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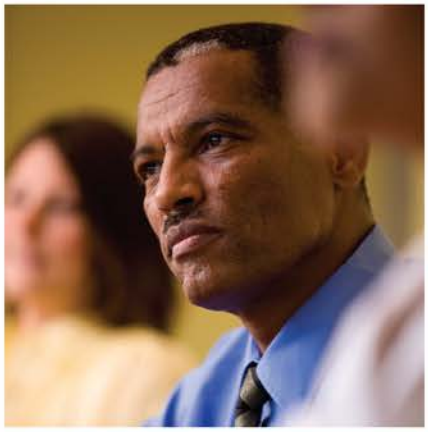
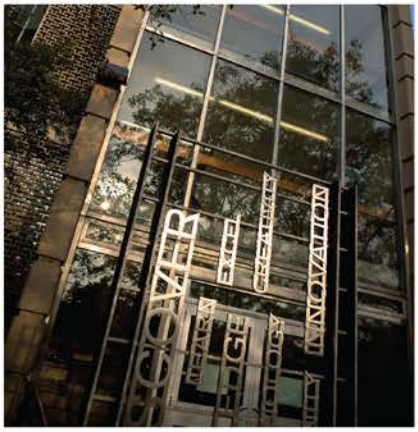
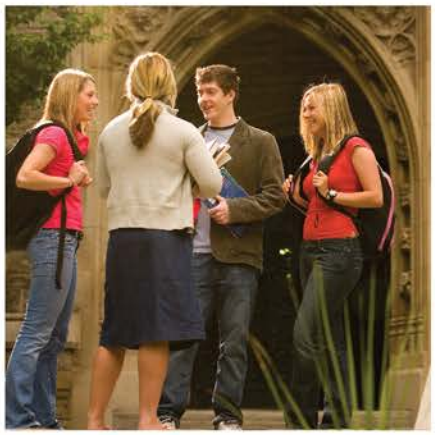
McMaster HEALTH FORUM

ENGAGING IN PRIORITY SETTING ABOUT PRIMARY AND INTEGRATED HEALTHCARE INNOVATIONS IN CANADA

RAPID SYNTHESIS (30-DAY RESPONSE)







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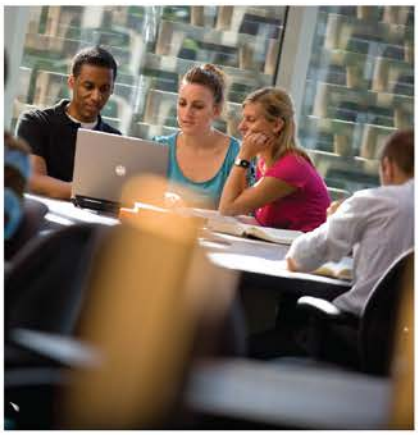

EVIDENCE >> INSIGHT >> ACTION

Rapid Synthesis:
Engaging in Priority Setting about Primary and Integrated Healthcare Innovations in Canada

31 March 2014

McMaster Health Forum

For concerned citizens and influential thinkers and doers, the McMaster Health Forum strives to be a leading hub for improving health outcomes through collective problem solving. Operating at regional/provincial levels and at national levels, the Forum harnesses information, convenes stakeholders, and prepares action-oriented leaders to meet pressing health issues creatively. The Forum acts as an agent of change by empowering stakeholders to set agendas, take well-considered actions, and communicate the rationale for actions effectively.

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Timeline

Rapid syntheses can be requested in a three-, 10- or 30-business-day timeframe and this synthesis was prepared over a 30-business-day timeframe. An overview of what can be provided and what cannot be provided in each of the different timelines is provided on the McMaster Health Forum's Rapid Response program webpage (http://www.mcmasterhealthforum.org/index.php/stakeholders/rapid-response).

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Conflict of interest

The authors declare that they have no professional or commercial interests relevant to the rapid synthesis. The funders 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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KEY MESSAGES

Questions

1. What principles and approaches have been used for implementing priority-setting mechanisms for research investments involving multiple partners and organizations?
2. What are the gaps in research relevant to primary and integrated healthcare interventions, delivery models and approaches to multi-sector integration for individuals with complex-care needs across the life course (including upstream prevention strategies)?

Why the issue is important

- Provincial and territorial ministries of health have made significant investments in primary healthcare reform over recent years to improve access, quality, continuity of care, value for money, satisfaction and health outcomes, but but the current system remains fragmented and uncoordinated.
- Given this, the Strategies for Patient-Oriented Research (SPOR) Network in Primary and Integrated Health Care Innovations has identified an urgent need for "transformative change towards integrated healthcare delivery models that take advantage of and build upon the foundation that provincial and territorial ministries of health have created through recent reforms and investments in community-based primary healthcare."
- To begin to address this need, the initial focus of the SPOR Network in Primary and Integrated Health Care Innovations is on new approaches to the delivery of primary and integrated healthcare to provide optimal care for individuals with complex-care needs across the life course, and to foster multi-sector integration of upstream prevention strategies and care-delivery models.

What we found

- **Question 1**
  - We identified nine systematic reviews and 37 primary studies and non-systematic reviews related to priority-setting processes for research evidence and for health systems.
  - No systematic reviews addressed priority-setting processes for primary research and reviews about health-system arrangements (the most relevant type of process for this rapid synthesis), but seven studies and non-systematic reviews provide rich descriptions of: 1) 'listening' approaches that have been conducted in Canada, the United States and nine countries in the Middle East and North Africa; 2) a participatory methodology to establish health-system financing research priorities in developing countries; and 3) a Delphi-survey method coupled with a two-day workshop for identifying research priorities for health-systems research on health and aging in Ontario, Canada.
- **Question 2**
  - We identified 26 systematic reviews (six of high quality, 17 of medium quality and three of low quality) and four economic evaluations that were mapped in a 'gap analysis' according to whether they: 1) assessed interventions designed to support integration among patients or individuals, providers, teams, organizations, sectors or systems; and 2) included outcomes within the Institute for Healthcare Improvement's Triple Aim Initiative, namely to improving the patient experience of care, improving the health of populations and reducing the per capita cost of care.
  - Many of the systematic reviews address several intervention levels and/or types of outcomes, with most addressing interventions at the level of providers or teams and disease-focused outcomes.
  - Three systematic reviews and one economic evaluation evaluated complex packages of interdependent interventions (which we classified as multi-level interventions) for people living with multimorbidity (i.e., those with three or more chronic conditions), or for chronic disease management.
  - Key informants (policymakers, professional leaders and researchers) identified four priority areas for research: 1) identifying complex-care patients and paying particular attention to those with the most complex needs; 2) taking a balanced approach to evaluating interventions and ensuring coverage of program-, system- and societal-level interventions; 3) adopting a patient-centred approach to measuring outcomes; and 4) developing guidance for patients/individuals and for providers.

QUESTIONS

1. What principles and approaches have been used for implementing priority-setting mechanisms for research investments involving multiple partners and organizations?
2. What are the gaps in research relevant to primary and integrated healthcare interventions, delivery models and approaches to multi-sector integration for individuals with complex-care needs across the life course (including upstream prevention strategies)?

WHY THE ISSUE IS IMPORTANT

Provincial and territorial ministries of health have made significant investments in primary healthcare reform over recent years to improve access, quality, continuity of care, cost, satisfaction and health outcomes. Interdisciplinary team-based care, networks with streamlined care pathways, the use of health-information technologies, new funding and remuneration models, patient-engagement and empowerment initiatives, chronic-disease prevention and management strategies, and new linkages with other key sectors are a few of the many examples of provincial and territorial reforms that have been used in efforts to strengthen primary healthcare in Canada. Despite these investments, the current system remains fragmented and uncoordinated which causes additional stress, confusion and potential harm to Canadians in need of care (particularly for those with complex-care needs).

Recent investments by the Canadian Institutes of Health Research to launch the Strategies for Patient-Oriented Research (SPOR) Network in Primary and Integrated Health Care Innovations (a network of networks that builds on provincial/territorial/federal networks, national assets in community-based primary healthcare, and partners in community-based primary healthcare innovation teams) is aimed at catalyzing evidence-informed innovation to address this fragmentation and lack of coordination. The goal of the network is to "foster a new alliance between research, policy and practice to create dynamic and responsive learning networks that develop, evaluate and scale up new approaches to the delivery of integrated and cost-effective services across and beyond sectors of health care, and contribute to improved clinical, population health, health equity, and health-system outcomes."(1)

Within this remit, the SPOR Network in Primary and Integrated Health Care Innovations has identified an urgent need for "transformative change towards integrated healthcare delivery models that take advantage of and build upon the foundation that provincial and territorial ministries of health have created through recent reforms and investments in CBPHC [community-based primary healthcare]."(1) Furthermore, the network

Box 1: 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-or 30-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 Rapid Response program webpage (http://www.mcmasterhealthforum.org/index.php/stakeholders/rapid-response)

This rapid synthesis was prepared over a 30-business-day timeframe and involved five steps:

1) submission of a question from a health-system policymaker or stakeholder (in this case, originally Health Canada and the Canadian Institutes of Health Research and later the Government of Ontario);
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; and
4) finalizing the rapid synthesis based on the input of at least three merit reviewers.

has identified that a strong foundation in community-based primary healthcare with integrated linkages to secondary and tertiary sectors of the health system (including prevention, acute care, tertiary hospitals, home care and long-term care), as well as to relevant sectors outside of health (e.g., education, housing, social services and transportation), is critical for addressing the challenges of health and healthcare in this century.(1)

Given these challenges, the initial focus of the network will be "on new approaches to the delivery of primary and integrated health care (including primary prevention and primary health care) both horizontally and vertically across the care continuum to address individuals with complex-care needs across the life course…and multi-sector [i.e., beyond the healthcare sector] integration of upstream prevention strategies and care-delivery models."(1) Within this initial focus, the network plans to lead a priority-setting process to identify research priorities and questions.(1) In general, this will require: 1) developing an understanding of the principles of and potential approaches for implementing robust priority-setting mechanisms involving multiple partners and jurisdictions; and 2) systematically identifying a list of potential priorities to be considered through a priority-setting process.

Box 2: Identification, selection and synthesis of research evidence

For the first question (about principles and approaches to priority setting), we identified research evidence (systematic reviews and primary studies) by searching (in February 2014) Medline and Health Systems Evidence (www.healthsystemsevidence.org). In Medline, we conducted two searches: 1) priority setting OR priority-setting (limited to the last 10 years and using a search filter to optimize the retrieval of systematic reviews); and 2) (priority setting OR priority-setting) AND Canada (limited to the last 10 years). In Health Systems Evidence we searched for priority setting OR priority-setting in the title, abstract and keywords fields.

For the second question, we identified systematic reviews and economic evaluations for the 'gap map' from a recent knowledge synthesis and issue brief about designing integrated approaches for people with multimorbidity. The searches of Health Systems Evidence from these documents were conducted in July 2013, which we updated in March 2014.

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 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 the Appendix 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.

WHAT WE FOUND

Approaches to priority setting in general involve: 1) assessing the state of the literature in a particular domain to identify possible gaps; 2) engaging relevant stakeholders in processes designed to identify their short-, medium- and long-term priorities that could be informed by research evidence; and 3) comparing the available literature to the identified priorities to generate a set of research priorities that can be addressed by researchers in the short-term (for products such as evidence briefs or rapid syntheses), medium-term (for products such as systematic reviews) and long-term (for new primary research).(2) We present below an assessment of the research evidence about principles and approaches for priority-setting processes that have been used to inform research investments involving multiple partners and organizations. We then present our assessment of the state of the literature (a 'gap analysis') related to primary and integrated interventions, delivery models and approaches to multi-sector integration for individuals with complex-care needs across the life course (including upstream prevention strategies).

Question 1: What principles and approaches have been used for implementing priority-setting mechanisms for research investments involving multiple partners and organizations?

We identified literature related to priority-setting processes for new research evidence, and for health systems (see Box 2 for a description of our search strategy). We summarize in Table 1 the number of systematic

reviews and primary studies/non-systematic reviews related to these different types of processes. We have divided the literature about priority-setting processes for research evidence into sub-categories for research evidence about health-system arrangements and implementation strategies, about clinical and public health programs and services, and about drugs, given that these processes may differ in important ways. Furthermore, we divided the categories about priority-setting processes for health systems into sub-categories about health-system arrangements and implementation strategies, and about clinical and public health programs and services, and about drugs, given that these also require unique sets of considerations.

Table 1: Summary literature identified about priority-setting processes for research evidence and health systems

Type of research evidence	Priority-setting processes for research evidence		Priority-setting processes for health systems	
	Primary research or reviews about health-system arrangements and implementation strategies	**Primary research or reviews about clinical and public health programs and services, and about drugs**	**Health-system arrangements and implementation strategies**	**Clinical and public health programs and services, and drugs**
Number of systematic reviews	n = 0	n = 2 older* medium-quality reviews	n = 1 recent medium-quality review	n = 6 reviews (one recent and one older medium-quality review, and four older low-quality reviews)
Number of primary studies/non-systematic reviews	n = 7	n = 4	n = 3	n = 23

*We define older here as being conducted more than five ago.

We summarize below the key findings based on the systematic reviews we identified, and supplement this with findings from single studies/non-systematic reviews where no systematic reviews were identified or to fill conceptual gaps. In general, our synthesis emphasizes the findings related to priority setting for primary research and reviews about health-system arrangements and implementation strategies, given that it is most relevant to the question posed for this rapid synthesis. We provide more details about the systematic reviews in Appendix 1 and about the primary studies and non-systematic reviews in Appendix 2 for those who are interested.

Priority setting for research evidence about health-system arrangements and implementation strategies

We did not identify systematic reviews relevant to priority setting for research evidence about health-system arrangements and implementation strategies, but we identified seven studies and non-systematic reviews that offer helpful findings and insight. Four of these papers describe 'listening' approaches used in Canada,(2;3) the United States,(4) and in nine countries within the Middle East and North Africa.(5) The Canadian papers describe the 'Listening for Direction' process used to identify investments in research that have a high likelihood to inform decision-making.(3) In setting the context for using a listening model, Lomas et al. indicate that priority-setting processes for applied health-services research previously documented in the literature include the incorporation of service users' values, technical/quantifiable assessments for diseases and treatments, and interpretive assessments that focus on participants' views and consensus.(2) This paper further outlined the following six key steps that were used to shape the Listening for Direction approach used in Canada:

1) identifying the stakeholders to participate in the consultation (i.e., determining the right mix of stakeholders to be consulted, which should include the intended users of the research to be produced);
2) identifying and assembling background information and data to inform the consultations (e.g., about specific problems to address or existing priorities);

3) designing and conducting consultation with stakeholders to identify issues that will persist over the next three to five years and outline short- and long-term priorities based on these issues;
4) validating priorities through other sources and/or against other similar priority-setting exercises that have been completed;
5) translating issues into priority research themes (i.e., turning priorities into researchable questions); and
6) validating research themes with the consulted stakeholders (to ensure the research themes are an accurate reflection of the views expressed by stakeholders).

