



National Collaborating Centre  
for Determinants of Health

Centre de collaboration nationale  
des déterminants de la santé

**DISCUSSION  
PAPER**

# **ECONOMIC ARGUMENTS FOR SHIFTING HEALTH DOLLARS UPSTREAM**



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## About the National Collaborating Centre for Determinants of Health

The National Collaborating Centre for Determinants of Health is one of six National Collaborating Centres (NCCs) for public health in Canada. Established in 2005 and funded by the Public Health Agency of Canada, the NCCs produce information to help public health professionals improve their response to public health threats, chronic disease and injury, infectious diseases, and health inequities.

The NCCDH focuses on the social and economic factors that influence the health of Canadians and applying knowledge to influence interrelated determinants and advance health equity through public health practice, policies and programs. Find out more at [www.nccdh.ca](http://www.nccdh.ca). The other centres address aboriginal health, environmental health, healthy public policy, infectious disease, and methods and tools. Find out more about all NCCs at [www.nccph.ca/en/home.aspx](http://www.nccph.ca/en/home.aspx).

# 1

## Key messages

- Renewed pressure to re-think how health dollars are spent is fueled by our technical medical advances, an aging population, rising incidence of chronic disease, an economically squeezed millennial generation, a skyrocketing wealth gap, and slowing global economies.
- There is irrefutable evidence that people living in disadvantaged circumstances are, on average, less healthy. Recent evidence suggests that growing poverty, exclusion and substandard housing are reflected in increasing mortality and morbidity rates, as well as increased healthcare costs.
- The evidence suggests that the healthcare sector can achieve better health outcomes for less money by spending more of its dollars on work that builds healthier communities, social supports and environments —these are upstream and equity investments.
- If the healthcare system is to help improve the health of all Canadians—and particularly those living with disadvantages—while at the same time containing costs, it must spend more of its resources on upstream actions, and less on patient-centred treatment of illness.
- There is growing awareness of the need for research connecting system interventions to improve social and economic conditions with costs/savings for the health system.
- In under-researched areas such as this one, requiring economic analysis as a pre-condition for taking upstream action may not be helpful. Our first obligation is to act, based on our current understanding of the evidence, and to generate more solid evidence in the process.

## 2 The purpose of this resource

See Appendix 1 for a glossary of terms

Health spending is a concern for many Canadians, and with good reason. Compared to most of its peer nations, Canada spends more on health and has less healthy citizens.<sup>1,2</sup> Canada is one of the top four, per capita healthcare spenders among 17 peer nations, and among the bottom four nations for three key measures of health status.<sup>3</sup> Meanwhile, close to 17% of our population is 65 or older, with predictions that this will grow to 20% by 2024.<sup>4</sup> Given that per capita healthcare spending generally increases with age,<sup>5</sup> managers of health budgets are wondering how we're going to fund this "grey tsunami." Adding to the tension is the growing gap between the least and most healthy, fueled by a growing income and wealth gap. For the health sector, these trends (among others) suggest we need to re-think how money is distributed between treatment and health promotion/prevention.

**"There are a few old adages that we should apply to health budgeting decisions: A stitch in time saves nine. An ounce of prevention is worth a pound of cure. Let's not be penny-wise and pound foolish. Our goal should be to prevent the preventable and save healthcare costs because we are improving health."**

Armine Yalnizyan, senior economist,  
Canadian Centre for Policy Alternatives

The question at the center of our knowledge assessment was:

*Would dividing healthcare dollars up differently —with more money going to improve people's living conditions and less to acute care — help us achieve better health outcomes for **all** Canadians. And could this be done without growing health costs?*

Healthcare decision-makers everywhere are looking for ways to improve health without growing our healthcare budgets. In this discussion paper, we argue that if the healthcare system is to improve the health of all Canadians—and particularly those living with disadvantages—while at the same time containing costs, it must spend more of its resources on upstream actions, and focus less exclusively on the treatment of illness.

In our 2014 publication, *Let's Talk: Moving Upstream*,<sup>6</sup> we define upstream interventions as seeking "to reform the fundamental social and economic structures that distribute wealth, power, opportunities, and decision-making."<sup>6(p.3)</sup> We argue that the health sector, and public health staff in particular, can contribute to an upstream shift by challenging assumptions about the causes of health and illness, and by contributing to work in other sectors that is focused on changing the policies that contribute to the social gradient in health. Public health is contributing to these shifts already through intersectoral collaborations, healthy communities work,<sup>7</sup> collective impact and poverty reduction initiatives,<sup>8</sup> and advocacy by public health associations.<sup>9</sup>

a Life expectancy, infant mortality and potential years of life lost

In this discussion paper, we present evidence supporting the position that greater investment in upstream action from within the health sector is both socially just and economically sound. Specifically, the evidence base suggests that the healthcare sector can achieve better health outcomes for less money by spending more of its dollars on public health and primary care work that builds healthier communities, social supports, and environments: what we call both upstream and equity work.

Historically, and currently, public health has been working with other sectors to improve the quality of people's living conditions, including: access to education, income, healthy food, inclusive environments, and other health-engendering conditions. Leaders interviewed for our 2014 environmental scan<sup>10</sup> said public health staff need guidance in building and using economic arguments to support their advocacy for upstream work, and recommended we stimulate discussion about economic arguments and the ethical concerns that surround them. In addition, a collaboration among Canada's top public health-related think tanks noted at a 2012 gathering that research and action on this investment dilemma is a top priority.<sup>11</sup> Among this group's recommendations was a call for researchers to produce user-friendly information showing the link between population and public health interventions and reduced demand on the healthcare system. We hope this publication serves to fill part of this resource gap.

