Rapid Synthesis

Examining the Intersections between Ontario Health Teams and Broader Human Services

28 March 2022

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Rapid Synthesis:
Examining the Intersections between Ontario Health Teams and Broader Human Services
30-day response

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McMaster Health Forum

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

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Timeline

Rapid syntheses can be requested in a three-, 10-, 30-, 60- or 90-business-day timeframe. This synthesis was prepared over a 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 McMaster Health Forum's Rapid Response program webpage (www.mcmasterforum.org/find-evidence/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 funder played no role in the identification, selection, assessment, synthesis or presentation of the research evidence profiled in the rapid synthesis.

Merit review

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

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KEY MESSAGES

Question

- What does the evidence say on the integration of health and social services to facilitate population-health management?
- What can we learn from transformations outside of Ontario on how health-system transformations have worked with broader human services?
  - How can each building block be leveraged to support this aim?

Why the issue is important

- Ontario's health system is undergoing a transformation to enable population-health management at a local level through the creation of Ontario Health Teams (OHTs)
- To be approved as an OHT, this must include – at a minimum – primary, home and community, and hospital-based care
- However, many OHTs see the transformation as an opportunity to explicitly leverage the critical role that broader human services play in determining individual and population health

What we found

- We identified nine systematic reviews and 12 primary studies that focused on the integration of health and broader human services
- Based on the literature, we identified five facilitators related to implementation considerations: 1) partnering across organizations with previous experience working together; 2) clarifying leadership, roles and responsibilities for each partner; 3) establishing shared goals, values, vision of care, and common understanding; 4) adequate resourcing across broader human services; and 5) having supportive policies that encourage innovation and flexibility
- We also conducted a jurisdiction scan of initiatives that have taken a population-health management approach of their targeted populations. We identified eight initiatives from Canada, Germany, the Netherlands, New Zealand, the U.K., and the U.S.
- Based on the literature and jurisdictional scan, we organized the findings into four different models for how health and broader human services could intersect to optimize population-health management: 1) provider-coordinated model; 2) organizationally coordinated model; 3) regionally coordinated model; and 4) fully integrated model
- A provider-coordinated model involves a care coordinator or care navigator who ensures 'warm handoffs' between service types among health and broader human services, but there is little to no integration of governance or financial arrangements (e.g., Integrated Care Systems in the U.K.)
- An organizationally coordinated model involves an organization that operates in a 'hub-and-spoke' model to screen individuals, determine their needs, and connect them with service providers, which has some integration of governance and financial arrangements (e.g., Accountable Health Communities in the U.S., Gesundes Kinzigtal in Germany)
- A regionally coordinated model revolves around a regional body to coordinate health and broader human services (e.g., Ontario Health Teams in Canada)
- A fully integrated model involves health and broader human services jointly planning for and sharing a common budget (e.g., Lead Agency Model in the U.K.)

QUESTIONs

1) What does the evidence say on the integration of health and social services to facilitate population-health management?
2) What can we learn from transformations outside of Ontario on how health system transformations have worked with broader human services?

WHY THE ISSUE IS IMPORTANT

Ontario's health system is undergoing a transformation to enable population-health management at a local level through the creation of Ontario Health Teams (OHTs). First announced in February 2019, OHTs are cross-sectoral networks of organizations (including healthcare, and in some cases public health and social services) that at maturity will be held clinically and fiscally accountable for the health and well-being of their attributed population. OHTs are expected to provide a complete continuum of care to their populations through their networks. To be approved as an OHT, partners must include primary, home and community and hospital-based care.

Many OHTs see the transformation as an opportunity to explicitly leverage the critical role that broader human services play in determining individual and population health. As a result, some Ontario Health Teams have partnered with organizations that provide broader human services. Some examples of these partnerships include:

- municipal governments that provide employment supports and childcare services, among others;
- organizations that provide emergency shelter and food services;
- organizations that provide advice and supports to new immigrants; and
- Indigenous-led organizations, such as the Ontario Indigenous Friendship Centres that deliver children and youth, education, mental health and healthy-living services to urban Indigenous communities.

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-, 30-, 60- or 90-business-day timeframe. An overview of what can be provided and what cannot be provided in each of these timelines is provided on the McMaster Health Forum's Rapid Response program webpage (www.mcmasterforum.org/find-evidence/rapid-response).

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

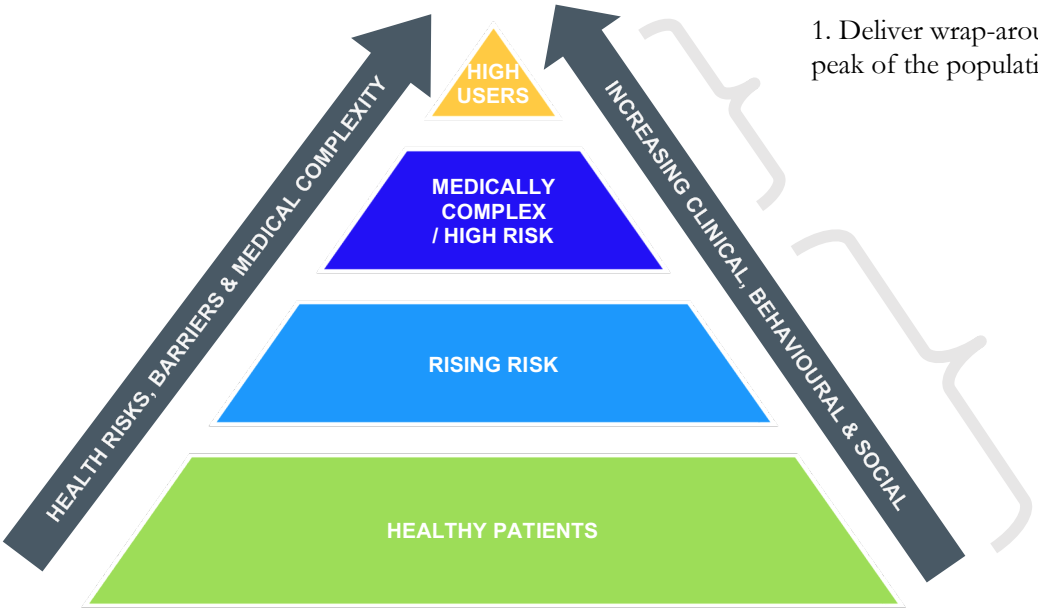
1) submission of a question from a policymaker or stakeholder;
2) identifying, selecting, appraising and synthesizing relevant research evidence about the question;
3) conducting key informant interviews;
4) drafting the rapid synthesis in such a way as to present concisely and in accessible language the research evidence; and
5) finalizing the rapid synthesis based on the input of at least one merit reviewer.

We use the phrase 'broader human services' to highlight the range of services and programs that exist beyond the health system that aim to improve the economic and social well-being of the population. These services could be related to childcare, children's and early-years services, disability services, employment and income supports, housing services, homelessness services, and other community programs.

In relation to OHTs, broader human services have the potential to play two important roles – one focused on improving care for the individual and the other on population-wide interventions (see Figure 1). The first is to partner with health services provided by OHTs to deliver wrap-around care to individuals in the top tiers of the OHT's attributed population. This role aims to improve the care provided to those individuals within the attributed population who are already accessing services from both health and broader human-service providers. The second role is to work with OHTs to develop population-health level interventions that can,

over time, improve the health and well-being of the entire attributed population. Examples of this approach include providing preventive screening and vaccination pop-ups at local community centres. or re-designing local infrastructure to improve walkability and physical activity.

Figure 1: Role of broader human services in a population-health management approach



In Ontario, many services that address social determinants of health are co-funded by provincial and municipal governments and governed at the municipal level. This adds a layer of complexity to OHTs working with municipal governments and broader human-service providers, as it requires work across levels of governance and across traditionally separate budgets. While many OHTs have representation from municipal governments or municipally governed service partners on their boards and committees, their participation is complicated by the eventual introduction of fiscal and clinical accountability measures. Additional layers of complexity include:

- the lack of defined expectations for which broader human services should be included in the Ontario Health Teams model;
- inconsistencies among Ontario Health Teams with respect to the services their partners are able to provide (for example, some Ontario Health Teams have chosen to partner with municipalities while others have not);
- the power and resource differences when developing partnerships between large health providers and community-based broader human-service providers (for example, differences between big hospital networks and emergency food banks); and
- uncertainty around future funding arrangements for Ontario Health Teams and how this will influence how health and broader human services intersect.

As many OHTs are still in the process of planning, there is an opportunity to take a detailed look at how broader human services can work with Ontario Health Teams to optimize population-health management and achieve the quadruple aim.

WHAT WE FOUND

We identified nine systematic reviews and 12 primary studies that focused on the integration of health and broader human services. We identified five facilitators that could be important to consider for implementation (Question 1).