The first iteration of the Listening for Direction process resulted in the identification of 15 research themes, and 90% of stakeholders believed these addressed their issues, while 85% indicated that they were reflective of the debates held in the workshops.(2;3) In addition, the third iteration of Listening for Direction identified the need to more actively facilitate the use of research evidence (e.g., through forums that allow for deliberation among researchers and decision-makers, by creating a virtual network linking research results and a list of researchers in decision-makers' areas of interest, providing training sessions for decision-makers, and packaging research evidence to make it easier to use).(3)

In the United States, AcademyHealth recently undertook a listening project to identify health-system leaders' most pressing Medicare-related health policy and healthcare-delivery research needs over the next three to five years.(4) This process involved interviews (both telephone and in-person) with government analysts, non-governmental experts, and other healthcare-policy experts. During the interviews, these stakeholders were asked to identify knowledge gaps and research needs that were specific to Medicare. Priority themes were identified through qualitative data analysis and then validated by an external-review committee that was comprised of interviewees and content experts.(4)

The third listening approach was focused on shaping health-system research priorities in the Middle East and North Africa, and adopted the approach outlined by Lomas et al. above (but slightly modified to accommodate its use for nine countries).(5) This process consisted of four phases with each consisting of a cluster of activities. In the first phase, a literature review of existing policy concerns and research priorities on the three themes was conducted in collaboration with researchers from each of the nine countries participating in the priority-setting process. In addition, the first phase included the identification of country-specific key informants from the public sector, health-professional associations, academic institutions and the non-state sector, and the development of a context-specific interview guide and approach to running the workshops for each country. The second phase consisted of convening the workshops, which were taped and transcribed. The local researchers conducted preliminary analyses, which informed a subsequent workshop where country-specific findings were presented and discussed. In the third phase, qualitative analysis was conducted using the data from each of the nine countries, which resulted in the identification of three themes. In the fourth and final phase, a workshop with 26 policymakers, researchers and representatives was convened for regional validation and ranking of priorities to derive a research agenda based on the three themes.

Two of the three remaining papers report on priority-setting processes that used a participatory methodology(6) and a method for identifying research priorities for health-systems research on health and aging,(7) with the final paper (a non-systematic review) emphasizing the general importance of civil society participating in health research (including processes to commission or develop priorities for research).(8) The study reporting on a participatory methodology was used to establish health-systems financing research priorities in developing countries, and used a three-stage process similar to the listening approaches outlined above. Specifically, the approach involved: 1) conducting key-informant interviews across 24 low- and middle-income countries; 2) conducting an assessment of systematic reviews related to health-system financing; and 3) convening a consultative workshop with experts to discuss the results of the first two phases (based on a draft paper that was developed) and to rank the identified priorities (using a five-point Likert scale).(6)

The paper reporting on a method for identifying research priorities for health-systems research on health and aging used a two-stage approach.(7) The first stage consisted of a series of three online Delphi surveys that were administered to panel members of the Ontario Research Coalition of Institutes/Centres on Health and Aging. The first survey included three open-ended questions designed to solicit research topics that could be prioritized. The second survey used PICO-based (i.e., population, intervention, comparison and outcome) research statements derived from responses to the first survey, and asked panel members to rate them using a five-point Likert scale and to rank order what they perceived to be the top three statements. Lastly, in the third survey panel members were asked to rate and rank the top-rated and ranked statements from the second survey, as well as recommend two Ontario-based researchers to be principal investigators for the proposed priority topics. In the second stage, three of the four research teams identified in the third survey were invited to attend a two-day, proposal-development meeting where consensus was reached on the project principal investigators, team composition and disbursement of funds for the preparation of proposals.

Priority setting for research evidence about clinical and public health programs and services, and about drugs

We identified one older medium-quality systematic review that assessed approaches to priority setting for health technology assessments (HTA).(9) The review found:

- 12 priority-setting frameworks from 11 agencies (including Canada);
- 59 criteria for HTA priority setting, which were grouped in 11 categories (available alternatives; budget impact; clinical impact; controversial nature of proposed technology; disease burden; economic impact; ethical, legal, or psychosocial implications; evidence; interest; timeliness of review; and variation in rates of use);
- most approaches used a panel or committee to provide advice about priorities and others engaged volunteer or strategic groups of several sets of stakeholders (e.g., clinicians, researchers, payers, consumers and industry representatives) or an executive-led group;
- the committees for all agencies included health-system funders, health professionals and researchers; and
- some approaches used a rating system coupled with a committee to inform priorities.

Researchers who built on the findings from the above review about HTA priority setting developed a multi-criteria decision analytic approach at the Canadian Agency for Drugs and Technologies in Health.(10) This approach uses a deliberative process aimed at ensuring transparency by openly declaring the criteria used for and their relative importance to decision-making. In addition, through this process, the engagement and interaction between policymakers, stakeholders, and research users is actively supported to provide the opportunity for these groups to openly comment on factors other than the significance of the research. Lastly, the study reported that the approach has received positive feedback from advisory committee members. More specifically, a survey of advisory-committee members found that 88% believed the priority-setting framework enhanced the impact of HTA reports, and 67% indicated that the relevance (in their view) of topic proposals increased after the process was implemented.(10)

Priority setting for health-system arrangements and implementation strategies

A recent medium-quality review of decision criteria for resource allocation and healthcare decision-making identified a list of 10 groupings of criteria that have been used (the list is provided in Appendix 2), and found that within the list that most (eight of 10) are normative criteria, highlighting the importance of considering the actual worth or value of healthcare interventions rather than just feasibility criteria.(11)

Priority setting for clinical and public health programs and services and for drugs

Several of the reviews we identified that address priority setting for clinical and public health programs and services and for drugs emphasized the importance of public engagement in priority setting. For example, an older medium-quality and large review (n=175 studies) found that public engagement is most commonly used at stages involving the development of a vision or goal setting, and less commonly in monitoring and

evaluation stages.(12) The review further indicates that satisfaction with priority-setting processes was increased in instances where there were opportunities for face-to-face interaction among the public and decision-makers.(12) Another older but low-quality review suggested that resource-allocation decisions must incorporate values-based considerations, and processes should consider values from within a specific nation, region or community.(13) Related to this, another older and low-quality review found three studies indicating that formulary decisions were not accessible beyond those who made the decisions.(14) Further, the review noted that the conclusions of these studies were that priority setting could be improved through greater publicity, which would support the engagement of all stakeholders in discussions about principles that should be used in priority setting, and ultimately enhance accountability and democratic decision-making.(14)

Question 2: What are the gaps in research relevant to primary and integrated healthcare interventions, delivery models and approaches to multi-sector integration for individuals with complex-care needs across the life course (including upstream prevention strategies)?

We developed a 'gap map' using the approach developed by the International Initiative for Impact Evaluation,(15) which we supplemented with key-informant interviews with seven stakeholders from Ontario, Canada. The interviews allowed us to gather insight about priorities from those actively engaged in policy development or research related to people with complex-care needs. Each interviewee was sent a draft of the 'gap map' and was asked during the interview to: 1) provide feedback about the structure and content of the table; 2) identify any additional systematic reviews that we may have missed; and 3) identify what they think the key priorities in this area should be. We incorporated feedback from the first and second questions into the 'gap analysis' and identified common themes based on feedback provided in response to the third question.

For the gap analysis, we identified relevant systematic reviews and economic evaluations that were included in a recently produced issue brief about designing integrated approaches to support people with multimorbidity, and updated the searches (in March 2014) that were completed for the brief.(16) Next, we mapped each review and economic evaluation according to whether they assessed interventions designed to support integration among patients or individuals, providers, teams, organizations, sectors or systems. Some systematic reviews were focused on complex packages of interdependent interventions. We therefore categorized these reviews as multi-level interventions (e.g., comprehensive care programs) because the different interventions and outcomes associated with them could not be differentiated. For reviews and economic evaluations categorized within each level of intervention, we further categorized them according to outcomes included within the Institute for Healthcare Improvement's Triple Aim Initiative.(17) This initiative includes outcomes related to improving the patient experience of care, improving the health of populations, and reducing the per capita cost of care. We then mapped these categorizations into a table with reviews colour coded according to whether they are high- (blue), medium- (green) or low-quality (yellow), with economic evaluations colour coded as purple. Because many of the reviews appear several times, we used a darker shade of colour for the instance of the review appearing in the table, and then a lighter shade of the same colour for all subsequent appearances of the review. We present the resulting 'gap map' below and provide more details about each review in Appendix 3 for those who are interested.

Themes identified from the key-informant interviews

Several common themes emerged from our brief (15-20 minute) key-informant interviews with seven Ontario-based stakeholders (policymakers, leaders from professional organizations and researchers) who are actively engaged in policy development and/or research related to people with complex-care needs. First, key informants highlighted the need to identify *who* complex patients are and their needs. A lack of clarity about what is meant by terms such as "high-needs users" or "complex-care needs" was noted. In addition, the need to focus research efforts on priority populations (e.g., people with mental health and addictions and the frail elderly) that often have the most complex needs was articulated by several key informants.

The second theme that emerged related to *what* should be prioritized to be evaluated in future research. Key informants identified the need for a balanced approach between evaluating program-level interventions (e.g., chronic disease-management programs), system-level interventions (e.g., Ontario's Health Links that provide integrated care across the continuum of care for those with complex needs) and societal-level interventions (e.g., those that aim to address the underlying determinants of health such as housing, employment and social connectedness). Within this scope, many of the key informants underscored the need to focus efforts on prevention to ensure research priorities are not only focused on those who already require complex care, but also on preventing others from eventually requiring complex care.

The most consistent theme that emerged was the need to consider what *outcomes* should be prioritized in future research. Most key informants indicated that the focal point of outcomes needs to be patients' goals (or what one key informant called a "whole person" focus), but indicated that this requires a shift in thinking about how outcomes are considered both in clinical practice and in research, where the emphasis is typically only on disease-focused outcomes. One key informant outlined that this type of "whole person" approach could focus on identifying treatment goals (at the micro level), treatment burden in relation to those goals (at the meso level), and what needs to be measured at a population level given that discrete disease rates are not helpful due to the overlap between diseases in people requiring complex care.(18;19) Others questioned whether the goal is to have happy patients, healthy patients or a mix, and one questioned what happens when patient goals (e.g., want all possible care no matter how complex) conflict with goals for the system (e.g., a delivery system that is more effective and efficient).

The last theme that emerged was the need for *guidelines or guidance* for complex-care patients. This theme was emphasized both in terms of guidance for patients and their families and caregivers, as well as guidelines for providers. For patients and their families and caregivers, the need to develop information and tools to support self-management was identified as being critical. One key example provided is a best practice guideline from the Registered Nurses Association of Ontario that provides a resource about strategies to support self-management for people with chronic conditions.(20) Guidelines that support the provision of care for people with complex needs have gained significant interest recently, but key informants noted that sustained efforts and investments in this area are required to develop this type of guideline.

Results from the gap analysis

We identified 26 systematic reviews and three economic evaluations. We summarize the quality and how recently each of the systematic reviews was conducted in Table 2. Almost half of the reviews (n=12) did not include any studies that were conducted in Canada. In those that did, they comprised a small proportion of the total number of included studies, pointing to an overall general lack of Canada-specific research evidence in this area (at least in terms of what has been identified in systematic reviews).

Table 2: Summary of the quality and recency of systematic reviews included in the 'gap analysis'

Last year the literature was searched	High quality (n=6)	Medium quality (n=17)	Low quality (n=3)
2011-2014	4	9	0
2007-2010	2	8	2
2004-2007	0	1	1
pre-2004	1	0	0

Most of the systematic reviews presented in the 'gap map' in Table 3 address several intervention levels and/or types of outcomes. We identified three systematic reviews (two high quality and one medium quality) and one economic evaluation that address multi-level interventions. In addition, one or more of these reviews addressed each of the types of outcomes. These reviews address interventions for people with multimorbidity (primary-care and community-setting interventions and comprehensive care programs),(21;22) and the

economic evaluation was conducted in Ontario and assesses interventions to improve chronic-disease management.(23) At the level of patients, we identified four medium-quality reviews addressing four types of outcomes (quality of care/patient satisfaction, disease focused, health-related quality of life, and whether patient goals were met). These reviews evaluated models of home and community care for older adults, internet-based self-help interventions, chronic disease peer support and culturally-relevant interventions.

Most of the systematic reviews addressed interventions at the level of providers or teams. Of the nine reviews addressing providers, eight were of medium quality, one was of low quality, and at least one of these reviews addressed all of the outcomes except for mortality. These reviews were focused on a variety of interventions and topics, including general practitioners' perspectives on managing patients with multimorbidity,(24) medication adherence and management,(25-27) nurse-focused interventions,(27-29) culturally appropriate interventions,(30;31) and general medical care for people with mental health and addictions.(32) At the level of teams, we identified six systematic reviews (two high quality, three medium quality and one low quality) and one economic evaluation, which addressed several outcomes, including access to and availability of care, appropriateness of care and disease-focused outcomes, with at least one addressing all of the listed outcomes except quality of care/patient satisfaction and mortality. These reviews focused on interventions related to case management,(33) geriatric care by pharmacists,(34) collaborative care models related to mental health,(35;36) case conferencing for people with advanced dementia living in nursing homes,(37) and medication reconciliation.(38) The economic evaluation, which was conducted in the United States, evaluated the addition of lay persons to the primary care team for chronic disease management.(39)

We found three systematic reviews (two of medium quality and one low quality) and one economic evaluation addressing interventions at the level of organizations, one high-quality review related to working across sectors (i.e., beyond the healthcare sector), and four reviews (one of high quality and three of medium quality) and one economic evaluation related to system-level interventions (and these do not include those that we classified as 'multiple level interventions'). At the organizational level, the systematic reviews assessed culturally appropriate interventions,(30) hospital-wide interventions for frail older patients,(40) and dual-diagnosis programs for the homeless with severe mental health and substance use disorders,(41) with these reviews addressing all of the outcomes except quality of care/patient safety and mortality. The economic evaluation was conducted in the United States and focused on the systematic identification and treatment of co-morbid major depression for people with chronic diseases.(42) The review related to working across sectors evaluated approaches to managing the hospital/community interface for older adults, and included outcomes related to appropriateness, disease-related measures, meeting patient goals and reducing the per capita cost of care.(43) The reviews addressing system-level interventions focused on interventions related to models of home and community care for older adults,(44) in-home care for chronic disease management,(45) outpatient case management for adults with medical illness and complex-care needs,(46) and culturally appropriate interventions.(30) These reviews addressed all of the outcomes except mortality. Lastly, the economic evaluation related to system-level interventions was conducted in the United States and assessed care-transition interventions for reducing rates of re-hospitalization.(47)

Table 3: Gap analysis of evidence about interventions for individuals with complex care needs
[Legend: High-quality reviews = blue; medium-quality reviews = green; low-quality reviews = yellow; and economic evaluations = purple. Note that a darker shade of each colour is used for the first instance of the review appearing in the table and then a lighter shade is used for all subsequent appearances of the review]

Levels/type of intervention	Outcomes (derived from the Institute for Healthcare Improvement's Triple Aim Initiative (17))							
	Improving the patient experience of care			Improving the health of populations				
	Access to and availability of care	Appropriateness of care	Quality of care/patient satisfaction	Disease-focused outcomes	Health-related quality of life	Patient goals met (e.g., optimized function)	Mortality	Reducing the per capita cost of care
Prevention/ upstream				Culturally appropriate interventions to manage or prevent chronic disease • Medium quality • Searched in 2009 • 1/24 studies conducted in Canada				
				Multicultural health workers in chronic disease prevention and self-management • Medium quality • Searched in 2010 • 39 studies included (countries in which studies countries were conducted was not reported)				
				Motivational interviewing for older adults in primary care • Medium quality • Searched in 2013 • 8 studies (countries in				

