Accessed 04/18, 2013.
- (4) Home Care (HC). 2012; Available at: <http://www.interrai.org/home-care.html>. Accessed 04/18, 2013.
- (5) Health Canada. Healthcare system - About Primary Health Care. 2012; Available at: <http://www.hc-sc.gc.ca/hcs-sss/prim/about-apos-eng.php>. Accessed 03/12, 2013.
- (6) Drummond MF, Sculpher MJ, Torrance GW, O'Brien BJ, Stoddart GL. *Methods for the economic evaluation of health care programmes*. Oxford University Press, USA; 2005.
- (7) Teams in Action: Primary Health Care Teams for Canadians. 2009 URL: www.healthcouncilcanada.ca.
- (8) Percent change by census consolidated subdivision 25 years- 1981 to 2006. 2008(Newfoundland and Labrador) URL: http://www.stats.gov.nl.ca/maps/PDFs/CCS_PopChange_8106.pdf.
- (9) Change in median age by community, 2001 to 2006. 2010 September 8 URL: http://www.communityaccounts.ca/SESA/nl_mapcentre/MedianAge06/MedAge0106.pdf.
- (10) Department of Health and Community Services, Government of Newfoundland and Labrador. *Healthy Aging for All In the 21st Century - Seniors Profile*. 2006 URL: <http://www.health.gov.nl.ca/health/publications/seniorsprofile.pdf>.
- (11) *Demographic Change: Issues & Implications*. 2006 October:1-14 URL: <http://www.fin.gov.nl.ca/fin/demographyupdate.pdf>.
- (12) The Atlantic Seniors Health Promotion Network. *More Than Shelter: Housing Policy Kit for Seniors in Atlantic Canada*. 2004 URL: <http://www.canpension.ca/pages/pdf/engkit.pdf>.
- (13) Mason A, Weatherly H, Spilsbury K, Arksey H, Golder S, Adamson J, et al. A systematic review of the effectiveness and cost-effectiveness of different models of community-based respite care for frail older people and their carers. *Health Technology Assessment* 2007;11(15)URL: <http://www.hta.ac.uk/pdf/excs/summ1115.pdf>.
- (14) Shaw C, McNamara R, Abrams K, Cannings-John R, Hood K, Longo M, et al. Systematic review of respite care in the frail elderly. *Health Technology Assessment* 2009;13(20). URL: <http://www.journalslibrary.nihr.ac.uk/hta/volume-13/issue-20>

- (15) Tappenden P, Campbell F, Rawdin A, Wong R, Kalita N. The clinical effectiveness and cost-effectiveness of home-based, nurse-led health promotion for older people: a systematic review. *Health Technology Assessment* 2012;20(20) URL: <http://www.ncbi.nlm.nih.gov/books/NBK98581/pdf/TOC.pdf>.
- (16) Beswick AD, Rees K, Dieppe P, Ayis S, Goberman-Hill R, Horwood J, et al. Complex interventions to improve physical function and maintain independent living in elderly people: a systematic review and meta-analysis. *The Lancet* 2008;371(9614):725-735 DOI: [10.1016/S0140-6736\(08\)60342-6](https://doi.org/10.1016/S0140-6736(08)60342-6).
- (17) Campbell AAJ. Rethinking individual and community fall prevention strategies: a meta-regression comparing single and multifactorial interventions. *Age Ageing* 2007 -11;36(6):656-662 DOI: [10.1093/ageing/afm122](https://doi.org/10.1093/ageing/afm122).
- (18) Chien LLY. Caregiver support groups in patients with dementia: a meta-analysis. *Int J Geriatr Psychiatry* 2011 -10;26(10):1089-1098 DOI: [10.1002/gps.2660](https://doi.org/10.1002/gps.2660).
- (19) Gates SS. Multifactorial assessment and targeted intervention for preventing falls and injuries among older people in community and emergency care settings: systematic review and meta-analysis. *BMJ. British medical journal (Clinical research ed.)* 2008 -01;336(7636):130-133 DOI: [10.1136/bmj.39412.525243.BE](https://doi.org/10.1136/bmj.39412.525243.BE).
