McMaster University | Health Forum

Rapid Evidence Profile

Effectiveness of upstream intersectoral actions targeting the social determinants of health

13 March 2025

[MHF product code: REP 90]

Context

- In recent years, Canadians have had to contend with many complex and multi-faceted public-health challenges.
- However, these types of challenges do not affect Canadians equally as they interact with pre-existing structural, social, economic, and environmental determinants.
- In efforts to strengthen communities' capacity to advance intersectoral action on the root causes of health inequities, the Public Health Agency of Canada launched the Intersectoral Action Fund to promote upstream action across sectors to address the social determinants of health, reduce health inequities, and strengthen local resiliency.
- This evidence synthesis aims to examine what we know about the effectiveness of these types of upstream intersectoral actions on immediate and intermediate outcomes.

Box 1: Evidence and other types of information

+ Global evidence drawn upon

Evidence syntheses selected based on relevance, quality, and recency of search

- No forms of domestic evidence used

*** Additional notable features**

Prepared in three-business days using an 'all hands on deck' approach

Questions

- What is the effectiveness of upstream, intersectoral actions on immediate and intermediate outcomes such as collaboration among different sectors in achieving shared goals with respect to population health and health-related inequities?

1) Among actions that have been studied, what, if any, additional impacts (e.g. return-on-investment) are accrued where the upstream, intersectoral actions are sustained over time?

High-level summary of key findings

- We identified seven evidence syntheses that addressed upstream intersectoral actions.
- Most of the upstream actions were complex and multi-faceted interventions, many of which did not include direct insights about immediate and intermediate outcomes related to how sectors work together.
- In general, the included evidence syntheses provided good coverage of both the sectors and social determinants included in the organizing framework below.
- Many of the included interventions focused on the following social determinants: income (income distribution and social status), education, early childhood development, food security, housing and physical environments and intersected with (by way of target populations) gender, racism, and immigration status.
- Three evidence syntheses provided insights into immediate and intermediate outcomes, with one synthesis noting that broad-scale community coalitions are one mechanism to engage a wide array of intersectoral partners in the

planning and implementation of an intervention, while another identified co-financing models as an approach to enable intersectoral collaboration.
- Five evidence syntheses reported on changes to health outcomes from upstream intersectoral interventions.
- The evidence syntheses frequently found null or mixed results from identified interventions, often due to the presence of confounding factors or underpowered studies.
- There is some evidence from two evidence syntheses that financial interventions such as income maintenance, income supplementation or increases in minimum wages and early life interventions (e.g., intensive pre-school, Head Start program) have beneficial effects on health outcomes.

Framework to organize what we looked for

- Sectors
  - Education
  - Labour and employment
  - Environment and natural resources
  - Food systems
  - Disability and accessibility
  - Tourism
  - Information, technology, and media
  - Arts and culture
  - Health (e.g. mental health, public health)
  - Social services
  - Urban planning and development (e.g., recreation and parks, transportation)
  - Housing
  - Commerce, trade, and industry
  - Government/public administration
  - Law and justice
- Social determinants of health
  - Income, income distribution, and social status
  - Education
  - Employment, precarious work and working conditions
  - Early childhood development/childhood experiences

Box 1: Approach and supporting materials

At the beginning of each rapid evidence profile and throughout its development, we engage a citizen partner, who helped us to scope the question and ensure relevant context is taken into account in the summary of the evidence.

We identified evidence addressing the question by searching PubMed and Health Evidence as well as hand searching National Collaborating Centre on Social Determinants of Health and the U.S. Community Preventive Services Task Force. All searches were conducted on 7 February 2025. The search strategies used are included in Appendix 1. In contrast to synthesis methods that provide an in-depth understanding of the evidence, this profile focuses on providing an overview and key insights from relevant documents.

We searched for full evidence syntheses (or synthesis-derived products such as overviews of evidence syntheses) and protocols for evidence syntheses.

