

Evidence *in* Context

Issue: Community-Based Service Models for Seniors
ONLINE COMPANION DOCUMENT
2013

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

Community-Based Service Models for Seniors: An Online Companion Document

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Newfoundland & Labrador Centre for

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HEALTH
RESEARCH**

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Preface

This Online Companion Document complements the final *'Evidence in Context'* report on Community-based Service Models for Seniors (CSMS), an evidence synthesis conducted through the Contextualized Health Research Synthesis Program (CHRSP) at NLCAHR. This Online Companion Document contains a range of background information on Newfoundland and Labrador systems of community-based care for seniors, details on the methodology used in the CHRSP project, details of the results of our analyses, and tables summarizing the contextualization factors for the project.

The purpose of the Online Companion Document is to provide the supporting details and data needed for a critical reading of the *'Evidence in Context'* report, while keeping the final report as succinct and focused on results as possible.

References to this document in the online version of our *'Evidence in Context'* report will link directly to the relevant section(s). The reader will also find bookmarks in the navigation pane.

Community-Based Services for Older Adults in Newfoundland and Labrador

In Newfoundland and Labrador, the four Regional Health Authorities (RHAs) provide universal community support services for seniors living in the community. The RHAs receive funding and direction from the Department of Health and Community Services (DHCS) to operate the *Home Support Program* and the *Special Assistance Program (SAP)*¹ which fall under the *Long Term Care and Community Support Services (LTC CSS)* system (1). In practice, access to services typically begins through one of the single intake phone numbers that each RHA operates. Patient/clients may also be referred to the single intake by their primary care physician or upon discharge from an acute care facility; however, a referral is not required to make first contact and initiate the process.

The Provincial Home Support Program

The provincial [Home Support Program](#) provides services at a minimum level in an effort to maintain the independence of older adults. Services provided are non-professional and can include respite care for informal caregivers, household work, behavioural supports, and help with activities of daily living (ADLs) (2). Home support services may be provided by a home support agency that is publicly subsidized or patient/clients can manage their own care by engaging a private agency to provide and coordinate home support services (1).

Patient/clients requesting home support services are eligible to receive publicly-funded services after undergoing a needs assessment and meeting criteria for place of residence and financial eligibility (3). The initial needs assessment, which is usually completed by a nurse or a social worker, determines which services the client requires. The RHAs have been using *The Long Term Care and Community Support Program: Adult Needs Assessment* but are in the process of transitioning to the InterRAI². This clinical evaluation is used to develop a service delivery plan. Place of residence criteria state that an individual must reside in a self-contained unit separately from others and have access to his/her own bathroom, bedroom and kitchen facilities (3). Therefore, seniors living in their own homes, apartments, condominiums, alternate family care homes, or having specialized board and lodging arrangements are eligible to receive services, whereas those in hospitals, nursing homes, or personal care homes are not eligible (3).

¹ The *Special Assistance Program (SAP)* provides basic medical equipment and supplies for community-dwelling residence that qualify for the program (2). To be eligible for the SAP, the item(s) being requested by the client must be included on the list of approved products. Certain supplies categorized as "Personal Health Supplies" are only available to clients who receive subsidized home support services as described above (1). In addition, some additional financial eligibility criteria must be met to receive services (1).

² The InterRAI will provide a greater degree of discrimination in terms of assessing the needs and capacities of patient clients than did the previous Adult Needs Assessment, which will in turn allow for the development of more complex and criteria-based service plans than before (personal communication, Bruce Cooper, 2012).

Home Support Financial Assessment

A Financial Assessment Officer (FAO) determines eligibility and any amounts that a patient/client is responsible for contributing towards their services (3). Firstly, a patient/client may not hold liquid assets in excess of \$10,000. Secondly, patient/clients are expected to contribute a percentage of their annual income toward the services they receive, based on their total annual income.

Patient/clients with an income of up to \$13,000 are exempt from making any contributions.

Patient/clients with an annual income of up to \$150,000 pay a percentage of costs out-of-pocket on a sliding scale; above the \$150,000 annual income ceiling, patient/clients pay 100% of the costs. For more details on the financial assessment protocol, see the [*Income Based Financial Assessment Policy Manual For The Home Support & Special Assistance Programs.*](#)

If clients are ineligible for financial assistance, they can take their service delivery plan to a private home support agency and purchase services on their own (1). The RHAs refer subsidized and non-subsidized patient/clients alike to 'approved' agencies, though non-subsidized patient/clients may contract services from non-approved agencies. In December 2009, changes were made to the financial assessment eligibility guidelines for the home support program which resulted in a larger number of seniors being eligible to receive financial subsidies for these services. A similar system of financial assessment is used for patient/clients applying to the Special Assistance Program (SAP).

In the case of services provided by the private sector, e.g., homecare or home support services, it is up to the patient/client, whether subsidized or not, to contract services on their own. In the case of public sector services, RHAs are responsible for providing community-based medical services, instruments and equipment through the SAP, and prescribed allied health services such as occupational therapy (OT) and physiotherapy (PT). In practice, patient/clients in the province have nearly universal access to community-based medical services. Patient/clients have variable access to instruments and equipment depending on the particular item and the RHA. Allied health services are, for the most part, not accessible: their available time is prioritized for patient/clients who have recently been discharged from an acute care facility and are attempting to rehabilitate and reintegrate into the community.

A major recurring issue for providing homecare and home supports is the lack of available human resources. This challenge is particularly pronounced in more rural and remote areas, but exists to varying degrees in population centres across the province. Key informants from the four RHAs report that low wages and low unemployment rates are main causes for the lack of human resources. A decrease in the availability of extended family to provide informal (i.e., unpaid) support, especially in rural and remote Newfoundland and Labrador, is compounding the problem. Areas of the province with aboriginal populations are an exception to this trend, as informal support appears to remain strong in these communities. These areas also have higher birthrates, higher proportions of young people living in the community, higher rates of multi-generational households and a continuing tradition of informal care for seniors.³

³ Personal communication, Theresa Dyson, 2012

None of the RHAs have a formalized structure to support or compel any form of integrated care. Key informants reported that in most of the coastal communities of Labrador, a single nurse practitioner is responsible for most health services.⁴ In Western Health and Central Health, key informants explained that some of the sub-regions within the RHA have *de facto* integrated health models.⁵ In these RHA sub-regions, a small number of key health and social service providers know one another professionally as well as personally and work together in close physical proximity. As the result of the natural evolution of strategies to manage caseloads, these professionals effectively work in multi-disciplinary teams.

Distinct from home support, social support and healthcare services are allied healthcare services that include physiotherapy, occupational therapy, speech language pathology, and dietetics, among other disciplines. Key informants in the four RHAs reported a lack of available allied health resources for seniors living in the community. A lack of allied healthcare personnel living in rural and remote areas was cited as one principal reason those services are unavailable in some areas. However, the small number of allied healthcare positions within the RHAs, despite available personnel, was cited as the most important contributor to the scarcity of services.

References

(1) Government of Newfoundland and Labrador. Income Based Financial Assessment Policy Manual For The Home Support & Special Assistance Programs. 2011 URL: http://www.health.gov.nl.ca/health/publications/pm_hssa.pdf .

(2) Government of Newfoundland and Labrador. Department of Health and Community Services. Programs Funded through the Department of Health and Community Services. 2012; Available at: http://www.health.gov.nl.ca/health/personsdisabilities/fundingprograms_hcs.html#phsp . Accessed December 8, 2012.

(3) Government of Newfoundland and Labrador, Department of Health and Community Services. Provincial Home Support Program Operational Standards. 2005 URL: http://www.health.gov.nl.ca/health/publications/home_support_manual.pdf .

⁴ Personal communication, Theresa Dyson, 2012

⁵ Personal communication, Kelli O'Brien and Heather Brown, 2012

Maps and Figures

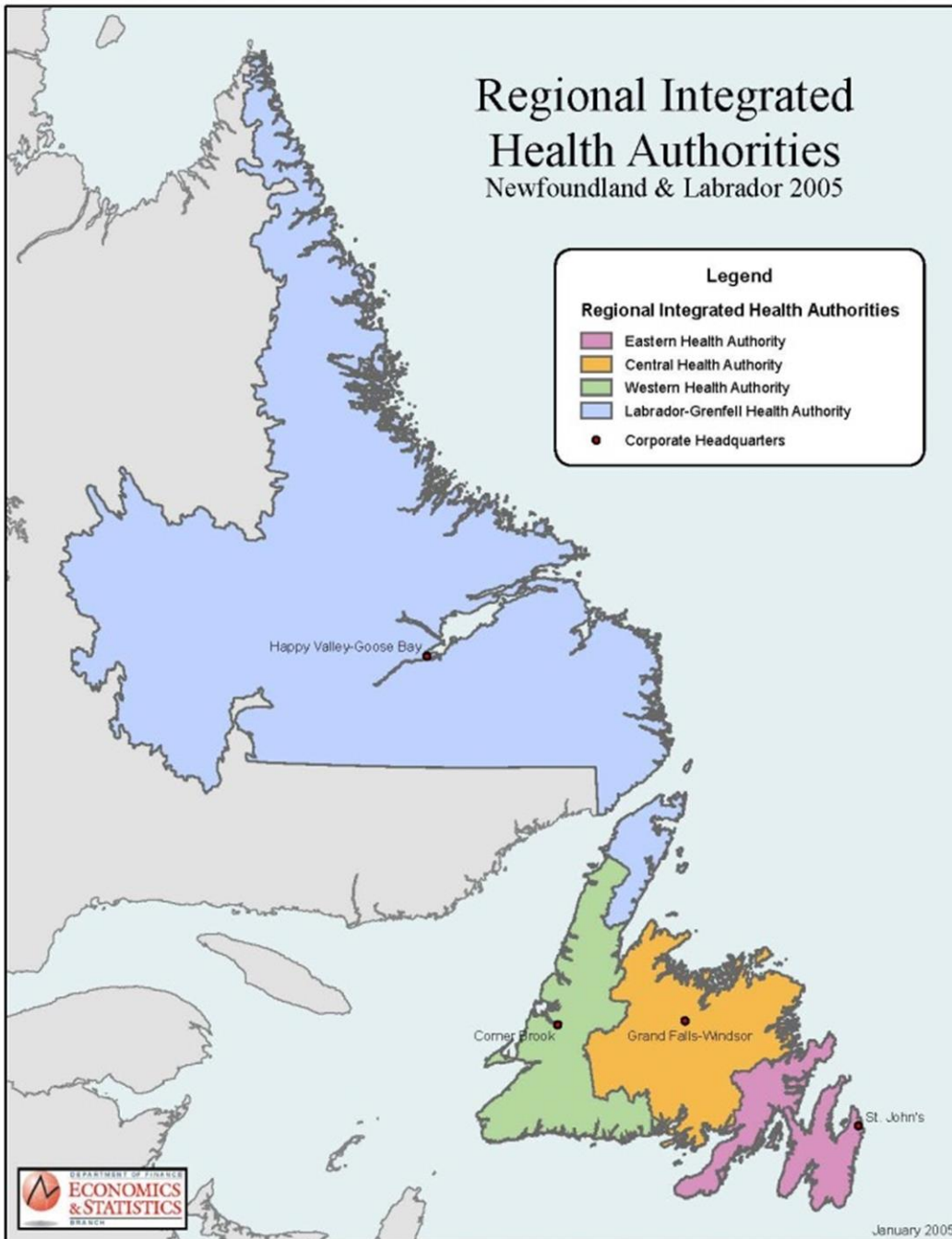


Figure 1: Regional Health Authorities (RHAs) in Newfoundland and Labrador (1)

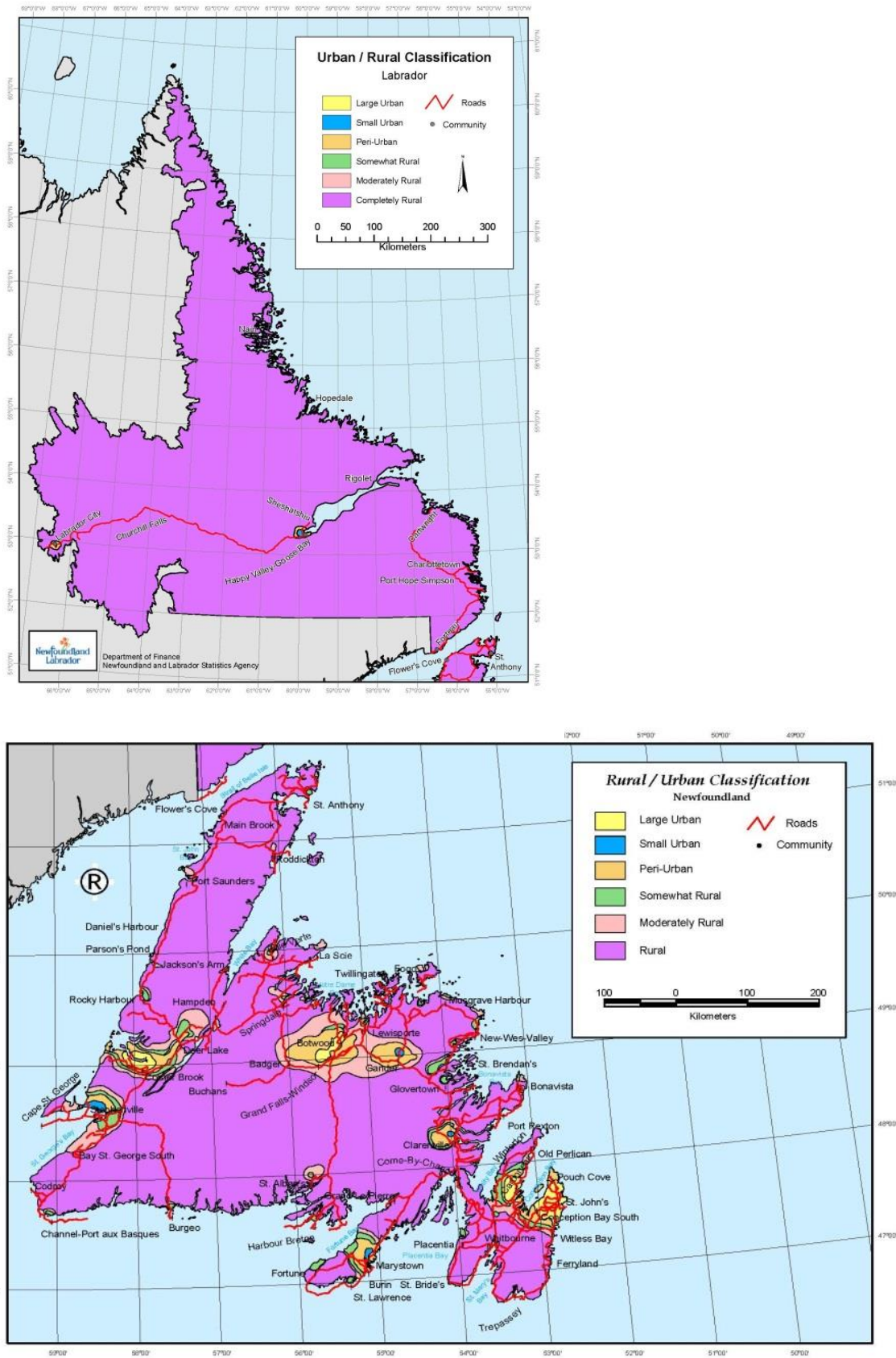


Figure 2: Rural/Urban Classification in Newfoundland & Labrador, 2007 (1)

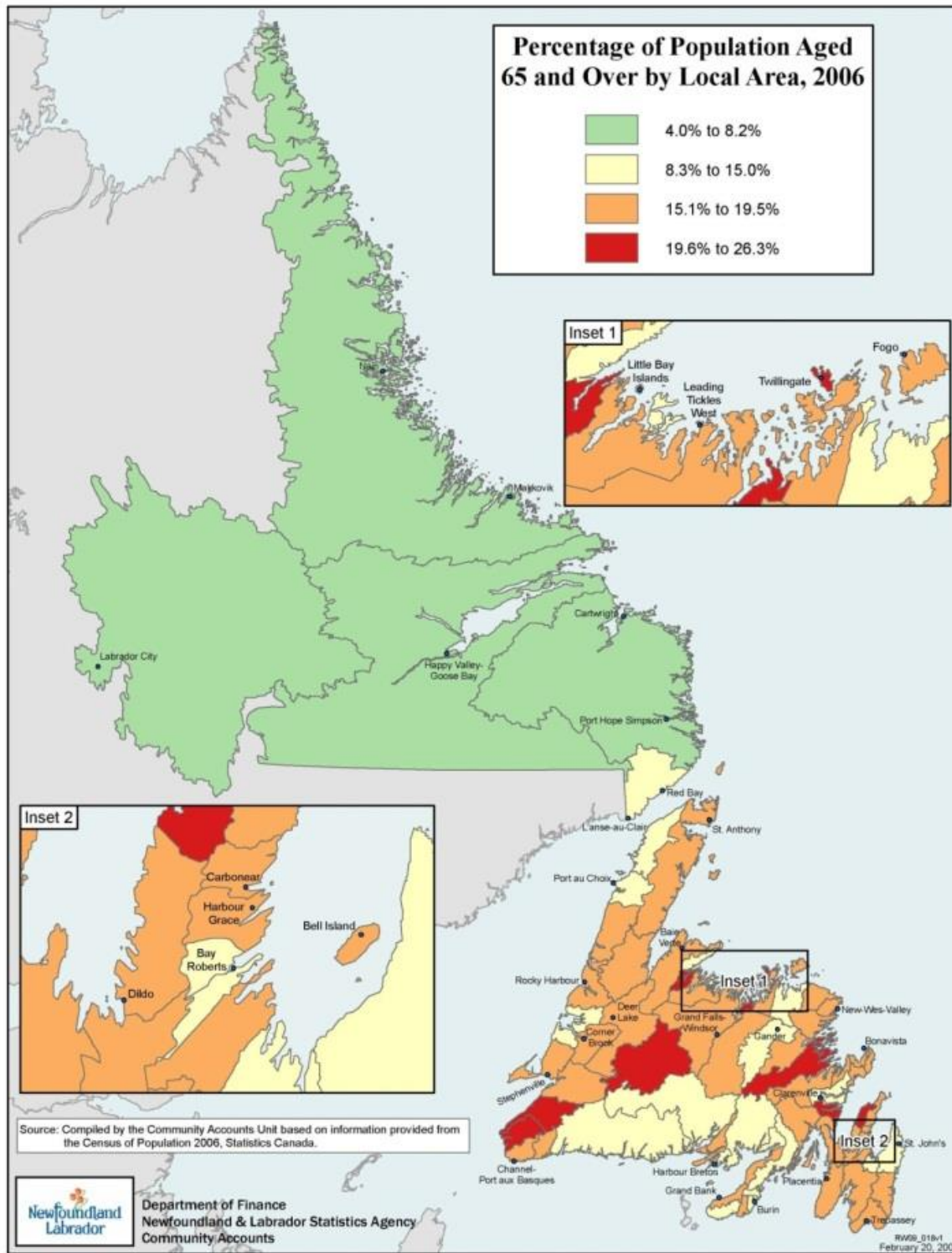


Figure 3: Population age by local area, 2006 (1)

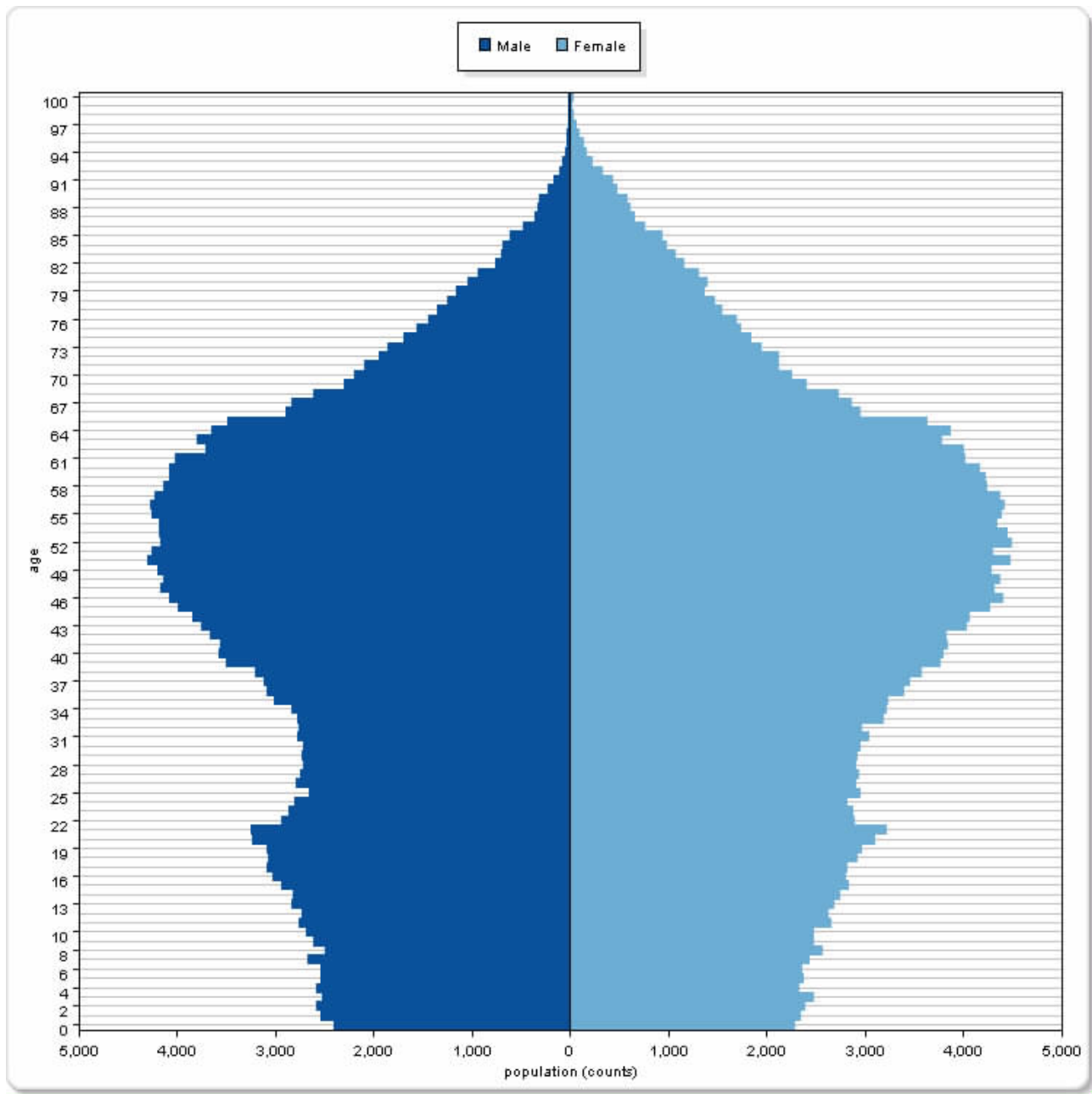


Figure 4: Population by single year of age and sex, Newfoundland and Labrador, 2011

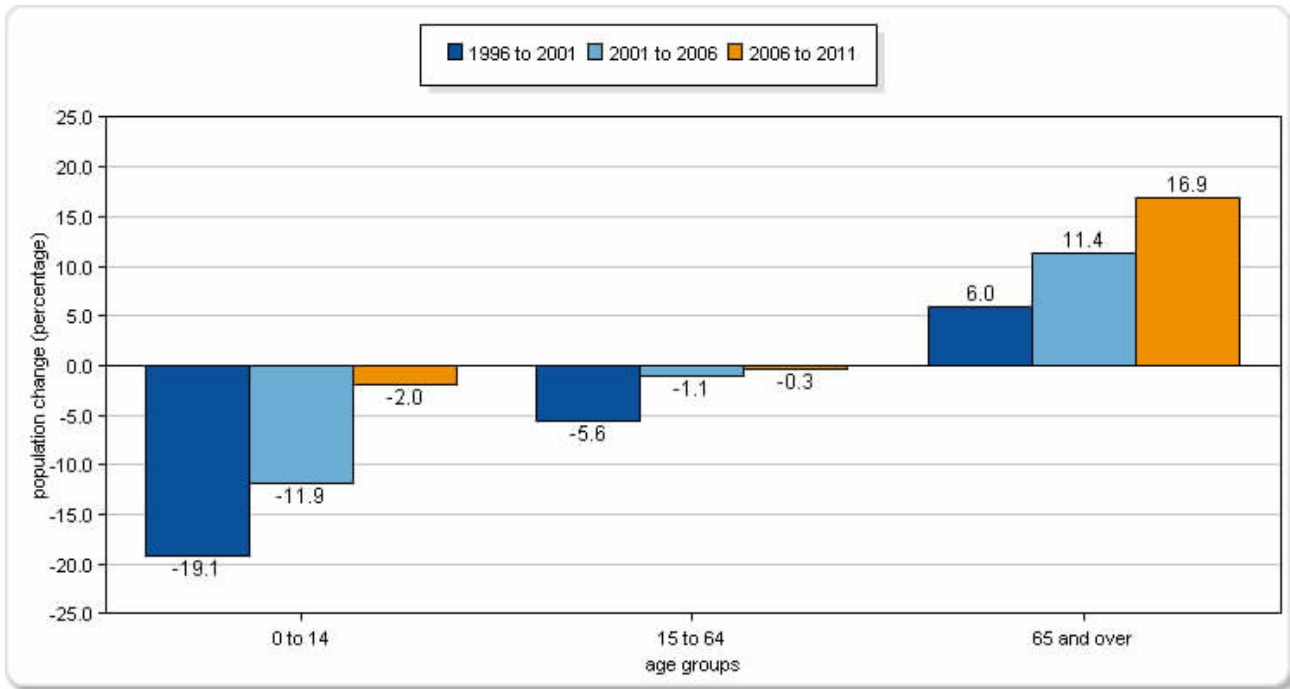


Figure 5: Population change by broad age groups, Newfoundland and Labrador (1)

References

(1) Government of Newfoundland and Labrador. Department of Finance. Newfoundland and Labrador Statistics Agency. Available at: <http://www.stats.gov.nl.ca/maps/>. Accessed 01/21, 2013.

Search Methods

Research Focused on Clinical Health Outcomes: Caregiver Supports

PubMed Medline

Population:

("Activities of Daily Living"[MeSH]) OR ("Aged, 80 and Over"[MeSH]) OR ("Aged"[MeSH]) OR ("Aged"[Title/Abstract]) OR ("Alzheimer Disease"[Mesh]) OR ("Caregiver"[Title/Abstract]) OR ("Caregivers/psychology"[MeSH]) OR ("Caregivers"[MeSH]) OR ("Caregivers"[Title/Abstract]) OR ("Cerebrovascular Disorders"[Mesh]) OR ("Chronic Disease"[MeSH]) OR ("Dementia"[MeSH]) OR ("Elderly"[Title/Abstract]) OR ("Frail Elderly"[MeSH]) OR ("Independent living"[MeSH]) OR ("Independent"[Title/Abstract]) OR ("Older"[Title/Abstract]) OR ("Dementia, Multi-Infarct"[Title/Abstract]) OR ("Dementia, Vascular"[Title/Abstract]) OR ("Age Factors"[MeSH]) OR ("Aging"[MeSH])

Intervention:

("Assist"[Title/Abstract]) OR ("Case Management"[MeSH]) OR ("Combined Modality Therapy"[MeSH]) OR ("Community Health Centers"[MeSH]) OR ("Community Health Services"[MeSH]) OR ("Community Medicine"[MeSH]) OR ("Community Mental Health Services"[MeSH]) OR ("Community"[Title/Abstract]) OR ("Day Care"[MeSH]) OR ("Disease Management"[MeSH]) OR ("Geriatric Assessment"[MeSH]) OR ("Geriatric Nursing"[MeSH]) OR ("Geriatric Psychiatry"[MeSH]) OR ("Geriatric"[Title/Abstract]) OR ("Geriatrics"[MeSH]) OR ("Health Promotion"[MeSH]) OR ("Health Services for the Aged"[MeSH]) OR ("Health Services Needs and Demand"[MeSH]) OR ("Home Care Services"[MeSH]) OR ("Homes for the Aged"[MeSH]) OR ("Hospitals, Community"[MeSH]) OR ("House Calls"[MeSH]) OR ("Institution"[Title/Abstract]) OR ("Institutionalisation"[Title/Abstract]) OR ("Institutionalization"[MeSH]) OR ("Institutionalization"[Title/Abstract]) OR ("Occupational Therapy"[MeSH]) OR ("Patient Care Planning"[Mesh]) OR ("Patient Care Team"[MeSH]) OR ("Patient-Centered Care"[MeSH]) OR ("Primary Healthcare"[Mesh]) OR ("Respite Care"[MeSH]) OR ("Risk Assessment"[Mesh]) OR ("Social Support"[MeSH]) OR ("Support"[Title/Abstract]) OR ("Self-Help Groups"[MeSH]) OR ("Home Nursing"[MeSH]) OR ("Patient Care Planning"[MeSH]) OR ("Counseling"[MeSH]) OR ("Psychotherapy"[MeSH])

Outcome:

("Aging in Place"[Title/Abstract]) OR ("Community-Dwelling"[Title/Abstract]) OR ("Cost of Illness"[MeSH]) OR ("Cost-Benefit Analysis"[Mesh]) OR ("Epidemiologic Studies"[MeSH]) OR ("Epidemiology"[MeSH]) OR ("Health Services Administration"[MeSH]) OR ("Health Status"[MeSH]) OR ("Homebound Persons"[MeSH]) OR ("Hospitalization"[MeSH]) OR ("Length of Stay"[MeSH]) OR ("Mortality"[Mesh]) OR ("Outcome and Process Assessment (Healthcare)"[MeSH]) OR ("Outcome Assessment (Healthcare)"[MeSH]) OR ("Patient Preference"[MeSH]) OR ("Patient Readmission"[MeSH]) OR ("Program Evaluation"[Mesh]) OR ("Quality of Healthcare"[Mesh]) OR ("Quality of Life"[MeSH]) OR ("Residence Characteristics"[MeSH]) OR ("Risk"[MeSH]) OR ("Treatment Outcome"[MeSH]) OR ("Psychological Stress"[MeSH]) OR ("Healthcare Costs"[MeSH])

Limits: English, French, published in the last 5 years

Hedge (Balanced strategy, Specific > Sensitive): Cochrane Database Syst Rev [TA] OR search[Title/Abstract] OR meta-analysis[Publication Type] OR MEDLINE[Title/Abstract] OR (systematic[Title/Abstract] AND review[Title/Abstract])

PubMed Results: 307 articles

Research Focused on Clinical Health Outcomes: Caregiver Respite Care

PubMed Medline

Population:

("Activities of Daily Living"[MeSH]) OR ("Aged, 80 and Over"[MeSH]) OR ("Aged"[MeSH]) OR ("Aged"[Title/Abstract]) OR ("Alzheimer Disease"[Mesh]) OR ("Caregiver"[Title/Abstract]) OR ("Caregivers/psychology"[MeSH]) OR ("Caregivers"[MeSH]) OR ("Caregivers"[Title/Abstract]) OR ("Cerebrovascular Disorders"[Mesh]) OR ("Chronic Disease"[MeSH]) OR ("Dementia"[MeSH]) OR ("Elderly"[Title/Abstract]) OR ("Frail Elderly"[MeSH]) OR ("Independent living"[MeSH]) OR ("Independent"[Title/Abstract]) OR ("Older"[Title/Abstract]) OR ("Disabled Persons"[MeSH]) OR ("Family"[MeSH])

Intervention:

("Assist"[Title/Abstract]) OR ("Case Management"[MeSH]) OR ("Combined Modality Therapy"[MeSH]) OR ("Community Health Centers"[MeSH]) OR ("Community Health Services"[MeSH]) OR ("Community Medicine"[MeSH]) OR ("Community Mental Health Services"[MeSH]) OR ("Community"[Title/Abstract]) OR ("Day Care"[MeSH]) OR ("Disease Management"[MeSH]) OR ("Geriatric Assessment"[MeSH]) OR ("Geriatric Nursing"[MeSH]) OR ("Geriatric Psychiatry"[MeSH]) OR ("Geriatric"[Title/Abstract]) OR ("Geriatrics"[MeSH]) OR ("Health Promotion"[MeSH]) OR ("Health Services for the Aged"[MeSH]) OR ("Health Services Needs and Demand"[MeSH]) OR ("Home Care Services"[MeSH]) OR ("Homes for the Aged"[MeSH]) OR ("Hospitals, Community"[MeSH]) OR ("House Calls"[MeSH]) OR ("Institution"[Title/Abstract]) OR ("Institutionalisation"[Title/Abstract]) OR ("Institutionalization"[MeSH]) OR ("Institutionalization"[Title/Abstract]) OR ("Occupational Therapy"[MeSH]) OR ("Patient Care Planning"[Mesh]) OR ("Patient Care Team"[MeSH]) OR ("Patient-Centered Care"[MeSH]) OR ("Primary Healthcare"[Mesh]) OR ("Respite Care"[MeSH]) OR ("Risk Assessment"[Mesh]) OR ("Social Support"[MeSH]) OR ("Support"[Title/Abstract]) OR ("Models, Organizational"[MeSH]) OR ("Health Policy"[MeSH])

Outcome:

("Aging in Place"[Title/Abstract]) OR ("Community-Dwelling"[Title/Abstract]) OR ("Cost of Illness"[MeSH]) OR ("Cost-Benefit Analysis"[Mesh]) OR ("Epidemiologic Studies"[MeSH]) OR ("Epidemiology"[MeSH]) OR ("Health Services Administration"[MeSH]) OR ("Health Status"[MeSH]) OR ("Homebound Persons"[MeSH]) OR ("Hospitalization"[MeSH]) OR ("Length of Stay"[MeSH]) OR ("Mortality"[Mesh]) OR ("Outcome and Process Assessment (Healthcare)"[MeSH]) OR ("Outcome Assessment (Healthcare)"[MeSH]) OR ("Patient Preference"[MeSH]) OR ("Patient Readmission"[MeSH]) OR ("Program Evaluation"[Mesh]) OR ("Quality of Healthcare"[Mesh]) OR ("Quality of Life"[MeSH]) OR ("Residence Characteristics"[MeSH]) OR ("Risk"[MeSH]) OR ("Treatment Outcome"[MeSH])

Limits: English, French, published in the last 5 years

Hedge (Balanced strategy, Specific > Sensitive): Cochrane Database Syst Rev [TA] OR search[Title/Abstract] OR meta-analysis[Publication Type] OR MEDLINE[Title/Abstract] OR (systematic[Title/Abstract] AND review[Title/Abstract])

PubMed Results: 252 articles

Research Focused on Clinical Health Outcomes: End-of-Life Care

PubMed Medline

Population:

("Activities of Daily Living"[MeSH]) OR ("Aged, 80 and Over"[MeSH]) OR ("Aged"[MeSH]) OR ("Aged"[Title/Abstract]) OR ("Alzheimer Disease"[Mesh]) OR ("Caregiver"[Title/Abstract]) OR ("Caregivers/psychology"[MeSH]) OR ("Caregivers"[MeSH]) OR ("Caregivers"[Title/Abstract]) OR ("Cerebrovascular Disorders"[Mesh]) OR ("Chronic Disease"[MeSH]) OR ("Dementia"[MeSH]) OR ("Elderly"[Title/Abstract]) OR ("Frail Elderly"[MeSH]) OR ("Independent living"[MeSH]) OR ("Independent"[Title/Abstract]) OR ("Older"[Title/Abstract]) OR ("Patient Preference"[MeSH])

Intervention:

("Assist"[Title/Abstract]) OR ("Case Management"[MeSH]) OR ("Combined Modality Therapy"[MeSH]) OR ("Community Health Centers"[MeSH]) OR ("Community Health Services"[MeSH]) OR ("Community Medicine"[MeSH]) OR ("Community Mental Health Services"[MeSH]) OR ("Community"[Title/Abstract]) OR ("Day Care"[MeSH]) OR ("Disease Management"[MeSH]) OR ("Geriatric Assessment"[MeSH]) OR ("Geriatric Nursing"[MeSH]) OR ("Geriatric Psychiatry"[MeSH]) OR ("Geriatric"[Title/Abstract]) OR ("Geriatrics"[MeSH]) OR ("Health Promotion"[MeSH]) OR ("Health Services for the Aged"[MeSH]) OR ("Health Services Needs and Demand"[MeSH]) OR ("Home Care Services"[MeSH]) OR ("Homes for the Aged"[MeSH]) OR ("Hospitals, Community"[MeSH]) OR ("House Calls"[MeSH]) OR ("Institution"[Title/Abstract]) OR ("Institutionalisation"[Title/Abstract]) OR ("Institutionalization"[MeSH]) OR ("Institutionalization"[Title/Abstract]) OR ("Occupational Therapy"[MeSH]) OR ("Patient Care Planning"[Mesh]) OR ("Patient Care Team"[MeSH]) OR ("Patient-Centered Care"[MeSH]) OR ("Primary Healthcare"[Mesh]) OR ("Respite Care"[MeSH]) OR ("Risk Assessment"[Mesh]) OR ("Social Support"[MeSH]) OR ("Support"[Title/Abstract]) OR ("Palliative Care*"[MeSH]) OR ("Terminal Care*"[MeSH]) OR ("Hospice Care"[MeSH])

Outcome:

("Aging in Place"[Title/Abstract]) OR ("Community-Dwelling"[Title/Abstract]) OR ("Cost of Illness"[MeSH]) OR ("Cost-Benefit Analysis"[Mesh]) OR ("Epidemiologic Studies"[MeSH]) OR ("Epidemiology"[MeSH]) OR ("Health Services Administration"[MeSH]) OR ("Health Status"[MeSH]) OR ("Homebound Persons"[MeSH]) OR ("Hospitalization"[MeSH]) OR ("Length of Stay"[MeSH]) OR ("Mortality"[Mesh]) OR ("Outcome and Process Assessment (Healthcare)"[MeSH]) OR ("Outcome Assessment (Healthcare)"[MeSH]) OR ("Patient Preference"[MeSH]) OR ("Patient Readmission"[MeSH]) OR ("Program Evaluation"[Mesh]) OR ("Quality of Healthcare"[Mesh]) OR ("Quality of Life"[MeSH]) OR ("Residence Characteristics"[MeSH]) OR ("Risk"[MeSH]) OR ("Treatment Outcome"[MeSH]) OR ("Attitude to Death*"[MeSH])

Limits: English, French, published in the last 5 years

Hedge (Balanced strategy, Specific > Sensitive): Cochrane Database Syst Rev [TA] OR search[Title/Abstract] OR meta-analysis[Publication Type] OR MEDLINE[Title/Abstract] OR (systematic[Title/Abstract] AND review[Title/Abstract])

PubMed Results: 53 articles

Research Focused on Clinical Health Outcomes: Fall Prevention

PubMed Medline

Population:

("Activities of Daily Living"[MeSH]) OR ("Aged, 80 and Over"[MeSH]) OR ("Aged"[MeSH]) OR ("Aged"[Title/Abstract]) OR ("Alzheimer Disease"[Mesh]) OR ("Caregiver"[Title/Abstract]) OR ("Caregivers/psychology"[MeSH]) OR ("Caregivers"[MeSH]) OR ("Caregivers"[Title/Abstract]) OR ("Cerebrovascular Disorders"[Mesh]) OR ("Chronic Disease"[MeSH]) OR ("Dementia"[MeSH]) OR ("Elderly"[Title/Abstract]) OR ("Frail Elderly"[MeSH]) OR ("Independent living"[MeSH]) OR ("Independent"[Title/Abstract]) OR ("Older"[Title/Abstract])

Intervention:

("Assist"[Title/Abstract]) OR ("Case Management"[MeSH]) OR ("Combined Modality Therapy"[MeSH]) OR ("Community Health Centers"[MeSH]) OR ("Community Health Services"[MeSH]) OR ("Community Medicine"[MeSH]) OR ("Community Mental Health Services"[MeSH]) OR ("Community"[Title/Abstract]) OR ("Day Care"[MeSH]) OR ("Disease Management"[MeSH]) OR ("Geriatric Assessment"[MeSH]) OR ("Geriatric Nursing"[MeSH]) OR ("Geriatric Psychiatry"[MeSH]) OR ("Geriatric"[Title/Abstract]) OR ("Geriatrics"[MeSH]) OR ("Health Promotion"[MeSH]) OR ("Health Services for the Aged"[MeSH]) OR ("Health Services Needs and Demand"[MeSH]) OR ("Home Care Services"[MeSH]) OR ("Homes for the Aged"[MeSH]) OR ("Hospitals, Community"[MeSH]) OR ("House Calls"[MeSH]) OR ("Institution"[Title/Abstract]) OR ("Institutionalisation"[Title/Abstract]) OR ("Institutionalization"[MeSH]) OR ("Institutionalization"[Title/Abstract]) OR ("Occupational Therapy"[MeSH]) OR ("Patient Care Planning"[Mesh]) OR ("Patient Care Team"[MeSH]) OR ("Patient-Centered Care"[MeSH]) OR ("Primary Healthcare"[Mesh]) OR ("Respite Care"[MeSH]) OR ("Risk Assessment"[Mesh]) OR ("Social Support"[MeSH]) OR ("Support"[Title/Abstract]) OR ("Accident Prevention"[MeSH]) OR ("Exercise Therapy"[MeSH]) OR ("Environment Design"[MeSH]) OR ("Patient Education as Topic"[MeSH])

Outcome:

