

# Social Environments and Health



## Healthy Public Policy

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# Social Environments and Health

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## Introduction: The Social Environments and Health project

'Social environments' is a key performance area identified in the 2010 Health Promotion Disease and Injury Prevention Action Plan of Alberta Health Services. Together with 'health disparities' and 'built environments', 'social environments' forms a key part of Health Promotion, Disease and Injury Prevention's (HPDIP) Priority Actions – Social and Physical Environments.

A Social Environment and Health proposal was approved in the fall of 2009 as one of a suite of go-forward projects. It provides a theoretical foundation for the development of a broad 'social determinants of health' perspective and aims to unpack the concept of social environment and identify a useful and relevant underpinning to the way the concept is applied within HPDIP.

Social environments (SE) can be thought of as "the groups to which we belong, the neighbourhoods in which we live, the organization of our workplaces, and the policies we create to order our lives".<sup>1</sup> The term has also been used interchangeably with the social determinants of health (SDH).

As public health practitioners, we have been challenged and encouraged to adopt a social determinants of health approach.<sup>2,3</sup> While improvements in individual health are regularly realized when individuals quit smoking, become more active, eat nutritious foods and avoid harmful substances, such individual-level behavior change interventions are not effective at changing population-level health parameters, including reducing health inequities.<sup>4-7</sup>

### Purpose

The purpose of this paper is to help the Healthy Public Policy (HPP) team and others in HPDIP, understand the term *social environments* (SE) and the related term

*social determinants of health* (SDH), and to recommend an SDH framework for advancing policy advocacy work in this area.

### Organization

First, this paper will discuss how use of the terms *social environments* and *social determinants of health* have co-evolved in the academic and grey literature and within certain institutions. Second, we will review several well known frameworks for understanding how health is produced and which have been suggested as guides for policy advocacy work. In the last decade there have been numerous calls for Public Health to adopt a broader *structural*<sup>i</sup> approach to addressing inequalities in health.<sup>3,8-14</sup> We will argue for the adoption of one such framework developed by Orielle Solar and Alec Irwin (2007) for the WHO Commission on Social Determinants of Health (CSDH). Finally, we will outline general implications of employing the Solar and Irwin framework for HPP action.


### Some important terms and concepts

Our discussion of social environments and social determinants of health will be easier to follow if we define some related terms up front.

#### Health

Most of the empirical work that has been done to demonstrate the relevance of SE and SDH to health – for example, establishing the social gradient in health – has defined health in terms of the absence or presence of disease and of risk factors (like smoking or physical inactivity) for disease. In this paper, therefore, when we reference health differences between social groups, we will typically mean differences in rudimentary markers

i. Relating to the system and its components



of health (such as those noted above) that are commonly used in social epidemiological research.

Because these measures do not capture everything important about the positive quality of health, or of being healthy either as an individual or as a society, we also understand health as not merely the absence of disease, infirmity, or a low average life expectancy, but as the “capacity of people to adapt to, respond to and/or control life’s challenges and changes”.<sup>15</sup> This definition can apply equally to an individual and to a population. Again, however, most of the research that has demonstrated a social gradient in health does not use this more holistic definition, though it is important to note that self-reported health has been shown to follow a socio-economic gradient.<sup>16</sup>

### Health (in)equality

Equality means sameness; inequality means difference; the state of being unequal. Health inequality requires at least two people or two groups to make sense: it is the presence of a difference between two or more people/groups on a measure of health that can be captured empirically.

### Health (in)equity

Equity is a normative concept; a condition of fairness or (social) justice; therefore health inequity means an unfair or unjust health inequality<sup>17</sup> that is systemic, socially produced and which is therefore avoidable or changeable by policy intervention.<sup>20</sup> Inequity and inequality are often used inconsistently in the literature<sup>13,19</sup> and usage varies from country to country. Inequality and disparity tend to be used interchangeably in Canadian and European literature, with the term equity reserved for differences deemed unjust. Disparity is more commonly used in the US context and often *implies* an inequitable situation, which is confusing. Use of the term equity is not widespread in the US social epidemiology, public health, and health promotion literature. Reutter and Kushner<sup>19</sup> advocate for use of the term health inequities “when the unequal distribution of societal resources and the ethical principle of social justice are implied which the terms health inequalities and health disparities hide” (p.271). Whitehead<sup>17</sup> further cautions

not to conflate the differences in levels and quality of health between groups with the distribution and access to health care services themselves. (See Reutter and Kushner for a discussion of the nuances of these concepts and their implications.)<sup>19</sup>

## Contribution

This paper builds on Nancy Hamilton and Tariq Bhatti’s flagship Population Health Promotion (PHP) model.<sup>21</sup> It examines the PHP’s theoretical underpinnings and argues for adopting a more robust explanatory framework on health inequities based on the work of Orielle Solar and Alec Irwin.<sup>22</sup>

Woven through out the paper is the pivotal issue of how health is generated and distributed across social groups. *Our hope is to invite discussion on an organizing framework that explains the social origins of unfair differences in health, with the goal of improving HPP action.* A review of the vast empirical research supporting the impacts of SDH on health outcomes is beyond the scope of this paper.

## Method

To understand the concepts of SE, SDH and their relationship to health outcomes, we conducted a targeted search of the peer-reviewed and grey literature from 2005 using the terms: social environments and population health, and social environments and public health. The most commonly occurring term that arose was social determinants of health. Because our strategy excluded a number of pre-2005 seminal articles charting the understanding and development of social environments, we expanded our search to select references prior to 2005 when they were regularly cited in key reports or identified in the first wave of research articles collected. (See the Appendix for a detailed description of our search methodology and the databases reviewed).

Broadly speaking, social environments (SE) describes a



## Defining social environments

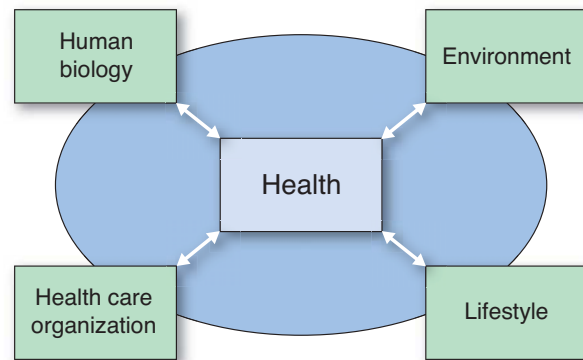
wide range of political, economic, familial, and cultural conditions that are not under the control of a single individual. These conditions, in turn, are a product of the institutions, structures of authority, economic policies and practices, and cultural background of the societies in which they are present. But how have we come to understand this concept in health?

Breaking it down, one of the earliest modern influences on our understanding of the term environment as a determinant of health comes from environmental epidemiology which defines an environmental determinant of health as “any *agent* external to the individual (i.e. biological, chemical, physical) that could be causally linked to a change in health status. However, since everything not genetically determined could be considered environmental, for practical purposes, the definition has been narrowed to include only those environmental influences that are involuntary, i.e., not a result of intentional choice.”<sup>23</sup>

The 1974 publication of the Lalonde Report expanded the idea of “environments” relevant to health. This report was the first official document to articulate a change in the way health was understood and the ways in which it could be improved. Internationally recognized, *A New Perspective on the Health of Canadians* introduced the Health Field (or Four Fields) concept into prevailing health care discourse; the idea that health is influenced by biology, lifestyles, health services and environments, and hence not remediable by the medical care system, alone. The Health Field concept is shown in Figure 1.

Lalonde characterized environments as “all those matters related to health which are external to the human body and over which the individual can do little or nothing.”<sup>24</sup> Despite gaining official status, the environment within the Lalonde report remained a fairly mixed bag: food and drug hazards, pollutants (in air,

**Figure 1 Health Field concept**



Based on the Lalonde Report, 1974

water and soil) to which people were exposed, the agents of communicable disease, and the conditions of sanitation. The Report went on to state that “self-imposed risks and the environment were the principal or underlying factors in the major causes of death” (p.15). Because environmental conditions were believed to perpetuate behaviours, both environment and behaviour were important to address; although a theory of how the environment influenced health was not provided in the report. The role of government was to protect the public against societal hazards in their natural and physical settings.

Despite recognizing environments as influencing health, the Report’s lifestyles concept and corresponding emphasis on individual risk factor reduction (e.g. “drug abuse, alcohol abuse, tobacco smoking, fitness and recreation, nutrition, personal health and contagious diseases” (p.48-49), was fiercely taken up by health proponents -a trend congruent with the zeitgeist of the times.<sup>25</sup>

Twenty years later Evans, Barer and Marmor wrote their highly influential book, *Why are Some People Healthy and Others Not?*<sup>26</sup> In this watershed book, we



begin to see mention and discussion of some of the defining features of social environments. These researchers and some other British epidemiologists began turning their attention to the production and distribution of the health of the population, recognizing that a broader conceptualization of social variables – and ways to test the relationship of these variables to health outcomes – was needed in order to understand these patterns.

In this volume, Corin<sup>26</sup> described social environments as consisting of “systems of interacting social and cultural variables; including social structures of power, community social life, and social differentiation that can aggravate, and mitigate social life.”

