

Strengthening the implementation of Health in All Policies: a methodology for realist explanatory case studies

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To address macro-social and economic determinants of health and equity, there has been growing use of intersectoral action by governments around the world. Health in All Policies (HiAP) initiatives are a special case where governments use cross-sectoral structures and relationships to systematically address health in policymaking by targeting broad health determinants rather than health services alone. Although many examples of HiAP have emerged in recent decades, the reasons for their successful implementation—and for implementation failures—have not been systematically studied. Consequently, rigorous evidence based on systematic research of the social mechanisms that have regularly enabled or hindered implementation in different jurisdictions is sparse. We describe a novel methodology for explanatory case studies that use a scientific realist perspective to study the implementation of HiAP. Our methodology begins with the formulation of a conceptual framework to describe contexts, social mechanisms and outcomes of relevance to the sustainable implementation of HiAP. We then describe the process of systematically explaining phenomena of interest using evidence from literature and key informant interviews, and looking for patterns and themes. Finally, we present a comparative example of how Health Impact Assessment tools have been utilized in Sweden and Quebec to illustrate how this methodology uses evidence to first describe successful practices for implementation of HiAP and then refine the initial framework. The methodology that we describe helps researchers to identify and triangulate rich evidence describing social mechanisms and salient contextual factors that characterize successful practices in implementing HiAP in specific jurisdictions. This methodology can be applied to study the implementation of HiAP and other forms of intersectoral action to reduce health inequities involving multiple geographic levels of government in diverse settings.

Keywords Health policy, implementation, health promotion, equity, determinants, social determinants, social epidemiology

KEY MESSAGES

- Health equity can only be achieved with multisectoral action by governments.
- There is a need for rigorous systematic research on HiAP to reveal successful practices for implementation.
- We describe a realist methodology to articulate mechanisms of HiAP implementation using explanatory case studies.

Introduction

What is health in all policies?

To narrow widening health inequalities worldwide (Bernier 2006; Bierman 2009; 2010; Commission on the Social Determinants of Health [CSDH] 2008; Freiler *et al.* 2013), macro-social and economic determinants of population health must be addressed, beyond improving access to and the quality of healthcare services (CSDH 2008; Greenhalgh *et al.* 2011a,b; Jagosh *et al.* 2011; 2012; Jacobs *et al.* 2012; Macaulay *et al.* 2011; Macfarlane *et al.* 2011; Noble *et al.* 2011; Shankardass *et al.* 2012; Wong *et al.* 2012). Health in All Policies (HiAP) are initiatives where actors including from multiple government sectors (e.g. social services, housing, transportation, education, employment relations, consumer protection and environment) (Berkman 2009; Clair and Singer 2003; CSDH 2008; Dahlgren and Whitehead 1991; Krieger 2001; Measurement and Evidence Knowledge Network 2007; Muntaner *et al.* 2002; Navarro 2009; Thomas and Sterk 2008; Venkatapuram and Marmot 2009; Woolf 2009), the private sector and civil society may collaborate to address complex health problems (CSDH 2008; Harris *et al.* 1995; Milio 1986; 1987; O'Campo *et al.* 2009; Public Health Agency of Canada 2007; 2008; Shankardass *et al.* 2012; Solar *et al.* 2009; Teran and Cole 2011; Thow *et al.* 2011).

Similar to other types of intersectoral action (ISA) for health, HiAP initiatives rely on cross-sectoral structures and relationships to foster healthy outcomes by assisting 'leaders and policy-makers to integrate considerations of health, well-being and equity during the development, implementation and evaluation of policies and services' (WHO and Government of South Australia 2010, p. 2). Thus, HiAP initiatives are distinguished by a focus on processes of government to systematically address health in policymaking by targeting broad health determinants rather than health services alone.

Rather than reflecting a single, specific intervention that is replicated in different jurisdictions, HiAP initiatives are often idiosyncratic to the setting where they are implemented and may involve a broad mandate to implement a range of possible interventions; what is referred to as an 'open change process' by Hummelbrunner (2011, p. 395). For example, the Swedish government's 2002 Public Health Objectives Bill is a HiAP initiative that aims to create 'social conditions that will ensure good health on equal terms for the entire population' (Anonymous 2004a, p. 4) through activities that address 11 domains of health determinants related to 31 policy areas affecting national, regional and local levels of government.

Need for rigorous systematic research on implementation of HiAP to reveal successful practices

The 2013 Helsinki Statement on HiAP emphasized that the implementation of HiAP has to become more effective (The Helsinki Statement on Health in All Policies 2013). This

indicates the importance of studying policy implementation rather than merely the outcomes of policies. Given the potential for multiple activities being implemented by diverse partners at different geographic levels of government, the practice of implementing HiAP is complicated. Governments have to develop 'institutionalized processes [that] value cross-sector problem solving and address power imbalances [...], including] providing the leadership, mandate, incentives, budgetary commitment and sustainable mechanisms that support government agencies to work collaboratively on integrated solutions' (WHO and Government of South Australia 2010, p. 2). Indeed, without a single model of HiAP for governments to rely on, the task of planning and implementing a HiAP initiative can be daunting for policymakers (Greaves and Bialystok 2011). Public health research that contributes to the analysis of complex macro-social interventions can enable the use of HiAP and facilitate greater health protection and promotion, equity, prevention and system sustainability.