It is widely known that the health sector alone cannot make the changes needed for people to live healthier lives; we need action and policy changes in transportation, education, housing, environment,

and social services, to name a few. However, for this discussion paper, we have focused on the financial savings and improved population health that could be realized by acting on the social determinants of health from *within existing healthcare budgets*. We chose to prepare an introductory paper focused on economic arguments for rethinking how health dollars are spent for two reasons: 1) our primary audience - public health - works within the health sector, and 2) the health sector can contribute significantly to an upstream shift in whole government and Canadian thinking about health.

Of course, economic savings are not the only justification for striving for greater health and equity. For many of us, these are social goals we should work towards, even if their cost to the public is significant. However, given the current retraction in social spending and a growing concern for escalating health spending, now is an excellent time to look at the evidence for shifting, rather than increasing, health dollars.

We hope this document will help you:

- become familiar with some of the economic evidence that supports the call for moving upstream within budgetary envelopes dedicated to health.
- begin to interpret or repurpose economic analyses that link upstream investment with greater health and health equity.
- begin to build a case that a shift in resources to address the causes of illness could rather stabilize or reduce illness care expenditures.
- participate in resource allocation dialogues, both within and outside the health sector.

### 3 An overview of our health system spending

In 2014, Canada spent 11% of its Gross Domestic Product (GDP) on the healthcare system, a percentage that remained stable over the past five years,<sup>12</sup> but that has climbed from 7% in 1975.<sup>13</sup>

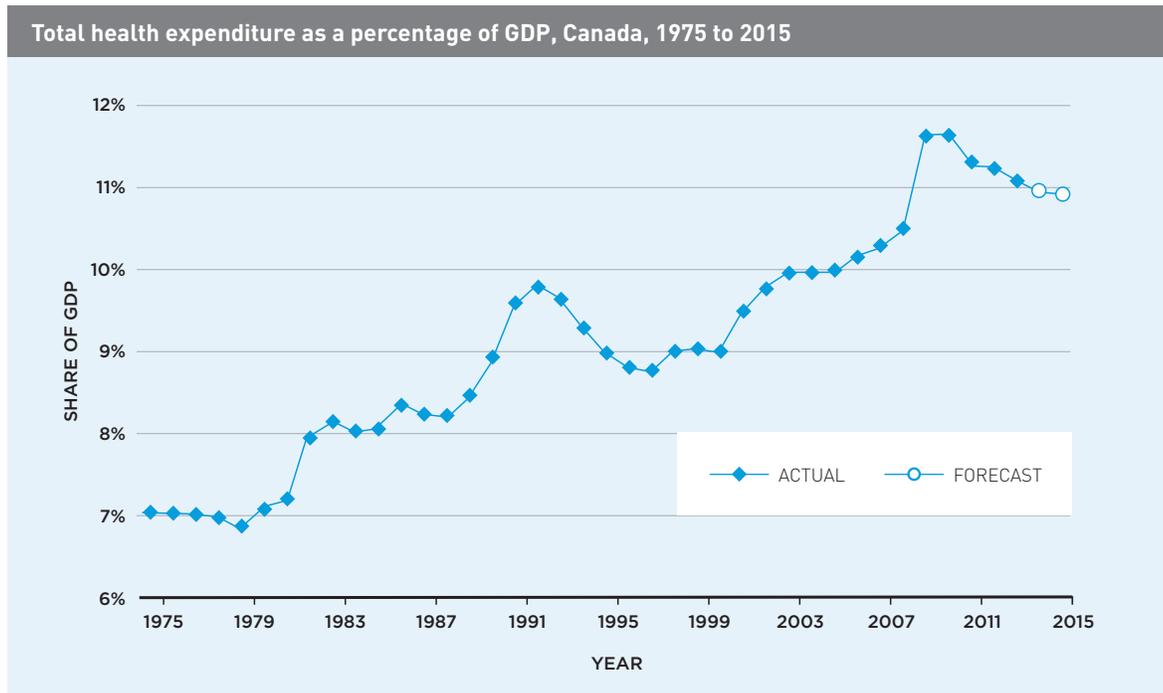


Figure 1. Total health expenditure as a percentage of GDP, Canada, 1975-2015<sup>14</sup> (p. 7)

As a percentage of total provincial/territorial spending, where the responsibility for healthcare rests (with the exception of First Nations and Inuit health), health budgets average 38% of total government expenditures, and is climbing.<sup>14</sup> Federal government projections through 2023 estimate that

provincial and territorial health spending will grow by 5 to 7% annually.<sup>15</sup> Economists David Dodge and Richard Dion estimate that by 2030, healthcare expenditures will consume 80% of provincial budgets, if current trends and practices continue.<sup>13</sup>

Canadians (in both public and private sectors) consume over \$219 billion a year in healthcare dollars, dollars that are skewed heavily towards acute or illness care.<sup>14</sup> According to the Canadian Institute for Health Information (CIHI), more than 60% of our healthcare budget goes to hospitals (29.5%), drugs (15.7%) and physician services (15.5%), respectively.

These diseases and conditions are service-intensive and closely linked to both the social determinants of health (e.g., housing, income, work conditions, food, etc.) and inequities in health. In other words, there is a socioeconomic gradient present in their related health care costs,<sup>17</sup> and the frequency of such conditions increases as you move down the social gradient. In its most recent (2015) report on health inequalities,<sup>18</sup> CIHI noted that Canada, along with other OECD countries, is experiencing little or no reduction in health inequities.

