Rapid Synthesis

Examining Care Coordination in the Home- and Community-Care Sector

24 April 2023

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Rapid Synthesis:
Examining Care Coordination in the Home- and Community-Care Sector
90-day response

24 April 2023

McMaster Health Forum

The McMaster Health Forum's goal is to generate action on the pressing health-system issues of our time, based on the best available research evidence and systematically elicited citizen values and stakeholder insights. We aim to strengthen health systems – locally, nationally and internationally – and get the right programs, services and drugs to the people who need them.

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Timeline

Rapid syntheses can be requested in a three-, 10-, 30-, 60- or 90-business day timeframe. This synthesis was prepared over a 90-business day timeframe. An overview of what can be provided and what cannot be provided in each of the different timelines is provided on McMaster Health Forum's webpage on contextualized evidence syntheses (https://www.mcmasterforum.org/find-domestic-evidence/contextualized-es).

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Conflict of interest

The authors declare that they have no professional or commercial interests relevant to the rapid synthesis. The funder played no role in the identification, selection, assessment, synthesis or presentation of the research evidence profiled in the rapid synthesis.

Merit review

The rapid synthesis was reviewed by a small number of policymakers, stakeholders and researchers in order to ensure its scientific rigour and system relevance.

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Why is the issue important?

- The *Connecting Care Act, 2019* lays out the requirements of health service providers (HSP) – including the 14 home- and community-support service organizations – and Ontario Health Teams (OHTs) to provide home and community-care services.
- The regulation identifies care coordination as being the entry and exit point to home- and community-care services and the mechanism through which services are planned and adjusted over the course a patient's care.
- The regulation sets out a number of requirements related to care coordination, including that:
  - prior to providing a service, an HSP (or eventually an OHT) shall ensure that the patient's needs are assessed, their eligibility for service determined, and their services set out in a care plan, which should be reassessed when appropriate given changes to the patient's condition or circumstances
  - patients and caregivers are given opportunities to participate in needs assessment and care planning
  - needs assessment and care planning decisions consider certain information (e.g., availability of other publicly funded services that could meet the patient's needs) and should be regularly evaluated and revised when patient's requirements change
  - care plans must include certain information (e.g., care goals)
  - patients have a right to clear and accessible information about their services, and to a clear and accessible explanation of their assessment information and care plans.
- As early steps in building the capacity to meet the requests of OHTs, Ontario Health is supporting seven 'Leading Projects' whereby select OHTs have been approved to test new models of home-care delivery – leveraging as needed the new legislative and regulatory framework and collaborating with home- and community-support service organizations and their care coordinators to support implementation.
- This rapid synthesis provides a detailed look at the evidence on care coordination in the home- and community-care sector (i.e., optimal target populations) and frameworks available to inform the development of new models of care.

QUESTIONS

- What does the evidence tell us about the optimal size and demographic of the target client/patient population, including their placement on the population-health risk pyramid?
- What does the evidence for care coordination tell us about optimal frameworks for care coordination interventions?

WHAT WE FOUND

Question 1: What does the evidence tell us about the optimal size and demographic of the target client/patient population, including their placement on the population-health risk pyramid?

Key findings

- We did not identify an optimal population size for care coordination as it will differ by intervention.
  - For example, evidence syntheses indicated that case managers could take on a caseload of between 50 and 70 people each.
- We were unable to determine what demographic is most likely to benefit from care-coordination interventions due to both a lack of literature assessing the comparative effectiveness across populations and the heterogeneity of the interventions being assessed.
- Strategies that used multidisciplinary teams and disease-management programs consistently reported improved outcomes across populations.

We were unable to identify an optimal population size for care coordination, as the appropriate population size will differ by specific intervention. However, evidence syntheses estimated that for case management – a

common care coordination intervention for high-risk populations – care-coordination managers can usually take on a patient population of between 50 and 70 individuals.(1) However, some reviews noted that patients benefited from being part of a smaller case load when patient care has greater levels of interdependence between professionals.(2) Further, previous work that RISE has undertaken on case-management models also notes that the size of the target population can vary by context. For example, rural case-management models often need to be smaller than models from urban areas given the different availability of services and variation in geography.(3)

As for the demographic of the population, one of the evidence syntheses describes the significant gap in the literature assessing the comparative effectiveness of care-coordination interventions across populations, limiting the determination of who would most benefit from this function.(4) Instead, most of literature in this synthesis focuses on whether a specific intervention (or multi-component intervention) is effective for a given population. While we were unable to determine who is most likely to benefit, we did find that strategies that used multidisciplinary teams and disease-management programs consistently reported improved outcomes across conditions.(5)

Findings related to the effectiveness of care-coordination interventions for the specific populations of OHT 'Leading Projects' have been included in Table 1 below. The findings have been summarized at a high level and additional details are available in the cited reports. A more comprehensive list of care-coordination interventions by population is included in Appendix 2.

Box 1: Our approach

We identified synthesized research evidence addressing the question(s) by searching: 1) Health Systems Evidence and 2) PubMed. Searches were conducted in July 2022, but updated searches for care-coordination interventions for populations addressed by the 'Leading Projects' was conducted in March 2023. The results from the searches were assessed by one reviewer for inclusion. A document was included if it fit within the scope of the questions posed for the rapid synthesis. The search strategies are included in Appendix 1.

Appendix 2 provides additional evidence synthesis tables that have been used to develop the high-level findings included in the main text of this rapid synthesis.

We appraise the methodological quality of evidence syntheses using AMSTAR. Ratings for each of the reviews can be found alongside detailed data extraction in Appendix 3.