Little research has focused on understanding how governments have fostered successful strategies for ISA (O'Campo *et al.* 2011a; Sanders and Haines 2006), and existing literature rarely describes ISA initiatives that address midstream or structural determinants typically addressed by HiAP (Shankardass *et al.* 2012). For the dozens of HiAP initiatives that have been introduced and described globally (McQueen *et al.* 2012; Public Health Agency of Canada 2008; Shankardass *et al.* 2011a), there have been no attempts to systematically review or synthesize evidence of how and why strategies for HiAP work (although some literature describes and compares programme components used for implementation in specific HiAP initiatives; Leppo *et al.* 2013; McQueen *et al.* 2012; Ståhl *et al.* 2006; St. Pierre 2009). Consequently, rigorous evidence based on systematic research methods of the social mechanisms that have regularly enabled or hindered implementation in different jurisdictions is sparse.

A realist perspective to articulate social mechanisms of HiAP implementation using explanatory case studies

In this article, we describe our methodology for explanatory case studies using a scientific realist perspective to understand the implementation of HiAP. Ontological and epistemological realism assumes the existence of an external world of concrete changing things, which can be known with transempirical concepts and factual data (Bhaskar 1975). Some approaches to realism view phenomena as complex while recognizing 'the role of both agency and structural factors in influencing human behavior' (Clark 2008, p. 168). Realism informs our goal of theorizing about determinants of sustainability in the implementation of HiAP and explaining phenomena of interest by

uncovering the social mechanisms of how and why HiAP works using case study research.

By social mechanism (hereafter, mechanism), we mean the interactive but oft-hidden processes that initiate causal sequences in the implementation of HiAP involving at least two persons engaged in a political, cultural or economic relation (Connelly 2007; Muntaner and Lynch 1999). While others refer more broadly to 'generative mechanisms', we focus on mechanisms rooted in the social world. Mechanisms thus provide potent explanations for how social systems like policy implementation function and are needed to generalize explanations (e.g. social processes of segregation and discrimination may explain racial inequalities in health in different social settings; Muntaner 1999). In particular, without attention paid to how setting-specific conditions (hereafter referred to as the *context*) can facilitate (or hinder) the effect of mechanisms, it is difficult to generalize successful strategies for HiAP implementation from one setting to other diverse settings.

Studying the implementation of HiAP is challenging for several reasons. The concept of HiAP is amorphous leading to idiosyncratic mandates with unique goals for implementation. This means that mechanisms may be specific to single jurisdictions. Moreover, a given mandate may engender one or multiple programmes or projects, and there is usually a long timeline of implementation. As a result, there may be a multitude of mechanisms that are relevant in a given jurisdiction, and the timeframe for these mechanisms of action can be years-long. Finally, mechanisms may involve the action of an array of partners from within government and outside of it as part of the private sector or civil society; moreover, these partners may participate at multiple levels of geography.

In practice, we draw on 'realist methods', such as those used by Pawson and Tilley (1997) for 'realistic evaluation,' which refers to a series of research methods that can be used in several disciplines to uncover mechanisms not accessible to senses directly (Best *et al.* 2012; Lavin and Metcalfe 2008; Pawson *et al.* 2005; Taylor and Gibbs 2010; Wong *et al.* 2010). We conceptualize mechanisms as being triggered in relation to conducive contextual conditions relevant to the initiation and implementation of HiAP, and specific outcomes such as acceptability, feasibility or sustainability of HiAP. Pawson and Tilley (2005) refer to these as *context mechanism outcome* (CMO) *pattern configurations*. In this way, realism leads us to a rich understanding of how and why sectors in different jurisdictions have collaborated in tackling health and equity by helping us learn about what approaches to implementing HiAP work, for which outcomes and populations, in what type of settings, and why.

A major barrier to systematic research about the implementation of HiAP has been the absence of suitable rigorous research methods for studying and synthesizing evidence about mechanisms-in-context for implementing macro-social health interventions at multiple levels of government (e.g. national, regional and municipal) (Kaufman and Hernan 2012; Lemire *et al.* 2012). Explanatory (or causal) case studies focus on telling a 'story of a sequence of events or processes' (Woiceshyn 2010, p. 138) with attention paid to contextual factors. Typically, case studies have been perceived as lacking rigour, and have therefore been used to answer primarily observational and

descriptive research questions (Leppo *et al.* 2013). However, recent developments to ensure systematic procedures and protocols through documentation and transparency have increased construct validity, internal and external validity, and reliability of case study research for answering quasi-experimental questions (Yin 2009).

Role of theory building and methodology for explanatory case studies to inform successful practices for HiAP implementation

To guide the use of these emerging methods, we present a novel methodology for explanatory case studies to examine the implementation of HiAP in global jurisdictions and build theory about successful practices for implementation. Based on an earlier realist-informed scoping review by our research team, we proposed a preliminary systems view of factors relevant to the initiation and implementation of HiAP (Shankardass *et al.* 2011a). This theory informed the conceptual framework used to guide the formulation of CMOs for the sustainable implementation of HiAP (Figure 1); therefore, in a first section, we describe this framework. This conceptual framework represents a type of middle range theory (cf. Merton 1968) that is used in our methodology to help systematize the construction of CMOs to explain complex phenomena about the implementation of HiAP within and across case studies.