Public health is the division of our healthcare system that works to prevent illness and increase health across populations. Public health receives, as a national average, 5% of health spending (CIHI national health expenditure data tables).<sup>19</sup> The bulk of this money is spent on infectious disease control, chronic disease prevention, vaccination programs, and lifestyle/behaviour modification. Only a small percentage of public health funds go to health equity work: work focused on improving the social and economic conditions that make everyone sick, and that affect the health of Canadians in lower social and economic positions more.<sup>11,20</sup> Public health does this in partnership with people in other government sectors and in the community.

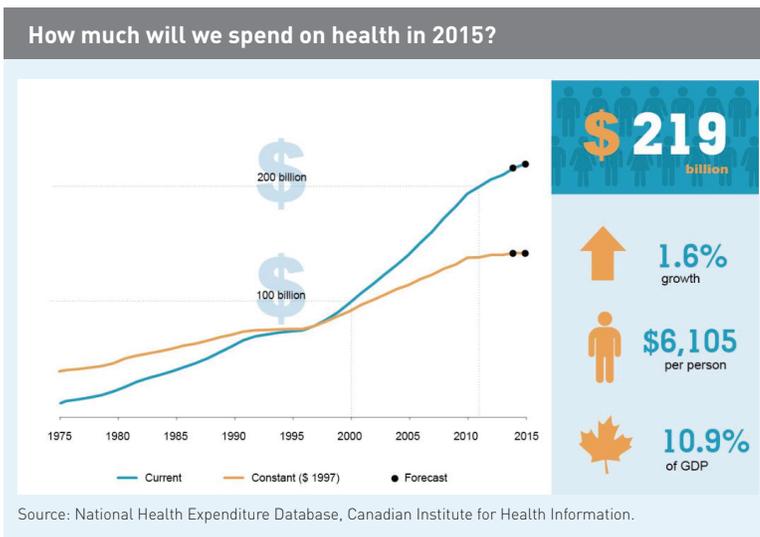


Figure 2. How much will we spend on health in 2015?<sup>14</sup> (p. 6)

More specifically, the vast majority of healthcare dollars go towards the treatment of cardiovascular disease, neuro-psychiatric conditions, digestive and musculoskeletal diseases, and injuries.<sup>16</sup>

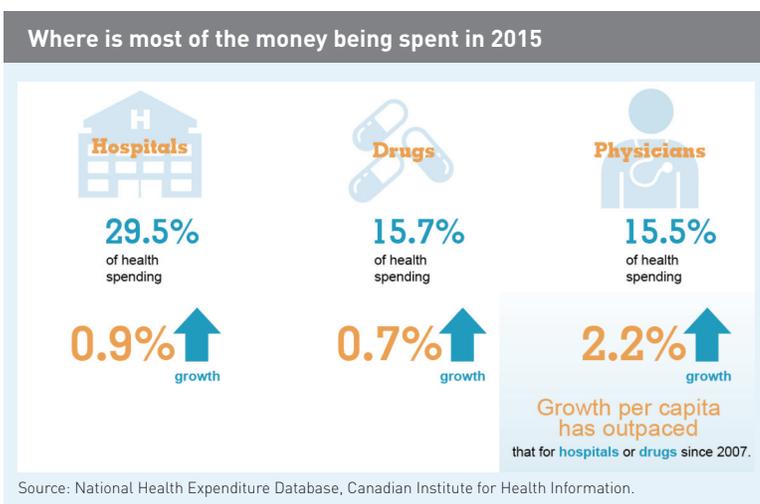


Figure 3. Where is most of the money being spent in 2015?<sup>14</sup> (p. 13)

**“It is time to view population and public health as an economic asset.”**

Nancy Edwards, CIHR-IPPH<sup>11</sup>

## 4 Drivers for a renewed call for upstream investment within health budgets

Over the past 30 years, many interveners have argued that investing in housing, food, education, built spaces and the environment make economic sense because they support health, and healthy people make fewer demands on the system. The “pay now, save later” argument has been made for decades.

In 2013, The Canadian Public Health Association renewed the call, arguing:

*“Investments ‘upstream,’ in population health-based services, programs and interventions that focus on disease prevention, health promotion and health protection, will result in decreased demand for and the utilization of “downstream” acute care health facility-based services.”<sup>20</sup>*

The renewal in calls for a shift in resource allocation within the health envelope is spurred by a number of persistent demographic and socio-economic trends:

- **the ascendancy of a high tech, biomedical health model**, particularly as it applies to end of life care, that is driving up acute care costs;
- **an aging population** that does not cover its healthcare costs through tax recovery, resulting in money being drawn from other social services. Paul Kershaw has argued that, since 1976, Canadian governments have increased annual medical spending on those 65 and older by 1.89% of GDP, but because general revenues have not increased in step, less money has been available for social programs that create health-promoting living conditions;<sup>21</sup>