("Aging in Place"[Title/Abstract]) OR ("Community-Dwelling"[Title/Abstract]) OR ("Cost of Illness"[MeSH]) OR ("Cost-Benefit Analysis"[Mesh]) OR ("Epidemiologic Studies"[MeSH]) OR ("Epidemiology"[MeSH]) OR ("Health Services Administration"[MeSH]) OR ("Health Status"[MeSH]) OR ("Homebound Persons"[MeSH]) OR ("Hospitalization"[MeSH]) OR ("Length of Stay"[MeSH]) OR ("Mortality"[Mesh]) OR ("Outcome and Process Assessment (Healthcare)"[MeSH]) OR ("Outcome Assessment (Healthcare)"[MeSH]) OR ("Patient Preference"[MeSH]) OR ("Patient Readmission"[MeSH]) OR ("Program Evaluation"[Mesh]) OR ("Quality of Healthcare"[Mesh]) OR ("Quality of Life"[MeSH]) OR ("Residence Characteristics"[MeSH]) OR ("Risk"[MeSH]) OR ("Treatment Outcome"[MeSH]) OR ("Accidental Falls"[MeSH]) OR ("Accidents, Home"[MeSH]) OR ("Mobility Limitation"[MeSH]) Limits: English, French, published in the last 5 years

Hedge (Balanced strategy, Specific > Sensitive): Cochrane Database Syst Rev [TA] OR search[Title/Abstract] OR meta-analysis[Publication Type] OR MEDLINE[Title/Abstract] OR (systematic[Title/Abstract] AND review[Title/Abstract])

PubMed Results: 133 articles

Research Focused on Clinical Health Outcomes: Preventative Home Visits

PubMed Medline

Population:

("Activities of Daily Living"[MeSH]) OR ("Aged, 80 and Over"[MeSH]) OR ("Aged"[MeSH]) OR ("Aged"[Title/Abstract]) OR ("Alzheimer Disease"[Mesh]) OR ("Caregiver"[Title/Abstract]) OR ("Caregivers/psychology"[MeSH]) OR ("Caregivers"[MeSH]) OR ("Caregivers"[Title/Abstract]) OR ("Cerebrovascular Disorders"[Mesh]) OR ("Chronic Disease"[MeSH]) OR ("Dementia"[MeSH]) OR ("Elderly"[Title/Abstract]) OR ("Frail Elderly"[MeSH]) OR ("Independent living"[MeSH]) OR ("Independent"[Title/Abstract]) OR ("Older"[Title/Abstract])

Intervention:

((("home visit*"[Title/Abstract]) OR ("in-home"[Title/Abstract]) OR ("House Calls"[MeSH])) AND (("Community Health Nursing"[MeSH]) OR ("Home Care Services"[MeSH]) OR ("prevent*"[Title/Abstract]) OR ("Health Services for the Aged"[MeSH])) Filters: published in the last 5 years; English; French

Outcome:

("Aging in Place"[Title/Abstract]) OR ("Community-Dwelling"[Title/Abstract]) OR ("Cost of Illness"[MeSH]) OR ("Cost-Benefit Analysis"[Mesh]) OR ("Epidemiologic Studies"[MeSH]) OR ("Epidemiology"[MeSH]) OR ("Health Services Administration"[MeSH]) OR ("Health Status"[MeSH]) OR ("Homebound Persons"[MeSH]) OR ("Hospitalization"[MeSH]) OR ("Length of Stay"[MeSH]) OR ("Mortality"[Mesh]) OR ("Outcome and Process Assessment (Healthcare)"[MeSH]) OR ("Outcome Assessment (Healthcare)"[MeSH]) OR ("Patient Preference"[MeSH]) OR ("Patient Readmission"[MeSH]) OR ("Program Evaluation"[Mesh]) OR ("Quality of Healthcare"[Mesh]) OR ("Quality of Life"[MeSH]) OR ("Residence Characteristics"[MeSH]) OR ("Risk"[MeSH]) OR ("Treatment Outcome"[MeSH]) Limits: English, French, published in the last 5 years

Hedge (Balanced strategy, Specific > Sensitive): Cochrane Database Syst Rev [TA] OR search[Title/Abstract] OR meta-analysis[Publication Type] OR MEDLINE[Title/Abstract] OR (systematic[Title/Abstract] AND review[Title/Abstract])

PubMed Results: 8 articles

Research Focused on Clinical Health Outcomes: Integrated Care

PubMed Medline

Population:

("Activities of Daily Living"[MeSH]) OR ("Aged, 80 and Over"[MeSH]) OR ("Aged"[MeSH]) OR ("Aged"[Title/Abstract]) OR ("Alzheimer Disease"[Mesh]) OR ("Caregiver"[Title/Abstract]) OR ("Caregivers/psychology"[MeSH]) OR ("Caregivers"[MeSH]) OR ("Caregivers"[Title/Abstract]) OR ("Cerebrovascular Disorders"[Mesh]) OR ("Chronic Disease"[MeSH]) OR ("Dementia"[MeSH]) OR ("Elderly"[Title/Abstract]) OR ("Frail Elderly"[MeSH]) OR ("Independent living"[MeSH]) OR ("Independent"[Title/Abstract]) OR ("Older"[Title/Abstract])

Intervention:

("Assist"[Title/Abstract]) OR ("Case Management"[MeSH]) OR ("Combined Modality Therapy"[MeSH]) OR ("Community Health Centers"[MeSH]) OR ("Community Health Services"[MeSH]) OR ("Community Medicine"[MeSH]) OR ("Community Mental Health Services"[MeSH]) OR ("Community"[Title/Abstract]) OR ("Day Care"[MeSH]) OR ("Disease Management"[MeSH]) OR ("Geriatric Assessment"[MeSH]) OR ("Geriatric Nursing"[MeSH]) OR ("Geriatric Psychiatry"[MeSH]) OR ("Geriatric"[Title/Abstract]) OR ("Geriatrics"[MeSH]) OR ("Health Promotion"[MeSH]) OR ("Health Services for the Aged"[MeSH]) OR ("Health Services Needs and Demand"[MeSH]) OR ("Home Care Services"[MeSH]) OR ("Homes for the Aged"[MeSH]) OR ("Hospitals, Community"[MeSH]) OR ("House Calls"[MeSH]) OR ("Institution"[Title/Abstract]) OR ("Institutionalisation"[Title/Abstract]) OR ("Institutionalization"[MeSH]) OR ("Institutionalization"[Title/Abstract]) OR ("Occupational Therapy"[MeSH]) OR ("Patient Care Planning"[Mesh]) OR ("Patient Care Team"[MeSH]) OR ("Patient-Centered Care"[MeSH]) OR ("Primary Healthcare"[Mesh]) OR ("Respite Care"[MeSH]) OR ("Risk Assessment"[Mesh]) OR ("Social Support"[MeSH]) OR ("Support"[Title/Abstract])

Outcome:

("Aging in Place"[Title/Abstract]) OR ("Community-Dwelling"[Title/Abstract]) OR ("Cost of Illness"[MeSH]) OR ("Cost-Benefit Analysis"[Mesh]) OR ("Epidemiologic Studies"[MeSH]) OR ("Epidemiology"[MeSH]) OR ("Health Services Administration"[MeSH]) OR ("Health Status"[MeSH]) OR ("Homebound Persons"[MeSH]) OR ("Hospitalization"[MeSH]) OR ("Length of Stay"[MeSH]) OR ("Mortality"[Mesh]) OR ("Outcome and Process Assessment (Healthcare)"[MeSH]) OR ("Outcome Assessment (Healthcare)"[MeSH]) OR ("Patient Preference"[MeSH]) OR ("Patient Readmission"[MeSH]) OR ("Program Evaluation"[Mesh]) OR ("Quality of Healthcare"[Mesh]) OR ("Quality of Life"[MeSH]) OR ("Residence Characteristics"[MeSH]) OR ("Risk"[MeSH]) OR ("Treatment Outcome"[MeSH])

Hedge (Balanced strategy, specificity > sensitivity): Cochrane Database Syst Rev [TA] OR search[Title/Abstract] OR meta-analysis[Publication Type] OR MEDLINE[Title/Abstract] OR (systematic[Title/Abstract] AND review[Title/Abstract])

PubMed results: 3,485 articles

CINAHL

Population:

(MH "Community Living") OR (MH "Assisted Living") OR (MH "Activities of Daily Living") OR (MH "Cost of Living") OR (MH "Independent Variable") OR (MH "Caregivers") OR (MH "Caregiver Burden") OR (MH "Caregiver Support") OR (MH "Caregiver Physical Health (Iowa NOC)") OR (MH "Health Services for the Aged") OR (MH "Frail Elderly") OR (MH "Housing for the Elderly") OR (MH "Aged") OR (MH "Aged, 80 and Over") OR (MH "Geriatric Assessment") OR (MH "Alzheimer's Disease") OR (MH "Dementia") OR (MH "Cerebrovascular Disorders") OR (MH "Chronic Disease")

Intervention:

(MH "Home Healthcare") OR (MH "Shared Services, Healthcare") OR (MH "Multidisciplinary Care Team") OR (MH "Continuity of Patient Care") OR (MH "Age Specific Care") OR (MH "Quality of Healthcare") OR (MH "Outcomes (Healthcare)") OR (MH "Long Term Care") OR (MH "Community Health Services") OR (MH "Community Health Workers") OR (MH "Health Services Needs and Demand") OR (MH "Health Services for the Aged") OR (MH "Health Services Accessibility") OR (MH "Community Health Nursing") OR (MH "Geriatric Assessment") OR (MH "Outcome Assessment") OR (MH "Community Assessment") OR (MH "Risk Assessment") OR (MH "Case Management") OR (MH "Case Managers") OR (MH "Home Health Aides") Search modes - Boolean/Phrase

Outcome:

(MH "Treatment Outcomes") OR (MH "Outcome Assessment") OR (MH "Outcomes of Education") OR (MH "Health Status") OR (MH "Risk Assessment") OR (MH "Quality of Life") OR (MH "Quality-Adjusted Life Years") OR (MH "Quality of Healthcare") OR (MH "Quality Assessment") OR (MH "Economic Value of Life") OR (MH "Economic Aspects of Illness") OR (MH "Cost Benefit Analysis") OR (MH "Costs and Cost Analysis") OR (MH "Healthcare Costs") Search modes - Boolean/Phrase

Hedge (High Sensitivity): meta analy:.mp. OR review.pt. OR systematic review.pt.

CINAHL Results: 734 results

Scopus

Population:

((TITLE-ABS-KEY-AUTH(independent living) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006) OR (TITLE-ABS-KEY-AUTH(caregivers) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006) OR (TITLE-ABS-KEY-AUTH(aged) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006) OR (TITLE-ABS-KEY-AUTH(alzheimer disease) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006) OR (TITLE-ABS-KEY-AUTH(dementia) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006) OR (TITLE-ABS-KEY-AUTH(activities of daily living) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006) OR (TITLE-ABS-KEY-AUTH(chronic disease) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006)) OR (TITLE-ABS-KEY-AUTH(frail elderly) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006)

Intervention:

(TITLE-ABS-KEY-AUTH(patient care team) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006) OR (TITLE-ABS-KEY-AUTH(case management) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006) OR (TITLE-ABS-KEY-AUTH(home care services) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006) OR (TITLE-ABS-KEY-AUTH(patient centered care) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006) OR (TITLE-ABS-KEY-AUTH(disease management) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006) OR ((TITLE-ABS-KEY-AUTH(home care services) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006) OR (TITLE-ABS-KEY-AUTH(patient care team) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006) OR (TITLE-ABS-KEY-AUTH(house calls) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006) OR (TITLE-ABS-KEY-

AUTH(community health services) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006) OR (TITLE-ABS-KEY-AUTH(respite) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006) OR (TITLE-ABS-KEY-AUTH(geriatric assessment) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006) OR (TITLE-ABS-KEY-AUTH(risk assessment) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006))

Outcome:

(TITLE-ABS-KEY-AUTH(program evaluation) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006) OR (TITLE-ABS-KEY-AUTH(economic) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006) OR (TITLE-ABS-KEY-AUTH(cost benefit analysis) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006) OR ((TITLE-ABS-KEY-AUTH(treatment outcome) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006) OR (TITLE-ABS-KEY-AUTH(outcome assessment) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006) OR (TITLE-ABS-KEY-AUTH(patient preference) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006) OR (TITLE-ABS-KEY-AUTH(community dwelling) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006) OR (TITLE-ABS-KEY-AUTH(outcome assessment) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006) OR (TITLE-ABS-KEY-AUTH(quality of life) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006) OR (TITLE-ABS-KEY-AUTH(program evaluation) AND SUBJAREA(mult OR medi OR nurs OR vete OR dent OR heal OR mult OR arts OR busi OR deci OR econ OR psyc OR soci) AND PUBYEAR > 2006))

Hedges: All combined, with limits: English/French, 2012-2007, Subject Areas (Medicine, Nursing, Health, Sociology, Engineering, Business-Management-Accounting, Economics-Econometrics-Finance)

Scopus Results: 7,093 articles

Research Focused on Health Economic Outcomes

In addition to these searches, we also carried out specialized searches for health economic research evidence using the PubMed search strings listed above in addition to health economic keywords and MeSH terms (detailed in the *Economic Analysis* section below); EconLit searches for the sub-topic area keywords; and Google Scholar to reverse citation search each included article. We limited the results to those articles published in English or French from 2007 to 2012.

After filtering the initial results and reviewing the articles, we identified eight systematic reviews of health economic evidence, two systematic reviews that included health economic evidence, one narrative review of health economic research, and fourteen primary research articles. These twenty-five articles were sent to the project’s Health Economist who was responsible for the data extraction and analysis that is included in this report.

	Systematic Reviews of Health Economic Research	Systematic Reviews that include some Health Economic Research	Narrative Reviews of Health Economic Research	Primary Health Economic Research	Totals
<i>Integrated/Complex Models of Care</i>		3	1	6	10
<i>Case Management</i>		1		1	2
<i>Geriatric Assessment</i>			1	4	5
<i>Multidisciplinary Intervention</i>				1	1
Caregiver Support (Dementia)	1				1
Fall Prevention	4			5	9
Home Based Care (General)				2	2
Home Based Health Promotion	1				1
Home Visit Programs		1		1	2
Respite Care	2				2
Totals	8	2	1	14	25

Table 1: Summary of included articles

Included Studies by Intervention Type

Studies on Caregiver Supports

Citation: Chien LY, Chu H, Guo JL, et al. *Caregiver support groups in patients with dementia: a meta-analysis.* Int J Geriatr Psychiatry 2011; 26: 1089-1098

AMSTAR Category: Weak

Total # Synthesis Findings: 14

Jurisdictions of Primary Studies: N/A from review

Publication Date Range of Primary Studies: January 1998 - December 2009

Design of Primary Studies: Quasi-experimental controlled trials

Inclusion Criteria: "(i) studies conducted on subjects who were nonprofessional caregivers of patients with dementia; (ii) studies assessing data from articles using quantitative methods and excluding qualitative studies; (iii) support groups were led by professionals, including nurses, social workers, physicians, professional consultants, or other group members who had received professional training; (iv) support group types included mutual support groups, educational psychology groups, and educational training groups, while groups organized on the internet, by telephone, or in the community were excluded; (v) studies of quasi- or true experimental designs were included, while single-subject or single-group design were excluded; (vi) control groups were general care, waiting list, or minimal support, including caregiving manuals and videos, information guides, personal consultation, traditional support groups, and short-break services." p. 1090

Citation: Eters L, Goodall D, Harrison BE. *Caregiver burden among dementia patient caregivers: a review of the literature.* JAANP. 2008; 20:423-28

AMSTAR Category: Weak

Total # Synthesis Findings: 5

Jurisdictions: N/A from review

Publication Date Range: 1996-2006

Design of Primary Studies: N/A

Inclusion Criteria: N/A from review

Citation: Pinqart M, Sorensen S. *Spouses, Adult Children, and Children-in-Law as Caregivers of Older Adults: A Meta-Analytic Comparison.* Psychol Aging. 26(1):1-14

AMSTAR Category: Moderate

Total # Synthesis Findings: 44

Jurisdictions: N/A from review

Publication Date Range: 1980 - September 2010

Design of Primary Studies: Empirical studies

Inclusion Criteria: "(1) spouse caregivers were compared with caregiving adult children or children-in-law, or child caregivers were compared to child-in-law caregivers, (2) size of group differences were reported in standard deviation units or as statistical measures that could be converted to standard deviation units (e.g.,

means and standard deviations), (3) studies were in English or German, or in a language for which we were able to obtain translation.” p.3

Citation: Schoenmakers B, Buntinx F, DeLepeleire J. *Supporting the dementia family caregiver: the effect of home care intervention on general wellbeing*. *Aging & Mental Health* 2010; 14:1, 44-56

AMSTAR Category: Moderate

Total # Synthesis Findings: 5

Jurisdictions: N/A from review

Publication Date Range: 1980- 2007

Design of Primary Studies: Randomized controlled trial and quasi-experimental trials

Inclusion Criteria: “...reported on a quasi-experimental or randomized controlled trial in dementia home care allocating the family caregiver to an intervention arm or to a control group. Population inclusion criteria were limited to community-dwelling demented elderly and the presence of a family caregiver. Primary outcome measures were determined as depression and burden. Both outcomes had to be measured by validated psychometric instruments.” p. 45

Citation: Smits CH, de Lange J, Dröes RM et al. *Effects of combined intervention programmes for people with dementia living at home and their caregivers: a systematic review*. *Int. J. Geriatr. Psychiatry* 2007; 22: 1181–1193

AMSTAR Category: Weak

Total # Synthesis Findings: 14

Jurisdictions: N/A from review

Publication Date Range: January 1992 - February 2005

Design of Primary Studies: Systematic reviews, single studies of interventions

Inclusion Criteria: “...intervention aimed at both caregiver and patient (resulting in personal contacts between care professional, caregiver and person with dementia); caregiver and person with dementia living in their own homes; elderly person suffering from dementia; report of effect study.” p. 1182

Citation: Spijker A, Vernooij-Dassen M, Vasse E et al. *Effects of combined intervention programmes for people with dementia living at home and their caregivers: a systematic review*. *Am Geriatr Soc* 56:1116–1128, 2008

AMSTAR Category: Moderate

Total # Synthesis Findings: 4

Jurisdictions: Australia, Europe (The Netherlands, Finland, Italy, UK), USA, Canada

Publication Date Range: January 1990 - March 2006

Design of Primary Studies: Randomized controlled trials

Inclusion Criteria: “Study population of patients with dementia and their informal caregivers; community-dwelling patients with dementia and informal caregivers; an outcome measure of institutionalization; a single-study design (not a review or a meta-analysis); a controlled, clinical study; a nonpharmacological study; a study written in English” p.1117

Citation: Van Mierlo LD, Meiland FJM, Van der Roest HG, et al. *Personalised caregiver support: effectiveness of psychosocial interventions in subgroups of caregivers of people with dementia.* Int J Geriatr Psychiatry 2012; 27, 1-14

AMSTAR Category: Weak

Total # Synthesis Findings :31

Jurisdictions: N/A from review

Publication Date Range: January 1990 - February 2008

Design of Primary Studies: Review articles

Inclusion Criteria: "studies that report on the effectiveness of care and welfare services for caregivers of people with dementia, as well as on the relation between outcomes and personal characteristics of caregivers. An intervention was considered effective when it had a statistically significant positive outcome for (subgroups of) caregivers of people with dementia." p.2

Citation: Winterton R, Warburton J. *Models of care for socially isolated older rural carers: barriers and implications.* Rural and Remote Health. 2011; 11: 1678.

AMSTAR Category: Weak

Total # Synthesis Findings: 6

Jurisdictions: N/A from review

Publication Date Range: 1999 - 2009

Design of Primary Studies: Review articles, program evaluations, small-scale qualitative and larger scale quantitative studies

Inclusion Criteria: "examined barriers to social participation for rural and older people, or evaluated interventions which addressed social isolation and/or had a social component." p. 3

Studies on Caregiver Respite Care

Citation: Mason A, Weatherly H, Spilsbury K, 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 Technol Assess 2007;11(15).

AMSTAR Category: Strong

Total # Synthesis Findings: 12

Jurisdictions: Europe (Spain, UK), Canada, USA, Australia, Germany

Publication Date Range: Published in or after 1980

Design of Primary Studies: Systematic reviews, randomized controlled trials, quasi-experimental studies, uncontrolled studies, economic evaluations

Inclusion Criteria: Intervention: "Respite care includes, but is not limited to: day care, in-home respite (day or overnight), host family respite, institutional respite (overnight), programmes, and video respite. Trials reporting at least one of these respite models were eligible for inclusion in the review. Respite care models where care recipients received no informal carer support were excluded." Participants: "older people receiving respite care, including those with frailty, disability, dementia or cancer, and their carers". Settings: "all settings apart from acute medical and/or surgical inpatient wards were eligible for inclusion in the review -nursing and residential homes, hospices, community and GP-run hospital units, day centres and domiciliary settings were

all eligible for inclusion". Outcomes: " quality of life (carer/care recipient), physical health (carer/care recipient), mental/psychological health (carer/care recipient), satisfaction (carer/care recipient), carer burden, utilisation of any health and social services (carer/care recipient), utilisation of informal or voluntary support services (carer/care recipient), (time to) institutionalisation, time spent on caring tasks, activities of daily living (ADL)." p.8

Citation: Shaw C, McNamara R, Abrams K, et al. *Systematic review of respite care in the frail elderly*. Health Technol Assess 2009; 13(20).

AMSTAR Category: Strong

Total # Synthesis Findings: 39

Jurisdictions: Canada, Australia, Europe (UK, Spain, Scotland, France, Ireland, Holland, Germany, Italy) USA, New Zealand, Asia (Hong Kong, Japan, Korea)

Publication Date Range: Prior to and including April 2008

Design of Primary Studies: Randomized Controlled Trials, quasi-experimental design, before-and-after studies, observational longitudinal studies, cross-sectional, qualitative studies

Inclusion Criteria: "Studies were included in the quantitative review if: they assessed an intervention designed to provide the carer with a break from caring, and they assessed carer outcomes, the care recipient population was aged 65 years or over (or included subsample analysis of participants over 65 years), the respite intervention was compared with no respite or another intervention. Studies were included in the qualitative review if: they employed qualitative methods (face-to-face semi-structured/in-depth interviews; focus groups; open questions in questionnaires), they reported the views of carer and/or recipients, the care recipient population was aged 65 years or over, the mean age was 65 years or over, or analysis identified those over the age of 65 years when reporting findings and either: they reported views of respite care or reported respite as a theme in relation to other types of care, e.g. care aimed to change the state of the care recipient or: views of respite included: respite care service provision/satisfaction with services, impact of respite on the carer and/or care recipient, unmet needs/perceived needs for respite care, reasons for utilising or not utilising respite care." p. ix

Studies on End-of Life Care

Citation: Goodman C, Evans C, Wilcock J, et al. *End of life care for community dwelling older people with dementia: an integrated review*. *Int J Geriatr Psychiatry* 2010; 25: 329–337

AMSTAR Category: Weak

Total # Synthesis Findings: 6

Jurisdictions: North America, Europe, Asia, Australia

Publication Date Range: Published between 1985 and 2006

Design of Primary Studies: Non-experimental, descriptive, randomized controlled trials, experimental

Inclusion Criteria: "Studies included were those that focused on prognostic indicators for end-of-life care, assessment, support/relief, respite and educational interventions for older people with dementia in primary care settings/community dwelling settings (defined as patients' own home), care homes, (defined as a long term residential facility for older people that offers personal care and may or may not have on site nursing provision) and settings staffed by or with links to primary care." p. 330

Studies on Fall Prevention

Citation: Beswick AD, Rees K, Dieppe P, et al. *Complex interventions to improve physical function and maintain independent living in elderly people: a systematic review and meta-analysis*. *Lancet* 2008; 371: 725–35

AMSTAR Category: Weak

Total # Synthesis Findings: 36

Jurisdictions: Europe (UK, Denmark, Sweden, Switzerland, The Netherlands, Italy, Germany), Canada, USA, Australia, Asia (Thailand, Japan, China)

Publication Date Range: 1945 - December 2006

Design of Primary Studies: Randomized controlled trials with at least 6 months follow-up

Inclusion Criteria: "Trials that compared community-based multifactorial intervention with usual care or minimum intervention, with follow-up for at least 6 months. Interventions were eligible for the review if individuals received personalised assessment and provision of or referral for appropriate specialist medical and social care. Mean age of eligible study populations was at least 65 years at baseline, with individuals living at home or preparing for hospital" p. 726

Citation: Campbell AJ, Robertson MC. *Rethinking individual and community fall prevention strategies: a meta-regression comparing single and multifactorial interventions*. *Age and Ageing*. 2007; 36: 656–662

AMSTAR Category: Moderate

Total # Synthesis Findings: 4

Jurisdictions: N/A from review

Publication Date Range: published prior to December 2006

Design of Primary Studies: Randomized controlled trials with follow-up of least 12 months

Inclusion Criteria: "(i) participants were randomly allocated to intervention and control groups, (ii) all participants were aged 65 years or older, (iii) the majority lived independently in the community, (iv) fall events were recorded prospectively using a diary or calendar during the entire trial and monitored at least monthly, (v) follow up was for 12 months or longer, (vi) at least 70% of participants completed the trial, (vii) all falls during the trial for at least 50 participants were included in the analysis, and (viii) a relative rate ratio with 95% CI comparing the number of falls in the intervention and control groups was reported." p. 657

Citation: Costello E, Edelstein JE. *Update on falls prevention for community-dwelling older adults: review of single and multifactorial intervention programs.* J Rehabil Res Dev. 2008; 45(8):1135-52

AMSTAR Category: Moderate

Total # Synthesis Findings: 4

Jurisdictions: N/A from review

Publication Date Range: 1996 - 2007

Design of Primary Studies: Randomized controlled trials (1 of 12 included studies was randomized, but had no true control)

Inclusion Criteria: "Study subjects in publications had to meet the following inclusion criteria to be included in this review: 60 years or older, ambulatory with or without an assistive device, and community dwelling. Prevention programs could offer single or multifactorial interventions. Outcomes of interest were number of falls and/or number of fallers or rate of falls. Falls were defined as "unintentionally coming to rest on the ground, floor, or other lower level". Studies reporting only intermediate outcome measures such as balance, strength, and self-efficacy were excluded from the analysis." p. 1136

Citation: Gates S, Fisher JD, Cooke MW, Carter YH, Lamb SE. *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. 2008 Jan 19;336(7636):130-3

AMSTAR Category: Strong

Total # Synthesis Findings: 7

Jurisdictions: Europe (UK, France, The Netherlands), USA, Canada, Asia (Taiwan, Thailand), Australia

Publication Date Range: Published prior to March 2007

Design of Primary Studies: Randomized controlled trials and quasi-randomized trials

Inclusion Criteria: "it carried out an assessment of multiple risk factors for falling, to identify those that were potentially modifiable; it provided treatments delivered by healthcare professionals, either directly or by onward referral, to reduce the risk of falling, on the basis of the results of the assessment; it was delivered to individuals, not at a community or population level; and it was a service based in an emergency department, primary care, or the community. Control groups could receive standard care or no fall prevention intervention." p.2

Citation: Gillespie LD, Robertson MC, Gillespie WJ, et al. *Interventions for preventing falls in older people living in the community (Review).* Cochrane Database of Systematic Reviews 2009, Issue 2. Art. No.: CD007146

AMSTAR Category: Strong

Total # Synthesis Findings: 14

Jurisdictions: Europe (UK, France, Switzerland, Germany, Norway, The Netherlands, Finland, England), Asia (Thailand, Taiwan, Japan, China), USA, Canada, Australia, New Zealand, Chile

Publication Date Range: Published prior to May 2008

Design of Primary Studies: Randomized controlled trials and quasi-randomized trials (controlled clinical trials

Inclusion Criteria: Participants: "specified an inclusion criterion of 60 years or over, or clearly recruited participants described as elderly, seniors or older people. Trials that included younger participants, for example recruited on the basis of a medical condition such as a stroke or Parkinson's disease, have been included if the mean age minus one standard deviation was more than 60 years. We included trials where the majority of participants were living in the community, either at home or in places of residence that, on the whole, do not provide residential health-related care or rehabilitative services, for example hostels, retirement villages, or sheltered housing". **Interventions:** "designed to reduce falls in older people, where the intervention was compared with 'usual care' or a 'placebo' control intervention and studies comparing two types of fall-prevention interventions". **Outcomes:** "trials that reported outcomes relating to rate or number of falls, or number of participants sustaining at least one fall during follow up." p. 3-4

Citation: Michael YL, Whitlock EP, Lin JS, et al. *Primary Care–Relevant Interventions to Prevent Falling in Older Adults: A Systematic Evidence Review for the U.S. Preventive Services Task Force Ann Intern Med.*

2010;153:815-825

AMSTAR Category: Strong

Total # Synthesis Findings: 3

Jurisdictions: Canada, Europe (UK, The Netherlands, Finland, Denmark, Sweden, Germany, Austria), USA, New Zealand, Australia

Publication Date Range: January 2001 - February 2010

Design of Primary Studies: Randomized controlled trials

Inclusion Criteria: "We included randomized, controlled trials (RCTs) of community-dwelling older adults (average age 65 years) in settings generalizable to U.S. primary care populations. We included trials if they were designed to assess fall prevention based on assessment of falling or falls as a primary or secondary outcome. We excluded trials not conducted in primary care or other settings with a primary care–comparable population (for example, hospitals, nursing homes, rehabilitation centers, or other long-term care facilities) and trials without a true control group." p.816

Studies on Preventative Home Visits

Citation: Bouman A, van Rossum E, Nelemans P, et al. *Effects of intensive home visiting programs for older people with poor health status: A systematic review.* BMC Health Services Research 2008, 8:74

AMSTAR Category: Strong

Total # Synthesis Findings: 5

Jurisdictions: Canada, Europe (Switzerland, The Netherlands), Japan

Publication Date Range: 1966 - July 2007

Design of Primary Studies: Randomized controlled trials with intervention duration of least 12 months

Inclusion Criteria: "Randomized controlled trials examining the effects of home visiting programs for people aged 65 years and over with a poor health status, studies with a relatively long and intensive follow-up, that is, when the intervention programs consisted of at least four home visits per year and the duration of the follow-

up home visit period lasted 12 months or more; the home visits were to be carried out by health professionals, e.g. nurses or general practitioners." p. 2

Citation: Huss A, Stuck AE, Rubenstein LZ, et al. *Multidimensional Preventive Home Visit Programs for Community-Dwelling Older Adults: a Systematic Review and Meta-Analysis of Randomized Controlled Trials.* J Gerontol A Biol Sci Med Sci, 2008, Vol. 63A, No. 3, 298–307

AMSTAR Category: Moderate

Total # Synthesis Findings: 3

Jurisdictions: Europe (The Netherlands, UK, Denmark, Sweden, Finland, Switzerland), Australia, USA, Canada, Asia (Japan)

Publication Date Range: January 2001 - October 2007

Design of Primary Studies: Randomized controlled trials

Inclusion Criteria: "Randomized controlled trials of the effects of multidimensional preventive home visit programs in older adults (mean age 70 years) living in the community. Trials had to report at least one of these outcomes: nursing home admission, functional status decline, or mortality; only studies designed with follow-up that included regular contact with intervention participants were included (i.e., multiple home visits, or home visits with regular telephone follow-up)" p. 299

Citation: Liebel DV, Friedman B, Watson NM, et al. *Review: Review of Nurse Home Visiting Interventions for Community-Dwelling Older Persons With Existing Disability.* Med Care Res Rev 2009 66: 119

AMSTAR Category: Moderate

Total # Synthesis Findings: 8

Jurisdictions: Canada, USA, Europe (The Netherlands, Italy, Switzerland)

Publication Date Range: 1980-2006

Design of Primary Studies: Randomized controlled trials, controlled trial with prospective individual matching

Inclusion Criteria: "(a) use of randomized controlled or quasi-experimental design, (b) provision of multiple in-home visits were provided by nurses to community-dwelling older adults (i.e., ≥65 years) with existing disability or to a subpopulation of older adults with disability, (c) a multidimensional framework with targeted interdisciplinary strategies (e.g., disease management, health promotion) to delay or prevent disability, (d) ongoing home visits using components of comprehensive community-based care and case management (e.g., assessment of care, implementation of case and care plan, monitoring and review of case and care plan), and (e) evaluation of change in disability scores (measured in ADLs or some other disability measure) from baseline." p.122

Citation: Tappenden P, Campbell F, Rawdin A et al. *The clinical effectiveness and cost-effectiveness of home-based, nurse-led health promotion for older people: a systematic review.* Health Technol Assess 2012; 16(20)

AMSTAR Category: Moderate

Total # Synthesis Findings: 3

Jurisdictions: UK

Publication Date Range: Published in or after 2001

Design of Primary Studies: Randomized controlled trials

Inclusion Criteria: "[Clinical Effectiveness]: (Population) older people (> 75 years) at risk of admission to hospital, residential or nursing care; (Intervention) structured home-based, nurse-led health promotion; (Comparators) standard care, including joint health and social assessment. Health promotion delivered in a different setting or not delivered by a nurse; (Setting) Interventions delivered in the home setting, undertaken in the UK; (Outcomes) Admission to hospital, residential or nursing care, mortality, morbidity including depression, falls, accidents, deteriorating health status, patient satisfaction; (Study Design) Randomized controlled trials; [Health Economic Analysis]: same as clinical effectiveness with addition of: studies presenting a comparative economic evaluation and presented results in terms of both costs and health outcomes; studies were undertaken from the UK National Health Service (NHS) and Personal Social Services (PSS) perspective." p.xi - xii

Citation: Thompson P, Lang L, Annells M. *A systematic review of the effectiveness of in-home community nurse-led interventions for the mental health of older persons*. *Journal of Clinical Nursing* 2008; 17, 1419–1427

AMSTAR Category: Moderate

Total # Synthesis Findings: 2

Jurisdictions: Europe (UK), Canada, USA

Publication Date Range: 1995 - 2006

Design of Primary Studies: Case-controlled cohort, descriptive correlational, case-control, randomized control trial

Inclusion Criteria: "(Types of studies) - This review considered any randomised controlled trials, quasi-experimental studies or studies with a qualitative research design that addressed in-home community nurse-led interventions intended to facilitate the mental health of patients who are older persons. Publications that consisted solely of narrative or opinion were not considered for this review. Only studies published in English between 1995–2006 were considered. (Types of participants) - The activities of community nurses were the principal focus. The term 'community nurse' was, for the purpose of this review, confined to registered nurses who were generalists (non-specialist) and employed by an organisation providing home-based health care. Nurses with a designated mental health nursing function or based in community health clinics were outside the scope of this review. Studies that included community nurses' patients who were aged 60 years or older, male or female, living at home (that is, not in a managed care facility) and had, or were at risk of, a MHD were examined. (Types of interventions)- Interventions of interest were those carried out by a community nurse in the patient's home, and which specifically intended to facilitate the mental health of the patient. Consequently, interventions sought for review were wide-ranging and included screening, education, referral, consultation, counselling, medicine administration, complementary therapy or any psychological intervention that could be instigated within the scope of a community nurse's role. (Types of outcome measure) - The outcome measures of interest were those that measured: nursing actions to determine incidence or prevalence of MHDs; any change in a patient's attitude towards their MHD; any objective measurement of mental health; a change in diagnostic status regarding a MHD." p. 1420 -1421

Studies on Activities of Integrated Care

Citation: Beswick AD, Rees K, Dieppe P, et al. *Complex interventions to improve physical function and maintain independent living in elderly people: a systematic review and meta-analysis*. *Lancet* 2008; 371: 725–35

AMSTAR Category: Weak

Total # Synthesis Findings: 36

Jurisdictions: Europe (UK, Denmark, Sweden, Switzerland, The Netherlands, Italy, Germany), Canada, USA, Australia, Asia (Thailand, Japan, China)

Publication Date Range: 1945 - December 2006

Design of Primary Studies: Randomized controlled trials with at least 6 months follow-up

Inclusion Criteria: "Trials that compared community-based multifactorial intervention with usual care or minimum intervention, with follow-up for at least 6 months. Interventions were eligible for the review if individuals received personalised assessment and provision of or referral for appropriate specialist medical and social care. Mean age of eligible study populations was at least 65 years at baseline, with individuals living at home or preparing for hospital" p 726

Citation: Dickens AP, Richards SH, Greaves CJ et al. *Interventions targeting social isolation in older people: a systematic review*. *BMC Public Health* 2011; 11:647

AMSTAR Category: Moderate

Total # Synthesis Findings: 29

Jurisdictions: USA, Canada, Japan, Europe (The Netherlands, Sweden, Finland)

Publication Date Range: Published prior to May 2009

Design of Primary Studies: Randomized controlled trials and Quasi-experimental studies

Inclusion Criteria: "related in full/part to older people; the intervention targeted people identified as socially isolated and/or lonely, and stated a clear and plausible aim to alleviate this; recorded some form of participant-level outcome measure, and reported sufficient outcome data for treatment effects to be obtained; used a randomised controlled trial (RCT), or quasi-experimental (controlled trial or matched controlled trial) design; included an inactive (usual care, no intervention, attentional) control group; was published in English". p.4

Citation: Eklund K, Wilhelmson K. *Outcomes of coordinated and integrated interventions targeting frail elderly people: a systematic review of randomised controlled trials*. *Health Soc Care Community*. 2009 Sep; 17(5):447-58

AMSTAR Category: Moderate

Total # Synthesis Findings: 13

Jurisdictions: Canada, USA, Italy

Publication Date Range: 1997 - July 2007

Design of Primary Studies: Randomized controlled trials

Inclusion Criteria: "original article; integrated intervention including CM or equivalent coordinated organisation; frail elderly people (elderly defined as 65 years or older) living in the community; randomised

controlled trials; in the English language, and published in refereed journals between 1997 and July 2007"
p.448

Citation: Johansson G, Eklund K, Gosman-Hedström G. *Multidisciplinary team, working with elderly persons living in the community: a systematic literature review*. Scand J Occup Ther. 2010; 17: 101-116

AMSTAR Category: Moderate

Total # Synthesis Findings: 6

Jurisdictions: N/A from review

Publication Date Range: January 1995 - September 2008

Design of Primary Studies: Qualitative (Case study, action research, reconstruction of events, ethnographic);

Qualitative (experimental randomized, non-experimental); Practice description

Inclusion Criteria: "articles describing general, non-specific diagnosis, multidisciplinary teamwork that concerned ways of working in a team, or methods and outcomes of working in team, all dealing with elderly persons with multiple diseases living in the community. The articles should be available at the Biomedical Library at the University of Gothenburg" p. 102

Citation: Low LF, Yap M, Brodaty H. *Systematic review of different models of home and community care services for older persons*. BMC Health Services Research 2011, 11:93

AMSTAR Category: Moderate

Total # Synthesis Findings: 12

Jurisdictions: Canada, USA, Italy, Europe (Italy, Finland, Spain, England, UK), Australia

Publication Date Range: 1994 - May 2009

Design of Primary Studies: Randomized controlled trials, non-randomized controlled trials, observational studies

Inclusion Criteria: "Written in English; evaluating the delivery of case managed, integrated or consumer directed home and community services using quantitative outcomes; home and community services could include but could not be limited exclusively to medical care; the sample was community dwelling, with either a majority aged 65 years and over, or with a subsample of persons aged 65 and over for whom results were reported separately; the sample was not selected because they had a specific medical illness, except for dementia." p.2

Citation: Oeseburg B, Wynia K, Middel B et al. *Effects of Case Management for Frail Older People or Those With Chronic Illness*. Nurs Res. 2009 May-Jun; 58(3):201-10

AMSTAR Category: Moderate

Total # Synthesis Findings: 6

Jurisdictions: USA, Canada, Europe (Finland, Italy)

Publication Date Range: March 1995 - March 2007

Design of Primary Studies: Randomized controlled trials

Inclusion Criteria: "studies had to evaluate case management interventions for people with a somatic chronic disease or older people who are frail or with impairment living in the community. Eligible studies reported RCT on the patient advocacy case management model and evaluated service use and costs." p. 202-203

Citation: Smits CH, de Lange J, Dröes RM et al. *Effects of combined intervention programmes for people with dementia living at home and their caregivers: a systematic review*. *Int. J. Geriatr. Psychiatry* 2007; 22: 1181–1193

AMSTAR Category: Weak

Total # Synthesis Findings: 14

Jurisdictions: N/A from review

Publication Date Range: January 1992 - February 2005

Design of Primary Studies: Systematic reviews, single studies of interventions

Inclusion Criteria: "intervention aimed at both caregiver and patient (resulting in personal contacts between care professional, caregiver and person with dementia); caregiver and person with dementia living in their own homes; elderly person suffering from dementia; report of effect study." p. 1182

Citation: Spijker A, Vernooij-Dassen M, Vasse E et al. *Effects of combined intervention programmes for people with dementia living at home and their caregivers: a systematic review*. *Am Geriatr Soc* 56:1116–1128, 2008

AMSTAR Category: Moderate

Total # Synthesis Findings: 4

Jurisdictions: Australia, Europe (The Netherlands, Finland, Italy, UK), USA, Canada

Publication Date Range: January 1990 - March 2006

Design of Primary Studies: Randomized controlled trials

Inclusion Criteria: "study population of patients with dementia and their informal caregivers; community-dwelling patients with dementia and informal caregivers; an outcome measure of institutionalization; a single-study design (not a review or a meta-analysis); a controlled, clinical study; a nonpharmacological study; a study written in English" p.1117

Citation: Tappenden P, Campbell F, Rawdin A et al. *The clinical effectiveness and cost-effectiveness of home-based, nurse-led health promotion for older people: a systematic review*. *Health Technol Assess* 2012; 16(20)

AMSTAR Category: Moderate

Total # Synthesis Findings: 3

Jurisdictions: UK

Publication Date Range: Published in or after 2001

Design of Primary Studies: Randomized controlled trials

Inclusion Criteria: "[Clinical Effectiveness]: (Population) older people (> 75 years) at risk of admission to hospital, residential or nursing care; (Intervention) structured home-based, nurse-led health promotion; (Comparators) standard care, including joint health and social assessment. Health promotion delivered in a different setting or not delivered by a nurse; (Setting) Interventions delivered in the home setting, undertaken in the UK; (Outcomes) Admission to hospital, residential or nursing care, mortality, morbidity including depression, falls, accidents, deteriorating health status, patient satisfaction; (Study Design) Randomized controlled trials; [Health Economic Analysis]: same as clinical effectiveness with addition of: studies presenting a comparative economic evaluation and presented results in terms of both costs and health outcomes; studies were undertaken from the UK National Health Service (NHS) and Personal Social Services (PSS) perspective" p.xi - xii

Studies on Organizational Features of Integrated Care

Citation: Macadam, M. *Frameworks of Integrated Care for the Elderly: A Systematic Review*. Ottawa:

Canadian Policy Research Networks (CPRN); 2008.