The process of explaining phenomena is detailed in a second section where we highlight our methodology for systematically identifying CMOs to explain phenomenon of interest using evidence from literature and key informant interviews, and then looking for patterns and themes to summarize a case. Finally, we apply this method by describing an example of how this evidence can be used to describe successful practices for implementation of HiAP using a comparative example of how Health Impact Assessment (HIA) tools have been utilized in Sweden and Quebec. These results are partial and are presented as an illustration of how to use our method to articulate potential recommendations. As described elsewhere (Shankardass 2013), we ultimately use another methodology to test and refine our systems view of HiAP implementation by synthesizing evidence across multiple case studies.

Conceptual framework

Our initial conceptual framework operationalizes our theoretical understanding of the implementation of HiAP for study purposes. Figure 1 conceptualizes the sustainability of these initiatives as a product of acceptability and feasibility of implementing HiAP to various actors. To aid the articulation of CMOs, the framework also highlights key contextual factors including: those that may have originally shaped the initiation of HiAP; the mandate that signals the formal adoption of a HiAP initiative by a government; and those factors that more directly condition the sustainability of implementation. Importantly, this framework is revised iteratively based on findings of explanatory case studies of HiAP implementation; particularly in terms of the contextual factors of relevance and, potentially, in terms of the study outcomes.

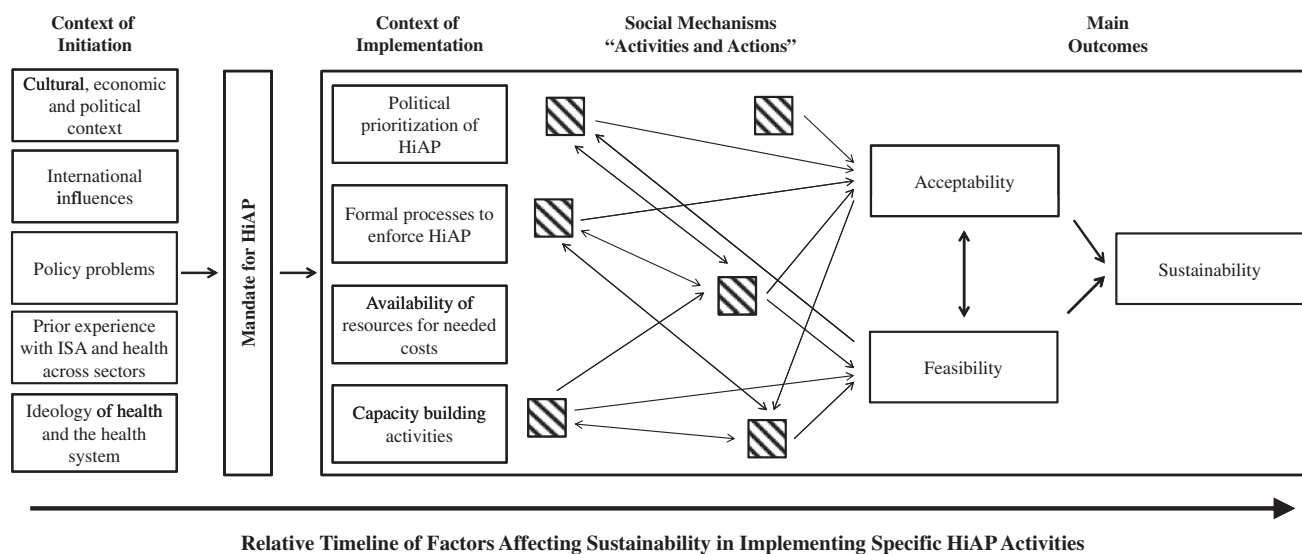


Figure 1 Conceptual framework for sustainable implementation of HiAP.

HiAP initiatives may include multiple programmes or projects that are fostered across multiple sectors and multiple levels of government either directly or indirectly related to the original policy commitment (Clark 2008; Lawless *et al.* 2012). The implementation of each programmatic unit may therefore need to be considered distinctly to assess the implementation of HiAP generally. Also, rather than a paradigm shift occurring at the time of the mandate, our model assumes that the implementation of HiAP is an incremental model of policy change that may be iterative in terms of renewed and changing mandates over time. As a result, while the framework is organized partly based on discrete policy phases of initiation and implementation (cf. Lasswell 1951), we recognize the potential overlap across stages of initiation and implementation.

Main study outcomes

Given that HiAP interventions are on-going processes of health policymaking, we define the main outcome of policy implementation by *sustainability*. One indicator of this sustainability is the description of successful or completed HiAP intervention activities; and thus, sustainability could be reflected by evidence that a HiAP initiative continued to be implemented following changes in political leadership, or that the implementation of a specific municipal initiative related to HiAP was scaled-up across more jurisdictions.