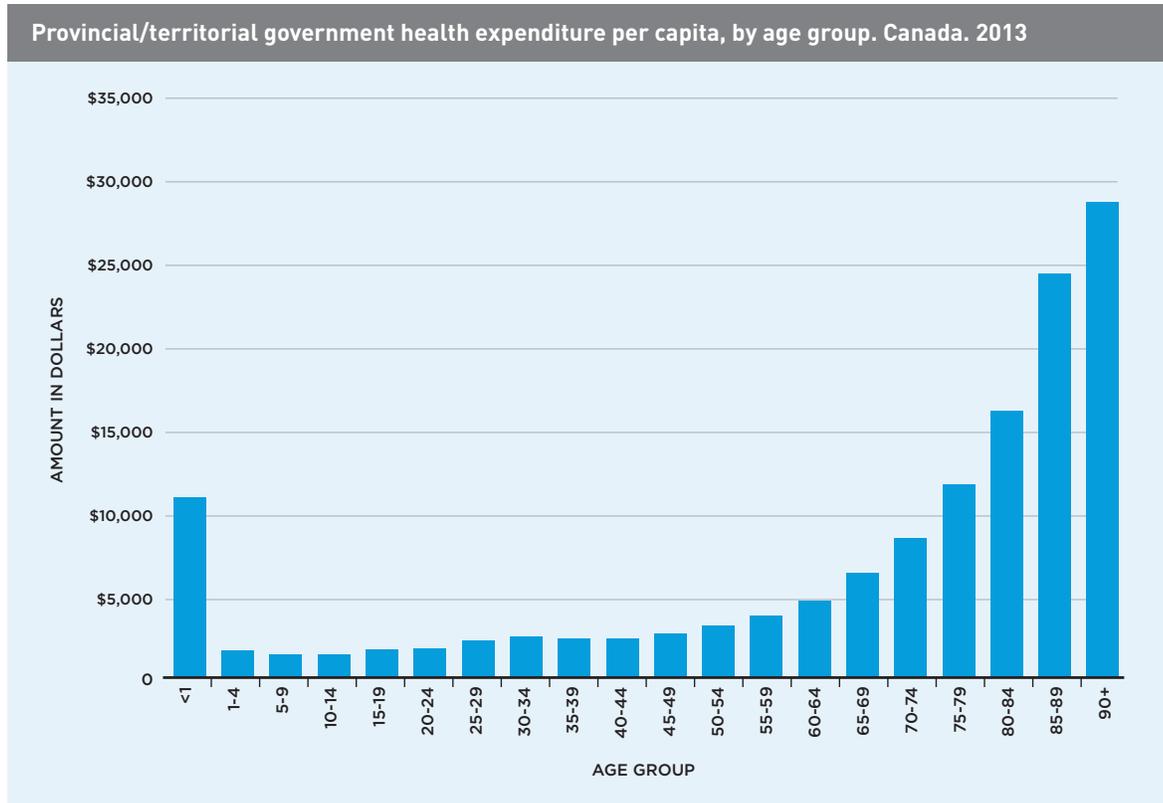


Figure 4. Provincial/territorial government health expenditure per capita, by age group. Canada, 2013<sup>14</sup> (p. 19)

- **an increase in the prevalence of chronic disease** and multiple chronic disease conditions, the incidences of which increase with age;<sup>22</sup>
- **an economically squeezed millennial generation**<sup>23</sup> which is being called upon to support the cost of age 65+ healthcare, and which is already burdened with lower wages, higher housing costs, greater student debt, and a lack of affordable child care. Smith, Mitton, and Kershaw argue that current health spending policies “risk compromising intergenerational equity by prioritizing inefficient illness treatment for an aging population at the expense of promoting well-being for their children and grandchildren;”<sup>24(p. 3)</sup>
- **a skyrocketing wealth gap.** In the 1920’s, 17% of income growth went to the top 1% of the Canadian population; from 1997-2007, 32% of income growth went to the top 1%.<sup>25</sup> Canadians age 75 and older are less than 7% of the population, and control more than a third of all financial assets in the country, not including their homes; and
- **slowing economies, around the world, combined with pressure for government austerity measures.** The social investments that help keep people healthy are vulnerable to cuts in the face of a decline in tax revenues and political pressures to reduce government debt.<sup>26</sup>

These statistics point to important moral and ethical discussions we must learn to have, both privately and publicly. They also point to the need to redirect money from high cost medical interventions to initiatives that create healthy conditions for everyone, and in particular, for people experiencing disadvantages.

# 5

## A synthesis of key economic arguments for shifting healthcare dollars upstream

See Appendix 2 for further discussion and description of economic analysis methods

Economists use a set of tools or methods to answer questions about the costs and/or benefits of a particular course of action, i.e., who pays and who benefits. These arguments play an increasing role in healthcare's evidence-based, decision-making standards. That said, there is very little economic analysis linking the costs and savings of population health interventions, or improving the conditions of people's lives, more generally.