AMSTAR Category: Weak

Total # Synthesis Findings: 10

Jurisdictions: Australia, Canada, USA, Europe (Italy)

Publication Date Range: N/A from review

Design of Primary Studies: Studies and review articles, surveys of opinion leaders, articles

Inclusion Criteria: "articles and papers that focused on comprehensive models of integrated or coordinated of the elderly as a focus of health system reform were included" p. 4

Citation: Macadam, M. *Moving Toward Health Service Integration: Provincial Progress in System Change for Seniors*. Ottawa: Canadian Policy Research Networks (CPRN); 2009

AMSTAR Category: Weak

Total # Synthesis Findings: 14

Jurisdictions: Australia, Canada, USA, Europe (Italy)

Publication Date Range: N/A from review

Design of Primary Studies: Studies and review articles, surveys of opinion leaders, articles

Inclusion Criteria: "studies and review articles of the effectiveness of models of integrated health and social care for seniors in peer-reviewed journals, government websites or official evaluation reports; surveys of opinion leaders about features of integrated health and social care models; articles about frameworks of health and social integrated care for seniors." p. 2

AMSTAR

The AMSTAR instrument is detailed below. The Contextualized Health Research Synthesis Program considers Items #3, 5, 6, 7 and 8 to be ‘key methodological criteria.’

#	Item	Description	Notes	Criteria
1	Was an 'a priori' design provided?	The research question and inclusion criteria should be established before the conduct of the review.	<i>"Need to refer to a protocol, ethics approval, or pre-determined/a priori published research objectives to score a "yes."</i>	A. Research question, or statement of either research objectives or purpose of the paper
				B. Inclusion criteria
				C. Protocol or ethics approval or pre-determined/a priori published research objectives
2	Was there duplicate study selection and data extraction?	There should be at least two independent data extractors and a consensus procedure for disagreements should be in place.	<i>"2 people do study selection, 2 people do data extraction, consensus process or one person checks the other's work."</i>	A. Duplicate study selection or one person checks the other's work
				B. Duplicate data extraction or one person checks the other's work
				C. Consensus process
3	Was a comprehensive literature search performed?	At least two electronic sources should be searched. The report must include years and databases used (e.g. Central, EMBASE, and MEDLINE). Key words and/or MESH terms must be stated and where feasible the search strategy should be provided. All searches should be supplemented by [a grey lit search], consulting current contents, reviews, textbooks, specialized registers, or experts in the particular field of study, and by reviewing the references in the studies found.	<i>"If at least 2 sources + one supplementary strategy used, select "yes" (Cochrane register/Central counts as 2 sources; a grey literature search counts as supplementary)."</i>	A. At least two electronic sources
				B. Years
				C. Names of databases
				D. Key words/MeSH terms
				E. One supplementary strategy

#	Item	Description	Notes	Criteria
4	Was the status of publication (i.e., grey literature) used as an inclusion criterion?	The authors should state that they searched for reports regardless of their publication type. The authors should state whether or not they excluded any reports (from the systematic review), based on their publication status, language etc.	<i>"If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." SIGLE database, dissertations, conference proceedings, and trial registries are all considered grey for this purpose. If searching a source that contains both grey and non-grey, must specify that they were searching for grey/unpublished lit."</i>	A. No language search restrictions
				B. No publication type search restrictions, grey lit search = YES
5	Was a list of studies (included and excluded) provided?	A list of included and excluded studies should be provided.	<i>"Acceptable if the excluded studies are referenced. If there is an electronic link to the list but the link is dead, select "no.""</i>	A. Both included AND excluded studies must be available for review. Excluded studies are those that passed title/abstract filtering and went on to full-text review. Information on the included and excluded studies can be presented as: lists within the body of the text, referenced at the end of the publication, linked to an online document or actually available from the author/publisher.
6	Were the characteristics of the included studies provided?	In an aggregated form such as a table, data from the original "studies should be provided on the participants, interventions and outcomes. The ranges of characteristics in all the studies analyzed e.g., age, race, sex, relevant socioeconomic data, disease status, duration, severity, or other diseases should be reported.	<i>"Acceptable if not in table format as long as they are described as above"</i>	A. Aggregate description of characteristics of included studies, e.g. participant age, gender, health status, etc.

#	Item	Description	Notes	Criteria
7	Was the scientific quality of the included studies assessed and documented?	'A priori' methods of assessment should be provided (e.g., for effectiveness studies if the author(s) chose to include only randomized, double-blind, placebo controlled studies, or allocation concealment as inclusion criteria); for other types of studies alternative items will be relevant.	<i>"Can include use of a quality scoring tool or checklist, e.g., Jadad scale, risk of bias, sensitivity analysis, etc., or a description of quality items, with some kind of result for EACH study ("low" or "high" is fine, as long as it is clear which studies scored "low" and which scored "high"; a summary score/range for all studies is not acceptable)."</i>	A. Quality score provided for EACH included study (quality scoring tool or checklist must be described)
				B. Some description of quality items, with a separate result for each included study
8	Was the scientific quality of the included studies used appropriately in formulating conclusions?	The results of the methodological rigor and scientific quality should be considered in the analysis and the conclusions of the review, and explicitly stated in formulating recommendations.	<i>"Might say something such as "the results should be interpreted with caution due to poor quality of included studies." Cannot score "yes" for this question if scored "no" for question 7"</i>	A. Must score YES on #7
				B. Must show some recognition of impact of quality and methodological rigour
9	Were the methods used to combine the findings of studies appropriate?	For the pooled results, a test should be done to ensure the studies were combinable, to assess their homogeneity (i.e., Chi-squared test for homogeneity, I2). If heterogeneity exists a random effects model should be used and/or the clinical appropriateness of combining should be taken into consideration (i.e., is it sensible to combine?)	<i>"Indicate "yes" if they mention or describe heterogeneity, i.e., if they explain that they cannot pool because of heterogeneity/variability between interventions."</i> <i>CHRSP: This item only applies to meta-analyses & systematic reviews that eschew meta-analysis because of heterogeneity; otherwise the score is out of 10.</i>	A. Pooled results have tests for homogeneity and appropriate changes if heterogeneity found
				B. Mention/describe heterogeneity as reason for not pooling results
10	Was the likelihood of publication bias (a.k.a. "file drawer" effect) assessed?	An assessment of publication bias should include a combination of graphical aids (e.g., funnel plot, other available tests) and/or statistical tests (e.g., Egger regression test).	<i>"If no test values or funnel plot included, score "no". Score "yes" if mentions that publication bias could not be assessed because there were fewer than 10 included studies."</i>	A. Graphical aids
				B. Statistical tests
				C. Fewer than 10 studies
11	Was the conflict of interest stated?	Potential sources of support should be clearly acknowledged in both the systematic review and the included studies.	<i>"To get a "yes," must indicate source of funding or support for the systematic review AND for each of the included studies."</i>	A. Sources of support or funding for systematic review
				B. Sources of support or funding for each included study

Table 2: Details of the AMSTAR Instrument

Analysis of Primary Research Studies

The following table shows the frequency of citation of primary research in the review literature, organized by sub-topic.

FREQUENCY OF PRIMARY RESEARCH CITATIONS: NUMERICAL DATA								
# of Citations	All Intervention Types	Integrated Care	End-of-Life Care	Preventative Home Visits	Fall Prevention	Caregiver Supports	Features of Integrated Care	Caregiver Respite Care
1	781	180	29	54	150	296	19	207
2	71	11	0	4	34	12	0	0
3	21	1	0	0	8	4	0	0
4	7	1	0	0	5	0	0	0
5	4	0	0	0	4	0	0	0
6	4	0	0	0	2	0	0	0
7	1	0	0	0	0	0	0	0
Total	1065	209	29	62	294	332	19	207
FREQUENCY OF PRIMARY RESEARCH CITATIONS: EXPRESSED AS A PERCENTAGE								
# of Citations	All Intervention Types	Integrated Care	End-of-Life Care	Preventative Home Visits	Fall Prevention	Caregiver Supports	Features of Integrated Care	Caregiver Respite Care
1	73.3%	86.1%	100.0%	87.1%	51.0%	89.2%	100.0%	100.0%
2	13.3%	10.5%		12.9%	23.1%	7.2%		
3	5.9%	1.4%			8.2%	3.6%		
4	2.6%	1.9%			6.8%			
5	1.9%				6.8%			
6	2.3%				4.1%			
7	0.7%							

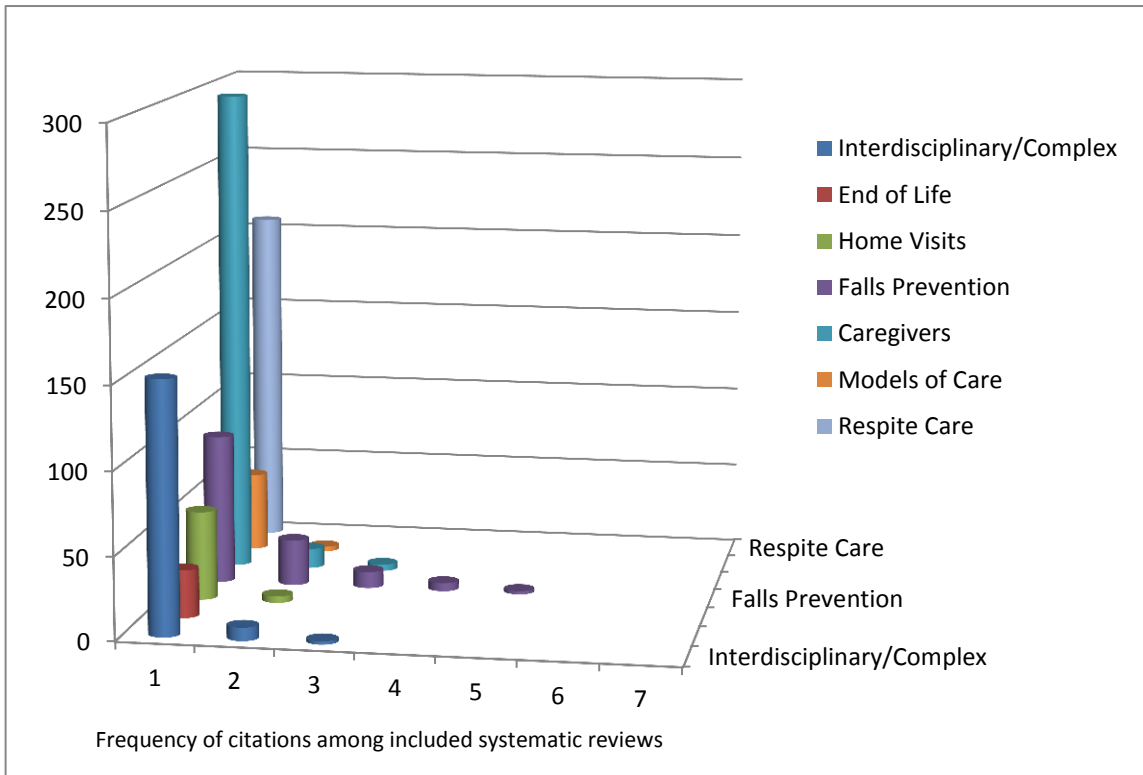


Figure 6: Frequency of Primary Research Studies

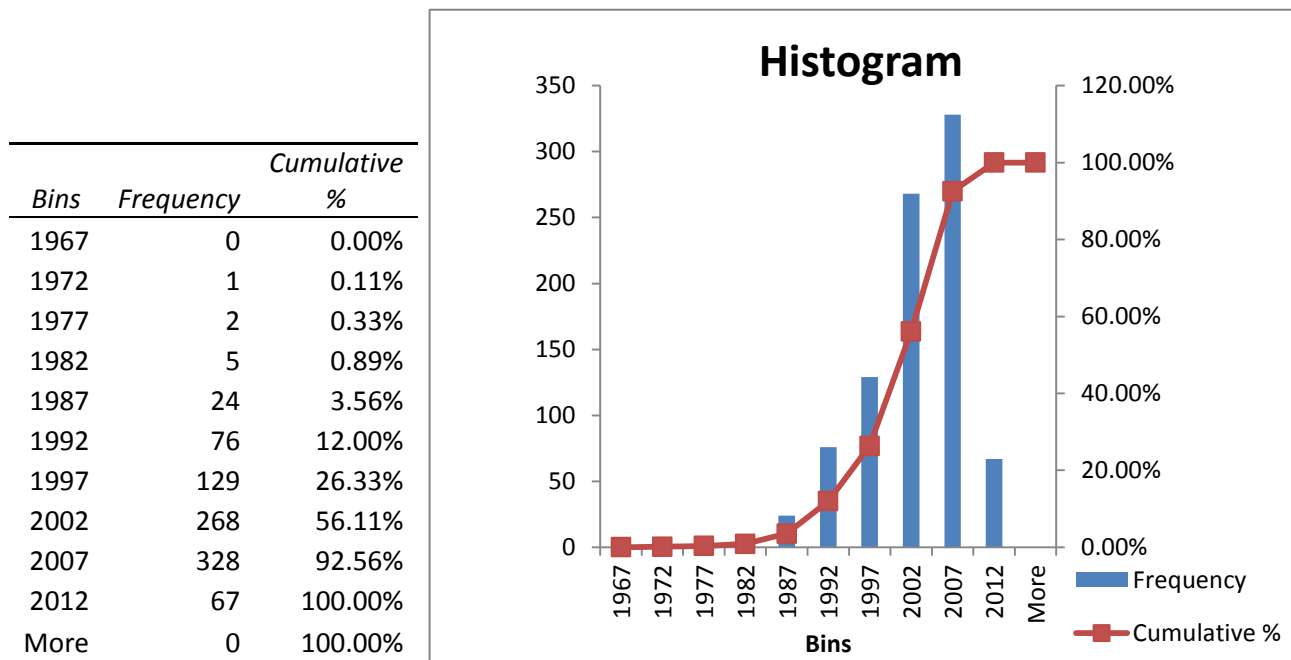


Figure 7: Primary research study publication year histogram (bins indicate "up and equal to" of range)

Data Extraction Methods

Developing a Database

The main tool we used in our analysis of the evidence was a database designed to organize extracted data from the included review papers. Our unit of analysis was a "synthesis finding", which we defined as:

A conclusion that is reached by the review paper authors regarding one specific aspect of the studied intervention that is based on a synthesis of the included primary research studies.

In other words, a synthesis finding was required to have a combination of information from more than one article that was included in the review paper. An observation in a review paper that was based on a single study was not considered synthesis finding nor entered into the database.

Each synthesis finding was first coded using the PICO⁶ components:

- Population that is included in the review
- Intervention that is tested for an effect
- Comparator that is used to evaluate differences
- Outcome that is measured

After the synthesis findings were coded, we reviewed the PICO labels that were assigned and consolidated the list. For example, for the Population component, we may have had "Seniors 65+", "Older Adults 65+" and "Elderly (65+)". These three labels would be combined to a single label, e.g., "Seniors 65+". For each PICO label, we also included any additional eligibility criteria, as defined by the review paper. For example, a systematic review had a Population label of "65+ years old" and the following additional inclusion criteria: "Frail elderly people with multiple health conditions."

Then, data was extracted for the synthesis finding that described:

- The measurement that was used to quantify the outcome e.g., odds-ratios (OR's) or group mean differences (GMD)
- The value of the measurement
- The sample size for that measurement
- The confidence intervals for that measurement
- The statistical significance for that measurement
- The heterogeneity of the data used in that measurement

⁶ The PICO framework was developed for systematic review methodology. For further details see: http://ph.cochrane.org/sites/ph.cochrane.org/files/uploads/Unit_Five.pdf

The extraction was carried out by Stephanie O'Brien and Pablo Navarro. Disagreements were resolved through discussion and consensus. Our data extraction yielded 376 individual synthesis findings, covering thirty-two separate interventions and measuring sixty-nine separate outcomes.

Assessing Effectiveness

Following the data extraction, our analysis first included an assessment of the effectiveness of each individual synthesis finding, in the context of its PICO combination: the effectiveness of an intervention for an included Population was compared to a Comparator for a particular Outcome. This assessment categorized each synthesis finding into one of four categories:

- **Beneficial:** The intervention was shown to be beneficial to the recipient, with a statistically significant effect size, where the balance between sample size (larger is better) and heterogeneity (smaller is better) seemed reasonable, and where the methodological quality of the primary research studies was not critically flawed.
- **Not significantly different:** The intervention was shown to be neither significantly beneficial nor significantly harmful to the recipient.
- **Harmful:** The intervention was shown to be harmful to the recipient with the same conditional requirements as described above for Beneficial.
- **Uncertain:** A lack of information in the review paper prevents categorization of the synthesis finding as Beneficial, Harmful, or Not Significantly Different from the comparator.

The assessment of effectiveness was carried out by Pablo Navarro and Stephanie O'Brien, working together. Differences were resolved through discussion and consensus.

Analyzing Synthesis Findings

The database was then used to generate analyses of the synthesis findings based on the extracted, coded and assessed data. These analyses were organized by the type of intervention (or by the intervention "label"), and then sub-categorized by the outcome (also at the "outcome label" level). Each analysis included a description of the population(s) and comparator(s) included in the analysis, a summary of the synthesis findings and a table detailing the individual synthesis findings. The analyses were submitted to the Team Leader for review, and then used as the basis for the results section of this report.

What was included in the final report?

The results of the analysis presented below were based on synthesis findings that were consistently found to be beneficial to the recipient (or conversely, consistently harmful).

The results of our report include only the results from the systematic review literature that were the subject of consensus when we discussed the evidence and its contextualization. Findings that were not the subject of consensus, with some findings indicating a beneficial effect and other findings indicating no significant difference or even a harmful effect were not included in the report, but can be reviewed here, in the Online Companion Document. In addition, findings that were uncertain are also summarized in this Online Companion Document.

Data Extraction Results

Details of Data Extraction

The following pages contain summaries of our research findings, followed by detailed tables outlining interventions and outcomes. These are listed in the following order:

1. Caregiver Supports
2. Caregiver Respite Care
3. End of Life Care
4. Fall Prevention
5. Preventative Home Visits
6. Integrated Care

1. Summary of Findings for Caregiver Supports

Beneficial

The intervention was shown to be **beneficial** to the client/patient, with a statistically significant effect size and with confidence intervals that were not approximate to the equivalence boundary, where the balance between sample size (larger is better) and heterogeneity (smaller is better) seemed reasonable, and where the methodological quality of the primary research studies was not critically flawed

- **Intervention: Support (All support groups)**
 - Outcome: Caregiver Burden*
 - Outcome: Caregiver wellbeing and health (coping, mental health, quality of life)
- **Intervention: Support (Education)**
 - Outcome: Caregiver burden*
- **Intervention: Support (Psycho-education)**
 - Outcome: Caregiver burden*
 - Outcome: Caregiver wellbeing and health (mental health, depressive symptoms)

Harmful

The intervention was shown to be **harmful** to the client/patient with the same conditional requirements as described above for Good

- No caregiver support interventions were found to have harmful effects

Not Significantly Different

The intervention was shown to be neither significantly beneficial nor significantly harmful to the client/patient

- **Intervention: Case Management**
 - Outcome: Caregiver Burden*
 - Outcome: Caregiver Wellbeing and Health (mental health)*
-
- **Intervention: Combined Care**
 - Outcome: Caregiver Burden
 - Outcome: Caregiver Wellbeing and Health (depressive symptoms, psychological wellbeing, coping ability)
- **Intervention: Support (Education)**
 - Outcome: Caregiver wellbeing and health (mental health)
- **Intervention: Support (Mutual Support Groups)**
 - Outcome: Caregiver burden*
 - Outcome: Caregiver wellbeing and health (mental health)
- **Intervention: Support (Psychosocial)**
 - Outcome: Caregiver burden*

- Outcome: Caregiver wellbeing and health (mental health)*
- **Intervention: Support (Telephone-based)**
 - Outcome: Caregiver wellbeing and health (mental health)*

Uncertain

A lack of information in the review paper prevents categorization of the synthesis finding as beneficial, harmful, or no different than the comparator

- No caregiver support interventions were found to have uncertain effects

Details of Findings for Caregiver Supports

Details of our findings are listed below, in alphabetical order by Intervention Type:

Intervention: Case Management

Outcome: Caregiver Burden

Population: Caregivers of older adults at risk

Comparator: Usual care

One synthesis finding indicates that while case management had no effect on reducing caregiving burden, it did have a significant positive effect on increasing caregiver satisfaction(1). Case management is defined as a method to achieve integrated and coordinated healthcare that includes an individual assessment, care plan, monitoring and follow-up conducted by one, or multiple, healthcare professionals. This review is rated as moderate quality according to the AMSTAR scale (52%) and includes only randomized controlled trials set in the U.S., Canada and Italy. Therefore, it has some potential applicability to the context of Newfoundland and Labrador.

Our Interpretation	Intervention	Finding/Source/Amstar
Not Significantly Different	<p>Case Management Category: Multi-component care</p> <p>Description: case management or equivalent coordinated organization p.447</p>	<p>Finding: (Burden) - Intervention had no statistical effect on outcome; (Satisfaction) - Intervention had significant positive effects on outcome--Zarith, Caregiver satisfaction, client satisfaction questionnaire (CSQ-8)</p> <p>Significance: N/A Sample Size: N/A Comment: p.456 Heterogeneity: N/A N/A Source: Eklund, 2009 AMSTAR: 52% (Moderate)</p>

Outcome: Caregiver Wellbeing and Health (mental health)

Population: Caregivers of older adults with dementia

Comparator: Control group (usual care, waiting list, or placebo)

One synthesis finding indicated that case management had no significant effect on improving caregiver wellbeing and health in terms of depressive symptoms (2). This was a moderate review according to AMSTAR (57%) and included only higher quality randomized controlled trial and quasi-experimental trials.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	<p>Case Management Category: Multi-component care</p> <p>Description: Multidisciplinary case management</p>	<p>Synthesis Finding: MD -0.32 (CI -0.73 - 0.09), I² =83.1%-- Depression: General Health Questionnaire 12 or 28 version, the Center for Epidemiological Studies Depression Scale, the Zung Depression Scale, the Beck Depression Inventory, PST-Brief Symptom Inventory</p> <p>Significance: p=0.13 Sample Size: 3769 Comment: Figure 6 p.52 Heterogeneity: p=0.003 Figure 6 p.52 Source: Schoenmaker, 2010 AMSTAR: 57% (Moderate)</p>

Intervention: Combined Care

Outcome: Caregiver Burden

Population: Caregivers of older adults with dementia

Comparator: Not stated, presumed standard of care

Two synthesis findings from a systematic review (3) in which both had mixed findings. While several primary research studies found that combined care interventions had significant effects on decreasing caregiver burden, several other primary research studies found no significant effects of combined care interventions on decreasing caregiver burden. The finding is from a weak review on the AMSTAR scale (38%) which includes systematic reviews and single studies of interventions of which the geographical locations are not detailed, hence it is difficult to put the results into the context of Newfoundland and Labrador.

Our Interpretation	Intervention	Finding/Source/AMSTAR
<p>Not Significantly Different</p>	<p>Combined Care Category: Multi-component care</p> <p>Description: combined care programmes addressing both the person with dementia and their caregiver at the same time, involving a mix of different services that are not necessarily integrated</p>	<p>Synthesis Finding: Mixed findings: 1 study had significant positive effects for the intervention, 2 studies had heterogeneous effects for the intervention, and 4 studies had no significant effects--Subjective</p> <p>Significance: N/A</p> <p>Sample Size: N/A</p> <p>Comment: Findings: Table 2 p. 1187. Heterogeneous effects a) were significant for some measures of the same outcome category but not for other measures; b) reached statistical significance at some but not all measurement points in longitudinal studies (except when later measurement points resulted in significant effects, whereas earlier measurements did not. In the latter case a delayed effect may have occurred; c) report positive effects for some subgroups but not for the total group that was studied. p. 1182</p> <p>Heterogeneity: N/A</p> <p>Source: Smits, 2007 AMSTAR: 38% (Weak)</p>
<p>Not Significantly Different</p>	<p>Combined Care Category: Multi-component care</p> <p>Description: combined care programmes addressing both the person with dementia and their caregiver at the same time, involving a mix of different services that are not necessarily integrated</p>	<p>Synthesis Finding: Mixed findings: 6 studies showed significant positive effects for the intervention, 2 showed heterogeneous effects for the intervention, and 12 had no significant effects. --Not described</p> <p>Significance: N/A</p> <p>Sample Size: N/A</p> <p>Comment: Findings: Table 2 p. 1187. Heterogeneous effects a) were significant for some measures of the same outcome category but not for other measures; b) reached statistical significance at some but not all measurement points in longitudinal studies (except when later measurement points resulted in significant effects, whereas earlier measurements did not. In the latter case a delayed effect may have occurred; c) report positive effects for some subgroups but not for the total group that was studied. p. 1182</p> <p>Heterogeneity: N/A, N/A</p> <p>Source: Smits, 2007 AMSTAR: 38% Weak</p>

Outcome: Caregiver Wellbeing and Health
(depressive symptoms, psychological wellbeing, coping ability)

Population: Caregivers of older adults with dementia

Comparator: Not stated, presumed standard of care

Five synthesis findings from one systematic review (3) indicate that combined care interventions have no significant effect on improving caregiver wellbeing and health in terms of depressive symptoms, psychological wellbeing and ability to cope. The findings are from a weak review on the AMSTAR scale (38%) that includes systematic reviews and single studies of interventions, of which the geographical locations are not detailed; hence it is difficult to put the results into the context of Newfoundland and Labrador.

Our Interpretation	Intervention	Finding/Source AMSTAR
Not Significantly Different	<p>Combined Care Category: Multi-component care</p> <p>Description: Combined care programmes addressing both the person with dementia and their caregiver at the same time, involving a mix of different services that are not necessarily integrated</p>	<p>Synthesis Finding: Mixed findings: 2 studies had significant positive effects for the intervention, 3 had heterogeneous effects, and 2 had no significant effects--Depressive symptoms Significance: N/A Sample Size: N/A Comment: Findings: Table 2 p. 1187. Heterogeneous effects a) were significant for some measures of the same outcome category but not for other measures; b) reached statistical significance at some but not all measurement points in longitudinal studies (except when later measurement points resulted in significant effects, whereas earlier measurements did not. In the latter case a delayed effect may have occurred; c) report positive effects for some subgroups but not for the total group that was studied. p. 1182 Heterogeneity: N/A, N/A Source: Smits, 2007 AMSTAR: 38% (Weak)</p>
Not Significantly Different	<p>Combined Care Category: Multi-component care</p> <p>Description: Combined care programmes addressing both the person with dementia and their caregiver at the same time, involving a mix of different services that are not necessarily integrated</p>	<p>Synthesis Finding: Mixed findings: 3 studies had significant positive effects for the intervention and 1 had no significant effects--General mental health/psychological and psychosomatic complaints. Significance: N/A Sample Size: N/A Comment: Table 2 p.1187 Heterogeneity: N/A, N/A Source: Smits, 2007 AMSTAR: 38% (Weak)</p>
Not Significantly Different	<p>Combined Care Category: Multi-component care</p> <p>Description: Combined care programmes addressing both the person with dementia and their caregiver at the same time, involving a mix of different services that are not necessarily integrated</p>	<p>Synthesis Finding: Mixed findings: 1 study had positive effects for the intervention and 2 studies had no significant effects--Wellbeing Significance: N/A Sample Size: N/A Comment: Table 2 p.1187 Heterogeneity: N/A, N/A Source: Smits, 2007 AMSTAR: 38% (Weak)</p>

Our Interpretation	Intervention	Finding/Source/AMSTAR
<p>Not Significantly Different</p>	<p>Combined Care Category: Multi-component care</p> <p>Description: Combined care programmes addressing both the person with dementia and their caregiver at the same time, involving a mix of different services that are not necessarily integrated</p>	<p>Synthesis Finding: Mixed findings: 4 studies had significant positive effects for the intervention, 1 study had heterogeneous effects, and 7 had no significant effect--Other aspects of mental health</p> <p>Significance: N/A</p> <p>Sample Size: N/A</p> <p>Comment: Findings: Table 2 p. 1187. Heterogeneous effects a) were significant for some measures of the same outcome category but not for other measures; b) reached statistical significance at some but not all measurement points in longitudinal studies (except when later measurement points resulted in significant effects, whereas earlier measurements did not. In the latter case a delayed effect may have occurred; c) report positive effects for some subgroups but not for the total group that was studied. p. 1182</p> <p>Heterogeneity: N/A, N/A</p> <p>Source: Smits, 2007 AMSTAR: 38% (Weak)</p>
<p>Not Significantly Different</p>	<p>Combined Care Category: Multi-component care</p> <p>Description: Combined care programmes addressing both the person with dementia and their caregiver at the same time, involving a mix of different services that are not necessarily integrated</p>	<p>Synthesis Finding: Mixed findings: 2 studies had significant positive effects for the intervention, 5 studies had heterogeneous effects for the intervention, and 1 study had no significant effects. --Coping strategies, feelings of competence, mastery, skill enhancement, ADL self-efficacy, knowledge on dementia, and response to disruptive behavior</p> <p>Significance: N/A</p> <p>Sample Size: N/A</p> <p>Comment: Findings: Table 2 p. 1188. Heterogeneous effects a) were significant for some measures of the same outcome category but not for other measures; b) reached statistical significance at some but not all measurement points in longitudinal studies (except when later measurement points resulted in significant effects, whereas earlier measurements did not. In the latter case a delayed effect may have occurred; c) report positive effects for some subgroups but not for the total group that was studied. p. 1182</p> <p>Heterogeneity: N/A, N/A</p> <p>Source: Smits, 2007 AMSTAR: 38% (Weak)</p>

Intervention: Support (All support groups)

Outcome: Caregiver Burden

Population: Caregivers of older adults with dementia

Comparator: Control group (general care, waiting list or minimal support)

A single synthesis finding indicates that all support groups that include mutual support groups, educational psychology groups and educational training had a significant effect on decreasing caregiver burden (4). This review was rated weak on the AMSTAR scale (24%) and, although it included quasi-experimental controlled trials, the geographies of the primary studies are unknown, thus making it difficult to ascertain the applicability of this evidence to the Newfoundland and Labrador context.

Our Interpretation	Intervention	Finding/ Source/AMSTAR
Beneficial	<p>All support groups Category: Support (Dementia) Description: Mutual support groups, educational psychology groups and educational training led by professionals, including nurses, social workers, physicians, professional consultants, or other group members who had received professional training. P.P. 1090</p>	<p>Synthesis Finding: ES -0.23 [CI(-0.33) - (-0.13)]--Not described Significance: N/A Sample Size: N/A Comment: Intervention associated with a significant positive effect on outcome. Table 2 p.1095 Heterogeneity: N/AN/A Source: Chien, 2011 AMSTAR: 24% (Weak)</p>

Outcome: Caregiver wellbeing and health (coping, mental health, quality of life)

Population: Caregivers of older adults with dementia

Comparator: Control group (general care, waiting list or minimal support)

Four synthesis findings from one systematic review (4) indicate that all mutual support groups including mutual support groups, educational psychology groups and educational training have a significant effect on improving caregiver wellbeing and health in terms of mental and psychological wellbeing, depressive symptoms and life quality. This review was rated weak on the AMSTAR scale (24%) and, although it included quasi-experimental controlled trials, the geographies of the primary studies are unknown making it difficult to ascertain the applicability of the evidence to Newfoundland and Labrador.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	<p>All support groups Category: Support (Dementia) Description: Mutual support groups, educational psychology groups and educational training led by professionals, including nurses, social workers, physicians, professional consultants, or other group members who had received professional training. P. 1090</p>	<p>Synthesis Finding: ES -0.44 [CI (-0.73) - (-0.15)]--Mental disorder, depressive symptom, anger and hostility, anxiety, sentiment and mood, and sorrow p.1089 Significance: N/A Sample Size: N/A Comment: Intervention associated with a significant positive effect on outcome. Table 2 p.1095 Heterogeneity: N/A, N/A Source: Chien , 2011 AMSTAR: 24% (Weak)</p>

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	<p>All support groups Category: Support (Dementia) Description: Mutual support groups, educational psychology groups and educational training led by professionals, including nurses, social workers, physicians, professional consultants, or other group members who had received professional training. P. 1090</p>	<p>Synthesis Finding: ES -0.40 [CI (-0.72) - (-0.08)]-- Depression: not otherwise described Significance: N/A Sample Size: N/A Comment: Intervention associated with a significant positive effect on outcome. Table 2 p.1095 Heterogeneity: N/A, N/A Source: Chien , 2011 AMSTAR: 24% (Weak)</p>
Beneficial	<p>All support groups Category: Support (Dementia) Description: Mutual support groups, educational psychology groups and educational training led by professionals, including nurses, social workers, physicians, professional consultants, or other group members who had received professional training. P. 1090</p>	<p>Synthesis Finding: ES 0.40 (CI 0.09 - 0.71)--"social support, relationship with the patient, and life quality" p. 1090 Significance: N/A Sample Size: N/A Comment: Intervention associated with a significant positive effect on outcome. p.1089 Heterogeneity: N/A, N/A Source: Chien , 2011 AMSTAR: 24% (Weak)</p>
Beneficial	<p>All support groups Category: Support (Dementia) Description: Mutual support groups, educational psychology groups and educational training led by professionals, including nurses, social workers, physicians, professional consultants, or other group members who had received professional training. P. 1090</p>	<p>Synthesis Finding: "The use of theoretical models, and length and intensity of group sessions had a significant impact on the effect sizes for psychological wellbeing and depression"--Psychological wellbeing, depression, burden and social outcomes Significance: N/A Sample Size: N/A Comment: p. 1097 Heterogeneity: N/A, N/A Source: Chien , 2011 AMSTAR: 24% (Weak)</p>

Intervention: Support (Education)

Outcome: Caregiver burden

Population: Caregivers of older adults with dementia

Comparator: Control group (general care, waiting list or minimal support)

A single synthesis finding indicates that educational support groups that solely provide information had a significant effect on decreasing caregiver burden (4). This review was rated weak on the AMSTAR scale (24%) and, although it included quasi-experimental controlled trials, the geographies of the primary studies are unknown, making it difficult to ascertain the applicability of the evidence to Newfoundland and Labrador.

Our Interpretation	Intervention	Finding/ Source/AMSTAR
Beneficial	<p>Education</p> <p>Category: Support (Dementia)</p> <p>Description: educational groups can immediately provide useful information, such as caregiving skills, ways of self-adjustment, knowledge for handling legal issues, role play, and discussion, and thus facilitate caregivers finding available resources that can reduce their burden in patient care quickly. (pP. 1096)</p>	<p>Synthesis Finding: ES -0.25 [CI (-0.48) - (-0.02)]--Not described</p> <p>Significance: p<0.05</p> <p>Sample Size: N/A</p> <p>Comment: Table 2 p.1095</p> <p>Heterogeneity: N/A Table 2 p.1095</p> <p>Source: Chien, 2011</p> <p>AMSTAR: 24% (Weak)</p>

Outcome: Caregiver wellbeing and health (mental health)

Population: Caregivers of older adults with dementia

Comparator: Control group (general care, waiting list or minimal support)

Two synthesis findings from one systematic review (4) indicate that educational groups have no significant effect on improving caregivers' wellbeing and health in terms of mental health and depressive symptoms. This review was rated weak on the AMSTAR scale (24%) and, although it included quasi-experimental controlled trials, the geographies of the primary studies are unknown, it difficult to ascertain the applicability of the evidence to Newfoundland and Labrador.

Our Interpretation	Intervention	Finding/ Source/AMSTAR
Not Significantly Different	<p>Education</p> <p>Category: Support (Dementia)</p> <p>Description: Educational groups can immediately provide useful information, such as caregiving skills, ways of self-adjustment, knowledge for handling legal issues, role play, and discussion, and thus facilitate caregivers finding available resources that can reduce their burden in patient care quickly. (p. 1096)</p>	<p>Synthesis Finding: ES -0.30 (CI -1.23 - 0.64)--Mental disorder, depressive symptom, anger and hostility, anxiety, sentiment and mood, and sorrow p.1090</p> <p>Significance: N/A</p> <p>Sample Size: N/A</p> <p>Comment: Table 2 p.1095</p> <p>Heterogeneity: N/A, N/A</p> <p>Source: Chien, 2011</p> <p>AMSTAR: 24% (Weak)</p>

Our Interpretation	Intervention	Finding/ Source/AMSTAR
Not Significantly Different	Education Category: Support (Dementia) Description: Educational groups can immediately provide useful information, such as caregiving skills, ways of self-adjustment, knowledge for handling legal issues, role play, and discussion, and thus facilitate caregivers finding available resources that can reduce their burden in patient care quickly. (p. 1096)	Synthesis Finding: ES -0.22 (CI -1.19 - 0.75)-- Depression: not otherwise described Significance: N/A Sample Size: N/A Comment: Table 2 p.1095 Heterogeneity: N/A, N/A Source: Chien, 2011 AMSTAR: 24% (Weak)

Intervention: Support (Mutual Support Groups)

Outcome: Caregiver burden

Population: Caregivers of older adults with dementia

Comparator: Control group (general care, waiting list or minimal support)

A single synthesis finding indicates that mutual support groups had no effect on decreasing caregiver burden (4). This review was rated weak on the AMSTAR scale (24%) and, although it included quasi-experimental controlled trials, the geographies of the primary studies are unknown, making it difficult to ascertain the applicability of the evidence to Newfoundland and Labrador.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Mutual Support Groups Category: Support (Dementia) Description: mutual support groups led by professionals, including nurses, social workers, physicians, professional consultants, or other group members who had received professional training. P.P. 1090 "mutual support group interventions, which operate on voluntary participation, place members that have similar problems and situations of caregiving together, and provide free choice and greater control of group processes." http://dx.doi.org/10.1053/apnu.2002.32951	Synthesis Finding: ES -0.27 (CI - 0.57 - 0.04)--Not described Significance: N/A Sample Size: N/A Comment: Table 2 p.1095 Heterogeneity: N/AN/A Source: Chien, 2011 AMSTAR: 24% (Weak)

Outcome: Caregiver wellbeing and health (mental health)

Population: Caregivers of older adults with dementia

Comparator: Control group (general care, waiting list or minimal support)

Two synthesis findings from one systematic review (4) indicate that mutual support groups have no significant effect on improving caregivers' wellbeing and health in terms of mental health and depressive symptoms. This review was rated weak on the AMSTAR scale (24%) and, although it included quasi-experimental controlled trials, the geographies of the primary studies are unknown, making it difficult to ascertain the applicability of the evidence to Newfoundland and Labrador.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	<p>Mutual Support Groups Category: Support (Dementia) Description: Mutual support groups led by professionals, including nurses, social workers, physicians, professional consultants, or other group members who had received professional training. P. 1090 "mutual support group interventions, which operate on voluntary participation, place members that have similar problems and situations of caregiving together, and provide free choice and greater control of group processes" http://dx.doi.org/10.1053/apnu.2002.32951</p>	<p>Synthesis Finding: ES 0.02 (CI -0.65 - 0.68)--Mental disorder, depressive symptom, anger and hostility, anxiety, sentiment and mood, and sorrow p.1090 Significance: N/A Sample Size: N/A Comment: Table 2 p.1095 Heterogeneity: N/A, N/A Source: Chien, 2011 AMSTAR: 24% (Weak)</p>
Not Significantly Different	<p>Mutual Support Groups Category: Support (Dementia) Description: Mutual support groups led by professionals, including nurses, social workers, physicians, professional consultants, or other group members who had received professional training. P. 1090 "mutual support group interventions, which operate on voluntary participation, place members that have similar problems and situations of caregiving together, and provide free choice and greater control of group processes" http://dx.doi.org/10.1053/apnu.2002.32951</p>	<p>Synthesis Finding: ES 0.08 (CI -0.61 - 0.77)--Depression: not otherwise described Significance: N/A Sample Size: N/A Comment: Table 2 p.1095 Heterogeneity: N/A, N/A Source: Chien, 2011 AMSTAR: 24% (Weak)</p>

Intervention: Support (Psycho-education)

Outcome: Caregiver burden

Population: Caregivers of older adults with dementia

Comparator: Control group (general care, waiting list or minimal support)

A single synthesis finding indicates that psycho-educational support groups that provide practical information on patient care focusing on caregivers' psychological and emotional status as well as on establishing a social, supportive network, had a significant effect on decreasing caregiver burden (4). This review was rated weak on the AMSTAR scale (24%) and, although it included quasi-experimental controlled trials, the geographies of the primary studies are unknown making it difficult to ascertain the applicability of the evidence to Newfoundland and Labrador.