A recent working paper by the National Collaborating Centre for Healthy Public Policy implies that *acceptability* (i.e. are sectors willing to collaborate on health and equity?) and *feasibility* (i.e. do sectors have the capacity to effectively collaborate on health and equity?) of HiAP may be necessary preconditions for sustainability (Morestin *et al.* 2010). The acceptability of multisectoral policies like HiAP can be influenced by the level of 'buy-in' from non-health sectors during implementation. In particular, prior work indicates the role of agenda setting activities (Teran and Cole 2011), effective

communication and dialogue (Finer *et al.* 2005; O'Neill *et al.* 1997), and the communication of the benefits of policy implementation (O'Neill *et al.* 1997; Thow *et al.* 2011). The feasibility of multisectoral health policies appears to be driven partly by the institutional capacity for implementation, including tools and human expertise to facilitate technical tasks, as well as more practical aspects related to the presence of adequate human, financial or infrastructural resources across participating sectors (Finer *et al.* 2005; Mannheimer *et al.* 2007a,b; O'Neill *et al.* 1997; Teran and Cole 2011; Thow *et al.* 2011).

Importantly, evidence that acceptability or feasibility (or both) was facilitated does not mean that sustainable implementation is inevitable. For instance, raising awareness of the need for ISA may be expected to improve acceptability due to improved knowledge, attitudes and beliefs in relation to health equity, but it does not alone mean that action to implement related initiatives is feasible. On the other hand, acceptability and feasibility are conditions that could be mutually reinforcing in different circumstances. Thus, sustainable implementation of HiAP should be viewed as a potential emergent property of increased acceptability and feasibility.

Mechanisms of sustainability

In this study, the sustainability of HiAP is viewed as a function of discrete inter-related mechanisms (such as actions and activities that are represented as boxes with diagonal lines in Figure 1) that cause acceptability and feasibility, and thus on-going implementation, in specific contexts. These mechanisms offer a narrative of how and why certain actions and activities are effective at convincing stakeholders to participate in HiAP initiatives, including cognitive and behavioural explanations for their impact. By definition, mechanisms are directly related to one or more outcomes; however, mechanisms may also interact with positive and negative synergies, and be acted on by

outcomes (e.g. high acceptability may facilitate mechanisms for feasibility).

Mechanisms are also meant to be understood in the broader context of implementation so that successful practices in one jurisdiction can be understood and applied by policymakers in other jurisdictions with potentially radical differences in contextual factors. Some mechanisms may be closely linked to a particular contextual factor, while others may be less dependent on such factors (as demonstrated in Figure 1 by the relative place along the timeline and in proximity to specific contextual factors).

Contextual factors relevant to implementation

We suggest an initial list of contextual factors that appear to influence mechanisms of sustainability based on our work to date examining cases of ISA (Figure 1). First, notwithstanding the original mandate, the on-going *level of political priority for HiAP* is expected to empower implementation through the directives and other motivators for action that civil servants are subject to, as well as the potential for leadership at a high level of government (Kingdon 1984). Second, the type of *formalized processes to enforce ongoing collaboration for HiAP* may be influential, including the following: benchmarking with monitoring and evaluation; legislation that makes participation mandatory; and HIA tools for generating predictive assessments of the effects of non-health policies (St. Pierre 2009). Third, the *availability of financial resources* for necessary ongoing costs related to managing and operating HiAP activities is expected to enable regular activities and impact how effectively the mandate for action will be satisfied (Anonymous 2004b; Drummond and Stoddart 1995; McQueen *et al.* 2012). Fourth, the use of other *capacity building activities* may facilitate HiAP-related activities (e.g. decision support, training for impact assessment tools) (Finer *et al.* 2005; Mannheimer *et al.* 2007a,b; O'Neill *et al.* 1997; Teran and Cole 2011; Thow *et al.* 2011).

The relevance of contextual factors to implementation is demonstrated by considering the wide variation in the use of HIA tools for generating predictive assessments of the effects of non-health policies (Shankardass *et al.* 2011a). Importantly, the institutionalization of HIA is sometimes incomplete or fails even in the case of existing mandate or supportive resources (Wismar *et al.* 2007), as was when HIA was used in British Columbia (Mahoney and Durham 2002) or in the Netherlands (Bekker 2007). The context of implementation may affect the acceptability and feasibility of using the tool and influence implementation. This includes whether monitoring and evaluating health or equity impacts is mandatory (as in Quebec) or voluntary (as in Sweden); whether it is used intra-governmentally (as in Quebec) or in a participatory manner (as in Thailand); and how financial resources support the implementation of HIA by funding different support structures for practical and technical capacity (Shankardass *et al.* 2011b).

Contextual factors of relevance to initiation

Contextual factors that influence the initiation of HiAP (i.e. the adoption of a HiAP mandate) could also influence implementation indirectly. First, it should be recognized that the mandate for HiAP is forged in a unique jurisdiction with a particular *cultural,*