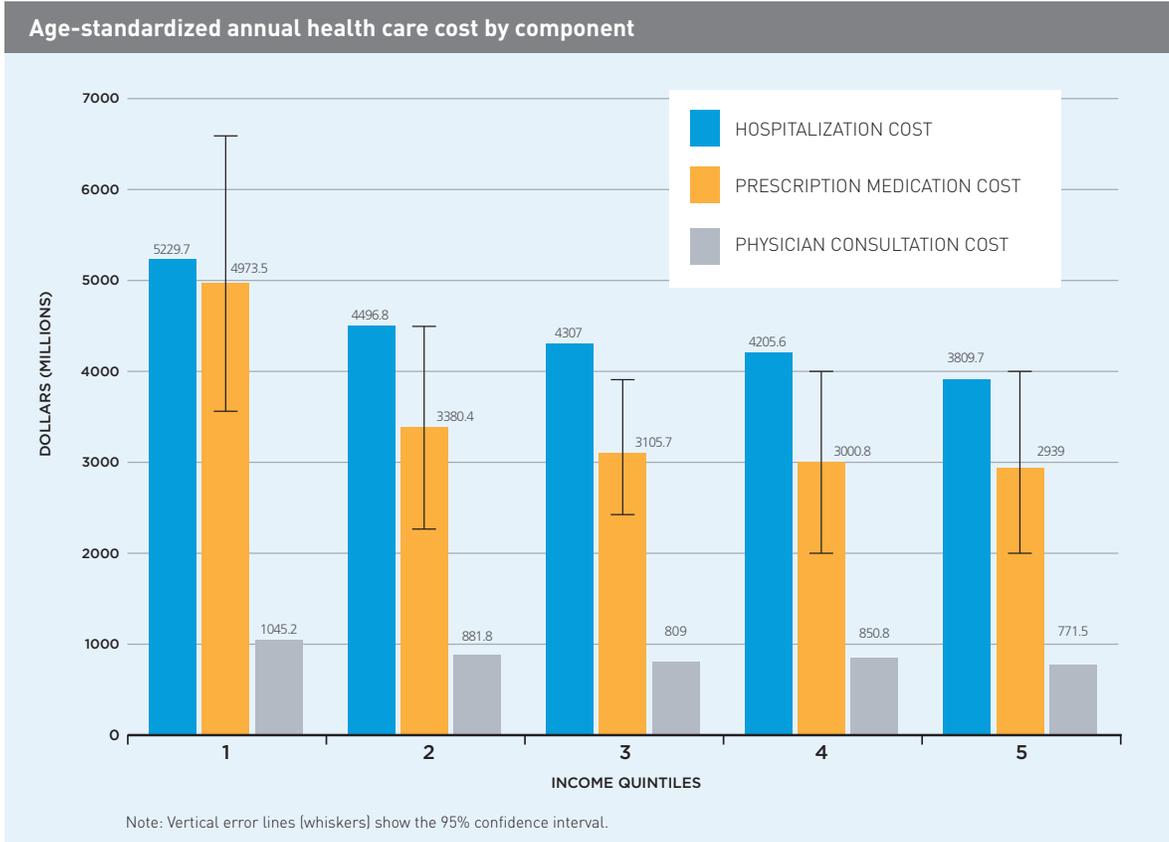
It is also important to note that economic evaluations are value laden; the questions that inspire them, the process of conducting them, the aspect of the issue selected, and the comparisons selected, all result from choices (see Section 6 for more discussion of this tension). The National Collaborating Centre for Healthy Public Policy (NCCCHPP) encourages academics and practitioner-researchers in public health to scrutinize their economic evaluation questions by asking: what is valued, how is it valued, who is asked, and what circumstances are considered?<sup>52</sup>

In the following section, we present some economic arguments organized around three themes: the impact of poverty and income inequality; high cost users of illness care; and other social determinants of health. All of these arguments demonstrate that inequality contributes significantly to health care costs, and that reducing social and economic inequalities would save health dollars.

### A. Focus on the impact of poverty and income inequality

There is irrefutable evidence that people living in disadvantaged circumstances are, on average, less healthy. Evidence suggests that growing poverty, exclusion and substandard housing are reflected in higher mortality and morbidity rates, and increased healthcare costs.<sup>27</sup>

- In 2004, the Public Health Agency of Canada (PHAC) Health Disparities Task Group stated that people in the lowest 20% of household incomes in Canada accounted for approximately 31% of health dollars spent, which was double the cost for the highest-income quintile.<sup>28</sup> The Group used modelling techniques to show that if the health status and service use patterns of the lower-income groups equaled those with middle incomes, significant healthcare savings could be possible. This research was highlighted by the World Health Organization (WHO) in its foundational report, *Closing the Gap in a Generation*.<sup>29</sup>



**Figure 5.** Age-standardized annual health care cost by component (SES quintiles)<sup>17</sup> (p. 18)

- A 2016 PHAC publication<sup>17</sup> estimated that 50% of the \$200 billion spent on healthcare annually is associated with the 20% of Canadians with the lowest income. Costs for hospitalization and general practitioner consultations are not only highest for the lowest income group; they are also higher in the middle of the income distribution compared to the most affluent 20% of the population.
- The Ontario Association of Food Banks estimated that poverty-induced healthcare in Ontario costs an estimated \$2.9 billion a year, and \$7.6 billion per year for all of Canada.<sup>30</sup>
- A 2014 economic study<sup>31</sup> by the Scottish Public Health Observatory modelled the impact of a range of interventions on health and health inequities. The researchers found that regulatory and tax options that affect income were the most effective (and likely cost-effective) interventions for reducing health inequities.
- In 2011, the outcomes of a guaranteed annual income (GAI) field experiment in Dauphin, Manitoba from the 1970s was revisited.<sup>32</sup> The results of the study indicated the potential for a relatively modest GAI to provide economic stability, improve overall population health, and offer cost savings to the healthcare system.

## B. Focus on high-cost users of illness care

Research indicates that because low-income populations experience poorer health, they use the acute care system more frequently, and at greater cost, than those in advantaged circumstances.<sup>33</sup> Research in this area refers to these populations as high-cost users (HCU).<sup>34</sup>

- A team of Saskatoon researchers<sup>35</sup> found that low-income residents were 27-33% more likely to be hospitalized, and 36-45% more likely to receive medication compared to higher income groups. In other words, low-income residents in Saskatchewan consumed \$179 million more in healthcare costs than middle/high income residents. The researchers pointed out that increased healthcare use by low income residents was mainly due to higher prevalence of disease rather than a difference in use behaviour.