We appraised the methodological quality of evidence syntheses that were deemed to be highly relevant using the first version of the AMSTAR tool. AMSTAR rates overall quality on a scale of 0 to 11, where 11/11 represents a review of the highest quality, medium-quality evidence syntheses are those with scores between four and seven, and low-quality evidence syntheses are those with scores less than four. The AMSTAR tool was developed to assess reviews focused on clinical interventions, so not all criteria apply to evidence syntheses pertaining to delivery, financial or governance arrangements within health systems or implementation strategies.

A separate appendix document includes:
- methodological details (Appendix 1)
- details about identified evidence syntheses focusing on upstream intersectoral interventions (Appendix 2)
- details about identified evidence syntheses focusing on mid-stream intersectoral interventions (Appendix 3)
- documents that were excluded in the final stages of review (Appendix 4).

This rapid evidence profile was prepared in the equivalent of three days of a ‘full-court press’ by all involved staff.

    - Food security
    - Housing
    - Social environment (including social safety network)
    - Physical environment
    - Indigenous status
    - Gender
    - Culture
    - Structural conflict
    - Exclusion or discrimination (for example, on the basis of ability, sexual orientation, sex, age, culture, or other factors; excluding racism)
    - Racism
    - Colonialization
    - Immigration status
- Outcomes
    - Immediate outcomes
        - Intersectoral partners are engaged in interventions that aim to support community/environmental, policy and system changes
        - Target populations participate in interventions that aim to support individual, community/environmental, policy and system changes
    - Intermediate outcomes
        - Increased capabilities to support health (e.g., increased understanding of the SDOH, linkages between social, education, economic and health sectors)
        - Environments that support health are improved
        - Improved systems and infrastructure for collaboration across sectors (e.g., policies, processes, funding mechanisms)
    - Ultimate outcome(s)
        - Improved health status
        - Return on investment
    - Sustainability outcomes
        - Sustained intersectoral action on SDOH
        - Sustained inclusion of health considerations in non-health sector policy activities

What we found

While we identified 16 evidence syntheses related to the question, only seven of these truly addressed upstream intersectoral interventions and are therefore the focus of the summary of key findings below. The remaining syntheses, which focus on mid-stream interventions, have been included in Appendix 3, as they may offer insights into how sectors can collaborate to address social determinants of health. The included literature did not compare the relative effectiveness of upstream interventions to multi-stream (upstream combined with mid-stream) interventions.

Coverage by and gaps in existing evidence syntheses

In general, one of the primary challenges with the included literature is the significant complexity and heterogeneity of the interventions. This complexity poses difficulties for conducting an evidence synthesis, as combining complex evaluations from these interventions is challenging and often results in the loss of important detail about the features of interventions and outcomes related to them. Indeed, many of the included evidence syntheses do not focus on the immediate and intermediate outcomes identified in the organizing framework provided above, particularly in the provision of explicit findings about whether and how different sectors work together. Only three of the included evidence syntheses provided these types of explicit and detailed findings, while the remaining five evidence syntheses focused on ultimate health outcomes. We did not identify any syntheses that explicitly addressed findings related to either return on

investment or sustainability outcomes. In addition, another detail that is frequently missing from the included syntheses is the mean follow-up time for the evaluations of the interventions. Where these timelines were mentioned in the included syntheses they have been added in the summary below, however going into single studies to identify these details is beyond the scope of this profile.

With respect to the rest of the organizing framework, many of the sectors were well represented in the evidence syntheses. Many of the identified interventions focused on education, labour and employment, health, and housing, with relatively less but still some representation of disability and accessibility, environment and natural resources, food systems, social services, urban planning and development, government/public administration (where we have placed changes to taxation and economic policies) and law and justice. We did not identify any interventions that explicitly focused on information, technology and media, arts and culture or commerce, trade and industry.