Despite the challenges with the current state of the literature, which include significant heterogeneity in the definitions of care coordination (4; 5), how coordination interventions are combined (i.e., multi-component interventions), and how they are implemented (i.e., intensity, duration and by whom they are provided), some key messages emerged:

- it is critical to carefully match populations with an appropriate care-coordination intervention (e.g., reserving the most intensive interventions such as case management for those with the most interdependent, complex and uncertain care)
    - this requires ensuring individuals are properly assessed for inclusion and that ongoing monitoring and evaluation is implemented to ensure intended outcomes are being met
- the coordinating function can be taken on by many different types of health workers (though it is frequently taken on by staff within primary-care offices and/or advance-practice nurses) and the right competencies are more important than a particular professional background
- key competencies for those responsible for the care-coordination role include strong interpersonal skills, knowledge of the specific conditions and population, and knowledge of local service availability
- tasks most frequently attributed to those responsible for coordination, include:
    - assessing patients' needs
    - creating individualized care plans
    - supporting patients with self-management
    - documenting care transitions
    - monitoring care including responding to changing needs
    - supporting communication of patient information across health professionals
    - helping patients to access additional community resources.(6; 7)

Table 1: Outcomes of care-coordination strategies by prioritized 'Leading Projects' populations

Population	Coordination strategies from most to least intensive	Outcomes
Older adults with dementia living in the community	Multi-component interventions Case management Integrated care (program of all-inclusive care - PACE) Specialty geriatric team Care coordination	• Multi-component interventions, which included periodic assessments, consultations, psycho-education and active case-finding, had no effect on hospital admission or nursing-home admissions.(8) • Multi-component interventions, which included an initial assessment, individualized care plans, referrals and linkages to services, provision of counselling, and information and support to caregivers and people with dementia, had no effect on the risk of hospital admission.(2) • Case management improved functionality, behaviours, aspects of medication management, and use of community services, and reduced long-term care home admissions; however, this was not consistent across all studies.(2; 4; 9; 10) o Case management was found to be more responsive to patient needs when case managers had a relationship with a patient's primary-care provider, and reduced nursing-home admissions when managers had lower caseloads.(2; 11) o A sub-groups analysis found that case managers with a nursing background and training in care for the elderly had greater benefits than typical care and reduced caregiver burden.(2) • Integrated care (program of all-inclusive care) did not improve clinical outcomes; however, it was associated with improved use of community and hospital services.(4; 12)
Older adults with functional impairments	Multi-component interventions	• Multi-component interventions, including developing an individualized care plan, ongoing assessment and weekly interdisciplinary meetings, reduced health-service utilization, improved quality of life and improved patient and caregiver satisfaction.(13)
Individuals in need of a palliative approach	Multi-component strategies Case management Multidisciplinary teams Managed-clinical networks	• Multi-component strategies of combining case management and shared care have been recommended as an approach for rural/remote adult services and pediatric palliative care.(14) • Case management was found to be a recurring feature of many successful coordinated-care models, and has been found to increase advance directives and lower service utilization.(15) • Multidisciplinary teams improved short-term quality of life and care experiences for those with advanced cancer in need of a palliative approach; however, no significant effects were reported for psychological outcomes or symptoms burden. o No association was found between the level of integration of multidisciplinary team members and intervention effects.(16; 17) • Managed clinical networks, when formally established with governance and guidelines in place, facilitated access to palliative-care approaches for people in underserved communities.(14)

Rising-risk patients in primary care	Case management Patient-centred medical home Specialist outreach clinics	• Case management was not found to be effective in alleviating the pressure on the health system or for reducing the use of secondary care services; however, it was successful for improving self-reported health status.(18) • The patient-centred medical home model was found to be an efficient and effective model for coordinating care for patients in primary care; however, the model's effects on access or coordination with specialty services are unknown.(19) • Specialist outreach clinics and specialists located on-site in primary care, particularly mental-health workers, improved functional outcomes among at-risk patients.(18)
High-risk patient populations	Case management	• Case management led by advance practice or specialist nurses contributed towards reduced hospital readmission rates and increased patient satisfaction for high-risk populations.(20)

Question 2: What does the evidence tell us about the optimal framework for care coordination?

Key findings

- We identified 12 key components that 'Leading Projects' will need to consider when designing their care-coordination models and have adapted a figure from one of the evidence syntheses to illustrate the relationships between the components.
- We also identified a range of additional supports that are needed to enable care-coordination models, including those for:
  - designing and adapting strategies (e.g., data reviews, workflow maps and role-planning matrices)
  - implementing strategies (e.g., templates and checklists for providers and local service directories)
  - the technological supports that can underpin coordination (e.g., EMRs, medical record alert systems and email and messaging services).

Three evidence syntheses provided an overview of care-coordination frameworks. Most of the frameworks addressed coordination generally rather than for a specific population, condition or setting of care, which made determining an 'optimal' framework to inform the work of the 'Leading Projects' difficult. As a result, we have synthesized key components of care-coordination frameworks below that will be critical for those developing and implementing 'Leading Projects' to consider and plan for. These 12 components include:

- external factors – anything that affects the care-coordination model in its entirety, for example, regulatory changes, policy changes and system resources
- need for coordination – the intensity of coordination strategies needed by the patient population or perceived by their providers
- goals or purpose of coordination – the 'shared mission' that participating providers sign onto and have collective ownership over
- setting of care coordination – the settings in which care coordination is intended to take place
- structure of team, organization or network – details of how the care-coordination team or network is organized including the number of participants, their specialization, the way participants are grouped, linkages between participants, amount of information required to manage care of the patient population, and any existing mechanisms for coordinating care that are provided by different participants
- task characteristics – the individual tasks required for each of the care-coordination strategies, including task variability between populations, the degree to which team members depend upon each other, the simplicity or complexity of tasks, and the degree of certainty in the outcome for each patient population
- knowledge and technology – the availability of skills and experts within the team, need for training, as well as technology resources currently available and needed