Levels/type of intervention	Outcomes (derived from the Institute for Healthcare Improvement's Triple Aim Initiative (17))							
	Improving the patient experience of care			Improving the health of populations				
	Access to and availability of care	Appropriateness of care	Quality of care/patient satisfaction	Disease-focused outcomes	Health-related quality of life	Patient goals met (e.g., optimized function)	Mortality	Reducing the per capita cost of care
				which studies were conducted was not reported)				
Multiple levels (e.g., comprehensive care programs comprised of interventions in several or all of the levels below)	Interventions for people with multimorbidity in primary care and community settings • High quality • Searched in 2011 • 2/10 studies conducted in Canada	Interventions to improve the appropriate use of polypharmacy for older people • High quality • Searched in 2009 • 2/10 studies conducted in Canada	Comprehensive care programs for people with multiple chronic conditions • Medium quality • Searched in 2011 • 4/42 studies conducted in Canada	Comprehensive care programs for people with multiple chronic conditions	Comprehensive care programs for people with multiple chronic conditions (2011)	Interventions for people with multimorbidity in primary care and community settings	Comprehensive care programs for people with multiple chronic conditions	Interventions to improve the management of chronic diseases • Published in 2013 • Conducted in Canada
		Comprehensive care programs for people with multiple chronic conditions		Interventions for people with multimorbidity in primary care and community settings		Comprehensive care programs for people with multiple chronic conditions		Interventions for people with multimorbidity in primary care and community settings
								Comprehensive care programs for people with multiple chronic conditions
Patients/ individuals			Models of home and community care for older persons • Medium quality • Searched in 2009 • 3/34 studies conducted in Canada	Internet-based self-help therapeutic interventions for chronic health conditions • Medium quality • Searched in 2011 • 0/23 studies conducted in Canada	Models of home and community care for older persons	Chronic disease peer-support interventions • Medium quality • Searched in 2011 • 23 studies (countries in which studies were conducted was not reported)		
				Culturally appropriate				

Levels/type of intervention	Outcomes (derived from the Institute for Healthcare Improvement's Triple Aim Initiative (17))							
	Improving the patient experience of care			Improving the health of populations				
	Access to and availability of care	Appropriateness of care	Quality of care/patient satisfaction	Disease-focused outcomes	Health-related quality of life	Patient goals met (e.g., optimized function)	Mortality	Reducing the per capita cost of care
				interventions to manage or prevent chronic disease				
				Models of home and community care for older persons				
Providers	General practitioners' perspectives on the management of patients with multimorbidity • Medium quality • Searched in 2012 • 0/10 studies conducted in Canada	Specialized nursing practice for chronic disease management in the primary care • Medium quality • Searched in 2012 • 0/6 studies conducted in Canada	Specialized nursing practice for chronic disease management in the primary care	Specialized nursing practice for chronic disease management in the primary care	Specialized nursing practice for chronic disease management in the primary care	General practitioners' perspectives on the management of patients with multimorbidity		Interventions to improve medication adherence in people with multiple chronic conditions • Medium quality • Searched in 2007 • 0/8 studies conducted in Canada
	Culturally appropriate interventions to manage or prevent chronic disease	Pharmacists' interventions in the management of patients with chronic kidney disease • Medium quality • Searched in 2010 • 1/37 studies conducted in Canada	Culturally appropriate interventions to manage or prevent chronic disease	Multicultural health workers in chronic disease prevention and self-management	Pharmacists' interventions in the management of patients with chronic kidney disease	Nurse-led interventions to enhance adherence to chronic medication • Medium quality • Searched in 2011 • 1/10 studies conducted in Canada		General medical care for persons with mental and addictive disorders • Medium quality • Searched in 2005 • 0/6 studies conducted in Canada
	General medical care for persons with mental and addictive disorders	Interventions to improve medication adherence in people with multiple chronic conditions	General medical care for persons with mental and addictive disorders	Culturally appropriate interventions to manage or prevent chronic disease				
		Nurse case managers for improving health outcomes for the chronically ill		Pharmacists' interventions in the management of patients with chronic				

Levels/type of intervention	Outcomes (derived from the Institute for Healthcare Improvement's Triple Aim Initiative (17))							
	Improving the patient experience of care			Improving the health of populations				
	Access to and availability of care	Appropriateness of care	Quality of care/patient satisfaction	Disease-focused outcomes	Health-related quality of life	Patient goals met (e.g., optimized function)	Mortality	Reducing the per capita cost of care
		• Low quality • Search not reported – published in 2009 • 0/18 studies conducted in Canada		kidney disease				
				General medical care for persons with mental and addictive disorders				
				Motivational interviewing for older adults in primary care • Medium quality • Searched in 2013 • 8 studies (countries in which studies were conducted was not reported)				
Teams	Case management for reducing emergency department visits in frequent user populations • Medium quality • Searched in 2010 • 1/12 studies conducted in Canada	Geriatric patient care by pharmacists in healthcare teams • High quality • Searched in 2012 • 0/20 studies conducted in Canada		Collaborative care for patients with depression and diabetes mellitus • High quality • Searched in 2012 • 0/8 studies conducted in Canada	Collaborative chronic care models for mental health conditions across disorders and treatment settings • Medium quality • Searched in 2011 • 0/55 studies conducted in Canada	Geriatric patient care by pharmacists in healthcare teams		Collaborative chronic care models for mental health conditions across disorders and treatment settings
		Case conferencing for people with advanced dementia living in nursing homes		Collaborative chronic care models for mental health conditions across		Case conferencing for people with advanced dementia living in nursing		Adding laypersons to the primary care team to improve chronic disease care

Levels/type of intervention	Outcomes (derived from the Institute for Healthcare Improvement's Triple Aim Initiative (17))							
	Improving the patient experience of care			Improving the health of populations				
	Access to and availability of care	Appropriateness of care	Quality of care/patient satisfaction	Disease-focused outcomes	Health-related quality of life	Patient goals met (e.g., optimized function)	Mortality	Reducing the per capita cost of care
		• Medium quality • Searched in 2010 • 0/9 studies conducted in Canada		disorders and treatment settings		homes		• Published in 2013 • Conducted in the United States
		Medication reconciliation interventions in patients transferred to and from long-term care settings • Low quality • Searched in 2010 • 0/7 studies conducted in Canada		Medication reconciliation interventions in patients transferred to and from long-term care settings				
Organizations	Culturally appropriate interventions to manage or prevent chronic disease	Hospital-wide interventions for frail older inpatients • Medium quality • Searched in 2009 • 3/20 studies conducted in Canada		Hospital-wide interventions for frail older inpatients	Hospital-wide interventions for frail older inpatients		Hospital-wide interventions for frail older inpatients	Systematic identification and treatment of co-morbid major depression for people with chronic diseases • Published in 2013 • Conducted in the United States
				Dual-diagnosis programs for the homeless with severe mental illness and substance use disorders • Low quality • Searched in 2004 • 0/11 studies				

Levels/type of intervention	Outcomes (derived from the Institute for Healthcare Improvement's Triple Aim Initiative (17))							
	Improving the patient experience of care			Improving the health of populations				
	Access to and availability of care	Appropriateness of care	Quality of care/patient satisfaction	Disease-focused outcomes	Health-related quality of life	Patient goals met (e.g., optimized function)	Mortality	Reducing the per capita cost of care
				conducted in Canada				
Sectors		Approaches to managing the hospital/community interface for older adults • High quality • Searched in 2003 • 4/39 studies conducted in Canada		Approaches to managing the hospital/community interface for older adults		Approaches to managing the hospital/ community interface for older adults		Approaches to managing the hospital/ community interface for older adults
Systems	Models of home and community care for older persons	In-home care for optimizing chronic disease management • Medium quality • Searched in 2012 • 1/12 studies conducted in Canada	Outpatient case management for adults with medical illness and complex-care needs • High quality • Searched in 2011 • 7/153 studies conducted in Canada	In-home care for optimizing chronic disease management	In-home care for optimizing chronic disease management	Outpatient case management for adults with medical illness and complex-care needs		Outpatient case management for adults with medical illness and complex-care needs
		Models of home and community care for older persons	Culturally appropriate interventions to manage or prevent chronic disease	Culturally appropriate interventions to manage or prevent chronic disease	Culturally appropriate interventions to manage or prevent chronic disease	In-home care for optimizing chronic disease management		Care transition interventions for reducing rates of rehospitalisation • Published in 2006 • Conducted in the United States
						Models of home and community care for older persons		

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APPENDICES

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, the proportion of studies conducted in Canada, and the proportion of studies focused on primary or integrated healthcare; and
- primary studies - the focus of the study, methods used, study sample, jurisdiction studied, key features of the intervention, and the study findings.

For the appendix tables providing details about the systematic reviews, the fourth 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.

Appendix 1: Summary of findings from systematic reviews about principles and approaches for implementing priority-setting mechanisms for research investments involving multiple partners and organizations

Priority-setting focus	Focus of systematic review	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
Priority setting for primary research and for reviews about health-system arrangements and implementation strategies	No reviews identified	N/A	N/A	N/A	N/A
Priority setting for primary research and for reviews about clinical and public health programs, services and for drugs	Priority setting for health technology assessment (10)	The review developed a multi-criteria decision analytic (MCDA) approach and a deliberative process that is goal-oriented and provides transparency in decisions by openly declaring its criteria for decision-making and its importance. The approach provides analysis of important factors to be considered. The study suggested that the approach is strengthened by the involvement and interaction of government officials, policymakers and research users who can comment upon other factors besides research significance. The responses from the Canadian Agency for Drug and Technologies in Health (CADTH) advisory committee members about the MCDA approach were generally favourable. The authors note limitations to MCDA such as not "accounting for value trade-offs across criteria and prescribe what topic should be selected". The authors express concern to their approach with respect to committee member turnover and its changes on priorities. Advisory committees completed the authors' evaluation on the priority setting framework and found 88% of respondents believe the process allowed an increase of impact of health technology (HTA) reports. Furthermore, "67% of respondents believed that the relevance of HTA topic proposals increased during the time that this process was implemented".	2007 (based on review presented in following row)	4/10 (AMSTAR rating from McMaster Health Forum)	Not reported in detail
	Priority setting for health technology assessments (9)	The review found: 12 priority-setting frameworks from 11 agencies (including Canada); most used a panel or committee to provide advice about priorities and others engaged volunteer or strategic groups of several sets of stakeholders (e.g., clinicians, researchers, payers, consumers and industry representatives) or an executive-led group; the committees for all agencies included health-system funders, health professionals and researchers; some used a rating system coupled with a committee to inform priorities; and 59 criteria for HTA priority setting, which were grouped in 11 categories (available alternatives; budget impact; clinical impact; controversial nature of	2007	4/10 (AMSTAR rating from McMaster Health Forum)	Not reported in detail

Priority-setting focus	Focus of systematic review	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
		proposed technology; disease burden; economic impact; ethical, legal, or psychosocial implications; evidence; interest; timeliness of review; variation in rates of use). By comparing the various frameworks from the HTA programs, the authors discovered an equal usage of committees, ratings and consideration of cost benefit. Only two of the 12 frameworks had an explicit process for considering the efficiency of conducting an assessment, however, future research is required to understand the gap between recommendations and currently existing practices.			
Priority setting for health-system arrangements and implementation strategies	Decision criteria for resource allocation and healthcare decision making (11)	The most frequently mentioned criteria were (in descending order): equity/fairness, efficacy/effectiveness, stakeholder interests and pressures, cost-effectiveness, strength of evidence, safety, mission and mandate of health system, organizational requirements and capacity, patient-reported outcomes and need. Among these, three were from the 'health benefits and outcomes of intervention' category, highlighting the importance of this consideration in decision-making. In addition, there is a predominance of normative criteria (8 out of 10), which highlights the importance of considering the actual worth or value of healthcare interventions, rather than just feasibility criteria. Among these criteria, equity is difficult to operationalize in decision-making and priority-setting processes in a pragmatic manner, given that it is a complex ethical concept, and cost-effectiveness criteria fails to incorporate equity considerations.	2010	4/10 (AMSTAR rating from Program in Policy Decision-making)	Not reported in detail
Priority setting for clinical and public health programs, services and drugs	Public participation in healthcare priority setting (12)	Public engagement is most common at the visioning or goal-setting level, and less common in monitoring or evaluation. Opportunities that involved face-to-face interaction among the public and decision-makers found better satisfaction with the outcomes. There is some evidence to suggest there is a lack of practical guidance for integrating public input with other forms of evidence. The authors discovered gaps in the literature such as: identifying what role the public plays in setting performance measures, monitoring and evaluation design.	2006	4/10 (AMSTAR rating from McMaster Health Forum)	16/175

Priority-setting 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 lack of evaluation studies inhibits the authors' ability to determine which evidence supports any particular approach to public engagement in priority setting.			
	Setting priorities for health interventions in developing countries (48)	Most of the studies in this review were small pilot studies and did not contain evaluation of the impact of the finding on priority setting. There is a need to involve the views of multiple stakeholders to enhance the legitimacy and fairness of decision-making. Studies suggest a need for focus group discussions with stakeholders to determine suitable criteria, but views may be dependent on culture and perspective of different countries. The review suggests quantitative techniques such as discrete choice experiments (DCE) be used in situations requiring general guidance on priority setting. Further research is suggested on quantitative techniques and their ability to make decisions more transparent. Qualitative techniques are suggested during specific situations and for decisions such as implementation of certain interventions.	2008	2/10 (AMSTAR rating from Program in Policy Decision-making)	1/18
	Decision-making in priority setting for medicines (14)	Six studies stated experts and administrative persons are the most essential individuals in terms of decision-making. For decision-making, a defined set of criteria with clinical evidence on the benefit and the costs being the main criteria was used in priority setting concerning medicines. There is some evidence to suggest publicity could improve priority setting through the engagement of all stakeholders in a discussion, in addition to promoting accountability and democracy in decision-making.	2007	1/10 (AMSTAR rating from Program in Policy Decision-making)	3/6
	Priority setting for technology adoption at a hospital level (49)	The authors created a reference framework that may be utilized as a list of issues during decision-making, which involved relevant information from current literature. The utilization of the reference framework may facilitate dialogue between the sponsors of a technology and the budget committee by enabling the sponsors to assess their proposal against a list of agreed issues. The authors believe the reference framework will increase accountability and responsibility between the sponsors and the budget committee.	Not reported	1/9 (AMSTAR rating from Program in Policy Decision-making)	Not reported
	Role of academic research in healthcare priority setting (13)	A national/state-level priority-setting process involved the assembly of a government-appointed committee and an extensive consultation with stakeholders to develop a systematic process for priority setting. Six of 10 countries used a formal process to determine pertinent principles. In the remaining four countries, an informal process was comprised of informal debates, discussions among policymakers and a consensus meeting. The majority of the proposed guidelines were based on principles or factors such	2005	3/10 (AMSTAR rating from McMaster Health Forum)	1/30

Priority-setting focus	Focus of systematic review	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
		as condition/disease severity. At the regional and community levels, the aim was to establish systematic approaches to priority setting explicitly for services and programs through public engagement. Public involvement decisions will vary from each region and community. The literature identifies that resource allocation decision-making must be values-based and should accommodate the particular values within a specific nation, region or community.			
	Pharmacoeconomics for priority setting for essential medicines in Tanzania (50)	There is little evidence to identify approaches and principles for priority setting. The authors encourage more pharmaeconomic studies to be applied for future priority-setting decisions.	2011	5/10 (AMSTAR rating from McMaster Health Forum)	Not reported in detail