- (20) Gillespie. Interventions for preventing falls in older people living in the community. *Cochrane Collaboration* URL: <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD007146.pub2/pdf/standard>.
- (21) Huss A. Multidimensional preventive home visit programs for community-dwelling older adults: a systematic review and meta-analysis of randomized controlled trials. *The journals of gerontology. Series A, Biological sciences and medical sciences* 2008;63(3):298 DOI: [10.1093/gerona/63.3.298](https://doi.org/10.1093/gerona/63.3.298).
- (22) Michael YL. Primary care-relevant interventions to prevent falling in older adults: a systematic evidence review for the US Preventive Services Task Force. *Ann Intern Med* 2010;153(12):815 URL: <http://www.medpagetoday.com/upload/2010/12/22/815.full.pdf>.
- (23) Pinquart MM. Spouses, adult children, and children-in-law as caregivers of older adults: A meta-analytic comparison. *Psychol Aging* 2011;26(1):1-14 DOI: [10.1037/a0021863](https://doi.org/10.1037/a0021863).
- (24) Schoenmakers BB. Supporting the dementia family caregiver: The effect of home care intervention on general well-being. *Aging & mental health* 2010 -01;14(1):44-56 DOI: [10.1080/13607860902845533](https://doi.org/10.1080/13607860902845533).
- (25) Spijker AA. Effectiveness of Nonpharmacological Interventions in Delaying the Institutionalization of Patients with Dementia: A Meta-Analysis EFFECTIVENESS OF SUPPORT PROGRAMS FOR DEMENTIA. *Journal of the American Geriatrics Society (JAGS)* 2008 -06;56(6):1116-1128 DOI: [10.1111/j.1532-5415.2008.01705.x](https://doi.org/10.1111/j.1532-5415.2008.01705.x).
- (26) Bouman AA. Effects of intensive home visiting programs for older people with poor health status: a systematic review. *BMC health services research* 2008;8(1):74 DOI: [10.1186/1472-6963-8-74](https://doi.org/10.1186/1472-6963-8-74).
- (27) Costello EE. Update on falls prevention for community-dwelling older adults: review of single and multifactorial intervention programs. *Journal of rehabilitation research and development* 2008;45(8):1135 DOI: [10.1682/JRRD.2007.10.0169](https://doi.org/10.1682/JRRD.2007.10.0169).

- (28) Dickens AA. Interventions targeting social isolation in older people: a systematic review. BMC Public Health 2011;11(1):647 DOI: [10.1186/1471-2458-11-647](https://doi.org/10.1186/1471-2458-11-647).
- (29) Eklund KK. Outcomes of coordinated and integrated interventions targeting frail elderly people: a systematic review of randomised controlled trials. Health & social care in the community 2009 - 09;17(5):447-458 DOI: [10.1111/j.1365-2524.2009.00844.x](https://doi.org/10.1111/j.1365-2524.2009.00844.x).
- (30) Eters LL. Caregiver burden among dementia patient caregivers: A review of the literature. J Am Acad Nurse Pract 2008 -08;20(8):423-428 DOI: [10.1111/j.1745-7599.2008.00342.x](https://doi.org/10.1111/j.1745-7599.2008.00342.x).
- (31) Goodman CC. End of life care for community dwelling older people with dementia: an integrated review. Int J Geriatr Psychiatry 2010 -04;25(4):329-337 DOI: [10.1002/gps.2343](https://doi.org/10.1002/gps.2343).
- (32) Johansson GG. Multidisciplinary team, working with elderly persons living in the community: a systematic literature review. Scandinavian journal of occupational therapy 2010 -01;17(2):101-116 DOI: [10.3109/11038120902978096](https://doi.org/10.3109/11038120902978096).
- (33) Liebel DDV. Review: Review of Nurse Home Visiting Interventions for Community-Dwelling Older Persons With Existing Disability. Medical care research and review 2009 -04;66(2):119-146 DOI: [10.1177/1077558708328815](https://doi.org/10.1177/1077558708328815).