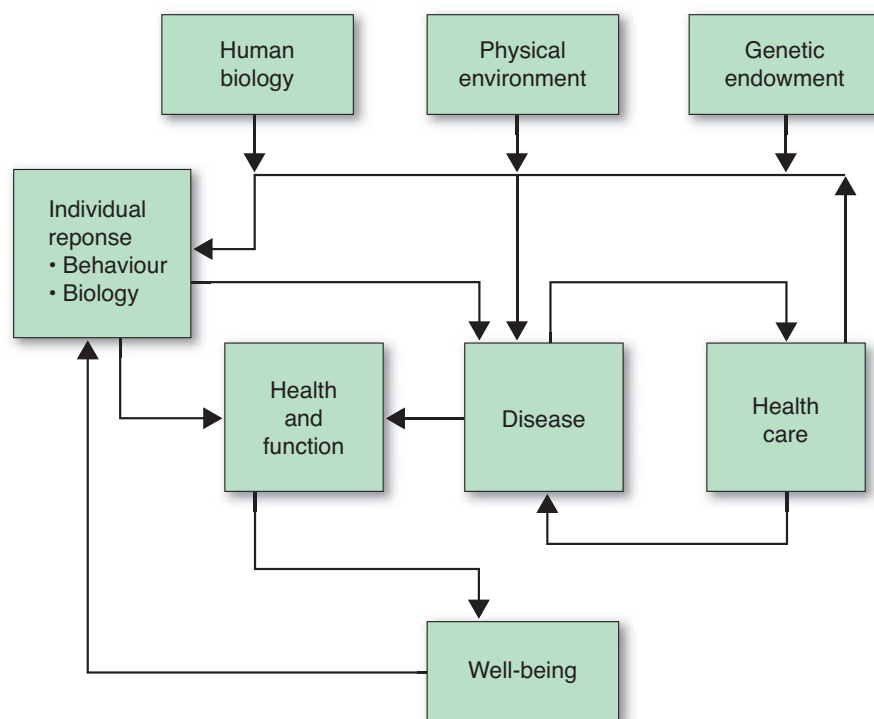
Figure 2 depicts Evan’s and Stoddard’s framework of influences, and the relationship between social and individual factors on health that lie outside the health sector (minus their prosperity concept) (p.1356).

In 2000, the National Institutes of Health (NIH) in the United States issued a call to academic and government researchers to examine the underlying mechanisms by which interactions between human biology and behavior, along with social and physical environments, lead to health disparities.<sup>27</sup> The NIH characterized the social environment broadly as “encompassing individual and community level characteristics, such as socioeconomic status (SES), education, coping resources and support systems, residential factors, cultural variables, institutional and political forces such as racism and classism, familial factors and media influences” (p.1). Here we see an expansion of Evan’s and Stoddard’s definition in some ways, but also the exclusion or re-casting of some of Evan’s and Stoddard’s concepts.

In response to the NIH call, Barnett and Casper<sup>28</sup> proposed an explicit definition of SE which included:

- physical surroundings, social relationships, and cultural milieus;

**Figure 2 Evans and Stoddard model**



Source: Evans, Barer, & Marmor, 1994



- built infrastructure, industrial and occupational infrastructure;
- labour markets, economic and social processes;
- wealth;
- social, human and health services, race relations, government; and
- social inequality, arts, religious institutions and practices, and beliefs about community.

Marko observes that prior to Barnett and Caspar's 2001 definition, SE had not been defined in the literature.<sup>29</sup> For Barnett and Casper, the SE is a complex mix of factors in which defined groups of people function and interact within concrete, geographic, cultural and historical settings (places). However, we also see that the term social environments has now become so all-encompassing that it is unclear what it adds as an explanatory device. This may partly explain why the term, which was never widely used and promulgated by researchers and government agencies, soon became overshadowed by the term social determinants of health.

Dennis Raphael suggests that the term SDH emerged and became widely used during the fervor of research activity in the 1980s and 1990s, as epidemiologists delved deeper into the specific exposures and pathways by which diverse social groups experienced differing health outcomes both within countries and across nations.<sup>10</sup> For a more comprehensive account of the historical influences on the development of the SDH and Linda Irvine.<sup>10,22,30</sup>


At their most basic, social determinants of health were conceived as the societal conditions or circumstances in which people are born, live, grow up, work and age<sup>13,31</sup> a definition that overlaps that of social environments. In addition to having a direct impact on the health of individuals and the population as a whole, SDH are recognized as the best predictors of health for both for individuals and populations.<sup>3,11,13,31,32</sup> SDH interact with each other to produce health, illness and disease and influence people's lifestyle choices. This idea of SDH being especially good predictors of individual and population health is emphasized by Tarlov as a quality of social environments (or social circumstances), which he calls "paramount determinants of population health."<sup>33</sup>

Even though some researchers appear to be making the same claims about social environments and social determinants of health, with the implication that they are really talking about the same thing,<sup>34</sup> some agencies have clearly described social environments as one of several social determinants of health. In Canada, the Federal Territorial Provincial report, *Strategies for Population Health* (1994), Health Canada's *Population Health Promotion Framework* (1998) and the Senate Report, *A Healthy Productive Canada: A Determinant of Health Approach* (2009), all identify social environment as a determinant of health, though they fail to clearly define it.

Treated now as one of a list of determinants of health, the meaning of social environments also began to shift from that implied in earlier definitions such as the one by Evans and Stoddard. The Public Health Agency of Canada (PHAC)<sup>35</sup> for example, defines social environments as the institutions, organizations and informal giving practices that people create to share resources and build attachments with others. This marks a shift toward the informal, affective and instrumental helping aspects of social environments, and emphasizes the quality of social interaction over the social-structural arrangements created by economic and social policies and practices. This emphasis is characteristic of many uses of the term SE, including those found in several prominent (Canadian) documents.<sup>2,10</sup> In these instances, SE has clearly become something less than SDH.

## Brief summary

Thus, there is thus no single definition of the SE, rather many formulations of the term, each identifying numerous compelling features (not always defined) and their complex relationships which may obscure the concrete circumstances, policies, and experiences that they represent. Also, the merging of the term social environments into social determinants of health, or the representation of the former as one of the latter, has left us with some concerns about the usefulness of the term social environments as a framing device for policy advocacy work. One of these concerns has been taken up by Dennis Raphael: the lack of emphasis, within the use of the term social environments, on the structures



that determine the distribution of economic and political power in society. A conceptualization of power and its crucial role in the social production<sup>10,14</sup> of health is all but absent in definitions of social environments, and as we will show, in the majority of other determinants of health frameworks.

## Social environments as structural contexts

According to Raphael and others,<sup>11</sup> the most significant problem with the way in which the term social environments is usually construed is that it lacks reference to a structural<sup>ii</sup> perspective or analysis of the way in which social life is organized and sanctioned. Raphael characterizes this construal as apolitical because it cuts off opportunities for understanding the social roots of health inequalities and the consideration of policy action. This can be understood as a criticism of the current use of the term by PHAC and in other federal publications, for example. Evans, Barer and Marmor,<sup>26</sup> too, point out that a categorical approach to socio-cultural environments (as opposed to an organizing principle of social life) removes human realities from their social context (p.98). Similarly, social environments, in Raphael's view, are not abstract, free-floating milieus that have universal impacts; they are instead concrete policy regimes that determine access to resources (including social capital, but most definitely money and other material resources) and which are grounded in people's everyday concrete lived-experiences. While effectively encouraging supportive environments by shifting norms of personal behavior (especially in relation to giving and receiving emotional and instrumental support and participating in one's community) may have some positive effects on population health, any health inequities that are caused or exacerbated by the concrete policy environment will remain.

Our search for definitions of the SE, and our attempts to understand how it contributes to health, has led to the recognition that the concept of social determinants of health is more widespread and potentially more

useful because it captures a wider range of interrelated phenomena involved in the production and distribution of health and illness, and because the use of the term often implies a policy (and political) dimension to health promotion action.

We turn now to a brief discussion of the difference between determinants of health *frameworks* and social production of health *models* before reviewing a number of each.

ii. Aspects of a system or its components



## Determinants of health frameworks and social production of health models

Within the SE and SDH literature, we encounter both *frameworks* and social production of health *models* and sometimes the two terms are used interchangeably. A few clarifying comments are needed before we review and assess several frameworks and before discussing some social production of health models in more detail.

For the purposes of this paper, frameworks are understood as a collection of concepts that capture relevant theoretical insights which purport to explain some phenomena, in this case the social production of health, illness and disease. Frameworks are formulated on some kind of assessment of the evidence base and ideally draw upon relevant theoretical perspectives, and important social values, but this is often not made explicit or explained at much length resulting in a description rather than an explanation of the phenomena of interest. In this paper the terms formulation(s) and perspective(s) are synonymous with framework(s).

By model, we mean the visual representation of the explanation of interest (or framework); an organized arrangement of concepts according to their supposed function in relation to the production of health, suggesting how concepts (such as the concept of a social determinant of health) are related to other concepts such that a view of an integrated “system” can be established. The terms ‘schema’ or ‘depiction’ are occasionally substituted for the term model in this paper. Both frameworks and models subsume multiple, more proximate factors related to health and both are needed in population health and health promotion work. In fairness, most determinants of health formulations are less formalized narratives rather than full-fledged frameworks, occasionally accompanied by graphics, and many influential typologies (lists and frameworks) exist.

Following is a list of titles the most prominent determinants of health typologies referenced in the Canadian academic and grey literature over the last four

decades. While not all are formal frameworks and/or models, they are likely most familiar to members of the Health Promotion Disease and Injury Prevention Unit, AHS and others working in the health sector.

1. Lalonde M. (1974), A New Perspective on the Health of Canadians
2. WHO (1986), The Ottawa Charter for Health Promotion
3. Hamilton N. and T. Bhatti (1996), Population Health Promotion Model, Health Canada
4. WHO Denmark (2003), Wilkinson R. and M. Marmot, Social Determinants of Health: The Solid Facts
5. Raphael D. (2004), Social determinants of health: Canadian perspectives
6. Butler-Jones D. (2008), The Chief Public Health Officer’s Report on the State of Public Health in Canada
7. Final Senate Report (June 2009), A Healthy Productive Canada: A Determinant of Health Approach

To continue, a further list of the most commonly cited determinants of health from our review of the literature follows. Also see Table 1 on page 10.

- Income and income distribution
- Employment and working conditions
- Unemployment and employment security
- Food insecurity
- Aboriginal status (and ethnicity)
- Social exclusion
- Housing
- Early childhood development
- Education and literacy
- Gender

- Human biology and genetics
- Health behaviours
- Health care system

Although not included in the preceding 'short' list, social safety net may also be considered a SDH.<sup>10</sup> Interestingly, The Report on the State of Public Health in Canada (2008) ranks the determinants of health according to the following order of importance: income, employment and working conditions, food security, environment and housing, early child development, education and literacy, social support and connectedness, health behaviours and access to health care (p.35). However the Report does not provide criteria for weighting, or justify this order with respect to the various health determinants' contributions to generating health inequities.