Other jurisdictions that have adopted population-health management approaches have grappled with similar questions around how to establish intersections between local networks of care and broader human services. We conducted targeted database and internet searches to identify how other health systems have approached this issue (Question 2). We focused on initiatives that:

- addressed the role of local networks of change in relation to broader human services;
- focused on a system-wide transformation, rather than a one-off program or care pathway; and
- crossed multiple 'OHT building blocks' (i.e., were a package of interventions, rather than a single intervention).

Based on the literature and jurisdictional scan, we organized the findings into four different models for how health and broader human services could intersect to optimize population-health management:

1) provider-coordinated model
2) organizationally coordinated model
3) regionally coordinated model
4) fully integrated model.

Box 2: Identification, selection and synthesis of research evidence

We identified research evidence (systematic reviews and primary studies) by searching (in January 2022) Health Systems Evidence (www.healthsystemsevidence.org) and PubMed. In Health Systems Evidence, we searched for [(coordinat* OR integrat*) AND (social services OR social system)]. In PubMed, we searched for [(coordinat* OR integrat*) AND (social services OR social system)].

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

For each systematic review we included in the synthesis, we documented the focus of the review, key findings, last year the literature was searched (as an indicator of how recently it was conducted), methodological quality using the AMSTAR quality appraisal tool (see 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.

We identified jurisdictional experiences by searching jurisdiction-specific sources by hand searching government and stakeholder websites.

These models, findings from effectiveness studies, and considerations for the Ontario context are briefly summarized in Table 1, while appendix 1 provides an overview of the identified initiatives in terms of the targeted population, sectors and settings, and brief description of the initiative.

Appendix 2 includes additional details on implementation considerations by Ontario Health Team building block based on each initiative. Appendices 3 and 4 provide summaries of findings from the identified and relevant systematic reviews and primary studies.

Question 1: What does the evidence say about the integration of health and broader human services to facilitate population-health management

When considering how human services can work with OHTs to optimize population-health management and achieve the quadruple aim, relevant factors that need to be in place include:

- partnering across organizations with previous experience working together
- clarifying leadership, roles and responsibilities for each partner
- establishing shared goals, values, vision of care, and common understanding
- adequate resourcing across broader human services
- having supportive policies that encourage innovation and flexibility.

Partnering across organizations with previous experience working together

One older medium-quality review and four qualitative studies conducted in the U.S. that described Accountable Care Organizations (ACOs) and Accountable Health Communities (AHCs) reported that integrating health and social care required 'buy-in' from relevant partners in order to better engage both health and social-care providers with local communities.(1-5) For example, a qualitative study reported that local ownership of new services led to more collaborative practices across the care system.(3) Additionally, a recent qualitative study indicated areas where trusted partnerships will be key during processes to standardize screening and documentation, share electronic patient data with community partners, and evaluate innovative programs and services.(4) For instance, a qualitative study reported that partnerships between ACOs and community-based organizations were critical for developing their programs, but found it difficult largely due to lacking personal relationships and history of working together.(4)

Clarifying leadership, roles and responsibilities for each partner

Two older low-quality reviews that focused on factors that promote collaboration between health and social care services described the importance of effective communication, strong management, and facilitated shared leadership with interprofessional teams. Conversely, the reviews indicated that differences in organization, professional philosophies, and ideologies, as well as financial uncertainty may impede joint working.(6; 7)

Establishing shared values, vision of care, and common understanding

An older medium-quality review reported that there is a need to clearly identify what should be provided in human and broader health services, and to clarify the language to establish a common understanding. Two descriptive studies conducted in the U.S. emphasized similar findings, where part of the joint planning should be to understand goals, strengths and expertise, how each partner will contribute, clarify definitions, and other supportive processes.(1-3)

Developing goals in a cooperative and coordinated manner

An older medium-quality review emphasized the importance of developing goals with equitable decision-making processes. This could involve equality across sectors and arranging partners in a non-hierarchical, democratic structure in addition to integrating processes that involve both administrative and clinical supports.(8)

Adequate resourcing across broader human services

Three reviews (including one older medium-quality review and one high-quality review) described that the development of structured information systems and other resources (e.g., funding service provision on equal footing, fund matching, joint budgeting with appropriate safeguards) were integral for joint collaboration between health and broader human services.(2 ;8; 9)

Having supportive policies that encourages innovation and flexibility

An older low-quality review and two recent qualitative studies conducted in the U.S. indicated that flexibility in budgeting, revenue streams, and policies could help resolve potential barriers to integration. For instance, ACOs found it difficult to describe their return on investments due to shorter funding cycles and longer time horizons to see returns of implemented programs, and called for more flexibility in policies.(4; 10; 11)

Question 2: What can we learn from transformations outside of Ontario on how health-system transformations have worked with broader human services?

We identified six initiatives – from Quebec, Germany, New Zealand, the U.K., and the U.S. – as well as one example of how a regional approach is currently being used to facilitate intersections between OHTs and broader human services. In the table below, we organized the examples we found into four different models, present evidence found on the models, and describe considerations for their use in Ontario. However, for any of these models to work, we know that certain essential elements must be in place, including:

- putting the patient at the centre of care (and their well-being at the centre of all decisions);
- engaging patients, family and caregivers in planning for the intersections between OHTs and broader human services; and
- coordinating between health and broader human services, which could include financing care-coordinator roles and establishing common digital tools.

Table 1. Models for intersections between Ontario Health Teams and broader human services that may be relevant to Ontario Health Teams

Model and examples	Findings from effectiveness studies	Considerations for the Ontario context
Provider-coordinated model: • Coordination between health and broader human services is facilitated by a care coordinator or care navigator who ensures 'warm handoffs' between service types, but there is little to no integration of governance or financial arrangements *Examples* • Integrated Care Systems [U.K.]: it has developed a care-coordinator role that is funded by the National Health Service to connect patients with broader human services provided in the 'third sector' (voluntary and community services), however there is no additional integration with these services (12)	• We found no effectiveness studies related to the use of care coordinators in the U.K.'s Integrated Care Systems. However, reviews on provider-coordinated models more generally have found: o increases in reported self-efficacy, self-management, and empowerment o improved likelihood that patients attend follow-up services o less use of acute-care services for care that could be provided at other levels, though this was dependent on how navigation was implemented (16; 17)	• This model requires clear understanding across health and broader human-service providers about who is providing the coordination/navigation role • Fragmentation between health and broader human services may continue due to the historic separation of care, differing cultures, and lack of information sharing • As it relies on individual providers, there may be variation in coordination between different services and across the province
Organizationally coordinated model: • Coordination between health services and broader human services is the responsibility of one organization that operates in a 'hub-and-spoke' model to screen individuals, determine their needs, and connect them with service providers • This model has some integration of governance and financial arrangements – for example, the model may have a steering committee or board that supports decision-making, or a 'hub'	• Though results from the full evaluation of Accountable Health Communities are not due until later in 2022, initial findings show: o eligibility and screening criteria helped to direct the intervention to beneficiaries where there is a potential for reducing expenditures and utilization o acceptance of navigation was high, but there was limited success in resolving health-related social	• It may be challenging for partners within this model to determine which organization takes on the role of the 'hub' • Though this model may be relatively easily

Model and examples	Findings from effectiveness studies	Considerations for the Ontario context
organization may be given funds for additional staffing and infrastructure (such as digital supports), but it does not pay for services directly *Examples* • Accountable Health Communities [U.S.] use a bridging organization to administer a common needs assessment and connect an attributed population with clinical and human services that meet their health and social needs (13) • Gesundes Kinzigtal [Germany] is a structured partnership between a regional management company and health insurers, with the health insurer establishing service contracts with both health and social-care providers (18; 19)	needs due to, in many instances, individuals could not be reached (33%), opted out of navigation after initial acceptance (10%), or could not be matched to a local service available to meet their needs (8%) ○ a reduction in emergency-department visits when compared with a control group, although no difference was found for total Medicare expenditures, overall inpatient admissions, or primary-care visits (13) • The Gesundes Kinzigtal has been evaluated by external researchers and reports positive effects on health outcomes and patient experiences in addition to reduced costs when compared to a control group (18; 19)	implemented as it does not require significant governance or financial changes, it is heavily dependent on the good will of those participating • Fragmentation may still occur between health and broader human-service providers
Regionally coordinated model • Coordination between health and broader human services within one municipality is facilitated by a regional body *Examples* • Toronto region [Ontario, Canada] has capitalized on its size and has established partnerships between the municipality and OHTs that are facilitated by the region ○ This approach has supported improved communication between the region and the city and allows the region to direct relevant information, including planning data, back to each OHT	• We found no effectiveness studies on the regionally coordinated model	• This model works for locations where there is either a large number of OHTs in one municipality or where there are many municipalities served by one OHT, and as a result may not be applicable for all areas of the province
Fully integrated approach • Health and broader human services are jointly planned for and share a common budget • This model provides a 'no-wrong-door' approach where individuals are supported to navigate services based on their needs, often through existing networks of health and broader human-service providers	• Lead Agency Model resulted in: ○ reduced burden on nursing staff, improved access to services (including reducing the waiting time for occupational-therapy assessment and emergency care), and decreased the average length of hospital stay by 16% with sustained efforts three years after integration	• Though this model has the potential to reduce fragmentation, it often requires complex governance and financial arrangements that may take time and