- The Canadian Public Health Association (CPHA) argued that the use of acute care facilities would decrease if we invest more in disease prevention, health promotion and protection.<sup>20</sup>
- The Manitoba Centre for Health Policy estimated that 15% of hospital and physician costs could be eliminated if the whole population experienced the level of health that the most affluent 20% of Winnipeggers do.<sup>36</sup>
- In 2009, a PHAC report<sup>37</sup> identified health inequalities as health system cost drivers because those living in disadvantage have poorer health, and therefore need more illness care services. The report argued that greater investments in living conditions would reduce the “substantial social, economic, and political costs [of inequities]” and would benefit the “overall health for individuals, communities and society.”<sup>37 [p.24]</sup>

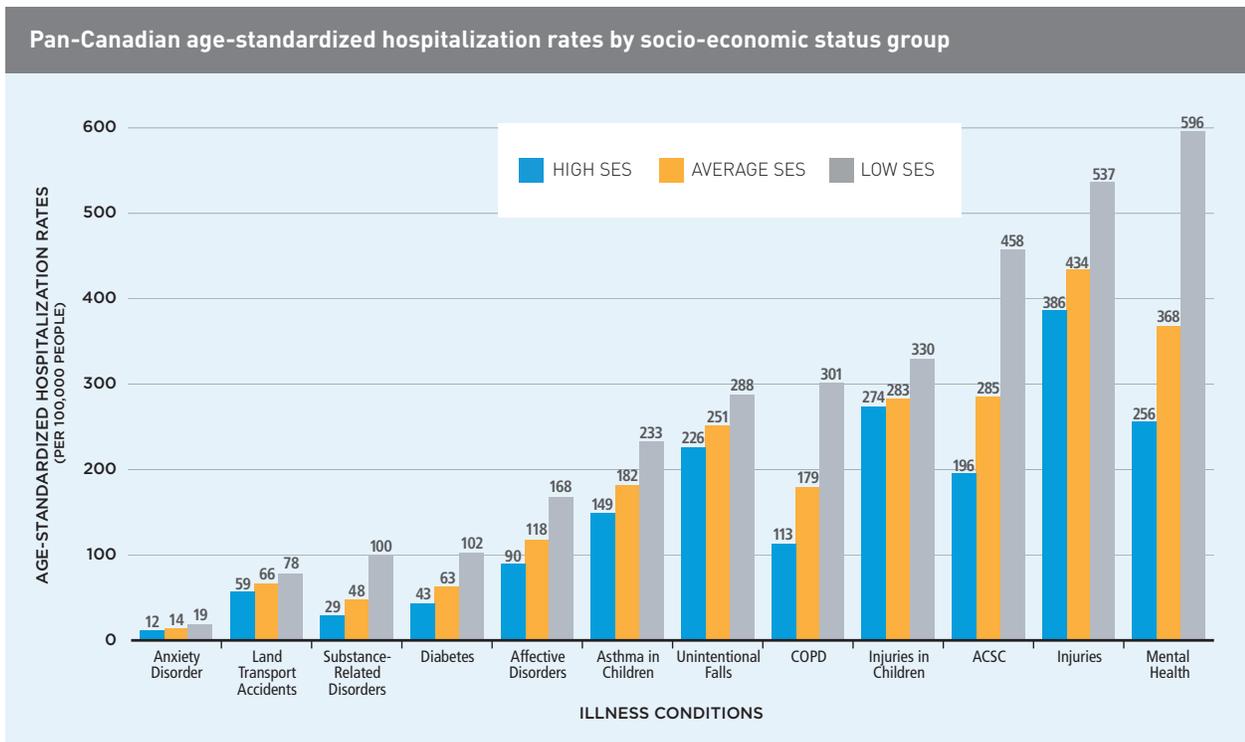
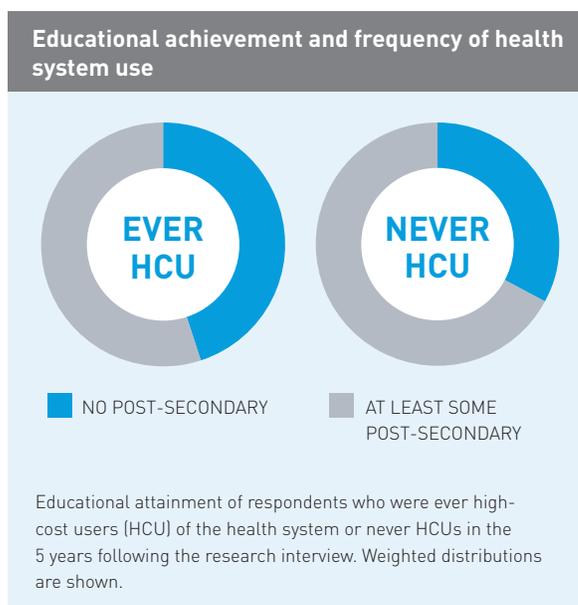


Figure 6. Pan-Canadian age-standardized hospitalization rates by SES group<sup>72 [p. 29]</sup>

### C. Focus on other social determinants of health

The following studies looked at the economic impact of a particular social determinant (other than poverty and income inequality), or at social determinants as a whole.