For social determinants of health, interventions addressed in the included evidence syntheses predominantly focused on income, income distribution and social status; education; employment, precarious work and working conditions; early childhood development; food security; and housing. Select interventions also specifically examined their effects on racialized populations, immigrant populations and Indigenous populations.(1-3)

Key findings from included evidence documents

Key findings related to sectors identified as part of included interventions

One older low-quality evidence synthesis focused on the use of co-financing to support intersectoral action. The included upstream interventions from high-income settings focus on:

- road safety grants in England, which included the urban planning and development and government/public administration sectors
- environmental changes to improve air quality and reduce rates of childhood asthma in the U.S., which included the environment and natural resources, urban planning and development and health sectors.(4)

One older high-quality evidence synthesis focused on the use of broad-scale, multi-component and community-led change strategies focused on:

- improvements to neighbourhood and educational school food systems (e.g., improving neighbourhood, community nutrition courses and school-based nutrition education) including those involving food systems, education, and urban planning and development sectorsimprovements to neighbourhood resources for healthy behaviours and quality of life through increasing green space and ensuring safe community infrastructure, \including involving urban planning and development, housing, and law and justice sectors interventions to reduce alcohol and drug use behaviours through changes to alcohol policies and enforcement practices involving the urban planning and development sectors, government/public administration and law and justice sectors.(1)

One recent high-quality evidence synthesis focused on upstream interventions between the health and housing sectors, such as the health sector advocating and providing funding for the construction and preservation of affordable housing, donating land for the construction of affordable housing, and removing exclusionary zoning regulations.(5)

Another older high-quality evidence synthesis identified two interventions that were intersectoral and upstream, including:

- an intervention aiming to reduce housing inequity experienced by Australian Indigenous communities which involved the housing, health and urban planning and development sectors
- inter-agency agreements to improve social and economic structures to support the employment of those with disability, which involved the disability and accessibility, employment and health sectors.(2)

Three evidence syntheses did not explicitly address the sectors involved the interventions, however given the types of interventions some assumptions can be made about what sectors were likely involved. One recent medium-quality evidence synthesis examined the effects of different interventions focused on structural determinants of racial inequalities. Interventions evaluated in the evidence synthesis, included:

- changes to tax policies and minimum wages, which likely involved labour and employment as well as government/public administration
- implementing nutrition safeguards such as the supplemental nutrition program, which likely involved government/public administration as well as health and social service sectors.
- changes to immigration policies such as the Deferred Action for Childhood Arrivals program, which likely involved the labour and employment, government/public administration and law and justice sectors.{Clark, 2022 #16}

Similar interventions were explored in the remaining two older medium-quality evidence syntheses, which examined structural primary-prevention policies such as:

- national scaling of early life and education programs including financial incentives, which likely involved the education and government/public administration sectors
- conditional cash transfers and negative income tax, which likely involved government/public administration sectors as well as labour and employment sectors
- housing vouchers and rental assistance, which likely involved the housing, social services and government/public administration sectors
- expansion of health insurance, which likely involved the health and government/public administration sectors
- changes to the regulations and taxing of tobacco and alcohol products, which likely involved health, government/public administration, and law and justice sectors
- food subsidy programs, which likely involved the food systems, health, and government/public administration sectors
- water fluoridation and mandatory fortification, which likely involve the food systems, health, and government/public administration sectors
- traffic calming measures and low emission zones, which likely involve the urban planning and development and government and public/administration sectors.(6)(7)

Key findings related to social determinants of health addressed in upstream intersectoral actions

Just as the interventions included in the evidence syntheses deal with multiple sectors, they also aim to target the intersecting effects of multiple social determinants of health. For example, many of the included interventions focus on populations that experience disparities based on their race and immigration status, but the interventions focus on changes to the physical environment in which they live and play. As a result, we have summarized the included interventions below based on the social determinant of health the intervention was primarily focused on as reported in the included evidence syntheses.