Model and examples	Findings from effectiveness studies	Considerations for the Ontario context
• Priority service areas for integration may be defined by drawing on population-based data and community-identified priorities *Examples* • Lead Agency Model [U.K.] joins health and broader human-service providers under one legal entity (NHS Highland) that is responsible for the delivery of adult health and social-care services (14; 15) • Integrated Health and Social Services Centre [Quebec, Canada] are local service networks which use a collaborative governance model and shared budget to meet the health and psychosocial needs of an attributed population o The model is built on having community organizers embedded within health-service delivery organizations that can support coordination (20-22) • Whānau Ora [New Zealand] is an Indigenous health initiative that uses integrated health and social-service contracting through local collectives of providers o The model uses a flexible approach to commissioning to support locally appropriate interventions o The model also involved the creation of a new employment category of Whānau Ora navigators to work intensively to assist providers to improve their delivery practices (23; 24)	o new linkages between care teams and care coordinators who ensure that the client receives their intended care in an efficient and timely manner o greater resource sharing between health and social government departments o safe and effective medicine management for care-home residents (14; 15) • Though no overall assessment of Health and Social Services Centres took place by the government of Quebec, strengths and weaknesses of the approach have been noted in studies, including: o the emphasis on prevention and public health as well as the development of care according to population health and social needs o the establishment of care pathways that ensure patient follow-up o significant administrative burden for professionals who took on the case-management role o competition between organizations in the network for limited resources (20-22) • Whānau Ora has achieved early gains for intended beneficiaries and has succeeded in engaging individuals who were not connected to mainstream social services, or for whom the fragmentation of existing services had led to poor outcomes o Further, the navigator role has been recognized as a key innovation arising to support seamless access to social services (23; 24)	high levels of trust among partners to establish • This model may also require significant changes to legislation to allow for information sharing and budget sharing, often at the highest levels of governance

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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, and the proportion of studies conducted in Canada; and
- primary studies (in this case, economic evaluations and costing studies) - the focus of the study, methods used, study sample, jurisdiction studied, key features of the intervention and the study findings (based on the outcomes reported in the study).

For the appendix table providing details about the systematic reviews, the 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: Description of included initiatives

Initiative	Population	Sectors and settings	Description of the model
NHS Highland – Lead Agency Model (14; 15)	• *Country/region:* United Kingdom (Scotland) • *Population:* Residents of nine rural and remote municipalities in the Scottish Highlands (population of 220,000 and land area of just over 25,000 km^2)	• Primary care (e.g., individual primary-care providers) • Home and community care • Social services (e.g., social services for older adults; specialty services for the disabled)	*Objectives*: • To improve the quality and reduce the cost of services through the creation of organizational arrangements designed to streamline service delivery to improve population health outcomes • The Public Bodies (Joint Working) Act of 2014 required the integration of health and social care • From 2011 to 2015, 1% of Scotland's annual healthcare and social-care budget for older people was earmarked to support care transformation; the Highlands was the first area to advance care reform through a Lead Agency model (the other model, adopted throughout the rest of Scotland, is through a Body Corporate model) • A joint board was created to support integration, while a legal partnership agreement detailed leadership, governance and shared performance-management frameworks *Scope:* • NHS Highland assumes responsibility for the delivery of adult health and social-care services, including management of 15 care homes, care-at-home service, daycare services, telecare services and a wide range of contracts with the third and independent sectors • Highland Council was responsible for children's health and social-care services *Outcomes:* • Resulted in reduced burden on nursing staff, improved access to services including reducing the waiting time for occupation-therapy assessment and emergency care, and decreased the average length of hospital stay by 16% with sustained efforts three years after integration • Reorganized existing management and government structures (e.g., community health partnerships, performance management frameworks) • Created linkages between care teams and care coordinators who ensure that the client receives their intended care in an efficient and timely manner • Supported greater resource sharing between health and social government departments • Safer and effective medicine management for care home residents
Accountable Health Communities (ACH) (13)	• *Country/region:* U.S.	• Primary care • Behavioral care	*Objectives:*

Initiative	Population	Sectors and settings	Description of the model
	• *Population:* Medicaid and Medicare eligible individuals living in a defined geographic target area of 32 pilot communities	• Acute care • Home and community care • Housing • Food security • Transportation • Utility concerns • Interpersonal violence/safety • Family and social supports • Employment and income assistance	• To help Medicare and Medicaid beneficiaries with unmet health-related social needs connect with community resources through screening, referral, and navigation services • To optimize community capacity to address health-related social needs through quality improvement, data-driven decision-making, and coordination and alignment of community-based resources • To reduce inpatient and outpatient healthcare use and total costs by addressing unmet health-related social needs through referral and connection to community services *Scope:* • Three key players in the model - the bridging organization, clinical delivery services, and community service providers – are collectively responsible for meeting the health and health-related social needs of their attributed population • 28 Accountable Health Communities are being trialed until the end of 2022, though no fiscal or clinical integration has occurred yet *Outcomes:* • Though results from the first analysis are not due until 2022, initial findings show: o eligibility and screening criteria helped to direct the intervention to beneficiaries with the potential for reducing expenditures and utilization o acceptance of navigation was high, but there was limited success in resolving health-related social needs due in many instances to not being able to reach the individual (33%), opting out of navigation after initial acceptance (10%), or no service could be identified to meet their needs (8%) o reduction in emergency-department visits compared to the control group counterpart, though no difference was found for the total Medicare expenditures, overall inpatient admissions, or primary-care visits
Veteran's Health Administration (VHA) (33-36)	• *Country/region:* U.S. • *Population:* Veterans in the United States being served across 1,293 healthcare facilities (enrolled	• Primary care • Inpatient care • Rehabilitation • Mental health • Home and community care (e.g., caregiver support, partner violence	*Objectives*: • To improve timely access to high-quality care that meets the needs, preferences, and safety of Veterans • The new model (announced October 2021) will deliver enhanced integrated care from a VA medical facility and in the community o The first phase involves realigning the financial arrangements of Community Care under the (VHA) Office of finance o The second phase involves the realignment of the Office of Community Care and the Office of Veterans Access to Care to establish the oversight and implementation of integrated access and care coordination model

Initiative	Population	Sectors and settings	Description of the model
	population of nine million)	assistance program) • Transportation and beneficiary travel • Family and social supports • Interpersonal violence/safety • Housing (temporary lodging, social work, case management, social services for older adults)	*Scope:* • The VHA is the largest integrated healthcare system in the U.S., and assumes responsibility for the delivery of adult health and some social-care services across 1,293 healthcare facilities (including 171 VA medical centers and 1,112 outpatient sites of care) *Outcomes:* • While there are no current evaluations of the new model, the VHA aims to conduct randomized program evaluations where programs will be evaluated within a 12-to-18-month period
Integrated Care Systems (12)	• *Country/region:* U.K. • *Population:* 44 Integrated Care Systems covering the entire population of the United Kingdom	• Primary care • Home and community care • Mental health and addictions • Acute services • Long-term care • Municipal services • Housing • Skills development • Family and social supports • Education	*Objective:* • To integrate care across different organizations and settings, joining up hospital and community-based services, physical and mental health, and health and social care *Scope:* • Geographically based partnerships that bring together providers and commissioners of NHS services with local authorities and other local partners to plan, co-ordinate and commission health and social-care services, though they are still in the process of being implemented • 'Place-based' partnerships (which operate at the level of a local authority) support the delivery of health and social care to a smaller attributed population • 'Place-based' partnerships operate below the Integrated Care Board and Integrated Care Partnership but are responsible for planning and coordinating care from between 250,000 and 500,000 individuals by working with local authorities, the voluntary sector, and NHS trusts, as well as primary-care networks *Outcomes* • Though Integrated Care Systems and 'place-based' partnerships were announced in 2019 they are only now beginning to have legislative footing with the passing of the 2022 Health and Social Care Bill, and as a result no evaluations have been undertaken as legal and financial changes have yet to be implemented