Our Interpretation	Intervention	Finding/ Source/AMSTAR
Beneficial	<p>Psycho-education Category: Support (Dementia) Description: Psycho-educational groups not only 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 wellbeing and depression. (p. 1096)</p>	<p>Synthesis Finding: ES -0.23 [CI(-0.36) - (-0.10)]--Not described Significance: p<0.05 Sample Size: N/A Comment: Table 2 p.1095 Heterogeneity: N/A, N/A Source: Chien, 2011 AMSTAR: 24% (Weak)</p>

Outcome: Caregiver wellbeing and health (mental health, depressive symptoms)

Population: Caregivers of older adults with dementia

Comparator: Control group (general care, waiting list or minimal support)

Two findings from one systematic review (4) indicate that psycho-educational groups that provide practical information on patient care, and focus on caregivers' psychological and emotional status have a significant effect on improving caregivers' wellbeing and health in terms of mental health and depressive symptoms. This review was rated weak on the AMSTAR scale (24%) and, although it included quasi-experimental controlled trials, the geographies of the primary studies are unknown making it difficult to ascertain the applicability of the evidence to Newfoundland and Labrador.

Our Interpretation	Intervention	Finding/Source/AMSTAR
<p>Beneficial</p>	<p>Psycho-Education Category: Support (Dementia) Description: Psycho-educational groups not only 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 wellbeing and depression. (pP. 1096)</p>	<p>Synthesis Finding: ES -0.62 [CI (-0.99) - (-0.24)]--Mental disorder, depressive symptom, anger and hostility, anxiety, sentiment and mood, and sorrow p.1090 Significance: p<0.05 Sample Size: N/A Comment: Table 2 p.1095 Heterogeneity: N/A Table 2 p.1095 Source: Chien, 2011 AMSTAR: 24% (Weak)</p>
<p>Beneficial</p>	<p>Psycho-Education Category: Support (Dementia) Description: Psycho-educational groups not only 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 wellbeing and depression. (p. 1096)</p>	<p>Synthesis Finding: ES -0.63 [CI (-1.06) - (-0.20)]--Depression: not otherwise described Significance: p<0.05 Sample Size: N/A Comment: Table 2 p.1095 Heterogeneity: N/A Table 2 p.1095 Source: Chien, 2011 AMSTAR: 24% (Weak)</p>

Intervention: Support (Psychosocial)

Outcome: Caregiver burden

Population: Caregivers of older adults with dementia

Comparator: Control group (general care, waiting list or minimal support)

A single synthesis finding indicates that psychosocial interventions such as cognitive behavioral family or group training had no effect on decreasing caregiver burden (2). This was a moderate review according to AMSTAR (57%) and included only higher quality randomized controlled trial and quasi-experimental trials.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Psychosocial Interventions Category: Support (Dementia) Description: Cognitive behavioral family, or group training	Synthesis Finding: MD -2.94 CI(-6.28 - 0.40), I2 = 72.5%--Zarit Burden Interview, Lawton Subjective Burden instrument Significance: p=0.08 Sample Size: N/A Comment: Figure 3 p.52 Heterogeneity: p=0.003Figure 3 p.52 Source: Schoenmaker, 2012 AMSTAR: 57% (Moderate)

Outcome: Caregiver wellbeing and health (mental health)

Population: Caregivers of older adults with dementia

Comparator: control group (usual care, waiting list, or placebo)

One synthesis finding indicated that psychosocial interventions had no significant effect on improving caregiver wellbeing and health in terms of depressive symptoms (2). This was a moderate review according to AMSTAR (57%) and included only higher quality randomized controlled trial and quasi-experimental trials.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Psychosocial Interventions Category: Support (Dementia) Description: Cognitive behavioral family, or group training	Synthesis Finding: MD -0.03 (CI -0.42 - 0.35), I2 = 54.4%-- Depression: General Health Questionnaire 12 or 28 version, the Center for Epidemiological Studies Depression Scale, the Zung Depression Scale, the Beck Depression Inventory, PST-Brief Symptom Inventory Significance: p=0.86 Sample Size: N/A Comment: Figure 2 p.51 Heterogeneity: p=0.006 Figure 2 p.51 Source: Schoenmaker, 2012 AMSTAR: 57% (Moderate)

Intervention: Support (Telephone-based)

Outcome: Caregiver wellbeing and health (mental health)

Population: Caregivers of older adults with dementia

Comparator: control group (usual care, waiting list, or placebo)

One synthesis finding indicated that telephone-based support had no significant effect on improving caregiver wellbeing and health in terms of depressive symptoms (2). This was a moderate review according to AMSTAR (57%) and included only higher quality randomized controlled trial and quasi-experimental trials.

Our Interpretation	Intervention	Finding/Source/AMSTAR
<p>Not Significantly Different</p>	<p>Telephone-based support Category: Support (Dementia) Description: Not described</p>	<p>Synthesis Finding: MD 0.07 (CI -2.62 - 2.75), I2=0%--Depression: General Health Questionnaire 12 or 28 version, the Center for Epidemiological Studies Depression Scale, the Zung Depression Scale, the Beck Depression Inventory, PST-Brief Symptom Inventory Significance: p=0.96 Sample Size: 186 Comment: Figure 5 p.52 Heterogeneity: Not significant Figure 5 p.52 Source: Schoenmaker, 2012 AMSTAR: 57% (Moderate)</p>

2. Summary of Findings for Caregiver Respite Care

Beneficial

The intervention was shown to be **beneficial** to the client/patient, with a statistically significant effect size and with confidence intervals that were not approximate to the equivalence boundary, where the balance between sample size (larger is better) and heterogeneity (smaller is better) seemed reasonable, and where the methodological quality of the primary research studies was not critically flawed

- **Intervention: Community-Based Models of Respite Care**
 - Outcome: Caregiver wellbeing and health (depressive symptoms, quality of life, mental health, physical health)

Harmful

The intervention was shown to be **harmful** to the client/patient with the same conditional requirements as described above for Good

- No caregiver support interventions were found to have harmful effects

Not Significantly Different

The intervention was shown to be neither significantly beneficial nor significantly harmful to the client/patient

- **Intervention: Community-Based Models of Respite Care**
 - Outcome: Caregiver Burden

Uncertain

A lack of information in the review paper prevents categorization of the synthesis finding as beneficial, harmful, or no different than the comparator

- **Intervention: Respite**
 - Outcome: Caregiver Burden
 - Outcome: Caregiver Wellbeing and Health (anger/hostility, quality of life, anxiety, morale, depressive symptoms)

Details of Findings for Caregiver Respite Care

Intervention: Community-Based Models of Respite Care

Outcome: Caregiver Burden

Population: Caregivers of older adults at risk

Comparator: Usual care

Two synthesis findings from one systematic review (5) indicate that community-based models of respite care have no effect on reducing caregiver burden. This review achieved a strong AMSTAR score (91%) and included systematic reviews, randomized controlled trials, quasi-experimental studies, uncontrolled studies, and economic evaluations in the analysis. The geographies of the included studies are varied and include Europe, Canada, USA, and Australia so the applicability to the Newfoundland and Labrador setting should be considered carefully.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	<p>Community-Based Models of Respite Care Category: Respite Description: Includes day care, in-home respite (day or overnight), host family respite, institutional respite (overnight), respite programmes and video respite</p>	<p>Synthesis Finding: RR -0.03 (CI -0.19 - 0.13), I2 = 0%--An outcome frequently used in trials and measured using a variety of instruments; the term encompasses the physical, psychological, social and financial impacts of caring p. vii Significance: N/A Sample Size: N/A Comment: Pooled effect size for randomised studies only. pP. 52 Heterogeneity: N/A, N/A Source: Mason, 2007 AMSTAR: 91% (Strong)</p>
Not Significantly Different	<p>Community-Based Models of Respite Care Category: Respite Description: Includes day care, in-home respite (day or overnight), host family respite, institutional respite (overnight), respite programmes and video respite</p>	<p>Synthesis Finding: "...this report suggests that respite for cares...generally has a small effect upon carer burden..."— An outcome frequently used in trials and measured using a variety of instruments; the term encompasses the physical, psychological, social and financial impacts of caring (p. vii) Significance: N/A Sample Size: N/A Comment: p. 73 Heterogeneity: N/A, N/A Source: Mason, 2007 AMSTAR: 91% (Strong)</p>

Outcome: Caregiver wellbeing and health

(depressive symptoms, quality of life, mental health, physical health)

Population: Caregivers of older adults at Risk

Comparator: Usual care

Two synthesis findings indicate that community-based models of respite care have a significant effect on reducing caregiver depressive symptoms. A single synthesis finding indicates that respite has a significant effect on improving caregivers' life satisfaction (5). A single synthesis finding also indicates that community-based respite care has a significant positive effect on improving caregivers' mental health and physical health (5). This review achieved a strong AMSTAR score (91%) and included systematic reviews, randomized

controlled trials, quasi-experimental studies, uncontrolled studies, and economic evaluations in the analysis. The geographies of the included studies are varied and include Europe, Canada, USA, and Australia so the applicability to the Newfoundland and Labrador setting should be considered carefully.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Community-Based Models of Respite Care Category: Respite Description: Includes day care, in-home respite (day or overnight), host family respite, institutional respite (overnight), respite programmes and video respite	Synthesis Finding: RR -0.32 [CI (-0.62) - (-0.02)], I ² = 28.2% -Depression: not otherwise described Significance: p=0.04 Sample Size: N/A Comment: Figure 8 p. 56 Heterogeneity: Not significant, N/A Source: Mason, 2007 AMSTAR: 91% (Strong)
Beneficial	Community-Based Models of Respite Care Category: Respite Description: Includes day care, in-home respite (day or overnight), host family respite, institutional respite (overnight), respite programmes and video respite	Synthesis Finding: "...carer satisfaction levels for all types of respite are generally high and carers appear to be more satisfied with respite than with usual care"--Life Satisfaction Scale, Satisfaction questionnaire, Satisfaction with caregiving process and other related instruments Table 35 p140 Significance: N/A Sample Size: N/A Comment: p73 Heterogeneity: N/A, N/A Source: Mason, 2007 AMSTAR: 91% (Strong)
Beneficial	Community-Based Models of Respite Care Category: Respite Description: Includes day care, in-home respite (day or overnight), host family respite, institutional respite (overnight), respite programmes and video respite	Synthesis Finding: "...this report suggests that respite for carers...generally has a small effect upon ...carers' mental health" --Brief Symptom Inventory, Geriatric Depression Scale, Psychological Distress Scale, Profile of Mood States and other instruments Table 35 p. 139 Significance: N/A Sample Size: N/A Comment: p73 Heterogeneity: N/A, N/A Source: Mason, 2007 AMSTAR: 91% (Strong)
Beneficial	Community-Based Models of Respite Care Category: Respite Description: Includes day care, in-home respite (day or overnight), host family respite, institutional respite (overnight), respite programmes and video respite	Synthesis Finding: "...this report suggests that respite for carers...generally has a small effect upon ...carers' physical health" --Blood pressure and pulse monitoring: repeated sampling for catecholamines (noradrenaline and adrenaline), GHQ, Health assessment scale, Philadelphia Geriatric Center Assessment Instrument, self-rated health, other self-reported assessment Table 35 p138 Significance: N/A Sample Size: N/A Comment: p73 Heterogeneity: N/A, N/A Source: Mason, 2007 AMSTAR: 91% (Strong)

Intervention: Respite

Outcome: Caregiver Wellbeing and Health (anger/hostility, quality of life, anxiety, morale, depressive symptoms)

Population: Caregivers of Older Adults at Risk

Comparator: Usual Care

Findings were mixed in relation to the effect of respite care on caregiver wellbeing and health. Two synthesis findings indicate that respite care has a significant positive effect on improving caregiver anger and hostility (6). Three synthesis findings indicate that respite care had a significant negative effect on caregiver quality of life (6). Seven synthesis findings indicate that respite care has no significant effect on reducing caregiver anxiety (Shaw, 2009). While one synthesis finding found no significant effect of respite care on improving caregiver morale, one synthesis finding did find significant and positive results (6). Six synthesis findings indicate that respite care has no significant effect on reducing depressive symptoms in caregivers, while one synthesis finding was uncertain (6). This review was rated strongly according to AMSTAR (76%) and included a range of primary study types from various locales

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Respite Category: Respite Description: Care that focuses on changing the wellbeing of the carer and that includes day care, institutional, in-home or mixed respite	Synthesis Finding: ES = -0.38 (CI -0.60 to -0.17), I2 = 0% Not described Significance: p = 0.001 Sample Size: N/A Comment: Figure 23 p.34 Heterogeneity: Not significant N/A Source: Shaw, 2009 AMSTAR: 76% (strong)
Beneficial	Respite Category: Respite Description: Care that focuses on changing the wellbeing of the carer and that includes day care, institutional, in-home or mixed respite	Synthesis Finding: "...respite....had positive effects on..anger and hostility." Not described Significance: N/A Sample Size: N/A Comment: p. x Heterogeneity: N/A, N/A Source: Shaw, 2009 AMSTAR: 76% (strong)
Beneficial	Respite Category: Respite Description: Care that focuses on changing the wellbeing of the carer and that includes day care, institutional, in-home or mixed respite	Synthesis Finding: "...respite....had positive effects on morale.." Not described Significance: N/A Sample Size: N/A Comment: p. x Heterogeneity: N/A, N/A
Not Significantly Different	Respite Category: Respite Description: Care that focuses on changing the wellbeing of the carer and that includes day care, institutional, in-home or mixed respite	Synthesis Finding: ES = 0.40 (CI -0.02 to 0.83), I2 = 14.8% Not described Significance: p = 0.063 Sample Size: N/A Comment: Figure 22 p.34 Heterogeneity: Not significant N/A Source: Shaw, 2009 AMSTAR: 76% (strong)

Our Interpretation	Intervention	Finding/Source/AMSTAR
Harmful	<p>Respite Category: Respite Description: Care that focuses on changing the wellbeing of the carer, and that includes day care, institutional, in-home or mixed respite</p>	<p>Synthesis Finding: ES = -0.18 (CI -0.35 to -0.01), I2 = 79.8%Not described Significance: p = 0.043 Sample Size: N/A Comment: Figure 24 p.35 Heterogeneity: p = 0.007 Figure 24 p.35 Source: Shaw, 2009 AMSTAR: 76% (strong)</p>
Harmful	<p>Respite Category: Respite Description: Care that focuses on changing the wellbeing of the carer and that includes day care, institutional, in-home or mixed respite</p>	<p>Synthesis Finding: ES = -0.22 (CI -0.27 to -0.17), I2 = 0%Not described Significance: p = 0.000 Sample Size: N/A Comment: Figure 25 p.35 Heterogeneity: Not significant N/A Source: Shaw, 2009 AMSTAR: 76% (strong)</p>
Harmful	<p>Respite Category: Respite Description: Care that focuses on changing the wellbeing of the carer and that includes day care, institutional, in-home or mixed respite</p>	<p>Synthesis Finding: "Single-group studies suggested that quality of life was worse after respite use." Not described Significance: Sample Size: Comment: p. x Heterogeneity: Source: Shaw, 2009 AMSTAR: 76% (strong)</p>
Not Significantly Different	<p>Respite Category: Respite Description: Care that focuses on changing the wellbeing of the carer, and that includes day care, institutional, in-home or mixed respite</p>	<p>Synthesis Finding: ES = 0.02 (CI -0.16 to 0.19), I2 = 0%Not described Significance: p = 0.829 Sample Size: N/A Comment: Figure 14 p.30 Heterogeneity: Not significant N/A Source: Shaw, 2009 AMSTAR: 76% (strong)</p>
Not Significantly Different	<p>Respite Category: Respite Description: Care that focuses on changing the wellbeing of the carer and that includes day care, institutional, in-home or mixed respite</p>	<p>Synthesis Finding: ES = 0.12 (CI -0.08 to 0.31), I2 = 72.5%Not described Significance: p = 0.238 Sample Size: N/A Comment: Figure 15 p.30 Heterogeneity: Not significant N/A Source: Shaw, 2009 AMSTAR: 76% (strong)</p>
Not Significantly Different	<p>Respite Category: Respite Description: Care that focuses on changing the wellbeing of the carer and that includes day care, institutional, in-home or mixed respite</p>	<p>Synthesis Finding: ES = 0.27 (CI -0.28 to 0.82), I2 = 72.5Not described Significance: p = 0.330 Sample Size: N/A Comment: Figure 16 p.30 Heterogeneity: Not significant N/A Source: Shaw, 2009 AMSTAR: 76% (strong)</p>

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	<p>Respite Category: Respite Description: Care that focuses on changing the wellbeing of the carer and that includes day care, institutional, in-home or mixed respite</p>	<p>Synthesis Finding: ES = 0.08 (CI -0.11 to 0.27), I2 = 63.2%Not described Significance: p = 0.392 Sample Size: N/A Comment: Figure 17 p.31 Heterogeneity: Not significant N/A Source: Shaw, 2009 AMSTAR: 76% (strong)</p>
Not Significantly Different	<p>Respite Category: Respite Description: Care that focuses on changing the wellbeing of the carer and that includes day care, institutional, in-home or mixed respite</p>	<p>Synthesis Finding: ES = 0.12 (CI -0.33 to 0.57), I2 = 63.2%Not described Significance: p = 0.612 Sample Size: N/A Comment: Figure 18 p.31 Heterogeneity: Not significant N/A Source: Shaw, 2009 AMSTAR: 76% (strong)</p>
Not Significantly Different	<p>Respite Category: Respite Description: Care that focuses on changing the wellbeing of the carer and that includes day care, institutional, in-home or mixed respite</p>	<p>Synthesis Finding: ES = -0.17 (CI -0.60 to 0.26), I2 = 0%Not described Significance: p = 0.430 Sample Size: N/A Comment: Figure 19 p. 32 Heterogeneity: Not significant N/A Source: Shaw, 2009 AMSTAR: 76% (strong)</p>
Not Significantly Different	<p>Respite Category: Respite Description: Care that focuses on changing the wellbeing of the carer and that includes day care, institutional, in-home or mixed respite</p>	<p>Synthesis Finding: "There was no effect of respite on anxiety...."Not described Significance: N/A Sample Size: N/A Comment: p. x Heterogeneity: N/A, N/A Source: Shaw, 2009 AMSTAR: 76% (strong)</p>
Not Significantly Different	<p>Respite Category: Respite Description: Care that focuses on changing the wellbeing of the carer and that includes day care, institutional, in-home or mixed respite</p>	<p>Synthesis Finding: ES = -0.23 (-0.49 to 0.03), I2 = 60.4% -Not described Significance: p = 0.089 Sample Size: N/A Comment: Figure 7 p.25 Heterogeneity: Not significant N/A Source: Shaw, 2009 AMSTAR: 76% (strong)</p>
Not Significantly Different	<p>Respite Category: Respite Description: Care that focuses on changing the wellbeing of the carer and that includes day care, institutional, in-home or mixed respite</p>	<p>Synthesis Finding: ES = -0.08 (CI -0.41 to 0.24), I2 = 67.7%Not described Significance: p = 0.623 Sample Size: N/A Comment: Figure 8 p.25 Heterogeneity: Not significant N/A Source: Shaw, 2009 AMSTAR: 76% (strong)</p>

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	<p>Respite Category: Respite Description: Care that focuses on changing the wellbeing of the carer and that includes day care, institutional, in-home or mixed respite</p>	<p>Synthesis Finding: ES = -0.13 (CI -0.29 to 0.03), I2 = 52.1% Not described Significance: p = 0.100 Sample Size: N/A Comment: Figure 9 p. 26 Heterogeneity: Not significant N/A Source: Shaw, 2009 AMSTAR: 76% (strong)</p>
Not Significantly Different	<p>Respite Category: Respite Description: Care that focuses on changing the wellbeing of the carer and that includes day care, institutional, in-home or mixed respite</p>	<p>Synthesis Finding: ES -0.47 (-1.31 to 0.37), I2 = 77.9% Not described Significance: p = 0.275 Sample Size: N/A Comment: Figure 10 p.26 Heterogeneity: Not significant N/A Source: Shaw, 2009 AMSTAR: 76% (strong)</p>
Not Significantly Different	<p>Respite Category: Respite Description: Care that focuses on changing the wellbeing of the carer and that includes day care, institutional, in-home or mixed respite</p>	<p>Synthesis Finding: ES = -0.04 (CI -0.47 to 0.38), I2 = 0%Not described Significance: p = 0.845 Sample Size: N/A Comment: Figure 12 p.27 Heterogeneity: Not significant N/A Source: Shaw, 2009 AMSTAR: 76% (strong)</p>
Not Significantly Different	<p>Respite Category: Respite Description: Care that focuses on changing the wellbeing of the carer and that includes day care, institutional, in-home or mixed respite</p>	<p>Synthesis Finding: ES = -0.16 (CI -0.57 to 0.25), I2 = 97.7%Not described Significance: p = 0.434 Sample Size: N/A Comment: Figure 13 p.28 Heterogeneity: p = 0.000 Figure 13 p.28 Source: Shaw, 2009 AMSTAR: 76% (strong)</p>
Uncertain	<p>Respite Category: Respite Description: Care that focuses on changing the wellbeing of the carer and that includes day care, institutional, in-home or mixed respite</p>	<p>Synthesis Finding: "Depression was reduced in RCT's in the short term and for home care but not for day care. These effects....were not significant in random-effects models. There was a trend for longer interventions to have more positive effects that shorter interventions -Not described Significance: N/A Sample Size: N/A Comment: p. x Heterogeneity: N/A, N/A Source: Shaw, 2009 AMSTAR: 76% (strong)</p>

Outcome: Caregiver Burden

Population: Caregivers of older adults with dementia

Comparator: Control group (usual care, waiting list, or placebo)

Two syntheses findings indicate that respite care has a significant effect on reducing caregiver burden, while an additional two findings indicate that respite care has no significant effect on caregiver burden (6). This review was rated strongly according to AMSTAR (76%) and included a range of primary study types from various locales. A single synthesis finding indicates that respite care had a significant effect on increasing caregiver burden (2). This was a moderate review according to AMSTAR (57%) and included only higher quality randomized controlled trial and quasi-experimental trials.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	<p>Respite Category: Respite Description: Care that focuses on changing the wellbeing of the carer and that includes day care, institutional, in-home or mixed respite</p>	<p>Synthesis Finding: ES = -0.46 (-0.82 to -0.10), I2 = 99.1% --Not described Significance: p=0.013 Sample Size: N/A Comment: Figure 5 p.21 Heterogeneity: p=0.000 Figure 5 p.21 Source: Shaw, 2009 AMSTAR: 76% (strong)</p>
Beneficial	<p>Respite Category: Respite Description: Care that focuses on changing the wellbeing of the carer and that includes day care, institutional, in-home or mixed respite</p>	<p>Synthesis Finding: ES = -0.58 (-1.06 to -0.11), I2 = 99.4% --Not described Significance: p=0.016 Sample Size: N/A Comment: Figure 6 p.22 Heterogeneity: p=0.001 Figure 6 p.22 Source: Shaw, 2009 AMSTAR: 76% (strong)</p>
Not Significantly Different	<p>Respite Category: Respite Description: Care that focuses on changing the wellbeing of the carer and that includes day care, institutional, in-home or mixed respite</p>	<p>Synthesis Finding: ES = -0.06 (CI -0.21 to 0.09), I2 = 60.2% --Not described Significance: p=0.441 Sample Size: N/A Comment: Figure 3 p.21 Heterogeneity: Not significant N/A Source: Shaw, 2009 AMSTAR: 76% (strong)</p>
Not Significantly Different	<p>Respite Category: Respite Description: Care that focuses on changing the wellbeing of the carer and that includes day care, institutional, in-home or mixed respite</p>	<p>Synthesis Finding: ES = -0.11 (CI -0.38 to 0.17), I2 = 60.2%--Not described Significance: p=0.458 Sample Size: N/A Comment: Figure 4 p.21 Heterogeneity: Not significant N/A Source: Shaw, 2009 AMSTAR: 76% (strong)</p>
Uncertain	<p>Respite Category: Respite Description: Care that focuses on changing the wellbeing of the carer and that includes day care, institutional, in-home or mixed respite</p>	<p>Synthesis Finding: " carer burden was reduced at 2-6 months' follow-up in single-sample studies but not in RCT's and quasi-experimental studies" --Not described Significance: N/A Sample Size: N/A Comment: N/A Source: Shaw, 2009 AMSTAR: 76% (strong) Heterogeneity: Not significant N/A</p>

Our Interpretation	Intervention	Finding/Source/AMSTAR
Harmful	Respite Category: Respite Description: Not described	Synthesis Finding: MD 0.30 (CI 0.12 - 0.48), I ² = 0%--Zarit Burden Interview, Lawton Subjective Burden instrument Significance: p=0.001 Sample Size: N/A Comment: Figure 4 p.52 Heterogeneity: Not significant Figure 4 p.52 Source: Schoenmaker, 2010 AMSTAR: 57% (Moderate)

3. Summary of Findings for End-of-Life Care

Beneficial

The intervention was shown to be **beneficial** to the client/patient, with a statistically significant effect size and with confidence intervals that were not approximate to the equivalence boundary, where the balance between sample size (larger is better) and heterogeneity (smaller is better) seemed reasonable, and where the methodological quality of the primary research studies was not critically flawed

Harmful

The intervention was shown to be **harmful** to the client/patient with the same conditional requirements as described above for Good

Not Significantly Different

The intervention was shown to be neither significantly beneficial nor significantly harmful to the client/patient

Uncertain

A lack of information in the review paper prevents categorization of the synthesis finding as beneficial, harmful, or no different than the comparator

- There is a limited amount of high-quality evidence on end-of-life care in the literature. Hence, our synthesis findings are uncertain.

Details of Findings for End-of-Life Care

Intervention: End-of-Life Care

Our Interpretation	Intervention	Finding/Source/AMSTAR
Uncertain	<p>Dementia Care Towards the end of life Category: End-of-Life Care Description: "How culture and context informs how care is provided and the overall experience of end-of-life care for older people with dementia and their family carers" p.331</p>	<p>Synthesis Finding: "The majority of older people with dementia live and die at home or in a care home." Significance: N/A Sample Size: N/A Comment: p335 Heterogeneity: N/A Source: Goodman, 2010 AMSTAR: 20% (Weak)</p>
Uncertain	<p>Dementia Care Towards the end of life Category: End-of-Life Care Description: "How culture and context informs how care is provided and the overall experience of end-of-life care for older people with dementia and their family carers" p.331</p>	<p>Synthesis Finding: ".....people with dementia are likely to receive a poorer quality of care than those without dementia." Significance: N/A Sample Size: N/A Comment: p332 Heterogeneity: N/A Source: Goodman, 2010 AMSTAR: 20% (Weak)</p>
Our Interpretation	Intervention	Finding/Source/AMSTAR
Uncertain	<p>Dementia Care Towards the end of life Category: End-of-Life Care Description: "How culture and context informs how care is provided and the overall experience of end-of-life care for older people with dementia and their family carers" p331</p>	<p>Synthesis Finding: "...location and systems of care as well as patient symptoms and physician responses influence patient outcomes." Significance: N/A Sample Size: N/A Comment: p332 Heterogeneity: N/A Source: Goodman, 2010 AMSTAR: 20% (Weak)</p>
Uncertain	<p>Dementia Care Towards the end of life Category: End-of-Life Care Description: "How culture and context informs how care is provided and the overall experience of end-of-life care for older people with dementia and their family carers" p331</p>	<p>Synthesis Finding: "The interpretations of the patient's quality of life by their care providers were often culturally determined and could be more significant in shaping care than living wills and policy agreements" Significance: N/A Sample Size: N/A Comment: p332 Source: Goodman, 2010 AMSTAR: 20% (Weak) Heterogeneity: N/A</p>
Uncertain	<p>Dementia Care Towards the end of life Category: End-of-Life Care Description: "How culture and context informs how care is provided and the overall experience of end-of-life care for older people with dementia and their family carers" p331</p>	<p>Synthesis Finding: "Little consensus was found about the value of prognostic indicators for people with dementia." Significance: N/A Sample Size: N/A Comment: p333 Heterogeneity: N/A Source: Goodman, 2010 AMSTAR: 20% (Weak)</p>
Uncertain	<p>Dementia Care Towards the end of life</p>	<p>Synthesis Finding: "In the absence of agreed guidelines, and advanced care</p>

	<p>Category: End-of-Life Care Description: "How culture and context informs how care is provided and the overall experience of end-of-life care for older people with dementia and their family carers" p331</p>	<p>plans,[it] is shaped by differences in religious beliefs, professional training, understanding of the disease, what is meant by palliative care, perspectives of other patients, culture and beliefs." Significance: N/A Sample Size: N/A Comment: p334 Heterogeneity: N/A Source: Goodman, 2010 AMSTAR: 20% (Weak)</p>
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4. Summary of Findings for Fall Prevention

Beneficial

The intervention was shown to be **beneficial** to the client/patient, with a statistically significant effect size and with confidence intervals that were not approximate to the equivalence boundary, where the balance between sample size (larger is better) and heterogeneity (smaller is better) seemed reasonable, and where the methodological quality of the primary research studies was not critically flawed.

- **Intervention: Environmental**
 - Outcome: Falls (Risk of falling)*
-
- **Intervention: Exercise**
 - Outcome: Falls (Number of fallers, rate of falls)
-
- **Intervention: Single Fall Prevention**
 - Outcome: Falls (rate of falls)
- **Intervention: Multiple Fall Prevention Components**
 - Outcome: Falls (Rate of Falls)
 - Outcome: Functionality*

Harmful

The intervention was shown to be **harmful** to the client/patient with the same conditional requirements as described above for Good

- No interventions produced harmful effects

Not Significantly Different

The intervention was shown to be neither significantly beneficial nor significantly harmful to the client/patient

- **Intervention: Environmental**
 - Outcome: Falls (Number of fallers, number of falls, rate of falls)
- **Intervention: Multiple Fall Prevention Components**
 - Outcome: Residence Status
 - Outcome: Falls (Risk of Falling)*
 - Outcome: Falls (Number of falls, number of fallers, fall-related injury)
 - Outcome: Healthcare utilization (hospital admission, emergency department visits)
 - Outcome: Mortality
- **Intervention: Supplementation**
 - Outcome: Falls (number of fallers, rate of falls)

Uncertain

A lack of information in the review paper prevents categorization of the synthesis finding as beneficial, harmful, or no different than the comparator

- No interventions produced uncertain effects

Details of Findings for Fall Prevention

Intervention: Environmental

Outcome: Falls (Number of fallers, number of falls, rate of falls)

Population: Community-dwelling older adults

Comparator: Not stated, presumed standard of care

Five synthesis findings indicate mixed effects of environmental interventions that include home safety and aids for mobility on reducing number of falls, number of fallers and rate of falls (7, 8). Costello and Gillespie were rated moderate and strong according to AMSTAR (50% and 95%, respectively) although it is difficult to draw conclusions to match the context of Newfoundland and Labrador since the geographies of the primary studies are either not detailed (7), or vary greatly (8).

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Environmental Category: Fall Prevention Description: Home hazard assessment by professional with modification only	Synthesis Finding: "... may be beneficial in reducing falls, especially in a targeted group of individuals. Additional benefits may be obtained if an OT or a PT conducts the assessment" Significance: N/A Sample Size: N/A Comment: p1150 Heterogeneity: N/A, N/A Source: Costello, 2008 AMSTAR: 50% (moderate)
Beneficial	Environmental Category: Fall Prevention Description: "Home safety and aids for personal mobility" p18	Synthesis Finding: RaR 0.56 (CI 0.42 - 0.76), I2 = 0% Significance: P = 0.00020 Sample Size: 491 Comment: Analysis 13.1 p216 Heterogeneity: Not significant Analysis 13.1 p216 Source: Gillespie, 2009 AMSTAR: 95% (Strong)
Beneficial	Environmental Category: Fall Prevention Description: "Home safety and aids for personal mobility" p18	Synthesis Finding: RR 0.78 (CI 0.64 - 0.95), I2=0% Significance: P = 0.014 Sample Size: 451 Comment: p18 Heterogeneity: Not significant Analysis 13.2 p217 Source: Gillespie, 2009 AMSTAR: 95% (Strong)
Not Significantly Different	Environmental Category: Fall Prevention Description: "Home safety and aids for personal mobility" p18	Synthesis Finding: RaR 0.90 (CI 0.79 - 1.03), I2 = 59% Significance: P = 0.12 Sample Size: 2367 Comment: (RaR = Rate Ratio p2) Analysis 12.1 p213 Heterogeneity: Not significant Analysis 12.1 p213 Source: Gillespie, 2009 AMSTAR: 95% (Strong)
Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Environmental Category: Fall Prevention Description: "Home safety and aids for personal mobility" p18	Synthesis Finding: RR 0.89 (CI 0.80 - 1.00), I2 = 0% Significance: P = 0.051 Sample Size: 2610 Comment: p2 Heterogeneity: Not significant Analysis 12.2 p214 Source: Gillespie, 2009 AMSTAR: 95% (Strong)

Outcome: Falls (Risk of falling)

Population: Community-dwelling older adults

Comparator: Usual care or placebo

A single synthesis finding indicates that environmental interventions including home safety and aids for personal mobility are effective in reducing the risk of falling for those seniors at high risk of falling because of vision problems (8). The systematic review was rated strong according to AMSTAR. All primary studies consisted of higher quality randomized controlled trials with at least 6-12 month follow-ups, or quasi-randomized trials. Applicability to the context of Newfoundland and Labrador is somewhat limited since the geographies of the primary studies are varied and include Europe, Asia, Chile, Australia, USA and Canada.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Environmental Category: Fall Prevention Description: "Home safety and aids for personal mobility" p18	Synthesis Finding: "...were effective in people with severe visual impairment, and in others at higher risk of falling" Significance: N/A Sample Size: N/A Comment: p2 Heterogeneity: N/AN/A Source: Gillespie, 2009 AMSTAR: 95% (Strong)

Intervention: Exercise

Outcome: Falls (Number of fallers, rate of falls)

Population: Community-dwelling older adults

Comparator: Usual care or placebo

Eight synthesis findings from three systematic reviews rated as moderate or strong on the AMSTAR scale indicate that exercise interventions that include groups exercise and a concentration on one or more of strength, balance or endurance, were found to have positive effects on reducing the risk of falling (7-9). The primary studies included were higher quality randomized controlled trials, and quasi-experimental trials, with findings having significant sample sizes. Applicability to the context of Newfoundland and Labrador is somewhat limited to the wide geographic areas of the primary studies including Europe, Asia, Chile, Australia, USA and Canada.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Exercise Category: Fall Prevention Description: Strengthening program, aerobic/endurance training or balance training Table 4 p1143	Synthesis Finding: "Exercise alone is effective in reducing the number of falls. It should include a comprehensive program combining strengthening, balance, and/or endurance training for a minimum of 12 weeks" Significance: N/A Sample Size: N/A Comment: p1150 Heterogeneity: N/A, N/A Source: Costello, 2008 AMSTAR: 50% (moderate)

<p>Beneficial</p>	<p>Exercise Category: Fall Prevention Description: Group exercise Programs that target two or more strength, balance, flexibility, or endurance p2</p>	<p>Synthesis Finding: RaR 0.78 (CI 0.71 - 0.86), I2 = 49% Significance: P < 0.00001 Sample Size:2264 Comment: (RaR = Rate Ratio p2) Analysis 1.1 p186 Heterogeneity: Not significant Analysis 1.1 p186 Source: Gillespie, 2009 AMSTAR: 95% (Strong)</p>
<p>Beneficial</p>	<p>Exercise Category: Fall Prevention Description: Group exercise Programs that target two or more strength, balance, flexibility, or endurance p2</p>	<p>Synthesis Finding: RR 0.83 (CI 0.72 - 0.97), I2 = 52% Significance: P = 0.018 Sample Size:2492 Comment: Analysis 1.2 p188 Heterogeneity: P = 0.01Analysis 1.2 p188 Source: Gillespie, 2009 AMSTAR: 95% (Strong)</p>
<p>Beneficial</p>	<p>Exercise Category: Fall Prevention Description: Group exercise Tai Chi</p>	<p>Synthesis Finding: RaR 0.63 (CI 0.52 - 0.78), I2 = 10% Significance: P = 0.000012 Sample Size:1294 Comment:(RaR = Rate Ratio p1) Analysis 1.1 p187 Heterogeneity: Not significant Analysis 1.1 p187 Source: Gillespie, 2009 AMSTAR: 95% (Strong)</p>
<p>Beneficial</p>	<p>Exercise Category: Fall Prevention Description: Group exercise Tai Chi</p>	<p>Synthesis Finding: RR 0.65 (CI 0.51 - 0.82), I2 = 37% Significance: P = 0.00022 Sample Size:1278 Comment:p1 Heterogeneity: Not significant Analysis 1.2 p189 Source: Gillespie, 2009 AMSTAR: 95% (Strong)</p>
<p>Beneficial</p>	<p>Exercise Category: Fall Prevention Description: Included 1)gait, balance, or functional training; 2)strength or resistance exercise; 3) general exercise p818</p>	<p>synthesis finding: rr 0.87 (ci 0.81 - 0.94), i2 = 4.2% significance: n/a sample size:3568 comment: figure 2 p820 heterogeneity: not significant figure 2 p820 Source:Michael, 2010 AMSTAR: 86% (Strong)</p>

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Exercise Category: Fall Prevention Description: Individual exercise Home-based programs that target two or more strength, balance, flexibility, or endurance p15	Synthesis Finding: RaR 0.66 (0.53 - 0.82), I2 = 0% Significance: P = 0.00018 Sample Size: 666 Comment: RaR = Rate Ratio p1 Heterogeneity: Not significant Analysis 1.1 p186 Source: Gillespie, 2009 AMSTAR: 95% (Strong)
Beneficial	Exercise Category: Fall Prevention Description: Individual exercise Home-based programs that target two or more strength, balance, flexibility, or endurance p15	Synthesis Finding: RR 0.77 (CI 0.61 - 0.97), I2 = 0% Significance: P = 0.028 Sample Size:566 Comment: p1 Heterogeneity: Not significant Analysis 1.2 p188 Source: Gillespie, 2009 AMSTAR: 95% (Strong)

Intervention: Multiple Fall Prevention Components

Outcome: Residence Status

Population: Community-dwelling older adults

Comparator: Usual care

Three synthesis findings from two systematic reviews indicate that multiple fall prevention interventions that focus on home safety, physical health and that include an assessment of fall risk have no significant effect on delaying institutionalization (10,11) . These findings were reported in both weak (38% AMSTAR) and strong (91% AMSTAR) systematic reviews that included only randomized controlled trials and quasi-randomized trials.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Multiple fall prevention components Category: Fall Prevention Description: Strongly focused on home safety and physical health	Synthesis finding: RR=0.86 (CI 0.63 - 1.19), I2 = 0%-- Participants not living at home at 6-month follow-up Significance: p=0.37 Sample Size: 1902 Comment: Table p.727 Heterogeneity: Not significant Figure 2 p. 728 Source: Beswick, 2008 AMSTAR: 38% (weak)
Not Significantly Different	Multiple fall prevention components Category: Fall Prevention Description: Strongly focused on home safety and physical health	Synthesis finding: RR=0.86 (CI 0.63 - 1.19), I2 = 0%-- Participants not living at home at 6-month follow-up Significance: p=0.37 Sample Size: 1902 Comment: Table p.727 Heterogeneity: Not significant Figure 2 p. 728 Source: Beswick, 2008 AMSTAR: 38% (weak)

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Multiple fall prevention components Category: Fall Prevention Description: Interventions that include an assessment of risk factors for falling, provides treatments conducted by healthcare professionals, is delivered to individuals and is based in an emergency department, primary care or community. P2	Synthesis finding: RR 0.92 (CI 0.59 - 1.43)--Move to Institutional Care Significance: N/A Sample Size: N/A Comment: Table 2 p5 Heterogeneity: N/A, N/A Source: Gates, 2008 AMSTAR: 91% (Strong)

Outcome: Falls (Rate of Falls)

Population: Community-dwelling older adults

Comparator: Usual care or placebo

Three synthesis findings indicate that multiple component fall prevention interventions have a significant beneficial effect on reducing the rate of falls in community-dwelling older adults (8, 12). Findings from Campbell et al. indicate that interventions are effective when targeted towards seniors at risk of falling. The systematic reviews are rated moderately (12) and strong (8) according to AMSTAR. All primary studies consisted of higher quality randomized controlled trials with at least 6-12 month follow-ups, or quasi-randomized trials. Applicability to the context of Newfoundland and Labrador is somewhat limited since the geographies of the primary studies are either not listed (12) or are varied as in Gillespie (Europe, Asia, Chile, Australia, USA and Canada).