## Interpreting the determinants: the individual vs. the collective lens

Even as our understanding of the influence of these determinants on population health has evolved, many of the determinants are still viewed as characteristics of individuals.<sup>19,36,37,38</sup>

Many of the determinants in Table 1 can be understood as having influence on, or be measured at the level of both the individual and the social group(s) or large society of which the individual is part. The level at which a determinant is understood and measured can have important implications for types of interventions that are undertaken.<sup>10,13</sup> For example, low average neighbourhood income might prompt interest in local economic development initiatives, while the low personal income of an individual might prompt an individually tailored intervention to connect that person with the income support programs for which they are eligible. Income inequality suggests intervening in yet another area, since here it is not only a question of increasing or decreasing the wealth of this or that individual or group, but of changing the distributive mechanisms that support or constrain massive wealth accumulation.

In reality these divisions are not so neat; individual income influences neighbourhood income, for example, and income inequality is also a function of individual incomes

and how these incomes are clustered in a socially stratified society. In addition, pre-existing social structures and policies affect the chances that an individual will be employed and have an adequate income, or that a neighbourhood's residents will demonstrate a mix (versus a concentration) of income levels. Action to address income inequality requires attention to the interaction of these impersonal, external forces, not just to the proximate causes that determine individual income.

Similarly, the terms homeless or *the* homeless refer to a person or to a group, while homelessness points to a person or group's state within a specific society (that consists of development priorities, economic practices, and so on that affect the stock of housing and access to it). Reframing the problem of homelessness as a lack of affordable, appropriate housing stock repositions the issue at the population and structural level, making it more amendable to public policy action. The difference between individual-level interpretations of SDH and population-level interpretations of SDH is important to keep in mind when evaluating the various SDH frameworks that have been advanced over the past 30 or 40 years. For example, frameworks that emphasize population/structural-level interpretations, or that are dominated by terms that only make sense as characteristics of environments or of a policy context, may be more appropriate as guides to policy advocacy than frameworks that demonstrate a more individual-level interpretation of SDH.<sup>9,11,13</sup>

To further consider these concerns with frameworks, and to suggest the sorts of qualities that a useful framework needs to have, we will discuss one particular framework in more detail: The Hamilton and Bhatti Population Health Promotion (PHP) model.

**Table 1 Determinants of health “typologies” (lists, frameworks and models)**

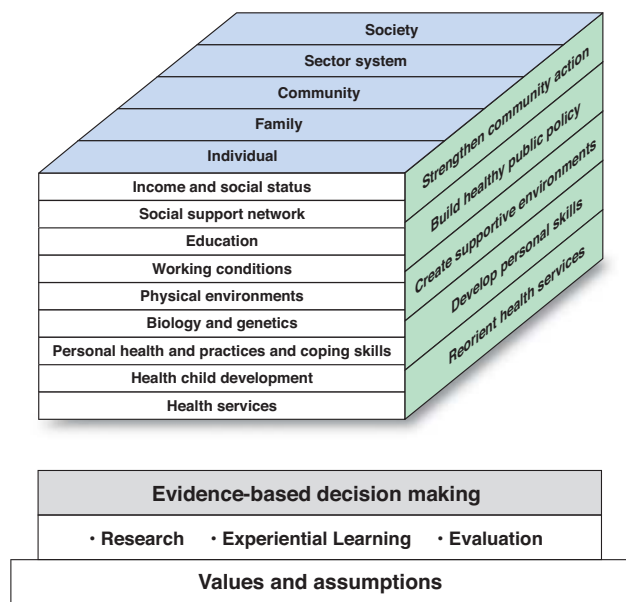
Typologies 1974-2009						
M. Lalonde	WHO	N. Hamilton and T. Bhatti	R. Wilkinson and M. Marmot	D. Raphael	D. Butler-Jones	Senate Subcommittee on Population Health
1974	1986	1996, 1998*	2003	2004	2008	2009
A New Perspective on the Health of Canadians	Ottawa Charter for Health Promotion	PHP Model	Social Determinants of Health: The Solid Facts, WHO Denmark	Social Determinants of Health: Canadian Perspectives	The Chief Public Health Officer’s Report on the State of Public Health in Canada	A Healthy Productive Canada: A Determinant of Health Approach
Environment	Education	Biology and genetics	Addiction	Aboriginal status	Access to health care	Culture
Health care organization	Equity	*Culture	Early life	Early life	Early child development	Early child development
Human biology	Food	Education	Food	Education	Education and literacy	Education
Lifestyle	Income	*Gender	Social exclusion	Employment and working conditions	Employment and working conditions	Employment and working conditions
	Peace	Healthy child development	Social gradient	Food security	Environment and housing	Gender
	Shelter	Health services	Social support	Health care services	Food security	Genetic endowment
	Social justice	Income and social status	Stress	Housing	Health behaviours	Health care system
	Social support networks	Personal health and practices, and coping skills	Transport	Income and its distribution	Income	Housing
	Stable ecosystem	Physical environments	Unemployment	Social safety net	Social support and connectedness	Income and social status
	Sustainable resources	*Social environments	Work	Social exclusion		Physical environment
		Social support network		Unemployment and employment security		
		Working conditions				



## Case studies: The Hamilton and Bhatti framework and the Ottawa Charter

Conceived by Nancy Hamilton and Tariq Bhatti, the Population Health Promotion model (Figure 3) was the first formal health determinants framework. (Health Canada 1996 Population Health Promotion model<sup>iii</sup> (PHP).

**Figure 3 Population Health Promotion model**



Source: Hamilton & Bhatti, 1996

Informally dubbed the Rubik's cube for its three-dimensional depiction, the front face of the Hamilton and Bhatti framework consists of nine health determinants; the top surface lists five levels of intervention; and the right side indicates five strategies for intervention, drawn from the Ottawa Charter for Health Promotion.<sup>39</sup> Health Canada updated the PHP model in 1998 by adding gender, culture and *social environments* as health determinants, although the latter term was not well defined.

As a guide to action, the PHP model has some advantages over many other SDH frameworks. First, it explicitly asserts that chosen courses of action on any determinant must be based on solid qualitative and quantitative evidence. Second, the model points to the prevailing societal values, norms and assumptions upon which the PHP framework is based. This is a reminder that the model is not an abstraction from social reality but one product of it. Third, the levels of intervention (on the top surface), alert us to the need to target interventions beyond the individual, family and community levels. Last; the strategies (to the right), point to interventions that target structural factors (i.e., policy advocacy) rather than focusing solely on developing individual skills (personal communication L. Reutter, Feb 2011).

The PHP framework<sup>40</sup> has some important limitations. Of the seven assumptions articulated in the document, only two touch on how health is created and distributed among the population – and these do not provide a thorough explanation. The remaining assumptions are not obvious from the schema itself but are evident in the supporting text. These are quite fundamental to the spirit in which the framework was created, and to its application as illustrated in the following quote.

*Health problems may affect certain groups more than others. However, the solution to these problems involves changing social values and structures. It is the responsibility of the society as a whole to take care of all of its members. In order to enjoy optimal health, people need opportunities to meet their physical, mental, social and spiritual needs. This is possible in an environment that is based on the principles of social justice and equity and where relationships are built on mutual respect and caring, rather than power and status. (p.2)*

iii In this paper we describe the PHP model as a framework; it is also a model according to our definition of the term



Another limitation is that the schematic version of the PHP model does not capture the interactive nature of the various determinants or suggest a temporal ordering of the determinants.

Although not primarily recognized for these insights, the Ottawa Charter too lists eight fundamental conditions and resources for health, called the *prerequisites for health*. They are: peace, shelter, education, food, income, a stable eco-system, sustainable resources, social justice and equity. The Charter's main aim was to articulate strategies for health promotion action, hence its primary focus on the 'how' versus the 'what' of health promotion practice. Revisiting the eight prerequisites for health, however, reveals astonishing insights into contemporary global issues which have come increasingly into national and international focus yet have been largely ignored or given short shrift in many current high level public health documents.<sup>41,42</sup>

Of the five key health promotion strategies identified in the Ottawa Charter, creating supportive environments (followed by strengthening community action and developing personal skills), have attained paramount status. In public health practice, strategies (processes) for creating supportive environments in the community and other settings (neighbourhoods, schools and workplaces) have come to dominate action on the social environment.<sup>38</sup> Settings approaches focus on aggregates of individuals rather than a population level approach per se. Despite what creating supportive environments implies, there is yet limited attention to healthy public policy in health promotion practice.<sup>32,43</sup>

The PHP model and the Ottawa Charter are deeply entrenched in public health discourse, and even so, not thoroughly mined for their nascent insights. Essential touchstones for public and population health practice they may be, we need to build on their valuable insights to gain a deeper understanding of the social origins of inequities in health among population groups.