- administrative and operational processes – methods in place for feedback and communication among participants that support their participation in the model
- information exchange – how patient information will be passed between participants
- roles – detailed description of the roles for each participant and methods to ensure awareness of each other's roles (including the role of the patient and caregivers)
- quality of relationships – the relationships between participants and include aspects such as the promotion of mutual respect
- outcomes – includes patient outcomes, team outcomes, organizational and inter-organizational outcomes, and system outcomes.(5; 21; 22)

In addition to these components, evidence syntheses highlighted additional supports that enabled care-coordination models for many different populations, including:

- supports for designing and adapting coordination strategies, such as
  - undertaking a review of data on population coordination needs
  - developing process and workflow maps of existing coordination strategies and planned changes
  - creating care-coordination role-planning matrices
  - undertaking plan-do-study-act cycles to test small rapid changes
- supports for implementing care-coordination strategies, such as
  - developing templates and checklists for providers including risk-assessment templates, care planning templates, patient discharge checklists, patient summary templates and referral templates
  - developing local service directories
- technology supports to enable care coordination, such as
  - online shared-decision making tools (such as those included in this decision aids list)
  - shared EMRs
  - medical record alert systems
  - email/messaging systems within multidisciplinary teams
  - email and telephone outreach to patients
  - patient portals.(23-26)

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Appendix 1: Background and methods

Background to the rapid synthesis

This rapid synthesis mobilizes both global and local research evidence about a question submitted to the McMaster Health Forum's Rapid Response program. Whenever possible, the rapid synthesis summarizes research evidence drawn from systematic reviews of the research literature and occasionally from single research studies. A systematic review is a summary of studies addressing a clearly formulated question that uses systematic and explicit methods to identify, select and appraise research studies, and to synthesize data from the included studies. The rapid synthesis does not contain recommendations, which would have required the authors to make judgments based on their personal values and preferences.

Rapid syntheses can be requested in a three-, 10-, 30-, 60- or 90-business-day timeframe. An overview of what can be provided and what cannot be provided in each of these timelines is provided on the McMaster Health Forum's webpage on contextualized evidence syntheses (https://www.mcmasterforum.org/find-domestic-evidence/contextualized-es).

This rapid synthesis was prepared over a 30-business day timeframe and involved four steps:
1) submission of a question from a policymaker or stakeholder (in this case, the Ontario Ministry of Health)
2) identifying, selecting, appraising and synthesizing relevant research evidence about the question
3) drafting the rapid synthesis in such a way as to present concisely and in accessible language the research evidence
4) finalizing the rapid synthesis based on the input of at least two merit reviewers.

Identification, selection and synthesis of research evidence

We identified research evidence (systematic reviews and primary studies) by searching (in February 2023) Health Systems Evidence (www.healthsystemsevidence.org) and PubMed. In Health Systems Evidence, we used a filter for "How care is designed to meet consumer needs" combined with an open search for (navigat* AND system). In PubMed, we searched for (navigat* AND system) and applied date restrictions to the past five years (i.e., 2018 inclusive).

The results from the searches were assessed by one reviewer for inclusion. A document was included if it fit within the scope of the questions posed for the rapid synthesis.

For each systematic review we included in the synthesis, we documented the focus of the review, key findings, last year the literature was searched (as an indicator of how recently it was conducted), methodological quality using the AMSTAR quality appraisal tool (see Appendix 3 for more detail), and the proportion of the included studies that were conducted in Canada. For primary research (if included), we documented the focus of the study, methods used, a description of the sample, the jurisdiction(s) studied, key features of the intervention and key findings. We then used this extracted information to develop a synthesis of the key findings from the included reviews and primary studies.

Appendix 2: Outcomes of care-coordination strategies by population

Population	Coordination interventions from most to least intensive	Outcomes
People with severe or moderate asthma	Disease management	• Some disease-management programs were found to be effective at improving health outcomes and cost-effectiveness of care.(4)
People with chronic conditions other than mental health conditions	Multi-component intervention (patient-centred medical model) Case management Transitional-care supports Advance practice nursing Self-management Patient education	• The patient medical home model resulted in small improvements in patient experiences, including increased satisfaction, patient-perceived level of care coordination, and increased access to a primary care physician, however there was insufficient evidence to determine the effects on clinical outcomes.(27) • Case management, self-management approaches and patient education had no significant effect on emergency department visits or clinic visits but did reduce hospital admissions among patients with multiple chronic conditions.(28; 29) o The most significant difference was found for older adults and those with the most frequent hospital utilization rate.(28) • Transitional-care supports that included transition coaches, self-management and education programs upon hospital discharge were found to have mixed outcomes, with some resulting in reduced hospital readmissions while others saw no change.(30; 31) • Advance-practice nursing, when coupled with individualized assessments, education care plans and follow-up, showed positive outcomes with respect to mortality, readmissions and self-care behaviour.(31; 32) • Patient education significantly reduced hospital admissions and might be an efficient use of resources for lower-risk patients, particularly for those with diabetes.(28)
People with chronic obstructive pulmonary disease (COPD)	Hospital-at-home	• Hospital-at-home interventions, which included early discharge from hospital and community-based specialty nursing, were found to be equivalent to usual hospital-based care and in some studies increased patient satisfaction.(27)
People with severe or moderate diabetes	Disease management	• Disease-management programs targeted at severely and moderately ill patients were associated with improved glycemic control as well as with improved screening and monitoring.(4; 5)
People with heart failure	Multidisciplinary teams Disease management Community-based specialty clinics Self-management support Telemonitoring	• Multidisciplinary teams providing follow-up with specialist heart-failure nurses and patient and caregiver education were associated with improved patient outcomes regardless of population-risk profile.(5) • Disease management with multidisciplinary teams and specialist clinics were found to be effective for those with heart disease in the general population.(5) • Ongoing care provided by a specialty heart-failure clinic in the community following hospital discharge reduced the duration of hospital stays, reduced mortality and improved clinical outcomes.(31) • Self-management support and shared decision-making, including education provided by nurses, following hospital discharge reduced hospital-readmission rates and demonstrated cost-effectiveness.(33) o Critical components included individualized content, different mediums and one-on-one education.(33) • Telemonitoring provided by nurses and cardiologists was associated with reduction in mortality and improved medication adherence.(33; 34)
People who have experienced a stroke	Interdisciplinary case management Comprehensive rehabilitation programs	• Interdisciplinary case management and self-management programs had no effect on quality-of-life measures.(35) • Comprehensive rehabilitation programs, and to a lesser extent single disciplinary rehabilitation, reduced depression following a stroke and improved health-related quality of life.(35) • Multidisciplinary teams providing early supported discharge from hospital to home were found to improve the quality of care and reduce the likelihood of additional hospitalizations.(5) o Findings suggest that early supported discharge from hospital to home is best targeted to patients with mild-to-moderate functional impairment, good cognitive functioning and who live in a suitable environment for rehabilitation.(36; 37)