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Multiple fall prevention components Category: Fall Prevention Description: Not described	Synthesis Finding: RR 0.78 (CI 0.68 - 0.89), I ² = 38% Significance: N/A Sample Size: N/A Comment: Figure 1 p659 Heterogeneity: Not significant Figure 1 p659 Source: Campbell, 2007 AMSTAR: 52% (Moderate)
Beneficial	Multiple fall prevention components Category: Fall Prevention Description: Not described	Synthesis Finding: "Multifactorial fall prevention interventions are effective for individual patients" Significance: N/A Sample Size: N/A Comment: p660 Heterogeneity: N/A, N/A Source: Campbell, 2007 AMSTAR: 52% (Moderate)
Beneficial	Multiple fall prevention components Category: Fall Prevention Description: "...consist of more than one main category of intervention, but participants receive different combinations of interventions based on an individual assessment." p11	Synthesis Finding: RaR 0.75 (CI 0.65 - 0.86), I ² = 85% Significance: P = 0.000057 Sample Size: 8141 Comment: RaR = Rate Ratio p1 Heterogeneity: P < 0.00001 Analysis 16.1 p223 Source: Gillespie, 2009 AMSTAR: 95% (Strong)

Outcome: Falls (Risk of Falling)

Population: Community-dwelling older adults

Comparator: Usual care or placebo

One synthesis finding indicated that multiple fall prevention interventions had no significant effect on reducing risk of falling in community-dwelling older adults (12). The systematic review was rated strong according to AMSTAR. All primary studies consisted of higher quality randomized controlled trials with at least 6-12 month follow-ups, or quasi-randomized trials. Applicability to the context of Newfoundland and Labrador is somewhat limited since the geographies of the primary studies are varied and include Europe, Asia, Chile, Australia, USA and Canada.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	<p>Multiple fall prevention components Category: Fall Prevention Description: "...consist of more than one main category of intervention, but participants receive different combinations of interventions based on an individual assessment." p11</p>	<p>Synthesis Finding: RR 0.95 (CI 0.88 - 1.02), I2 = 51% Significance: P = 0.19 Sample Size:11173 Comment:p19 Heterogeneity: P = 0.002Analysis 16.2 p223 Source: Gillespie, 2009 AMSTAR: 95% (Strong)</p>

Outcome: Falls (Number of falls, number of fallers, fall-related injury)

Population: Community-dwelling older adults

Comparator:

Seven synthesis findings indicate mixed findings in regards to the effectiveness of multiple component fall prevention interventions on reducing the number of falls, number of fallers and reducing fall-related injuries (7, 9-11). The systematic reviews are rated as weak, moderate and strong and consist of randomized controlled trials and quasi-experimental designs for the primary studies. The applicability of the results to the Newfoundland and Labrador context is somewhat limited by the varied locales of the primary studies.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	<p>Multiple fall prevention components Category: Fall Prevention Description: Strongly focused on home safety and physical health</p>	<p>Synthesis Finding: RR=0.92 (CI 0.87 - 0.97), I2= 65.8% Significance: p<0.002 Sample Size:7912 Comment: able p.727 Heterogeneity: p<0.0007Webfigure 4 Source: Beswick, 2008 AMSTAR: 38% (Weak)</p>

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	<p>Multiple fall prevention components Category: Fall Prevention Description: "Health and fall risk assessment with referral to other healthcare practitioners, medication assessment with education and/or modifications, vision assessment with appropriate health practitioner referral and/or correction, home visit assessment with education and/or modifications of hazards, client education on fall risk factors, diet and exercise guidelines for healthy aging, exercise and balance training programs, and psychotropic medication withdrawal" p1136</p>	<p>Synthesis Finding: "Multifactorial fall prevention programs appear to be more effective for individuals with a previous history of falls" Significance: N/A Sample Size: N/A Comment:p1147 Heterogeneity: N/A, N/A Source: Costello, 2008 AMSTAR: 50% (Moderate)</p>
Beneficial	<p>Multiple fall prevention components Category: Fall Prevention Description: "Health and fall risk assessment with referral to other healthcare practitioners...medication assessment with education and/or modifications, vision assessment with appropriate health practitioner referral and/or correction, home visit assessment with education and/or modifications of hazards, client education on fall risk factors, diet and exercise guidelines for healthy aging, exercise and balance training programs, and psychotropic medication withdrawal" p1136</p>	<p>Synthesis Finding: "Medication and vision assessment with appropriate health practitioner referral should be included as part of a falls screening examination" Significance: N/A Sample Size: N/A Comment:p1147 Heterogeneity: N/A, N/A Costello, 2008 AMSTAR: 50% (Moderate)</p>
Not Significantly Different	<p>Multiple fall prevention components Category: Fall Prevention Description: Interventions that include an assessment of risk factors for falling, provides treatments conducted by healthcare professionals, is delivered to individuals and is based in an emergency department, primary care or community. p2</p>	<p>Synthesis Finding: RR 0.91 (CI 0.82 - 1.02), I2 =59.8% Significance: p=0.10 Sample Size:2031 Comment: Figure 2 p5 Heterogeneity: P=0.0006Figure 2 p5 Source: Gates, 2008 AMSTAR: 91% (Strong)</p>
Not Significantly Different	<p>Multiple fall prevention components Category: Fall Prevention Description: Interventions that include an assessment of risk factors for falling, provides treatments conducted by healthcare professionals, is delivered to individuals and is based in an emergency department, primary care or community. p2</p>	<p>Synthesis Finding: RR 0.81 (CI 0.54 - 1.21), I2 = 74.6% Significance: N/A Sample Size: N/A Comment: Table 2 p5 Heterogeneity: N/AN/A Source: Gates, 2008 AMSTAR: 91% (Strong)</p>
Not Significantly Different	<p>Multiple fall prevention components Category: Fall Prevention Description: Interventions that include an assessment of risk factors for falling, provides treatments conducted by healthcare professionals, is delivered to individuals and is based in an emergency department, primary care or community. p2</p>	<p>Synthesis Finding: RR 0.90 (CI 0.68 - 1.20), I2 = 55.6% Significance: p=0.49 Sample Size: 482 Comment: Figure 3 p6 Heterogeneity: Not significant N/A Source: Gates, 2008 AMSTAR: 91% (Strong)</p>

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Multiple fall prevention components Category: Fall Prevention Description: Multifactorial assessment and management, not otherwise described	Synthesis Finding: RR 0.94 (CI 0.87 - 1.02), I2 = 61.5% Significance: N/A Sample Size: 6322 Comment: Figure 1 p819 Heterogeneity: P<0.001 Figure 1 p819 Source: Michael, 2010 AMSTAR: 86% (Strong)

Outcome: Functionality

Population: Community-dwelling older adults

Comparator: Usual care

One synthesis finding indicates that multiple fall prevention component interventions that focus on home safety and physical health had significant positive Outcome: Residence Status (Not Living at Home) on care recipient functionality (10). The systematic review had a weak AMSTAR rating (38%), but did include randomized controlled trials with 6-month follow-up and had a notable sample size (n=1111). It is important to note that primary studies included a variety of geographic regions including Asia, Australia, England, U.S. and Canada and date back to as early as 1971, which may limit its applicability to the current context of Newfoundland and Labrador.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Multiple fall prevention components Category: Fall Prevention Description: Strongly focused on home safety and physical health	Synthesis Finding: SMD=-0.25 [CI (-0.36) -(-0.13)], I2 = 4.1%--Status of Physical function at 6-month follow-up Significance: p<0.0001 Sample Size: 1111 Comment: Table p.727 Heterogeneity: Not significant Webfigure 5 Source: Beswick, 2008 AMSTAR: 38% (Weak)

Outcome: Healthcare utilization (hospital admission, emergency department visits)

Population: Community-dwelling older adults

Comparator: Usual care, standard care

Three synthesis findings from two systematic reviews (10, 11) do not indicate that fall prevention interventions significantly reduce hospital admissions (10, 11). Interventions include an assessment of risk factors for falling and/or are strongly focused on home safety and physical health. While Gates has a stronger methodological quality (AMSTAR = 91%) than Beswick (AMSTAR = 38%), both reviews include only randomized controlled trials with or without a minimum 6-month follow-up, and quasi-randomized trials. It is important to note that both reviews include primary studies from varying geographical regions such as Canada, Europe, Australia, USA, and Asia making their applicability to Newfoundland and Labrador limited

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Multiple Fall Prevention Components Category: Fall Prevention Description: Strongly focused on home safety and physical health	Synthesis Finding: RR=0.84 (CI 0.61 - 1.16), I2 =0%--Participants admitted to hospital at a point during, or currently admitted at, 6-month follow-up Significance: p=0.29 Sample Size: 1125 Comment: Table p.727 Heterogeneity: Not significant Webfigure 3 Source: Beswick, 2008 AMSTAR: 38% (Weak)
Not Significantly Different	Multiple Fall Prevention Components Category: Fall Prevention Description: Interventions that include an assessment of risk factors for falling, provides treatments conducted by healthcare professionals, is delivered to individuals and is based in an emergency department, primary care or community. P2	Synthesis Finding: RR 0.82 (CI 0.63 - 1.07), I2 = 0%--Not described Significance: N/A Sample Size: N/A Comment: Table 2 p5 Heterogeneity: N/A Source: Gates, 2008 AMSTAR: 91%(Strong)
Not Significantly Different	Multiple Fall Prevention Components Category: Fall Prevention Description: Interventions that include an assessment of risk factors for falling, provides treatments conducted by healthcare professionals, is delivered to individuals and is based in an emergency department, primary care or community. P2	Synthesis Finding: RR 0.96 (CI 0.72 - 1.27), I2 = 38.9%--Not described Significance: N/A Sample Size: N/A Comment: Table 2 p5 Heterogeneity: N/A Source: Gates, 2008 AMSTAR: 91%(Strong)

Outcome: Mortality

Population: Community-dwelling older adults

Comparator: Usual care, standard care

One synthesis finding from Beswick, 2008 indicated that multiple fall prevention components that focused on home safety and physical health significantly reduced risk or mortality. Although the study had a weak AMSTAR methodological rating (38%), the relative risk (RR = 0.79), confidence interval (CI = 0.66-0.96) and sample size were notable (n=4520). Gates et al. (2008), had a high AMSTAR score (91%) and did not find a significant effect of fall prevention interventions on reducing mortality. These programs were more intensive and included an assessment of risk factors for falling, and provided treatments conducted by healthcare professionals.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	<p>Multiple fall prevention components Category: Fall Prevention Description: Strongly focused on home safety and physical health</p>	<p>Synthesis Finding: RR=0.79 (CI 0.66 - 0.96), I2 =0%--Participants who died between baseline and 6-month follow-up Significance: p=0.02 Sample Size: 4520 Comment: Table p.727 Heterogeneity: Not significant Webfigure 1 Source: Beswick, 2008 AMSTAR: 38% (Weak)</p>
Not Significantly Different	<p>Multiple fall prevention components Category: Fall Prevention Description: Interventions that include an assessment of risk factors for falling, provides treatments conducted by healthcare professionals, is delivered to individuals and is based in an emergency department, primary care or community. P. 2</p>	<p>Synthesis Finding: RR 1.08 (CI 0.87 - 1.34), I2 = 0%--Not described Significance: N/A Sample Size: N/A Comment: Table 2 p5 Heterogeneity: N/A, N/A Source: Gates, 2008 AMSTAR: 91%(Strong)</p>

Intervention: Single Fall Prevention

Outcome: Falls (rate of falls)

Population: Community-dwelling older adults

Comparator: Usual care

Two synthesis findings indicate that single fall prevention interventions aimed at addressing one category of fall risk are effective in reducing the rate of falling (12). Both findings are reported from a review rated as moderate on the AMSTAR scale that includes only randomized controlled trials with a follow-up of least 12 months. It may be difficult to ascertain the applicability to the context of Newfoundland and Labrador since the geographies of the primary studies are not detailed and several primary studies are 10-15 years old.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	<p>Single interventions Category: Fall Prevention Description: Interventions addressing one category of fall risk factor only (for example, Exercise programme, home safety programme) p657</p>	<p>Synthesis Finding: RR 0.77 (CI 0.67 - 0.89), I2 = 54% Significance: N/A Sample Size: N/A Comment: Figure 1 p. 659 Heterogeneity: Not significant Figure 1 p. 659 Source: Campbell, 2007 AMSTAR: 52% (Moderate)</p>

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Single interventions Category: Fall Prevention Description: Interventions addressing one category of fall risk factor only (for example, Exercise programme, home safety programme) p657	Synthesis Finding: "For a community based approach, targeted single interventions are as effective as multifactorial interventions, may be more acceptable and cost effective" Significance: N/A Sample Size: N/A Comment: p660 Heterogeneity: N/A, N/A Source: Campbell, 2007 AMSTAR: 52% (Moderate)

Intervention: Supplementation

Outcome: Falls (number of fallers, rate of falls)

Population: Community-dwelling older adults

Comparator: Usual care or placebo

Three syntheses findings indicate that **supplementation** of Vitamin D with or without calcium co-supplementation had positive effects on reducing fall risk in elderly with low Vitamin D levels(8,9), elderly with recent falls and in elderly with no risk factors for falling (9). However, two syntheses findings indicated supplementation had no effects on reducing fall risk in the general population of older adults(8). While the positive findings have notable rate ratio and relative risks with low heterogeneity, the sample sizes of the findings with no effect are relatively larger than the positive findings (n=3929, n=21110 versus n=260, n=562, respectively, with the exception of Michael which had n = 5780). The systematic reviews are both rated as strong on the AMSTAR scale and included only higher quality randomized controlled trials and quasi-randomized trials. Applicability to the context of Newfoundland and Labrador is somewhat limited to the wide geographic areas of the primary studies including Europe, Asia, Chile, Australia, USA and Canada.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Supplements Category: Fall Prevention Description: Supplementation either alone or with calcium co-supplementation p10	Synthesis Finding: RaR 0.57 (CI 0.37 - 0.89), I2 = 0% Significance: P = 0.012 Sample Size: 260 Comment: Analysis 6.1 p202 Heterogeneity: Not significant Analysis 6.1 p202 Source: Gillespie, 2009 AMSTAR: 95% (Strong)
Beneficial	Supplements Category: Fall Prevention Description: Supplementation either alone or with calcium co-supplementation p10	Synthesis Finding: RR 0.65 (CI 0.46 - 0.91) Significance: P = 0.013 Sample Size: 562 Comment: Analysis 6.2 p203 Heterogeneity: Not significant Analysis 6.2 p203 Source: Gillespie, 2009 AMSTAR: 95% (Strong)

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Supplements Category: Fall Prevention Description: Daily oral doses of vitamin D (ergocalciferol or cholecalciferol) with or without calcium supplementation	Synthesis Finding: RR 0.83 (CI 0.77 - 0.89), $I^2 = 3.2\%$ Significance: 0.408 Sample Size: 5780 Comment: Figure 3 p821 Heterogeneity: Not significant Figure 3 p821 Source: Michael, 2010 AMSTAR: 86% (Strong)
Not Significantly Different	Supplements Category: Fall Prevention Description: Supplementation either alone or with calcium co-supplementation p. 10	Synthesis Finding: RaR 0.95 (CI 0.80 - 1.14), $I^2 = 64\%$ Significance: P = 0.59 Sample Size:3929 Comment: (RaR = Rate Ratio p2) Analysis 4.1 p195 Heterogeneity: Not significant Analysis 4.1 p195 Source: Gillespie, 2009 AMSTAR: 95% (Strong)
Not Significantly Different	Supplements Category: Fall Prevention Description: Supplementation either alone or with calcium co-supplementation p10.	Synthesis Finding: RR 0.96 (CI 0.92 - 1.01), $I^2 = 30\%$ Significance: P = 0.13 Sample Size:21110 Comment: Analysis 4.2 p197 Heterogeneity: Not significant Analysis 4.2 p197 Source: Gillespie, 2009 AMSTAR: 95% (Strong)

5. Summary of Findings for Preventative Home Visits

Beneficial

The intervention was shown to be **beneficial** to the client/patient, with a statistically significant effect size and with confidence intervals that were not approximate to the equivalence boundary, where the balance between sample size (larger is better) and heterogeneity (smaller is better) seemed reasonable, and where the methodological quality of the primary research studies was not critically flawed

- **Intervention: Home-based Health Promotion Programmes**
 - Outcome: Mortality*
- **Intervention: In-Home Community-Based interventions**
 - Outcome: Care recipient functionality (ADL, IADL)

Harmful

The intervention was shown to be **harmful** to the client/patient with the same conditional requirements as described above for Good

Not Significantly Different

The intervention was shown to be neither significantly beneficial nor significantly harmful to the client/patient

- **Intervention: Home-based Health Promotion Programmes**
 - Outcome: Care recipient falls*
- **Intervention: Multidimensional Home Visit Programs**
 - Outcome: Care recipient functionality Outcome: Healthcare utilization (Service use)*
 - Outcome: Mortality
 - Outcome: Residence status (admission to nursing home)*

Uncertain

A lack of information in the review paper prevents categorization of the synthesis finding as beneficial, harmful, or no different than the comparator

- **Intervention: In-home Mental Health-Based intervention**
 - Outcome: Care recipient health (mental health)

*indicates a single synthesis finding

Details of Findings for Preventative Home Visits

Intervention: Home-based Health Promotion Programmes

Outcome: Care recipient falls

Population: Community-dwelling older adults at risk

Comparator: Usual care

A single synthesis finding indicates home-based health promotion programs that include education and/or assessment had no effect on reducing fall risk. This systematic review was rated as moderate quality according to AMSTAR (67%) and the primary studies included were limited to randomized controlled trials published since 2001.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	<p>Home-based health promotion programmes that include education and/or assessment Category: Home Visits Description: Not otherwise defined</p>	<p>Synthesis Finding: RR 0.51 (CI 0.19 - 1.36), I2 = 89% Significance: p=0.18 Sample Size:1392 Comment: Figure 4 p18 Heterogeneity: p < 0.00001 Figure 4 p18 Source: Tappenden, 2012 AMSTAR: 67% (Moderate)</p>

Outcome: Mortality

Population: Community-dwelling older adults at risk (13)

Comparator: Usual care

One synthesis finding regarding a similar type of intervention, home-based health promotion that include assessment and/or education, was also found to have a significant impact on reducing mortality (13). This systematic review was rated as moderate quality according to AMSTAR (67%) and found a notable relative risk and confidence interval (RR 0.80 [CI 0.68 - 0.95]). The primary studies were limited to randomized controlled trials published since 2001.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	<p>Home-based health promotion programmes that include education and/or assessment Category: Home Visits Description: Not otherwise defined</p>	<p>Synthesis Finding: OR 0.80 (CI 0.68 - 0.95), I2 = 9%-- Not described Significance: p = 0.008 Sample Size: 4583 Comment: Figure 2 p17 Heterogeneity: Not significant N/A Source: Tappenden, 2012 AMSTAR: 67% (Moderate)</p>

Intervention: In-Home Community-Based interventions

Outcome: Care recipient functionality (ADL, IADL)

Population: Community-dwelling older adults at risk

Comparator: Not stated, presumed standard of care

Eight synthesis findings from a single systematic review (14) indicate that community-based home visits had positive effects for improving care recipient functionality when they were tailored for the individual, conducted by experienced community nurses, and had multiple visits. The systematic review was rated as moderate on the AMSTAR scale (52%) and included only randomized controlled trials and quasi-experimental trials. The geographies of the primary studies include Canada, the US, and Europe making the findings relevant to the context of Newfoundland and Labrador.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	In-home community based interventions Category: Home Visits Description: Not described	Synthesis Finding: "Most of the successful interventions were accomplished by experienced community health nurses. Interventions where nurses were provided with extensive training and nurses had prior geriatric experience, including geriatric nurse practitioners, resulted in the most successful disability outcomes" --Limitations to Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL), p136; as part of an overall assessment of older adults; and as a measure of risk for institutionalization among community-dwelling elders Significance: N/A Sample Size: N/A Comment: p138 Heterogeneity: N/A Source: Liebel, 2009 AMSTAR: 53% (Moderate)
Beneficial	In-home community based interventions Category: Home Visits Description: Not described	Synthesis Finding: "...frequent multiple nurse visits were associated with positive disability outcomes"--Limitations to Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL), p136; as part of an overall assessment of older adults; and as a measure of risk for institutionalization among community-dwelling elders Significance: N/A Sample Size: N/A Comment: p133 Heterogeneity: N/A Source: Liebel, 2009 AMSTAR: 53% (Moderate)
Beneficial	In-home community based interventions Category: Home Visits Description: Not described	Synthesis Finding: "...the most successful interventions used a comprehensive approach that incorporated a variety of intervention strategies (e.g., disease management, health promotion) to promote health behavior and targeted the multiple risk factors associated with disability."--Limitations to Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL), p. 136; as part of an overall assessment of older adults; and as a measure of risk for institutionalization among community-dwelling elders Significance: N/A Sample Size: N/A Comment: p140 Heterogeneity: N/A Source: Liebel, 2009 AMSTAR: 53% (Moderate)

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	<p>In-home community based interventions Category: Home Visits Description: Not described</p>	<p>Synthesis Finding: "The interdisciplinary dialogue among primary care providers, nurses, and other healthcare professionals conceivably helped patients achieve more positive disability outcomes." --Limitations to Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL), p136; as part of an overall assessment of older adults; and as a measure of risk for institutionalization among community-dwelling elders Significance: N/A Sample Size: N/A Comment: p136 Heterogeneity: N/A Source: Liebel, 2009 AMSTAR: 53% (Moderate)</p>
Beneficial	<p>In-home community based interventions Category: Home Visits Description: Not described</p>	<p>Synthesis Finding: "...most likely facilitated interdisciplinary communication that led to delivery of more focused interventions and improved disability outcomes." --Limitations to Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL), p136; as part of an overall assessment of older adults; and as a measure of risk for institutionalization among community-dwelling elders Significance: N/A Sample Size: N/A Comment: p140 Heterogeneity: N/A Source: Liebel, 2009 AMSTAR: 53% (Moderate)</p>
Beneficial	<p>In-home community based interventions Category: Home Visits Description: Not described</p>	<p>Synthesis Finding: "Successful nurse home visiting interventions recognized the importance of nurse-patient relationships by tailoring the intervention to meet patients' individual needs." --Limitations to Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL), p136; as part of an overall assessment of older adults; and as a measure of risk for institutionalization among community-dwelling elders Significance: N/A Sample Size: N/A Comment: p140 Heterogeneity: N/A Source: Liebel, 2009 AMSTAR: 53% (Moderate)</p>
Beneficial	<p>In-home community based interventions Category: Home Visits Description: Not described</p>	<p>Synthesis Finding: "...nurses need to make multiple visits, use comprehensive disease management and health promotion strategies, create and sustain active communication with patients, and engage in interdisciplinary collaboration with healthcare professionals." --Limitations to Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL), p136; as part of an overall assessment of older adults; and as a measure of risk for institutionalization among community-dwelling elders Significance: N/A Sample Size: N/A Comment: p142 Heterogeneity: N/A Source: Liebel, 2009 AMSTAR: 53% (Moderate)</p>

Our Interpretation	Intervention	Finding/Source/AMSTAR
<p>Beneficial</p>	<p>In-home community based interventions Category: Home Visits Description: Not described</p>	<p>Synthesis Finding: "The results...suggest that it may be very beneficial to frail elderly individuals to integrate the nurse home visiting approaches identified in this review into policies for new and existing home care delivery systems."--Limitations to Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL), p136; as part of an overall assessment of older adults; and as a measure of risk for institutionalization among community-dwelling elders Significance: N/A Sample Size: N/A Comment: p142 Heterogeneity: N/A Source: Liebel, 2009 AMSTAR: 53% (Moderate)</p>

Intervention: In-home Mental Health-Based intervention

Outcome: Care recipient health (mental health)
Population: Community-dwelling older adults at risk
Comparator: Not stated, presumed standard of care

Thompson (15) found that interventions led by community-nurses in care recipient homes had "some benefit" in improving mental health outcomes, but that nurse's assessment of a client's mental state was "inferior" to validated screening tools. While this review achieved a moderate score on AMSTAR (52%), it was noted that there was "a lack of high quality evidence" available which certainly introduced biases into the findings. The majority of primary studies included were case-controlled cohort, descriptive correlational, case-control, with only one randomized control trial.

Our Interpretation	Intervention	Finding/Source/AMSTAR
<p>Beneficial</p>	<p>In-home mental health based interventions Category: Home Visits Description: "Interventions....carried out by a community nurse in the patient's home...which specifically intended to facilitate the mental health of the patient....included screening and comprehensive nursing interventions" Population: Community-dwelling Older Adults At Risk</p>	<p>Synthesis Finding: "..three nurse-led interventions were reported as having some benefit: individualised management plans, total quality management (TQM) and the PATCH Model Intervention.."--Not described Significance: N/A Sample Size: N/A Comment: p1426 Heterogeneity: N/A Source: Thompson, 2008 AMSTAR: 52% (Moderate)</p>

Our Interpretation	Intervention	Finding/Source/AMSTAR
Uncertain	<p>In-home mental health based interventions Category: Home Visits Description: "Interventions....carried out by a community nurse in the patient's home...which specifically intended to facilitate the mental health of the patient....included screening and comprehensive nursing interventions" Population: Community-dwelling Older Adults At Risk</p>	<p>Synthesis Finding: "Nurses' opinion about the mental health status of patients was consistently found to be inferior to validated screening tools."--Not described Significance: N/A Sample Size: N/A Comment: p1425 Heterogeneity: N/A Source: Thompson, 2008 AMSTAR: 52% (Moderate)</p>

Intervention: Multidimensional Home Visit Programs

Outcome: Care recipient functionality

Population: Community-dwelling older adults at risk

Comparator: Usual care or other intervention

Two synthesis findings indicated a positive effect of home visits on care recipient functionality and one synthesis finding from the same review found no effect on functionality (16). One synthesis finding from another review (17) found no effect of home visits on functionality. The main difference between the two systematic reviews is that Huss described home visits that included clinical assessments (16). However, it should be noted that Bouman has a higher AMSTAR score (76%) compared to Huss (48%) although both reviews include only randomized controlled trials. Huss also reported that half of the included primary studies reported adequate blinding as a measure of quality.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	<p>Multidimensional home visit programs Category: Home Visits Description: "...home visit programs offered to community-dwelling older adults...with follow-up through home visits or telephone contacts...that include multidimensional assessment."</p>	<p>Synthesis Finding: OR 0.64 (CI 0.48 - 0.87), I² = 44.6%--ADL or other specific measures of functional ability Significance: N/A Sample Size: N/A Comment: Figure 3 p304 Heterogeneity: Not significant Figure 3 p304 Source: Huss, 2008 AMSTAR: 48% (Moderate)</p>
Beneficial	<p>Multidimensional home visit programs Category: Home Visits Description: "...home visit programs offered to community-dwelling older adults...with follow-up through home visits or telephone contacts...that include multidimensional assessment."</p>	<p>Synthesis Finding: "Preventative home visit programs... prevented or significantly delayed functional status decline if they included a clinical examination as part of the initial assessment" --ADL or other specific measures of functional ability Significance: N/A Sample Size: N/A Comment: p302 Heterogeneity: N/A Source: Huss, 2008 AMSTAR: 48% (Moderate)</p>

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Multidimensional home visit programs Category: Home Visits Description: "...visits to older people living in the community, which are aimed at multidimensional medical, functional, psychosocial, and environmental evaluation of their problems and resources."	Synthesis Finding: "None of the trials with sufficient methodological quality showed a significant favorable effect for...the intervention group..on...health status..." -- Functional status (ADL, IADL); mental health status, social functioning Significance: N/A Sample Size: N/A Comment: p4 Heterogeneity: N/A Source: Bouman, 2008 AMSTAR: 78% (Strong)
Not Significantly Different	Multidimensional home visit programs Category: Home Visits Description: "...home visit programs offered to community-dwelling older adults...with follow-up through home visits or telephone contact that include multidimensional assessment."	Synthesis Finding: OR 0.89 (CI 0.77 - 1.03), I ² =52.4%-- ADL or other specific measures of functional ability Significance: N/A Sample Size: N/A Comment: Table 2 p302 Heterogeneity: P = 0.008 Table 2 p302 Source: Huss, 2008 AMSTAR: 48% (Moderate)

Outcome: Healthcare utilization (Service use)

Population: Community-dwelling older adults at risk

Comparator: Usual care

A single synthesis finding from Bouman (17) indicated that "none of the trials with sufficient methodological quality showed a significant favorable effect for the intervention.." on reducing service use including long term care or hospital admission, primary care or specialist visits or additional home help. With the exception of one primary study, all studies measuring healthcare utilization were of sufficient methodological quality. The systematic review as a whole was rated strongly on the AMSTAR scale (76%), as it included only randomized controlled trials with intervention durations of least 12 months.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Multidimensional Home Visit Programs Category: Home Visits Description: "...visits to older people living in the community, which are aimed at multidimensional medical, functional, psychosocial, and environmental evaluation of their problems and resources."	Synthesis Finding: "None of the trials with sufficient methodological quality showed a significant favorable effect for...the intervention group..on...service use..." -- Hospital or nursing home admission; home for older persons; medical specialist contacts; GP contacts; home nursing care; home help Significance: N/A Sample Size: N/A Comment: p4 Heterogeneity: N/A Source: Bouman, 2008 AMSTAR: 78% (Strong)

Outcome: Mortality

Population: Community-dwelling older adults (16), community-dwelling older adults at risk (17)

Comparator: Usual care or other intervention

Two synthesis findings from (16)Huss (16) indicated that home visit programs that included multidimensional assessments and frequent follow-ups had a significant effect on decreasing mortality in a subgroup of older adults less than or equal to 77 years of age. However, one synthesis finding from the same review did not show any significant effect of the intervention on reducing mortality. Although this systematic review was rated as moderate on the AMSTAR scale (48%), the included primary studies were limited to randomized controlled trials. The geographical locations of the primary studies were throughout Asia, Australia, England, the U.S. and Canada. One synthesis finding from Bouman (17) did not show such a significant effect of home visits on decreasing mortality. Similar to Huss et. al, the home visits studied included multidimensional assessments and frequent follow-ups, although Bouman et al achieved a high score on the AMSTAR scale (76%). With the exception of one primary study, all studies measuring mortality were of sufficient methodological quality

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Multidimensional home visit programs Category: Home Visits Description: "...home visit programs offered to community-dwelling older adults...with follow-up through home visits or telephone contacts..that include multidimensional assessment."	Synthesis Finding: OR 0.74 (CI 0.58 -0.94), I2 = 21.7%--The number of deaths from all causes and participants with known vital status Significance: N/A Sample Size: 535 Comment: Figure 4 p305 Heterogeneity: Not significant Figure 4 p305 Source: Huss, 2008 AMSTAR: 48% (Moderate)
Beneficial	Multidimensional home visit programs Category: Home Visits Description: "...home visit programs offered to community-dwelling older adults...with follow-up through home visits or telephone contacts..that include multidimensional assessment."	Synthesis Finding: "Preventative home visit programs focusing on younger study populations produced significant beneficial effects on mortality.." --The number of deaths from all causes and participants with known vital status Significance: N/A Sample Size: N/A Comment: p302 Heterogeneity: N/A, N/A Source: Huss, 2008 AMSTAR: 48% (Moderate)
Not Significantly Different	Multidimensional home visit programs Category: Home Visits Description: "...visits to older people living in the community, which are aimed at multidimensional medical, functional, psychosocial, and environmental evaluation of their problems and resources."	Synthesis Finding: "None of the trials with sufficient methodological quality showed a significant favorable effect for...the intervention group..on mortality.." --Not described Significance: N/A Sample Size: N/A Comment: p4 Heterogeneity: N/A, N/A Source: Bouman, 2008 AMSTAR: 76% (Strong)
Not Significantly Different	Multidimensional home visit programs Category: Home Visits Description: "...home visit programs offered to community-dwelling older adults...with follow-up through home visits or telephone contacts..that include multidimensional assessment."	Synthesis Finding: OR 0.92 (CI 0.80 - 1.05), I2=35.6%--The number of deaths from all causes and participants with known vital status Significance: N/A Sample Size: N/A Comment: Table 2 p302 Heterogeneity: Not significant Table 2 p302 Source: Huss, 2008 AMSTAR: 48% (Moderate)

Outcome: Residence status (admission to nursing home)

Population: Community-dwelling older adults

Comparator: Usual care or other intervention

A single synthesis finding indicates that multidimensional home visit programs have no beneficial effect on reducing the risk of admission to a nursing home(16). This evidence is drawn from a moderate AMSTAR review (48%) that included only randomized controlled trials. The geographical locations of the primary studies were throughout Asia, Australia, England, the U.S. and Canada.

Our Interpretation	Intervention	Finding/Source/AMSTAR
<p>Not Significantly Different</p>	<p>Multidimensional home visit programs Category: Home Visits Description: "...home visit programs offered to community-dwelling older adults...with follow-up through home visits or telephone contacts...that include multidimensional assessment."</p>	<p>Synthesis finding: OR 0.86 (CI0.68 - 1.10), I² = 42.5%-- Number of participants admitted to nursing homes (excluding short-term admissions and admissions to residential or board and care units) Significance: N/A Sample Size: N/A Comment: Table 2 p302 Heterogeneity: Not significant Table 2 p302 Source: Huss, 2008 AMSTAR: 48% (Moderate)</p>

7. Summary of Findings for Activities of Integrated care

Beneficial

The intervention was shown to be **beneficial** to the client/patient, with a statistically significant effect size and with confidence intervals that were not approximate to the equivalence boundary, where the balance between sample size (larger is better) and heterogeneity (smaller is better) seemed reasonable, and where the methodological quality of the primary research studies was not critically flawed.

- **Intervention: Geriatric Assessment**
 - Outcome: Residence Status (Not living at home) (in general non-frail elderly population)
 - Outcome: Falls (Number of fallers) (in general non-frail elderly population)*
 - Outcome: Care recipient functionality (in general non-frail elderly population)*
 - Outcome: Healthcare utilization (hospital admission)* (in frail elderly population)
- **Intervention: Mixed Case Management**
 - Outcome: Functionality*
 - Outcome: Care Recipient Health (medication use, and mixed clinical outcomes)
 - Outcome: Healthcare Utilization (hospital admission) (in frail elderly population)*
 - Outcome: Residence Status (Nursing home admission) *
 - Outcome: Community service use*
- **Intervention: Partially Integrated Care**
 - Outcome: Residence Status (Not Living at Home)
 - Outcome: Healthcare utilization (hospital admission)

Harmful

The intervention was shown to be **harmful** to the client/patient with the same conditional requirements as described above for Good

- No interventions produced harmful effects

Not Significantly Different

The intervention was shown to be neither significantly beneficial nor significantly harmful to the client/patient

- **Intervention: Case Management**
 - Outcome: Caregiver burden*
 - Outcome: Functionality*
 - Outcome: Healthcare utilization (hospital admission, length of stay, emergency department use)
 - Outcome: Care Recipient Health (depression, cognitive function, medication use)
 - Outcome: Mortality*

- Outcome: Care recipient quality of life
- **Intervention: Combined Care**
 - Outcome: Caregiver burden
 - Outcome: Caregiver Wellbeing and Health (depressive symptoms, psychological wellbeing, coping ability)
 - Outcome: Care Recipient (Behavioral Problems)*
 - Outcome: Residence Status (Long Stay Admission)*
 - Outcome: Functionality*
 - Outcome: Care recipient Health (mental health, cognitive function)
 - Outcome: Mortality*
- **Intervention: Geriatric Assessment**
 - Outcome: Residence Status (Not living at home) (in frail elderly population)
 - Outcome: Falls (Number of fallers) (in frail elderly population)*
 - Outcome: Care recipient functionality (in frail elderly population)*
 - Outcome: Healthcare utilization (hospital admission) (in general non-frail elderly population)*
 - Outcome: Mortality
-
- **Intervention: Home-based Health Promotion Programmes**
 - Outcome: Falls (Number of fallers)*
- **Intervention: More Fully Integrated Care**
 - Outcome: Residence Status (Not living at home)*
 - Outcome: Healthcare utilization (hospital admission and length of stay, emergency department visits, service use)
 - Outcome: Mortality*
- **Intervention: Partially Integrated Care**
 - Outcome: Falls (number of fallers)
 - Outcome: Functionality
 - Outcome: Mortality
- **Intervention: Support (Education/Training)**
 - Outcome: Residence Status (Not living at home)
 - Outcome: Care Recipient Health (depression, mental health)
 - Outcome: Healthcare utilization (hospital admission)*
 - Outcome: Mortality*
 -
 - Outcome: Care recipient quality of life
 - Outcome: Functionality (physical function)*
- **Intervention: Support (Non-Dementia)**
 - Outcome: Care Recipient Health (depression, mental/psychological wellbeing, physical health)
 - Outcome: Care recipient quality of life

- **Intervention: Support (Non-Pharmacological)**
 - Outcome: Residence Status (Institutionalization)
- **Intervention: Support (Social/Physical)**
 - Outcome: Care Recipient Health (depression, physical health, mental/psychological well-being)
 - Outcome: Care recipient quality of life

Uncertain

A lack of information in the review paper prevents categorization of the synthesis finding as beneficial, harmful, or no different than the comparator

- **Intervention: Consumer-directed Home and Community Services**
 - Outcome: Care Recipient Health (clinical outcomes)*
 - Outcome: Care recipient quality of life*
- **Intervention: Fully and Partially Integrated Care**
 - Outcome: Care Recipient Health (clinical outcomes)
 - Outcome: Healthcare utilization (service use)*
- **Intervention: Models of Integrated Health and Social Care**
 - Outcome: Healthcare utilization (service use)
 - Outcome: Care recipient quality of life*
- **Intervention: More Fully Integrated Care**
 - Outcome: Falls (Number of fallers, number of falls, rate of falls, risk of falling, fall-related injury)*
 - Outcome: Functionality*
 - Outcome: Care recipient quality of life*
- **Intervention: Support (Education/Training)**
 - Outcome: Falls (Number of fallers)*

*indicates a single synthesis finding

Details of Findings for Activities of Integrated Care

Intervention: Case Management

Outcome: Caregiver burden

Population: Caregivers of older adults at risk and caregivers of community-dwelling older adults at risk

Comparator: Not stated, presumed standard of care

One synthesis finding indicates that while case management had no effect on reducing caregiving burden, it did have a significant positive effect on increasing caregiver satisfaction(1). Case management is defined as a method to achieve integrated and coordinated healthcare that includes an individual assessment, care plan, monitoring and follow-up conducted by one, or multiple, healthcare professionals. This review is rated as moderate quality according to the AMSTAR scale (52%) and includes only randomized controlled trials set in the U.S., Canada and Italy. Therefore, it has some potential to be applicable to the context of Newfoundland.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Case Management Category: Multi-component care Description: case management or equivalent coordinated organization p.447	Synthesis Finding: (Burden) - Intervention had no statistical effect on outcome; (Satisfaction)- Intervention had significant positive effects on outcome--Zarith, Caregiver satisfaction, client satisfaction questionnaire (CSQ-8) Significance: N/A Sample Size: N/A Comment: p.456 Heterogeneity: N/A, N/A Source: Eklund, 2009 AMSTAR: 52% (Moderate)

Outcome: Functionality

Population: Community-dwelling older adults at risk

Comparator: Not stated, presumed standard of care

One synthesis finding indicated mixed results for case management 2 primary research studies finding a significant positive effect on care recipient functionality and 4 primary research studies finding no significant effects(1). Case management is defined as a method to achieve integrated and coordinated healthcare that includes an individual assessment, care plan, monitoring and follow-up conducted by one, or multiple, healthcare professionals. This review is rated as moderate quality according to the AMSTAR scale (52%) and includes only randomized controlled trials set in the U.S., Canada and Italy. Therefore, it has some potential to be applicable to the context of Newfoundland.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Case Management Category: Multi-component care Description: Case management or equivalent coordinated organization p.447	Synthesis Finding: Mixed findings: 2 studies had significant positive effects for the intervention, and 4 studies had no significant effects-- Personal activities of daily living (PADL), instrumental activities of daily living (IADL), older Americans Resources and Services (OARS), Barthel index, Lawton IADL, Health assessment questionnaire (HAQ) Significance: N/A Sample Size: N/A Comment: p.456 Heterogeneity: N/A Source: Eklund, 2009 AMSTAR: 52% (Moderate)

Outcome: Care Recipient Health (depression, cognitive function, medication use)

Population: Community-dwelling older adults at risk

Comparator: Not stated, presumed to be standard of care

Three synthesis findings from the same systematic review (1) found the primary research literature to be mixed in terms of the impacts of case management on mental health outcomes, including for depression symptoms and mental status questionnaire scores. In this instance, case management is defined as a method to achieve integrated and coordinated healthcare that includes an individual assessment, care plan, monitoring and follow-up conducted by one, or multiple, healthcare professionals. This review is rated as moderate quality according to the AMSTAR scale (52%) and includes only randomized controlled trials set in the U.S., Canada and Italy; therefore it may have a small amount of applicability to Newfoundland and Labrador.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	<p>Case Management Category: Multi-component care Description: Case management or equivalent coordinated organization p.447 Population: Community-dwelling Older Adults At Risk</p>	<p>Synthesis Finding: Mixed findings: 2 studies had significant positive effects for the intervention, and 2 studies had no significant effects--Geriatric Depression Scale, Centre for Epidemiological Studies Depression Scale Significance: N/A Sample Size: N/A Comment: p.456 Heterogeneity: N/A Source: Eklund, 2009 AMSTAR: 52% (Moderate)</p>
Not Significantly Different	<p>Case Management Category: Multi-component care Description: Case management or equivalent coordinated organization p.447 Population: Community-dwelling Older Adults At Risk</p>	<p>Synthesis Finding: Mixed findings: 1 study had significant positive effects for the intervention, and 3 studies had no significant effects--Short portable mental status questionnaire (SPMS), mini-mental state evaluation (MMSE) Significance: N/A Sample Size: N/A Comment: p.456 Heterogeneity: N/A Source: Eklund, 2009 AMSTAR: 52% (Moderate)</p>
Not Significantly Different	<p>Case Management Category: Multi-component care Description: Case management or equivalent coordinated organization p.447 Population: Community-dwelling Older Adults At Risk</p>	<p>Synthesis Finding: Mixed findings: 3 studies had significant positive effects for the intervention and 1 had no significant effects--Not described Significance: N/A Sample Size: N/A Comment: p.456 Heterogeneity: N/A Source: Eklund, 2009 AMSTAR: 52% (Moderate)</p>

Outcome: Healthcare utilization (hospital admission, length of stay, emergency department use)

Population: Community-dwelling older adults at risk

Comparator: Not stated, presumed standard of care

The evidence for case management to have an impact on Healthcare Utilization and Social Services is mixed between studies finding statistically significant improvements or no improvement, based on 3 synthesis findings from one systematic review(1). Case management is defined as a method to achieve integrated and coordinated healthcare that includes an individual assessment, care plan, monitoring and follow-up conducted by one, or multiple, healthcare professionals. This review is rated as moderate quality according to the AMSTAR scale (52%) and includes only randomized controlled trials set in the U.S., Canada and Italy. Therefore, it has some potential to be applicable to the context of Newfoundland.