## Case studies: Tarlov's socio-ecological framework of health production, and Dahlgren and Whitehead's social ecology framework

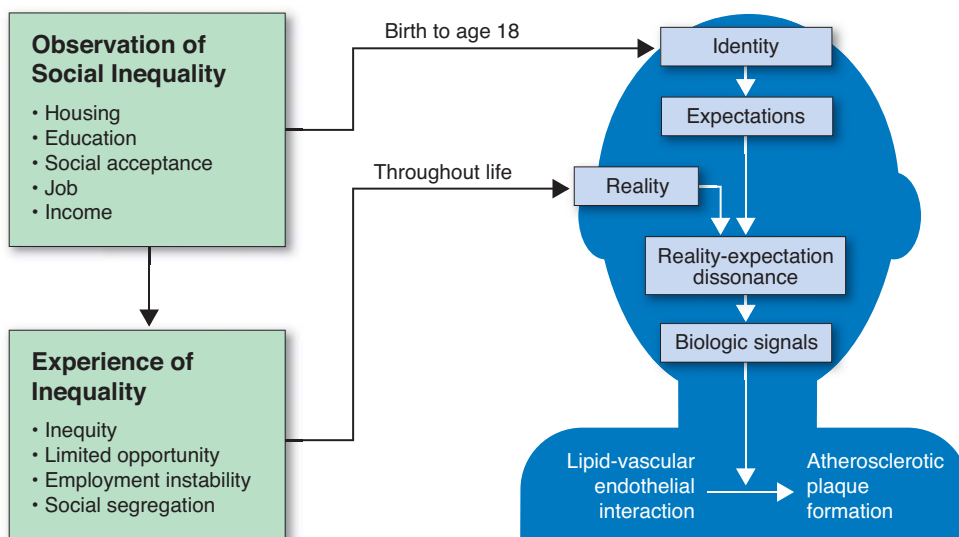
In 1996, Tarlov<sup>33</sup> suggested a socio-ecological framework for the production of health. By socio-ecological he meant “man’s (sic) interaction with his social circumstances and the physical environment in which living takes place (p.77).” His goal was to explain how social circumstances translate into bodily manifestations of disease and illness which he called the socio-biological translation. Tarlov described three concentric rings of influence: proximal (nearest the individual, whether in time, space, or personal specificity); intermediate and distal (furthest from the individual in terms of time, space, or personal specificity). Each of these rings includes a host of factors that interact with others in the same ring as well as with factors in other rings to affect the health of the individuals constituting the population of concern in the middle.

These factors include: the influence of family, friends, home, neighbourhood, norms, expectations and a sense

of opportunity for fulfillment (ring one); community, school, worksite, the local economy and jobs, natural resources, effectiveness of local government, a sense of meaning and participation in civic activities (ring two).

The third ring encompasses macro-social influences such as characteristics of the government and national priorities, tax and monetary policy, public and private investment in infrastructure, a sense of collective security, fairness, justice and the distribution of resources. Significantly, the predominant direction of influence is inward (from macro to micro).<sup>33</sup> The terms micro, meso and macro are often used in narratives such as Tarlov’s to represent forces acting across a range of levels, although their demarcations are not always consistent in use. What is astonishing is that Tarlov’s perceptive identification of the factors at the meso and macro levels are not show in his model (Figure 4).

**Figure 4 Tarlov's model**



Source: Tarlov, Blane, Brunner & Wilkinson, 1996

Instead, Tarlov focused on the social-psychological-biological mechanisms by which people appropriate messages about their social circumstances, and by which these internalizations are ultimately translated into disease at the cellular level. He reckoned that over the course of a lifetime conflicts of many kinds occur that create chronic stress, and that this stress eventually manifests physiologically as illness and disease. Tarlov theorized that the amount and sources of stress differ across social strata, and that the effects of chronic stress, mediated by individual resilience (and the opportunity cost of stress reduction), are also socially patterned.

While integrated public policies are part of the solution to improving population health, Tarlov's socio-ecological model falls short in that it does not contain an explicit analysis of how structural forces and factors create the conditions whereby people are sorted into social strata; it views the social order as almost self-evident.

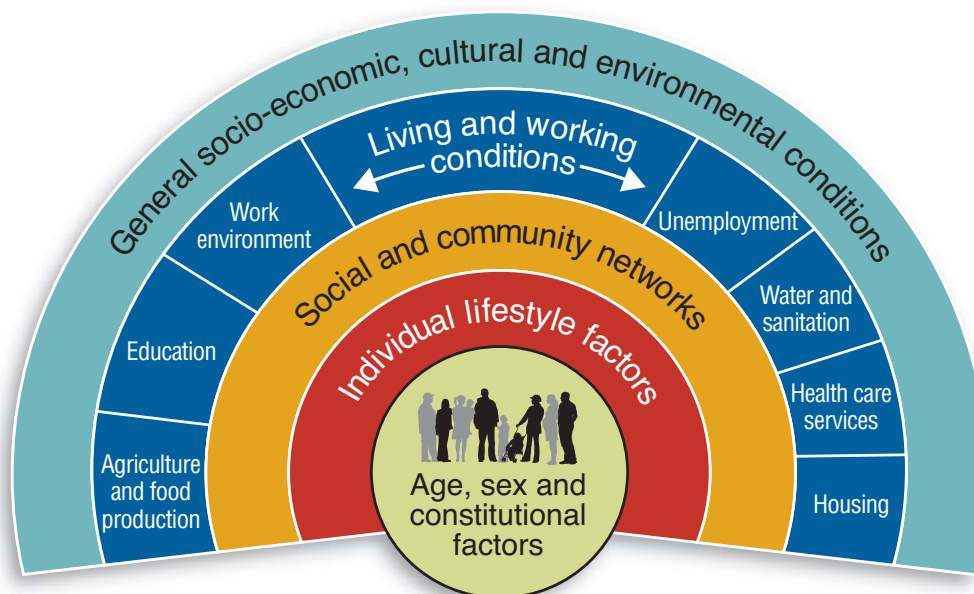
The most well known of ecological models, the Dahlgren and Whitehead model (Figure 5) picked up where Tarlov's left off, with several significant advances.

Dahlgren and Whitehead asserted that "the root causes of social inequities in health must be understood before effective policies can be formulated to tackle them."<sup>20</sup> Like Tarlov, their model was organized into concentric bands in a rainbow formation illustrating the characteristic ordering of factors influencing health from proximal to distal where the central reference point is individual factors. The addition of a fourth band allowed for the introduction of factors operating at yet another level. According to G. Dahlgren and M. Whitehead, everything except for a person's age, sex, and genetics were believed to be amenable, in principle, to public policy intervention.

These authors further categorized the factors that could be influenced by policy interventions into three groups:

- 1) positive health factors (e.g. economic and food security and emotionally satisfying relationships) that contribute to the maintenance of health;
- 2) protective factors (e.g. immunization, social support, healthy diets) that eliminate risk or facilitate resilience; and

**Figure 5 Dahlgren and Whitehead's model**



Source: The Dahlgren and Whitehead model: Dahlgren G and Whitehead, M (1991). Policies and Strategies to Promote Social Equity in Health. Stockholm: Institute for Future Studies

3) risk factors and risk conditions that cause disease and illness and are potentially preventable.

The authors' acknowledge that deciding which category a particular health determinant falls into "may be difficult at times"<sup>20</sup> (p.22), but do not suggest organizing / selection criteria.

Next, they assessed the contribution of the various risk factors to the total burden of disease. Although the authors promote assessing both upstream and downstream factors (which they do not define), for a variety of unexplained reasons (except for the unavailability of data), the fall back category is risk factors. Notwithstanding, their framework proposes five mechanisms for understanding how 'root causes' influence health: different levels of power and resources, different levels of exposure to health hazards, the same level of exposure leading to differential impacts, life-course effects, and the different social and economic effects of being sick.

Unfortunately, none of these valuable insights is apparent in the model *per se*. This is significant because these authors' model is reproduced in many health promotion documents (grey and white literature) without the full accompanying text; hence its deeper insights are lost.

Dahlgren and Whitehead associate the process of social stratification which is not defined with a person or group's social position, although this is not explained. Social position construed as socio-economic status or SES is, however, in turn closely associated with health risk, and follows a step-wise decrease in health along with decreasing social position. Negative experiences such as being looked down on, stigmatized, not feeling valued, and/or feeling powerless, along with comparing oneself to others better off, are potent psychosocial stresses affecting health, which too are positively associated with social position.<sup>18</sup> Their insight that health impacts are socially-structured and that social context plays a foundational role in generating unfair differences in health is critical.

Therefore, depending on one's SES, people may experience differences in exposure to factors that cause harm, differential abilities to withstand these abuses (including where the level of exposure is the

same across social groups), and differential consequences. Compounding the harm are the accumulated effects of these various experiences (under variable conditions) over a lifetime, known as the life-course perspective.<sup>44</sup> Social selection, or social mobility – the idea that poor health and all that accompanies it can lead to a downward spiral – is another proposed route which "may eventually contribute to observed social inequities in health"<sup>20</sup> (pg.32). Since then, the verdict is in that social causation rather than social selection is the main explanation for socio-economic inequities in health.<sup>4</sup>

Importantly, Dahlgren and Whitehead's explanation of the causes of health inequity is based on theorizing two sets of health determinants; the ones that cause inequity called the *determinants of health inequity* and the *social determinants of health of the whole population*,<sup>10</sup> however the differences between the two sets and how they operate is unclear.

Further, positive factors, protective factors and risk factors seem to become uncoupled from the ecological model, and everyday lived experience in practice with individual risk factors assuming priority. Positive and protective factors also appear to coalesce with their subsequent connotation being the opposite of risk factors. All three categories of factors are not transparent in the model, and worse, are un-hinged from their structural counterparts, eclipsing the opportunity to understand these factors and forces and pursue appropriate courses of policy action.



## Contribution of the previous frameworks/models: how well do they ‘explain’ the generation of health inequality/inequity?

Observed differences in health between social groups have long begged the question, *why are some people healthy and others not?*

Of the various frameworks examined, the most salient collective insights include:

- that human life is embedded within a social context;
- that explicit acknowledgement that societal values and processes condition human life for better or worse;
- that one’s place in society, or social position is socially-structured and therefore amenable to policy intervention; and
- that identification of the essential pathways through which life’s circumstances are transformed into health, disease or illness is important.

Specific formulations of psychosocial pathways and mechanisms and theorizing the cumulative effects of exposures, vulnerabilities and consequences over a lifetime have added significantly to understanding the social production of health.

The parsimony of lists is a strength in terms of their easy uptake; however, by themselves do not explain the roles of and relationships between factors, nor how they contribute to generating health inequities in the first place.<sup>7</sup>

Of the examples in Table 1 (see page 10) not previously discussed, *The Solid Facts* provides a series of statements as to how societal conditions are health damaging but does not put forth an explanation of the social production of illness and disease, The Chief Public Health Officer’s Report on the State of Public Health in Canada<sup>59</sup> states that “the structure of society also influences health through the distribution of public goods and resources” (p.35), but does not offer further explanation, and the 2009 Senate Report, notes, “these

inequities result from the external environment and other social and economic conditions that, while largely outside the control of the individuals affected, are amenable to mitigation by the implementation of well-crafted public policy” (p.5).