Population	Coordination interventions from most to least intensive	Outcomes
	Multidisciplinary team delivered early supported discharge	
Older adults with dementia living in the community	Multi-component interventions Case management Integrated care (PACE program)	• Multi-component interventions, which included periodic assessments, consultations, psycho-education and active case finding, had no effect on hospital admission or long-term care home admissions.(12)(2) • Case management improved functionality, behaviour, aspects of medication management and use of community services and reduced nursing-home admissions; however, this was not consistent across all studies.(2; 4; 9; 10; 38) o Case management was found to be more responsive to patient needs when case managers had a relationship with a patient's primary-care provider and reduced long-term care home admissions when managers had lower caseloads.(2; 11) o A sub-groups analysis found that case managers with a nursing background and training in care for the elderly had greater benefits than typical care and reduced caregiver burden.(2) • Integrated care (PACE program) did not improve clinical outcomes, but was associated with improved use of community and hospital services.(4; 12)
People severe mental health conditions	Case management Assertive community treatment Disease management Team changes Self-management	• Case management had mixed effects on improving patient outcomes, but a sub-analysis noted that it likely reduces hospitalization among those with the highest hospitalization rates.(5) • Assertive community treatment was found to reduce hospitalization.(5) • Disease management may be effective in improving depression severity and adherence to treatment, however the heterogeneity in definitions makes it difficult to determine.(5) • Neither team changes nor self-management approaches had a significant effect on patient hospitalization among those with severe mental health conditions such as schizophrenia and severe bipolar disorder.(28)
Older adults with functional impairments	Multi-component strategy	• Multi-component strategies, including developing an individualized care plan, ongoing assessment and weekly interdisciplinary meetings, reduced health service utilization, improved quality of life and improved patient and caregiver satisfaction.(13)
People who use drugs	Case management	• Case management improved the client's ability to abstain from drug use, reduced reported social problems, and supported unmet service needs when compared to traditional clinical management.(39)
People who are experiencing homelessness and who use drugs	Case management	• Case management, when combines with harm-reduction policies, were found to be significantly better than usual treatment for reducing substance use and fatal overdoses.(40)
People in need of a palliative approach	Multi-component strategies Case management Managed clinical networks	• Multi-component strategies of combining case management and shared care have been recommended as an approach for rural/remote adult services and pediatric palliative care.(14) • Case management was found to be a recurring feature of many successful coordinate care models and has been found to increase advance directives and lower utilization.(15) • Managed clinical networks, when formally established with governance and guidelines in place, facilitated access to care for people in underserved communities.(14)
At-risk patients in primary care	Case management Specialist out-reach clinics	• Case management was found not to be effective in alleviating the pressure on the health system or in reducing the use of secondary care services, but self-reported health status was found to improve.(18) • Specialist outreach clinics and specialists located on-site in primary care, particularly mental-health workers, improved functional outcomes among at-risk patients.(18)

Population	Coordination interventions from most to least intensive	Outcomes
High-risk patient populations	Case management Multi-component interventions	• Case management led by advance practice or specialist nurses contributed towards reduced hospital readmission rates and increased patient satisfaction for high-risk populations.(20) • Multi-component interventions that supported patient capacity for self-care were found to be more effective than single interventions for individuals who had been recently discharged from hospital.(41)

Appendix 3: Detailed data extraction tables

The following tables provide detailed information about the systematic reviews and primary studies identified in the rapid synthesis. The ensuing information was extracted from the following sources:

- systematic reviews – the focus of the review, key findings, last year the literature was searched and the proportion of studies conducted in Canada
- primary studies (in this case, economic evaluations and costing studies) – the focus of the study, methods used, study sample, jurisdiction studied, key features of the intervention and the study findings (based on the outcomes reported in the study).

For the appendix table providing details about the systematic reviews, the fifth column presents a rating of the overall quality of each review. The quality of each review has been assessed using AMSTAR (A MeaSurement Tool to Assess Reviews), which rates overall quality on a scale of 0 to 11, where 11/11 represents a review of the highest quality. It is important to note that the AMSTAR tool was developed to assess reviews focused on clinical interventions, so not all criteria apply to systematic reviews pertaining to delivery, financial or governance arrangements within health systems. Where the denominator is not 11, an aspect of the tool was considered not relevant by the raters. In comparing ratings, it is therefore important to keep both parts of the score (i.e., the numerator and denominator) in mind. For example, a review that scores 8/8 is generally of comparable quality to a review scoring 11/11; both ratings are considered 'high scores.' A high score signals that readers of the review can have a high level of confidence in its findings. A low score, on the other hand, does not mean that the review should be discarded, merely that less confidence can be placed in its findings and that the review needs to be examined closely to identify its limitations. (Lewin S, Oxman AD, Lavis JN, Fretheim A. SUPPORT Tools for evidence-informed health Policymaking (STP): 8. Deciding how much confidence to place in a systematic review. *Health Research Policy and Systems* 2009; 7 (Suppl1): S8.)