Initiative	Population	Sectors and settings	Description of the model
Health and Social Services Centre (HSSC) (14; 15)	*Country/region:* Canada, Quebec *Population:* 95 HSSCs across the province responsible for the care of a population within a specific territory	• Primary care • Public health • Home and community care • Mental health and addictions • Family and social supports • Social work and case management • Municipal services	*Objective:* • Integration of health and social care to improve the population's health and well-being, distribute services more equitably, facilitate the use of services and manage clients with more socially complex care needs • Guided by creating population-based responsibility for the delivery of services and the hierarchical provision of services *Scope:* • Each HSSC has the mandate to evaluate the health and well-being of their populations and determine the healthcare service needs, to coordinate the use of healthcare services, to manage the healthcare services offered, and to develop integrated local care networks connecting health and social-service partners *Outcomes:* • Though we did not identify an no overall assessment of Health and Social Services Centres by the government of Quebec, strengths and weaknesses of the approach have been noted in studies, including: o the emphasis on prevention and public health as well as the development of care according to population health and social needs o the establishment of care pathways that ensure patient follow-up o significant administrative burden for professionals who took on the case management role o the critical role of trusting relationships between health centres and communities, as well as the time required to build and strengthen these relationships
Whānau Ora (23; 24)	• *Country/region:* New Zealand • *Population*: Maori	• Primary care • Public health • Home and community care • Mental health and addictions • Family and social services • Interpersonal violence/safety • Education and skills development	*Objective:* • To address issues of the overrepresentation of Māori whānau (families and/or multigenerational communities) in poor social and health outcomes by supporting the holistic well-being of multigenerational family groups *Scope* • Nationally funded program jointly implemented by the Ministry of Health, Te Puni Kōkiri and the Ministry of Social Development • Included three key initiatives: o Whānau innovation, integration and engagement (WIIE), which involved funding whanau to make plans to improve their lives and assistance to carry these out; o provider capacity-building, to enable groups of providers to deliver coordinated and Whānau-centred services;

Initiative	Population	Sectors and settings	Description of the model
		• Economic support programs	○ integrated contracting and government support for the initiatives, involving the cooperation of Te Puni Kōkiri (the Ministry of Māori Development), the health and social development ministries, and district health boards to develop integrated contracts. *Outcomes* • Achieved early gains for intended beneficiaries and has succeeded in engaging Whānau who were not connected to mainstream social services, or for whom the fragmentation of existing services had led to poor outcomes • Navigator role has been recognized as a key innovation arising to support seamless access to social services
Pioneer population-health management sites (25)	• *Country/region:* Netherlands • *Population:* Regional networks responsible for between 42,000 and 646,000 residents	• Insurers • Primary care • Hospitals • Municipalities • Citizen representative organizations • Employers	*Objective* • To integrate and optimize services through the improved organization of care (i.e., better data infrastructure) and through the improved delivery of care (i.e. substitution, integration of care and better self-management) *Scope* • Nine regional partnerships among providers representing a range of sectors in primary and secondary care as well as insurers, and other stakeholders including municipalities who represent both long-term care and social and community care services *Outcomes* • There is currently no data available in English on the effects of the pioneer sites on population-health management outcomes • However, insights related to facilitators and barriers to establishing these networks have been included throughout the synthesis
Gesundes Kinzigtal (18;19)	• *Country/region:* Germany • *Population:* 71,000 residents from the Kinzigtal region	• Primary care • Mental health and addictions • Acute services • Skills development • Family and social supports • Education	*Objective* • Value-oriented population-based shared savings contract with Healthy Kinzigtal Ltd, which is responsible for the contribution margin (difference between the amount the social health insurance company receives from the central healthcare fund for the expected mean costs of care and costs actually incurred by the population) • Healthy Kinzigtal Ltd is financially accountable for all people in the population served The financial goal is to increase the insurer's contribution margin in order to provide the stimuli to integrate care delivery and engage all partners in working towards the triple-aim *Scope*

Initiative	Population	Sectors and settings	Description of the model
			• Provides individual treatment plans and goal-setting agreements between physicians and patients, patient self-management and shared decision-making, care planning based on the chronic-care model, patient coaching and follow-up care, prevention and health-promotion programs, and system-wide electronic patient records • Key aspects of the model are rooted in the scientific literature such as triple-aim approach, the chronic-care model, audit and feedback strategies, the focus on patient activation, or pharmacological consultations to improve safety of drug prescriptions *Outcomes* • External evaluations are conducted by independent research institutions and internal evaluations are conducted by different entities (OptisMedis AG) on the impact of the integrated-care system. • A survey is conducted among insured population groups about their perceived success in their health, satisfaction, and health behaviour • A controlled quasi-experimental study compared the intervention to a random sample of 500,000 members not part of the Kinzigtal region, which provided an analysis from routinely available health-claims data from the social health insurance to evaluate physician performance, and the over-, under-, and misutilization of health services • Key components from this model include the following: 1) the role of an integrator (regionally based organization, partly owned by local providers who are familiar with local health-services issues); 2) support from the integrator (e.g., financial investments, decision-making stewardship, health data analytics); 3) considerable start-up investment; 4) foresight and vision to improve population health; 4) appropriate population size; 5) comprehensive data sharing and technology (e.g., shared patient records); 6) transparency and benchmarking to facilitate improvement and effective knowledge sharing; 7) efforts and focus on triple aim; and 8) long-term success included shifts in culture and contracts to provide stability for planning health interventions

Appendix 2: Implementation considerations by Ontario Health Team building block

Initiative	BB#1: Defined patient population	BB#2: In-scope services	BB#3: Patient partnership and community engagement	BB#4: Patient care and experience	BB#5: Digital health	BB#6: Leadership, accountability and governance	BB#7: Financing and incentive structure	BB#8: Performance measurement, quality improvement and continuous learning
Canada								
Health and Social Services Centres (HSSCs)	• Using federal, provincial and regional data on population needs, including socio-economic status, education, housing, immigration, and community organization to highlight critical social issues affecting local populations • Data updated every two years and is used to allocate funding equitably		• Built on local community service centre (CLSC) model of having community organizers integrated with health service delivery organization			• Primary and secondary level services fall directly under HCCS jurisdiction, and collaborate with regional health agencies to coordinate access to tertiary and other specialized services	• Population data by health region used to align funding with population clinical and social needs	
England								
Integrated Care systems (ICS) – 'place-	• Responsible for the health and social-	Health and social care services are	As part of decision-making arrangements,	• Coordination and navigation is critical, but	Though not currently in place, ICSs	• Collaborative leadership model that includes local-	• Shift towards aligned incentive contracts which	ICSs are held to 70 performance metrics which can

Initiative	BB#1: Defined patient population	BB#2: In-scope services	BB#3: Patient partnership and community engagement	BB#4: Patient care and experience	BB#5: Digital health	BB#6: Leadership, accountability and governance	BB#7: Financing and incentive structure	BB#8: Performance measurement, quality improvement and continuous learning
based partnerships'	care needs of an attributed population defined largely by geography, with considerations for patient-flow data • Partners in the integrated-care system collectively define the boundaries, size and configuration of the 'places' to be served by 'place-based partnerships'	provided alongside one another and coordinated through 'place-based partnerships' and primary-care networks	'place-based' partnerships are required to systematically involve and co-produce with people and communities	differs between each ICS • Social prescribing through a link worker or community connector that is funded by the NHS	are used to implement a shared care record and other digital infrastructure that supports interoperability across partners, as well as digital channels for citizens to support monitoring at their own home	government councils and the voluntary sector • Place-based partnerships that form the foundation of integration between health and social services currently have flexibility in how their governance structure is arranged (i.e., whether to take a lead-agency model, joint committee, or consultative forum)	include a gain and risk share element that recognizes the achievement, or not, of an agreed upon population-health aim • Place-based partners align and share resources, for example, operational supports to primary-care networks including population-health data and analytics to support the co-ordination of care as well as human resource support and program management • Select budgets will be delegated to the 'place-based' partnership to support a more joined-up resource management • Voluntary and community-sector organizations remain largely	be grouped into six key themes of quality, access, and outcomes, preventing ill health and reducing inequalities, leadership, people, and finances

Initiative	BB#1: Defined patient population	BB#2: In-scope services	BB#3: Patient partnership and community engagement	BB#4: Patient care and experience	BB#5: Digital health	BB#6: Leadership, accountability and governance	BB#7: Financing and incentive structure	BB#8: Performance measurement, quality improvement and continuous learning
							funded by various arrangements including charitable donations, NHS partnerships, central government funding from the Department of Health and Social Care	
Germany								
Gesundes Kinzigtal	• Responsible for 71,000 residents	• Access to primary care, mental health and addiction services, acute services, skills and training development, family and social supports	• Patient-centred care is embedded at three levels: structural (e.g., advisory boards), intervention planning (e.g., shared decision-making and self-management support), and between physician and patient interactions (e.g., self-assessment questionnaire)	• Patient surveys are conducted to understand perceived success in health, satisfaction, and health behaviour	• OptiMedis AG (a health management company that develops health networks based on integrated healthcare contracts with health insurers) is responsible for health data analytics	• Local planning and implementation of disease prevention and health programs conducted by Healthy Kinzigtal Ltd • OptiMedis AG (a health management company that develops health networks based on integrated healthcare contracts with health insurers) provides the overarching management support, business, and health data analytics	• Healthy Kinzigtal Ltd is financially accountable for all people in the population served and the contribution margin (values-oriented, population-based shared savings contract)	• Internal evaluations within the initiative and on physician performance • External evaluations by independent research institutions by conducting survey and controlled quasi-experimental study

