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Care Coordination for Postacute Stroke, Chronic Obstructive Pulmonary Disease, and Heart Failure Clients: An Economic Rapid Review

Health Quality Ontario

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Conflict of Interest Statement

All authors in the Evidence Development and Standards branch at Health Quality Ontario are impartial. There are no competing interests or conflicts of interest to declare.

Rapid Review Methodology

Rapid reviews must be completed in a 2- to 4-week time frame. Clinical questions are developed by the Evidence Development and Standards branch at Health Quality Ontario, in consultation with experts, end users, and/or applicants in the topic area. A systematic literature search is then conducted to identify relevant systematic reviews, health technology assessments, and meta-analyses. The methods prioritize systematic reviews, which, if found, are rated by AMSTAR to determine the methodological quality of the review. If the systematic review has evaluated the included primary studies using the GRADE Working Group criteria (http://www.gradeworkinggroup.org/index.htm), the results are reported and the rapid review process is complete. If the systematic review has not evaluated the primary studies using GRADE, the primary studies in the systematic review are retrieved and the GRADE criteria are applied to 2 outcomes. If no systematic review is found, then RCTs or observational studies are included, and their risk of bias is assessed. All rapid reviews are developed and finalized in consultation with experts.

About Health Quality Ontario

Health Quality Ontario is an arms-length agency of the Ontario government. It is a partner and leader in transforming Ontario's health care system so that it can deliver a better experience of care, better outcomes for Ontarians, and better value for money.

Health Quality Ontario strives to promote health care that is supported by the best available scientific evidence. The Evidence Development and Standards branch works with expert advisory panels, clinical experts, scientific collaborators, and field evaluation partners to conduct evidence-based reviews that evaluate the effectiveness and cost-effectiveness of health interventions in Ontario.

Based on the evidence provided by Evidence Development and Standards and its partners, the Ontario Health Technology Advisory Committee—a standing advisory subcommittee of the Health Quality Ontario Board—makes recommendations about the uptake, diffusion, distribution, or removal of health interventions to Ontario's Ministry of Health and Long-Term Care, clinicians, health system leaders, and policy-makers.

Health Quality Ontario's research is published as part of the *Ontario Health Technology Assessment Series*, which is indexed in MEDLINE/PubMed, Excerpta Medica/Embase, and the Centre for Reviews and Dissemination database. Corresponding Ontario Health Technology Advisory Committee recommendations and other associated reports are also published on the Health Quality Ontario website. Visit http://www.hqontario.ca for more information.

About Health Quality Ontario Publications

To conduct its rapid reviews, the Evidence Development and Standards branch and its research partners review the available scientific literature, making every effort to consider all relevant national and international research; collaborate with partners across relevant government branches; consult with expert advisory panels, clinical and other external experts, and developers of health technologies; and solicit any necessary supplemental information.

In addition, Evidence Development and Standards collects and analyzes information about how a health intervention fits within current practice and existing treatment alternatives. Details about the diffusion of the intervention into current health care practices in Ontario add an important dimension to the review. Information concerning the health benefits, economic and human resources, and ethical, regulatory, social, and legal issues relating to the intervention may be included to assist in making timely and relevant decisions to optimize patient outcomes.

Disclaimer

This rapid review is the work of the Evidence Development and Standards branch at Health Quality Ontario, and is developed from analysis, interpretation, and comparison of published scientific research. It also incorporates, when available, Ontario data and information provided by experts. As this is a rapid review, it may not reflect all the available scientific research and is not intended as an exhaustive analysis. Health Quality Ontario assumes no responsibility for omissions or incomplete analysis resulting from its rapid reviews. In addition, it is possible that other relevant scientific findings may have been reported since completion of the review. This report is current as of the date of the literature search specified in the Research Methods section. Health Quality Ontario makes no representation that the literature search captured every publication that was or could be applicable to the subject matter of the report. This rapid review may be superseded by an updated publication on the same topic. Please check the Health Quality Ontario website for a list of all publications: http://www.hqontario.ca/evidence/publications-and-ohtac-recommendations.