- (34) Low LF. A systematic review of different models of home and community care services for older persons. BMC health services research 2011;11(1):93 DOI: [10.1186/1472-6963-11-93](https://doi.org/10.1186/1472-6963-11-93).
- (35) MacAdam M. Frameworks of Integrated Care for the Elderly: A Systematic Review. 2008 URL: <http://www.cssnetwork.ca/Resources%20and%20Publications/MacAdam-Frameworks%20for%20Integrated%20Care%20for%20the%20Frail%20Elderly.pdf>.
- (36) MacAdam M. Moving Toward Health Service Integration: Provincial Progress in System Change for Seniors. 2009 URL: http://cprn.org/documents/51302_FR.pdf.
- (37) Oeseburg BB. Effects of Case Management for Frail Older People or Those With Chronic Illness A Systematic Review. Nursing research (New York) 2009 -05;58(3):201-210 DOI: [10.1097/NNR.0b013e3181a30941](https://doi.org/10.1097/NNR.0b013e3181a30941).
- (38) Smits CHMCHM. Effects of combined intervention programmes for people with dementia living at home and their caregivers: a systematic review. Int J Geriatr Psychiatry 2007 -12;22(12):1181-1193 DOI: [10.1002/gps.1805](https://doi.org/10.1002/gps.1805).
- (39) Thompson PP. A systematic review of the effectiveness of in-home community nurse led interventions for the mental health of older persons. J Clin Nurs 2008 -06;17(11):1419-1427 DOI: [10.1111/j.1365-2702.2008.02287.x](https://doi.org/10.1111/j.1365-2702.2008.02287.x).
- (40) Van Mierlo LLD. Personalised caregiver support: effectiveness of psychosocial interventions in subgroups of caregivers of people with dementia. Int J Geriatr Psychiatry 2012 -01;27(1):1-14 DOI: [10.1002/gps.2694](https://doi.org/10.1002/gps.2694).
- (41) Winterton R. Models of care for socially isolated older rural carers: barriers and implications. Rural and remote health 2011;11(1678). URL: <http://www.rrh.org.au/articles/printviewnew.asp?ArticleID=1678>

- (42) Church J, Goodall S, Norman R, Haas M. An economic evaluation of community and residential aged care falls prevention strategies in NSW. *New South Wales public health bulletin* 2011;22(4):60-68. DOI: [10.1071/NB10051](https://doi.org/10.1071/NB10051).
- (43) Corrieri S, Riedel-Heller SG, Matschinger H, König HH. Cost-effectiveness of fall prevention programs based on home visits for seniors aged over 65 years: a systematic review. *International Psychogeriatrics* 2011;23(5):711. DOI: [10.1017/S1041610210002280](https://doi.org/10.1017/S1041610210002280)
- (44) Davis JC, Robertson MC, Ashe MC, Liu-Ambrose T, Khan KM, Marra CA. Does a home-based strength and balance programme in people aged ≥ 80 years provide the best value for money to prevent falls? A systematic review of economic evaluations of falls prevention interventions. *Br J Sports Med* 2010;44(2):80-89. DOI: [10.1136/bjism.2008.060988](https://doi.org/10.1136/bjism.2008.060988)
- (45) Jones C, Edwards RT, Hounsom B. A systematic review of the cost-effectiveness of interventions for supporting informal caregivers of people with dementia residing in the community. *International Psychogeriatrics* 2012;1(1):1-13. DOI: [10.1017/S1041610211001207](https://doi.org/10.1017/S1041610211001207)
- (46) Wu S, Keeler EB, Rubenstein LZ, Maglione MA, Shekelle PG. A cost-effectiveness analysis of a proposed national falls prevention program. *Clin Geriatr Med* 2010;26(4). DOI: [10.1016/j.cger.2010.07.005](https://doi.org/10.1016/j.cger.2010.07.005)
- (47) Bettio F, Solinas G. Which European model for elderly care? Equity and cost-effectiveness in home based care in three European countries 2009. DOI: [10.7384/70820](https://doi.org/10.7384/70820)
- (48) Bielaszka-DuVernay C. The 'GRACE' model: In-home assessments lead to better care for dual eligibles. *Health Aff* 2011;30(3):431-434. DOI: [10.1377/hlthaff.2011.0043](https://doi.org/10.1377/hlthaff.2011.0043)
- (49) Brown PPM. Cost of prescribed and delivered health services resulting from a comprehensive geriatric assessment tool in New Zealand. *Health & social care in the community* 2009 -09;17(5):514-521 DOI: [10.1111/j.1365-2524.2009.00855.x](https://doi.org/10.1111/j.1365-2524.2009.00855.x).