Initiative	BB#1: Defined patient population	BB#2: In-scope services	BB#3: Patient partnership and community engagement	BB#4: Patient care and experience	BB#5: Digital health	BB#6: Leadership, accountability and governance	BB#7: Financing and incentive structure	BB#8: Performance measurement, quality improvement and continuous learning
Scotland								
NHS Highland – Lead Agency Model (7; 8; 15)		• District-level multi-disciplinary care teams, with care coordinator across health and social needs; community geriatricians as critical • Integrated transport plans as part of care design	• Leveraged national policy requiring local authorities to offer citizens choice with respect to assessment and care delivery, including where budget is spent • Public engagement to inform the development of the lead-agency model through meetings and focus groups	• Streamlining services released nursing time, improved access and decreased length of hospital stay		• Supported local capacity development, particularly for social care • The Highland Council has a core team of health and social-care professionals • The Social Care Self-Directed Support (SDS) envisions care should be based around the citizen • Focus and reconfiguration of services based on the needs of the local population instead of organizational barriers • Leadership and management capacity with senior leaders demonstrating 'can-do' attitude	• Single budgets had to be prepared and tax reporting mechanisms for each organization had to be reconciled • Support for integration garnered by avoiding a focus on cost-savings	
New Zealand								
Whānau Ora	Initial focus of Māori for Māori needs expanded to include all	• Defined by scope of self-determined Whānau	• Initiative co-produced with potential beneficiaries and through			• Program design and theory of change based on both mainstream and Māori scholarship	• Dedicated funding available to collectives of providers who held contracts with	• Developed Whanau-led evaluation framework to capture

Initiative	BB#1: Defined patient population	BB#2: In-scope services	BB#3: Patient partnership and community engagement	BB#4: Patient care and experience	BB#5: Digital health	BB#6: Leadership, accountability and governance	BB#7: Financing and incentive structure	BB#8: Performance measurement, quality improvement and continuous learning
	New Zealanders in need	outcome plan • Created new employment category of Whānau Ora navigators to work intensively with Whānau and to assist providers to improve their delivery practices for Whanau • Responsive and flexible service model	extensive consultative dialogue with Māori communities throughout New Zealan • Whānau applied for planning and implementation funding to support well-being			• Program implementation supported by new ministerial portfolio and dedicated budget appropriation	district health boards or ministries of health or social development, to enter into formal, collaborative relationships • Integrated contracts across locally based collectives, guided by regional leadership groups • Eventually, funding devolved to three independent geographically focused non-governmental commissioning agencies • Flexible approach to commissioning in support of locally appropriate interventions	individual as well as collective outcome measures (cohesion, healthy lifestyle and social participation) • Accountability for funding based on outputs and driven by state-based services accountability frameworks • Commissioning agencies can develop own outcome priorities (as long as consistent with broader outcomes framework)
Netherlands								
National Health Network					• National Health Network, a state enterprise,		• Municipalities are responsible for the delivery of primary care, home and community care,	

Initiative	BB#1: Defined patient population	BB#2: In-scope services	BB#3: Patient partnership and community engagement	BB#4: Patient care and experience	BB#5: Digital health	BB#6: Leadership, accountability and governance	BB#7: Financing and incentive structure	BB#8: Performance measurement, quality improvement and continuous learning
					provides an electronic health record for the exchange of patient information between all health and social-service providers • The same system also allows adult patients to have online access to their medical records		long-term care and social services	
United States								
Accountable Health Communities	• Each ACH is responsible for a population of 10,000 to 200,000 • However, two bridge organizations serve the	• Clinical delivery sites are responsible for providing health services to beneficiaries and must include		• A universal screening tool is used to identify the health-related social needs of community dwelling Medicare, Medicaid and		• Hub-and-spoke model is established with bridge organizations at the centre • Bridge organizations (often a hospital or health network) is responsible for developing and	• Funds have not yet been integrated and continue to maintain a fee-for-service model • Fee-for-service expenditures within the model are being tracked as part of the evaluation and	• An advisory board is responsible for assessing and prioritizing community needs and developing a quality-

Initiative	BB#1: Defined patient population	BB#2: In-scope services	BB#3: Patient partnership and community engagement	BB#4: Patient care and experience	BB#5: Digital health	BB#6: Leadership, accountability and governance	BB#7: Financing and incentive structure	BB#8: Performance measurement, quality improvement and continuous learning
	Medicare and Medicaid eligible beneficiaries for an entire state (West Virginia and Oklahoma)	hospital, primary care, behavioural health, and home and community care services • Community service providers are agencies that delivery broader human services, which vary by AHC, but commonly include food, shelter, transportation, and supports for benefits (e.g., utilities and applying for vouchers)		dually eligible beneficiaries • Community referrals are then provided based on the community resource inventory and results of the patient's assessment (database updated every six months) • Navigation is provided to ensure referrals between the bridge organization, clinical delivery sites, and community-service providers have been successful, with follow-up to determine if needs have been resolved		maintaining relationships with key partners, facilitating the adoption of the screening tool, populating the community resource inventory, and financially managimg the AHC model award	to determine whether the model results in cost-savings and/or quality improvements • AHC model awards are in place to support the infrastructure and staffing needs of bridge organizations	improvement plan • Gap analysis is undertaken by the advisory board to determine where multi-sector partnerships are needed

Initiative	BB#1: Defined patient population	BB#2: In-scope services	BB#3: Patient partnership and community engagement	BB#4: Patient care and experience	BB#5: Digital health	BB#6: Leadership, accountability and governance	BB#7: Financing and incentive structure	BB#8: Performance measurement, quality improvement and continuous learning
Veterans Health Administration	The VHA assumes responsibility for the delivery of adult health and some social-care services of nine million veterans across the country	• Each medical benefit package includes services such as preventive care, inpatient care, mental health, assisted living and home health care, prescriptions • Beneficiaries may be eligible for services such as rehabilitation, home and community care (e.g., caregiver support, partner-violence assistance program, transportation and beneficiary travel, family			• The VHA provides telehealth at home, in clinics, and in the hospital, however it is unclear on its connection to broader health services	The Acting Under Secretary for Health is responsible for overseeing $68 billion and delivery of care to more than nine million veterans	• The first phase of the new integrated-care model involves the realignment of financial functions of Community Care under the VHA Office of Finance	The VHA aims to conduct randomized program evaluations where programs will be evaluated within a 12-to-18-month period

Initiative	BB#1: Defined patient population	BB#2: In-scope services	BB#3: Patient partnership and community engagement	BB#4: Patient care and experience	BB#5: Digital health	BB#6: Leadership, accountability and governance	BB#7: Financing and incentive structure	BB#8: Performance measurement, quality improvement and continuous learning
		and social supports, interpersonal violence/safety, housing, temporary lodging, social work, case management, social services for older adults)						

Appendix 3: Summary of findings from systematic reviews about the intersections between broader human services and Ontario Health Teams

Focus of systematic review	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
Factors that affect integrated health and social services (7)	This review of 46 studies evaluated the evidence related to the joint working of health and social-care services for adults in the U.K. Improvements in health and standard of living were found across many of the reviewed studies, however, when integrated and non-integrated care were compared, no significant or marginal differences were found. Further review of the literature found integration of health and social services could help deter inappropriate admission to acute care or residential care and could affect the ability of the elderly to remain independent at home. Lack of evidence regarding cost effectiveness of joint services made it difficult to draw conclusions, however, there was some evidence that costs were identical between integrated service provision and standard care, and that intermediate care could save costs. Furthermore, the study highlighted factors that either promoted or hindered joint services through three themes: organizational issues, cultural and professional issues, and contextual issues. Effective communication, co-location, adequate resources, and strong management were key factors found to promote joint working. Conversely, differences in organization, professional philosophies, and ideologies, as well as financial uncertainty impeded many joint initiatives. Lack of evidence makes it difficult to make firm conclusions on the effectiveness of integration, and some of the evidence even demonstrates a lack of appreciation for the goals of integrated services.	2011	4/9 (AMSTAR rating from McMaster Health Forum)	Not Reported
Leadership in health and social teams (6)	This literature review of 28 papers aimed to assess evidence regarding the nature of effective leadership in relation to inter-related health and social-care teams.	2015	4/9 (AMSTAR rating from McMaster	Not Reported