Alternatively, Raphael’s 2004 book *Canadian Perspectives*<sup>10</sup> communicates, and reviews the major pathways or mechanisms: cultural/behavioural and materialist/structuralist through which social conditions exert their effects, while also recognizing the importance of the life-course perspective. He adds a further pathway called the neo-materialist approach which includes the conditions of living and *social infrastructure* as determinants of health.<sup>10</sup> Here he focuses on how governments distribute resources through various public policies which in turn affect the quality of social determinants in peoples’ everyday lives. Raphael’s strength lies in his ability to link the SDH to welfare state policies and his clarion call to pragmatic policy action.

Another strength, Raphael and colleagues articulate a list of reasons for the social determinants chosen in the *Toronto Charter for a Healthy Canada*<sup>45</sup> which align closely with the determinants of health from the York University Social Determinants of Health across the lifespan conference, also held in 2002. Briefly, the reasons are

*“that the social determinant is consistent with most other formulations in the existing empirical literature, all the social determinants are important to the health of Canadians, and are understandable to Canadians, and last, that the determinants named have clear policy relevance to Canadian decision makers and citizens.”*<sup>10</sup>

In all, Raphael’s work is theoretically informed, empirically supported, pragmatically justifiable and policy



relevant. That it lacks a corresponding visual model is its only shortfall.

Except for Raphael's formulation, by and large none of the frameworks reviewed (Lalonde, Evans and Stoddard, Tarlov, Dahlgren and Whitehead, and Hamilton and Bhatti), provide an adequate, comprehensive and integrated *explanation* of how social inequities in health are generated and perpetuated. Yet, each calls for further research to deepen our understanding of the 'causes of the causes' commensurate with the best available evidence and other pertinent knowledge (e.g. policy development, knowledge of a particular context, etc.) of the precise mechanisms by which determinants of health generate unfair differences in health across social groups.<sup>3,7-10,13,46,47</sup>

Also missing in the previous examples, Solar and Irwin, whose background work informed the WHO Commission on Social Determinants,<sup>3</sup> suggest five requirements for any comprehensive framework or perspective that claims to explain the social causation of health inequities and identify entry points for policy action. In their view, an adequate framework should:

- 1) identify the SDH and the social determinants of health inequities;
- 2) show how major determinants relate to each other;
- 3) clarify the mechanisms by which social determinants generate health inequities;
- 4) provide a framework for evaluating which SDH are the most important to address; and
- 5) map specific levels of intervention and policy entry points for action on SDH (p.15).

Table 2 (see pages 18-21) summarizes the frameworks reviewed according to select key elements required for an adequate explanation of health inequities. While each framework presents strengths and weaknesses, Raphael's (2004), Dahlgren and Whitehead's and Solar and Irwin's explanations are the most satisfactory with respect to these criteria. Including the authors' visual depictions (or models), the Solar and Irwin package is the most complete.

**Table 2 Adequacy of determinants of health “frameworks” for explaining health inequities**

Criteria							
Determinants of Health Frameworks	Definition of health Values	Theory based Power analysis	Explanation type Individual / intermediary Structural / stratifying	Identifies and differentiates between SDH and SDH inequities	Clarifies equity generating social processes and mechanisms (pathways)	Provides a framework for evaluating which determinants are most important to address	Identifies levels of intervention Entry points for policy action
<b>M. Lalonde 1974</b>	Health field concept Values: health is a 'gift'; good health and wellbeing for all Canadians including the essentials of life & enhancement of Quality of Life	Employs an historical approach, however theory not explicit Acknowledges conflicting goals in the health care system; however, there is no analysis of power	Individual (or intermediary) and environmental Intermediary determinants dominate	No	Discussion of social processes is suggestive but not explicit; pathways are not hypothesized	No	Yes (albeit, recognizes the current system as 'sickness care')  Focus is on Federal Gov. role (programs & policies) in creating health including macro re-distributive policies
<b>R. Evans &amp; G. Stoddard 1994</b>	Health as a continuum -a comprehensive view of health; different definitions for different purposes Values: invokes 2 ancient perspectives: God of Medicine and Goddess of Health	Theory not explicit; employs economics and anthropology No analysis of power	Intermediary and structural determinants Greater emphasis on intermediary	Acknowledges some determinants are more powerful than others; e.g. income, status, prestige; discusses relationships between some intermediary and stratifying factors	Discussion of social processes is suggestive but not explicit; mechanisms (pathways) are hypothesized	Identifies significant categories of factors; framework is suggestive although not explicit for assessing which most important	Model describes categories of factors vs. levels  Macro social and economic public policy entry points suggested in particular, universal health care
<b>The Ottawa Charter 1986</b>	A resource for living, a positive concept emphasizing social & personal resources, and physical capacities Values: invokes moral and social values from <i>Alma-Ata Declaration</i> and <i>Health for All</i>	Theory not explicit; No analysis of power	Structural / stratifying	No; determinants are predominantly structural / stratifying	No	No	HPP is a key strategy; identifies levels & policy 'tools'; e.g. legislation, taxation, fiscal measures & org. change  No specific entry points

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<b>Population Health Promotion (PHP) 1996</b>	Health not explicitly defined Identifies principles vs. values per se: e.g. social justice, equity, mutual respect and caring	<b>Power analysis</b> Uses communication theory to explain levels of society, also refers to Evan's & Stoddard's theoretical model Mentions power and status as undesirable characteristics of relationships, however there is no analysis of power	Intermediary and stratifying	No clear differentiation Acknowledges but does not explain interactions between intermediary and structural determinants	No	No	Yes	Identifies levels of intervention and healthy public policy strategy No explicit entry points for policy action
<b>The Solid Facts 2nd ED. 2003</b>	Health not explicitly defined Values: attainment of the highest possible level of health for all people	Theory not explicit although suggests the need to employ sociology, economics, psychology, neurobiology and medicine Mentions 'exclusionary' social processes, however there is no analysis of power	Intermediary and stratifying Intermediary determinants dominate	Differentiates and acknowledges population level factors are more powerful than individual / intermediary level factors Relationships between determinants also acknowledged	Yes, descriptive	No	Yes, in particular universal access to medical care	Levels not explicit Suggests a range of micro, meso & macro healthy public policies
<b>D. Raphael 2004</b>	Health not explicitly defined although states that any construal limited to 'health and illness' only is a narrow definition of health Values are not explicit	Political economy Analysis of power is not explicit, but quotes Virchow "Medicine is a social science and politics is nothing else but medicine on a large scale" (p. 3)	Stratifying	Differentiates between individual / intermediary and structural / stratifying determinants Identifies the relationships between determinants	Yes, explanatory	Yes	"Re-engineered health care (or illness treatment services)" in particular, greater emphasis on primary prevention could make health care a greater influence on health" (p. 308)	Macro public policy interventions proposed

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<b>Chief Public Health Officer's Report 2009</b>	Health not explicitly defined Values: Canadian goal is to be healthy for as long as possible, and public health is a shared responsibility	Theory not explicit; however refers to Dahlgren and Whitehead's ecological model There is no analysis of power	Intermediary and stratifying	Differentiates determinants by putting in order of importance Acknowledges relationships between intermediary and structural determinants	No	No	Yes (access to health care)	Identifies strategies (social investment, community capacity, intersectoral action, knowledge development, leadership) vs. levels of intervention <i>per se</i> Emphasis on program vs. policy entry points
<b>Senate Subcommittee on Population Health 2009</b>	A state of complete physical, mental and social wellbeing' and 'a resource for everyday life' Values: Every Canadian is able to develop, live and contribute to society to his/her fullest potential	No explicit theoretical perspective Acknowledges unequal distribution of health and societal resources, however, there is no explicit analysis of power	Stratifying	Not explicit; however states that 'the socioeconomic environment is the most powerful of the determinants of health'	No	No	A strong system for health and social wellbeing that responds to disparities in health status and offers timely appropriate care	Levels of intervention not explicit; focus on Federal Gov. role; recommends: GOC work with other levels of governmental and non-governmental sector to support the integration of community-level services within a determinant of health framework Recommends health impact assessments (HIA) as one strategy
<b>A. Tarlov 1996</b>	Health is the capacity, relative to potential and aspirations for living fully in the social environment Values are not explicit	Social ecological Mentions uneven distribution of social resources, however there is no analysis of power	Intermediary Emphasis on intermediary (psychosocial)	Substantial fraction of variation in health is explained by 'social characteristics' rather than genetics, medical care and behaviours; acknowledges interactions between determinants	Psychosocial processes and pathways explained; links to equity are implicit	Social ecological and socio-biological narratives mention structural factors; however, the psychosocial perspective overshadows structural factors	Yes	Calls for ameliorative and corrective "level" integrated policies to improve population health Entry points include: education, transportation, communication, job creation, training improved work conditions

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<b>G. Dahlgren and M. Whitehead <i>Leveling Up 2</i> 2007</b>	Health not explicitly defined Values: social justice, social human rights and other core values as in WHO Health for All policy framework	Social-ecological Acknowledges different levels of power (i.e., better off have more power but does not explain why)	Intermediary and stratifying Emphasis on intermediary (psychosocial)	Declares 2 types of determinants: 'the main determinants of social inequities in health', and the 'main determinants of health of the population as a whole', yet further states that distinguishing between the categories of determinants may be difficult at times	Acknowledges role of social context, social position and social stratification as primary social forces involved; differential exposures, vulnerability and consequences	Strong discussion of structural factors, but not how they exert their force on intermediary determinants; therefore unable to assess which determinants are most important	Fair arrangements that allow equal geographic, cultural and economic access to available services for all in equal need of care	Efforts to reduce social inequities in health need to be an integral part of socio-economic development policies (in general) and specific public health programs and policies (in particular)
<b>O. Solar and A. Irwin 2007</b>	Aligns with the social model of health advanced by the <i>Alma-Ata Declaration on Primary Health Care and Health for All</i> Values: health equity, human rights, distribution of power	Social theory and political philosophy; Explicit analysis of power	Intermediary and stratifying Emphasis on stratifying	Yes; differentiates the stratifying determinants of health inequities from intermediary determinants of health	Yes; socioeconomic and political context, social stratification, SEP, differential exposures, vulnerabilities and consequences and material, psychosocial, biological and behavioural pathways	Yes	Yes, the health system is an intermediary determinant of health – author's outline 4 roles (see text)	Yes; social and economic policies aimed at the macro-social conditions (context); and policies aimed at decreasing differential exposure, lessening vulnerability, and/or ameliorating differential consequences