economic and political context, including the following: how centralized or decentralized power is across levels of government and across society; whether it is resource-poor or resource-rich period; and, which ideas are politically accepted (Chung *et al.* 2010; Saint-Arnaud and Bernard 2003; Solar and Irwin 2007; Timpka *et al.* 2009). For example, with respect to the latter, while there has necessarily been some manner of political agreement in achieving a mandate to implement HiAP, the political interests of specific sectors may help or hinder implementation because of the 'bureaucratic discretion' afforded to policymakers (Balla 1998; Bossert 1998; Thompson 1982); and the impetus to use such discretion may change over time as administrations change. Second, *international influences* may encourage HiAP to be used and then help support implementation. This is the case, for instance, of the work done at the World Health Organization to promote and support the use of HiAP (McQueen *et al.* 2012; Torgersen *et al.* 2007; WHO and Government of South Australia 2010). Third, *specific policy problems* may facilitate the adoption of HiAP, such as concerns about specific disease burdens, equity and sustainability or population health in general (Exworthy 2008; Kingdon 1984; Tervonen-Goncalves and Lehto 2004). Addressing these specific problems may be of greater or lesser interest to stakeholders from various sectors within a government, and over time. Fourth, *prior experience with ISA* for health or other purposes (e.g. for environmental policymaking) may encourage a familiarity with HiAP and could impact awareness of the value of working on HiAP or the capacity to work intersectorally in government (British Medical Association 2009; Shankardass *et al.* 2012; 2011a). Fifth, the *ideology of health and the health system* in which a mandate for HiAP was initiated could impact how acceptable and feasible HiAP activities will be in implementation. Indeed, while HiAP focuses on preventive action for health and on a multisectoral view of the determinants of health, some HiAP jurisdictions may focus on intervening on midstream determinants of health, such as lifestyle factors, while others may choose to address the structural determinants of those behaviours (Shankardass *et al.* 2011a). Importantly, these differences may reflect normative constructs of 'prevention' that place greater or lesser value on fostering a more egalitarian distribution of health (Solar *et al.* 2009; St. Pierre 2009). Again, the factors included in Figure 1 reflect an initial (i.e. not closed) list.

Methods: methodology for realist explanatory case studies

Our conceptual framework alone has limited explanatory power beyond implying that the context of initiation and implementation, including factors at different geographic levels of government, may be salient to implementation. To explain the causes of acceptability and feasibility among collaborators, and of sustainability of implementation across geographic levels of government, what is required is evidence of the actual mechanisms that enable or hinder implementation. We now describe a methodology for conducting realist explanatory case studies to elicit such evidence and inform the implementation of HiAP in other jurisdictions (Figure 2). Our case study work has been approved by the Research Ethics Board of St. Michael's Hospital.

1. **Case Study Preparation**
 - a) Identify case for inclusion
 - b) Compile and review case library to create case summary and identify diverse key informants
2. **Data Collection**
 - a) Key informant interviews
 - b) Systematic literature search
3. **Coding and Analysis**
 - a) Code interviews for specific context-mechanism-outcome pattern configurations (CMOs)
 - b) Summarize CMOs by theme
 - c) Code literature for strong confirmatory/contradictory evidence
 - d) Generation of case report with comprehensive case summary and findings

Figure 2 Steps of explanatory case study methodology.

Case study preparation

Identify case for inclusion

Cases of HiAP are identified for inclusion using the following definition: an intersectoral initiative toward healthy public policy making, where sectors collaborate by developing policies, programmes and projects that include interventions addressing health upstream of inequities in health care utilization (i.e. more than equitable access to health care; some action on the social determinants of health). This definition assumes the following: (1) an approach that moves beyond the mere identification of health inequities to foster ISA; (2) that health is conceived of in fundamentally multisectoral terms (i.e. health is impacted by non-health policies) at a high level of governance (e.g. at the state or national level); and (3) that policies related to HiAP may foster multiple programmes or projects at multiple levels of context (i.e. multiple entry points for the implementation of policies and strategies).

Importantly, we limit our cases of HiAP to those relying on mandates at high levels of government with the expectation that we will be able to identify top-down and bottom-up mechanisms for implementation across a potentially broad range of levels in every case. Such interventions are also more likely to address macro-social determinants and be accompanied by strong mandates (e.g. legislation) with clearly defined processes for implementation. This definition was applied to examples of ISA for health equity obtained from a scoping review of the peer-reviewed and grey literature in 2010 to identify the list of sixteen HiAP initiatives in Figure 3 (Shankardass *et al.* 2011a).

Compile and review case library to create case summary and identify diverse key informants

Once a case is selected, team members begin by reviewing all literature in our initial case library (collecting using a methodology described elsewhere; Shankardass *et al.* 2012) to generate a preliminary understanding of HiAP in each setting. This includes a summary of contextual factors that may influence implementation (e.g. the history of ISA for health and health equity problems), as well as a description of the specific approach to HiAP (e.g. the mandate adopted, key sectors and non-governmental partners and their roles in implementation, examples of activities being implemented). This *case summary* prepares the research team for analysis and is also shared with potential key informants.

Key informants are identified based on the review of literature. We ensure that a diverse and relevant sample

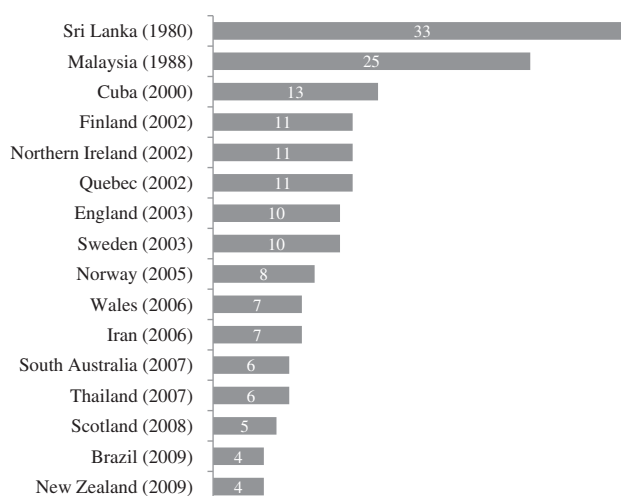


Figure 3 Duration of time (in years) since adoption of a HiAP initiative in 16 jurisdictional cases.