Three medium-quality evidence synthesis (one recent and two older) included interventions that address income, income distribution and social status, such as the implementation of the earned income tax credit, changes to minimum wage policies, negative income tax and conditional cash transfers.(3; 6; 7)

One older medium-quality evidence synthesis included interventions that focus on education as a social determinant of health including interventions such as the Head Start program (which provides comprehensive early education for low-income families), the expansion of alternative schools, and vocational training.(7)

Two older evidence synthesis (one high-quality and one medium-quality) included interventions focused on employment, namely adjusting the social and economic supports for the employment of people with disabilities (2), job training programs, and welfare-to-work programs.(7)

Two older medium-quality evidence synthesis included interventions focused on early childhood development/childhood including adjustments to childcare benefits and maternity allowance (6) as well as intensive pre-school for low-income communities.(7)

Two recent medium-quality evidence syntheses and one older high-quality evidence synthesis included interventions focused on food security, namely nutrition safeguard policies, food subsidy programs, taxes on unhealthy food and beverages (including alcohol), water fluoridation and mandatory fortifications, free school fruit subsidies, mass media and education campaigns for healthy eating, incentivizing the opening of grocery stores in select areas. (1; 3; 7)

Three evidence syntheses (one recent high-quality, one older high-quality and one older medium-quality) included interventions focused on housing, including construction and restoration of housing units, financing and advocacy of affordable housing construction for general and specific population, including Australian Indigenous populations, and providing housing vouchers and rental assistance.(2; 5; 7)

One high-quality older evidence synthesis included interventions that support changes to the social environment, namely community-coalition led efforts to reduce alcohol and drug use behaviour in select areas by changing beverage service practices in bars and taverns and altering and enhancing local law enforcement of existing regulations.(1)

Three older evidence syntheses (one high-quality, one medium-quality and one low-quality) included interventions focused on altering the physical environment, namely grants to improve road safety, improvements to green spaces and neighbourhood infrastructure to encourage healthy behaviours, traffic calming measures and low emission zones.(1; 4; 6)

Two evidence syntheses include interventions related to Indigeneity, one was previously mentioned under housing and the second examined the effects national social policies on health inequities including Indigenous land and sea management programs in Australia and the generational effects of Canadian residential schools.(2; 3)

No interventions were directed towards gender, culture, structural conflict, exclusion or discrimination, or racism, however the target populations of many of the interventions overlap with these social determinants, namely racialized populations which was the focus of two included evidence syntheses.(1; 3)

As mentioned above, colonization was examined in one evidence synthesis that included a single study on the generational effects of the Canadian residential school system.(3)

Finally, one older medium-quality evidence synthesis examined changes to immigration policies such as the Deferred Action for Childhood Arrivals policy.(3)

Key findings related to immediate and intermediate outcomes from upstream intersectoral actions

Three evidence syntheses addressed immediate and intermediate outcomes including:

- intersectoral partners being engaged in interventions that aim to support community/environmental, policy and system changes
- improved systems and infrastructure for collaboration across sectors.

An older high-quality evidence synthesis examining broad-scale community-led system change strategies to reduce disparities among minority racial and ethnic populations found that effective governance structures for these types of interventions included group- or shared-leadership approaches or inter-sectoral committee structures demonstrating engagement by intersectoral partners.(1) Findings from an older high-quality evidence synthesis on upstream intersectoral interventions also describes similar engagement through partnerships and the use of implementation supports to engage across sectors, including:

- written agreements for interagency partnerships that include:

    - identification of target populations
    - clear roles and responsibilities for each partner
    - resource commitment from each partner
    - expected outcomes
- multi-sectoral partnership committees that play an advisory role
- hiring of new staff responsible for seeing through the intersectoral action (rather than relying on existing staff from partner organizations)
- logic models and planning tools
- formal communication processes such as monthly meetings.(2)

These examples also underscore the importance of improved systems and infrastructure to enable collaboration.

In addition, one older low-quality evidence synthesis examined the use of co-financing models as methods to enable intersectoral collaboration. The synthesis found that upstream interventions tended to use a promotion model of co-financing, whereby one sector would invest in or leverage its resources to support change in another sector. The synthesis also noted barriers to this type of collaboration, including:

- public actors safeguarding resources in the face of constrained budgets
- limited autonomy over government budgets
- differential organizational capacity, resources, regulatory requirements across sectors.(4)

Key findings related to ultimate outcomes

Five of the seven highly relevant evidence syntheses reported on changes to health outcomes as a result of upstream intersectoral interventions. One of the other two evidence synthesis, provided null results because it was unable to identify any studies meeting the criteria used for structural primary-prevention interventions between the health and housing sectors.(5) The second evidence synthesis examined co-financing to support cross-sectoral collaboration, but does not clearly distinguish in the section on health outcomes between the effects of different types of interventions (upstream, mid-stream and downstream).(4)

In general, the five evidence syntheses reported mixed results with regards to upstream interventions, in some cases citing challenges with underpowered analyses of the outcomes related to the interventions. We review the findings for each synthesis below.