Source: Criteria drawn from Solar and Irwin, Raphael (2010)<sup>58</sup> and Raphael (in press)<sup>64</sup>



## Case study: Solar and Irwin framework

In Hamilton and Bhatti tradition, Solar and Irwin's 2007 Conceptual framework for action on the social determinants of health<sup>22</sup> identifies equity, human rights and the distribution of power as their foundational principles and starting point. Human rights are understood as the right to individual and collective wellbeing. Further they assert "identifying the right to health and its connection to social and economic conditions, including entitlement to a social order in which these rights and freedoms can be realized as enshrined in the UN Declaration of Human Rights, elevates the right to health from motherhood status to legitimate political claims and the domain of law" (p.8).<sup>12,14,19</sup>

Solar and Irwin arrive at new insights into the links between social conditions and health by turning to social theory and political philosophy and in the process pointing out important limits to the relatively simplistic anthropological models developed by theorists such as Evans and Stoddard. In particular, Solar and Irwin drew on the work of Finn Diderichsen and colleagues<sup>48</sup> to explain the social production and patterning of population health. Their key contribution to our understanding of social environments is to clarify and emphasize the difference between the *social factors* that enable or constrain the health of individuals and groups and the *underlying societal processes* that are responsible for the uneven distribution of these factors across population groups<sup>13,22</sup> – and to incorporate this distinction in a model for guiding policy action. The idea that social factors relevant to individual health should not be confused with societal processes that pattern the distribution of health<sup>46,48</sup> was present but underdeveloped in the model proposed by Dahlgren and Whitehead. Solar and Irwin bring the idea to the forefront in a model consisting of three interrelated components, which are:

- 1) the socio-political context;
- 2) the structural determinants of socio-economic position; and
- 3) intermediary determinants of health.

The first two components are closely related and we discuss them together, followed by a discussion of the third component. We present the integrated model last and consider implications for action.

### Components 1 and 2: Socio-economic and political context and the structural determinants of socioeconomic position

Solar and Irwin<sup>22</sup> draw heavily from analyses of power ("arguably the single most important organizing principle in social and political theory (p.16)" to characterize the relationships between individual SDH and between these determinants and the broader socio-economic and political context.<sup>49</sup> According to Solar and Irwin, health inequities flow from social-stratification, the process of sorting people into different social groups according to their access to prized societal values and resources,<sup>12,50,51</sup> and power which is the common thread.<sup>38,52</sup> Put another way, health inequities result from systemic processes that have produced and maintained unequal distributions of valued resources among social groups, and that have helped define these social groups in the first place.<sup>37</sup>

These valued resources are class, status and power. Class is associated with one's *economic* base and access to a range of material goods, in particular income. Status, or social standing, reflects one's *prestige or honor* in the community.<sup>22,53</sup> It is typically associated with family background and social networks, but is also a function of the visibility of one's profession



or of advanced education. Power is the ability to directly manipulate material resources such as money or wealth-generating enterprises and the actions of other people including those who make policy.

The processes that socially stratify individuals are central to understanding Solar and Irwin's concept of socio-economic position (SEP), which is the determinative centre of their framework and a key to their understanding of how health status, in turn, is socially patterned. The process of social stratification that produces groups of individuals who occupy different SEPs operates almost invisibly.<sup>54</sup> "Historical power relations have become so deeply embedded in our institutions over time that they are taken for granted as self-evident and normative" in other words, *real*.<sup>22,46,54</sup>

That the operation of our institutions is an important part of how resources become unequally distributed in society suggests that we are dealing with a systemic phenomenon that is characterized by the embedding of social, economic, and political values in the structures of our society – specifically, in our systems of *governance* (or government approaches) and in the particular economic and social *policies* that sanction our dealings with each other.<sup>13,55</sup> Governance is the way a society organizes itself to make decisions and act on them, and to manage its relations with citizens and the private sector.<sup>22</sup> The mechanisms through which governments accomplish this are macro social, economic (and other) policies, which perform both distributive and re-distributive functions and reflect prevailing minority or majority societal and cultural values. Examples of redistributive policies include labor market training, income support, child tax benefits, and tax protection for education savings. "Public sector policies may buffer or amplify the effects of SEP on health outcomes" (p.32).

### Additional distinctions

In addition to clarifying the difference between social factors and underlying societal processes (e.g. stratification), Solar and Irwin<sup>22</sup> also clarify the difference between *social determinants of health* (which, for a population, are analogous to social factors for an individual) and *social determinants of health inequities*. They describe this latter term by using the idea of

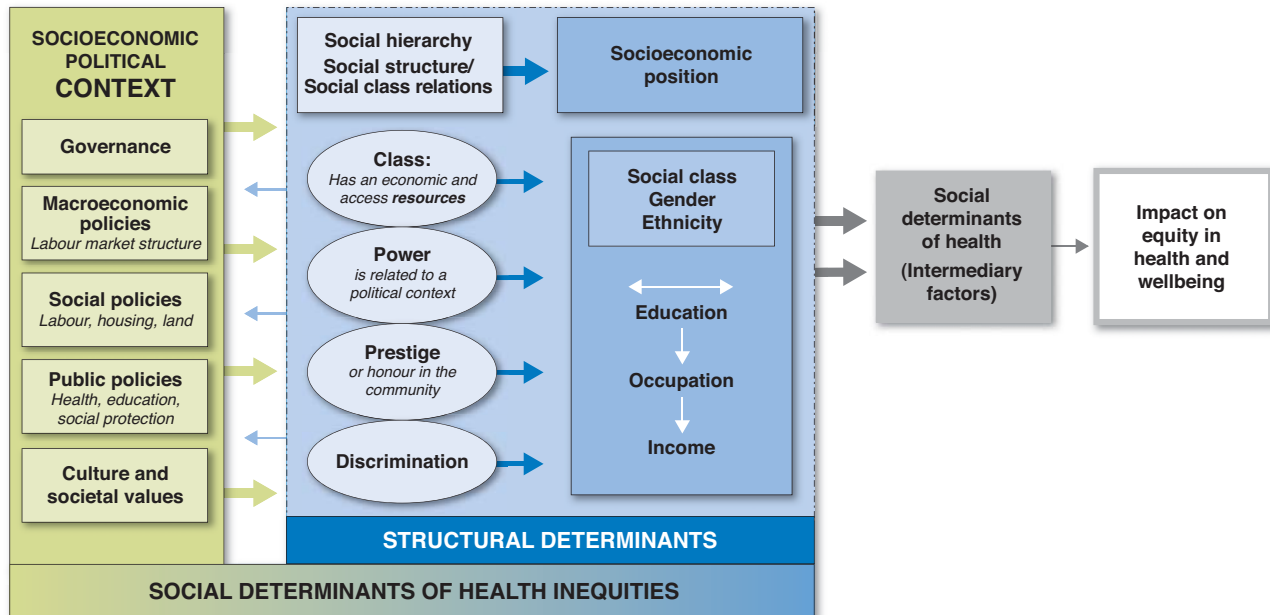
structural determinants. Structural determinants are the components of socio-economic position, and they are the signifiers or building blocks of a socially stratified society. Intermediary determinants of health flow between structural determinants and measurable health outcomes; however it is the structural determinants, along with the socio-political context that determines the sharpness of the edges between social groups, the relative differences between these groups on measures of SEP, and ultimately the extent of health differences between them. Structural determinants in their socio-political contexts constitute the *social determinants of health inequities*. The National Collaborating Centre on Social Determinants (NCCSD) concurs with Solar and Irwin's formulation and recognized that the phrase social determinants of health is inadequate for describing the patterning of society and of the inequitable distribution of health and illness by SEP.<sup>13</sup> This is an important point and challenging in practice. Health promoters wish to encourage awareness and uptake of a social determinants of health approach; yet the term itself can obscure critical elements of the social production of health inequities and appropriate interventions, restricting the possibility of meaningful and effective public health action.

Figure 6 (see page 24) captures how the socio-political context (shown on the left hand side of the diagram) asserts its multi-faceted influence on health and wellbeing (on the far right) via SEP and through the largely institutionalized process of social stratification. Other important stratifying (or structural) determinants are: gender, ethnicity, discrimination and social class in and of itself. The structural determinants, along with the socioeconomic and political context together constitute the social determinants of health inequities.