(diverse sectors and geographic levels of government) is recruited based on the ongoing analysis of interview data. During the recruitment process and at the end of interviews, each actual or potential participant is asked to nominate names of individuals who might serve as key informants for the HiAP case across all sectors involved (snowball sampling strategy). All potential informants are screened for eligibility based on their self-rated familiarity with HiAP implementation on a Likert scale from very unfamiliar (1) to very familiar (5); those rating themselves as familiar (3) to very familiar (5) are deemed eligible. Although we seek to have between ten and 15 interviews per case, the actual number will vary as we aim to comprehensively investigate the diverse intersectoral activities that comprise implementation for each case (i.e. within and across levels of government).

Data collection

Key informant interviews

Semi-structured telephone interviews with key informants follow an interview guide that aims to first understand the specific role of the informant in implementing HiAP, and then discuss examples of barriers and facilitators to implementation of HiAP across a range of themes (e.g. relevant to the specific

work of the individual or at a broader scale of implementation; in relation to the work of social networks or leaders; related to financing or evaluation of projects). The interview guide includes probes for each theme to elicit explanations for these phenomena (i.e. answering ‘how’ and ‘why’ questions vs mere descriptions), including the relevance of contextual factors (such as those outlined in Figure 1). The protocol for using the interview guide instructs interviewers to frame probing questions that contribute to the articulation of mechanisms and evaluate alternative explanations without leading the interviewee. For instance, to address financial barriers or facilitators, key informants were first asked: ‘Can you give me an overview of where funding was derived for actions, activities or initiatives related to [this strategy]?’. Some probes were suggested in the interview guide to retrieve detailed information if not addressed automatically by the informant: ‘To what extent did financing arrangements of intersectoral work vary by sector and across levels of government?’; ‘How did this affect the sustainability of implementation?’; ‘Did the financing structure contribute to facilitate or hinder implementation? Why or why not?’. As data collection occurs, the research team provides feedback to the interviewer on a regular basis to ensure that data collection is meeting the team’s needs (i.e. that rich information about mechanisms of implementation is being elicited) and to prepare for interviews with other informants within a case by identifying information gaps that could be addressed in other interviews.

Systematic literature search

Using the same strategy that was utilized for the aforementioned scoping view in 2010 (as described in Shankardass *et al.* 2012), the case library containing peer-reviewed and grey literature describing HiAP in a specific jurisdiction is updated. All sources of literature describing the case that are mentioned during key informant interviews are also compiled into the case library.

Coding and analysis

Code interviews for specific CMO pattern configurations

Interview data are coded to flag and organize passages that can be used to articulate CMOs. Some codes help the research team to identify the description of outcomes, including sustainability (or lack of sustainability) in implementing HiAP initiatives, or increased (or decreased) acceptability or feasibility of implementation. Other codes focus on articulating mechanisms of these outcomes. For the purpose of analysis, mechanisms are defined as basic processes that are causally related to indicators of the sustainable and unsustainable implementation of HiAP-related initiatives (or indicators of a sub-outcome) that feature ISA. Coding of mechanisms details specific analytic themes of interest, such as cross-sectoral capacity building and buy-in. Still other codes identify passages that may help to contextualize the mechanism, including: the role and sector of the informant in implementing HiAP; the level of government in which they operate; the sectors and levels of government with whom they collaborate; and other contextual factors that appear to condition the relationship between the mechanisms and success or failure in implementation. For each case, interviews transcripts

(or summaries) are carefully and systematically coded independently by two research team members.

Summarize CMOs by theme

Once initial coding is complete for a case, we work across interview data to discuss all coded mechanisms in team meetings, to reach consensus about how and why the mechanism triggers related outcomes (which involves a discussion of possible alternative explanations), and the extent to which text coded for contextual factors and other articulated CMOs are relevant to the core mechanisms at play. Unique CMO text based on diverse key informants is then grouped by patterns of similar mechanisms and within themes into higher level summaries of findings for each case. Once all mechanisms for a given case have been summarized, we ensure that we ‘interrogate’ the data by explicitly examining interviews for evidence that might support other explanations for what we are observing. We repeat the process of investigating and interrogating the data as many times as needed—reviewing and reorganizing evidence for specific mechanisms and themes—to refine our theory for that case (O’Campo *et al.* 2011b).

Code literature for strong confirmatory/contradictory evidence

All grey and scholarly literature describing the case (including that identified in the course of key informant interviews) is then examined for unique evidence to confirm or contradict mechanisms articulated based on interview data. This process is aided by use of a worksheet to catalogue unique evidence from the literature that provides a concise description of mechanisms described, the geographic level of government from which the evidence comes (national, state/provincial, regional and/or municipal), and, an indication of the specific themes addressed by the confirmatory or contradictory evidence. Importantly, evidence from the literature is only included if it is strong, which means that it provides a rich description of how it directly supports or clearly refutes the original understanding of the mechanism. All strong new evidence about mechanisms from the literature is integrated into our case summaries.