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List of Abbreviations

ADL	Activities of daily living
CCAC	Community care access centre
CHF	Congestive heart failure
COPD	Chronic obstructive pulmonary disease
IQR	Interquartile range
NICE	National Institute for Health and Care Excellence
PGCMS	Philadelphia Geriatric Center Morale Scale
QALY	Quality-adjusted life-year
RCT	Randomized controlled trial
RMI	Rivermead Mobility Index
THETA	Toronto Health Economics and Technology Assessment Collaborative

Background

The Programs for the Assessment of Technology in Health (PATH) Research Institute/Toronto Health Economics and Technology Assessment (THETA) Collaborative was commissioned by Health Quality Ontario to evaluate the cost-effectiveness and predict the long-term costs and effects of a technique for disease. Published economic evaluations are reviewed, and the structure and inputs of the economic model used to estimate cost-effectiveness are summarized. The results of the economic analyses are presented for the technique versus comparator, and the budget impact of implementing each intervention is estimated.

Health Quality Ontario conducts full evidence-based analyses, including economic analyses, of health technologies being considered for use in Ontario. These analyses are then presented to the Ontario Health Technology Advisory Committee, whose mandate is to examine proposed health technologies in the context of available evidence and existing clinical practice and to provide advice and recommendations to Ontario health care practitioners, the broader health care system, and the Ontario Ministry of Health and Long-Term Care.

DISCLAIMER: Health Quality Ontario uses a standardized costing method for its economic analyses. The main cost categories and associated methods of retrieval from the province's perspective are described below.

Hospital costs: Ontario Case Costing Initiative cost data are used for in-hospital stay, emergency department visit, and day procedure costs for the designated International Classification of Diseases diagnosis codes and Canadian Classification of Health Interventions procedure codes. Adjustments may be required to reflect accuracy in the estimated costs of the diagnoses and procedures under consideration. Due to difficulties in estimating indirect costs in hospitals associated with a particular diagnosis or procedure, Health Quality Ontario normally defaults to a consideration of direct treatment costs only.

Non-hospital costs: These include physician services costs obtained from the Ontario Benefits for Physician Services, laboratory fees from the Ontario Schedule of Laboratory Fees, drug costs from the Ontario Drug Benefit Formulary, and device costs from the perspective of local health care institutions whenever possible, or from the device manufacturer.

Discounting: For cost-effectiveness analyses, a discount rate of 5% is applied (to both costs and effects/QALYs), as recommended by economic guidelines.

Downstream costs: All reported downstream costs are based on assumptions of population trends (i.e., incidence, prevalence, and mortality rates), time horizon, resource utilization, patient compliance, health care patterns, market trends (i.e., rates of intervention uptake or trends in current programs in place in the province), and estimates of funding and prices. These may or may not be realized by the Ontario health care system or individual institutions and are often based on evidence from the medical literature, standard listing references, and educated hypotheses from expert panels. In cases where a deviation from this standard is used, an explanation is offered as to the reasons, the assumptions, and the revised approach.

The economic analysis represents ***an estimate only***, based on the assumptions and costing methods explicitly stated above. These estimates will change if different assumptions and costing methods are applied to the analysis.

NOTE: Numbers may be rounded to the nearest decimal point, as they may be reported from an Excel spreadsheet.

As legislated in Ontario's *Excellent Care for All Act*, Health Quality Ontario's mandate includes the provision of objective, evidence-informed advice about health care funding mechanisms, incentives, and opportunities to improve quality and efficiency in the health care system. As part of its Quality-Based Procedures (QBP) initiative, Health Quality Ontario works with multidisciplinary expert panels (composed of leading clinicians, scientists, and administrators) to develop evidence-based practice recommendations and define episodes of care for selected disease areas or procedures. Health Quality Ontario's recommendations are intended to inform the Ministry of Health and Long-Term Care's Health System Funding Strategy.

For more information on Health Quality Ontario's Quality-Based Procedures initiative, visit www.hqontario.ca.

Objective of Analysis

The objective of this rapid review is to summarize the peer-reviewed literature on the cost-effectiveness of care coordination for post-acute stroke, chronic obstructive pulmonary disease (COPD), and congestive heart failure (CHF) patients.

Clinical Need and Target Population

A case manager is defined as a health care worker who assesses a patient's needs and develops a care plan for home care services, coordinates home care provision, and guides the patient through the health and social support systems. Care coordination plays an important role in enabling community care access centres (CCACs) to fulfil their mandate of providing home care and managing the process of placing clients in long-term care facilities. More specifically, the case manager is responsible for assessing clients' needs for home care services and determining their eligibility; developing a care plan for each client; coordinating care provision; reassessing need, as necessary; supporting the client through social and health support systems; and discharging the client from home care. (1)

Working at the client level, care coordination is expected to provide people with timely and appropriate home care services in an environment with limited health care resources. With the aid of case managers, people should receive the care they need, resulting in improved health outcomes and efficient use of home care services. (1) However, care coordination does come at a cost: CCACs must hire and train case managers. The cost-effectiveness of care coordination is unknown. Thus, this economic rapid review was conducted to briefly search for economic evidence on care coordination.