Focus of systematic review	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
	The authors searched for Interprofessional Team and Leadership and analyzed the studies obtained to provide important characteristics of interprofessional team and leadership frameworks. They found that facilitated shared leadership was an important aspect for interprofessional teams to work effectively, mainly through the use of "non-hierarchical, democratic structures" and transformational forms of leadership. Additionally, many personal qualities, such as enthusiasm, commitment and empathy, were deemed important for interprofessional team and leadership. Furthermore, team-building opportunities, and leadership clarity, were important aspects of effective leadership in integrating health and social-care teams. Leaders of integrated-care teams must also ensure the team has the right skills to achieve their objectives and provide the team with resources needed to achieve these goals through networking and exploiting new opportunities. Other important factors included goal alignment, creativity, contextual expertise, effective communication, and facilitated shared leadership. The study also highlights that achieving all these goals may be challenging. For example, there is a paradox in striving for collective and collaborative leadership while maintaining clear leadership. However, the literature focuses on developing team dynamics, while increasing integrated practice, with a lesser focus on managing performance. Another contradiction includes team size, as some studies conclude that larger teams become less effective, while other studies observed better patient-care outcomes in larger teams. Whether or not there are other factors which influence these contradictions raises some questions regarding what makes an effective framework for interprofessional teams.		Health Forum)	
Joint commissioning of health and social-care agencies (2)	This review of 25 studies explored the impact of joint commissioning of commissioners from different sectors. All studies, but one, were conducted in the U.K. The study listed many positive impacts of joint commissioning, including reduced duplication of services, reduced overall costs, better services, improvements in efficiency and staff morale, as well as improved patient	Not reported	6/9 (AMSTAR rating from McMaster Health Forum)	0/25

Focus of systematic review	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
	outcomes. However, the study also mentioned that joint commissioning could lead to increased transaction costs, staff demotivation, and the "takeover" of one sector by another. The study also outlined the key factors that led to positive or negative impacts of joint commissioning: input, context, internal issues, and relationship between partners. Furthermore, the authors found that joint commissioning goals were also affected by a variety of specific considerations, including previous history working together, geographical issues, policy initiatives, communication, accountability, structured organization, shared goals, as well as trust and understanding. Overall, trusting relationships between commissioners, clarity over responsibilities, coterminous geographical boundaries, and the development of structured information systems were all deemed of high importance for successful joint commissioning of health and social-care agencies. The study also mentions that the quality of the literature reviewed was judged overall to be low, and that there was little confidence that the impacts outlined in the study were caused by joint commissioning alone rather than a variety of factors.			
Reorganizing and integrating public health, healthcare, social care and wider public services (25)	The authors describe population health management as large-scale transformations that initiate collaboration and integration across public health, healthcare, social care, and wider public services. The realist review identified strategies, outcomes, contextual factors, and mechanisms from 41 included studies in order to develop a framework to summarize 'how' and 'why' of PHM development.	2020	5/9 (AMSTAR rating from McMaster Health Forum)	3/41
Integrating funds for health and social care (26)	The authors proposed a framework based on agency theory to understand the role of integrated funding in promoting coordinated care. The review found 38 relevant studies from Australia, Canada, England, Sweden, and the U.S. None of the studies described the effect of integrated funding, but solely focused on 'integrated financing plus integrated care.' The review identified eight types of financial integration, including transfer payments, cross charging, aligned budgets, lead commissioning, pooled funds, integrated management/provision with pooled funds, structural	2015	3/9 (AMSTAR rating from McMaster Health Forum)	

Focus of systematic review	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
	integration, and lead commissioning with aligned incentives. The authors indicated that the funding mechanism and impact were poorly described. Over 80% of the studies reported the use of pooled budget, but the scope varied and disaggregated results were not reported. Many studies reported that access to care improved, while also uncovering substantial levels of unmet needs and services from implementing financial integration into coordinated care. Clinical autonomy and policies can undermine budget holders' ability to facilitate access to care. There was no study that demonstrated a sustained reduction in hospital use, in addition to limited studies that showed significant improvements in health outcomes. In the remaining studies, there were mixed or unclear findings on short-term reductions (e.g., hospital discharge and readmission). There was some evidence to support the increase of community care (health and social care), but unclear for long-term residential care. There was evidence that cross charging and pooled funding could reduce delayed discharges in the short-term, and largely positive results to improving patient and user experience of care. Total costs, outcomes, and quality of care were less frequently reported. The review found that the main barrier was the significant challenge for implementing financial integration. Even while funds were pooled, budget holders' control over access to services was limited. Other barriers included differences in performance frameworks, priorities, governance, and linking different information systems. The authors concluded that costs will likely rise, but if integration delivers improved quality of life, this may be valuable to implement.			
The impacts of collaboration between local healthcare and non-healthcare organizations (9)	The review focused on the impact of collaboration between local healthcare and non-healthcare organizations and related factors. The authors defined collaboration as "activities between distinct organizations working together to achieve health goals, including through formal and informal partnership arrangements."	2021	8/10 (AMSTAR rating from McMaster Health Forum)	Not reported

Focus of systematic review	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
	The review found mixed evidence of impact, with some studies that focused on targeted interventions (e.g., health-system and community-outreach interventions or narrow measures of impact) suggested that collaboration may improve access to services and patient satisfaction. Additionally, the review found limited evidence related to health outcomes and wide variability in the context of the collaboration between local healthcare and non-healthcare organizations. The review also found that factors such as motivation and purpose, relationships and cultures, resources and capabilities, governance and leadership, and external factors are related to the level of potential collaboration. Generally, the authors found it difficult to uncover which kinds of collaborations work, for whom, and in what contexts. This may be related to the difficulty to measure collaboration, and/or difficulty to implement. The authors suggest to policymakers and health services leaders to be realistic in their expectations of collaboration.			
Integration of the social determinants of health within health-systems frameworks (27)	Historically, health systems have been assigned the resources and mandate to address health and disease in most settings, even when the multi-sector etiology of health is acknowledged. The review examines health-system frameworks in relation to social determinants of health. Twenty-seven studies were included in the qualitative analysis. Significant variation was observed in the extent to which social determinants of health are included within health system frameworks. Five categories of frameworks emerged: 1) bounded – where social determinants were separated from the health system; 2) production – where social determinants are either an input or output of the health system; 3) reciprocal model – which maintains separation described in the production model, but considers the social determinants to be simultaneously inputs and outputs; 4) joint model – which positions the relationship as being fluid and interactive; and 5) systems model which moves beyond the components.	2012	3/9 (AMSTAR rating from McMaster Health Forum)	0/31

Focus of systematic review	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
	Systems models often use the phrasing of complex adaptive system and aim to capture the potentially unpredictable ways in which social determinants may influence health systems.			
Cross-sector service provision in health and social care (8)	Cross-sector service provision is increasingly seen as an expectation rather than the exception and is becoming increasingly more common. However, many challenges have emerged and work is needed to determine how these can be overcome. The aim of the review is to provide a comprehensive overview of the existing body of evidence related to cross-sector service provision. Sixteen articles were included, 11 of which focus on integration, four on collaboration and one on partnership. Many different terms are used to describe the cross-service provision synonymously. Findings from which show the need to clearly identify what is meant by cross-sector service provision and to pay particular attention to the differences between some of the more commonly used terms. While there is preliminary evidence to conclude that integrated models of care are helpful in improving care, additional research is needed. The majority of studies stress the importance of placing the consumer at the centre of cross-sector service provision, which means making sure that consumers are centrally involved in care provision and that their voice is present during decision-making, establishing trust and ensuring that the consumers' goals are met. This also includes establishing trust and establishing mechanisms for communication across sectors in the event that the consumer's needs rapidly change. Success elements of care across sectors include: • establishing a shared vision of care • developing goals in a cooperative and coordinated manner • decision-making occurring in a collaborative and shared manner • devoting time to work through differences as they emerge • equality across sectors and arranging team members in a non-hierarchical way	2015	6/10 (AMSTAR rating from McMaster Health Forum)	3/16

Focus of systematic review	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
	• effective leadership, including collective leadership • reducing jargon used and efforts to improve direct communication • assigning leadership roles to those with the greatest expertise • adequately resourcing cross-sector service provision (i.e., funding service provision on equal footing) – or fund matching from different sources • integrating procedural elements of the network including administrative and clinical supports • engaging in team building and increasing knowledge together • role clarification and negotiation such that it removed professional tribalism			
Financing and budgeting mechanisms to support intersectoral action between health, education and social welfare (10)	As different sectors are subject to different regulatory structures and have distinct goals, funding intersectoral collaborations can be difficult. Separate funding streams, organizational budget silos, a lack of flexibility in funding arrangements, and restrictions on the use of funds can significantly impede investment in intersectoral health-promotion activities. Three principal approaches are described: 1) discretionary earmarked funding (which typically remains under the control of a ministry in charge of health); 2) recurring delegated financing allocated to an independent body; and 3) joint budgeting between two or more sectors. The effectiveness of each of these is dependent on the organizational-structures management culture and trust. Imbalance in the financial and resource contributions from different sectors can be a significant source of hindrance. Policy implications include: • looking at the architecture, legislation and regulation that allow budget sharing between agencies and ensure accountability for funds • identifying outcomes of interests to all intersectoral partners • financially compensating partner sectors that don't receive direct funding	2016	3/9 (AMSTAR rating from McMaster Health Forum)	Not available

Focus of systematic review	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
	• make ongoing financial or intersectoral activities conditional on routine monitoring and evaluation • voluntary joint budgeting with appropriate safeguards may be sustainable through mutual trust rather than imposing mandatory requirements to pool budgets.			