Appendix 2: Summary of findings from non-systematic reviews about principles and approaches for implementating priority-setting mechanisms for research investments involving multiple partners and organization

Priority-setting focus	Focus of study/document	Study characteristics	Sample description	Features of the priority-setting process	Key findings
Priority setting for primary research and for reviews about health-system arrangements and implementation strategies	Health-system leaders' most pressing Medicare-related health policy and healthcare delivery research needs over a period of three to five years (4)	*Publication date:* 2014 *Jurisdiction studied:* United States *Methods used:* Telephone and in-person interviews with government agency analysts, non-governmental experts, and other healthcare policymakers regarding knowledge gaps and research needs related to Medicare Qualitative data analysis was used to identify and synthesize major themes, which were validated by an external review committee comprised of interviewees and content experts	Participants included those who had participated in AcademyHealth projects in the last two years and had relevant expertise to the Medicare program Two groups were targeted: 1) analytical staff in congressional, executive and independent federal agencies tasked with supporting the development or implementation of Medicare policy; and 2) other Medicare experts currently employed by think tanks who previously served in government agencies with Medicare responsibilities	Centers for Medical and Medicaid Innovation (CMMI) utilize rapid-cycle evaluation but it is not explicitly explained in the report	For research process improvements, 'rapid-cycle' evaluations were highlighted in the study as being fundamental to the establishment of a 'learning health care system'. There are mixed feelings among the interviewees on 'rapid-cycle' evaluations. The interviewees recommend traditional research methods to draw valid conclusions about the interventions.
	Providing a common road map for national granting and knowledge organizations to help guide investment decisions for research funding and related knowledge-exchange activity (3)	*Publication date:* 2008 *Jurisdiction studied:* Canada *Methods used:* All eight groups participated throughout the following phases: consultation workshops with one national workshop in Ottawa, five regional workshops in the South, and three northern regional workshops; one-day meeting with research experts for a translation	Eight national organizations partnered for the third phase of the process: the Foundation and Institute of Health Services and Policy Research at the Canadian Institutes of Health Research(co-strategic leads), CADTH, Canadian Healthcare Association, Canadian Institute for Health Information, Canadian Patient Safety Institute, Health Canada, and Statistics Canada	'Listening for Direction' identifies investments in research that are most likely to improve decision-making Process involves consultations with healthcare managers, policymakers and lead researchers about identifying and translating short-term and long-term issues into research questions The process involves six phases: background information, consultation workshops, translation and sorting session, final report, validation, ongoing	The first (2001-2004) and second (2004-2007) iterations of "Listening for Direction" involved partnerships between five national organizations for the priority-setting process. The consultation identified 15 priority research themes that can be distinguished into two types of research questions. The process had significant impact for the CIHR-IHSPR with the adoption of all of the themes. The report notes that there are difficulties in further assessing the impact of the first and second 'Listening for Direction'. The report indicates the impact of the third 'Listening for Direction' from 2007 is yet to be determined with partners searching for a more rigorous approach to monitoring and evaluating

Priority-setting focus	Focus of study/document	Study characteristics	Sample description	Features of the priority-setting process	Key findings
		and sorting session; and final report disseminated to all workshop participants	202 attendees for the consultation included: 107 decision-makers such as clinical leaders, hospital managers, national and provincial analysts; 40 mid- to senior-level researchers; 55 from other settings such as consultants, knowledge brokers, research administrators, healthcare associations and professional associations	follow-up activities "Linkage and exchange" is promoted in 'Listening for Direction' to promote timely and relevant evidence for decision-making through partnerships of national agencies	the process's impact. The third 'Listening for Direction' illustrated the need to facilitate the uptake of research including: creation of forums where researchers and decision-makers share knowledge and discuss their experiences and methods of implementation following a certain outcome; creation of a virtual network that would hold research results and a list of researchers linked to their areas of interest; training sessions for decision-makers such as courses targeted to long-term training programs; and providing clear and accessible evidence to decision-makers.
	Setting priorities for applied health services research (2)	N/A	N/A	Processes mentioned in past literature include: incorporation of service users' values, technical assessments with a heavy focus on quantifiable epidemiological method for diseases and treatments, and interpretive assessments with a focus on participants' views and consensus "Listening Model" is suggested, which includes six key steps: engaging research users in a consultation; identifying key concerns to research priorities prior to the consultation; stakeholders identifying issues that will persist over the next three to five years and outlining long-term or short-term priorities; validating priority issues through other sources; translating issues into priority research themes; and validating research themes with the consulted stakeholders Other processes mentioned are: creation of research teams that include stakeholders or are	In a Canadian case study, 56 environmental scans of organizations and community input identified 175 key stakeholders regarding priority and policy themes. In six workshops, stakeholders identified 15 research themes and 90% believed "priorities addressed their issues and 85% believed priorities reflected their workshop's debates". Case studies that utilized the "Listening Model" found acceptance of the implementation of priorities. Three provinces in Canada used the "Listening Model" for their own purposes and found considerable usefulness for their own funding activities.

Priority-setting focus	Focus of study/document	Study characteristics	Sample description	Features of the priority-setting process	Key findings
				"overseen by advisory committee including both researchers and stakeholders"	
	Eliciting policymakers' and stakeholders' opinions to help shape health-system research priorities in the Middle East and North Africa region (5)	*Publication date:* 2010 *Jurisdiction studied:* Nine countries within the Middle East and North Africa *Methods used:* Regional and local researchers attended two workshops that included audio-taped and transcribed interviews with a small set of open-ended questions, and a two-day regional validation and ranking workshop	Nine countries within the Middle East and North Africa (MENA): Algeria, Egypt, Jordan, Lebanon, Morocco, Palestine, Syria, Tunisia, Yemen Regional validation and ranking workshop involved 26 policymakers, researchers and representatives from nine countries	The "listening" approach involved four modified phases: 1) conducting literature review of existing research priorities and identification of researchers informants from each country through a criteria; 2) methodological workshop and audio-taped and transcribed interviews with identified researchers; 3) extracting, coding and combining similar concepts together into three themes; 4) workshop with 26 policymakers, researchers and representatives for regional validation on common policy concerns and ranking of priorities for the three- to five-year span Phase four involved rating the importance of policy concerns and research priorities using three-point Likert scale and a ranking process for priorities identified within each theme based on the relevance, urgency, feasibility, applicability, originality of each priority.	The approach provided the authors with "clear insights into stakeholders' views on research priorities" by utilizing a combined qualitative and quantitative research technique. The stakeholders identified five research priorities for the next three to five years. During the ranking of priorities, the weighting of each ranked item by key informant illustrated fluctuation, which may indicate different interests. Differences in priorities are noted in researchers and representatives from non-state sectors in comparison to policymakers. Limitations to the process involve not defining priorities expressed by each informant.
	Establishing health-systems financing research priorities in developing countries using a participatory methodology (6)	*Publication date:* 2010 *Jurisdiction studied:* Low- and middle-income countries *Methods used:* Key informant interviews with stakeholders and consultative workshop	Key informant interviews were conducted with health policymakers, researchers, community and civil society representatives from 24 low- and middle-income countries from Latin America, East Africa, Southeast Asia and Middle East/North Africa	Three steps in the process which include: key-informant interviews across 24 low- and middle-income countries from four regions; literature review on systematic reviews relating to the research; and consultative workshop with expert researchers who discussed steps one and two, ranked priorities and found methodologies to approach issues	The review highlights methodological strengths to the process such as ability to replicate results, increasing generalizability to other developing countries, identifying diverse views from stakeholders, and providing specific research questions. Impact of the approach has yet to be documented.

Priority-setting focus	Focus of study/document	Study characteristics	Sample description	Features of the priority-setting process	Key findings
			Consultative workshop involved 12 experts from institutions (e.g., international organizations, government and private or non-profit research institutes) in low-or middle-income countries	Consultative workshop provided participants with a draft paper that included key-informant interviews and an overview of the literature review in addition to an unranked list of priorities Ranking involved the five-point Likert scale Technical report, briefing note or academic paper follows the three-step process	
	Identifying research priorities for health-systems research on health and aging (7)	*Publication date:* 2013 *Jurisdiction studied:* Canada *Methods used:* Online tool "Survey Monkey" to administer three independent Delphi surveys that included project goals, criteria and voluntary nature of participation Two-day meeting hosted by the Ontario Research Coalition of Institutes/Centres on Health and Aging (ORC) involved the identification of a principal investigator, team roles, ORC fund disbursement	Panel members across Ontario including health and aging researchers, policymakers, and caregivers 33, 29, 32 out of 129 approached panellists responded to each respective survey Three of the four identified investigator teams attended the two-day meeting; MOHLTC attended for results and to provide additional input	First survey included three open-ended questions to identify priority research topics to be addressed with an adapted population health priority-setting criteria The second survey categorized responses from the first survey using the PICO approach (population, intervention, comparison, outcome) and asked panel members to rank each statement with a five-point Likert agree or disagree scale The third survey included top ranked statements from the second survey and requested panel members to rate and rank PICO statements in addition to recommending two Ontario researchers to be principal investigators for the proposed priority topic	The decision to use online surveys instead of roundtable discussions was because of reduced cost, convenience and the ability to reach appropriate participants. Through surveys, individual dominance is mitigated and each participant's perspective can be acknowledged. This process identified research priorities in less than four months. The authors note the collaboration among policymakers, researchers and caregivers increases the transfer from research to policy.
	Participation of civil society organizations in health research(8)	*Publication date:* 2004 *Jurisdiction studied: Global Health*	N/A	No mention of a specific process for priority setting	The review highlights three approaches to engage civil society organizations such as "influencing commissioning and priority-setting; involvement in the research and review

Priority-setting focus	Focus of study/document	Study characteristics	Sample description	Features of the priority-setting process	Key findings
		Methods used: *N/A*			process; formal partnerships between academics and civil society groups". Participatory research conducted through formal partnerships between academics and civil society groups holds promise for the application of research findings. There is an emphasis on the need for human processes such as community participation for long-term implementation and to identify factors that lead to health development The lack of understanding of decision-making processes by researchers is noted as a significant barrier.
Priority setting for primary research and for reviews about clinical and public health programs, services and for drugs	A model to engage patients and clinicians in setting research priorities (51)	*Publication date:* 2014 *Jurisdiction studied:* Scotland *Methods used:* Standard Survey Model included questionnaires emailed to stroke survivors, carers and healthcare professionals and responded to through mail, email or telephone FREE TEA model included different formats for submission of treatment uncertainties such as powerpoint presentations, on-line presentation and table-top presentation, with a focus on aphasia-friendly information sheet Facilitation for the submission of treatment	Residents in Scotland affected by stroke including survivors, carers and health professionals, identified by steering committee members	Study focuses on Facilitating Representative Engagement and Assisted involvement (FREE TEA) model that involves mail and electronic surveys for submission of treatment uncertainties from targeted population Knowledge gaps relevant to patients are high priority for the James Lind Alliance (JLA) process Key features of JLA include: forming priority-setting partnerships through establishment of a steering committee of patients, carers and clinicians in addition to partner organizations for a defined scope; identifying and gathering treatment uncertainties through stakeholder meetings, consultations with partners, electronic and paper-based surveys; identifying existing	The authors successfully elicited the collection of 516 treatment uncertainties with similar 54% of responses from stroke survivors and 46% health professionals. More stroke survivors responded to the FREE TEA model than to the Standard Survey method, with opposite results from health professionals. Fair representation of both patients and health professionals led to the identification of the top 10 shared research priorities in relation to strokes via the JLA methods of prioritization. The authors believe the fair representation allowed for ethical credibility.

Priority-setting focus	Focus of study/document	Study characteristics	Sample description	Features of the priority-setting process	Key findings
		uncertainties involved face-to-face contact with 20 stroke support groups and clubs from 11 NHS Scotland areas		research on each priority and merging similar questions and removing non-treatment questions; further consultation and surveys with partners for validation; consensus meeting with representative patients, carers and clinicians for top 10 priorities; and dissemination of top 10 priorities to potential researchers and funders	
	Setting priorities in global child health research investments (52)	*Publication date:* 2007 *Jurisdiction studied:* Global *Methods used:* Three interviews with three different groups of stakeholders which included a different version of a questionnaire to set weights to criteria	30 affiliates to the global research priority-setting network, representing the larger reference group which includes researchers, policymakers and health practitioners for the first survey Stakeholders in South Africa for the second survey included academics, participants of a local public health conference, workers at the Medical Research Council and the Human Sciences Research Council in Cape Town, lay people, and members of the public The third survey included 20 participants at a conference related to international child health held in Washington, D.C.	Process includes: flexible methodology defining all criteria relevant to priority-setting; technical experts listing and scoring research options against the defined criteria through a set of simple and discriminative questions; and the overall value of each research option computed as a final research priority score by averaging the intermediate scores Authors suggest funding agencies to gather two main groups: a Technical Working Group (TWG) assigning values to each research option "by likelihood to address each relevant criteria to priority-setting", and a larger reference group not including TWG that adjusts thresholds and weights defined by the TWG Development of three questionnaires from simple to complex concepts and explanations enables individuals with different backgrounds and knowledge to assess each research option First questionnaire involves a scale from one to five with one	The authors highly recommend the first questionnaire to be used in large reference groups with a wide range of backgrounds and level of education. There is concern for the lost meaning of each criterion upon simplification that may result in different interpretations. The input from the first questionnaire enables simple and useful quantitative values and "works well in practice", but there is "no theoretical justification for limiting the weights for intermediate values." The second questionnaire is recommended and more useful when stakeholders have the appropriate level of knowledge as the questions are more specific to the criteria for priority setting. The authors recommend the third questionnaire in exceptional cases such as "when the larger reference group is formed by a relatively small number of highly motivated people with a good understanding of the issues related to health research investments", and for the "purpose of qualitative research on stakeholders' values" to provide more detailed information and deeper understanding of the weights. Respondents of the third questionnaire suggested trained research assistants guide the interviews.

Priority-setting focus	Focus of study/document	Study characteristics	Sample description	Features of the priority-setting process	Key findings
				bearing the most importance for each of the five criteria and involving the use of layman terms Second and third questionnaires vary in language and understanding of the research options with the third questionnaire being most complex, but both questionnaires ask stakeholders to allocate an arbitrary amount of money across the five criteria	
	Priority setting for systematic reviews of healthcare interventions in Nigeria (53)	*Publication date:* 2011 *Jurisdiction studied:* Nigeria *Methods used:* Researchers used a combination of the Delphi technique, the Hanlon method and method used by Cochrane public health field	21 key informants, including healthcare professionals, health policymakers, researchers and consumers from six geo-political zones in Nigeria identified priority health problems	Process included: utilizing the National Health Information System and key informants to identify national health priorities, search for and identify systematic reviews and existing gaps in literature, and rank systematic review topics with a pre-determined criteria Selected panellists identified potential review topics to address gaps in existing literature of systematic reviews Ranking is based on five criteria from one to five with five being the best score: "relevance to MDGs, likelihood that the intervention will be affordable to households and governments, potential of review to influence healthcare practice or policy, urgency, and likelihood of review to be relevant to other countries" The final priority list included topics with aggregate scores over 85	The response rate was 85.7% with 18 of 21 key informants returning their ranked list of health priorities, which enabled the identification of 18 research priorities. The authors highlight end-users of systematic reviews playing a key role for each stage of the research process and requiring a "systematic and participatory approach". The authors believe and recommend the use of systematic reviews as a reliable method to determine the effectiveness of healthcare interventions. Ethical considerations are highlighted as being key in all processes for priority setting.