Rapid Review

Research Question

What is the cost effectiveness of care by a case manager for post-acute patients with stroke, congestive heart failure, or chronic obstructive pulmonary disease? The effectiveness can be measured per quality-adjusted life year or per clinical outcome.

Research Methods

Literature Search

Literature searches were performed on January 20 and 22, 2014, using Ovid MEDLINE, Ovid MEDLINE In-Process and Other Non-Indexed Citations, and Wiley Cochrane Library databases, including NHS Economic Evaluation Database, for studies published from January 1, 2009, to January 21, 2014. The search terms were identical to those in the search conducted for the clinical evidence rapid review on the same subject, with additional limits to restrict results to economics-related studies. (Appendix 1 provides details of the search strategies.) As well, given the smaller number of relevant economic articles anticipated, the economic rapid review included observational studies. Titles and abstracts were reviewed by a single reviewer and, for those studies potentially meeting the eligibility criteria, full-text articles were obtained and reviewed. Reference lists were also examined for any additional relevant studies not identified through the search.

Inclusion Criteria

- English-language full-text publications
- published between January 1, 2009 and January 21, 2014
- post-acute adult patients with stroke, COPD, or CHF
- care coordination intervention

Exclusion Criteria

- letters, editorials, historical articles

Outcomes of Interest

- costs
- quality-adjusted life-years (QALYs)
- clinical outcomes

Expert Panel

In November 2013, an Expert Advisory Panel on Post-Acute Community-Based Care for Stroke Patients was struck. Members of the panel included physicians, nurses, allied health professionals, and personnel from the Ministry of Health and Long-Term Care.

The role of the expert advisory panel was to provide advice on primary stroke patient groupings; to review the evidence, guidance, and publications related to defined stroke patient populations; to identify and prioritize interventions and areas of community-based care; to advise on the development of a care pathway model; and to develop recommendations to inform funding mechanisms. The role of panel members was to provide advice on the scope of the project, the methods used, and the findings. However, the statements, conclusions, and views expressed in this report do not necessarily represent the views of the expert panel members.

Quality of the Economic Evidence

To determine the usefulness of each identified study for decision-making, we applied a modified version of a methodology checklist for economic evaluations, developed by the National Institute for Health and Care Excellence (NICE) in the United Kingdom. (2) The original checklist was used to inform the development of clinical guidelines by NICE; the wording of the questions was modified to remove references to guidelines and to make it Ontario specific. A summary of the number of studies judged to be directly applicable, partially applicable, and not applicable to the research question is presented in Appendix 2.

Results of Rapid Review

A total of 1,514 articles published from January 1, 2009 to January 21, 2014 were identified by Ovid MEDLINE. The Cochrane databases found 279 publications from the same period. All titles and abstracts were reviewed.

After an initial review, a total of 1,783 abstracts were excluded and the full text of the remaining 10 papers were reviewed (Appendix 2). Upon critical appraisal of the full text articles, no studies met the criteria for inclusion. Two of the studies did not have the appropriate study population (a chronic disease population was explored, but results for the diseases of interest—stroke, COPD, and CHF—were not stratified). Seven studies did not have the appropriate intervention, with 5 studies investigating a patient education program, 1 study exploring the provision of hospital services in a home setting, and 1 study on transitional care provision. In the 1 remaining study, neither the population nor the intervention were appropriate for our review. Since no studies were applicable, the level of limitations was not assessed.

Limitations

The results of this economic rapid review are limited because, due to the time restrictions established in the rapid review methodology, the literature search was limited to a 5-year timeframe. Thus, the review did not consider publications from before 2009.

Conclusions

No studies were identified that examined the cost-effectiveness of care by a case manager for post-acute patients with stroke, congestive heart failure, or chronic obstructive pulmonary disease. Therefore, the cost-effectiveness is unclear.