Our Interpretation	Intervention	Finding/Source/AMSTAR
<p>Not Significantly Different</p>	<p>Case Management Category: Multi-component care Description: Case Management or equivalent coordinated organization p.447</p>	<p>Synthesis Finding: Mixed findings: 4 studies had significant positive effects for the intervention, 3 studies had no statistical effect on outcome, and 1 study had unknown results--National official statistics, care advocate records, day hospital files, medical record departments, home care waiting list, health and social service utilization inventory, provincial government, regional health board databases, questionnaire and medical record review, sharp health care systems questionnaire, administrative databases Significance: N/A Sample Size: N/A Comment: p.456 Heterogeneity: N/A Source: Eklund, 2009 AMSTAR: 52% (Moderate)</p>
<p>Uncertain</p>	<p>Case Management Category: Multi-component care Description: Case Management or equivalent coordinated organization p.447</p>	<p>Synthesis Finding: Mixed findings: 2 studies had significant positive effects for the intervention, 4 studies had no significant effects, and 1 study had significant positive effects for the control--National official statistics, care advocate records, day hospital files, medical record departments, home care waiting list, health and social service utilization inventory, provincial government, regional health board databases, questionnaire and medical record review, sharp health care systems questionnaire, administrative databases Significance: N/A Sample Size: N/A Comment: p.456 Heterogeneity: N/A Source: Eklund, 2009 AMSTAR: 52% (Moderate)</p>

Our Interpretation	Intervention	Finding/Source/AMSTAR
Uncertain	Case Management Category: Multi-component care Description: Case Management or equivalent coordinated organization p.447	Synthesis Finding: Mixed findings: 2 studies had significant positive effects for the intervention on home service use, 2 studies had no significant effects, and 3 studies had significant positive effects for the control on health service use--Home and health system: National official statistics, care advocate records, day hospital files, medical record departments, home care waiting list, health and social service utilization inventory, provincial government, regional health board databases, questionnaire and medical record review, sharp health care systems questionnaire, administrative databases Significance: N/A Sample Size: N/A Comment: p.456 Heterogeneity: N/A Source: Eklund, 2009 AMSTAR: 52% (Moderate)

Outcome: Mortality

Population: Community-dwelling older adults at risk

Comparator: Not stated, presumed standard of care

A single synthesis finding indicated that case management had no significant effect on reducing mortality (1). In this instance, case management is defined as a method to achieve integrated and coordinated healthcare that includes an individual assessment, care plan, monitoring and follow-up conducted by one, or multiple, healthcare professionals. This review is rated as moderate quality according to the AMSTAR scale (52%) and includes only randomized controlled trials set in the U.S., Canada and Italy.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Case Management Category: Multi-component care Description: Case management or equivalent coordinated organization p.447	Synthesis Finding: Intervention has no statistical effect on outcome--Not described Significance: N/A Sample Size: N/A Comment: p.456 Heterogeneity: N/A, N/A Source: Eklund, 2009 AMSTAR: 52% (Moderate)

Outcome: Care recipient quality of life

Population: Community-dwelling older adults at risk

Comparator: Not stated, presumed standard of care

Three synthesis findings from the same systematic review indicated that case management had no significant effect on improving quality of life (1). In this instance, case management is defined as a method to achieve integrated and coordinated healthcare that includes an individual assessment, care plan, monitoring and follow-up conducted by one, or multiple, healthcare professionals. This systematic review scored moderately on the AMSTAR scale (52%), and included only randomized controlled trials from Canada, the U.S. and Italy meaning there is potential applicability to the Newfoundland context. However, based on the Cochrane

Collaboration Guidelines quality criteria assessment regarding possible bias, the primary studies that measured quality of life scored 5, 6, and 7 out of a possible high score of 11 signifying a moderate amount of bias.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Case Management Category: Multi-component care Description: Case management or equivalent coordinated organization p.447	Synthesis Finding^b: Intervention had no statistical effect on outcome--SF-12, SF-36 - medical outcome study Short Form Health Survey Significance: N/A Sample Size: N/A Comment: p.456 Heterogeneity: N/A, N/A Source: Eklund, 2009 AMSTAR: 52% (Moderate)
Not Significantly Different	Case Management Category: Multi-component care Description: Case management or equivalent coordinated organization p.447	Synthesis Finding^b: Mixed findings: 1 study had significant positive effects for the intervention, and 2 studies had no significant effects--Medical outcome study Short Form Health Survey (SF-36), Spitzer quality of life index (SPQLI) Significance: N/A Sample Size: N/A Comment: p.456 Heterogeneity: N/A, N/A Source: Eklund, 2009 AMSTAR: 52% (Moderate)
Not Significantly Different	Case Management Category: Multi-component care Description: Case management or equivalent coordinated organization p.447	Synthesis Finding^b: (Satisfaction)- Intervention had no significant effect on outcome; (Resources) - Intervention had significant positive effects for the intervention-- Coping questionnaire, personal resource questionnaire (PRQ 85), client satisfaction questionnaire (CSQ -8), goal attainment scale (GAS), physician based assessment and counselling for exercise (PACE), the physical activity scale for the elderly (PASE) Significance: N/A Sample Size: N/A Comment: p.456 Heterogeneity: N/A, N/A Source: Eklund, 2009 AMSTAR: 52% (Moderate)

Intervention: Combined Care

Outcome: Caregiver burden

Population: Caregivers of older adults with dementia

Comparator: Not stated, presumed standard of care

Two synthesis findings from a systematic review (3) both had mixed findings. While several primary research studies found that combined care interventions had significant effects on decreasing caregiver burden, several other primary research studies found no significant effects of combined care interventions on decreasing caregiver burden. The finding is from a weak review on the AMSTAR scale (38%) which includes systematic reviews and single studies of interventions of which the geographical locations are not detailed, hence it is difficult to put the results into the context of Newfoundland and Labrador.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	<p>Combined Care Category: Multi-component care Description: combined care programmes addressing both the person with dementia and their caregiver at the same time, involving a mix of different services that are not necessarily integrated</p>	<p>Synthesis Finding: Mixed findings: 1 study had significant positive effects for the intervention, 2 studies had heterogeneous effects for the intervention, and 4 studies had no significant effects--Subjective Significance: N/A Sample Size: N/A Comment: Findings: Table 2 p. 1187. Heterogeneous effects a) were significant for some measures of the same outcome category but not for other measures; b)reached statistical significance at some but not all measurement points in longitudinal studies (except when later measurement points resulted in significant effects, whereas earlier measurements did not. In the latter case a delayed effect may have occurred; c) report positive effects for some subgroups but not for the total group that was studied. p. 1182 Heterogeneity: N/A, N/A Source: Smits, 2007 AMSTAR: 38% (Weak)</p>
Not Significantly Different	<p>Combined Care Category: Multi-component care Description: combined care programmes addressing both the person with dementia and their caregiver at the same time, involving a mix of different services that are not necessarily integrated</p>	<p>Synthesis Finding: Mixed findings: 6 studies showed significant positive effects for the intervention, 2 showed heterogeneous effects for the intervention, and 12 had no significant effects. --Not described Significance: N/A Sample Size: N/A Comment: Findings: Table 2 p. 1187. Heterogeneous effects a) were significant for some measures of the same outcome category but not for other measures; b) reached statistical significance at some but not all measurement points in longitudinal studies (except when later measurement points resulted in significant effects, whereas earlier measurements did not. In the latter case a delayed effect may have occurred; c) report positive effects for some subgroups but not for the total group that was studied. p. 1182 Heterogeneity: N/A, N/A Source: Smits, 2007 AMSTAR: 38% (Weak)</p>

Outcome: Caregiver Wellbeing and Health (depressive symptoms, psychological wellbeing, coping ability)

Population: Caregivers of Older Adults with Dementia

Comparator: Not stated, presumed standard of care

Five synthesis findings from one systematic review(3), indicate that combined care interventions have no significant effect on improving caregiver wellbeing and health in terms of depressive symptoms, psychological wellbeing and ability to cope. The findings are from a weak review on the AMSTAR scale (38%) that includes systematic reviews and single studies of interventions, of which the geographical locations are not detailed; hence it is difficult to put the results into the context of Newfoundland and Labrador.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	<p>Combined Care Category: Multi-component care</p> <p>Description: Combined care programmes addressing both the person with dementia and their caregiver at the same time, involving a mix of different services that are not necessarily integrated</p>	<p>Synthesis Finding: Mixed findings: 2 studies had significant positive effects for the intervention, 3 had heterogeneous effects, and 2 had no significant effects--Depressive symptoms</p> <p>Significance: N/A</p> <p>Sample Size: N/A</p> <p>Comment: Findings: Table 2 p. 1187. Heterogeneous effects a) were significant for some measures of the same outcome category but not for other measures; b) reached statistical significance at some but not all measurement points in longitudinal studies (except when later measurement points resulted in significant effects, whereas earlier measurements did not. In the latter case a delayed effect may have occurred; c) report positive effects for some subgroups but not for the total group that was studied. p. 1182</p> <p>Heterogeneity: N/A, N/A</p> <p>Source: Smits, 2007</p> <p>AMSTAR: 38% (Weak)</p>
Not Significantly Different	<p>Combined Care Category: Multi-component care</p> <p>Description: Combined care programmes addressing both the person with dementia and their caregiver at the same time, involving a mix of different services that are not necessarily integrated</p>	<p>Synthesis Finding: Mixed findings: 3 studies had significant positive effects for the intervention and 1 had no significant effects--General mental health/psychological and psychomatic complaints</p> <p>Significance: N/A</p> <p>Sample Size: N/A</p> <p>Comment: Table 2 p.1187</p> <p>Heterogeneity: N/A, N/A</p> <p>Source: Smits, 2007</p> <p>AMSTAR: 38% (Weak)</p>

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	<p>Combined Care Category: Multi-component care</p> <p>Description: Combined care programmes addressing both the person with dementia and their caregiver at the same time, involving a mix of different services that are not necessarily integrated</p>	<p>Synthesis Finding: Mixed findings: 2 studies had significant positive effects for the intervention, 3 had heterogeneous effects, and 2 had no significant effects--Depressive symptoms</p> <p>Significance: N/A</p> <p>Sample Size: N/A</p> <p>Comment: Findings: Table 2 p. 1187. Heterogeneous effects a) were significant for some measures of the same outcome category but not for other measures; b) reached statistical significance at some but not all measurement points in longitudinal studies (except when later measurement points resulted in significant effects, whereas earlier measurements did not. In the latter case a delayed effect may have occurred; c) report positive effects for some subgroups but not for the total group that was studied. p. 1182</p> <p>Heterogeneity: N/A, N/A</p> <p>Source: Smits, 2007</p> <p>AMSTAR: 38% (Weak)</p>
Not Significantly Different	<p>Combined Care Category: Multi-component care</p> <p>Description: Combined care programmes addressing both the person with dementia and their caregiver at the same time, involving a mix of different services that are not necessarily integrated</p>	<p>Synthesis Finding: Mixed findings: 1 study had positive effects for the intervention and 2 studies had no significant effects--Wellbeing</p> <p>Significance: N/A</p> <p>Sample Size: N/A</p> <p>Comment: Table 2 p.1187</p> <p>Heterogeneity: N/A, N/A</p> <p>Source: Smits, 2007</p> <p>AMSTAR: 38% (Weak)</p>
Not Significantly Different	<p>Combined Care Category: Multi-component care</p> <p>Description: Combined care programmes addressing both the person with dementia and their caregiver at the same time, involving a mix of different services that are not necessarily integrated</p>	<p>Synthesis Finding: Mixed findings: 4 studies had significant positive effects for the intervention, 1 study had heterogeneous effects, and 7 had no significant effect--Other aspects of mental health</p> <p>Significance: N/A</p> <p>Sample Size: N/A</p> <p>Comment: Findings: Table 2 p. 1187. Heterogeneous effects a)were significant for some measures of the same outcome category but not for other measures; b)reached statistical significance at some but not all measurement points in longitudinal studies (except when later measurement points resulted in significant effects, whereas earlier measurements did not. In the latter case a delayed effect may have occurred; c) report positive effects for some subgroups but not for the total group that was studied. p. 1182</p> <p>Heterogeneity: N/A, N/A</p> <p>Source: Smits, 2007</p> <p>AMSTAR: 38% (Weak)</p>

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	<p>Combined Care Category: Multi-component care Description: Combined care programmes addressing both the person with dementia and their caregiver at the same time, involving a mix of different services that are not necessarily integrated</p>	<p>Synthesis Finding: Mixed findings: 2 studies had significant positive effects for the intervention, 5 studies had heterogeneous effects for the intervention, and 1 study had no significant effects. --Coping strategies, feelings of competence, mastery, skill enhancement, ADL self-efficacy, knowledge on dementia, and response to disruptive behavior Significance: N/A Sample Size: N/A Comment: Findings: Table 2 p. 1188. Heterogeneous effects a) were significant for some measures of the same outcome category but not for other measures; b)reached statistical significance at some but not all measurement points in longitudinal studies (except when later measurement points resulted in significant effects, whereas earlier measurements did not. In the latter case a delayed effect may have occurred; c) report positive effects for some subgroups but not for the total group that was studied. p. 1182 Heterogeneity: N/A, N/A Source: Smits, 2007 AMSTAR: 38% (Weak)</p>

Outcome: Care Recipient (Behavioral Problems)

Population: Caregivers of Older Adults with Dementia

Comparator: Not states, presumed standard of care

One synthesis finding indicated that combined care had no significant effect on reducing care recipient behavioral problems including memory and disruption-related problems(3). The finding is from a weak review on the AMSTAR scale (38%) which includes systematic reviews and single studies of interventions of which the geographical locations are not detailed, hence it is difficult to put the results into the context of Newfoundland and Labrador.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	<p>Combined Care Category: Multi-component care Description: Combined Care programmes addressing both the person with dementia and their caregiver at the same time, involving a mix of different services that are not necessarily integrated</p>	<p>Synthesis Finding: Mixed findings: 1 study had significant positive effects for the intervention, 3 studies had heterogeneous effects for the intervention, and 5 studies had no significant effects---In general, memory related problem and disruption related problems, behavioral disorder Significance: N/A Sample Size: N/A Comment: Table 3 p. 1190. Heterogeneous effects a) were significant for some measures of the same outcome category but not for other measures; b)reached statistical significance at some but not all measurement points in longitudinal studies (except when later measurement points resulted in significant effects, whereas earlier measurements did not. In the latter case a delayed effect may have occurred; c) report positive effects for some subgroups but not for the total group that was studied. p. 1182 Heterogeneity: N/A, N/A Source: Smits, 2007 AMSTAR: 38% (Weak)</p>

Outcome: Residence Status (Long Stay Admission)

Population: Caregivers of older adults with dementia

Comparator: Not stated, presumed standard of care

One synthesis finding indicates that combined care interventions that offer a variety of different services to both the caregiver and person with dementia, have no effect on delaying admission to a long-stay facility(3). The finding is from a weak review on the AMSTAR scale (38%) which includes systematic reviews and single studies of interventions of which the geographical locations are not detailed, hence it is difficult to put the results into the context of Newfoundland and Labrador.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	<p>Combined Care Category: Multi-component care</p> <p>Description: Combined Care programmes addressing both the person with dementia and their caregiver at the same time, involving a mix of different services that are not necessarily integrated</p>	<p>Synthesis Finding: Mixed findings: 8 studies had significant positive effects for the intervention, 3 had heterogeneous effects for the intervention, and 1 study had no significant effects</p> <p>Significance: N/A</p> <p>Sample Size: N/A</p> <p>Comment Table 3 p. 1190.</p> <p>Heterogeneous effects a) were significant for some measures of the same outcome category but not for other measures; b)reached statistical Significance at some but not all measurement points in longitudinal studies (except when later measurement points resulted in significant effects, whereas earlier measurements did not. In the latter case a delayed effect may have occurred; c) report positive effects for some subgroups but not for the total group that was studied. p. 1182</p> <p>Heterogeneity: N/A, N/A</p> <p>Source: Smits, 2007</p> <p>AMSTAR: 38% (Weak)</p>

Outcome: Functionality

Population: Caregivers of older adults with dementia

Comparator: Not stated, presumed standard of care

One synthesis finding indicated mixed results for combined care intervention with 1 study having significant positive effects for the intervention, 1 study having heterogeneous effects for the intervention, and 2 having no significant effects(3). Interventions included programs addressing both the caregiver and the person with dementia. According to the Cochrane Collaboration Guidelines, the primary studies were rated as moderate and good quality. The finding is from a weak review on the AMSTAR scale (38%) which includes systematic reviews and single studies of interventions of which the geographical locations are not detailed, hence it is difficult to put the results into the context of Newfoundland and Labrador.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Combined Care Category: Multi-component care Description: Combined care programmes addressing both the person with dementia and their caregiver at the same time, involving a mix of different services that are not necessarily integrated	Synthesis Finding: Mixed findings: 1 study had significant positive effects for the intervention, 1 study had heterogeneous effects for the intervention, and 2 had no significant effects--ADL, IADL, mobility, restricted activity Significance: N/A Sample Size: N/A Comment: Findings: Table 3 p. 1190. Heterogeneous effects a) were significant for some measures of the same outcome category but not for other measures; b)reached statistical significance at some but not all measurement points in longitudinal studies (except when later measurement points resulted in significant effects, whereas earlier measurements did not. In the latter case a delayed effect may have occurred; c) report positive effects for some subgroups but not for the total group that was studied. p. 1182 Heterogeneity: N/A Source: Smits, 2007 AMSTAR: 38% (Weak)

Outcome: Care recipient Health (mental health, cognitive function)

Population: Caregivers of older adults with dementia

Comparator: Not stated, presumed standard of care

Two synthesis findings by Smits (3) indicate that the primary research literature is mixed with regard to the impacts of combined care (which includes services for both a person with dementia and their informal caregiver) on mental health outcomes. According to the Cochrane Collaboration Guidelines, the primary studies were rated as moderate and good quality, with the systematic review rated as weak according to AMSTAR (38%). The review also included systematic reviews, and single studies of interventions dating back as early as the late 1980's (3)potentially reducing their relevancy to the current context of Newfoundland and Labrador.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Combined Care Category: Multi-component care Description: Combined care programmes addressing both the person with dementia and their caregiver at the same time, involving a mix of different services that are not necessarily integrated Population:	Synthesis Finding: Mixed findings: 3 studies had significant positive effects for the intervention, 1 study had heterogeneous effects for the intervention, and 1 had no significant effects--depression and dissatisfaction, depressive behavior, positive affect, negative affect, self-esteem, feeling of belonging Significance: N/A Sample Size: N/A Comment: Findings: Table 3 p. 1190. Heterogeneous effects a) were significant for some measures of the same outcome category but not for other measures; b)reached statistical significance at some but not all measurement points in longitudinal studies (except when later measurement points resulted in significant effects, whereas earlier measurements did not. In the latter case a delayed effect may have occurred; c) report positive effects for some subgroups but not for the total group that was studied. p. 1182 Heterogeneity: N/A Source: Smits, 2007 AMSTAR: 38% (Weak)

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	<p>Combined Care Category: Multi-component care Description: Combined care programmes addressing both the person with dementia and their caregiver at the same time, involving a mix of different services that are not necessarily integrated Population:</p>	<p>Synthesis Finding: Mixed findings: 2 studies had significant positive effects for the intervention, 1 study had heterogeneous effects for the intervention, and 2 studies had no significant effect for the intervention--Various cognitive functioning Significance: N/A Sample Size: N/A Comment: Findings: Table 3 p. 1190. Heterogeneous effects a) were significant for some measures of the same outcome category but not for other measures; b)reached statistical significance at some but not all measurement points in longitudinal studies (except when later measurement points resulted in significant effects, whereas earlier measurements did not. In the latter case a delayed effect may have occurred; c) report positive effects for some subgroups but not for the total group that was studied. p. 1182 Heterogeneity: N/A Source: Smits, 2007 AMSTAR: 38% (Weak)</p>

Outcome: Mortality

Population: Caregivers of older adults with dementia

Comparator: Not stated, presumed standard of care

A single synthesis finding had mixed results such that the intervention, which included services for both the caregiver and the person with dementia, showed significant effects on reducing mortality in one primary study, and no effect on mortality in another primary study. According to the Cochrane Collaboration Guidelines, the primary studies were rated as moderate and good quality, with the systematic review is rated as weak according to AMSTAR (38%)(3).

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	<p>Combined Care Category: Multi-component care Description: Combined care programmes addressing both the person with dementia and their caregiver at the same time, involving a mix of different services that are not necessarily integrated <i>(this one is a bit of an exception since caregivers were also included)</i></p>	<p>Synthesis Finding: Mixed findings: 1 study had significant positive effects for the intervention, and 1 study had no significant effects--Not described Significance: N/A Sample Size: N/A Comment: Findings: Table 3 p. 1190. Heterogeneity: N/A, N/A Source: Smits, 2007 AMSTAR: 38% (Weak)</p>

Intervention: Consumer-directed Home and Community Services

Outcome: Care Recipient Health (clinical outcomes)

Population: Community-dwelling older adults

Comparator: Usual care

Low (18) reports that this intervention, defined as “giving consumers greater awareness, control and responsibility for their health care spending”, improved customer satisfaction but did not have any impact on clinical health outcomes, however, no direct evidence is presented. This systematic review scored moderately on the AMSTAR scale (52%), and included a mix of randomized controlled trials, non-randomized controlled trials, and observational studies. It is important to note that “the quality of studies of consumer-directed care was the lowest of the three models examined” (18).

Our Interpretation	Intervention	Finding/Source/AMSTAR
Uncertain	<p>Consumer directed home and community services Category: Multi-component care Description: "conceptualized as giving consumers greater awareness, control and responsibility for their health care spending, and therefore incentive to consider both cost and quality when making healthcare decisions" p2 Population: Community-dwelling Older Adults</p>	<p>Synthesis Finding: Overall the results showed that consumer directed care improved satisfaction with care and community service use, but had little effect on clinical outcomes page 4--Clinical outcomes Significance: N/A Sample Size: 13 RCT, 5 non-RT, 13 Observational Studies Comment: N/A Heterogeneity: N/A Source: Low, 2011 AMSTAR: 50% Moderate</p>

Outcome: Care recipient quality of life

Population: Community-dwelling older adults

Comparator: Usual care

A single synthesis finding indicated improved satisfaction, but had no significant effect on quality of life. Home and community services included medical care, house cleaning and maintenance, shopping, transportation, home visits, and social outings and they focused on providing the consumer with full control over the services used. This systematic review scored moderately on the AMSTAR scale (52%), and included a mix of randomized controlled trials, non-randomized controlled trials, and observational studies. It is important to note that “the quality of studies of consumer-directed care was the lowest of the three models examined” (18)

Our Interpretation	Intervention	Finding/Source/AMSTAR
Uncertain	<p>Consumer directed home and community services Category: Multi-component care Description: "conceptualized as giving consumers greater awareness, control and responsibility for their health care spending, and therefore incentive to consider both cost and quality when making healthcare decisions" p2</p>	<p>Synthesis Finding^c: Overall the results showed that consumer directed care improved satisfaction with care and community service use, but had little effect on clinical outcomes page 4--Customer satisfaction Significance: N/A Sample Size: 13 RCT, 5 non-RT, 13 Observational Studies Comment: N/A Heterogeneity: N/A, N/A Source: Low, 2011 AMSTAR: 50% (Moderate)</p>

Intervention: Fully and Partially Integrated Care

Outcome: Care Recipient Health (clinical outcomes)

Population: Community-dwelling older adults

Comparator: Usual care

Two synthesis findings from Low assert fully integrated care models (e.g. PACE and the Kaiser Permanente Northwest), and partial integration models where services were formally linked and coordinated, did not improve clinical outcomes; however, no direct evidence was provided. It was noted that the higher quality evidence did not show a positive effect of integrated care on increasing clinical outcomes (18). This systematic review scored moderately on the AMSTAR scale (52%), and included a mix of randomized controlled trials, non-randomized controlled trials, and observational studies.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Uncertain	<p>Fully and partially integrated care Category: Multi-component care Description: "Fully integrated care programs (e.g. PACE and the Kaiser Permanente Northwest)... partial integration models where services were formally linked and coordinated" p3 Population: Community-dwelling Older Adults</p>	<p>Synthesis Finding: Overall, integrated care did not improve clinical outcomes. P3--Clinical outcomes Significance: N/A Sample Size: 13 RCT, 5 non-RT, 13 Observational Studies Comment: N/A Heterogeneity: N/A Source: Low, 2011 AMSTAR: 50% (Moderate)</p>
Uncertain	<p>Fully and partially integrated care Category: Multi-component care Description: "Fully integrated care programs (e.g. PACE and the Kaiser Permanente Northwest)... partial integration models where services were formally linked and coordinated" p3 Population: Community-dwelling Older Adults</p>	<p>Synthesis Finding: Overall, integrated care did not improve clinical outcomes. --Clinical outcomes Significance: N/A Sample Size: 13 RCT, 5 non-RT, 13 Observational Studies Comment: Fully integrated care programs (e.g. PACE and the Kaiser Permanente Northwest) were associated with greater use of community and hospital services; however the methodological quality of these studies was relatively low. The higher quality randomized and non-randomized trials evaluated partial integration models where services were formally linked and coordinated, however these were more likely to report significant effects on clinical or service use outcomes. Thus it was difficult to evaluate whether fully integrated programs result in better outcomes than programs where linkages are created between disparate systems. Heterogeneity: N/A Source: Low, 2011 AMSTAR: 50% (Moderate)</p>

Outcome: Healthcare utilization (service use)

Population: Community-dwelling older adults

Comparator: Usual care

One synthesis finding indicated that fully integrated care significantly increased use of community and hospital services in a beneficial way to the healthcare system, but no direct evidence was provided (18). Although this systematic review scored moderately on the AMSTAR scale (52%), and included a mix of randomized controlled

trials, non-randomized controlled trials, and observational studies, it is important to note that, of the primary studies measuring healthcare utilization and service use, “the methodological quality....was relatively low” (18).

Our Interpretation	Intervention	Finding/Source/AMSTAR
Uncertain	<p>Fully and Partially Integrated Care Category: Multi-component care Description: "Fully integrated care programs (e.g. PACE and the Kaiser Permanente Northwest)... partial integration models where services were formally linked and coordinated" p3</p>	<p>Synthesis Finding: Fully integrated care programs... Were associated with greater use of community and hospital services--Community and hospital services Significance: N/A Sample Size: 13 RCT, 5 non-RT, 13 Observational Studies Comment: Page 3 "however the methodological quality of these studies was relatively low." Heterogeneity: N/A Source: Low, 2011 AMSTAR: 50% (Moderate)</p>

Intervention: Geriatric Assessment

Outcome: Residence Status (Not living at home)

Population: Community-dwelling older adults

Comparator: Usual care or minimum intervention

Two synthesis findings indicate that geriatric assessment has a significant positive effect on keeping the general elderly population at home and delaying institutionalization to a nursing home. However, two synthesis findings from the same study indicate that geriatric assessment does not have a significant effect on keeping the frail elderly at home and delaying institutionalization to a nursing home (10). The systematic review had a weak AMSTAR rating (38%), but did include randomized controlled trials with 6-month follow-up. The geographical settings of the primary studies include Asia, Australia, England, U.S. and Canada and date back to as early as 1971, which may limit its applicability to the current context of Newfoundland.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	<p>Geriatric Assessment Category: Multi-component care Description: Assessment of need for medical and/or social interventions in the general elderly population conducted by any one, or a combination of, health professional(s) p. 731 and Webtable 1</p>	<p>Synthesis finding: RR=0.95 (CI 0.93-0.98), I2 = 35.3%-- Participants not living at home at 6-month follow-up Significance: p<0.0001 Sample Size: 65847 Comment: Table p.727 Heterogeneity: Not significant Figure 2 p. 728 Source: Beswick, 2008 AMSTAR: 38% (Weak)</p>
Beneficial	<p>Geriatric Assessment Category: Multi-component care Description: Assessment of need for medical and/or social interventions in the general elderly population conducted by any one, or a combination of, health professional(s) p. 731 and Webtable 1</p>	<p>Synthesis finding: RR=0.86 (CI 0.83 - 0.90), I2 = 47.5%-- Participants admitted to a nursing home either permanently or at 6-month follow-up Significance: p<0.00001 Sample Size: 66982 Comment: Table p.727 Heterogeneity: p=0.01 Webfigure 2 Source: Beswick, 2008 AMSTAR: 38% (Weak)</p>

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Geriatric Assessment Category: Multi-component care Description: Assessment of need for medical and/or social interventions in frail elderly conducted by any one, or a combination of, health professional(s) p. 731 and Webtable 1	Synthesis finding: RR=1.00 (CI 0.87 - 1.15), I2 = 43.3%-- Participants not living at home at 6-month follow-up Significance: p=0.95 Sample Size: 6515 Comment: Table p.727 Heterogeneity: Not significant Figure 2 p. 728 Source: Beswick, 2008 AMSTAR: 38% (Weak)
Not Significantly Different	Geriatric Assessment Category: Multi-component care Description: Assessment of need for medical and/or social interventions in frail elderly conducted by any one, or a combination of, health professional(s) p. 731 and Webtable 1	Synthesis finding: RR=1.01 (CI 0.83 - 1.23), I2 = 28.8%-- Participants admitted to a nursing home either permanently or at 6-month follow-up Significance: p=0.92 Sample Size: 6695 Comment: Table p.727 Heterogeneity: Not significant Webfigure 2 Source: Beswick, 2008 AMSTAR: 38% (Weak)

Outcome: Falls (Number of fallers)

Population: Community-dwelling older adults

Comparator: Usual care or minimum intervention

Two synthesis findings indicate that geriatric assessment that assesses the need for medical and/or social interventions and is conducted by any one, or a combination of, health professionals, is effective in reducing the risk of falling in the general elderly population, but is not effective in reducing fall risk in the frail elderly (10). Although the study had a weak AMSTAR methodological rating (38%), these findings are derived from two relatively larger samples (n=3,007 and n=3,962) with no significant heterogeneity and is based on randomized controlled trials with a six-month follow up. It is important to note that primary studies included a variety of geographic regions including Asia, Australia, England, U.S. and Canada and date back to as early as 1971, which may limit the applicability to the current context of Newfoundland and Labrador.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Geriatric Assessment Category: Multi-component care Description: Assessment of need for medical and/or social interventions in the general elderly population conducted by any one, or a combination of, health professional(s) p. 731 and Webtable 1	Synthesis Finding: RR=0.76 (CI 0.67 - 0.86), I2 = 0 % Significance: p<0.0001 Sample Size:3007 Comment: Table p.727 Heterogeneity: Not significant Webfigure 4 Source: Beswick, 2008 AMSTAR: 38% (Weak)
Not Significantly Different	Geriatric Assessment Category: Multi-component care Description: Assessment of need for medical and/or social interventions in frail elderly conducted by any one, or a combination of, health professional(s) p. 731 and Webtable 1	Synthesis Finding: RR=0.99 (CI 0.89 - 1.10), I2 = 0 % Significance: p=0.84 Sample Size:3962 Comment: Table p.727 Heterogeneity: Not significant Webfigure 4 Source: Beswick, 2008 AMSTAR: 38% (Weak)

Outcome: Care recipient functionality

Population: Community-dwelling older adults

Comparator: Usual care or minimum intervention

One synthesis finding indicated that geriatric assessment had positive effects on functionality in the general elderly populations, while one synthesis finding found no positive effects on functionality in the frail elderly population (10). Although the study had a weak AMSTAR methodological rating (38%), the finding was derived from a well powered meta-sample (n=11,714) and is based on randomized controlled trials with a six-month follow up. It is important to note that primary studies included a variety of geographic regions including Asia, Australia, England, U.S. and Canada and date back to as early as 1971, which may limit the applicability to the current context of Newfoundland and Labrador.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Geriatric Assessment Category: Multi-component care Description: Assessment of need for medical and/or social interventions in the general elderly population conducted by any one, or a combination of, health professional(s) p. 731 and Weetable 1	Synthesis Finding: SMD=-0.12 (CI (-0.16) –(- 0.08)), I2 = 0%--Status of Physical function at 6-month follow-up Significance: p<0.00001 Sample Size: 11714 Comment: Table p.727 Heterogeneity: Not significant Webfigure 5 Source: Beswick, 2008 AMSTAR: 38% (Weak)
Not Significantly Different	Geriatric Assessment Category: Multi-component care Description: Assessment of need for medical and/or social interventions in the frail elderly population conducted by any one, or a combination of, health professional(s) p. 731 and Weetable 1	Synthesis Finding: SMD=-0.01 (CI -0.06 – 0.04), I2 = 57.9%--Status of Physical function at 6-month follow-up Significance: p=0.62 Sample Size: 6875 Comment: Table p.727 Heterogeneity: p=0.001 Webfigure 5 Source: Beswick, 2008 AMSTAR: 38% (Weak)

Outcome: Healthcare utilization (hospital admission)

Population: Community-dwelling older adults

Comparator: Usual care

One synthesis finding found that geriatric assessment had a significant effect on reducing hospital admissions in frail elderly, but another analysis from the same systematic review (10) found no effect of geriatric assessment on reducing hospital admissions in the general elderly. The systematic review had a weak AMSTAR rating (38%), but did include randomized controlled trials with 6-month follow-up. The geographical settings of the primary studies include Asia, Australia, England, U.S. and Canada and date back to as early as 1971, which may limit the applicability to the current context of Newfoundland.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Geriatric Assessment Category: Multi-component care Description: Assessment of need for medical and/or social interventions in frail elderly conducted by any one, or a combination of, health professional(s) p. 731 and Webtable 1	Synthesis Finding: RR=0.90 (CI 0.84 - 0.98), I2 = 11.0 %-- Participants admitted to hospital at a point during, or currently admitted at, 6-month follow-up Significance: p=0.009 Sample Size: 6028 Comment: Table p.727 Heterogeneity: Not significant Webfigure 3 Source: Beswick, 2008 AMSTAR: 38% (Weak)
Not Significantly Different	Geriatric Assessment Category: Multi-component care Description: Assessment of need for medical and/or social interventions in the general elderly population conducted by any one, or a combination of, health professional(s) p. 731 and Webtable 1	Synthesis Finding: RR=0.98 (CI 0.92 - 1.03), I2 = 61.4%-- Participants admitted to hospital at a point during, or currently admitted at, 6-month follow-up Significance: p=0.40 Sample Size: 5885 Comment: Table p.727 Heterogeneity: p=0.008 Webfigure 3 Source: Beswick, 2008 AMSTAR: 38% (Weak)

Outcome: Mortality

Population: Community-dwelling older adults

Comparator: Usual care

Two synthesis findings from the same meta-analysis (10) indicated that geriatric assessment did not have an impact on reducing mortality rates in either the general or frail elderly populations. Although the study had a weak AMSTAR methodological rating (38%), these findings are derived from two well powered meta-samples (n=70,572 and n=9,612) with no significant heterogeneity and is based on randomized controlled trials with a six-month follow up. It is important to note that primary studies included a variety of geographic regions including Asia, Australia, England, U.S. and Canada and date back to as early as 1971, which may limit the applicability to the current context of Newfoundland.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Geriatric Assessment Category: Multi-component care Description: Assessment of need for medical and/or social interventions in the general elderly population conducted by any one, or a combination of, health professional(s) p. 731 and Webtable 1	Synthesis Finding: RR=1.00 (CI 0.98 - 1.03), I2 = 39.7%-- -Participants who died between baseline and 6-month follow-up Significance: p=0.81 Sample Size: 70572 Comment: Table p.727 Heterogeneity: Not significant Webfigure 1 Source: Beswick, 2008 AMSTAR: 38% (Weak)
Not Significantly Different	Geriatric Assessment Category: Multi-component care Description: Assessment of need for medical and/or social interventions in frail elderly conducted by any one, or a combination of, health professional(s) p. 731 and Webtable 1	Synthesis Finding: RR=1.03 (CI 0.89 - 1.19), I2 = 0%-- Participants who died between baseline and 6-month follow-up Significance: p=0.74 Sample Size: 9612 Comment: Table p.727 Heterogeneity: Not significant Webfigure 1 Source: Beswick, 2008 AMSTAR: 38% (Weak)

Intervention: Home-based Health Promotion Programmes

Outcome: Falls (Number of fallers)

Population: Community-dwelling older adults at risk

Comparator: Usual care

A single synthesis finding indicates home-based health promotion programs that include education and/or assessment had no effect on reducing fall risk (13). This systematic review was rated as moderate quality according to AMSTAR (67%) and the primary studies included were limited to randomized controlled trials published since 2001.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Home-based health promotion programmes that include education and/or assessment Category: Home Visits Description: Not otherwise defined	Synthesis Finding: RR 0.51 (CI 0.19 - 1.36), I ² = 89% Significance: p=0.18 Sample Size:1392 Comment: Figure 4 p18 Heterogeneity: p < 0.00001Figure 4 p18 Source: Tappenden, 2012 AMSTAR: 67% (Moderate)

Intervention: Mixed Case Management

Outcome: Functionality

Population: Community-dwelling older adults

Comparator: Usual care

One synthesis finding indicated that mixed case management interventions improved care recipient functionality (18). Interventions included telephone-based case management, computer program assisted case management and case management in combination with cost subsidies. This systematic review scored moderately on the AMSTAR scale (50%), and included a mix of randomized controlled trials, non-randomized controlled trials, and observational studies. It is also important to note that the “most and highest quality evidence” was available for case management.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Mixed case management models Category: Multi-component care Description: "Different methods of case management were evaluated such as telephone-based case management, computer program assisted case management and case management in combination with cost subsidies." p3	Synthesis Finding: Case management improves function--Not otherwise described Significance: N/A Sample Size: 13 RCT, 5 non-RT, 13 Observational Studies Comment: Mixed results from systematic review; Page 3 Heterogeneity: N/A Source: Low, 2011 AMSTAR: 50% (Moderate)

Outcome: Care Recipient Health (medication use, and mixed clinical outcomes)

Population: Community-dwelling older adults

Comparator: Usual care

Two synthesis findings, all from Low (18) indicate that different case management models can have significant beneficial effects for care recipients in terms of medication management and improving health outcomes. One finding, indicating several beneficial outcomes including nursing home admission and hospital use in addition to clinical outcomes, did not provide direct supporting evidence. This systematic review scored moderately on the AMSTAR scale (50%), and included a mix of randomized controlled trials, non-randomized controlled trials, and observational studies. It is also important to note that the “most and highest quality evidence” was available for case management.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	<p>Mixed case management models Category: Multi-component care Description: "Different methods of case management were evaluated such as telephone-based case management, computer program assisted case management and case management in combination with cost subsidies." p3 Population: Community-dwelling Older Adults</p>	<p>Synthesis Finding: Case management improves different aspects of medication management, --Not otherwise described Significance: N/A Sample Size: 13 RCT, 5 non-RT, 13 Observational Studies Comment: Mixed results from systematic review; Page 3 Heterogeneity: N/A Source: Low, 2011 AMSTAR: 50% (Moderate)</p>
Beneficial	<p>Mixed case management models Category: Multi-component care Description: "Different methods of case management were evaluated such as telephone-based case management, computer program assisted case management and case management in combination with cost subsidies." p3 Population: Community-dwelling Older Adults</p>	<p>Synthesis Finding: Improved clinical outcomes --Clinical outcomes Significance: N/A Sample Size: 13 RCT, 5 non-RT, 13 Observational Studies Comment: There were also positive results for other clinical outcomes and decreasing hospital admissions but not consistently across studies Page 3 Heterogeneity: N/A Source: Low, 2011 AMSTAR: 50% (Moderate)</p>

Outcome: Healthcare Utilization (hospital admission)

Population: Community-dwelling older adults

Comparator: Usual care

One synthesis findings from Low indicate that mixed case management that includes telephone-based case management, computer program assisted case management and case management in combination with cost subsidies, was found to reduce hospital admissions (18). This systematic review scored moderately on the AMSTAR scale (52%), and included a mix of randomized controlled trials (n=13), non-randomized controlled trials (n=5), and observational studies (n=13).

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Mixed Case Management models Category: Multi-component care Description: "Different methods of Case Management were evaluated such as telephone-based Case Management, computer program assisted Case Management and Case Management in combination with cost subsidies." p3	Synthesis Finding: "there was the most and highest quality evidence, including from randomized controlled trials, that case management... decreases... hospital use." P.4 Significance: N/A Sample Size: 13 RCT, 5 non-RT, 13 Observational Studies Comment: N/A Heterogeneity: N/A Source: Low, 2011 AMSTAR: 50% (Moderate)

Outcome: Residence Status (Nursing home admission)

Population: Community-dwelling older adults

Comparator: Usual care

One synthesis finding indicated that mixed case management had a significant effect on reducing nursing home admission (18). This systematic review scored moderately on the AMSTAR scale (50%), and included a mix of randomized controlled trials, non-randomized controlled trials, and observational studies. It is also important to note that the "most and highest quality evidence" was available for case management

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Mixed case management models Category: Multi-component care Description: "Different methods of case management were evaluated such as telephone-based case management, computer program assisted case management and case management in combination with cost subsidies." p3 Population: Community-dwelling Older Adults	Synthesis Finding: case management... reduces nursing home admission. P3-- Significance: N/A Sample Size: 13 RCT, 5 non-RT, 13 Observational Studies Comment: N/A Heterogeneity: N/A Source: Low, 2011 AMSTAR: 50% (Moderate)

Outcome: Community service use

Population: Community-dwelling older adults

Comparator: Usual care

One synthesis finding from Low indicated that mixed case management that includes telephone-based case management, computer program assisted case management and case management in combination with cost subsidies, was found to increase the use of home-based services (18). This systematic review scored moderately on the AMSTAR scale (52%), and included a mix of randomized controlled trials (n=13), non-randomized controlled trials (n=5), and observational studies (n=13).