Priority-setting focus	Focus of study/document	Study characteristics	Sample description	Features of the priority-setting process	Key findings
	Research priorities for suicide prevention in Australia (54)	*Publication date:* 2008 *Jurisdiction studied:* Australia *Methods used:* Part one of the study asked stakeholders through questionnaires about their views on future priorities The focus of the study is on part two and involved three group interviews, also known as "consensus panels", in Melbourne, Sydney and Brisbane	A "snowballing technique" was used to find participants, which included identifying individuals from networks, yielding 28 key informants with a focus on suicide prevention research	Consensus panels were prompted by questions including: what is currently known and unknown; the individual's thoughts on current and future research priorities; the overall quality of research; and identifying the factors that influence priorities Interviewees raised certain topics, which were used to develop category labels, and interview segments or quotations were sorted into these categories Emphasis of this approach involved identifying common and recurring themes within a given category	Despite differences in opinions by the key informants, the authors noted common emerging themes. The interviews reached a "saturation" point where no new ideas were being expressed and became consistent with the questionnaire findings from study one. The authors explain that despite limitations, the themes emerged from the interviews may provide guidance to its future direction and reveal the importance of stakeholder views on priorities. Limitations to this method involve the small number of participants. The need for epidemiological data is expressed.
Priority setting for health-system arrangements and implementation strategies	To test the impact of involving patients in setting healthcare improvement priorities for chronic care at the community level (55)	*Publication date:* 2014 *Jurisdiction studied:* Canada *Methods used:* Authors conducted a cluster-randomized controlled trial for the study involving consultations, one-day meetings and a two-day deliberation meeting Recruitment teams identified participants through open advertising, healthcare organizations and snowballing technique	172 individuals from six communities, including 83 chronic disease patients and 89 professionals for the trial from six Health and Social Services Centres Five experts (two physicians, two managers, one information specialist) rated each indicator	Processes to identify indicators included systematic reviews and a panel to review and rate indicators for measurability and applicability Baseline patient consultation included a one-day meeting with patients before randomization to select indicators for prioritization, where the intervention and control groups varied with patient involvement, such as the intervention group being allowed feedback on patients' consultations and to deliberate on priorities with patients and professionals in a two-day meeting to agree upon priorities The control group only contained deliberations on priorities by professionals Professionals' intentions to	The authors comment that the "process of mutual influence, agreement between patients and professionals increased by 41% favouring intervention sites". The selected indicators scored high in both the control and intervention groups on the professionals' intention to use these priorities to improve healthcare. Patient involvement required more time and resources, but was considered clinically significant in moving priorities towards access to primary care. The study provides and supports the "feasibility of effectively involving a broad range of stakeholders in complex policy decisions". There are limitations to the study such as whether or not patient involvement can transform healthcare services over a longer period of time, and the uncertainty with regards to generalizing its findings. The authors express caution before "extrapolating the effects" to other programs and contexts.

Priority-setting focus	Focus of study/document	Study characteristics	Sample description	Features of the priority-setting process	Key findings
				implement the identified priorities by patients were collected with an 11-item questionnaire with a seven-point Likert scale that measured credibility, feasibility, importance and their own intention to use identified priorities to improve healthcare Patient involvement required: structured recruitment, full-day meeting, consultation of large number patients, small face-to-face deliberation between professionals and patients, moderation by an expert facilitator	
	Public involvement in the priority-setting activities of a wait time management initiative (56)	*Publication date:* 2007 *Jurisdiction studied:* Canada *Methods used:* One-on-one interviews with key informants	28 participants from the Ontario Wait Times Strategy (OWTS), MOHLTC representatives, clinicians, patient advocates	Structure of the OWTS included: "Expert Panels" consisting of clinicians, administrators, researchers, informatics personnel and no representation from the public. Panel reports were made available to the public Interviewees referred loosely to the use of "eight context-specific factors in making their recommendations": 1) capacity to increase services; 2) time frame; 3) consistency; 4) equity; 5) quality; 6) efficiency ratings; 7) scientific evidence; and 8) utilization of expert panel recommendations for practicality Panel chairs informally assessed the feedback from panel members One interviewee recommended "commonality and rigor to panel	"Accountability for reasonableness" was the conceptual framework to provide decision-makers a way to improve priority-setting processes. It meets four conditions: "relevance, publicity, revisions/appeals, and enforcement". The majority of the interviewees "did not identify lack of public participation as a short-coming of the OWTS decision-making process". Most of the interviewees expressed openness to public involvement with regards to the public "identifying priorities, setting benchmarks, decision-making within panels, and the selection of targeted service areas" through "focus groups, surveys, phone interviews, deliberative dialogue, elections/voting, stakeholder roundtable, and development of an arms' length public commission on health". Many interviewees express the need for public input in priority setting to improve the quality of decision-making by providing another "layer of scrutiny". A proposal to involve the public included shared decision-making, focused outreach,

Priority-setting focus	Focus of study/document	Study characteristics	Sample description	Features of the priority-setting process	Key findings
				deliberations and written recommendations to avoid conflicting advice" Ad hoc comments from public informally influenced some decisions, but the OWTS did not solicit feedback from the public	feedback and appeals mechanism. The MOHLTC was receptive to implementing the proposal. The results may not be generalizable.
	Social values in health priority setting (57)	N/A	N/A	The document identified transparency, accountability and participation as important process components Transparency is practically useful especially during explicit priority setting with criteria openly stated, which will allow for efficiency and equity, and minimize misuse of resources Accountability refers to "three questions: who, what, where" "Who" is outlined as individuals making the decisions such as central or local government; "what" involves being accountable for taxpayers' money; "how" is outlined by two concepts which are providing information on decisions and the second involves explanations and justifications Participation and inclusivity may increase transparency for decision-making, but requires a balance Participation may include information or deliberation such as "public consultations, surveys, citizen juries, community forums, deliberative polls", but there are	The process values are closely linked. Increased participation in areas where citizens experience a direct impact from decisions may lead to advancement in transparency. Accountability is seen to be a common concern among systems with policymakers and the public need for increased accountability. Transparency and accountability are considered closely linked when decision-makers are an independent or a quasi-independent expert body, as their independency requires a clearer justification to their decisions. Important reasons for involving the public include: being the users of service; making important contributions to the technical quality of decisions through their experience; and identifying relevant moral considerations. Clear plans are required to achieve meaningful contributions especially as to how their input will be used and how it will be communicated. "Content" values are often associated with technical criteria and its importance is often hidden within clinical and cost-effectiveness measures.

Priority-setting focus	Focus of study/document	Study characteristics	Sample description	Features of the priority-setting process	Key findings
				difficulties with the methodology "Content" values include: clinical effectiveness, cost effectiveness, justice/equity, solidarity, autonomy	
Priority setting for clinical and public health programs, services and for drugs	Setting priorities for the healthcare sector in Zimbabwe using cost-effectiveness analysis and estimates of the burden of disease (58)	*Publication date:* 2008 *Jurisdiction studied:* Zimbabwe *Methods used:* Costs per disability-adjusted life year (DALY) for a total of 65 health interventions were estimated. Costing data were collected through visits to health centres, hospitals and vertical programs when a combination of step-down and micro-costing was applied. Effectiveness of health interventions was estimated based on published information on the efficacy adjusted for factors such as coverage and compliance	Study sites randomly chosen from across the country Six of the total 1,200 were selected for cost analysis Five district level hospitals including two mission hospitals from a total of 130 hospitals were sampled for the cost of inpatient and outpatient services and surgical procedures Two provincial hospitals, which provided less specialized services in comparison to district-level hospitals, from a total of eight were randomly selected Highest-level central hospitals were excluded Two provinces out of a total of eight were randomly chosen and two districts were randomly selected with each province The Ministry of Health and two provincial health offices were visited to gain additional information about program costs of interventions	Limited number of interventions in the study due to lack of knowledge to the particular topic	The analyses of the study suggest a substantial potential for improving the efficiency of resource use in the public healthcare sector by using a consistent methodology. The authors note there is a significant lack of data due to limiting research resources available.
	A conceptual framework for successful priority setting	*Publication date:* 2009	Study one gathered 12 priority setting scholars	Three studies provided insight into elements that can	The conceptual framework is the first attempt to comprehensively describe elements of

Priority-setting focus	Focus of study/document	Study characteristics	Sample description	Features of the priority-setting process	Key findings
	(59)	*Jurisdiction studied:* Canada *Methods used:* Three separate but related empirical studies were conducted using different data collection methods Study one gathered international perspectives to contribute to three Delphi 'rounds' The ethical framework 'accountability for reasonableness' served as a starting point for discussions Study two brought together senior level decision-makers in healthcare organizations One-on-one interviews by phone or in person completed with participants until conceptual saturation reached These audio taped interviews were transcribed Study three consisted of patients, health-system users and health policymakers from across Canada, set around those who participated in the Alberta-based Provincial Health Ethics Network Conference Focus groups were videotaped and discussions transcribed	and healthcare decision-makers from five different health systems: Canada, Norway, Uganda, U.K. and U.S.A. Study two recruited senior level decision-makers in healthcare organizations across Canada using theoretical sampling and 'snowball' sampling Individuals came from across 45 different organizations, with representation from every province except Newfoundland and Prince Edward Island Study three included 13 patients/health-system users and 13 health policymakers representing different levels of government Focus of the studies was to describe characteristics of successful priority setting from decision-makers' perspectives, so sample size was not formally calculated	comprehensively define successful priority setting 21 elements were identified, but upon re-analyzing the data, an amalgamated list was created with 10 key elements Whenever there was disagreement or uncertainty in this process, researchers returned to the original data to discuss the specific meaning of the element Limited controversies in this process showed there are common elements people can agree on Some contradictions were identified within study two between focus groups (patients/health-system users and policymakers) Completed conceptual framework was circulated to a selection of participants across the three studies and interdisciplinary scholars as a type of 'member check'	successful priority setting from the perspectives of stakeholders. Five process concepts and five outcome concepts were identified. Process concepts include stakeholder engagement, use of explicit process, information management, consideration of values and context, and revision or appeal mechanism. Outcome concepts include improved stakeholder understanding, shifted priorities and/or reallocated resources, improved decision-making quality, stakeholder acceptance and satisfaction, and positive externalities. The elements are interconnected and often interdependent. They are not weighted because no evidence suggests one element is more important than another. This research is limited in its generalizability because most perspectives are from the Canadian health system, and may not serve to represent other countries' contextual elements of success.

Priority-setting focus	Focus of study/document	Study characteristics	Sample description	Features of the priority-setting process	Key findings
	Evaluating priority-setting success in healthcare (60) .	*Publication date:* 2010 *Jurisdiction studied:* Ontario *Methods used:* The study includes two distinct phases: (1) creating the evaluation process, and (2) assessing the validity, usefulness and applicability of the evaluation process Development of the evaluation process began with questions that attempt to operationalize elements of the conceptual framework (developed by Sibbald in 2009) Questions were mapped across three evaluation process: a survey, interviews and document analysis Based on feedback, researchers revised the questions and proposed evaluation indicators To assess the validity of the evaluation process, the survey, interview guide and document analysis were circulated to an interdisciplinary group of researchers and policymakers The panel assessed how well the questions captured or reflected the 10 elements from the conceptual framework Framework piloted in a	Panel of interdisciplinary researchers and policymakers in phase two are composed of 12 individuals including four priority-setting scholars and eight decision-makers involved in priority-setting decisions Pilot test was conducted in mid-sized acute care urban community hospital in Ontario Participants were employees of the hospital, including those directly and indirectly involved in the 2007/2008 budgeting process Survey participants were recruited via internal email to all hospital employees with an email account Of the 2,000 invitations, 105 hospital employees responded to the online survey Interview participants were sampled using a convenience sampling, then a combination of theoretical sampling and snowball sampling Of the 28 hospital managers invited, nine participated in a one-on-one interview	A key strength identified in the 2007/2008 budgeting process was the involvement of the program director and managers The budget process followed an explicit and pre-determined timeline, but participants believed that the time of year coupled with the short time frame impeded the rigour and transparency of the process A lack of clarity in the methods of decision, how the decisions were made, and those who were in charge of decision-making was expressed During the budgeting process, information was managed by a pre-populated computer-based budgeting tool Frustrations about the functionality of the tool were expressed frequently, including issues with the template, bugs that should have been worked out, and wasted time Three decision-making frameworks were available, including the provincial ministry of health's framework, an ethical decision-making framework adapted from Gibson et al., and an activity analysis tool, but were rarely used due to insufficient information None of the four most common decision-making inputs used by the program director were included in the aforementioned inputs	Seven questions pertained to stakeholder engagement in the survey. When level of involvement was compared with satisfaction, 53% were satisfied with their involvement. Several respondents reflected that there was insufficient involvement from front line staff. Many pointed out the primary reason for lack of broader consultation was derived from the tight timeline. Interview participants reached consensus that front line staff should have been more involved, and that there should be increased consultation and engagement from external stakeholders. There was interest from interviewees to enhance internal collaboration on budgets to capture cross-departmental interdependencies. The four most common decision-making inputs used by program directors were: (1) capital need; (2) interdependency; (3) strategic directions; and (4) other revenue sources. Long-time employees of the hospital often relied on their "own forecasting" and "personal knowledge." The majority of the survey respondents felt that the mission, vision and values of the hospital were considered in the 2007/2008 budget. Both survey respondents and interviewees believed that staff values were not considered as much as they should have been. Of the seven values and context items, the majority of the respondents said that all elements were 'somewhat' or 'appropriately' reflected in the budget. Interviewees stated that most of the 'back and forth' between different levels of management were one-way discussions, and they felt that a two-way dialogue to allow changes to final budget decisions was lacking.