- In 2015, Fitzpatrick et al. identified food insecurity and substandard housing as the top social determinant correlates with HCUs of our healthcare system.<sup>34</sup> This connection is discussed further in Section 6 of this document.
- A 2008 Canadian Senate sub-committee estimated that 50% of health outcomes can be attributed to social determinants of health.<sup>38</sup>



**Figure 7.** Educational achievement and frequency of health system use<sup>34</sup> (p.166)

- In its 2010 report on the burden of chronic disease in British Columbia,<sup>22</sup> the Office of the Provincial Health Officer stated that “inequalities in the distribution of the social determinants of health are undermining Canadian society as a whole. However, they can be addressed through investments in affordable housing, early childhood development, equal access to higher education, improved literacy, and work place initiatives including onsite childcare and good maternity and paternity benefits, that promote more equality of opportunity and less societal disadvantage.”<sup>22</sup> (p. 36)
- In the United States, diabetes occurs among adults without a high school diploma at twice the rate observed among college graduates.<sup>27</sup>
- A 2012 study by Catholic Health Australia<sup>39</sup> concluded that, if the recommendations of the WHO *Closing the Gap* report were implemented in Australia, half a million Australians could be freed from chronic illness each year.<sup>b</sup> The authors wrote that “Irrespective of whether an income, education or social exclusion lens is taken, closing the gap in health status potentially could lead to \$2-3 billion in savings per year in Government expenditure, and in the order of \$3-4 billion per year if the prevalence of chronic illness in most disadvantaged socio-economic groups could be reduced to the level experienced by the least [dis]advantaged groups.”<sup>39</sup> (p. xii)

<sup>b</sup> The report argued that 60,000 fewer people would need to be admitted to hospital, saving \$2.3 billion; 5.5 million fewer Medicare services would be needed, saving \$273 million; 5.3 million fewer Pharmaceutical Benefit Scheme scripts would be filled, saving \$184.5 million dollars.

- The Scottish Public Health Observatory<sup>31</sup> compared the impact on mortality, hospitalization and inequities for both universal, population-wide approaches and individual-based interventions. The researchers concluded that interventions focused on individual agency were much less likely to impact inequities, even when targeted at those in the most deprived communities.
- The final report from a recent Canadian “housing first” pilot project (At Home/Chez Soi)<sup>40</sup> revealed that stable housing for a group with high levels of chronic mental and physical illness impacted health service use outcomes, including shifts away from emergency room services and outpatient visits.

## 6 Examples of the effective use of economic arguments to move health resources upstream

In this section we highlight two intervention areas—early childhood development and food security – where research has demonstrated how action on the upstream determinants and on reducing inequities has resulted in, or could result in, reduced healthcare costs.

### A. Economic arguments for early childhood interventions.

There is wide consensus that investing in the childhood years makes good economic sense, as this is the period when the health impacts of inequities start.<sup>73</sup> Economic arguments for early childhood interventions stress the cumulative and interactive impact of disadvantages across the span of a person's life.<sup>41</sup> Early advantage or disadvantage can set in motion events that influence later health outcomes, even for people who change their socioeconomic position along the way.<sup>42,43</sup> Woolf and Braverman concluded that these outcomes intensify demands on a healthcare system that is already too costly to sustain.<sup>23</sup> In addition, Clyde Hertzman (founder of the Human Early Learning Project at the University of British Columbia) and colleagues have argued that society cannot afford to ignore the costs of developmental inequality among children.<sup>44</sup> Given the strength of the evidence, it is unfortunate that Canada has the weakest public funding for early childhood development among wealthy countries.

While the economic case for investing in infants and children has been extensively researched and documented, particularly in wealthy countries, only a few studies focus on health outcomes or costs to the health system in the child's adult years.<sup>c</sup> We present arguments here that link disadvantage in childhood with health risk, lifetime productivity and general cost to government. Increased costs to the health system can be inferred from this.

Li and colleagues<sup>46</sup> investigated how a child's socioeconomic environment "gets under the skin" and translates into health risks. They tracked the cortisol levels (associated with a range of mental and physical illnesses) of 17 000 people from birth to 45 years of age and concluded that a less advantaged socioeconomic position over a lifetime leads to significantly higher cortisol levels, and by extension, to more frequent use of the healthcare system.

A synthesis of cost-effectiveness data of early-childhood development programs (first decade of life) predicted government-wide savings.<sup>47</sup> The author reported cost-benefit ratios ranging from \$2 per dollar invested to over \$10 per dollar invested, with an average return of \$6 per dollar invested. Prenatal or early infancy programs ranged from \$1 to \$5 per dollar invested, with an average of \$3 per dollar invested.

Two studies have addressed the productivity impact of allowing so many children to grow up in disadvantaged circumstances. Based on data from British Columbia and across Canada, the first study<sup>48</sup> concluded that reducing the rate of child vulnerability from the current 29% to 10% would result in an increase in gross domestic product (GDP) that would outweigh the social investment by a significant margin. The second study by Kershaw et al.<sup>49</sup> concluded that high rates of vulnerability among British Columbian children costs the province an estimated 10 times the provincial debt load annually.

c Goldsmith et al. found that "day care or preschool programs was the most-studied healthy public policy intervention."<sup>45</sup>[p.12]

## **B. Economic arguments for food security interventions**

Household food insecurity (a measure of income-related problems of food access) is growing in Canada and is tightly linked to poorer health status.<sup>52</sup> Food insecurity has been linked to health issues ranging from poor mental health to diabetes.<sup>50,52</sup> The reverse correlation has also been found to be true: chronic physical and mental health conditions can increase vulnerability to household food insecurity.<sup>51</sup> Food insecurity diminishes individuals' ability to manage their health problems, often increasing the need for healthcare.<sup>52,53</sup> Emergency department patients with high rates of hunger often choose to buy food instead of medications, which can result in repeated emergency department visits and hospitalizations.<sup>54</sup>