- (50) Counsell SSR. Cost Analysis of the Geriatric Resources for Assessment and Care of Elders Care Management Intervention COST ANALYSIS OF THE GRACE INTERVENTION. *Journal of the American Geriatrics Society (JAGS)* 2009 -08;57(8):1420-1426 DOI: [10.1111/j.1532-5415.2009.02383.x](https://doi.org/10.1111/j.1532-5415.2009.02383.x).
- (51) Frick KD, Kung JY, Parrish JM, Narrett MJ. Evaluating the Cost-Effectiveness of Fall Prevention Programs that Reduce Fall-Related Hip Fractures in Older Adults. *J Am Geriatr Soc* 2010;58(1):136-141 DOI: [10.1111/j.1532-5415.2009.02575.x](https://doi.org/10.1111/j.1532-5415.2009.02575.x).
- (52) Hektoen LF, Aas E, Lurås H. Cost-effectiveness in fall prevention for older women. *Scand J Public Health* 2009;37(6):584-589 DOI: [10.1177/1403494809341093](https://doi.org/10.1177/1403494809341093).
- (53) Hermus G, Stonebridge C, Theriault L, Bounajm F. Home and Community Care in Canada: An Economic Footprint. 2012 URL: <http://www.conferenceboard.ca/e-library/abstract.aspx?did=4841>.
- (54) Irvine LL. Cost-effectiveness of a day hospital falls prevention programme for screened community-dwelling older people at high risk of falls. *Age Ageing* 2010 -11;39(6):710-716 DOI: [10.1093/ageing/afq108](https://doi.org/10.1093/ageing/afq108).

- (55) Kronborg CC. Cost effectiveness of preventive home visits to the elderly Economic evaluation alongside randomized controlled study. *The European journal of health economics* 2006 -12;7(4):238-246 DOI: [10.1007/s10198-006-0361-2](https://doi.org/10.1007/s10198-006-0361-2).
- (56) Page TF. Cost analysis of a community-based fall prevention program being delivered in South Florida. *Fam Community Health* 2012;35(3):264. DOI: [10.1097/FCH.0b013e318250be2e](https://doi.org/10.1097/FCH.0b013e318250be2e)
- (57) Sach TTH. Community falls prevention for people who call an emergency ambulance after a fall: an economic evaluation alongside a randomised controlled trial. *Age Ageing* 2012 -06;41(5):635 DOI: [10.1093/ageing/afs071](https://doi.org/10.1093/ageing/afs071).
- (58) Melis RJF. Cost-effectiveness of a multidisciplinary intervention model for community-dwelling frail older people. *The journals of gerontology. Series A, Biological sciences and medical sciences* 2008;63(3):275 DOI: [10.1093/gerona/63.3.275](https://doi.org/10.1093/gerona/63.3.275).
- (59) Long MJ, Marshall BS. What price an additional day of life? A cost-effectiveness study of case management. *Am J Manag Care* 2000;6(8):881-886. URL: http://knowledge.translation.ca/sysrev/articles/Long_AJMC_2000.pdf
- (60) Shea BBJ. External Validation of a Measurement Tool to Assess Systematic Reviews (AMSTAR). *PloS one* 2007 -12;2(12):e1350. DOI: [10.1371/journal.pone.0001350](https://doi.org/10.1371/journal.pone.0001350)
- (61) Shea BBJ. Development of AMSTAR: a measurement tool to assess the methodological quality of systematic reviews. *BMC medical research methodology* 2007;7(1):10. DOI: [10.1186/1471-2288-7-10](https://doi.org/10.1186/1471-2288-7-10)
- (62) Landis JR, Koch GG. The measurement of observer agreement for categorical data. *Biometrics* 1977:159-174. URL: <http://www.jstor.org/stable/2529310>
- (63) Leutz WWN. Five Laws for Integrating Medical and Social Services: Lessons from the United States and the United Kingdom. *Milbank Q* 1999 -03;77(1):77-110 DOI: [10.1111/1468-0009.00125](https://doi.org/10.1111/1468-0009.00125).