Appendix 4: Summary of findings from primary studies about the intersections between broader human services and Ontario Health Teams

Focus of study	Study characteristics	Sample description	Key features of the intervention(s)	Key findings
How accountable care organizations seek to improve health through non-medical needs, specifically housing,	*Publication date:* 2016 *Jurisdiction studied:* U.S.	Conducted 58 semi-structured phone interviews, typically one hour, with 32 ACO leaders, who were selected based on diversity of	Not applicable	Accountable Care Organizations (ACOs) may be more likely to address non-medical needs, to improve quality and lower costs of care. ACOs found that transportation, housing, and food insecurity were the most common non-medical needs of their patients. Regarding transportation, difference in how ACOs targeted

Focus of study	Study characteristics	Sample description	Key features of the intervention(s)	Key findings
transportation and food (28)	*Methods used:* 58 semi-structured phone interviews with 32 ACO leaders, and site visits of three ACOs	geography, composition and other factors. Furthermore, three sites were visited by three team members, where at least 25 on-site interviews were conducted.		transportation needs were influenced by geographic characteristics. In areas with poor infrastructure, challenges arose in meeting transportation needs. Some ACOs collaborated with transportation companies, especially in rural or suburban areas. In areas with a quality public-transit system, ACOs relied on existing infrastructure. Additionally, ACOs reported stable housing was a basic need that must be addressed before proper medical care could be delivered to the patient. ACOs typically identified housing options and coordinated with housing agencies. Nutrition and food insecurity were deemed important for patient population. Some ACOs partnered with food banks and farmers to overcome this barrier. To address these non-medical needs, ACOs first identified these patients through a screening process. Then, internal and external resources were used to assist with these needs, and both individualized and targeted approaches were developed. Observing how ACOs address non-medical needs, specifically housing, transportation and food insecurities, can offer insight for policy initiatives for both medical and social services.
Integration of health and social services regarding funding and jurisdictional silos (11)	*Publication date:* 2020 *Jurisdiction studied:* U.S. *Methods used:* Mixed methods case study in two jurisdictions, an urban city, and the surrounding county	Studied integration of services in a large, urban city ("City 1") and the county surrounding City 1 ("County 2"). Conducted semi-structured interviews with 41 city and council leaders. Majority were conducted in-person, with 5 on the telephone. Also obtained and analyzed budget data from 2009 to 2018 from the city and county.	Not applicable	Integration of health and social services should involve in-depth consideration of budgetary and jurisdictional realities of health and social-service agencies. Although many interviewees agreed that health and social services are important, budget analysis revealed these services together only constituted US$157 of US$1250 total per capita spending in 2018, which was less than spending on public safety and other country services. Furthermore, per capita public-health spending between City 1 and County 2 was observed to decrease from $57 USD per capita in 2009 to $48 USD per capita in 2018. These budgets are built upon analyzing the previous year's budget and can act as a financial restraint in the integration of health and social services. Additionally, revenue stream inflexibilities also made it quite difficult to integrate services and some funding sources could not be integrated regardless of cooperation between agencies. Other barriers included duplicate government services, political barriers, lack of strategy and limited data sharing.

Focus of study	Study characteristics	Sample description	Key features of the intervention(s)	Key findings
				To overcome these issues, the study found that increasing flexibility in budgeting, revenue streams, and jurisdictional rules can help resolve this barrier to integration. Furthermore, shifting to performance-based budgeting may help increase funding for integration. Big-picture goal alignment and instating a systems-level office as an entity to address integration barriers may also be fundamental to successful integration efforts. Additionally, the authors highlighted that some data may not be generalizable to other settings, and that budget analysis occurred over a timeframe including the 2008-09 financial recession, which could have uniquely affected public budgets.
Model for a community-based social-determinants driven accountable care organization (29)	*Publication date:* 2017 *Jurisdiction studied:* U.S. (North Carolina) *Methods used:* Case report (Invited commentary)	Description of an ACO/Pathways Hub model applied to a health and social-service network in North Carolina	(see next box)	The Pathways Hub Model as applied to Mission Health Partners provides community-based care coordination that includes services to address social determinants of health. The model relies heavily on a care manager who collects information on all patients' needs and identifies needs or gaps in the clinical or psychosocial aspects of an individual's life. Each engaged partner is then assigned a pathway to complete. The care coordination team is divided into pods based on patient attribution. Pods include a registered nurse to act as a care manager, a pharmacy technician care coordinator, clinical pharmacist, licensed clinical social worker, and others working within their scopes of practice. The pod creates relationships between the team members. In addition, cloud-based platforms have been used to receive referrals and document progress on gap closure for high-risk patients whose needs can't be immediately met within the partners.
Accounting for social determinants of health in payments to managed care and accountable care organizations (30)	*Publication date:* 2017 *Jurisdiction studied:* U.S. (Massachusetts) *Methods used:* Linear regression models	357,660 people who were fee-for-service participants and 52,4607 enrolled in managed care organization to determine whether a social determinants of	Expanding the diagnosis-based model to include social determinants of health to improve the accuracy of cost predictions for	The model which included social determinants of health performed slightly better than the typical diagnostic model and reduced underpayments for several vulnerable populations. Providing clinicians with additional funds to compensate for social complexity can significantly increase their ability to provide care that deals with root causes such as finding houses or making existing housing safer.

Focus of study	Study characteristics	Sample description	Key features of the intervention(s)	Key findings
		health model better allocates funds to managed care plans and accountable care organizations	vulnerable populations	When integrating health and social services it is critical to include a funding formula that better accounts for social risk to ensure inequalities are not being exacerbated.
Engaging social-service providers as partners in ACOs (4)	*Publication date:* 2020 *Jurisdiction studied:* U.S. *Methods used:* Qualitative description	Twenty-two accountable care organizations operating between 2015 and 2018	Examining ACOs that were early adopters of initiatives that address social needs alongside medical care	Despite new payment models that encourage ACOs to focus on population health and social determinants, relatively few do as the outcomes are often perceived beyond the direct control of providers. All ACOs included had one physician group, and many included at least one safety net provider organization and a hospital. Only about half of the ACOs in the sample earned a financial bonus or achieved shared savings in at least one performance year. All of the ACOs expressed views that demonstrated their knowledge and commitment to social-service integration. ACOs reported working to address transportation, food and housing needs most frequently. with other services such as health literacy, economic hardship and inadequate social support or loneliness also showing up. Relatively few reported working on safety issues, legal services or underemployment and unemployment. Few ACOs had formal programs or contracts that addressed social needs, and what contracts were in place were inadequately specified. Three themes emerged that spoke to why integration is so challenging. First, ACOs had little data related to social needs to use in making decisions. Second, partnerships between ACOS and community-based organizations were critical to developing programs, but were difficult to develop (largely a result of lacking personal relationships and history of working together). Third, implementation of innovations to address social needs was constrained by ACOs' difficulties in determining how best to approach return on investment given shorter funding cycles and longer time horizons to see returns.

Focus of study	Study characteristics	Sample description	Key features of the intervention(s)	Key findings
Development of accountable health communities (31)	*Publication date:* 2017 *Jurisdiction studied:* U.S. *Methods used*: Qualitative description	Not applicable	Describes innovations in the integration of health and social care in U.S. ACOs	Innovations in the integration of health and social care in U.S.-based ACOs include: using housing and community service specialists who are part of a tightly integrated team; tracking patients' service utilization across clinical and human-service systems; re-investing savings in upstream programs; prescriptions for community services through an interface between a patient's electronic health record and community resource databases; and fulsome client assessments which include examining health and social needs. To further test these innovations, Accountable Health Communities were developed and funded under the Centre for Medicare and Medicaid Innovation centre. These will test whether systematically identifying and addressing social needs can reduce health care costs and utilization. The foundation of the model is universal, comprehensive screening for health and social needs. A number of barriers exist to this model including gaps in the evidence base for the selection of screening items, and varying quality of community resources to invest in the model.
Effects of social determinants of health on care payment formulas (30)	*Publication date:* 2017 *Jurisdiction studied:* U.S. *Methods used:* Quantitative analysis	Obtained quantitative data from MassHealth, including analysis of participants in fee-for-service (FFS) programs or managed-care organizations (MCOs). Conducted regression analyses, such as an SDH model used for cost prediction.	Not Applicable	Many managed-care payment formulas are known to ignore many social determinants of health (SDH), which can negatively impact the care of socially vulnerable individuals. The authors used data from MassHealth, Massachusetts Medicaid and Children's Health Insurance Program. This included the analysis of spending with regression models as well as participants in fee-for-service (FFS) programs or managed-care organizations (MCOs). The paper used an SDH cost prediction model, taking into account predictors describing housing instability, behavioural health issues, disability, and neighbourhood-level stressors. When compared to the diagnosis-based model, the SDH model performed slightly better and was shown to reduce underpayments in vulnerable populations. For example, the SDH model eliminated neighbourhood associated underpayment and 72% of client underpayments in the Department of Mental Health. Since October of 2016, this model was adopted by MassHealth and provides fixed-budget accounting for socio-economic risks, as