Priority-setting focus	Focus of study/document	Study characteristics	Sample description	Features of the priority-setting process	Key findings
		mid-size urban hospital to test the real-world applicability and usability of the evaluation process		Long-time employees of the hospital often relied on their "own forecasting" and "personal knowledge" in their decision-making	
	Cost-effectiveness analysis for priority-setting in South Africa (61)	*Publication date:* 2010 *Jurisdiction studied:* South Africa *Methods used:* A literature review was conducted	N/A	Cost-effectiveness analysis comparing the cost of different interventions against units of gain (e.g., a life saved)	"International experience shows that priority setting based on cost-effectiveness and burden of disease estimates is essentially a political rather than a technical exercise and therefore political and institutional processes need to be engaged."
	Criteria, process and indicators of success for setting priorities in health care organizations (62)	*Publication date:* 2004 *Jurisdiction studied:* Canada *Methods used:* A strategy for priority-setting based on the Accountability for Reasonableness (A4R) framework was developed by board members and senior leadership at three healthcare organizations	Senior leadership from three Canadian academic health science centres (Saskatoon Health Region, Kingston General Hospital and The Ottawa Hospital) participated	Within the A4R framework, four conditions should be met to ensure legitimate and fair decision-making: relevance, publicity, revisions and appeals, and enforcement	Participants identified a range of elements for initiating and maintaining a fair priority-setting process, including: • establishing a strategic plan; • clarifying the "programmatic architecture" of the organization; • clarifying responsibilities of senior management in relation to the process; • ensuring that the decision-making group is multidisciplinary; • engaging stakeholders; • clearly defining priority-setting criteria for stakeholders; • developing effective communication strategies; • developing decision review processes; • implementing process and evaluation strategies; and • promoting leadership development and change management strategies. Indicators of success were largely based on "…whether the process was perceived to be an improvement over past priority setting initiatives and whether it was implemented in subsequent iterations of priority setting."
	Resource allocation in health services organizations (63)	*Publication date:* 2004 *Jurisdiction studied:*	N/A	Within the A4R framework, four conditions should be met to ensure legitimate and fair	To fulfill the relevance condition, the authors suggest: • developing a rationale for priority-setting

Priority-setting focus	Focus of study/document	Study characteristics	Sample description	Features of the priority-setting process	Key findings
		Canada *Methods used:* Personal experiences with Accountability for Reasonableness (A4R) framework were distilled into several lessons		decision-making: relevance, publicity, revisions and appeals, and enforcement Authors concluded that "empowerment" should be considered a fifth condition	decisions; • using explicit decision criteria related to the organization's mission, visions and values; • collecting information related to each criterion; • consulting with stakeholders to inform the process; and • making decisions using an interdisciplinary group. To fulfill the publicity condition, the authors suggest communicating the decision and its rationale, and using an effective communication strategy to engage stakeholders around priority-setting process and objectives. To fulfil the revisions and appeals condition, the authors suggest building opportunities for iterative decision review, and developing a formal decision-review process based on explicit criteria. To fulfil the enforcement condition, the authors suggest leading by example, and evaluating the priority-setting process. To support the empowerment condition, the authors suggest promoting leadership development and change management strategies.
	Priority setting at the micro-, meso- and macro-levels in Canada, Norway and Uganda (64)	*Publication date:* 2007 *Jurisdiction studied:* Canada (Ontario), Norway and Uganda *Methods used:* Interviews were conducted with decision-makers involved in priority setting in three countries	184 decision-makers involved at all levels of priority setting in the Canadian (Ontario), Norwegian and Ugandan healthcare systems	Within the A4R framework, four conditions should be met to ensure legitimate and fair decision-making: relevance, publicity, revisions and appeals, and enforcement	Priority-setting challenges faced by decision-makers across the three countries include: • lack of transparency; • low stakeholder and public engagement; • lack of clear mechanisms for public engagement; and • impact of macro-level decisions on the meso-level and micro-level decisions. Areas of improvement include "…the lack of adherence to written criteria in the three cases; the lack of public accessibility of priority-setting

Priority-setting focus	Focus of study/document	Study characteristics	Sample description	Features of the priority-setting process	Key findings
					decisions and reasons; and the ability to by-pass formal appeal mechanisms and use informal lobbying." Efforts to publicize the decisions were seen in all three countries, although the rationale was often not made clear. In all contexts, target populations, including frontline patients and practitioners, did not seem to have access to the information. Content disseminated through the internet could be made more interactive, supplementing the work of newsletters. Citizen juries and town hall meetings should also be encouraged. "Challenge and revisions may be hindered by accountability agreements in Ontario, the strict guidelines given by the health department in Norway, and the severe lack of resources in Uganda."
	Views of decision-makers about fairness and accountability for reasonableness for priority setting (65)	*Publication date:* 2009 *Jurisdiction studied:* Canada (Ontario), Norway and Uganda *Methods used:* Interviews were conducted with decision-makers involved in priority setting in three countries	184 decision-makers involved at all levels of priority setting in the Canadian (Ontario), Norwegian and Ugandan health care systems	Within the A4R framework, four conditions should be met to ensure legitimate and fair decision-making: relevance, publicity, revisions and appeals, and enforcement	"The variations across the levels of decision making and health care systems illustrate the lack of agreement on criteria; and the impact of the social, cultural and economic contexts on the perception of fairness." "The overlap between the elements of fairness elicited and the conditions of Accountability for Reasonableness demonstrate that the four conditions are recognizable and applicable across health care systems and levels of decision making." The framework should be used flexibly to enable the identification of other elements of fairness not included in the four conditions.
	Effectiveness of the essential health package for improving priority setting in low-income countries(65;66)	*Publication date:* 2013 *Jurisdiction studied:* N/A *Methods used:*	N/A	The Essential/Basic Health Care Package (EHP) is "…derived from assessing the cost-effectiveness of interventions against the leading causes of the disease burden"	"...limited attention paid to the priority-setting process and its context, failure to institute and strengthen the capacity of priority-setting institutions, and lack of an inbuilt process of monitoring and evaluating the implementation of the approach may have also contributed to

Priority-setting focus	Focus of study/document	Study characteristics	Sample description	Features of the priority-setting process	Key findings
		A literature review was conducted			the EHP's not meeting its expectations."
	Combining evidence and values in priority setting (67)	*Publication date:* 2007 *Jurisdiction studied:* Tanzania *Methods used:* A balance sheet was developed after a systematic search of relevant evidence Group interviews were used to assess the rankings of a given health intervention before and after the presentation of the balance sheet	Eight groups of stakeholders were identified from the general population, health workers, national and district planners and patient groups	"The information obtained [from the systematic search] was presented in an explicit and neutral manner to the respondents, in the form of a Balance Sheet, developed according to David Eddy's method."	"Many of the arguably most important decisions in priority setting – such as the assessment and interpretation of evidence – are so technical that they are not feasible for direct participation from the public." Despite its complexities, the balance sheet method "…promotes internal accountability through explicitness, transparency and a commitment to scientific validity."
	Fairness, transparency and accountability in health care priority setting at district level in Tanzania (68)	*Publication date:* 2011 *Jurisdiction studied:* Mbarali District, Mbeya Region, Tanzania *Methods used:* Various qualitative methods, including interviews, participant observation and document review, were used to identify priority-setting practices in the Mbarli District, and to document the experiences of implementing the Accountability for Reasonableness (A4R) framework	Mbarali district represents a typical rural district in Tanzania. Structure of the health system is decentralized The Council Health Management Team coordinates all health services in the district	Within the A4R framework, four conditions should be met to ensure legitimate and fair decision making: relevance, publicity, revisions and appeals, and enforcement	A lack of engagement with all relevant stakeholders was attributed to "…poor attendance of public meetings, lack of interest and education, lack of monetary gain, cultural barriers and suspicion." A lack of clear roles and responsibilities of the various actors, limited capacity, and the political context of the operations were seen as influencing the priority-setting processes. "The presence of participatory structures under the decentralisation framework appeared to be the main factor that facilitated the adoption and implementation of the A4R intervention in the district." Having a project focal person and a dedicated research team helped facilitate the implementation of the framework. "National guidelines, budget ceilings, interference from higher authorities, unreliable and untimely disbursement of funds, inactive grassroots participatory structures, and low

Priority-setting focus	Focus of study/document	Study characteristics	Sample description	Features of the priority-setting process	Key findings
					awareness of health staff, stakeholders and communities were the major obstacles to the implementation of the Accountability for Reasonableness intervention." Establishing fair priority-setting mechanisms requires being flexible, and recognizing the local context and constraints. Power asymmetries between actors, and the challenges of inclusion, need to be better addressed in the priority-setting process.
	Engaging the public in priority-setting for health technology assessment (69)	*Publication date:* 2008 *Jurisdiction studied:* Alberta, Canada *Methods used:* A sample of residents of the Capital Health Region in Alberta, Canada participated in a two- day jury, which comprised presentations by "expert witnesses" and priority-setting exercises, to develop criteria for setting priorities for health technology assessment Jurors evaluated the process at the end of the session	Sixteen individuals were selected from 1,600 randomly sampled residents of the Capital Health Region in Alberta, Canada	"The health technology assessment (HTA) process comprises three main phases: 1) selection of technologies to be assessed; 2) performance of the assessment; and 3) communication and implementation of the findings."	"Citizens' juries offer a feasible approach to involving the public in priority-setting for HTA."
	Assessment of processes for setting health care priorities in Alberta, Canada (70)	*Publication date:* 2013 *Jurisdiction studied:* Alberta, Canada *Methods used:* Interviews were conducted with a representative sample of senior managers from the regional health authorities, and specialized	Regional health authorities are largely responsible for delivering healthcare services in Alberta	"Priority-setting processes involved four phrases: 1) identification of health care needs; 2) allocation of resources; 3) communication of decisions to stakeholders; and 4) management of feedback from stakeholders."	Identification of health care needs was largely conducted through self-initiated approaches by the regional health authorities. Focus groups and telephone surveys have been used to conduct a formal needs assessment. Advisory councils have also been established to more routinely seek public input. The role of the council remains unclear, as questions exist surrounding the representativeness of their views and how to formally incorporate such views into the broader priority-setting

Priority-setting focus	Focus of study/document	Study characteristics	Sample description	Features of the priority-setting process	Key findings
		provincial health agencies			processes. Approaches to involving the public only take place during the first phase of the priority-setting process. A standardized priority-setting process across regional health authorities may not be feasible. Greater accountability to the A4R principles is needed.
	Priority-setting for mental health services (71)	*Publication date:* 2013 *Jurisdiction studied:* N/A *Methods used:* A review of priority-setting literature	N/A	Program budgeting and marginal analysis (PBMA) is grounded in the two fundamental economic principles of opportunity cost (i.e., doing one thing instead of another) and the margin (i.e., resource allocation decisions should result in maximum benefit for available resources) The generalized cost-effectiveness (GCE) approach requires cost and benefit evaluations of interventions in isolation and in combination, as compared to the null scenario (i.e. a situation with no interventions) A league table is then used to rank interventions The assessing cost-effectiveness (ACE) approach requires explicit consideration of issues important to decision-makers (e.g., equity, affordability and feasibility) The process is composed of six steps: 1) the research question is developed; 2) a working group of stakeholders is created; 3) interventions are selected using an explicit criteria; 4) evaluation methods are confirmed; 5) evaluation methods are applied; 6) findings are disseminated	PBMA is especially useful for priority setting in mental health services because of the complex notion of benefits. One perceived limitation of the PBMA process is that the measure of outcome is highly context-specific. GCE better allows decision-makers to identify existing inefficiencies in the system by the comparison to the null scenario (i.e., as if they were "starting from scratch"). One weakness of the GCE is that it is difficult to understand how the "best package" can be achieved from the current practice. ACE projects initiated by decision-makers are more likely to be successful than those initiated by researchers. Priority setting for mental health interventions is complicated by limitations in data availability. Methodologically rigorous approaches that integrate "…due process for involving stakeholders and broad-based notions of 'benefit'" will be most useful for mental healthcare decision-makers.

Priority-setting focus	Focus of study/document	Study characteristics	Sample description	Features of the priority-setting process	Key findings
	Views from decision-makers on health services priority setting (72)	*Publication date:* 2005 *Jurisdiction studied:* Calgary Health Region, Alberta, Canada *Methods used:* Participant observation was used to introduce and apply the program budgeting and marginal analysis (PBMA) framework within the Calgary Health Region Subsequent analysis was conducted through document reviews, in-depth interviews and focus groups	The Calgary Health Region is one of nine regional health authorities in Alberta responsible for delivering health care services	Specific features of PBMA were not described in the article	Comparing services across disparate patient groups was identified as a challenge that the PBMA did not fully address. Guidelines could be developed to address this gap. Creating a common metric for evaluation would not be useful given the value-laden nature of these decisions. "Givens" – or services and infrastructure that would be prioritized regardless of their ranking on priority lists – were seen as problematic. Greater transparency could help shed light on such political decisions. The PBMA was criticized for not taking into account innovation, and being too conservative. Future benefits were not sufficiently represented in the criteria, effectively reducing the role of long-term investments. Public involvement in priority setting was seen as largely having limited value as it would not provide a population health perspective/adequate representation. The public was seen as better suited to helping establish the priority-setting criteria. Some participants felt decisions should be made based more on the potential benefit to specific patient groups, and through a more inclusive definition of "evidence".
	Participatory action research to build a priority-setting process in a Canadian Regional Health Authority (73)	*Publication date:* 2006 *Jurisdiction studied:* Calgary Health Region, Alberta, Canada *Methods used:* Participant observation was used to introduce and apply the program budgeting and marginal analysis (PBMA) framework within the	The Calgary Health Region is one of nine regional health authorities in Alberta responsible for delivering health care services	Specific features of PBMA were not described in the article	As the participatory action research approach requires researcher immersion and context-specific understanding, it can be seen as a means to stimulate organizational change. Decision-makers need practical and technical support to implement the PBMA. A "priority-setting team" could serve this function. Internal commitment was fundamental in continuing use of the PBMA over time. External guidance and oversight of the PBMA

Priority-setting focus	Focus of study/document	Study characteristics	Sample description	Features of the priority-setting process	Key findings
		Calgary Health Region Subsequent analysis was conducted through document reviews, in-depth interviews and focus groups			process were seen as important in maintaining objectivity and fairness.
	Addressing barriers to priority setting using interdisciplinary methods (74)	*Publication date:* 2009 *Jurisdiction studied:* N/A *Methods used:* An interdisciplinary framework was developed "…based on learning from real-world experience with health systems and a range of different academic disciplines" Specifically, the paper focuses on PBMA, multi-criteria decision analysis (MCDA), participatory action research (PAR) and Accountability for Reasonableness (A4R)	N/A	PBMA is grounded in the two fundamental economic principles of opportunity cost (i.e., doing one thing instead of another) and the margin (i.e., resource allocation decisions should result in maximum benefit for available resources) The stages of the PBMA include 1) setting the scope of the priority exercise; 2) determining a program budget; 3) forming an advisory group; 4) compiling locally relevant decision-making criteria; 5) identifying opportunities for growth and increased efficiency; 6) evaluating investments and disinvestments; and 7) validating results and re-allocating resources MCDA enables the development of models of decision-maker objectives and their value trade-offs, facilitating consistent and transparent comparisons MCDA's strength lies in its ability to organize and structure large amounts of information needed for decision-making PAR involves researchers and decision-makers working in concert to elicit organizational, context-specific change Within the A4R framework, four	Understanding organizational culture and identifying methods to address barriers are necessary for any priority-setting process. Barriers to initiating the PBMA process include: • no genuine buy-in; • too many other demands on time; • politics preventing evaluation; • lack of trust between stakeholders; • discontinuity of personnel; • complex organizational objectives; and • lack of shared vision. Factors that facilitate initiating the PBMA process include: • credible commitment from stakeholders; • a high level champion; • strong leadership; • culture/openness to learn; • consistency with managerial activity; • being faced with actual decision to be made; • earmarking resources for process; and • relative organizational stability. Barriers to the implementation of PBMA recommendations include: • lack of trust between stakeholders; • disinterested physicians; • misalignment of incentives; • no perceived authority to change; • budget and service delivery boundaries; • politics prevailing over evidence; and • gaming of the system/vested interests.