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Health Quality Ontario's Expert Advisory Panel on Post-Acute, Community-Based Care for Stroke Patients

Name	Affiliation(s)	Appointment(s)
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Dr Mark Bayley	Toronto Rehabilitation Institute; University of Toronto	Medical Director of the Neuro-rehabilitation Program; Associate Professor
Karyn Lumsden	Central West Community Care Access Centre (CCAC)	Vice President of Client Services
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Dr Leanne Casaubon	Toronto Western Hospital; University of Toronto	Assistant Professor-Division of Neurology, Stroke Program
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Dr Robert Teasell	Stroke Rehabilitation Program at Parkwood Hospital; Western University	Medical Director; Professor
Family Medicine		
Dr Adam Stacy	Ontario Medical Association	Board Member
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Name	Affiliation(s)	Appointment(s)
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Paula Gilmore	London Health Sciences Centre, Southwestern Ontario Stroke Strategy	Community and Long Term Care Coordinator
Mathew Meyer	Ontario Stroke Network (OSN)	Project Coordinator
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Patient Representation		
Daniel Brouillard	Kingston Heart Clinic	Internist, Stroke Survivor
Nicole Martyn-Capobianco	University of Guelph-Humber	Program Head of Human Services

Appendices

Appendix 1: Literature Search Strategies

Search date: January, 20, 2014
Databases searched: OVID MEDLINE 1946 to January Week 1 2014, MEDLINE In-Process and Other Non-Indexed Citations January 20, 2014
Limits: English language, not letter, editorial or historical article, 2009-current
Filters: Economic evaluation filter

#	Searches	Results
1	exp Patient Discharge/ or exp Aftercare/ or exp Convalescence/ or "Continuity of Patient Care"/ or exp "Recovery of Function"/ or ((patient* adj2 discharge*) or after?care or post medical discharge* or post?discharge* or convalescen*).ti,ab.	95279
2	exp Stroke/ or exp brain ischemia/ or exp intracranial hemorrhages/ or (stroke or poststroke or tia or transient ischemic attack or ((cerebral vascular or cerebrovascular) adj (accident* or infarct*)) or CVA or cerebrovascular apoplexy or brain infarct* or (brain adj2 isch?emia) or (cerebral adj2 isch?emia) or (intracranial adj2 h?emorrhag*) or (brain adj2 h?emorrhag*)).ti,ab.	256135
3	exp Heart Failure/ or (((cardia? or heart) adj (decompensation or failure or incompetence or insufficiency)) or cardiac stand still or ((coronary or myocardial) adj (failure or insufficiency))).ti,ab.	143981
4	exp Pulmonary Disease, Chronic Obstructive/ or exp Emphysema/ or (copd or coad or chronic airflow obstruction* or (chronic adj2 bronchitis) or emphysema or (chronic obstructive adj2 (lung* or pulmonary or airway* or airflow* or respiratory or bronchopulmonary) adj (disease* or disorder*))).ti,ab.	74639
5	exp Pneumonia/ or (pneumoni* or peripneumoni* or pleuropneumoni* or lobitis or ((pulmon* or lung*) adj inflammation*)).ti,ab.	157009
6	or/1-5	694411
7	exp Caregivers/ or exp Case Management/ or exp Patient Care Management/ or exp Social Support/ or exp Counseling/ or exp Patient Education as Topic/ or (liaison* or case manage* or care manage* or counsel* or healthcare worker* or health-care worker*).ti,ab.	707354
8	economics/ or exp "costs and cost analysis"/ or economics, dental/ or exp "economics, hospital"/ or economics, medical/ or economics, nursing/ or economics, pharmaceutical/ or (economic$ or cost or costs or costly or costing or price or prices or pricing or pharmacoeconomic$ or (expenditure$ not energy) or (value adj1 money) or budget$).ti,ab.	568574
9	(((energy or oxygen) adj cost) or (metabolic adj cost) or ((energy or oxygen) adj expenditure)).ti,ab.	19122
10	8 not 9	564202
11	(letter or editorial or historical article).pt.	1440200
12	10 not 11	536436
13	Animals/ not (Animals/ and Humans/)	3772468
14	12 not 13	505738
15	6 and 7 and 14	5388
16	limit 15 to english language	5012
17	limit 16 to yr="2009 -Current"	1514

Search date: January 22, 2014
Databases searched: Cochrane Library Databases (Cochrane Database of Systematic Reviews, Cochrane Central Register of Controlled Trials, Cochrane Methodology Register, Database of Abstracts of Reviews of Effects, Health Technology Assessment, NHS Economic Evaluation Database)
Limits: English language, not letter, editorial or historical article
Filters: Economic evaluation filter