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Mixed Case Management models Category: Multi-component care Description: "Different methods of Case Management were evaluated such as telephone-based Case Management, computer program assisted Case Management and Case Management in combination with cost subsidies." p3	Synthesis Finding: Case Management ... increases use of community services--Not otherwise described Significance: N/A Sample Size: 13 RCT, 5 non-RT, 13 Observational Studies Comment: Mixed results from systematic review; Page 3 Heterogeneity: N/A Source: Low, 2011 AMSTAR: 50% (Moderate)

Intervention: Models of Integrated Health and Social Care

Outcome: Healthcare utilization (service use)

Population: Community-dwelling older adults at risk

Comparator: Treatment, control group or comparison group

Two synthesis findings indicate that models of integrated health and social care may have a beneficial effect on reducing healthcare utilization in terms of hospital and long-term care admissions, although no direct evidence was provided (19,20). These research reports scored weakly on the AMSTAR scale (5%). The projects that reported these findings included SIPA (Canada), PACE and SHMO (United States), SA HealthPlus (Australia), and an integrated care model from Italy, which makes their applicability to the Newfoundland and Labrador context relatively limited (19,20).

Our Interpretation	Intervention	Finding/Source/AMSTAR
Uncertain	Models of Integrated Health and Social Care Category: Multi-component care Description: "...that have both coordination and integration models at the system level that contain features that are stronger than status quo linkage models." p10	Synthesis Finding: Features associated with better outcomes--"Reduction in hospital use" Significance: N/A Sample Size: 7 (studies) Comment: SIPA, PACE and Integrated Care (Italy) all included active physician involvement and multidisciplinary Case Management team. p8 Heterogeneity: N/A Source: MacAdam, 2008 AMSTAR: 5% (weak)
Uncertain	Models of Integrated Health and Social Care Category: Multi-component care Description: "...that have both coordination and integration models at the system level that contain features that are stronger than status quo linkage models." p10	Synthesis Finding: Features associated with better outcomes--"Reduced use of nursing homes / longterm care homes" Significance: N/A Sample Size: 7 (studies) Comment: PACE and SHMO use capitation payment. SIPA planned to evolve to capitation payment. p8 Heterogeneity: N/A Source: MacAdam, 2009 AMSTAR: 5% (weak)

Outcome: Care recipient quality of life

Population: Community-dwelling older adults at risk

Comparator: Treatment, control group or comparison group

A single synthesis finding reported improved satisfaction and quality of life, but provided no direct evidence. This research report scored weakly on the AMSTAR scale (5%). The projects that reported these findings included SIPA (Canada), PACE and SHMO (United States), SA HealthPlus (Australia) which makes their applicability to the Newfoundland context relatively limited (19).

Our Interpretation	Intervention	Finding/Source/AMSTAR
Uncertain	Models of integrated health and social care Category: Multi-component care Description: ..."that have both coordination and integration models at the system level that contain features that are stronger than status quo linkage models." p10	Synthesis Finding^e: Features associated with better outcomes--"Increased client satisfaction, quality of life" Significance: N/A Sample Size: 7 (studies) Comment: SIPA: no additional cost to caregivers Heterogeneity: N/A, N/A Source: MacAdam, 2009 AMSTAR: 5% (weak)

Intervention: More Fully Integrated Care

Outcome: Residence Status (Not living at home)

Population: Community-dwelling older adults

Comparator: Not stated, presumed standard of care

One synthesis finding indicates that there is "no consistent evidence supporting or contradicting the intervention" of fully integrated care on delaying institutionalization (21). Fully integrated care in this case is a comprehensive coordination of services across the continuum of care, viewed from patient perspective. This systematic review included only randomized controlled trials, of which 75% were rated as high or good quality. The primary studies were located in the USA, Canada, and Europe making the findings relatively applicable to the context of Newfoundland and Labrador.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	More Fully Integrated Care Category: Multi-component care Description: Focus is on a comprehensive coordination of services across the continuum of care, viewed from patient perspective. Treatment determined by medical, financial, psychological and social circumstances of patient p. 201-202	Synthesis Finding: Mixed findings: no consistent evidence supporting or contradicting the intervention Significance: N/A Sample Size: N/A Comment: Table 2 p.205 Heterogeneity: N/A, N/A Source: Oeseburg, 2009 AMSTAR: 57% (Moderate)

Outcome: Falls (Number of fallers, number of falls, rate of falls, risk of falling, fall-related injury)

Population: Community-dwelling older adults

Comparator: usual care, placebo, minimal intervention or attention control group

A single synthesis finding indicated that fully integrated care with mixed versions of multi-professional team work with comprehensive geriatric assessment had the “..potential to decrease number of falls” but provided no direct evidence(22). This review is rated as moderate on the AMSTAR scale (52%) and included a range of qualitative and quantitative research designs. In addition, the primary studies that measured falls as an outcome were of high quality according to Cochrane Collaboration Guidelines quality criteria assessment.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Uncertain	<p>More Fully Integrated Care Category: Multi-component care Description: Mixed versions of multi-professional team work with comprehensive geriatric assessment, in acute care, primary care and community care settings</p>	<p>Synthesis Finding: Potential to decrease number of falls Significance: N/A Sample Size: N/A Comment: p.107 Heterogeneity: N/A, N/A Source: Johansson, 2010 AMSTAR: 52% Moderate</p>

Outcome: Functionality

Population: Community-dwelling older adults at risk

Comparator: Not stated, presumed standard of care

One synthesis finding indicated that fully integrated care including mixed versions of multi-professional team work with comprehensive geriatric assessment, had the potential to improve functionality, but no direct evidence was provided (22). This systematic review scored moderately on the AMSTAR scale (52%), and included qualitative studies (case study, action research, reconstruction of events, ethnographic), qualitative (experimental randomized, non-experimental) and practice descriptions. However, the geographical regions where the primary studies were based were not detailed in the systematic review precluding applicability to the Newfoundland and Labrador setting. Based on the Cochrane Collaboration Guidelines quality criteria assessment, two of three primary studies that reported improved care recipient functionality were of high quality with one being of low quality(22).

Our Interpretation	Intervention	Finding/Source/AMSTAR
Uncertain	<p>More Fully Integrated Care Category: Multi-component care Description: Mixed versions of multi-professional team work with comprehensive geriatric assessment, in acute care, primary care and community care settings</p>	<p>Synthesis Finding: Potential to improve functional capacity--Not described Significance: N/A Sample Size: N/A Comment: p.107 Heterogeneity: N/A Source: Johansson, 2010 AMSTAR: 52% Moderate</p>

Outcome: Healthcare utilization (hospital admission and length of stay, emergency department visits, service use)

Population: Community-dwelling older adults at risk

Comparator: Not stated, presumed standard of care

One synthesis finding from indicated that patient advocacy case management, as a segment of fully integrated care, had a significant effect on reducing healthcare utilization and costs. Within the same systematic review (21), three findings indicated that integrated care had no significant effect on number of hospital admissions, number of days per year in a hospital, or number of visits to the emergency department. This systematic review included only randomized controlled trials, of which 75% were rated as high or good quality. The primary studies were located in the USA, Canada, and Europe making the findings relatively applicable to the context of Newfoundland and Labrador.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	<p>More Fully Integrated Care Category: Multi-component care Description: Focus is on a comprehensive coordination of services across the continuum of care, viewed from patient perspective. Treatment determined by medical, financial, psychological and social circumstances of patient p. 201-202</p>	<p>Synthesis Finding: "The most important conclusion of this study can be that patient advocacy Case Management does not increase service use and costs. Moreover indications were found that patient advocacy Case Management for those with chronic illness or older people can lead to a decrease in service use and healthcare costs" --Combined service use (hospital admission and length of stay, ED visits, nursing home admission) Significance: N/A Sample Size: N/A Comment: p.208 Heterogeneity: N/A Source: Oeseburg, 2009 AMSTAR: 57% (Moderate)</p>
Not Significantly Different	<p>More Fully Integrated Care Category: Multi-component care Description: Focus is on a comprehensive coordination of services across the continuum of care, viewed from patient perspective. Treatment determined by medical, financial, psychological and social circumstances of patient p. 201-202</p>	<p>Synthesis Finding: Mixed findings: intervention associated with fewer hospital admissions OR no association found.--Number of hospital admissions during follow-up Significance: N/A Sample Size: N/A Comment: Table 2 p.205 Heterogeneity: N/A Source: Oeseburg, 2009 AMSTAR: 57% (Moderate)</p>
Not Significantly Different	<p>More Fully Integrated Care Category: Multi-component care Description: Focus is on a comprehensive coordination of services across the continuum of care, viewed from patient perspective. Treatment determined by medical, financial, psychological and social circumstances of patient p. 201-202</p>	<p>Synthesis Finding: Mixed findings: intervention associated with shorter hospital stay OR no association found.--Number of days per year in a hospital Significance: N/A Sample Size: N/A Comment: Table 2 p.205 Heterogeneity: N/A Source: Oeseburg, 2009 AMSTAR: 57% (Moderate)</p>

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	More Fully Integrated Care Category: Multi-component care Description: Focus is on a comprehensive coordination of services across the continuum of care, viewed from patient perspective. Treatment determined by medical, financial, psychological and social circumstances of patient p. 201-202	Synthesis Finding: Mixed findings: intervention associated with fewer ED visits AND more ED visits.--Number of visits to emergency department during follow-up Significance: N/A Sample Size: N/A Comment: Table 2 p.205 Heterogeneity: N/A Source: Oeseburg, 2009 AMSTAR: 57% (Moderate)
Uncertain	More Fully Integrated Care Category: Multi-component care Description: Mixed versions of multi-professional team work with comprehensive Geriatric Assessment , in acute care, primary care and community care settings	Synthesis Finding: Potential to shorten hospital stay--Not described Significance: N/A Sample Size: N/A Comment: p.107 Heterogeneity: N/A Source: Johansson, 2010 AMSTAR: 52% Moderate
Uncertain	More Fully Integrated Care Category: Multi-component care Description: Mixed versions of multi-professional team work with comprehensive Geriatric Assessment , in acute care, primary care and community care settings	Synthesis Finding: Potential to reduce hospital admission--Not described Significance: N/A Sample Size: N/A Comment: p.107 Heterogeneity: N/A Source: Johansson, 2010 AMSTAR: 52% Moderate

Outcome: Mortality

Population: Community-dwelling older adults at risk

Comparator: Not stated, presumed standard of care

In a systematic review of a related topic, "more fully integrated care", Johansson could not find any consistent evidence that the interventions influenced mortality rates (22). This review is rated as moderate quality (52%) on the AMSTAR scale and included qualitative (case study, action research, reconstruction of events, ethnographic), qualitative (experimental randomized, non-experimental), and practice description studies.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	More Fully Integrated Care Category: Multi-component care Description: Mixed versions of multi-professional team work with comprehensive geriatric assessment, in acute care, primary care and community care settings	Synthesis Finding: No consistent differences in rates of mortality--Not described Significance: N/A Sample Size: N/A Comment: p.107 Heterogeneity: N/A, N/A Source: Johansson, 2010 AMSTAR: 52% Moderate

Outcome: Care recipient quality of life

Population: Community-dwelling older adults at risk

Comparator: Not stated, presumed standard of care

A single synthesis finding indicated the 'potential to improve life satisfaction'. This systematic review scored moderately on the AMSTAR scale (52%), and included qualitative studies (case study, action research, reconstruction of events, ethnographic), qualitative (experimental randomized, non-experimental) and practice descriptions. However, the geographical regions where the primary studies were based were not detailed in the systematic review. Based on the Cochrane Collaboration Guidelines quality criteria assessment, the two primary studies that reported improved life satisfaction were of high and low quality (22).

Our Interpretation	Intervention	Finding/Source/AMSTAR
Uncertain	<p>More Fully Integrated Care Category: Multi-component care Description: Mixed versions of multi-professional team work with comprehensive geriatric assessment, in acute care, primary care and community care settings</p>	<p>Synthesis Finding[†]: Potential to improve life satisfaction--Not described Significance: N/A Sample Size: N/A Comment: p.107 Heterogeneity: N/A, N/A Source: Johansson, 2010 AMSTAR: 52% Moderate</p>

Intervention: Partially Integrated Care

Outcome: Residence Status (Not Living at Home)

Population: Community-dwelling older adults

Comparator: Usual care or minimum intervention

Four synthesis findings indicate that partially integrated care interventions have significant positive effects on delaying institutionalization (10). Partially integrated care includes geriatric assessment with appropriate care follow-ups. The systematic review had a weak AMSTAR rating (38%), but did include randomized controlled trials with 6-month follow-up. The geographical settings of the primary studies include Asia, Australia, England, U.S. and Canada and date back to as early as 1971, which may limit its applicability to the current context of Newfoundland.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	<p>Partially Integrated Care Category: Multi-component care Description: Assessment for community-based care completed either pre-or post- hospital discharge by any one, or a combination of, health professional(s) with follow-ups and management as appropriate for patient. Webtable 1</p>	<p>Synthesis finding: RR=0.90 (CI 0.82 - 0.99), I2=2.2%--Participants not living at home at 6-month follow-up Significance: p=0.03 Sample Size: 4699 Comment: Table p.727 Heterogeneity: Not significant Figure 2 p. 728 Source: Beswick, 2008 AMSTAR: 38% (Weak)</p>

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Partially Integrated Care Category: Multi-component care Description: Assessment for community-based care completed either pre-or post- hospital discharge by any one, or a combination of, health professional(s) with follow-ups and management as appropriate for patient. Webtable 1	Synthesis finding: RR=0.77 (CI 0.64 - 0.91), I2 = 0%-- Participants admitted to a nursing home either permanently or at 6-month follow-up Significance: p=0.003 Sample Size: 3775 Comment: Table p.727 Heterogeneity: Not significant Webfigure 2 Source: Beswick, 2008 AMSTAR: 38% (Weak)
Beneficial	Partially Integrated Care Category: Multi-component care Description: Combination of Geriatric Assessment of general elderly people and frail elderly, community-based care after hospital discharge, fall prevention, and group education and counselling; not necessarily integrated	Synthesis finding: RR=0.95 (CI 0.93 - 0.97), I2 = 29.3%-- Participants not living at home at 6-month follow-up Significance: p<0.00001 Sample Size: 79578 Comment: Table p.727 Heterogeneity: Not significant Figure 2 p. 728 Source: Beswick, 2008 AMSTAR: 38% (Weak)
Beneficial	Partially Integrated Care Category: Multi-component care Description: Combination of Geriatric Assessment of general elderly people and frail elderly, community-based care after hospital discharge, fall prevention, and group education and counselling; not necessarily integrated	Synthesis finding: RR = 0.87 (CI 0.83 - 0.90), I2=29.0%-- Participants admitted to a nursing home either permanently or at 6-month follow-up Significance: p<0.00001 Sample Size: 79575 Comment: Table p.727 Heterogeneity: Not significant Webfigure 2 Source: Beswick, 2008 AMSTAR: 38% (Weak)

Outcome: Falls (number of fallers)

Population: Community-dwelling older adults

Comparator: Usual care or minimum intervention

One synthesis finding indicates that partially integrated care that includes a combination of geriatric assessment of general elderly people and frail elderly, community-based care after hospital discharge, fall prevention, and group education and counselling had a significant positive effect on reducing fall risk (10). However, two findings indicated that partially integrated care that included either assessment or education alone, had no effect on reducing fall risk (10,13). The positive finding had a significant sample size (n=15607) but also significant heterogeneity (I²=52%) and a weak AMSTAR review (38%).

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Partially Integrated Care Category: Multi-component care Description: Combination of geriatric assessment of general elderly people and frail elderly, community-based care after hospital discharge, fall prevention, and group education and counselling; not necessarily integrated	Synthesis Finding: RR = 0.90 (CI 0.86 - 0.95), I2 = 52.8% Significance: p<0.0001 Sample Size:15607 Comment: Table p.727 Heterogeneity: p=0.001Webfigure 4 Source: Beswick, 2008 AMSTAR: 38% (Weak)

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Partially Integrated Care Category: Multi-component care Description: Assessment for community-based care completed either pre-or post- hospital discharge by any one, or a combination of, health professional(s) with follow-ups and management as appropriate for patient. Webtable 1	Synthesis Finding: RR=0.82 (CI 0.61 - 1.08), I2 = 40.3% Significance: p=0.16 Sample Size: 726 Comment: Table p.727 Heterogeneity: Not significant Webfigure 4 Source: Beswick, 2008 AMSTAR: 38% (Weak)
Not Significantly Different	Partially Integrated Care Category: Multi-component care Description: Programmes delivered by nurses that include education and/or assessment	Synthesis Finding: RR 0.51 (CI 0.19 - 1.36), I2 = 89% Significance: p=0.18 Sample Size: 1392 Comment: Figure 4 p18 Heterogeneity: p < 0.00001 Figure 4 p18 Source: Tappenden, 2012 AMSTAR: 67% (Moderate)

Outcome: Functionality

Population: Community-dwelling older adults

Comparator: Usual care

One synthesis finding from Beswick indicates that partially integrated care which includes geriatric assessment, care provided by one or multiple healthcare professionals, and/or education had significant positive effects on care recipient functionality (10). One synthesis finding from the same review found no significant effect on functionality. The systematic review had a weak AMSTAR rating (38%), but did include randomized controlled trials with 6-month follow-up and had a notable sample sizes for the two findings (n=21651, n=1670). It is important to note that primary studies included a variety of geographic regions including Asia, Australia, England, U.S. and Canada and date back to as early as 1971, which may limit its applicability to the current context of Newfoundland and Labrador.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Partially Integrated Care Category: Multi-component care Description: Combination of geriatric assessment of general elderly people and frail elderly, community-based care after hospital discharge, fall prevention, and group education and counselling; not necessarily integrated	Synthesis Finding: RR= -0.08 [(CI(-0.11)-(-0.06)], I2 = 45.9%--Status of Physical function at 6-month follow-up Significance: p<0.00001 Sample Size: 21651 Comment: Table p.727 Heterogeneity: p=0.0007 Webfigure 5 Source: Beswick, 2008 AMSTAR: 38% (Weak)
Not Significantly Different	Partially Integrated Care Category: Multi-component care Description: Assessment for community-based care completed either pre-or post- hospital discharge by any one, or a combination of, health professional(s) with follow-ups and management as appropriate for patient. Webtable 1	Synthesis Finding: RR=-0.05 (CI -0.15 - 0.04), I2 = 0%--Status of Physical function at 6-month follow-up Significance: p=0.29 Sample Size: 1670 Comment: Table p.727 Heterogeneity: Not significant Webfigure 5 Source: Beswick, 2008 AMSTAR: 38% (Weak)

Outcome: Healthcare utilization (hospital admission)

Population: Community-dwelling older adults

Comparator: Usual care

There are two synthesis findings from Beswick (10) that indicate that partially integrated care can reduce the relative risk of healthcare utilization in the form of hospital admissions, but only by a very small amount. While the relative risks and confidence intervals indicate the reduction is small, (RR=0.95 [CI 0.90 - 0.99]; RR = 0.94 [CI 0.91 - 0.97]), the sample sizes are notable (n=6688 and n=20047, respectively). As well, although the review had a weak AMSTAR score (38%), the primary studies included were limited to randomized controlled trials with a minimum 6-month follow-up.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	<p>Partially Integrated Care Category: Multi-component care Description: Assessment for community-based care completed either pre-or post-hospital discharge by any one, or a combination of, health professional(s) with follow-ups and management as appropriate for patient. Webtable 1</p>	<p>Synthesis Finding: RR=0.95 (CI 0.90 - 0.99), I² = 57%--Participants admitted to hospital at a point during, or currently admitted at, 6-month follow-up Significance: p=0.02 Sample Size: 6688 Comment: Table p.727 Heterogeneity: p=0.003 Webfigure 3 Source: Beswick, 2008 AMSTAR: 38% (Weak)</p>
Beneficial	<p>Partially Integrated Care Category: Multi-component care Description: Combination of geriatric assessment of general elderly people and frail elderly, community-based care after hospital discharge, fall prevention, and group education and counselling; not necessarily integrated</p>	<p>Synthesis Finding: RR = 0.94 (CI 0.91 - 0.97), I² = 43.0%--Participants admitted to hospital at a point during, or currently admitted at, 6-month follow-up Significance: p=0.0004 Sample Size: 20047 Comment: Table p.727 Heterogeneity: p=0.002 Webfigure 3 Source: Beswick, 2008 AMSTAR: 38% (Weak)</p>

Outcome: Mortality

Population: Community-dwelling older adults (10), community-dwelling older adults at risk (13).

Comparator: Usual care

One synthesis finding from Tappenden (13) reports that multi-component care that includes nurse-delivered education and/or assessment produced a significant decrease in mortality. This systematic review was rated as moderate quality according to AMSTAR (67%) with a notable relative risk (RR= 0.80), confidence interval (CI = 0.68 - 0.95), and sample size (n=4583). The primary studies were limited to randomized controlled trials published since 2001. Two synthesis findings from Beswick (10) weak AMSTAR score of 38%) indicate that interventions that consistently include assessment do not significantly reduce mortality.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Partially Integrated Care Category: Multi-component care Description: Programmes delivered by nurses that include education and/or assessment	Synthesis Finding: RR 0.80 (CI 0.68 - 0.95), I2 = 9%--Not described Significance: p = 0.008 Sample Size: 4583 Comment: Figure 2 p17 Heterogeneity: Not significant N/A Source: Tappenden, 2012 AMSTAR: 67% (Moderate)
Not Significantly Different	Partially Integrated Care Category: Multi-component care Description: Assessment for community-based care completed either pre-or post- hospital discharge by any one, or a combination of, health professional(s) with follow-ups and management as appropriate for patient. Webtable 1	Synthesis Finding: RR=0.97 (CI 0.89 - 1.05), I2 = 5.2%--Participants who died between baseline and 6-month follow-up Significance: p=0.43 Sample Size: 8435 Comment: Table p.727 Heterogeneity: Not significant Webfigure 1 Source: Beswick, 2008 AMSTAR: 38% (Weak)
Not Significantly Different	Partially Integrated Care Category: Multi-component care Description: Combination of geriatric assessment of general elderly people and frail elderly, community-based care after hospital discharge, fall prevention, and group education and counselling; not necessarily integrated	Synthesis Finding: RR= 1.00 (CI 0.97 - 1.02), I2 = 10.6%--Participants who died between baseline and 6-month follow-up Significance: p=0.73 Sample Size: 93754 Comment: Table p.727 Heterogeneity: Not significant Webfigure 1 Source: Beswick, 2008 AMSTAR: 38% (Weak)

Intervention: Support (Education/Training)

Outcome: Falls (Number of fallers)

Population: Community-dwelling older adults

Comparator: Usual care

Reported as not applicable (10).

Our Interpretation	Intervention	Finding/Source/AMSTAR
Uncertain	Education/Training Category: Support (Non-Dementia) Description: Health education topics administered by any one, or a combination of, health professional(s). Webtable 1	Synthesis Finding: N/A Significance: N/A Sample Size: 0 Comment: N/A Heterogeneity: N/A Webfigure 4 Source: Beswick, 2008 AMSTAR: 38% (Weak)

Outcome: Functionality (physical function)

Population: Community-dwelling older adults

Comparator: Usual care

Support (Non-Dementia)

A single synthesis finding indicated that education/training support did not have a significant effect on improving care recipient functionality (10). The systematic review had a weak AMSTAR rating (38%), but did include randomized controlled trials with 6-month follow-up and had a notable sample sizes for the two findings (n=21651, n=1670). It is important to note that primary studies included a variety of geographic regions including Asia, Australia, England, U.S. and Canada and date back to as early as 1971, which may limit its applicability to the current context of Newfoundland and Labrador.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Education/Training Category: Support (Non-Dementia) Description: Health education topics administered by any one, or a combination of, health professional(s). Webtable 1	Synthesis Finding: SMD = 0.05 (CI -0.20 - 0.30), I ² = n/a--Status of Physical function at 6-month follow-up Significance: p=0.70 Sample Size: 281 Comment: Table p.727 Heterogeneity: N/A Webfigure 5 Source: Beswick, 2008 AMSTAR: 38% (Weak)

Outcome: Residence Status (Not living at home)

Population: Community-dwelling older adults

Comparator: Usual care or minimum intervention

Evidence from a weak study is mixed regarding whether group education and counselling provided by health professionals can reduce the risk of moving to an institution. However, the comparably stronger evidence within this study (p=0.007, n=615), does point to a beneficial effect of reducing risk (10). The systematic review had a weak AMSTAR rating (38%), but did include randomized controlled trials with 6-month follow-up. The geographical settings of the primary studies include Asia, Australia, England, U.S. and Canada and date back to as early as 1971, which may limit its applicability to the current context of Newfoundland.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Education/Training Category: Support (Non-Dementia) Description: Health education topics administered by any one, or a combination of, health professional(s). Webtable 1	Synthesis finding: RR=0.62 (CI 0.43 - 0.88), I ² = 0%-Participants not living at home at 6-month follow-up Significance: p=0.007 Sample Size: 615 Comment: Table p.727 Heterogeneity: Not significant Figure 2 p. 728 Source: Beswick, 2008 AMSTAR: 38% (Weak)

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Education/Training Category: Support (Non-Dementia) Description: Health education topics administered by any one, or a combination of, health professional(s). Webtable 1	Synthesis finding: RR=0.50 (CI 0.05 - 5.49), I2= n/a- -Participants admitted to a nursing home either permanently or at 6-month follow-up Significance: p=0.57 Sample Size: 321 Comment: Table p.727 Heterogeneity: N/A Webfigure 2 Source: Beswick, 2008 AMSTAR: 38% (Weak)

Outcome: Care Recipient Health (depression, mental health)

Population: Older adults, and their caregivers, assumed to be socially isolated

Comparator: Inactive control group

Education/Training: Two synthesis findings indicate that education and training, specifically one-to-one non-participatory internet training, did not have a significant effect on improving clinical health outcomes (23). This systematic review scored moderately on the AMSTAR scale (52%), and included randomized controlled trials and quasi-experimental studies. While a number of the primary studies were based in the U.S. and Canada, others were based in Japan and Western European countries signifying a small applicability to the environment in Newfoundland and Labrador. In addition, based on the Cochrane Risk of Bias Tool, the primary studies that measured health outcomes were categorized as being at a moderate or high risk of bias.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Education/Training Category: Support (Non-Dementia) Description: One-to-one Non-Participatory Internet Training - Non-Theory Based, non-participatory: "simply being recipients of a service or education/training" p9 Population: Adults assumed to be socially isolated	Synthesis Finding: intervention has no statistical effect on outcome--Not described Significance: N/A Sample Size: N/A Comment: Table 6 p.16 Heterogeneity: N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)
Not Significantly Different	Education/Training Category: Support (Non-Dementia) Description: One-to-one Non-Participatory Internet Training - Non-Theory Based, non-participatory: "simply being recipients of a service or education/training" p9 Population: Adults assumed to be socially isolated	Synthesis Finding: intervention has no statistical effect on outcome--Not described Significance: N/A Sample Size: N/A Comment: Table 6 p.16 Heterogeneity: N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)

Outcome: Healthcare utilization (hospital admission)

Population: Community-dwelling older adults

Comparator: Usual care

A single synthesis finding indicates that education and training administered by a health professional had no significant effect on reducing healthcare utilization or service use (10). The systematic review had a weak AMSTAR rating (38%), but did include randomized controlled trials with 6-month follow-up. The geographical settings of the primary studies include Asia, Australia, England, U.S. and Canada and date back to as early as 1971, which may limit its applicability to the current context of Newfoundland.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	<p>Education/Training Category: Support (Non-Dementia)</p> <p>Description: Health education topics administered by any one, or a combination of, health professional(s). Webtable 1</p>	<p>Synthesis Finding: RR=0.75 (CI 0.51 - 1.09), I2 = n/a--Participants admitted to hospital at a point during, or currently admitted at, 6-month follow-up</p> <p>Significance: p=0.14</p> <p>Sample Size: 321</p> <p>Comment: Table p.727</p> <p>Heterogeneity: N/A Webfigure 3</p> <p>Source: Beswick, 2008</p> <p>AMSTAR: 38% (Weak)</p>

Outcome: Mortality

Population: Community-dwelling older adults

Comparator: Usual care

A single synthesis finding from (10) indicates that education and training administered by a health professional had no significant effect on reducing mortality. The systematic review had a weak AMSTAR rating (38%), but did include randomized controlled trials with 6-month follow-up and had a significant sample size (n=615)

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	<p>Education/Training Category: Support (Non-Dementia)</p> <p>Description: Health education topics administered by any one, or a combination of, health professional(s). Webtable 1</p>	<p>Synthesis Finding: RR=0.80 (CI 0.42 - 1.55), I2 = 0%--Participants who died between baseline and 6-month follow-up</p> <p>Significance: p=0.52</p> <p>Sample Size: 615</p> <p>Comment: Table p.727</p> <p>Heterogeneity: Not significant Webfigure 1</p> <p>Source: Beswick, 2008</p> <p>AMSTAR: 38% (Weak)</p>

Outcome: Care recipient quality of life

Population: Caregivers of older adults assumed to be socially isolated

Comparator: Inactive control group

Two synthesis findings from same systematic review indicated that education/training interventions had no significant effect on improving quality of life (23). The specific type of training studied included one-to-one non-

participatory internet training to housebound older people who were involved in a home visiting program. This systematic review scored moderately on the AMSTAR scale (52%), and included randomized controlled trials and quasi-experimental studies. While a number of the primary studies were based in the U.S. and Canada, others were based in Japan and Western European countries signifying a small applicability to the environment in Newfoundland. In addition, based on the Cochrane Risk of Bias Tool, the primary studies that measured quality of life were categorized as being at a moderate or high risk of bias.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Education/Training Category: Support (Non-Dementia) Description: One-to-one Non-Participatory Internet Training - Non-Theory Based, non-participatory: "simply being recipients of a service or education/training" p9	Synthesis Finding^d: Mixed findings: intervention associated with decreased loneliness OR no association.--...a subjective concept resulting from a perceived absence or loss of companionship p.2 Significance: N/A Sample Size: N/A Comment: Table 6 p.16 Heterogeneity: N/A, N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)
Not Significantly Different	Education/Training Category: Support (Non-Dementia) Description: One-to-one Non-Participatory Internet Training - Non-Theory Based, non-participatory: "simply being recipients of a service or education/training" p9	Synthesis Finding^d: intervention has no statistical effect on outcome--"An objective assessment of size and frequency.... of emotional, instrumental and informational support provided by others" p.2 Significance: N/A Sample Size: N/A Comment: Table 6 p.16 Heterogeneity: N/A, N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)

Intervention: Support (Non-Dementia)

Outcome: Care Recipient Health (depression, mental/psychological wellbeing, physical health)

Population: Older adults, and their caregivers, assumed to be socially isolated

Comparator: Inactive control group

Four synthesis findings from the same systematic review Dickens (23) indicate that participatory group support has a significant effect on improving health outcomes such as depressive symptoms, mental/psychological wellbeing, and physical health in terms of medication management and blood pressure. However, two other synthesis findings indicate mixed results for the effect of these interventions on depressive symptoms and mental/psychological wellbeing. This systematic review scored moderately on the AMSTAR scale (52%), and included randomized controlled trials and quasi-experimental studies. Of the primary studies that measured health outcomes, the risk of bias was moderate –high. Also, while a number of the primary studies were based in the U.S. and Canada, others were based in Japan and Western European countries signifying a small applicability to the environment in Newfoundland and Labrador.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	<p>Support Category: Support (Non-Dementia) Description: Participatory Group Support not defined - Theory or Non-Theory-Based, participatory: "active input from participants involving social contact (not necessarily face to face)" p9 Population: Adults assumed to be socially isolated</p>	<p>Synthesis Finding: Interventions associated with improved mental/psychological wellbeing--Not described Significance: N/A Sample Size: N/A Comment: Table 6 p.15 Heterogeneity: N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)</p>
Beneficial	<p>Support Category: Support (Non-Dementia) Description: Participatory Group Support not defined - Theory or Non-Theory-Based, participatory: "active input from participants involving social contact (not necessarily face to face)" p9 Population: Adults assumed to be socially isolated</p>	<p>Synthesis Finding: Intervention associated with improved physical health--"perceived health status, blood pressure, daily medication intake" p.5 Significance: N/A Sample Size: N/A Comment: Table 6 p.15 Heterogeneity: N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)</p>
Beneficial	<p>Support Category: Support (Non-Dementia) Description: Participatory Group Support not defined - Theory or Non-Theory-Based, participatory: "active input from participants involving social contact (not necessarily face to face)" p9 Population: Adults assumed to be socially isolated</p>	<p>Synthesis Finding: Intervention is associated with lowered feelings of depression--Not described Significance: N/A Sample Size: N/A Comment: Table 6 p.15 Heterogeneity: N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)</p>
Beneficial	<p>Support Category: Support (Non-Dementia) Description: Participatory Group Support not defined - Theory or Non-Theory-Based, participatory: "active input from participants involving social contact (not necessarily face to face)" p9 Population: Adults assumed to be socially isolated</p>	<p>Synthesis Finding: Intervention associated with improved physical health--"perceived health status, blood pressure, daily medication intake" p.5 Significance: N/A Sample Size: N/A Comment: Table 6 p.15 Heterogeneity: N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)</p>
Not Significantly Different	<p>Support Category: Support (Non-Dementia) Description: Participatory Group Support not defined - Theory or Non-Theory-Based, participatory: "active input from participants involving social contact (not necessarily face to face)" p9 Population: Adults assumed to be socially isolated</p>	<p>Synthesis Finding: Mixed findings: intervention associated with lowered feelings of depression OR no association--Not described Significance: N/A Sample Size: N/A Comment: Table 6 p.15 Heterogeneity: N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)</p>

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Support Category: Support (Non-Dementia) Description: Participatory Group Support not defined - Theory or Non-Theory-Based, participatory: "active input from participants involving social contact (not necessarily face to face)" p9 Population: Adults assumed to be socially isolated	Synthesis Finding: Mixed findings: intervention associated with improved mental/psychological wellbeing OR no association--Not described Significance: N/A Sample Size: N/A Comment: Table 6 p.15 Heterogeneity: N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)

Outcome: Care recipient quality of life

Population: Caregivers of older adults assumed to be socially isolated

Comparator: Inactive control group

Three synthesis findings indicate that participatory group support was "associated with improved structural social support", but four synthesis findings did not indicate a positive or negative impact of participatory group support on other measures of quality of life including functional social support (23). This systematic review scored moderately on the AMSTAR scale (52%), and included randomized controlled trials and quasi-experimental studies. While a number of the primary studies were based in the U.S. and Canada, others were based in Japan and Western European countries signifying a small applicability to the environment in Newfoundland. Based on the Cochrane Risk of Bias Tool, the primary studies measuring quality of life were categorized as being at a moderate or high risk of bias. In addition, only 38% of included primary studies explicitly targeted older people that were socially isolated or lonely; in the remaining studies, social isolation and loneliness were only assumed (23).

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Support Category: Support (Non-Dementia) Description: Participatory Group Support not defined - Theory or Non-Theory-Based, participatory: "active input from participants involving social contact (not necessarily face to face)" p9	Synthesis Finding: Intervention associated with improving structured social supports--"An objective assessment of size and frequency.... of emotional, instrumental and informational support provided by others" p.2 Significance: N/A Sample Size: N/A Comment: Table 6 p.15 Heterogeneity: N/A, N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)
Beneficial	Support Category: Support (Non-Dementia) Description: Participatory Group Support not defined - Theory or Non-Theory-Based, participatory: "active input from participants involving social contact (not necessarily face to face)" p9	Synthesis Finding: Intervention is associated with improved structural social support--"An objective assessment of size and frequency.... of emotional, instrumental and informational support provided by others" p.2 Significance: N/A Sample Size: N/A Comment: Table 6 p.15 Heterogeneity: N/A, N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Support Category: Support (Non-Dementia) Description: Participatory Group Support not defined - Theory or Non-Theory-Based, participatory: "active input from participants involving social contact (not necessarily face to face)" p9	Synthesis Finding: Intervention is associated with improved functional social support--"...is a subjective judgement of the quality or perceived value of emotional, instrumental and informational support provided by others" p.2 Significance: N/A Sample Size: N/A Comment: Table 6 p.15 Heterogeneity: N/A, N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)
Not Significantly Different	Support Category: Support (Non-Dementia) Description: Participatory Group Support not defined - Theory or Non-Theory-Based, participatory: "active input from participants involving social contact (not necessarily face to face)" p9	Synthesis Finding: Mixed findings: intervention associated with decreased loneliness OR no association....a subjective concept resulting from a perceived absence or loss of companionship p.2 Significance: N/A Sample Size: N/A Comment: Table 6 p.15 Heterogeneity: N/A, N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)
Not Significantly Different	Support Category: Support (Non-Dementia) Description: Participatory Group Support not defined - Theory or Non-Theory-Based, participatory: "active input from participants involving social contact (not necessarily face to face)" p9	Synthesis Finding: Mixed findings: intervention associated with improved structural social support OR no association.--"...is a subjective judgement of the quality or perceived value of emotional, instrumental and informational support provided by others" p.2 Significance: N/A Sample Size: N/A Comment: Table 6 p.15 Heterogeneity: N/A, N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)
Not Significantly Different	Support Category: Support (Non-Dementia) Description: Participatory Group Support not defined - Theory or Non-Theory-Based, participatory: "active input from participants involving social contact (not necessarily face to face)" p9	Synthesis Finding: intervention has no statistical effect on outcome--"...a subjective concept resulting from a perceived absence or loss of companionship p.2 Significance: N/A Sample Size: N/A Comment: Table 6 p.15 Heterogeneity: N/A, N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Support Category: Support (Non-Dementia) Description: Participatory Group Support not defined - Theory or Non-Theory-Based, participatory: "active input from participants involving social contact (not necessarily face to face)" p9	Synthesis Finding: intervention has no statistical effect on outcome--...a subjective concept resulting from a perceived absence or loss of companionship p.2 Significance: N/A Sample Size: N/A Comment: Table 6 p.15 Heterogeneity: N/A, N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)

Intervention: Support (Non-Pharmacological)

Outcome: Residence Status (Institutionalization)

Population: Caregivers of older adults with dementia

Comparator: Not stated, presumed standard of care

There are three synthesis findings to indicate that non-pharmacological interventions are effective in delaying institutionalization and reducing the odds of institutionalization for older adults with dementia. The interventions are most effective when caregivers are involved in the decision-making process about available treatments, however "no distinctive intervention seemed to be characteristic of the estimated effectiveness in the odds of being institutionalized and the delay of institutionalization" (24). This systematic review was rated as moderate on the AMSTAR scale (52%) and included only randomized controlled trials published in Canada, the U.S., Australia and Europe making the findings relatively applicable to Newfoundland and Labrador.