All of the information provided in the appendix tables was taken into account by the authors in describing the findings in the rapid synthesis.

Table 1. Summary of findings from systematic reviews about care coordination in the home- and community-care sector

Population of focus	Focus of systematic review	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
Older adults	Examining the effects of care models for older adults, including those with dementia (38)	The review examined the outcomes of case management, integrated care and consumer-directed care for older persons, including those with dementia. The review found that case management improved function, aspects of medication management and use of community services and reduced long-term care home admissions, but this was not consistent across all studies. Studies in general found more positive outcomes were not necessarily associated with more intensive case management. Integrated care (in particular the PACE program) did not improve clinical outcomes, but was associated with improved use of community and hospital services. Partially integrated models where services were formally linked and coordinated were more likely to report significant effects on clinical or service use outcomes. Consumer-directed care was found to improve patient satisfaction with care and community service use but had little effect on clinical outcomes. Further, as consumer-directed care usually involves a budget for the purchase of services, it is unclear whether the control groups had similar value of services such that benefits may not have been due to consumer involvement but rather easier access to care. The review found that administrators and providers of services need to be explicitly clear as to the focus of their service and prioritization of outcomes. Heterogeneity in the included studies is noted as a limitation, particularly when it comes to the intensity of each intervention and the definition of home- and community-care services, which makes decisions about study inclusion difficult.	2009	7/10 (AMSTAR rating from McMaster Health Forum)	3/34
Older adults with dementia	Examining the effects of care coordination and multifactorial interventions on hospital and long-term care home admissions (8)	The review focuses on identifying effective non-pharmaceutical interventions to manage older adults with dementia in efforts to minimize hospital or long-term care home admissions. Interventions included single interventions (i.e., community-care coordination, health professional training, psychoeducation, psychosocial support and exercise), multiple interventions (i.e., general practitioner training and patient recommendations, exercise and psychoeducation), and	2019	6/11 (AMSTAR rating from McMaster Health Forum)	0/20

Population of focus	Focus of systematic review	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
		multifactorial interventions such as multifactorial assessment treatment clinics/services. Care coordination interventions typically included an initial assessment, individualized care plans, referrals and linkages to services, provision of counselling, information, education and support to caregivers and people with dementia, and regular reassessments. The intervention duration and last follow-up assessment time in included studies was 12–18 months. Studies reported no effect of their community-care coordination intervention on the risk of hospital admissions in people with dementia at the 12-month follow-up. Multifactorial assessment and treatment, including period assessments, consultations, pharmacological and psychosocial interventions, psychoeducation, active case finding to prevent syndromes superimposed on dementia and depression, and case management, had no effect on hospital admission or long-term care home admission.			
Home-bound adults with functional impairments or multiple chronic conditions	Supports to enable multidisciplinary team interventions for home-bound adults (13)	Interventions, including an interdisciplinary team to develop an individualized care plan, initial and ongoing assessments by social workers, and weekly interdisciplinary meetings, demonstrated reduced health service utilization, lower costs of care, better quality of life and better patient and caregiver satisfaction. The systematic review identified four elements that were critical to the success of these interventions: using electronic medical records, conducting interdisciplinary team meetings, sharing standardized patient assessments and communicating via secure e-messaging systems.	2015	4/9 (AMSTAR rating from McMaster Health Forum)	3/40
Patients with severe or moderate asthma, patients with diabetes, patients with heart failure, and older adults with complex needs	Examining effective coordination models to improve quality and reduce costs (4)	The review defines care coordination as ordering the care that different providers give to a patient so that the results are greater than the sum of each provider's care. Coordination involves two or more providers communicating or collaborating with one another. The review found that care coordination can improve quality and save money but it is extremely dependent on which approach is used for which population, how well it is implemented, and on features of the environment. The review found that some disease management programs targeted at severely and moderate asthma, diabetes or heart failure patients at risk of hospitalizations resulted in improved quality and reduced cost.	2010	5/9 (AMSTAR rating provided by McMaster Health Forum)	Not reported

Population of focus	Focus of systematic review	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
		Team-based models possible provide greater value than nurse-based models for depression. Multidisciplinary teams for patients with heart failure including follow-up with a specialist heart failure nurse and being provided with caregiver education improved quality and reduced costs. Discharge planning programs with support for older patients with congestive heart failure improved quality outcomes and reduced costs. Team coordination for stroke patient giving early coordinated discharge from hospital and providing post-discharge care and rehabilitation at home was effective. Finally, transitional care models for older patients with complex needs leaving hospital was also found to be effective.			
Post-stroke hospital discharge to the community	Prioritizing patients for early supported discharge program after experience a stroke (27)	The review examined the effectiveness of team-coordinated post-stroke early supported discharge. All early supported discharge programs included a physiotherapist and occupational therapist as the core of their team, and provided access to speech language pathologists. Nurses and social workers also formed part of the team to support the social and emotional challenges of patient recovering from stroke. The review demonstrated that there is a need for clear criteria on admissions to early supported discharge programs, which could include: mild-to-moderate functional impairment, good cognitive function, potential to benefit from rehabilitation, and those who live in a suitable environment for rehabilitation. The review suggests the following criteria: patients with a Barthel index (BI, measure of functionality) of 16 to 20, or a 23 to 30 on the mini-mental state examination, and a suitable home environment within a predetermined reasonable distance from the hospital could have an early supported discharge initiated automatically as they are likely to benefit from the coordinated care. Patients with a BI of 11 to 20 or a mini-mental state examination of 14 to 30 could be flagged for clinical assessment for suitability for admission to early supported discharge, whereas all other patients could be considered on a case-by-case basis.	2014	5/10 (AMSTAR rating)	1/8