Generation of case report with comprehensive case summary and findings

Our end product for case-specific analyses is a case report. These reports should tell a story about how successful the implementation of HiAP was, and demonstrate ‘the unique vitality of each case, noting its particular program situation and how the context influences the experience of the program or phenomenon’ (Stake 2006, p. 39). The case report will tell the story of how and why various factors and strategies were relevant to sustainability in implementing interventions related to a HiAP initiative in a given setting. This process has been used before in our own work (ECSC-EC-EAEC 1999; O’Campo *et al.* 2009), as well as others employing realist approaches (O’Campo *et al.* 2011b).

Our case reports will contain the following: (1) a revised case summary based on new information collected in interviews and other documents; and (2) a detailed description of mechanisms that explain how and why, and in what circumstances (i.e. contexts) the HiAP initiative was able to implement activities across multiple sectors in the jurisdiction. Importantly, the case report will include ‘citations’ indicating unique informants and

literature providing evidence for specific mechanisms in order to facilitate a detailed account. This summary will also be enriched with key quotes from informants and the literature to illuminate the role of a particular mechanism or the influence of a contextual factor.

Results: example of mechanisms for implementing HIA tools for HiAP

To date, our team has applied this explanatory case study approach to study the implementation of HiAP in Sweden, Quebec and South Australia. To illustrate an example of how this approach uses the systematic analysis of data to extract mechanisms and articulate CMOs within each case, we describe an example of one emerging successful practice for building capacity to implement HIA in Sweden. Importantly, we provide a description of how and why implementation of HIA was strengthened (or hindered) in Sweden in relation to specific contextual factors that appear to influence the acceptability and feasibility of implementation. Finally, we provide evidence from the case of Quebec that demonstrates how contextual factors across jurisdictions can engender unique successful practices, while validating the salience of mechanisms within jurisdictions.

One key hypothesis that emerged throughout the course of our analysis is that the feasibility of implementing HIA requires a government to actively develop specific types of technical and practical capacity. A rival hypothesis would be that a detailed strategy for implementation alone can be effective because sectors can adapt existing capacity to meet the demands of HIA. Our research team identified evidence described by informants and in the literature to articulate mechanisms that account for phenomena where government sectors successfully (and unsuccessfully) utilized HIA. Two examples of how we view data in terms of CMOs in our analytic process are presented later.

One informant from Sweden observed:

“There are fewer and fewer sectors that use HIA. Many think it is a good idea in theory but, difficult to implement it in practice, how to measure things in practice and the financial resources to do it are problematic. It is not mandatory by law to use these HIA.”

From these data, we learned that in Sweden, where HIA is not a legal requirement [Context], the use of HIA by non-health sectors [Outcome] was hindered by a lack of understanding about how to use this tool [Mechanism] and a lack of financial capacity for implementation [Mechanism]. On a related note, another Swedish informant stated:

“[W]hen something new needs to be introduced, one needs to (...) work within the mechanisms and processes that are already in place within that sector (and then) introduce a public health perspective with the goal of adding as little disturbance and new workload as possible (...) with the aim for the sector to not have the impression that something totally new is coming into the picture.”

This reflected a mechanism expressed by several informants indicating that when introducing activities that are new to a

jurisdiction (e.g. HIA) [Context], the introduction of a public health perspective was more acceptable [Outcome] when activities were more feasible; and that feasibility was driven by activities that are easily integrated into pre-existing structures that sectors are familiar with [Mechanism]. Incidentally, one informant specified that relying on pre-existing structures works by drawing on the experience of individual actors and the existing capacity of their sectors [Mechanism].

These explanations were supported by confirmatory evidence that the use of HIA in Sweden was facilitated for those sectors that have participated in environmental impact assessments (EIA), which has been a mandatory aspect of policymaking in cases of potential impacts on diverse dimensions of environment and human health under the Environmental Code since the 1990s. We also have evidence on the counter-factual: some informants pointed out that sectors with no prior EIA experience required more time to begin using HIA.

This suggests that, where sectors are already familiar with or using other forms of impact assessment, one successful practice for implementing HIA is to frame the uptake of HIA as integrating additional information about the wider determinants of health to pre-existing assessments. This strategy is supported by our own theoretical framework (described above) and by the recent implementation framework proposed by the National Collaborating Centre for Healthy Public Policy, which suggests that feasibility will be influenced by ‘automaticity’ (i.e. when new policies can use existing administrative structures) because of ‘conformity’ (e.g. pilot projects can facilitate implementation as they allow actors to draw on the experience and structure of these programmes) (Morestin *et al.* 2010).

By way of comparison, this specific mechanism was not observed in our case study of Quebec. A non-realist analysis may stop at inferring that this mechanism is idiosyncratic to the case of Sweden. However, there are two key contextual differences in the use of HIA between these jurisdictions. First, the inclusion of legislation in Quebec (Section 54 of the Public Health Act, 2001) effectively mandates the use of this tool in provincial policymaking, while there is a non-legislated, occasional use of HIA in Sweden for ‘self-monitoring’ within ministries that is meant to help them meet the objectives of the Public Health Objectives Bill (2003). Second, a detailed inter-ministerial process involving multiple structures to guide ministries using the tool and to support their assessment of health impacts with evidence was established in Quebec, while the role of the National Public Health Institute in Sweden was defined as the main structure to support those ministries that participate in HIA with evidence about possible impacts.