- (64) Kodner DL. Fully integrated care for frail elderly: two American models. *International journal of integrated care* 2000;1 URL: <http://www.ijic.org/index.php/ijic/article/view/11/21>.
- (65) Gagnon AJ. Randomized controlled trial of nurse case management of frail older people. *Journal of the American Geriatrics Society (JAGS)* 1999 -09-01;47(9):1118-1124.
- (66) Kodner DL. Whole-system approaches to health and social care partnerships for the frail elderly: an exploration of North American models and lessons. *Health & social care in the community* 2006;14(5):384 DOI: [10.1111/j.1365-2524.2006.00655.x](https://doi.org/10.1111/j.1365-2524.2006.00655.x).
- (67) Vedel I, De Stampa M, Bergman H, Ankri J, Cassou B, Mauriat C, et al. A novel model of integrated care for the elderly: COPA, Coordination of Professional Care for the Elderly. *Aging Clin Exp Res* 2009 Dec;21(6):414-423. DOI: [10.1007/BF03327446](https://doi.org/10.1007/BF03327446)
- (68) Vedel I. Ten years of integrated care: backwards and forwards. The case of the province of Québec, Canada. *International journal of integrated care* 2011;11(special 10th anniversary edition) URL: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3111887/?tool=pmcentrez>.

- (69) Feachem RGARGA. Getting more for their dollar: a comparison of the NHS with California's Kaiser Permanente Commentary: Funding is not the only factor Commentary: Same price, better care Commentary: Competition made them do it. BMJ.British medical journal (Clinical research ed.) 2002 - 01;324(7330):135; 135-143; 143. DOI: [10.1136/bmj.324.7330.135](https://doi.org/10.1136/bmj.324.7330.135)
- (70) Dalhousie University. Health Care of the Elderly. 2012; Available at: <http://halifax.medicine.dal.ca/HCOE.html>. Accessed 07/26, 2013.
- (71) Healthy Aging for All In the 21st Century - Seniors Profile. 2006 March:1-29URL: <http://www.health.gov.nl.ca/health/publications/seniorsprofile.pdf>.
- (72) Health Canada. Respite for Family Caregivers: An Environmental Scan of Publicly-funded Programs in Canada. 2011; Available at: <http://www.hc-sc.gc.ca/hcs-sss/pubs/home-domicile/2003-respite-releve/index-eng.php#p3>. Accessed 12/18, 2012.
- (73) Public Health Agency of Canada, Division of Aging and Seniors. Inventory of Fall Prevention Initiatives in Canada - 2005. 2005 URL: <http://www.saskatoonhealthregion.ca/pdf/fp-InventoryofCdafpinitiatives05.pdf>.
- (74) Seniors Resource Centre of Newfoundland and Labrador. Seniors Guide to Services and Programs in Newfoundland and Labrador. 2012 URL: <http://www.seniorsresource.ca/Seniors%20Guide%202012%20for%20website.pdf>.
- (75) Chappell NL. An evidence-based policy prescription for an aging population. HealthcarePapers (Toronto) 2011;11(1):8. URL: <http://www.longwoods.com/product/download/code/22246>
- (76) Provincial Home & Health Care. Services. 2010; Available at: <http://www.provincialhomecare.ca/services/>. Accessed 12/18, 2012.
- (77) Seniors Resource Centre of Newfoundland and Labrador. Services - Friendly Visiting Program. Unknown; Available at: <http://www.seniorsresource.ca/services.htm>. Accessed 12/18, 2012.
- (78) The Victorian Order of Nurses. VON (Victorian Order of Nurses) National Directory. 2009; Available at: <http://www.von.ca/en/NationalDirectory/branch.aspx?BranchId=60>. Accessed 12/20, 2012.