Focus of study	Study characteristics	Sample description	Key features of the intervention(s)	Key findings
				well as medical risks. Through this program, clinicians serving 1,000-2,000 people in socio-economically distressed neighbourhoods received $100,000+/year to help address social barriers. Ultimately, the authors found MassHealth's SDH model provided a viable system to support care for vulnerable members, and provided equitable treatment. The authors note that other geographical areas may not be able to identify the same SDH outlined in the study, and risk models will have to consider patient characterises and costs in their own right.
How accountable care organizations are meeting social needs (4)	*Publication date:* 2020 *Jurisdiction studied:* U.S. *Methods used:* Qualitative data and interviews	Obtained qualitative data from 22 ACOs, conducted qualitative semi-structured phone interviews with 19 ACOs, with data also obtained from 11 site visits and 181 in-person interviews at three specific ACO sites	ACOs selected were early adopters of initiatives that aimed to target social needs and focused on social service integration, organizational and geographical diversity, as well as low-income minorities or disadvantaged patients.	Accountable Care Organizations (ACOs) have taken initiatives to meet the social needs of their patients. The authors collected qualitative data from 22 ACOs and analyzed how they addressed social needs such as transportation, housing and food. These ACOs struggled to find viable methods to integrate social services and medical care. One of the initiatives included organizational approaches to integrate social services, including standardizing screening and documentation, sharing electronic data with community partners, evaluating social-service work, and calculating return on investment of projects. ACOs also aimed to provide direct services, including transportation, food services, short-term housing, and ac hoc cash distributions though petty cash funds and donations. Although difficult, ACOs also aimed to partner with community organizations to provide social services, mostly through referrals to support patients. Many interviewees believed establishing these relationships with other organizations was essential for providing social services, as ACOs struggled to carry these burdens themselves. Lack of clear funding, struggles to form formal partnerships, and lack of robust reward on investment analysis of integration initiatives were all factors that acted as barriers to social-service integration, despite effort and attention. Future policies that could facilitate integration could involve providing funding that is sustainable, implementing initiatives for partnerships, and creating standardized data to aid providers that are actively seeking partners.

Focus of study	Study characteristics	Sample description	Key features of the intervention(s)	Key findings
				The authors note that the qualitative data is not statistically generalizable, and the interviews may be subject to bias.
Identifying Medicare-related social risk factors (32)	*Publication date:* 2016 *Jurisdiction studied:* U.S. *Methods used:* Qualitative analysis	Qualitative analysis of review articles, and individual studies, organized by outcome domains, subdomains and measure	Not Applicable	The study aimed to account for social risk factors that could be integrated into Medicare payment and quality programs. They focused on five social risk factors that could influence health outcome of Medicare patients, including socio-economic position, race, ethnicity and cultural content, gender, social relationships, and residential and community context. Regarding socio-economic position, the literature found that income, education and occupation may influence healthcare utilization, clinical processes of care, and patient experience. Other factors that may influence healthcare utilization include race and ethnicity, language, marital status, social support, community composition, urbanization, and health literacy. Additionally, gender was found to have some influence on clinical care and patient experiences. Interestingly, no literature indicated that socio-economic position and social relationships may affect patient safety outcomes. The paper concludes that many social risk factors can have varying effect on health outcomes for Medicare beneficiaries, and should be accounted for to optimize patient care. These efforts aim to move Medicare towards value-based purchasing, with financial rewards for the provision of high-quality and efficient care. Hopefully, this model will allow for the feasible integration of social risk factors into Medicare payment programs.
Integrated Health and Social Care in the United States (5)	*Publication date:* 2021 *Jurisdiction studied:* U.S. *Methods used:* Descriptive	Accountable Health Communities is a federally funded model to systematically test social risk screening, referrals, and community navigation services to address social needs of	Examining new payment and delivery models to incentivize better integrated health and social services	The study focused on Accountable Health Communities and two policy initiatives within Medicaid (e.g., 1115 waivers focused on social determinants of health and managed-care contracts) to improve integrated health and social care. A federal evaluation will be completed in 2022 for Accountable Health Communities, which involve matched controlled research designs and evaluation metrics (i.e., total cost of care and health utilization, utilization of outpatient services). Some early evaluation reported that the first 750,000 screenings

Focus of study	Study characteristics	Sample description	Key features of the intervention(s)	Key findings
		Medicare and Medicaid beneficiaries. Section 1115 waivers allow states to test innovative approaches to implement social care-based programs. Managed-care contracts are contracts between Medicaid agencies and private managed-care organizations (MCOs) that deliver Medicaid services, which recently incentivized MCOs to implement social-care services.		reported at least one social need with food security being the most common need. Of the 18% eligible for navigation services, 76% of beneficiaries accepted these services. Based on preliminary studies, the screening tool was perceived to be appropriate and acceptable. Additionally, these studies indicated that power dynamics between sector stakeholders, financial sustainability, and competition for employees were identified perceived risks. Overall, innovative initiatives include social-risk screening in primary care, building cross-sector collaborations, integrated financing (e.g., using healthcare dollars to fund social-care services), and sharing data across health, social and community services. The study provided examples of states (e.g., North Carolina, California, New York, Michigan, Rhode Island, Oregon, Illinois) who have utilized the 1115 waivers to implement innovative social care-based services. For example, California developed a $3 billion program, Whole Person Care (WPC), which integrates physical health, behavioural health, and social-care delivery for Medicaid beneficiaries. Centers for Medicare and Medicaid Services (CMS) conducted studies and reported 1115 waiver programs have led to increased provider collaboration to support physical and behavioural health integration. The study provided examples of social care-based programs supported by managed-care contracts. For example, MCOs within states may be required to hire full-time housing supportive specialists, invest in community-based social services, create quality-improvement plans, screen for social risks, create financial incentives, and/or coordinate with state agencies. Formal process or outcome evaluations have yet to be conducted given the difficulty to share data across health and social-service agencies. The lack of a specific funding stream for these innovations was a perceived barrier.

Focus of study	Study characteristics	Sample description	Key features of the intervention(s)	Key findings
				The study concluded with key lessons learned specific to each integrated-care domain as defined by the WHO. For governance and culture, integrating health and social care required buy-in from key stakeholders with additional exploration to better engage social-service providers and local communities. For financing, new flexibility from policymakers are required to enable healthcare organizations to use healthcare dollars and consider bi-directional funding mechanisms or pool funding. For service delivery, the authors concluded that additional implementation studies are required to tailor current interventions to different contexts, in addition to comparative and cost-effectiveness studies. For workforce, the authors indicated that they may benefit from a national strategy to develop and fund a new workforce. For information and research, cross-sector data sharing, increased uptake of electronic health records, and developing new technology platforms would be beneficial.
Principles and tactics for effective cross-sector population health networks (1)	*Publication date:* 2022 *Jurisdiction studied:* U.S. *Methods used:* Descriptive	Not applicable	Not applicable	The descriptive study highlighted principles for effective cross-sector networks. The study described equity and inclusion, readiness, joint planning, governance, data, and promoting equity through data disaggregation to be key principles. The authors indicated that equity and inclusion should be central to all goals and engage the community to understand lived experiences. Readiness indicates that organizations should have access to organizational readiness and ability to participate, which may involve securing funding for staff, creating changes to workflows, and/or incorporating changes to organizational policies to align with the cross-sector networks. Joint planning requires understanding goals, individual strengths and expertise, and reliance on what resources each partner will contribute. Governance is required to determine the structure of how the network will communicate, which may benefit from diverse leadership. Data is relevant when it enables sharing and integrating data collected across sectors, and the ability to disaggregate data to identify targeted resources and specialized strategies.
Stimulating whole system redesign: Lessons from an	*Publication date:* 2013	Nine U.K. sites adopting remote care with participants	Not applicable	The study reported that local ownership of new services led to more collaborative practice across the care system. The study

Focus of study	Study characteristics	Sample description	Key features of the intervention(s)	Key findings
organizational analysis of the Whole System Demonstrator program (3)	*Jurisdiction studied:* U.K. *Methods used:* Qualitative longitudinal ethnography	including health and social-care staff and government policymakers		found that there was a lack of shared operational definition of "whole system" and practice. Barriers to collaborative health and social care included differences in statutory responsibilities, absence of integrated budgets or roles, differences in work practices and organizational philosophies, and ambiguity of what the whole system actually entails. The author indicated that a blueprint (e.g., care pathways, management structures, financial agreements, information exchange systems) is required with clear definitions and supportive processes. They also described that local organizations are needed to succeed in whole system transformation in addition to local and national standards.

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