ID	Search	Hits
1	MeSH descriptor: [Patient Discharge] explode all trees	980
2	MeSH descriptor: [Aftercare] explode all trees	408
3	MeSH descriptor: [Convalescence] explode all trees	119
4	MeSH descriptor: [Continuity of Patient Care] explode all trees	481
5	MeSH descriptor: [Recovery of Function] explode all trees	2615
6	((patient* adj2 discharge*) or after?care or post medical discharge* or post?discharge* or convalescen*):ti,ab,kw	938
7	#1 or #2 or #3 or #4 or #5 or #6	5130
8	MeSH descriptor: [Stroke] explode all trees	4720
9	MeSH descriptor: [Brain Ischemia] explode all trees	2115
10	MeSH descriptor: [Intracranial Hemorrhages] explode all trees	1244
11	stroke or tia or transient ischemic attack or cerebrovascular apoplexy or cerebrovascular accident or cerebrovascular infarct* or brain infarct* or CVA or (brain adj2 isch?emia) or (cerebral adj2 isch?emia) or (intracranial adj2 hemorrhag*) or (brain adj2 hemorrhag*):ti,ab,kw (Word variations have been searched)	20701
12	#8 or #9 or #10 or #11	21989
13	MeSH descriptor: [Heart Failure] explode all trees	5251
14	(((cardia? or heart) adj (decompensation or failure or incompetence or insufficiency)) or cardiac stand still or ((coronary or myocardial) adj (failure or insufficiency))):ti,ab,kw	9
15	#13 or #14	5258
16	MeSH descriptor: [Pulmonary Disease, Chronic Obstructive] explode all trees	2130
17	MeSH descriptor: [Emphysema] explode all trees	97
18	((copd or coad or chronic airflow obstruction* or (chronic adj2 bronchitis) or emphysema) or (chronic obstructive adj2 (lung* or pulmonary or airway* or airflow* or respiratory or bronchopulmonary) adj (disease* or disorder*))):ti,ab,kw	7007
19	#16 or #17 or #18	7531
20	MeSH descriptor: [Pneumonia] explode all trees	2491
21	(pneumoni* or peripneumoni* or pleuropneumoni* or lobitis or ((pulmon* or lung*) adj inflammation*)):ti,ab,kw	6064
22	#20 or #21	6101
23	#7 or #12 or #15 or #19 or #22	43675
24	MeSH descriptor: [Caregivers] explode all trees	1048
25	MeSH descriptor: [Case Management] explode all trees	603
26	MeSH descriptor: [Patient Care Management] explode all trees	14957
27	MeSH descriptor: [Social Support] explode all trees	2136
28	MeSH descriptor: [Counseling] explode all trees	2950
29	MeSH descriptor: [Patient Education as Topic] explode all trees	6012
30	(liaison* or case manage* or care manage* or counsel* or healthcare worker* or health-care worker*):ti,ab,kw	21815
31	#24 or #25 or #26 or #27 or #28 or #29 or #30	37604
32	MeSH descriptor: [Economics] this term only	54
33	MeSH descriptor: [Costs and Cost Analysis] explode all trees	20694
34	MeSH descriptor: [Economics, Dental] this term only	3
35	MeSH descriptor: [Economics, Hospital] explode all trees	1507
36	MeSH descriptor: [Economics, Medical] this term only	36

37	MeSH descriptor: [Economics, Nursing] this term only	15
38	MeSH descriptor: [Economics, Pharmaceutical] this term only	226
39	(economic* or cost or costs or costly or costing or price or prices or pricing or pharmacoeconomic*) or (expenditure* not energy) or (value near/1 money) or budget*:ti,ab,kw (Word variations have been searched)	39198
40	#32 or #33 or #34 or #35 or #36 or #37 or #38 or #39	39276
41	((energy or oxygen) near cost) or (metabolic near cost) or ((energy or oxygen) near expenditure):ti,ab,kw (Word variations have been searched)	2010
42	#40 not #41	38821
43	letter or editorial or historical article:pt (Word variations have been searched)	5987
44	#42 not #43	38740
45	MeSH descriptor: [Animals] explode all trees	6442
46	MeSH descriptor: [Humans] explode all trees	1067
47	#45 not (#45 and #46)	5375
48	#44 not #47	38581
49	#23 and #31 and #48 from 2009 to 2014	279