### Component 3: Intermediary determinants of health

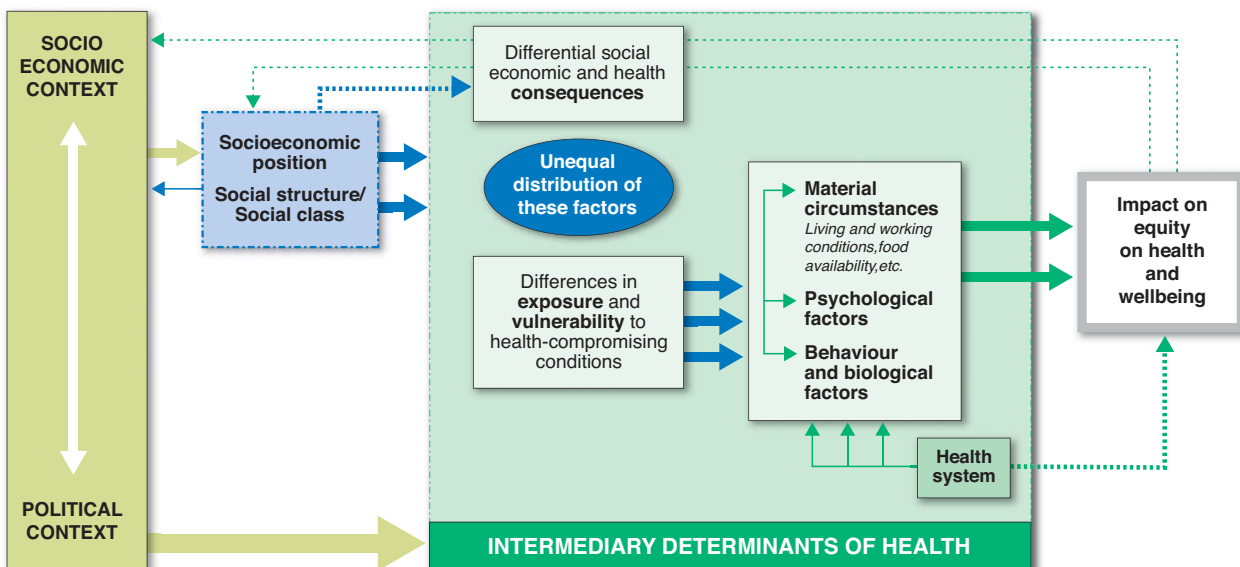
The structural or stratifying determinants of health – those that both produce and are reinforced by socio-economic position (SEP) – are understood in the Solar and Irwin model to have their ultimate effects on health via several types of intermediary determinants: material circumstances; psychosocial factors; and behavioural and biological factors.<sup>10</sup> As Figure 7 (see page 24)

Figure 6 Solar and Irwin model




Source: Solar & Irwin, 2007

Figure 7 Solar and Irwin model



Source: Solar & Irwin, 2007



indicates, material circumstances are basic conditions such as housing and access to food, as well as working conditions. Stress from grievous or traumatic life events, experiences of distress (e.g., personal loss, lack of control, emotional isolation, unemployment or underemployment, recurring frightening situations) is the dominant psychosocial issue. Smoking, physical inactivity, and other behaviours constitute the behavioural intermediary determinants, and the predisposing conditions of genetics, constitute the biological intermediary determinants of health.

Intermediary determinants are also called *non-stratifying determinants* because they mediate or modify the effects of SEP on health but do not create SEP. For example, the neighbourhood in which one lives (a material condition) is an outcome of SEP and independently contributes something to the health risks of those who reside there, but it does not primarily determine one's SEP.

Regarding behavioural and biological factors, Solar and Irwin<sup>22</sup> unequivocally state, “although descriptions of the correlations between lifestyle factors with social status [or SEP] are relatively detailed and well-founded, this should not be taken to indicate that these factors are the most important causes of social inequities in health... other more fundamental factors may cause variation in both lifestyle and health” (p.38). Socio-economic position is the most obvious of these more fundamental factors that have an influence on intermediary determinants and ultimately on health outcomes, but according to Solar and Irwin it is not the only one. The larger socioeconomic and political context, which determines SEP, also exerts a more direct impact on many intermediary determinants of health through its effect on public policies affecting housing, income support, incentives to employment and protection during unemployment, and the availability and affordability of healthcare.<sup>8,9</sup>

The intermediary determinants affect the extent to which SEP impacts health in three linked ways. Based on their relative social positions, individuals and groups experience:

- unequal exposures to health compromising conditions, stressors and risk behaviours;

- differential vulnerability as a result of these unequal exposures; and
- differential social, economic and health consequences as a result of these unequal exposures and vulnerabilities.

The actions and inactions of providers within the health system (again, also construed by Solar and Irwin as an intermediary determinant), as well as the economic consequences associated with prolonged involvement with that system, can reduce or exacerbate the health damaging outcomes of these differential exposures, vulnerabilities and consequences but do not determine them in the sense of providing pre-existing conditions for their occurrence.

Simply put, the main idea behind the causation of health by SEP is that each SEP is associated with a unique average level of exposure (for example, to unemployment and social stressors), vulnerability, and likelihood of successful medical treatment that is different from the other SEPs. These differences among SEPs, along with the more direct impacts of the policy context on health, lead to a social patterning of health outcomes.<sup>7</sup>



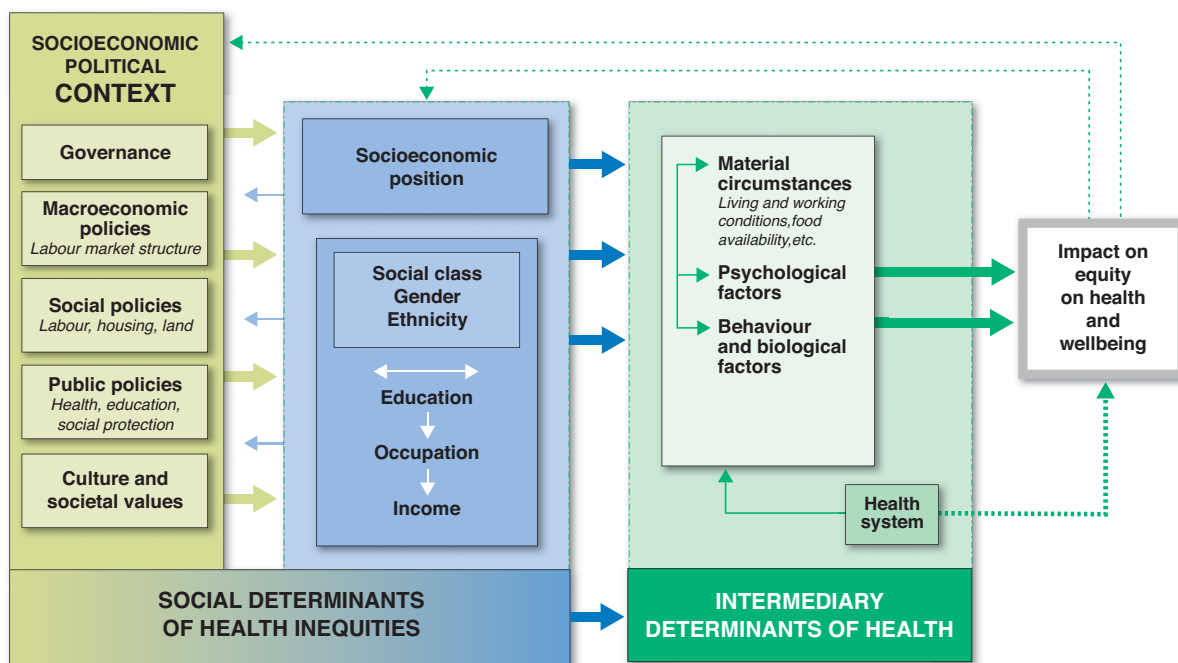
## Summary of Solar and Irwin framework

Figure 8 builds on the previous schematics and illustrates the main pathways by which the determinants of health affect the health and wellbeing of the population. It shows the links between the stratifying and the intermediary determinants of health, and it schematizes the ways that structural determinants in conjunction with the larger socio-political context generate health inequities among groups of people occupying different SEPs.<sup>56</sup>

The Solar and Irwin framework improves upon the frameworks reviewed earlier in this paper in four ways.

1. It represents the social processes, perpetuated in large part by institutions that contribute to the unequal distribution of societal resources and their associated unequal impact on the health of population subgroups.
2. It recognizes the essential role of the socioeconomic and political context in the processes that lead to social stratification.
3. It differentiates structural (stratifying) from non-structural (non-stratifying or intermediary) determinants of health, thereby pointing to processes in society that lie deeper than, and are antecedent to the health-related behaviours often associated with social position. This has the advantage of directing attention to fundamental social structures and processes (the socioeconomic-political context) and seeing them as relevant targets of prevention efforts, and as distinct from the various intermediary determinants. This is important because focusing on intermediary

**Figure 8 Solar and Irwin model**



Source: Solar & Irwin, 2007



determinants alone can improve average health indicators but fail to reduce health inequalities associated with socio-economic position (p.67).

4. By identifying the salient policy domains involved in these processes, the Solar and Irwin framework suggests where targeted policy interventions might make a difference to the stratifying processes that ultimately result in health inequities.



## Implications for action

For Solar and Irwin, any policy approach to reducing health inequalities associated with the stratifying determinants must take account of the social gradient in health itself – how it has been produced, maintained, and exacerbated or softened over time. Along with interventions that target disadvantaged or vulnerable groups and efforts to reduce the health gap between the worst and best off, Solar and Irwin suggest that an approach that deals with the creation and maintenance of the health gradient itself is needed to realize lasting improvements in health equity.

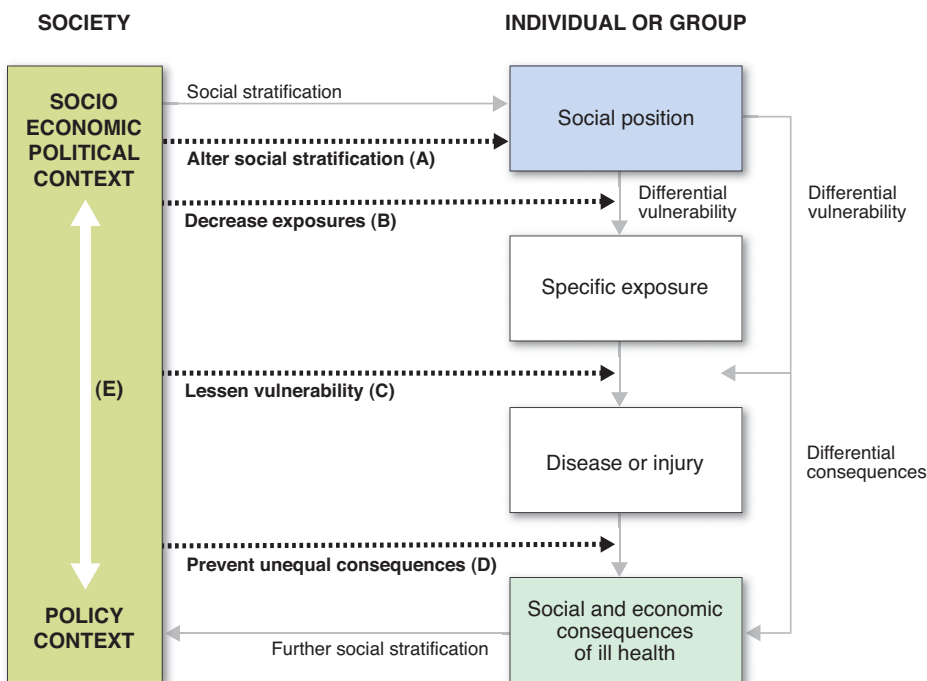
To this end, following Diderichsen, Solar and Irwin identify four possible entry points for healthy public policy

action which are represented by the letters A, B, C, D and E on Figure 9.