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Non-pharmacological for Dementia Category: Support (Dementia) Description: Non- pharmacological interventions intended to delay institutionalization, most individualized and intensive in nature	Synthesis Finding: OR = 0.66 (CI 0.43 - 0.99), I2 = 63.9% Significance: p=0.05 Sample Size: 9043 Comment: Figure 2 p. 1125 Heterogeneity: p = 0.003Figure 2 p. 1125 Source: Spijker 2008 AMSTAR: 52% (Moderate)
Beneficial	Non-pharmacological for Dementia Category: Support (Dementia) Description: Non- pharmacological interventions intended to delay institutionalization, most individualized and intensive in nature	Synthesis Finding: SMD = 1.44 (CI 0.07 - 2.81), I2 = 96.6% Significance: p=0.04 Sample Size: 385 Comment: Figure 3 p.1126 Heterogeneity: p<0.00001Figure 3 p.1126 Source: Spijker 2008 AMSTAR: 52% (Moderate)

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Non-pharmacological for Dementia Category: Support (Dementia) Description: Non- pharmacological I interventions intended to delay institutionalization, most individualized and intensive in nature	Synthesis Finding: "Conversely, a combination of involvement and choice seemed to be the main intervention characteristic that distinguished effective support programs from ineffective ones." Significance: N/A Sample Size: N/A Comment: p.1126 Heterogeneity: N/A, N/A Source: Spijker 2008 AMSTAR: 52% (Moderate)
Not Significantly Different	Non-pharmacological for Dementia Category: Support (Dementia) Description: Non-pharmacological interventions intended to delay institutionalization, most individualized and intensive in nature	Synthesis Finding: "no distinctive intervention seemed to be characteristic of the estimated effectiveness in the odds of being institutionalized and the delay of institutionalization" Significance: N/A Sample Size: N/A Comment: p.1126 Heterogeneity: N/A, N/A Source: Spijker 2008 AMSTAR: 52% (Moderate)

Intervention: Support (Social/Physical)

Outcome: Care Recipient Health (depression, physical health, mental/psychological wellbeing)
Population: Older adults, and their caregivers, assumed to be socially isolated
Comparator: Inactive control group

One synthesis finding indicated that social/physical support had a significant effect on improving care recipient physical health. Two synthesis findings indicated that social/physical support had no significant effect on improving health in terms of mental/psychological wellbeing, while one finding indicated mixed results for effects on depression (23). This systematic review scored moderately on the AMSTAR scale (52%), and included randomized controlled trials and quasi-experimental studies. Of the primary studies that measured health outcomes, the risk of bias was moderate –high. Also, while a number of the primary studies were based in the U.S. and Canada, others were based in Japan and Western European countries signifying a small applicability to the environment in Newfoundland and Labrador

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Social/Physical Category: Support (Non-Dementia) Description: Participatory Group Activities not defined - Theory and Non-Theory-Based, participatory: "active input from participants involving social contact (not necessarily face to face)" p9 Population: Adults assumed to be socially isolated	Synthesis Finding: Intervention is associated with improved physical health--"perceived health status, blood pressure, daily medication intake" p.5 Significance: N/A Sample Size: N/A Comment: Table 6 p.15 Heterogeneity: N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Social/Physical Category: Support (Non-Dementia) Description: Participatory Group Activities not defined - Theory and Non-Theory-Based, participatory: "active input from participants involving social contact (not necessarily face to face)" p9 Population: Adults assumed to be socially isolated	Synthesis Finding: Mixed findings: intervention associated with lowered feelings of depression OR no association--Not described Significance: N/A Sample Size: N/A Comment: Table 6 p.15 Heterogeneity: N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)
Not Significantly Different	Social/Physical Category: Support (Non-Dementia) Description: Participatory Group Activities not defined - Theory and Non-Theory-Based, participatory: "active input from participants involving social contact (not necessarily face to face)" p9 Population: Adults assumed to be socially isolated	Synthesis Finding: Intervention has no statistical effect on outcome--Not described Significance: N/A Sample Size: N/A Comment: Table 6 p.15 Heterogeneity: N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)
Not Significantly Different	Social/Physical Category: Support (Non-Dementia) Description: One-to-One Non-Participatory Home Visiting - Non-Theory Based, non-participatory: "simply being recipients of a service or education/training" p9 Population: Adults assumed to be socially isolated	Synthesis Finding: Intervention has no statistical effect on outcome--Not described Significance: N/A Sample Size: N/A Comment: Table 6 p.16 Heterogeneity: N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)

Outcome: Care recipient quality of life

Population: Caregivers of older adults assumed to be socially isolated

Comparator: Inactive control group

Seven synthesis findings indicate that social/physical interventions such as one-to-one non-participatory home visits and participatory group activities did not improve quality of life in terms of structural and functional social supports, and loneliness. However one synthesis finding indicated that social/physical interventions, such as theory-based participatory group activities were, associated with increased structured social support" (23). This systematic review scored moderately on the AMSTAR scale (52%), and included randomized controlled trials and quasi-experimental studies. While a number of the primary studies were based in the U.S. and Canada, others were based in Japan and Western European countries signifying a small applicability to the environment in Newfoundland. Based on the Cochrane Risk of Bias Tool, the primary studies measuring quality of life were categorized as being at a moderate or high risk of bias. In addition, only 38% of included primary studies explicitly targeted older people that were socially isolated or lonely; in the remaining studies, social isolation and loneliness were only assumed (23)

Our Interpretation	Intervention	Finding/Source/AMSTAR
Beneficial	Social/Physical Category: Support (Non-Dementia) Description: Participatory Group Activities not defined - Theory and Non-Theory-Based, participatory: "active input from participants involving social contact (not necessarily face to face)" p9	Synthesis Finding: Intervention is associated with increased structured social support--"An objective assessment of size and frequency.... of emotional, instrumental and informational support provided by others" p.2 Significance: N/A Sample Size: N/A Comment: Table 6 p.15 Heterogeneity: N/A, N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)
Not Significantly Different	Social/Physical Category: Support (Non-Dementia) Description: One-to-One Non-Participatory Home Visiting - Non-Theory Based, non-participatory: "simply being recipients of a service or education/training" p9	Synthesis Finding: intervention has no statistical effect on outcome--...a subjective concept resulting from a perceived absence or loss of companionship p.2 Significance: N/A Sample Size: N/A Comment: Table 6 p.16 Heterogeneity: N/A, N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)
Not Significantly Different	Social/Physical Category: Support (Non-Dementia) Description: One-to-One Non-Participatory Home Visiting - Non-Theory Based, non-participatory: "simply being recipients of a service or education/training" p9	Synthesis Finding: Mixed findings: intervention associated with improved structural social support OR no association--"An objective assessment of size and frequency.... of emotional, instrumental and informational support provided by others" p.2 Significance: N/A Sample Size: N/A Comment: Table 6 p.16 Heterogeneity: N/A, N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)
Not Significantly Different	Social/Physical Category: Support (Non-Dementia) Description: One-to-One Non-Participatory Home Visiting - Non-Theory Based, non-participatory: "simply being recipients of a service or education/training" p9	Synthesis Finding: intervention has no statistical effect on outcome--"...is a subjective judgement of the quality or perceived value of emotional, instrumental and informational support provided by others" p.2 Significance: N/A Sample Size: N/A Comment: Table 6 p.16 Heterogeneity: N/A, N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)
Not Significantly Different	Social/Physical Category: Support (Non-Dementia) Description: Participatory Group Activities not defined - Theory and Non-Theory-Based, participatory: "active input from participants involving social contact (not necessarily face to face)" p9	Synthesis Finding: Intervention has no statistical effect on outcome--"...is a subjective judgement of the quality or perceived value of emotional, instrumental and informational support provided by others" p.2 Significance: N/A Sample Size: N/A Comment: Table 6 p.15 Heterogeneity: N/A, N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)

Our Interpretation	Intervention	Finding/Source/AMSTAR
Not Significantly Different	Social/Physical Category: Support (Non-Dementia) Description: Participatory Group Activities not defined - Theory and Non-Theory-Based, participatory: "active input from participants involving social contact (not necessarily face to face)" p9	Synthesis Finding: Intervention has no statistical effect on outcome--...a subjective concept resulting from a perceived absence or loss of companionship p.2 Significance: N/A Sample Size: N/A Comment: Table 6 p.15 Heterogeneity: N/A, N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)
Not Significantly Different	Social/Physical Category: Support (Non-Dementia) Description: Participatory Group Activities not defined - Theory and Non-Theory-Based, participatory: "active input from participants involving social contact (not necessarily face to face)" p9	Synthesis Finding: Mixed findings: intervention associated with improved structural social support OR no association.--"An objective assessment of size and frequency.... of emotional, instrumental and informational support provided by others" p.2 Significance: N/A Sample Size: N/A Comment: Table 6 p.15 Heterogeneity: N/A, N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)
Not Significantly Different	Social/Physical Category: Support (Non-Dementia) Description: Participatory Group Activities not defined - Theory and Non-Theory-Based, participatory: "active input from participants involving social contact (not necessarily face to face)" p9	Synthesis Finding: Intervention has no statistical effect on outcome--"...is a subjective judgement of the quality or perceived value of emotional, instrumental and informational support provided by others" p.2 Significance: N/A Sample Size: N/A Comment: Table 6 p.15 Heterogeneity: N/A, N/A Source: Dickens, 2011 AMSTAR: 52% (Moderate)

Synthesis Findings and Key Messages

1. **Key Objectives:** *Integrated care has been shown to help older adults stay in their homes and to reduce hospital admissions.*
2. **Key Care Team Members:** *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.*
3. **Reduce Barriers to Access:** *Facilitated access to health and social services appears to be a critical component of effective integrated care programs.*
4. **Standardized Geriatric Assessment:** *Geriatric assessment, whether or not a component of integrated care, is consistently and significantly effective for maximizing the time older adults live at home and for reducing hospitalizations among frail older adults.*
5. **Appropriate Levels of Case Management:** *Case management can be significantly and consistently effective for older adults living in the community, in terms of staying in the community, improving service use, and prolonging autonomy.*
6. **Fall Prevention is Effective:** *Several well-established community-based fall prevention exercise programs, including individual and group exercise programs and Tai Chi, have been shown to significantly reduce the occurrence of falls for seniors living at home. Environmental fall prevention programs that focus on home safety and personal mobility are effective for high-risk older adults.*
7. **Support Groups Help Caregivers:** *Support groups, including psycho-education groups and educational training, are effective interventions for caregivers of older persons with dementia in terms of caregiver burden and mental health outcomes.*

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Economic Analysis

Introduction

Following is an overview of economic studies focusing on interventions for seniors living in the community. It is important to note that there are no meta-analyses of economic evaluations that would be able to accurately determine the cost-effectiveness of a given intervention. Meta-analyses, for economic studies, are difficult because the findings are rarely presented homogeneously across studies. Economic studies may discuss the economic impact of an intervention in terms of:

- savings (e.g., the intervention saves costs to society or a healthcare system),
- incremental cost effectiveness⁷ ratios (ICERs) (e.g., the intervention costs more than the control but generates outcomes and the main finding is the cost per unit of outcome⁸), or
- as ratios of benefit-to-cost (e.g., the outcome of the intervention is converted into monetary value and compared to the costs of the intervention.⁹)

However, the main reason for a lack of economic meta-analyses, as pointed out by Drummond, (1) is that cost-effectiveness analyses (CEAs) — but even more so in the case of cost-utility analyses (CUAs) or cost-benefit analyses (CBAs) — are essentially local. These economic analyses are intended to assist in local decision-making (i.e., whether or not a particular intervention is cost-effective depends on the local situation.) (1) More specifically, local context will influence:

- unit costs of the intervention;
- resources saved through averted interventions (e.g., whether or not hospitals have spare capacity will determine if reducing hospital lengths of stay will allow for more patients to be admitted); and
- outcomes (e.g., if quality-adjusted life years (QALYs) are used). The way quality of life is measured, through Health Utilities Index (HUI) for instance, will vary with population preferences which constitute a non-surmountable heterogeneity issue.

Therefore, as outlined by Anderson (2), there are only three situations in which a systematic review of economic evaluations can effectively be conducted. These are:

7 Economic evaluations are almost always about effectiveness (pragmatic trials comparing the intervention to usual practice) rather than efficacy (explanatory trials comparing the intervention to a theoretical control, usually of no intervention at all) and aimed at testing a theoretical prediction.

8 If the outcome is measured as units of treatment, the analysis is called Cost Effectiveness Analysis; if the outcome is measured as units of health (typically Quality-adjusted life years, or QALYs) the analysis is called Cost Utility Analysis.

9 An analysis measuring the outcome in dollars or any other monetary value (which often implies converting health outcomes into money using a value of life measure) is called Cost Benefit Analysis.

1. When developing a new decision model (i.e., to ascertain existing models, so as not to reinvent the wheel.)
2. When identifying the most relevant studies for local decision makers
3. When conducting a meta-regression to identify economic trade-offs and contextual determinants of success (i.e., at what cost and under what circumstances is the intervention cost-effective?)

We begin below with a presentation of systematic reviews covering primary studies published up to, and including, 2008. We have then added our own review of individual studies¹⁰ published since 2008. Most studies described below are pragmatic rather than theoretical: they test whether a given intervention is cost-effective, not whether a given theoretical proposition is true. As such, these studies compare an intervention to standard care or best practice rather than comparing the intervention to a fictitious practice describing a complete lack of any intervention. The majority of the studies are experimental rather than simulation-based. In most instances, the economic evaluations presented below were an exercise in providing some costing component to a randomized clinical trial.

Fall Prevention Interventions

Systematic Reviews of Fall Prevention Interventions

Two systematic reviews were identified that focused on fall prevention in the elderly. Corrieri (3) reviewed the cost-effectiveness of an intervention referred to as Preventive Home Visits (PHVs). This review attempted to determine whether PHVs are cost-effective and to understand the determinants of cost-effectiveness for such interventions. However, as mentioned in the introduction, determining cost-effectiveness is not achievable given the heterogeneous presentation of different economic findings. Secondly, identifying what makes an intervention cost-effective could not be determined in this review based on a lack of available evidence.

Inclusion criteria for primary studies were: studies on PHV interventions dealing with fall prevention, published in English or German, based on a randomized controlled trial (RCT) with a sample size of 100 or more, involving seniors aged 65 years or older, and including incremental cost-effectiveness ratios (ICERs) as a published outcome.

Search terms:

(home care[All Fields] OR home care services[All Fields] OR home nursing[All Fields]
OR house calls[All Fields] OR home visit[All Fields] OR hospital- based[All Fields])
AND (cost-benefit analysis[All Fields] OR cost savings[All Fields] OR costs and cost
analysis[All Fields] OR economic[All Fields] OR healthcare costs[All Fields] OR

¹⁰ The search and identification of systematic reviews and individual studies was conducted by Pablo Navarro and Stephanie O'Brien, both at Memorial University, St. John's, Newfoundland and Labrador, Canada.

hospital costs[All Fields]) AND aged[MeSH Terms] AND Randomized Controlled Trial [ptyp].

Using these search terms, 148 studies were retrieved from PubMed to which an extra 84 were added through references cited in the initial 148 articles. This produced a total of 232 studies. Excluding studies that were not about PHVs yielded a sample of 35 potential studies, eight of which presented an ICER, and of which five were ICERs focusing on fall prevention. The final sample comprised the following five studies (3):

- Hendricks et al. (Netherlands, 2008) - the intervention was pathogenic, meaning that the PHV was led by an occupational therapist (OT) and aimed at removing environmental hazards in the patient's home that might contribute to falls. Costs were identified as the difference between the sum of program costs and informal costs (e.g., the cost to the patients and their families from completing the recommended home modifications) net of fall-related healthcare costs averted as a result of the intervention. The outcomes were QALYs. The intervention did not change QALYs or costs at one year follow-up.
- Sahlen et al. (Sweden, 2008) - the intervention consisted of four PHVs over two years that were led by a nurse and a case manager. The PHVs were a mix of interventions in that they aimed to reduce falls (pathogenic interventions) while also enhancing the conditions for wellbeing (salutogenic interventions). The costs were direct program costs net of averted fall-related costs and outcomes were QALYs at four years. ICER = \$20,383 which was deemed cost-effective.
- Rizzo et al. (U.S., 1996) - the intervention consisted of an initial assessment conducted by a nurse and a physical therapist followed by a three-month program to reduce environmental and medication hazards (pathogenic) and to increase exercise (salutogenic). Costs were direct costs of the intervention net of averted fall-related costs. The outcome measure was the number of falls prevented at two year follow-up. The ICER was negative and hence the program saves costs.
- Robertson et al. (New Zealand, 2001) - the intervention was salutogenic in that it was comprised of five PHVs that provided balance training and enhanced capacity. Costs were direct costs net of averted hospitalization costs. It is not clear whether production losses are included since they were mentioned as included in the table but not in the text. The outcome measure was the number of falls prevented at one year follow-up. The cost per fall prevented was \$133 overall and the program saved costs particularly among seniors aged 80 years and older.
- Salkeld et al. (Australia, 2000) - the intervention consisted of a home assessment by an occupational therapist. The costs were direct net of the sum of hospitalizations, nursing home, home care and informal costs. The outcome measures were the number of falls prevented at one year follow-up and the cost-effectiveness of the intervention. The study found a negative ICER for sub-groups of the population with a history of falls (at least one event in the previous twelve months), and \$1,525 per fall prevented for elderly without a fall in the previous year.

To make them comparable across studies, costs were inflated to 2008 using the Organization for Economic Cooperation and Development (OECD) consumer price index. Costs were then converted to U.S. dollars using the OECD purchasing power parities (PPPs)¹¹ for GDP per U.S. dollar in 2008 (3). The main source of heterogeneity was the way in which outcomes were presented e.g., QALYs or number of falls prevented. The main conclusion is that PHV programs are deemed cost-effective depending on the denominator of the ICER (QALYs or falls prevented); how the QALY is calculated (i.e., what questionnaire is used to evaluate quality of life); how costs are calculated; and if averted costs are included. It is also clear that context matters— it is almost impossible to talk about the cost-efficiency of PHVs in absolute terms without knowing what personnel will provide the intervention and to whom.

The second review by Davis et al. (4) is broader in scope and focuses on home-based programs (rather than preventive home visits only). Here, the objective was to measure the value-for-money of various interventions conducted in the home to prevent falls, including, but not limited to, PHVs. English-language publications from 1945 to 2008 were searched using the following key words: fall prevention, economic evaluation, cost-effectiveness, cost utility, and cost benefit analysis. They retrieved 111 studies, 82 of which were excluded based on abstracts, yielding 29 studies. 25 of these studies were economic evaluations and nine were conducted in the community. One study presented a cost-benefit analysis, seven presented a cost-effectiveness analysis, and one presented both a cost-utility analysis and a cost-effectiveness analysis. All but one was based on RCTs. The non-RCT was a hypothetical intervention assumed to reduce falls by 25% (4).

The nine studies are as follows (4):

- Beard et al. (Australia, 2006) - the intervention consisted of a large community-wide educational program that ran over a period of five years. The costs were intervention costs net of averted admissions costs over the full five years with a total debt ratio (TDR) of 8%. The ratio of benefits to costs was 20.6 from the Australian societal perspective i.e., including payers and households.

¹¹ Purchasing Power Parity is a way to convert currency units from one country to another. Market exchange rates could be used since, in theory, they reflect purchasing power of national currencies. However, because exchange rates do not always adjust perfectly, or because they are the result of political decisions (on interest rates, for instance), they are often considered poor proxies for the relative purchasing power of two currencies (they measure it with considerable error). An alternative, called PPPs, is to measure directly how many currency units it would take in two different countries to buy the same basket of goods. One extreme example (called the BigMac Index) makes this approach clear: if the basket is comprised of one Big Mac only, and if it costs \$10CAD to buy it in Canada, but only \$8 USD to buy the same Big Mac in the United States, then one Canadian dollar will be said to be worth (i.e., to have the same purchasing power as) 0.8 US dollars. The operation is exactly the same as when one measures inflation: how much does it cost today to buy the same bundle of goods as last year? The main technical issue in calculating the index lies, of course, in the choice of the standard basket of goods (typically, if cheese represents 80% of the basket, the Euro will have more purchasing power than the Canadian dollar.)

- Campbell et al. (New Zealand, 2005) - the intervention included a home safety assessment by an occupational therapist and targeted individuals with severe visual impairment. Costs were direct program costs only and the ICER was £304 per fall prevented.
- Roberston et al. (New Zealand, 2001) - three interventions were studied that included a PHV by a nurse, a physiotherapist (PT) or a team of nurses with regular phone calls. Costs are measured differently for all three interventions such that the nurse-led PHV focused on program costs only; the PT-led PHV focused on program costs net of averted total healthcare costs; and the nurse team-led PHV focused on program costs net of averted hospitalization costs. ICERs were £173 per fall prevented, £81 per fall prevented (with a negative ICER for patients aged 80 years and older) and £794 per fall prevented, respectively.
- Sach et al. (United Kingdom, 2007) - the intervention consisted of expedited cataract surgery with a follow-up of one year. Costs were intervention costs net of total healthcare costs. ICER was £4,732 per fall prevented, £38,482 per QALY at one year, and £14,193 per QALY gained over the lifetime.
- Smith et al. (Australia, 1998) - a hypothetical intervention is modeled that is assumed to reduce falls by 25%. Costs were intervention costs net of fall-related costs and a TDR of 5% was used for the 10-year simulation. ICER was £1,052 per fall prevented.

The review converted all costs to 2008 Pounds Sterling using the Consumer Price Index and then PPP values in 2008 to convert currencies to Pounds Sterling (4). Barring surgery, interventions cost between £80 and £800 (approximately \$160 and \$1600) per fall prevented. One intervention showed cost savings (4). While cataract surgery was more expensive (at £4,732 per fall prevented), it did have the benefit of producing better vision. Targeting older individuals or those with recurrent falls makes interventions cost-saving. Converting benefits to U.S. dollars yields a large positive rate of return of 2000% but this hinges on how benefits of the intervention are converted. This may be something to investigate in more detail. The only intervention with a cost per QALY was cataract surgery, and it yields a cost of £38,482 per QALY, or approximately \$80,000, which was deemed effective or close to effectiveness thresholds which were approximately £30,000 in the United Kingdom and \$100,000 in North America. The authors of the study advocate for better data which would involve standardized experiments and the reporting of outcomes and costs for comparability. Note: some of the authors have been involved in the Otago study (Robertson, 2001a, b, and c).

Overall, there are two systematic reviews of fall prevention interventions (3, 4) that do not attempt to provide a meta-analysis of ICERs; rather, they describe five and nine evaluations, respectively, and report ICERs. Corrieri et al. conclude that ICER is largely, but not entirely, context-dependent as a result of the quality of personnel delivering the intervention. Davis et al. (4) also conclude that it is not possible to tell why a given intervention is successful based on objective reproducible parameters. These authors call for standardization of interventions in terms of both the implementation and outcome and costs measurements.

Primary Research Studies of Fall Prevention Interventions

Seven studies (published after 2008 and therefore not included in the systematic reviews described so far) were identified that provided results on 13 interventions. One study compared the costs of implementing an intervention across agencies but did not measure cost per outcome. Hence, it is not an economic evaluation. Therefore there were six articles covering 12 interventions of which nine are conducted in, or simulated based on, the U.S., two were conducted in the UK and one was conducted in Norway.

Frick, 2010 (5) - The seven interventions in the U.S. are evaluated based on a simulation such that each intervention has an estimated, rather than observed, cost. The estimated cost is based on values for the cost of labor and observational data for labor time of providers involved in the intervention. The seven interventions examined included: medication control (mostly withdrawal of psychotropic medications), Tai Chi, vitamin D supplementation, home modification, balance training, non-targeted multifactorial interventions, and multifactorial interventions targeted at high risk individuals. These interventions prevent hip fractures and the associated treatment costs. The outcomes of the interventions are:

1. Increased longevity (based on the trials conducted to measure the effectiveness of the intervention, published in a Cochrane collaboration review)
2. Better quality of life for individual patients through prevented fractures. Each year of life is weighted differently depending whether it is lived with or without a hip fracture, the relative weight being based on the literature
3. Averted costs to the healthcare system of treating the hip fractures

However, because QALYs are not converted into dollars (through willingness-to-pay or value of life measurement), averted costs are not treated as outcomes but rather subtracted from the cost of the intervention. As a result, the net cost of the intervention can be negative and no ICER is calculated. Averted costs are simulated on the basis of costs averted in the first year (average cost of treatment of hip fracture in the US is based on three cost studies) and an assumption that costs in the first year represent 45% of total treatment cost.

All interventions (except the multifactorial intervention on high risk patients¹²) saved costs to the healthcare system and, as a result, had a negative net cost. Controlling medication prevents a sufficient number of falls and is inexpensive to the extent that it generated \$1,000 savings per patient enrolled in the intervention over a lifetime; Tai Chi was comparable with \$800 savings to the integrated healthcare system. Vitamin D supplementation and home modification saved approximately \$400 to the system, non-targeted multifactorial intervention saved only \$200, and balance training was cost neutral. It must be noted that gains in QALYs are always minimal with half a month at best.

¹² Even though not mentioned in the paper, this implies the targeted multifactorial intervention is different from, and more resource-intensive than, the non-targeted intervention.

Church et al. (6) conducted an economic simulation whereby the average effectiveness of each intervention was based on a meta-analysis of interventions shown to have statistically significant effects. The objective was to compare cost-effectiveness over a range of interventions including home-based exercise, Tai Chi, vitamin D supplementation, education, clinical medication review, vision and eye examinations, expedited cataract surgery, cardiac pacing, psychotropic medication withdrawal, and various multiple and multifactorial interventions representing combinations of the other interventions.

A Markov model over ten years generated costs related to admissions to inpatient care, nursing homes, and ER visits, longevity, and QALYs in the intervention and control groups. Gains in QALYs are due to falls prevented. The main conclusion was that Tai Chi was the most cost-effective intervention at \$45,000 per QALY. Targeted interventions such as expedited cataract excision are more cost-effective at \$2,200 per QALY. Contrary to the conclusion of Frick (5), none of the interventions were cost-saving even though they are comparable. Further investigation may be required to determine whether this discrepancy can be explained by differences in the simulation methodologies used by these two studies, and what can be learned from this discrepancy.

Wu et al. (7) evaluated a program designed for the U.S Medicare and elderly who experienced a fall in the previous 12 months. The program paid for a full examination by a general practitioner (GP) in order to establish a rehabilitation program that was designed in consultation with the patient/client. The program also paid for eight therapist-led sessions over the course of six weeks. Using a meta-analysis of interventions on risk-reductions due to the intervention, dollar values for the cost of the intervention were based on Medicare data, estimates of base-line risk, and estimates of costs related to falls. It should be noted that the author used one study conducted in the U.S. in 1996 and projected the costs to the reference year of 2008. The findings suggested a cost of \$850 per fall prevented; however, the findings were not significant since the 95% confidence interval includes 0 (from -\$7,046 to +\$8,200).

The Norwegian study (8) consisted of a balance-training program, and provided an estimate of averted costs close to that of vitamin D and home modification in the US of \$400. The comparable program in the U.S. did not have cost-savings and was not targeted whereas the Norwegian program targeted women aged 80 years and older. Targeting seems to make the intervention more efficient. The costs are simulated based on Norwegian unit costs.

The two studies conducted in the British National Health Service (NHS) used observed costs collected alongside the trial. An intervention that referred high-risk individuals admitted to the ER as a result of a fall to a community fall prevention program was effective at saving costs to the NHS and Social Services, equivalent to \$2,500 saved over one year per person enrolled (9). The intervention also generated substantial gains in quality and quantity of life - almost one month gained for a one-year period of observation. The other study conducted in the NHS (10) provided an intervention to community dwellers aged 70 years and older at high risk of falling and found a cost of \$5,300 per prevented fall.

Studies Focus on Averted Costs

Most studies make the case that spending on preventing falls will not only improve quality and quantity of life but will also save dollars to the healthcare system. The main argument is that treating a hip fracture is costly and that every prevented fracture will save enough money to allow spending on prevention. However, it must be noted that two studies only reach this conclusion based on observational data (8, 9). A balance-training program saved \$400 per patient to the Norwegian healthcare system, and a narrowly targeted program to refer patients identified in the ER after a fall¹³ saved as much as \$2,500 per patient to the English NHS. The issue with these observational studies is that they are highly contingent on the specific intervention itself, e.g., where it was provided, by whom, to whom etc.

Frick (5) and Church (6) provided a more generalizable estimate because their averted costs were estimated based on data for the entire country and everything is simulated. The trade-off is the need to make assumptions, e.g., on the proportion of fallers who will sustain a hip fracture (Frick used 2% as the baseline assumption). Frick's estimate of lifetime cost of a hip fracture is approximately \$87,000 ± \$21,000 (or an interval of [\$66,000; \$108,000]), based on the average cost of initial treatment, the assumption that cost in the first year represents 45% of total lifetime cost, an average of 7.2 years of life expectancy after a hip fracture, and a Time Discount Rate of 3%. Because 2% only of fallers will sustain a hip fracture, one has to spend 50 times on fall prevention to get one reduction in the lifetime cost of a hip fracture. If the cost is \$66,000 (lower bound of the estimate), the neutrality cost of the intervention is $\$66,000/50 = \$1,320$.

If the intervention reduced the risk of fall by Y%, the maximum cost of the intervention per included patient must be $\$1,320 * Y/2$. For instance, as they report that vitamin supplementation reduced the risk by 25%, for this intervention to be cost saving, the maximum cost of the intervention should be \$305 (conservative) or \$435 (average.) Frick provides a cost-per-patient of \$99 (5) but it is not clear whether this a cost per year (and the intervention would have to be repeated for the entire 7.2 years of expected duration of life, or, with a 3% TDR, a total cost of \$635, which would make it cost-generating rather than cost saving) or a total cost, in which case the intervention would save between \$204 (lower bound of the treatment estimate) and \$336 (average treatment cost)¹⁴. It is interesting to note that the observational study presented by Irvine (10) finds a much higher cost per fall prevented of \$5,300 which would make the intervention clearly not cost-saving even though it might still be a low cost per QALY type of intervention.

Overall, if we assume the lifetime cost of treatment for a hip fracture to be \$87,000 then there is reason to believe that some fall prevention intervention may save costs to the healthcare system. This, however, is based on a very strong assumption that the healthcare system reimburses costs

¹³ As a result, it is an intervention to prevent recurring falls

¹⁴ I did not find the \$400 mentioned above, but these are based on a graph, therefore the \$336 must be a good approximation of what they actually find.

through pure retrospective payments, as might be the case in the U.S. for some private hospitals. In other environments where hospitals are funded under a global budget, prevention treatments will not actually save costs - at the very least, they will save only the variable portion of costs such as physician fees or medications. However, such treatments will free up resources originally allocated to other interventions or programs and may subsequently reduce wait times for fall prevention programs. As a result, it would make more sense to translate prevented hip fractures into some measure of benefit, such as wellbeing gains due to reduced waiting times, that could be added to the gains due to QALYs (a conversion of QALYs into actual dollars would be needed), and to present an ICER i.e., the gains in units of benefit per unit of cost of the intervention rather than averted costs. This approach would amount to a cost-benefit analysis that (although it may appear to cost the healthcare system) would improve overall cost-efficiency.

Need to Transpose to Canadian Costs and Context

It is clear that care must be taken when transposing these results to the Canadian context. In particular, there is a need to consider the global budgets for hospitals, the epidemiology of hip fractures, or other consequences of falls in Canadian elderly.

Targeting is Crucial to Net Cost Being Negative

An important conclusion drawn from these primary studies of fall prevention is that targeting makes a crucial difference. Interventions are cost-saving and could be cost-effective in different environments. Interventions could also be cost-effective in some populations and less so in other populations.

Studies of Caregiver Support Interventions (including Respite Care)

Jones et al. (11) reviewed CEAs of interventions that report outcomes for caregivers of seniors with dementia usually through questionnaires such as the Short Form Health Survey (SF-36). Of the 12 primary studies included, only four could find any significant positive impact on caregivers. While there was evidence on intermediate outcomes such as sense of control there were no positive impacts on QALYs. Even though intermediate outcomes are very important and are certainly worth supporting financially, they are hard to compare across studies or to include in a quantitative measure such as an ICER.

Mason et al. (12) reviewed five economic evaluations of respite care interventions (in the form of day care) to caregivers of elderly patients aged 65 years and older. None of the five studies measured caregivers' QALYs but there was agreement that caregivers find day care satisfactory for a reasonable cost. No ICERs were provided in the analysis.

Shaw et al. (13) reviewed effectiveness and cost-effectiveness of breaks in care interventions and the effects on caregivers. Five economic studies were identified, three of which were quasi-

experimental and two of which were RCTs. Two were conducted in the U.S. and one each was conducted in the UK, Canada, and Spain. All study interventions centered on adult day care. Three studies failed to find any effect of providing day care (free or subsidized) on caregiver burden (13). One article studied the impact of a family support unit providing day care at home and identified a reduction in the use of long-term care beds to a cost of \$3,200 per patient (13). Another study found subsidized day care decreased the onset of depression among caregivers to a cost of \$7 per caregiver per day (13).

Studies of Integrated Care

Systematic Reviews of Integrated Care Interventions

MacAdam (14) - seven economic studies of integrated care were identified. Two studies were categorized as cost-saving, one as cost-effective, and four as neither cost-effective or as unclear.

Cost-Saving or Cost-Effective Integrated Care Interventions

One article studied an intervention based on case management, multi-disciplinary geriatric assessment, involvement of general practitioners, and improved access to health and social services in Italy. This study found a reduction in admissions to nursing homes, inpatient care, and primary care making the intervention cost-effective. Overall, the cost of the intervention net of savings due to averted admissions and utilization is such that cost per improved physical and cognitive ability was low. Hence, the intervention is cost-effective. Another article studied an intervention providing case management, multi-disciplinary assessment, home support and 24-hour call services in Canada. It was found to be cost-effective since it increased satisfaction without increasing costs to the system or caregivers nor did it increase burden for caregivers. However, it was not found to be cost-saving. Lastly, an intervention based on case management, improved access to health and social services, and self-management education in Australia found a sharp reduction in ER utilization (21%), inpatient admissions (28%) and nursing home admissions (19%), making the intervention cost-saving.

Non Cost-Saving or Non Cost-Effective Integrated Care Interventions

The Program of All-inclusive Care of the Elderly (PACE) offers case-management, multi-disciplinary teams, respite care, improved access to health and social services and is based on capitation payment. PACE was found to decrease mortality, improve health and quality of life but it was more costly. It was not stated if PACE was cost-effective. Social Health Maintenance Organization (HMO) in the US was initially not cost-effective when it focused on capitation payment only. A new version that included capitation, case-management, and improved access to health and social services reduced nursing home placements but no measure of cost-effectiveness was provided. Lastly, a study of SA Health Plus in Australia that involved assessment, care planning, and disease-specific

clinical guidelines indicated improved wellbeing but had high costs associated with it, therefore making it non cost-effective.

Tappenden et al. (15) studied home-based, nurse-led health promotion interventions on elderly patients. This review of economic evaluations focused on UK-based studies and was able to identify three evaluations. One consisted of an early-discharge and integrated care protocol for patients hospitalized for severe consequences of COPD which found the intervention saved £603 (\$1,200) per patient per year. A study of counseling for patients with Parkinson Disease found that the cost of the intervention was greater than the savings generated through averted costs while producing no greater beneficial effects on outcomes compared to the control group. Lastly, an early discharge and rehabilitative service (EDRS) found savings although not precisely estimated (CI [-754 to +4,208]). Overall, only the early-discharge and integrated care protocol conducted in the UK seemed cost-saving to the National Health Service (NHS).

Primary Research Studies of Integrated Care Interventions

The next group of studies concerns itself with integrated care that includes gatekeepers, patient advocacy, and consolidated systems. The main goal of integrated care is to promote home and community care, substituting away-from-hospital and institutional care as much as possible.

Integrated care improved quality such that patients prefer being treated or taken care of at home rather than in a hospital or nursing home. Integrated care may reduce seniors' risk of experiencing adverse health outcomes but it is costly - the more it reduces the risk, the more it costs. Some interventions sell themselves as cost-saving to the healthcare system or at the societal level (including indirect costs but never intangible costs to relatives); of shifting the burden from professionals to lay persons; and some as costly but potentially cost-effective (either if the cost per individual treated is low enough in a cost-effectiveness analysis or if the cost per unit of health such as QALYs is low enough in a cost-utility analysis.)

Cost-Saving Interventions

Firstly, we will look at a study that compares the costs of generic home care versus generic institutional care (such as care in a hospital or nursing home) (16). The term 'generic,' in this context means that it was not based on a trial assessing the relative costs of a specific intervention versus the costs associated with care as usual. Rather, the study was based on observational data where the costs associated with home care were compared to costs associated with institutional care. To avoid spurious comparisons, the level of care need was controlled; however, unobservable selection effects cannot be ruled out. Hence, the comparison can still be spurious since these selection effects are neither controlled for nor modeled. If patients staying at home are easier to care for or treat, for reasons beyond observable need, the comparison is meaningless. The comparison was conducted within three countries (Ireland, Italy, and Denmark) as well as between these countries, based on a survey conducted simultaneously in three cities (one in each country) (16).

The survey detailed the amount and origin of care received by elderly from unpaid family caregivers, a paid caregiver, either at home or in an institution. Total cost was then calculated for each one of five levels of dependency. The main issue was that some costs had to be imputed, namely those of unpaid family caregivers. These estimations relied on using the average industrial wage as the opportunity cost of family caregivers weighted by the proportion of time these caregivers would spend at work if they were not caring for their relatives. It was unclear from the paper how these weights were calculated, whether they varied across individuals in the survey, or whether the same weights applied to all. The paper stated that 25% of the average industrial wage represented the opportunity cost of caring for a relative instead of enjoying leisure time for those caregivers who would not be employed even if they were not providing care. Using these rather arbitrary assumptions, the authors found that home care is often, but not consistently, less expensive per person than institutional care. The main finding is that home care is more cost-effective at lower levels of dependency but institutions might be more cost-effective for seniors with higher levels of dependency. This finding varied across countries.

Hermus (17) conducted a macro-measure of total cost of home care in Canada, as opposed to a cost-effectiveness analysis. However, Hermus does discuss what the total cost would be if long-term care were efficient in Canada (i.e., if there were no provision of unnecessary institutional care.) This definition is based on a review of the Canadian literature (18).

Program GRACE (Geriatric Resources for Assessment and Care of the Elderly) is a local initiative that provides coordinated care by a primary care doctor assisted by a nurse practitioner and a social worker (19). The paper presented savings for high-risk seniors only. However, among low-risk seniors, the cost of the intervention might very well exceed the gains. The paper indicated that the average rate of hospitalization and subsequent total costs decreased between year 1 and 2, and between year 2 and 3 for high-risk patients for both the intervention and the control. If these seniors were truly high-risk the rates of hospitalization and total costs would be expected to increase as they age unless some die and have \$0 cost and no hospitalizations, but that would not be a good way to account for the success of the interventions. Overall, the paper was poor quality in assessing the effect of the intervention. Lastly, the intervention was cost-saving as long as the cost of coordination remains reasonable. This might not be the case if the intervention were rolled out with the perceived shortage of primary care doctors, geriatricians, and nurses that it requires i.e., if the healthcare system needed substantially more of these positions, the unit cost would increase dramatically.

Counsell et al. (20) presented results on the same GRACE trial but in a more transparent way. It showed that GRACE was not cost-saving on the full sample even though it is potentially cost-saving on high-risk seniors – approximately \$1,500 in the first two years and another \$1,000 in the third year. There was no discount rate - the cost of the intervention was incurred in year 1, with cost-savings starting in year 3. Table 2 explains the yearly decreasing costs in the control and intervention groups: decedents are included in the year of death but not in the year after death. Since the last year of life is more costly, costs are higher in year 1. It would make much more sense to run the

comparison on the sub-sample surviving at the end of three years adding relative mortality in the two groups as an outcome measure. It would be interesting to compare the cost of dying in both groups (e.g., does the intervention save costs through cutting out the last year of life?)

Non Cost-Saving but Potentially Cost-Effective Interventions

Program EASY - integrated care of older patients in the Netherlands found an ICER of EUR \$3,500 (cost per treatment) but the sample was so small that the intervention dominated in only 34% of cases (21). The willingness-to-pay (WTP) would need to be EUR \$34,000 to make sure this intervention is cost-effective.

Long et al. (22) presented the results of a Kaiser-Permanente Patient Advocacy intervention among frail very old patients with an average age of 80 years. The total cost was higher in the intervention arm (\$4,000 per patient) but patients lived longer (656 days versus 550 on average over a two-year follow-up), yielding a cost per day of life of approximately \$40, which seems reasonable. However, those patients are so frail that the probability of death is very high (25% per year) and, as a result, the intervention costs \$42 million per life saved. This raises the thorny issue of the choice of outcome in a cost-utility analysis and amounts actually used in conducting a cost-benefit analysis. Conventional wisdom is to use a \$100,000 per year of life saved. ($40 \times 400 = 16,000$, bottom up is CE; $42 \text{ M} / 4 = 10 \text{ M}$ per year, top down is not cost-effective).

Kronborg et al. (23) presented an economic evaluation alongside an RCT of an intervention consisting of preventive home visits. It was randomized at the municipality level¹⁵ and included 4,000 community-dwelling individuals aged 75 or 80 years old with 2,000 in each of the intervention and control groups. Because analyses were conducted separately for the two ages, the sample size was 1,000 in each intervention arm which was quite substantial. Surprisingly, the economic evaluation was conducted before efficacy had been assessed. Unfortunately, it turns out that the intervention had no proven efficacy (95% of CI's included 0 in both age groups). Therefore, no conclusions could be drawn from a cost-effective perspective.

Brown et al. (24) was not an intervention, but rather a study showing that the need for long-term care is not well assessed in New Zealand. It also indicated that a geriatric-based assessment (InterRAI MDS-HC) would lead to an increase in prescribed medical care services such as prevention and acute care, but a decrease in disability services such as home care. As a result, it would cost substantially more but would better address the needs of the elderly population.

¹⁵ This helps explain why the Confidence Intervals are so wide, despite the large number of subjects included – variances must be estimated taking clustering effects into account. Also the researchers estimate costs based on observed averages (the dependent variable is not transformed), not taking into account the skewed nature of hospital costs, nor the bias linked to 0s in the distribution. As a result, their costs estimates are certainly spurious.

Conclusion

We identified three types of interventions: fall prevention, caregiver support, and integrated care (i.e., changing the organization of care to improve coordination). Systematic reviews conducted before 2008 found that fall prevention interventions cost more than they save (in averted post-fall interventions) but they can be cost-effective or not depending on the quality of personnel delivering the fall prevention intervention. It is impossible to characterize the objective factors of successful interventions due to the heterogeneity in the ways evaluations are presented. Some individual studies published after 2008 find cost-saving fall prevention interventions (averted costs are higher than the cost of the intervention), but this applies mostly in the US, in systems where hospitals are paid retrospectively for each case they treat. This is not easily transferrable to Canada, where hospitals are often under global budgets and no actual savings can be made through averted admissions. The benefit of such interventions would be to decrease waiting lists for admissions to hospitals and one would need to convert such a benefit into a dollar value to run a cost-benefit analysis of fall prevention programs. Another conclusion of these studies and the systematic reviews is that targeting is crucial to cost-effectiveness in fall prevention: delivering the program to too large a group, including individuals at low risk of falling, makes it cost-ineffective.

Interventions to support caregivers work well on intermediate outcomes, such as satisfaction or depression, but findings are mixed on cost-effectiveness. Many studies seem to find that these outcomes are reached at a high cost. Overall, the quality of these studies prevents one from reaching a firm conclusion on the cost-effectiveness of support interventions.

Last, integrated care is not cost-saving in general. Contrary to the assumption that preventing institutionalization would save costs, studies find that the costs of preventing institutionalization usually exceed the savings of averted institutionalizations. The only exception is an early-discharge program conducted in the UK. However, even though these programs do not save costs to the healthcare system, they can be cost-effective i.e., the cost per outcome is reasonable. Here again, results are mixed, and effectiveness is highly context- and targeting-dependent.

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