Appendix 2: Critical Appraisal of Studies Given Full-Text Review

Question topic: To assess the cost-effectiveness of case management for post-acute stroke, chronic obstructive pulmonary disease, and congestive heart failure patients.			
Author/Year	**Is the study population appropriate to the question?**	**Are the interventions appropriate to the question?**	**Are all relevant interventions compared?**
Agren et al, 2013 (3)	Yes	No	No
Bakerly et al, 2009 (4)	Yes	No	No
Dewan et al, 2011 (5)	Yes	No	No
Glendenning-Napoli et al, 2012 (6)	No	Yes	Yes
Harrington et al, 2010 (7)	Yes	No	No
Miller et al, 2009 (8)	Yes	No	No
Peikes et al, 2009 (9)	No	Yes	Yes
Postmus et al, 2011 (10)	Yes	No	No
Saleh et al, 2012 (11)	No	No	No
Stauffer et al, 2011 (12)	Yes	No	No

	What country was this study conducted in?	**Is the health care system in which the study was conducted sufficiently similar to Ontario's with respect to this question/topic? Explain the ways in which they differ.**	**Are estimates of relative treatment effect the same as those included in the review?**
Agren et al, 2013 (3)	Sweden	Yes	No
Bakerly et al, 2009 (4)	UK	Yes	No
Dewan et al, 2011 (5)	US	No – US Veterans Affairs	No
Glendenning-Napoli et al, 2012 (6)	US	No	NA
Harrington et al, 2010 (7)	UK	Yes	No
Miller et al, 2009 (8)	US	No	No
Peikes et al, 2009 (9)	US	No	No
Postmus et al, 2011 (10)	Netherlands	Yes	Yes
Saleh et al, 2012 (11)	US	No	No
Stauffer et al, 2011 (12)	US	No	No

	Are costs measured from a health care payer perspective?	Are non-direct health effects on individuals excluded?	Are both costs and health effects discounted at an annual rate of 5%?
Agren et al, 2013 (3)	Yes	No	NA
Bakerly et al, 2009 (4)	Yes	No	NA
Dewan et al, 2011 (5)	Yes	No	NA
Glendenning-Napoli et al, 2012 (6)	No	No	No
Harrington et al, 2010 (7)	Yes	No	No
Miller et al, 2009 (8)	Yes	No	No
Peikes et al, 2009 (9)	Yes	No	NA
Postmus et al, 2011 (10)	Yes	No	No
Saleh et al, 2012 (11)	Yes	No	No
Stauffer et al, 2011 (12)	Yes	No	No

	Do the estimates of resource use differ from that which would be expected in an Ontario context?	Is the value of health expressed in terms of QALYs?	Are changes in health-related quality of life (HRQL) obtained directly from patients and/or carers?
Agren et al, 2013 (3)	No	Yes	NA
Bakerly et al, 2009 (4)	No	NA	NA
Dewan et al, 2011 (5)	Unclear	NA	NA
Glendenning-Napoli et al, 2012 (6)	Yes	NA	NA
Harrington et al, 2010 (7)	No	No	Yes
Miller et al, 2009 (8)	Yes	Yes	Yes
Peikes et al, 2009 (9)	Yes	No	No
Postmus et al, 2011 (10)	No	Yes	Yes
Saleh et al, 2012 (11)	Yes	No	No
Stauffer et al, 2011 (12)	No	No	No

	Was the valuation of changes in HRQL (utilities) obtained from a representative sample of the general public?	Overall judgement (directly applicable/partially applicable/not applicable)	Other comments
Agren et al, 2013 (3)	No	Not applicable	Intervention (nurse-led education) was not appropriate.
Bakerly et al, 2009 (4)	NA	Not applicable	Intervention (hospital services at home) was not appropriate.
Dewan et al, 2011 (5)	NA	Not applicable	Intervention (disease management through education by case manager) was not appropriate.
Glendenning-Napoli et al, 2012 (6)	NA	Not applicable	Chronic disease population was not stratified to the disease of interest.
Harrington et al, 2010 (7)	No	Not applicable	Intervention (exercise and education program) was not appropriate.
Miller et al, 2009 (8)	No	Not applicable	Intervention (education and medication management) was not appropriate.
Peikes et al, 2009 (9)	No	Not applicable	Chronic disease population was not stratified to the diseases of interest.
Postmus et al, 2011 (10)	No	Not applicable	Intervention (nurse-led disease management) was not appropriate.
Saleh et al, 2012 (11)	No	Not applicable	Neither intervention (care coordination without linkage to health care services) nor population (elderly Medicare recipients) were appropriate.
Stauffer et al, 2011 (12)	No	Not applicable	Intervention (transitional care provision) was not appropriate.

Abbreviations: HRQL, health-related quality of life; NA, not applicable; QALY, quality-adjusted life-year.

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