### Policies that alter social stratification (letter A)

This entry point acknowledges the underlying social processes that generate social inequalities by sorting people into social groups based on SEP. Therefore, such policies would aim to diminish social inequalities by altering the key stratifying determinants. Examples include public policies that affect the labor market, gender equality, income levels or distribution, and social supports (e.g., welfare and public pensions). Health impact assessments can generate information about the likelihood of different health impacts associated with

**Figure 9 Diderichsen model**



Source: Braveman, 2010



these social and economic policies.<sup>15,22,48</sup> While the health sector has typically not viewed this policy arena as a focus of its work, there is growing recognition that addressing social stratification must be a priority if we are to change inequitable population health outcomes.<sup>3,10,13,22,59,60</sup>

### **Policies for decreasing specific exposures (letter B) and lessening vulnerabilities (letter C)**

These categories represent action on the intermediary determinants of health, where the bulk of policy (and other) public health interventions are currently focused. Policies aimed at this part of the system aim to decrease exposure (letter B) to health damaging conditions and factors (housing, food security, perilous working conditions, etc.) through policies aimed at shoring up public resources and supports in these same areas. They also include policies aimed at reducing vulnerability to disease or to functional limitations associated with exposure. Policies aimed at this part of the system would include those that improve rapid medical response or that support shelters and emergency social services. They do not change SEP. One of the criticisms of public policy and/or other health sector interventions that aim to address the differences in exposure and vulnerability between groups defined by SEP is that they usually focus on a single intermediary determinant and less on how the various intermediary determinants relate, and practically never on the sociopolitical source of most of these intermediary determinants.

### **Reducing the unequal consequences of illness and disease (letter D)**

Improving access to health care and rehabilitation services is a common response of the health system when the more severe consequences of illness and disease for socially disadvantaged populations become apparent. A structural level counterpart for reducing differences in health outcomes would be equitable health system financing. And a strong social safety net is essential to prevent socially disadvantaged populations from further socio-economic decline when serious illness is experienced.

### **Address macro social and economic conditions or context (letter E)**

Closely related to the first type of policy interventions that take aim at the processes that stratify populations into socioeconomic groups is the opportunity to strengthen existing social policies and develop and/or advocate for additional redistributive public policies that build strong communities and foster civic engagement and connection with others.

Regardless of the entry point, however, policies must be mutually compatible and positively reinforcing, which means that a careful analysis of context is imperative. The forces and factors that stratify people operate as a result of local, regional, provincial, national and international policy environments. There is no one-size-fits-all policy solution.

Harkening back to Hamilton and Bhatti,<sup>40</sup> the “PHP model illustrates how many levers for influencing health lie outside the health sector.” Solar and Irwin too advocate for an intersectoral approach to policy action on the SDH, also referred to as a *whole of government approach*.<sup>19</sup> Given the complexities involved in addressing health inequities, health sector organizations will need to adopt a number of roles ... and will increasingly be required to assume an *influencing* role,<sup>32,54</sup> working with other sectors whose programs and policies have an impact on people’s health<sup>40</sup> (p.6). In this respect, efforts to reduce social inequities in health need to be seen as an integral part of socio-economic development policies in general and specific public health programs and policies in particular (p.4).<sup>46,61</sup> The Solar and Irwin framework might be called an all-cause framework in that it addresses the full range of factors and forces that explain why some people are healthy and others not, and more comprehensively and thoroughly than the other frameworks examined in this paper.



## Conclusion

We have discussed how the use of the terms *social environments* and *social determinants of health* have co-evolved in the academic and grey literature and within certain institutions, and reviewed several well known frameworks for understanding how health is produced and which have been suggested as guides to policy advocacy work.

Reviewing the development of the term, we agree with Raphael and others that the concept of social environment is too abstract and imprecise to be useful to guide population and public health action. It also fails to adequately capture people's concrete everyday experiences, and lacks a structural perspective or analysis making it irrelevant for guiding policy action. The concept of social determinants of health, too, may be only slightly better than the term SE for communicating about the distribution of population health, but confuses and masks more than it reveals, despite its inherent structural perspective.<sup>46</sup>

Yet, when invoking the concept of SDH, it is critical to distinguish between the social causes of health and the social processes that shape the unequal distribution of these determinants.<sup>46</sup> Lumping these two phenomena under the single label 'social determinants of health' obscures the specificity required to understand and tackle health inequities at their roots. Moreover, failure to do so, perpetuates the assumption that inequities in health can be prevented by policies that focus on the (intermediary) social determinants of health.

These are complex terms to grasp and yet they must become embedded in population and public health discourse and action if we are to make effective and sustainable headway on reducing health inequities. We know enough to act,<sup>18,53</sup> although there will always be uncertainty. Policies are rarely evaluated for their health impacts, there is lag time between their implementation and impact, and unintended consequences do occur. However, this is no reason not to proceed. Dahlgren and Whitehead's supposition "that equity oriented policies

cannot be developed due to lack of health data linked to social position can and should always be rejected" (p.19).

Drawing on the findings from this review of the social environments literature, we recommend that Healthy Public Policy and others in Population and Public Health apply the Solar and Irwin framework, when thinking, planning and taking action on social environments. Developed for the World Health Organization's global health promotion community, the overall analytic framework should also be valid for our work and has been implemented in other contexts.<sup>8,56,62</sup> Adopting the Solar and Irwin framework will help to:

- ensure that a consistent, theoretically robust, evidence-informed framework is applied within AHS when seeking to identify where there are policy gaps to reduce health inequities;
- contribute to a standardized vocabulary when discussing population and public health issues and activities that differentiate between structural and intermediary determinants of health, reducing misinterpretation and confusion;
- bring the stratifying and intermediate determinants together – rather than dichotomize them – showing how they are inter-related, and their relative importance in generating and tackling health inequities;<sup>63</sup>
- identify where program areas, projects, policies and other interventions are 'located' with respect to tackling health inequalities and inequities;
- assist in identifying policy gaps in Healthy Public Policy action related to social environments;
- contribute to direction-setting for decisions on appropriate courses of action; and
- identify a role for Healthy Public Policy interventions and specific entry points for policy advocacy interventions for social change.

In so doing, the key performance areas of the Social and Physical Environments priority actions located in the HPDIP Action Plan will be certain to include action on the *determinants of health* inequalities and inequities.



## Appendix: Literature search and selection process

### Literature Search Strategy

Literature searches were conducted using major databases such as: PubMed/MEDLINE, CINAHL, SocIndex, and others. National library catalogues were also searched. The grey literature was searched using the Google internet search engine and browsing key organization websites relevant to the topic. Searches were limited to English language and predominately the last 10 years of publication. Whenever possible, we focused on retrieving systematic reviews, meta-analyses, literature reviews, summaries or synthesis reports.

#### Search strategy terms

##### Search Terms

■ social environment(s) [MeSH]

AND

■ population OR public health

AND

##### Keywords to identify useful publications

- social determinants of health
- determinants of health
- disparity
- inequality
- inequity
- justice
- policy
- health behavior
- health outcome(s)
- health promotion
- chronic disease

### Databases Searched

- PubMed/Medline
- CINAHL (EBSCO)
- Medline (Ovid)
- Web of Science
- SocIndex
- Social Sciences Fulltext
- International Political Science Abstracts
- Health Evidence.ca
- Knowledge Utilization (KUUC) – Laval University
- Google
- Google Scholar

### Websites Searched

#### Canada

##### ■ **Government**

British Columbia – Interior Health Region  
 Health Canada  
 Ontario – Peel Health Region  
 Ontario Agency for Health Protection and Promotion  
 Ontario – Sudbury & District Health Unit  
 Government of Canada  
 National Collaborating Centre for Social Determinants of Health  
 Public Health Agency of Canada  
 Statistics Canada

##### ■ **Non-government & non-profit**

Caledon Institute of Social Policy  
 Canadian Centre for Policy Alternatives  
 C.D. Howe Institute  
 Health in Action (Alberta)  
 Ontario Chronic Disease Prevention Alliance  
 Ontario Inclusion Learning Network  
 Ontario Prevention Clearinghouse  
 Social Planning Council (Edmonton)



### ■ **Professional organizations/associations**

Alberta Public Health Association  
Canadian Nurses Association  
Canadian Public Health Association  
National Association of County and City Health Officials

### ■ **Research**

Atlantic Networks for Prevention Research  
Canadian Health Services Research Foundation  
(CHSRF)  
Canadian Policy Research Network (CPRN)  
Canadian Institute for Health Information/  
Institute for Population and Public Health  
Canadian Institute for Health Research  
University of Alberta, School of Public Health

### **Other Websites**

#### ■ **United States**

Centers for Disease Control (CDC) Atlanta  
Policy Link  
Prevention Institute  
Robert Wood Johnson Foundation  
Urban Institute


#### ■ **International**

European Commission (Health Branch)  
International City/County Management Association  
National Health Service, United Kingdom  
Pan American Health Organization (PAHO)  
World Health Organization (WHO)



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