Priority-setting focus	Focus of study/document	Study characteristics	Sample description	Features of the priority-setting process	Key findings
				conditions should be met to ensure legitimate and fair decision-making: relevance, publicity, revisions and appeals, and enforcement	Factors that facilitate the implementation of PBMA recommendations include: • real decisions have to be made; • a culture open to change; • earmarked resources for implementation and follow-up; • integrated budgets; • incentives for decision-makers to reallocate resources; • data-driven culture; and • demonstrated results. To publicize priority-setting processes, all relevant stakeholders should be notified of the need for priority setting, the objectives of the process, the decision-making criteria, how the process will work, and the decisions made. Determining whether the time and setting are well-suited for explicit priority setting is important. Strong leadership, along with the support of key stakeholders, is vital. This is often dependent on whether the process is deemed to be fair and legitimate. Embedding researchers into the organizational context (i.e. PAR) is an effective tool to catalyze change, and translate knowledge into practice.
	Healthcare priority-setting guidelines using the program budgeting and marginal analysis framework (75)	*Publication date:* 2010 *Jurisdiction studied:* N/A *Methods used:* A literature review was informed by personal experiences with PBMA	N/A	PBMA is grounded in the two fundamental economic principles of opportunity cost (i.e., doing one thing instead of another) and the margin (i.e., resource allocation decisions should result in maximum benefit for available resources) The stages of the PBMA include 1) setting the scope of the priority exercise; 2) determining a program budget; 3) forming an advisory group; 4) compiling	Success in priority setting requires that resources are shifted (i.e. process has an impact on resource allocation) and that the shifts are consistent with specified health objectives. Pragmatic factors for success are related to the organizational context and constraints faced by decision-makers, while technical factors determine the validity of information used in setting priorities. Concrete guidelines are fundamental to the design and implementation of priority-setting

Priority-setting focus	Focus of study/document	Study characteristics	Sample description	Features of the priority-setting process	Key findings
				locally relevant decision-making criteria; 5) identifying opportunities for growth and increased efficiency; 6) evaluating investments and disinvestments; and 7) validating results and re-allocating resources	processes. "Pragmatic guidelines relate to: establishing organizational objectives; ensuring there is organizational readiness; establishing an advisory panel; and ensuring the implementation of results is feasible." "Technical guidelines relate to: defining the study question; choosing the program structure; constructing the program budget; identifying options for investment and disinvestment; measuring and valuing costs and benefits; and implementing results." Achieving success with the PBMA at a local level may not always be consistent with a sustainable, long-term view for the health system.
	Hospital decision-makers' views about the fairness of priority setting in their institutions (76)	*Publication date:* 2005 *Jurisdiction studied:* Ontario, Canada *Methods used:* A survey questionnaire based on the Accountability for Reasonableness ethical framework was sent to 160 Ontario hospital chief executive officers.	All hospitals in Ontario were asked to participate, and the 86 respondents included a range of teaching, small, community and specialized service facilities	The Accountability for Reasonableness framework posits that four conditions should be met to ensure legitimate and fair decision making: relevance, publicity, revisions and appeals, and enforcement	Decision-makers identified five factors relevant to meeting priority-setting goals: 1) Review processes; 2) Leadership; 3) Stakeholder consultation; 4) Access to relevant information; and 5) Decision-making tools, or benchmarking. Leadership is important to perceptions of fairness in the priority-setting process.
	Tools to support evidence-based priority setting for healthcare and research in maternal, neonatal and child health in Africa (77)	*Publication date:* 2010 *Jurisdiction studied:* Africa *Methods used:* Literature review	N/A	"Burden of disease/cost effectiveness analysis" is a key component of many new tools It identifies the most cost-effective interventions in terms of DALYs saved per unit cost The Lives Saved Tool assesses important contextual factors, performs specific comparisons between other investment	N/A (review of priority-setting tools to support policy in maternal, neonatal, and child health in Africa)

Priority-setting focus	Focus of study/document	Study characteristics	Sample description	Features of the priority-setting process	Key findings
				strategies in terms of child survival outcomes, and applies an equity lens The Child Health and Nutrition Research Initiative's methodology for priority-setting in health research involves policymakers, technical experts and key stakeholders It identifies general considerations, such as cost-effectiveness and impact on disease burden, and more context-specific considerations such as answerability, deliverability, affordability, sustainability, local capacity, likelihood of support, feasibility, and equity Stakeholders can assign different weights to the criteria	
	Evaluation theory for priority setting and resource allocation (78)	*Publication date:* 2003 *Jurisdiction studied:* N/A *Methods used:* Literature review of evaluation theory	N/A	The three main branches of evaluation theory set different expectations for priority-setting processes, as they are guided by different questions The methods-based approach focuses on "how can valid and reliable knowledge of social interventions be obtained through evaluation?" The use-based approach focuses on "how are evaluation results used, and by whom?" The value-based approach focuses on "how do we assign value to social programs and interventions, and what are the consequences of this?"	Explicitly considering evaluation theory can help facilitate more effective evaluation of priority-setting processes by organizing thinking and encouraging greater transparency.

Priority-setting focus	Focus of study/document	Study characteristics	Sample description	Features of the priority-setting process	Key findings
	Priority setting in the Provincial Health Services Authority in British Columbia (79)	*Publication date:* 2007 *Jurisdiction studied:* British Columbia, Canada *Methods used:* Interviews with 25 decision-makers in the Provincial Health Services Authority of British Columbia (PHSA) were conducted to identify the organizational context with respect to priority setting	PHSA is one of six health authorities in British Columbia responsible for delivering healthcare services, and oversees the activities of eight provincial agencies	Priorities are currently set on an ad hoc basis, usually based on historical allocation	Key stakeholders, including the public, should be involved more in priority-setting processes. Areas of improvement included making the process for priority setting more transparent, developing a culture supportive of priority setting, and focusing on fairness in decision-making. Decision-makers' lack of training in priority setting, and the challenge of providing specialized services to diverse patient groups were identified as barriers to explicit priority-setting processes.
	Priority setting and resource allocation in home and community care programs (80)	*Publication date:* 2008 *Jurisdiction studied:* Northern Health Authority, British Columbia, Canada *Methods used:* The 2007–08 operating budget for Home and Community Care Programs was developed using PBMA, and applying Accountability for Reasonableness (A4R), an ethical framework for priority setting and resource allocation	Northern Health is one of six health authorities in British Columbia responsible for delivering health care services The Home and Community Care Programs is a major program run by the authority	PBMA is grounded in the two fundamental economic principles of opportunity cost (i.e., doing one thing instead of another) and the margin (i.e., resource allocation decisions should result in maximum benefit for available resources) The stages of the PBMA include 1) setting the scope of the priority exercise; 2) determining a program budget; 3) forming an advisory group; 4) compiling locally relevant decision-making criteria; 5) identifying opportunities for growth and increased efficiency; 6) evaluating investments and disinvestments; and 7) validating results and re-allocating resources Within the A4R framework, four conditions should be met to ensure legitimate and fair decision-making: relevance, publicity, revisions and appeals, and enforcement	PBMA represents an improvement over past practice.

Priority-setting focus	Focus of study/document	Study characteristics	Sample description	Features of the priority-setting process	Key findings
				It has been suggested that "empowerment" should also be a consideration	

Appendix 3: Systematic reviews relevant to primary and integrated healthcare interventions, delivery models and approaches to multi-sector integration individuals with complex-care needs across the life course (including upstream prevention strategies)

Level/type of intervention	Type of document	Focus of document	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
Prevention/ upstream	Systematic review of effects	Motivational interviewing for older adults in primary care (81)	Motivational interviewing for older adults in primary care may be effective as a supplement to health promotion and disease-prevention interventions. Motivational interviewing has the potential to be applied across diverse types of professionals and healthcare settings. The findings of the review should be interpreted with caution given that the quality of the motivational interviewing intervention could not be assessed in most of the included studies.	2013	6/10 (AMSTAR rating from Program in Policy Decision-making)	Not reported (review included 8 studies)
	Systematic review of effects	Culturally appropriate interventions to manage or prevent chronic disease in culturally and linguistically diverse communities (30)	The review found that the interventions led to positive outcomes, including an increased screening rate, improved health status, improved health behaviour, completion of a health promotion program, improved health knowledge, and improved appointment keeping. For patients with chronic conditions, an intervention caused improved self-management. The use of multimedia also led to increased knowledge. The review concluded that the bilingual community health worker model has positive impacts on the culturally and linguistically diverse communities. However, the presence of comorbidities was not discussed, and more research on the effective implementation of the model is needed.	2009	6/9 (AMSTAR rating from Program in Policy Decision-making)	1/24
	Systematic review of effects	Multicultural health workers in chronic disease prevention and self-management in culturally and linguistically diverse populations (31)	Significant improvements in participants' chronic disease prevention and self-management outcomes were found in several studies. In addition, meta-analyses identified a positive association between multicultural health workers and the outcomes.	2010	5/11 (AMSTAR rating from Program in Policy Decision-making)	Not reported
Multiple levels (e.g., comprehensive care programs comprised of interventions in several or all of the levels below)	Systematic review of effects	Interventions for people with multimorbidity in primary care and community settings (22)	All studies in this review involved complex and multifaceted interventions, most predominantly a change to the organization of care delivery (i.e., case management or enhanced multidisciplinary team work) or patient-oriented interventions (i.e., patient education or support for self-management).	2011	9/10 (AMSTAR rating from Program in Policy Decision-making)	2/10

Level/type of intervention	Type of document	Focus of document	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
			The review found that these interventions have mixed effects, with a tendency to improve prescribing and medication adherence. More specifically, organizational interventions that have a broader focus (e.g., case management or changes in care delivery) appear less effective. Similarly, patient-oriented interventions that are not linked to healthcare delivery appear less effective, with the exception of one study that examined interventions targeting functional difficulty and fall prevention, which found significantly reduced mortality. The results showed that improving outcomes in patients with multimorbidity is difficult, but interventions focusing on particular risk factors or functional difficulties might be more effective.			
	Systematic review of effects	Comprehensive care programs for people with multiple chronic conditions (21)	The review included programs that varied greatly in terms of target patient groups, implementation settings, number of interventions, and the number of chronic care model components. The review found moderate evidence of a beneficial effect of comprehensive care on inpatient healthcare utilization and healthcare costs, health behaviour of patients, perceived quality of care, and satisfaction of patients and caregivers. The review found insufficient evidence of a beneficial effect of comprehensive care on health-related quality of life in terms of mental functioning, medication use, and outpatient healthcare utilization and healthcare costs. The review found no evidence of a beneficial effect of comprehensive care on cognitive functioning, depressive symptoms, functional status, mortality, quality of life in terms of physical functioning, or caregiver burden.	2011	5/9 (AMSTAR rating from Program in Policy Decision-making)	4/42
	Systematic review of effects	Interventions to improve the appropriate use of polypharmacy for older people (82)	Among the 10 studies included in the review, one was a computerized decision support and nine were complex and multifaceted pharmaceutical care provided in a variety of settings. No included study explored the effectiveness of professional, financial or regulatory interventions. The review found that these interventions demonstrated a reduction in inappropriate medication use. The number of adverse drug events also reduced significantly (35%) post-intervention in three	2009	11/11 (AMSTAR rating from Program in Policy Decision-making)	2/10

Level/type of intervention	Type of document	Focus of document	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
			studies. Thus, such interventions can be beneficial in reducing inappropriate prescribing and medication-related problems. However, the review found inconsistent evidence of the effectiveness of these interventions on hospital admissions, and whether these resulted in clinically significant improvements.			
	Economic evaluation or costing study	Interventions to improve the management of chronic diseases (23)	Cost-effectiveness analyses found gains in quality-adjusted life years (QALYs) and cost savings compared with usual care for the following interventions: discharge planning plus post-discharge support for congestive heart failure; in-home care for heart failure patients; specialized nursing alone for chronic disease management; specialized nursing plus physicians for chronic disease management; and electronic tools for health information exchange in diabetes patients.	2013	No rating tool available for this type of document	Conducted in Canada
Patients/ individuals	Systematic review of effects	Interventions for people with multimorbidity in primary care and community settings (22)	All studies in this review involved complex and multifaceted interventions, most predominantly a change to the organization of care delivery (i.e., case management or enhanced multidisciplinary team work) or patient-oriented interventions (i.e., patient education or support for self-management). The review found that these interventions have mixed effects, with a tendency to improve prescribing and medication adherence. More specifically, organizational interventions that have a broader focus (e.g., case management or changes in care delivery) appear less effective. Similarly, patient-oriented interventions that are not linked to healthcare delivery appear less effective, with the exception of one study that examined interventions targeting functional difficulty and fall prevention, which found significantly reduced mortality. The results showed that improving outcomes in patients with multimorbidity is difficult, but interventions focusing on particular risk factors or functional difficulties might be more effective.	2011	9/10 (AMSTAR rating from Program in Policy Decision-making)	2/10
	Systematic review addressing other questions	Chronic disease peer-support interventions (83)	The synthesis suggests that emotional support is valued, especially in contexts that do reproduce biomedical hierarchies of power. However, the review also found that peer-support interventions may establish uneven power relationships between mentors and mentees and there is the potential for initially asymmetrical relationships to become more symmetrical over time.	2011	6/9 (AMSTAR rating from Program in Policy Decision-making)	Not reported (review included 25 studies but the countries in

Level/type of intervention	Type of document	Focus of document	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
			The implications of the review indicate that those developing and implementing peer-support interventions should be attentive to the potential negative effects and need to manage the tension between the hierarchical and egalitarian aspects of peer support interventions.			which the studies were conducted was not reported)
	Systematic review of effects	Internet-based self-help therapeutic interventions for chronic health conditions (84)	The review found consistent evidence that online therapeutic interventions are efficacious at improving the symptoms and ability to control chronic health conditions (except for diabetes). The conclusions of the review were that internet-based self-help interventions are promising for improving distress and disease-control for chronic health conditions.	2011	5/10 (AMSTAR rating from Program in Policy Decision-making)	0/23
	Systematic review of effects	Models of home and community care for older persons (44)	The review found that case management can benefit patients' function and medication management, reduce admission to nursing homes, and increase use of community services. Integrated care was found not to improve clinical outcomes, despite the programs being associated with a greater use of community and hospital services. The review also found that consumer-directed care did not affect clinical outcomes, but led to increased satisfaction with care and community service use. However, there are inconsistencies in the results between the reviewed studies, with variability in their inclusion criteria, design, sample and methods of delivery. The review concluded that each of the three models has different outcomes, and they need to be combined to maximize outcome benefits.	2009	5/10 (AMSTAR rating from Program in Policy Decision-making)	3/34
	Systematic review of effects	Culturally appropriate interventions to manage or prevent chronic disease in culturally and linguistically diverse communities (30)	The review found that the interventions led to positive outcomes, including an increased screening rate, improved health status, improved health behaviour, completion of health promotion program, improved health knowledge, and improved appointment keeping. For patients with chronic conditions, an intervention caused improved self-management. The use of multimedia also led to	2009	6/9 (AMSTAR rating from Program in Policy Decision-making)	1/24

Level/type of intervention	Type of document	Focus of document	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
			increased knowledge. The review concluded that the bilingual community health worker model has positive impacts on the CALD communities. However, the presence of comorbidities was not discussed, and more research on the effective implementation of the model is needed.			
Providers	Systematic review of effects	Motivational interviewing for older adults in primary care (81)	Motivational interviewing for older adults in primary care may be effective as a supplement to health promotion and disease prevention interventions. Motivational interviewing has the potential to be applied across diverse types of professionals and healthcare settings. The findings of the review should be interpreted with caution given that the quality of the motivational interviewing intervention could not be assessed in most of the included studies.	2013	6/10 (AMSTAR rating from Program in Policy Decision-making)	Not reported (review included 8 studies)
	Systematic review of effects	Specialized nursing practice for chronic disease management in the primary care (29)	In comparisons of nurses alone versus physicians alone, there were no significant differences in health resource use, disease-specific measures, quality of life, or patient satisfaction. In comparisons of nurses and physicians working together versus physicians alone, there was a reduction in hospitalizations and improved outcomes for coronary artery disease (blood pressure and lipids) and diabetes (hemoglobin A1c), but no difference in other disease-specific measures. There was a trend toward improved process measures (medication prescribing and clinical assessments), inconsistent improvements in quality of life, improved patient satisfaction when nurses and physicians worked together, and while there were more and longer visits to the nurse, physician workload did not change.	2012	5/10 (AMSTAR rating from Program in Policy Decision-making)	0/6
	Systematic review addressing other questions	General practitioners' perspectives on the management of patients with multimorbidity (24)	From the 10 included studies, four areas of difficulty specific to the management of multimorbidity were identified: 1) disorganization and fragmentation of healthcare; 2) inadequacy of guidelines and evidence-based medicine; 3) challenges in delivering patient-centred care; and 4) barriers to shared decision-making.	2012	6/9 (AMSTAR rating from Program in Policy Decision-making)	0/10
	Systematic review of effects	Nurse-led interventions to enhance adherence to chronic medication (27)	The most frequently evaluated intervention in the 10 included studies was counselling (delivered face-to-face, in groups and/or through electronic messages) and all of the studies evaluating these interventions enhanced adherence medication for chronic	2011	5/11 (AMSTAR rating from Program in Policy Decision-making)	1/10