Population of focus	Focus of systematic review	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
Older adults with multiple chronic conditions	Examining the effectiveness of the patient-centred medical home	The review examined the effectiveness of the patient-centred medical home model on the quadruple aim. The model includes the following elements: team-based care; having at least two of four elements focused on how to improve the entire organization of care; a sustained partnership; and having an intervention that involves structural changes to the traditional practice. The review found the patient-centred medical home had small improvements in patient experiences both in overall measures of satisfaction and measures of patient-reported outcomes and patient-perceived level of care coordination for older adults. The review found that the medical home model improved care processes for preventive services for patients with chronic illness. However, there is insufficient evidence to determine whether this had any effect on clinical outcomes.	2012	7/11 (AMSTAR rating from McMaster Health Forum)	2/56
Primary care	Effects of patient-centred medical home on access and care coordination (19)	Patient-centred medical homes involve a partnership between primary care providers and other team members who provide care that is supplementary to or a substitute for care by primary care providers. By leveraging the skills of all members of the team it is noted to be more efficient and cost effective. The review found very few studies assessed access beyond seeing the primary care physician and conclusions are limited as a result of not having a composite score.	2014	2/9 (AMSTAR rating from McMaster Health Forum)	Not reported
Home-based palliative care	Interventions to improve palliative care in the home (17)	The review found that both individualized patient-centred care models, including care plans and coordination of care services, and multidisciplinary care provision improved patient care experience and helped to better meet patient needs. However, the review highlights that the diverse nature of these interventions makes generalizations about what components contribute to positive outcomes difficult.	2016	8/10 (AMSTAR rating)	9/53
Chronic conditions including mental health	Effects of clinical care coordination on quality of care (4)	The review found that patients with long-term or chronic conditions that require help from multiple providers are those most likely to benefit. In addition, there is evidence that patients in the last stages of life who wish to die at home would benefit from coordinated help to do this. No research considered the question of who could most benefit comprehensively or systematically. The review notes that from the perspective of purchases or funders those most likely to be cost effective are patients at risk of being hospitalized,	2010	5/10 (AMSTAR rating)	Not reported

Population of focus	Focus of systematic review	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
		particularly those with asthma, diabetes, heart disease and moderate-to-severe mental health conditions. Additional insights from the review related to particular conditions have been included in the write-up above.			
People with dementia living in the community	Effectiveness of community-based coordinating interventions in dementia care (2)	The review examined the use of case management using a health- or social-care professional for those with dementia. The review found case management significantly improved both patient behaviour and caregiver burden. Only weak evidence of effects was found for institutionalization, caregiver quality of life and social support. The review found case management had little effect on hospitalization, mortality, patient quality of life, cognition or depression. A sub-group analysis found that interventions that used a nurse or individual with a nursing background as a case manager showed improved outcomes with respect to caregiver quality of life when compared to interventions that used other professionals. It further found weak evidence that a lower caseload for managers had greater effectiveness for reducing the number of patients institutionalized compared to interventions using a higher caseload for case managers.	2017	8/11 (AMSTAR rating from McMaster Health Forum)	1/35
People diagnosed with heart failure	Effective interventions to reduce hospitalization among heart failure patients (33)	The review examined the current evidence on organizational interventions to improve quality and health outcomes for heart failure patients in ambulatory care settings. The review uses the chronic care model as a framing and highlights the critical elements of delivery system design, self-management support, decision support, clinical information systems and linkages to community services. Chronic care models rely on multi-component interventions. A meta-analysis found that multi-component interventions reduced hospitalizations and mortality from heart failure. Effective components included: multi-disciplinary teams, telephone monitoring following hospitalization, pre-discharge counselling, in-person patient education, self-management support, optimization of medical therapy and exercise and psychosocial counselling. Multi-component interventions that included hospital discharge planning and timely post-discharge follow-up were most successful at reducing readmission rates. Self-management support following hospital discharge, which consists of a nurse educating patients in self-management skills, disease knowledge,	2014	7/9 (AMSTAR rating from McMaster Health Forum)	0/32

Population of focus	Focus of systematic review	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
		symptom recognition and risk factor modification, resulted in a significant decrease in all-cause readmission rates and demonstrated cost-effectiveness. Greater effectiveness was seen on disease-specific outcomes for those with a younger mean age (i.e., under 70). Critical components of successful self-management include providing individualized content, different mediums, one-on-one education over multiple sessions, and self-care knowledge and behaviour scores. Structured telemonitoring and telephone support initiated by a healthcare professional and delivered to patients with heart failure living in the community reduced hospitalizations. Telemonitoring, but not telephone support, was associated with reductions in all-cause mortality.			
People with chronic conditions	Addressing the role of hospitals in the coordination of follow-up care for adults with chronic conditions (31)	The review examined the role of hospitals in the downstream coordination and follow-up care of chronically ill patients. Patients in the included studies had a range of conditions, including heart failure, diabetes, rheumatoid arthritis, cardiovascular disease, stroke, chronic obstructive pulmonary disease (COPD) and other chronic conditions. The majority of included studies described transitional care interventions originating in hospitals. Specialized settings providing care after hospital discharge were closely related. Transitional care interventions were initiated within hospitals. Patients were identified during their inpatient stay and followed up with during and after discharge. The follow-ups were coordinated by transition coaches and included additional assistance such as medication self-management, patient-centred records, red flags that indicate changes in the patient's conditions and education programs. The interventions resulted in mixed outcomes with some confirming reduced readmission rates and others seeing no change. The review found a positive effect for the ongoing use of a heart failure clinic following discharge. In particular, one included study reported lower hospitalization duration, lower mortality and improvements in clinical outcomes. Hospitals were found to play an important role in the coordination of transitional processes. Findings from the review suggest that this role can be played by case managers from within hospitals. However, general practitioners were also identified as playing coordinating roles.	2016	8/10 (AMSTAR rating)	2/32