In this way, while both jurisdictions use experts to provide evidence for impact assessment, we might expect the presence of legislation for HIA and the more detailed process for using HIA in Quebec to help persuade other ministries to use the tool and also facilitate the use of the tool itself. In turn, we expect that a need for conformity would be less important in Quebec given that there is a much more detailed intentional process in place to support ministries using HIA tools; in other words, conformity is less relevant in contexts with detailed administrative structures for HIA because of less need for automaticity. It is worth noting here that our team has also developed a methodology for a multiple case study of the implementation of

HiAP that more rigorously examines the generalizability successful practices *across* jurisdictions using a realist approach for cross-case analysis of CMOs.

Discussion

Strengths of research approach

Our methodology for explanatory case study uses three types of triangulation to strengthen the quality of our analysis: multiple sources of evidence, including published grey and peer-reviewed literature, interviews with key informants, and reviews of case-related documents (e.g. policy frameworks and strategic plans); diverse methodological approaches, including explanatory case study and realist evaluation; and a team-based approach to construct and summarize CMOs that uses multiple raters to interpret evidence. The use of multiple data sources can yield rich data about the mechanisms and causal linkages involved in HiAP to support inferences about 'how' and 'why' certain phenomena occur (Bhaskar 1975; Greenhalgh *et al.* 2009; Hummelbrunner 2011; Lemire *et al.* 2012; Wong *et al.* 2012; Pawson and Tilley 2005). This gives our case studies good construct validity, while internal validity is further strengthened through our interrogation of specific CMOs by triangulating evidence across data sources and multiple team members. A retrospective approach that is still proximate to the time of initiation facilitates the use of such multiple types of evidence and also allows for implementation to have occurred for a period of time to demonstrate the relevance of a specific case (e.g. sustainable or not) while also allowing time for mechanisms to have translated into measurable indicators of sustainability.

This method supports theory and learning about causation where temporal sequences are clear in the narrative, which improves on ambiguity about causal direction inherent to most analysis of variance that dominates quantitative approaches to research (Best *et al.* 2012; Clark 2008; Lavin and Metcalfe 2008; McQueen *et al.* 2012; Pawson *et al.* 2005; Taylor and Gibbs 2010; Wong *et al.* 2010). The method can also accommodate the complex interplay of macro- and micro-social factors related to HiAP, particularly where patterns and themes can be demonstrated in the evidence (Woiceshyn 2010). In turn, the iterative identification of patterns and consideration of alternative and competing explanations helps to elaborate causal linkages between the inner mechanisms of how HiAP works (Woiceshyn 2010; Yin 2003; 2009).

We anticipate that our findings for a given case study will be relatively unique and dependent on contextual factors related to the case jurisdiction; and yet we aim to assess the generalizability of successful strategies for implementation for policymakers in other jurisdictions and contexts. To facilitate this level of analysis, as we articulate CMOs we are specific about the contextual factors of relevance, and about which specific outcomes these mechanisms pertain to (e.g. the implementing HIA compared with other activities).

We aim to be transparent in reporting what the researchers do and why they do it in the course of case studies. We iteratively construct a narrative description of our methodological approach as the study progresses based on meeting minutes to document our rationale for key decisions. Also, we

do not force reconciliation of contrasting interpretations across team members when analyzing data, but rather document such differences and attempt to resolve them in future interviews with key informants.

We aim to be systematic by using a consistent and comprehensive approach. We follow a detailed protocol to maintain consistency as we repeat activities across individual case studies, including for the selection of cases, the systematic literature search, the writing of case summaries, key informant interviews, and the analysis of case documents.

Limitations of research approach

Although effort is made to probe for alternative explanations for phenomena of interest during key informant interviews, some important mechanisms may not be revealed by relying on the recall of the 15 informants per case. First, although we aim to interview a diverse pool of informants, we cannot always recruit participants from all sectors involved at all levels of geography within a case jurisdiction. Second, discussing explanations for barriers and facilitators in implementation is time-intensive while interviews are limited to one hour in length to minimize participant burden; thus, informants are sometimes not able to exhaustively discuss their experiences with mechanisms of progress. Finally, individuals are limited by their own perspective (notably influenced by their position, from technician/engineer, to manager, researcher, decision-maker or politician) on the barriers and facilitators that they experienced.

With our method, it is possible that contradictory evidence will be obtained from key informants about how and why certain activities and action cause progress in implementing HiAP strategies. In such instances, while a full resolution of disparate reporting may not always be possible, the research team makes attempts to further discuss areas of disagreement with key informants and review supporting documents to obtain more consistent information.

Conclusions

Despite increasing recognition of the importance of strengthening macro-social determinants of health, there have been few attempts by government to broaden the health system by coordinating greater action outside of health care services. Moreover, there is little systematic research to inform and encourage governments to use a multisectoral approach to population health. The HiAP strategy is one promising intervention in this respect because it systematically addresses health in policymaking by targeting broad health determinants. The research approach outlined here provides a novel methodology to identify and triangulate rich evidence describing social mechanisms and salient contextual factors that characterize successful practices in implementing HiAP in specific jurisdictions. This methodology can be applied to study the implementation of HiAP and other forms of ISA to reduce health inequities involving multiple geographic levels of government. The explanatory case study approach is based on a rigorous conceptual framework that is applicable to diverse jurisdictions, while the methodology itself can be applied to learn about a

wide range of successful practices. Finally, the approach to explanatory case studies described here serves as a building block for a multiple case study approach to examine the wider relevance of successful practices across global jurisdictions.

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