One older high-quality evidence synthesis examining the use of broad-scale community coalition-led system change strategies found these types of approaches led to little or no difference in measures of health behaviour or health status among the targeted population.(1) The interventions included multi-component and multi-level efforts to: improve neighbourhood diet and physical activity (e.g., increasing choice of grocery stores, community nutrition education, school-based nutrition education); improve neighbourhood resources for healthy behaviour by modifying greenspaces and increasing the safety of public infrastructure; and altering beverage-service practices in bars and taverns and law enforcement policies and practices around local neighbourhoods. Interventions were evaluated at 24 and 60 months of follow-up.(1)

Despite reporting small but positive results from two interventions (one focused on minimizing housing inequities experienced by Australian Indigenous populations and one focused on improving the social and economic structures for employment of people with disabilities), a second older high-quality evidence synthesis found that conclusive outcomes on social determinants of health or health equity were not possible due to the lack of consistent reporting measures across interventions, small populations under study and presence of confounding factors.(2)

One recent medium-quality evidence synthesis investigated the effects of structural-level policy changes on inequities in racial health outcomes, and reported no or mixed effects from a range of interventions including supplemental income policies, minimum wage policies, nutrition-safeguard programs, immigration-related policies and reproduction and

family-based policies.(3) However, the synthesis did report benefits from select financial policy changes including minimum wage increases which was found to reduce HIV incidence and improve birth outcomes. Conversely, the synthesis also reported clear harms stemming from anti-immigration and anti-reproductive health policies, both of which negatively affected birth outcomes and mental health outcomes.(3)

An older medium-quality evidence synthesis also examined the effects of primary-prevention policies on health inequalities in high-income countries.(6) Of the interventions examined, the synthesis reported that ten had a positive effect on minimizing health inequalities by improving the health or health behaviours of low-income and other vulnerable populations. These interventions included:

- fiscal measures
  - taxes on unhealth food and soft drinks
  - food subsidy programs for low income women
  - parent incentives that link payments of childcare benefits and maternity allowance to immunization status
- regulatory measures
  - control on advertising and promotion of tobacco
  - water fluoridation
  - school requirements for immunisation certificates
  - traffic calming measures
- education, communication and information provision
  - national tooth brushing campaign
  - nutrition education program.(6)
  - reproductive cancer screening campaign.

The evidence synthesis also notes that several other primary-prevention approaches were found to have no effect on health inequities, including:

- under fiscal measures:
  - tobacco/cigarette tax
  - free school fruit subsidy
- under regulatory measures:
  - smoke free legislation in workplaces and/or enclosed public space
  - mandatory fortification to increase folate intake
  - national salt reduction strategy
  - trans-fatty acid ban in all food
  - establishments and mandatory calorie labelling
  - privatization of utility industries
- under education, communication and information
  - mass media smoking cessation campaigns
  - health warnings on cigarettes
  - general nutrition and/or physical activity information campaign
  - health information campaigns
  - sodium reduction campaigns
  - combined education and reminder/calls for vaccinations

while the following four widened health inequities (e.g., effects disproportionately benefited high income populations):

- lowering tax on alcohol
- implementing 20 mile per hour zones
- low emission zones in cities
- folic acid mass media campaigns.(6)

Finally, another older medium-quality evidence synthesis examined the effects of social policies on health outcomes.(7) The synthesis examined 38 types of interventions that generally fell into five domains:

1) early life and education (e.g., intensive pre-school, Head Start programs targeting low-income families, smaller class sizes, alternative schools and vocational training)
2) income supplementation and maintenance (e.g., conditional cash transfer, work rewards and self-sufficiency programs, and negative income taxes)
3) employment and welfare-to-work programs (e.g., team-based supported employment, job training programs, employment support services, limits on welfare benefits tied to work requirements)
4) housing and neighbourhood interventions (e.g., integrated clinical and housing services, housing vouchers, and rental assistance)
5) health insurance (e.g., provision of additional public health care benefits).(7)