Population of focus	Focus of systematic review	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
People who have had a stroke	Examining the effectiveness of community-based interventions on people that have experienced a stroke (35)	The review included 54 studies that were categorized into different types of interventions, including: comprehensive rehabilitation that included two or more disciplines, exercise programmes, gait and balance programmes, single discipline rehabilitation, care coordination and interdisciplinary management, self-management programs, information provision and leisure-based community interventions. The review found evidence to support exercise improving symptoms of depression immediately after the intervention period. Further, the results indicate some evidence to support interventions involving leisure rehabilitation, comprehensive rehabilitation programmes, and to a lesser extent single disciplinary rehabilitation for reducing depression and improving health-related quality of life. There was no evidence to support gait and balance programs, care coordination, psychosocial and interdisciplinary management, self-management programs or information provision.	2009	4/10 (AMSTAR rating)	8/54
Older adults living in the community	Examining the effects of care management for community-based older adults (9)	The review defined case management as the collaborative process of assessment, planning, facilitation and advocacy for options and services to meet an individual's holistic needs through communication and available resources to promote quality cost-effective outcomes. The review examined the case management supports for frail elderly people suffering from chronic and ongoing age-related disabilities, dementia and co-morbidities. The interventions included in studies in the review focus on case managers who have a range of skill mixes such as nurses, social workers, allied health professionals and others. Key case management functions include assessment, care coordination and monitoring of individuals. The review included 21 studies examining 16 programs. Core intervention elements included in the studies were assessment, care planning, implementation, care coordination, monitoring and reassessment. The review found moderate evidence supporting case management interventions using some community-care services as well as moderate evidence for improving the use of case management services, delaying long-term care home placement, reducing long-term care home admission and shortening the length of long-term care home stay. However, no evidence was found that case management interventions reduce use of hospital care or other medical services, nor were they found to significantly change costs. That said, there are significant differences in	Not reported	5/10 (AMSTAR rating from McMaster Health Forum)	1/21

Population of focus	Focus of systematic review	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
		the characteristics examined in each of the studies, which precludes comparing different interventions and intervention effects. The findings were hypothesized to stem from inappropriate intervention options or clients' subjective factors and the review notes that it is therefore important for case managers to analyze the reasons for intervention first and then undertake interventions.			
Patients that have recently experienced a heart attack or stroke	Examining the effects of transitional care interventions on individuals that have recently experienced a heart attack or stroke (37)	The review examined four types of transitions of care and their effects on those who had recently experienced and been hospitalized for a stroke and for myocardial infarction. The four categories include: 1) hospital-initiated support for discharge; 2) patient and family education interventions; 3) community-based models of support that follow hospital discharge; and 4) chronic disease management models of care that assume responsibility for long-term care. Early support discharge after stroke was associated with reduced total hospital length of stay without adverse effects on function recovery. Specialty care after myocardial infarction was associated with reduced mortality.	2011	7/10 (AMSTAR rating from McMaster Health Forum)	7/62
Individuals living in the community with advanced dementia	Examining the relationship between the family-physician and case manager for patients with dementia and their caregivers (11)	The review examined whether the collaboration of family physicians with case managers supports an improved response to the needs of patients with dementia living in their community. The review included 54 studies and found that case management addressed most needs of patients and caregivers, but also found that select common needs such as early diagnosis remain overlooked. The review found that formal training of case managers in the care of the elderly was a valuable asset to care and that case managers specialized in dementia care were better able to assess needs and follow up with the patient and caregiver regularly.	2014	6/10 (AMSTAR rating from McMaster Health Forum)	2/54
Individuals experiencing homelessness and who use drugs	Interventions to support those who are experiencing homelessness and who use drugs (40)	This overview aims to identify effective interventions that could be used to support people who are experiencing homelessness and who use drugs. The review found that harm reduction approaches led to decreases in drug-related risk behaviour and fatal overdoses as well as reducing morbidity and mortality. Case management interventions were found to be significantly better than treatment-as-usual for reducing substance use.	2020	Rating not available for this type of document	3/25

Population of focus	Focus of systematic review	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
All conditions	Examining interventions that reduce risk of 30-day hospital readmission (41)	The review included 42 studies that focused on examining which interventions reduce 30-day risk of hospital readmission. The studies focused on individuals with a range of different conditions. The review found that interventions with many components, interventions that involved more individuals in care delivery, and those that supported patient capacity for self-care were more effective than other interventions. A further regression model showed additional value in providing comprehensive post-discharge support to patient and caregivers.	2013	11/11 (AMSTAR from McMaster Health Forum)	2/42
Older adults	Efficacy of specialist geriatric services in the community (10)	The review found evidence that supports the efficacy of specialist geriatric teams trained in geriatrics with a multidisciplinary collaborative focus to undertake assessment, rehabilitation and coordinated case management in community settings. The review found that both preventative and supportive discharge in these settings were beneficial over typical care.	2003	7/10 (AMSTAR rating by the McMaster Health Forum)	4/64
Individuals with heart failure and chronic comorbidities	Effects of advanced practice nursing in different settings and for those with different conditions (32)	The review focuses on advanced practice nursing, which is defined as nursing practice that maximizes the use of specialized skills and nursing knowledge to respond to the patients' needs in the health sphere. The review included 15 studies related to advanced practice nursing. In all the studies the patient required multidisciplinary care but had various health conditions including dementia, hip fractures, chronic heart disease and multimorbidity. The review found that advanced practice nurses mostly had a master's or PhD and were well versed in an evidence-based approach to practice. Primary interventions used were patients' education and training, relationship with families, physical, social and physiological assessment, interdisciplinary care management during a defined period of time, direct clinical interventions and counselling. Advanced practice nurses were frequently embedded in multidisciplinary teams, having an active role as consultants and collaborating with other health professionals to develop evidence-based care plans after an initial assessment. The main features identified in the studies concerning advanced practice nursing included a high level of professional autonomy, case management, advanced skills for assessment, diagnosis and decision-making, consultancy with other team members or institutions, and development of health programs.	2014	8/10 (AMSTAR rating from McMaster Health Forum)	0/15