Level/type of intervention	Type of document	Focus of document	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
			conditions.			
	Systematic review of effects	Pharmacists' interventions in the management of patients with chronic kidney disease (26)	The studies included in the review were conducted in different health care settings, including patients aged between 31.4-65.9 years on average. Pharmacist intervention contributed to significantly reducing all-cause hospitalizations. In a two-year prospective cohort with Type 2 diabetic nephropathy patients, risk reduction for end-stage renal disease is 55%, with 78% risk reduction of all-cause death. The review concluded that the evidence of pharmacists' interventions in patients with chronic kidney disease is sparse and of variable quality, but may have a positive impact on outcomes of patients with chronic kidney disease.	2010	5/9 (AMSTAR rating from Program in Policy Decision-making)	1/37
	Systematic review of effects	Multicultural health workers in chronic disease prevention and self-management in culturally and linguistically diverse populations (31)	Significant improvements in participants' chronic disease prevention and self-management outcomes were found in several studies. In addition, meta-analyses identified a positive association between multicultural health workers and the outcomes.	2010	5/11 (AMSTAR rating from Program in Policy Decision-making)	Not reported
	Systematic review of effects	Culturally appropriate interventions to manage or prevent chronic disease in culturally and linguistically diverse communities (30)	The review found that the interventions led to positive outcomes, including an increased screening rate, improved health status, improved health behaviour, completion of health promoting program, improved health knowledge, and improved appointment keeping. For patients with chronic conditions, an intervention caused improved self-management. The use of multimedia also led to increased knowledge. The review concluded that the bilingual community health worker model has positive impacts on the CALD communities. However, the presence of comorbidities was not discussed, and more research on the effective implementation of the model is needed.	2009	6/9 (AMSTAR rating from Program in Policy Decision-making)	1/24
	Systematic review of effects	Interventions to improve medication adherence in people with multiple chronic conditions (25)	The review found that there were large gaps in the intervention research on medication adherence, and the lack of consistent methodology led to a difficulty in interpreting and comparing results across the studies. The review found that baseline adherence rates were higher than the	2007	6/11 (AMSTAR rating from www.rxforchange.ca)	0/8

Level/type of intervention	Type of document	Focus of document	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
			cited mean of 50% across the eight included randomized controlled trials that tested an intervention delivered by pharmacists to adults with three or more chronic conditions. The review concluded that the evidence supporting interventions aimed at improving medication adherence was minimal and weak. Further research-tested strategies are needed to improve medication adherence and the subsequent health outcomes.			
	Systematic review of effects	General medical care for persons with mental and addictive disorders (32)	The review indicated that chronic care programs improve coordination for those with comorbid conditions. The integrated medical program was shown to be particularly cost-effective and beneficial for those with comorbid conditions due to the large gap between medical needs and treatment availability. The review concluded that interventions on individuals with comorbid conditions could lead to improved abstinence rates, and the programs were found to be cost-neutral from a health plan perspective.	2005	5/10 (AMSTAR rating from Program in Policy Decision-making)	0/6
	Systematic review of effects	Nurse case managers for improving health outcomes for the chronically ill (28)	This review found that nurses working in a specialized care coordinating role are effective in improving care for long-term conditions. None of the studies assessed in the review reported a reduction in quality of life measures due to the interventions. The nurses' role in monitoring and case management can have a significant impact on disease progression. The review reported that the greatest financial savings were reported for heart failure patients, and that patients are more responsive to treatment regimens when nurses work closely with patients. The review concluded that nurse care managers have a positive impact on quality of life, patient satisfaction, treatment adherence, self-care and service use, and objective clinical measures.	2009	2/9 (AMSTAR rating from Program in Policy Decision-making)	0/18
Teams	Systematic review of effects	Geriatric patient care by pharmacists in healthcare teams (34)	The review found nine studies focused on multiple diseases and conditions pertaining to pharmacist interventions for geriatric patients. Findings from the studies suggest a positive effect of pharmacists	2012	8/11 (AMSTAR rating from Program in Policy Decision-making)	0/20

Level/type of intervention	Type of document	Focus of document	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
			on therapeutic, safety, hospitalization and adherence outcomes. The review noted that the most important finding was that pharmacist care produced significant benefit in comparison to conventional care in all four patient-oriented outcomes. There is variation within the studies attributed to the socioeconomic status of patients and the access to pharmacist care. The review recommends that a pharmacist member should be included in team-based care serving older patients in order to improve care and outcomes.			
	Systematic review of effects	Collaborative care for patients with depression and diabetes mellitus (35)	As compared to usual care, the review found that collaborative care significantly improved depression treatment response, depression remission, and rates of adherence to antidepressant medication and oral hypoglycemic agent. A non-significant reduction in HbA1c values was found across the included studies.	2012	8/11 (AMSTAR rating from Program in Policy Decision-making)	0/8
	Systematic review of effects	Interventions for people with multimorbidity in primary care and community settings (22)	All studies in this review involved complex and multifaceted interventions, most predominantly a change to the organization of care delivery (i.e., case management or enhanced multidisciplinary team work) or patient-oriented interventions (i.e., patient education or support for self-management). The review found that these interventions have mixed effects, with a tendency to improve prescribing and medication adherence. More specifically, organizational interventions that have a broader focus (e.g., case management or changes in care delivery) appear less effective. Similarly, patient-oriented interventions that are not linked to healthcare delivery appear less effective, with the exception of one study that examined interventions targeting functional difficulty and fall prevention, which found significantly reduced mortality. The results showed that improving outcomes in patients with multimorbidity is difficult, but interventions focusing on particular risk factors or functional difficulties might be more effective.	2011	9/10 (AMSTAR rating from Program in Policy Decision-making)	2/10
	Systematic review of effects	Collaborative chronic care models for mental health	The review found that total health costs did not differ between collaborative chronic care models and comparison models across	2011	6/11 (AMSTAR rating from Program	0/55

Level/type of intervention	Type of document	Focus of document	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
		conditions across disorders and treatment settings (36)	conditions and outcome domains. The meta-analysis showed significant small to medium effects of collaborative chronic care models while net healthcare cost remained the same across multiple disorders. The review also showed that trials for chronic conditions showed a more variable effect due to the presence of multiple comorbidities accompanying these disorders. The model needs to be further developed to include or remove certain components in deploying the collaborative chronic care model for the greatest benefit to public health. The review concluded that individuals with mental health conditions can see improvements in their mental and physical outcomes through collaborative chronic care models, which can be extended to patients with chronic or comorbid disorders.		in Policy Decision-making)	
	Systematic review of effects	Case conferencing for people with advanced dementia living in nursing homes (37)	Strong evidence indicated that case conferencing enhanced medication management for people living with dementia in nursing homes. Additional studies found evidence to suggest that case conferencing improved management of palliative symptoms and care.	2010	7/10 (AMSTAR rating from Program in Policy Decision-making)	0/9
	Systematic review of effects	Case management for reducing emergency department visits in frequent user populations (33)	The review included 12 studies, 11 of which reported emergency department use as the primary outcome. Of these, eight reported reduction, two reported no significant reduction, and one reported an increase in emergency department (ED) use. There was heterogeneity across all studies, and the majority of evidence illustrated benefits of case-management interventions, namely reduced ED visitation and ED costs. The most common complaints reported by the frequent ED users included mental health and drug/alcohol abuse disorders, and two studies reported pain as the primary complaint. Further investigation is required to determine which aspects of case management are the most cost effective. The review concluded that case-management interventions benefitted frequent ED users through both social and clinical outcomes.	2010	5/10 (AMSTAR rating from Program in Policy Decision-making)	1/12

Level/type of intervention	Type of document	Focus of document	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
	Economic evaluation or costing study	Adding laypersons to the primary care team to improve chronic disease care (39)	The percentage of goals met increased in both the care guide and usual care groups, but those who received care guides achieved more goals than those in usual care, and unmet goals were reduced by 30.1% compared with 12.6% for usual care patients The estimated cost of adding a layperson to the primary care team was $286 per patient per year.	2013	No rating tool available for this type of document	Conducted in the United States
	Systematic review of effects	Medication reconciliation interventions in patients transferred to and from long-term care settings (38)	The review indicated that strong evidence was not provided for interventions in reduction of medication discrepancies in studies conducted in the U.S. Studies conducted in Sweden, Australia and Belgium indicated that a pharmacist being involved in the intervention was beneficial and there is a potential for improved patient outcomes. However, there are difficulties pertaining to the feasibility of collaborative approaches which require long-term test settings with more medically complex patients. The review concluded that interventions involving a clinical pharmacist can improve outcomes, and more research is required on medication reconciliation during these transitions.	2010	3/10 (AMSTAR rating from Program in Policy Decision-making)	0/7
Organizations	Systematic review of effects	Culturally appropriate interventions to manage or prevent chronic disease in culturally and linguistically diverse communities (30)	The review found that the interventions led to positive outcomes, including an increased screening rate, improved health status, improved health behaviour, completion of health promoting program, improved health knowledge, and improved appointment keeping. For patients with chronic conditions, an intervention caused improved self-management. The use of multimedia also led to increased knowledge. The review concluded that the bilingual community health worker model has positive impacts on the CALD communities. However, the presence of comorbidities was not discussed, and more research on the effective implementation of the model is needed.	2009	6/9 (AMSTAR rating from Program in Policy Decision-making)	1/24
	Systematic review of effects	Hospital-wide interventions for frail older inpatients (40)	The review found that interventions led to increased positive physical and mental health outcomes, positive significant results on patient mortality, reduced length of stay and costs, and fewer readmissions, and did not affect patient complications.	2009	6/10 (AMSTAR rating from Program in Policy Decision-making)	3/20

Level/type of intervention	Type of document	Focus of document	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
			Heterogeneous effects were present in the methodology used within studies. It was determined that no single practice can be labelled as the best intervention to improve quality of care, safety and effectiveness. The review concluded that comprehensive interventions geared towards all frail older patients are needed. Alternative approaches and setting-adjusted scientific standards are required to gain this improvement.			
	Systematic review of effects	Dual-diagnosis programs for the homeless with severe mental illness and substance use disorders (41)	The review reported that 50% of individuals with co-occurring disorders do not respond well to integrated outpatient services. Many of the studies for individuals with dual disorder utilize a therapeutic community model to facilitate the integration of treatment programs. The review found that short-term dual-diagnosis programs led to higher rates of program completion, lower substance abuse relapse, but with no change in substance use outcomes. Long-term residential programs showed better abstinence rates and treatment retention, and retained more clients, but showed no significant differences in substance abuse outcomes during the treatment when compared to therapeutic communities. The conclusion identified substance abuse as a comorbidity with mental illness, and dual-diagnosis programs have benefits for clients who are homeless or do not respond to treatment.	2004	3/10 (AMSTAR rating from Program in Policy Decision-making)	0/11
	Economic evaluation or costing study	Interventions to improve the management of comorbid major depression for people with chronic diseases (42)	While higher costs were found for systematic integrated depression management as compared to usual practice, quality-adjusted life years (QALYs) also increased. The review concluded that "systematic integrated management of co-morbid major depression in cancer patients is likely to be cost-effective at widely accepted threshold values and may be a better way of generating QALYs for cancer patients than some existing medical and surgical treatments." In addition, the review suggested that it could be applied to other chronic medical conditions.	2013	No rating tool available for this type of document	Conducted in the United States
Sectors	Systematic review of effects	Approaches to managing the hospital/community interface for older adults	Findings indicate that interventions designed to reduce and prevent falls are effective, and that discharge planning arrangements were effective at reducing hospital readmissions.	2003	8/11 (AMSTAR rating from Program in Policy Decision-	4/39

Level/type of intervention	Type of document	Focus of document	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
		(43)	Hospital-at-home approaches were found to be as good as standard hospital care (although the outcomes measured are very heterogeneous across studies). A variety of case management models (case management by advanced practice nurses, integrated community care programs, case managers for discharged patients and integrated home care guided by a case manager) were found to be effective at improving health outcomes. There was insufficient evidence to assess the effects of nurse-led units.		making)	
Systems	Systematic review of effects	Outpatient case management for adults with medical illness and complex-care needs (46)	The outpatient case management interventions evaluated in the included studies found only small improvements in patient-centred outcomes, quality of care, and resource utilization. Intense case management with greater contact time, longer duration, face-to-face visits, and integration with patients' usual care providers were found to be the most successful types of interventions evaluated. The review concluded that outpatient case management has limited impact on patient-centred outcomes, quality of care, and resource utilization among patients with chronic medical illness.	2011	9/10 (AMSTAR rating from Program in Policy Decision-making)	7/153
	Systematic review of effects	In-home care for optimizing chronic disease management (45)	In-home care was found to reduce the risk for the outcome measure of combined events (this included all-cause mortality and hospitalizations) and resulted in an average of one less unplanned hospitalization and emergency department visit. Moderate quality evidence indicated that activities of daily living improved among those who received in-home care, and low-quality evidence indicated that health-related quality of life was improved.	2012	5/11 (AMSTAR rating from Program in Policy Decision-making)	1/12 (also included four systematic reviews and one health technology assessment)
	Systematic review of effects	Models of home and community care for older persons (44)	The review found that case management can benefit patients' function and medication management, reduce admission to nursing homes, and increase use of community services. Integrated care was found not to improve clinical outcomes, despite the programs being associated with a greater use of community and hospital services.	2009	5/10 (AMSTAR rating from Program in Policy Decision-making)	3/34

Level/type of intervention	Type of document	Focus of document	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
			The review also found that consumer-directed care did not affect clinical outcomes, but led to increased satisfaction with care and community service use. However, there are inconsistencies in the results between the reviewed studies, with variability in their inclusion criteria, design, sample and methods of delivery. The review concluded that each of the three models has different outcomes, and they need to be combined to maximize outcome benefits.			
	Systematic review of effects	Culturally appropriate interventions to manage or prevent chronic disease in culturally and linguistically diverse communities (30)	The review found that the interventions led to positive outcomes, including an increased screening rate, improved health status, improved health behaviour, completion of health promoting program, improved health knowledge, and improved appointment keeping. For patients with chronic conditions, an intervention caused improved self-management. The use of multimedia also led to increased knowledge. The review concluded that the bilingual community health worker model has positive impacts on the CALD communities. However, the presence of comorbidities was not discussed, and more research on the effective implementation of the model is needed.	2009	6/9 (AMSTAR rating from Program in Policy Decision-making)	1/24
	Economic evaluation or costing study	Care transition interventions for reducing rates of re-hospitalization (47)	The mean hospital costs were lower for intervention patients ($2,058) vs controls ($2,546) at 180 days	2006	No rating tool available for this type of document	United States

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