The synthesis found that many of the included studies (77%) were insufficiently powered to draw conclusions regarding health outcomes. Among those that were adequately powered, about half (49%) reported significant changes in health outcomes, 44% reported no significant changes, and 7% reported worsening health.(7) Among sufficiently powered studies, a meta-analysis found:

- early life interventions had a beneficial effect on smoking status, which may be an early indicator of other positive health behaviour choices, but no effect on self-rated health status or obesity
- income maintenance and supplementation interventions were associated with improvements in self-rated health but not smoking status or obesity
- welfare-to-work interventions led to lower odds of reporting good or excellence health
- housing and neighbourhood interventions were not associated with changes to self-rated health
- expanded health insurance interventions improved self-rated health but had no effect on obesity.(7)

Next steps based on the identified evidence

Though this evidence profile provides a broad overview of the recent available literature, the evidence syntheses that address this question are quite broad given they bring together findings from extremely heterogenous and complex interventions that often have components that span multiple levels (e.g., upstream, mid-stream and downstream). This complexity is consistently noted in the literature and is often included as a limitation. As a result, next steps could focus on improving the design and evaluation of future interventions, what is known about specific types of intersectoral actions and what is known about the enablers or barriers of specific sectors working together at the upstream level. Another challenge we've identified is the lack of consensus regarding the classification of interventions as upstream (primary prevention) versus midstream (secondary prevention). A proposed next step would be to develop a comprehensive taxonomy for these intervention categories and a framework to systematically evaluate their effectiveness, including relevant measures. One possible way of tackling this taxonomy could be to begin with key priority areas identified through community engagement. Given this complexity, there may also be some value in exploring further the combined effectiveness of upstream and mid-stream intersectoral action on outcomes related to the social and structural determinants of health.

References

1. Anderson LM, Adeney KL, Shinn C, Safranek S, Buckner-Brown J, Krause LK. Community coalition-driven interventions to reduce health disparities among racial and ethnic minority populations. *Cochrane Database of Systematic Reviews* 2015;2015(6): Cd009905.
2. Ndumbe-Eyoh S, Moffatt H. Assessing the impact and effectiveness of intersectoral action on the social determinants of health and health equity: An expedited systematic review. Antigonish: Health NCCfDo; 2012.
3. Clark EC, Cranston E, Polin T, et al. Structural interventions that affect racial inequities and their impact on population health outcomes: A systematic review. *BMC Public Health* 2022;22(1): 2162.
4. McGuire F, Vijayasingham L, Vassall A, et al. Financing intersectoral action for health: A systematic review of co-financing models. *Global Health* 2019;15(1): 86.
5. Chen KL, Miake-Lye IM, Begashaw MM, et al. Association of promoting housing affordability and stability with improved health outcomes: A systematic review. *JAMA Network Open* 2022;5(11): e2239860.
6. Thomson K, Hillier-Brown F, Todd A, McNamara C, Huijts T, Bambra C. The effects of public health policies on health inequalities in high-income countries: An umbrella review. *BMC Public Health* 2018;18(1): 869.
7. Courtin E, Kim S, Song S, Yu W, Muennig P. Can social policies improve health? A systematic review and meta-analysis of 38 randomized trials *Milbank Quarterly* 2020;98(2): 297-371.

Waddell K, Whitelaw H, Dass R, Kupinski H, Chen K, Goodale G, Wilson MG. Rapid evidence profile #90: Effectiveness of upstream intersectoral actions targeting the social determinants of health, Hamilton: McMaster Health Forum 13 March 2025.

This rapid evidence profile was funded by the Public Health Agency of Canada. The McMaster Health Forum receives both financial and in-kind support from McMaster University. The views expressed in the rapid evidence profile are the views of the authors and should not be taken to represent the views of the Public Health Agency of Canada or McMaster University.