Population of focus	Focus of systematic review	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
		Advanced practice nurses were found to be effective when implemented in long-term care settings and home care when additional tools were used to follow up with patient progress and adherence to their individualized care plan in home care. Additionally, studies that focused on particular conditions, including heart failure, showed positive outcomes in terms of mortality, readmissions and self-care behaviour. The same finding was identified with multimorbid conditions when paired with education interventions.			
Advanced cancer	Effectiveness of outpatient palliative care for those with advance cancer (16)	The review included 10 studies and 11 companion papers that focused on integrated palliative care services. In all studies, palliative care was delivered by a multidisciplinary team and provided services during outpatient visits. Many included telephone-based care and some included delivery of written materials. Interventions addressed both physical and psychological symptoms and varied in intensity from four sessions weekly to contacts every two to four weeks. The level of integration varied among the included studies. In six of the trials, services were virtually or physically co-located. Standard communication was in place to ensure team members could discuss treatment issues and included exchanges between palliative and oncology clinicians. The review found that the interventions improved short-term quality of life, but reported no statistically significant results on psychological outcomes and symptom burden outcomes. Measures of healthcare utilization were inconsistent across studies. No association was found between integration level and intervention effects.	2018	7/10 (AMSTAR rating from McMaster Health Forum)	1/10
Older adults	Elements of integrated care for older adults (12)	The review examined the components of integrated care approaches that address the needs of older people. The overview included 15 reviews, all of which focused on the needs of older adults. All reported interventions were multifaceted, with most containing two or more discrete elements that consistently featured case management and multidisciplinary planning/care delivery. The most commonly reported elements were a multidisciplinary care team, comprehensive assessment, case management, systematic risk factor screening, patient education, professional education, home visits and medication review. Providers that were most frequently represented as part of the integrated care team included nurses, physiotherapists, general practitioners and social workers.	2017	No quality rating available for this document	10/ 15

Population of focus	Focus of systematic review	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
		Due to the heterogeneity of the integrated care elements the overview was unable to determine the extent to which these elements resulted in care improvements.			
Patients diagnosed with heart failure	Improving adherence in heart failure (34)	The review examined approaches to improve adherence to medication treatment. The review found that positive effects were found for quality of life, adherence to medication therapy, and self-care as a result of complex bundles of measures including a simplified dosing regimen, education for patients, brochures and keeping a heart failure diary with discussion of the documented entries. Similarly, bundled interventions including telephone monitoring, home visits and an advisory hotline had a positive adherence on medication treatment and on mortality. Long-term changes included supports by care provided in a specific clinic run by nursing staff, structured telephone contact, medication adjustment after discussion with cardiologists, psychosocial care, help provided at home, and creating a therapeutic bond.	Not reported	5/11 (AMSTAR rating from McMaster Health Forum)	3/31
Older adults with chronic diseases	Transitional care for older adults from hospital to home (30)	The review examined the use of transitional care interventions for older patients with chronic disease transitioning from hospital to home. The review included 38 studies. The most frequently included chronic disease was chronic heart failure, followed by respiratory conditions and cancer. Most interventions included phone contacts or home visits and provided phone availability or hotline services. Nurses played a key role in the majority of interventions, which also frequently included educational components. Other components included written reports sent to primary care physicians or cardiologists and collaboration with other healthcare professionals to discuss a care plan or receive additional care guidance. The interventions resulted in a reduction of readmission rates and emergency department visits, but no effect was observed on mortality. Further, no changes were observed for individual quality of life, but this may have been the result of the metrics used for evaluation. Sub-group analysis found that phone calls, phone availability and the involvement of a pharmacist led to better outcomes. Further, they did not lead to improvements among chronic heart failure patients.	2015	8/11 (AMSTAR rating from McMaster Health Forum)	5/38

Population of focus	Focus of systematic review	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
		The review suggests that proactive follow-up is key to improve outcomes. An ideal intervention could include an educational component, an initial contact within one week of discharge, multidisciplinary coordination and continuity of care through repeated contacts.			
Chronic conditions	Using interprofessional care plans in chronic care for older individuals (26)	The review included 45 studies that focused on the use of shared care plans. Most of the studies aimed to identify models of multidisciplinary collaboration. The majority of included studies focused on disease-specific care plans. Main elements of care plans included information on the current state of the patient, goals and concerns, actions and interventions, and an evaluation of the care delivered and the plan. Factors found to influence the interprofessional development of a shared care plan were found to include interpersonal factors related to individual professionals and interactions between team members, organizational factors related to conditions and structures such as logistics of team meetings, and patient-related factors regarding the integration of the patient's perspective during the care plan development process. Many of the included studies also identified tools to support the building and use of shared care plans. These included an alert system with the electronic health record use of an information communication technology platform including web-based call centres, tools such as decision supports and self-management training that allow the patient to take part in the care plan development, and tools that allow patients to contribute to modifications and adaptions of their plan. Despite identifying the many elements included in care plans, the scoping review was unable to determine that it is supported by empirical evidence, as in many cases the care plan was part of a larger intervention.	2014	6/9 (AMSTAR rating from McMaster Health Forum)	0/45

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