Through these intersecting factors, costs to the health system escalate: restricted food options and low quality food put people at higher risk for chronic disease, which restricts their ability to earn income and manage their health conditions and, in turn, leads to higher healthcare costs.<sup>55, 56</sup> Household food insecurity has been identified as a predictor of healthcare use by working-age adults, independent of other social determinants.<sup>34</sup>

In one Ontario study, unhealthy eating was estimated to cost the province \$2.9 billion in direct healthcare costs.<sup>5</sup> In another study, researchers found that individual-level healthcare costs increase systematically with increased severity of household food insecurity.<sup>52</sup> At the end of a robust study involving over 67 000 people (aged 18-64), Tarasuk et al. concluded that

*“household food insecurity was a robust predictor of healthcare utilization and costs incurred by working-age adults, independent of other social determinants of health. Policy interventions at the provincial or federal level designed to reduce household food insecurity could offset considerable public expenditures in healthcare and improve overall health.”*<sup>52 (p.6)</sup>

# 7

## Moving forward ...

### A. in the area of research

#### ***Support research linking upstream and equity-focused interventions with health system savings.***

Few studies link system interventions to improve social and economic conditions, health outcomes and costs/savings for the health system. In addition, most economic studies investigating health outcomes speak to average health outcomes, rather than the distribution of health outcomes across socioeconomic groups.<sup>57</sup> Sir Michael Marmot has called for economic research that includes evidence of who gains and who loses.<sup>58</sup> We need more economic and health outcome studies of upstream interventions, such as the guaranteed annual income pilot project announced by Ontario in 2016.<sup>59</sup>

#### ***Widen what we measure.***

Goldsmith et al.<sup>45</sup> point to the tension around agreeing on measures and systems that help us cost and compare the health impacts of an intervention across communities, regions, provinces, territories and nations. There are many gaps and inconsistencies in our data about healthcare usage and socio-economic status (SES). However, consistent measures cannot change the fact that upstream interventions occur in complex environments, with multiple cause-and-effect pathways, where health and non-health

benefits are beyond the primary focus of attention. For example, while Australian researchers<sup>20</sup> studying the impact of a Walking School Bus program could not demonstrate cost effectiveness in terms of lower obesity rates, they did see reduced traffic congestion and pollution, higher social cohesion, and improved exercise habits. We need to broaden the scope of the outcomes we measure.

### B. in the area of practice

#### ***Fund action to reduce socioeconomic inequalities: the pre-condition for evidence.***

Requiring economic analysis as a pre-condition for upstream work could work against action being taken, given how little evidence currently exists. Goldsmith et al.<sup>45</sup> argue that in neglected areas of research—such as putting a cost to socioeconomic inequalities—action is the pre-condition for generating evidence, and we don't yet have enough action. More critical at this time is for public health to: 1) act, based on a standard of plausibility, in partnership with other organizations working to reduce determinants such as income inequality or good quality housing; 2) keep detailed records of the financial costs and benefits (financial, social and health) that can be captured; and 3) communicate the findings.

***Fund longitudinal studies; the health and cost benefits will be gradual.***

The potential for savings will not be realized in a political term of office. We will not quickly see an impact on health spending from an investment in upstream work. One reason for this is that while we keep some people out of hospital, the drop in demand for service would be quickly filled by those on waiting lists, with no cost savings (P. Plourde, oral communication, January 2015). As Goldsmith et al.<sup>45</sup> argue: “In the quest for resources, prevention faces a difficult challenge in obtaining public and political support, because illness care has immediate, identifiable beneficiaries, while health promotion and protection have long term, more amorphous benefits.”<sup>[p. iii]</sup> We have to keep pressuring for longer studies, and for standards of evidence, that allow health leaders to act when there is a strong plausibility of cost savings and other benefits.

***More healthy people = longer lives and potentially higher health costs.***

Some people argue that any savings we gain from investing in better and more equitable population health would be eaten up by the care these people would require over a longer life course. This is a long-term concern that lacks ethical legs, and it does not weaken the argument that investing in prevention and promotion has the potential to reduce health costs all along the lifespan.

**C. in the area of ethics**

***Economic arguments are one tool we can use to convince leaders to do the right thing.***

Researchers ask if it is ethically sound to quantify the value of policies designed to reduce poverty or hunger.<sup>60</sup> As the NCCHPP has pointed out, “even with the help of economic evaluations, the difficulties of choosing what is good, what is just, and what is socially desirable, remain.”<sup>60 [p.9]</sup> Despite this truth, in a period of perceived fiscal constraint, building an economic argument can bolster the ethical argument. Many factors (e.g., values, political/personal connections, current events, public opinion) influence resource distribution decisions. Economic arguments are still a powerful tool in persuading decision-makers.<sup>45</sup>

***We need to align our values around sources of revenue as well as around costs.***

An important and often neglected consideration is finding a way to align our values around wanting greater health and economic equity with our values around economic development and taxation policies. Where money comes from is as value laden as how it is spent, and it is important that we bring these discussions together.



## Conclusion and discussion questions

Moving more of our health system dollars upstream means working more collaboratively with other sectors and their initiatives; health needs to lead some of the time, and – at other times – support and facilitate. Fitzpatrick et al.<sup>34</sup> sum up many of the arguments in their 2015 discussion paper:

*“The root causes of high-cost and frequent healthcare use are entrenched in SES [socio-economic status] and are often overlooked in health services research. A multitude of factors affecting the SES-health gradient lie outside of the healthcare system; in order to effect change before patients become high-cost users or begin down that trajectory of use, an upstream population-based lens must be taken to this problem. Indeed health disparities and SES inequities are at the core of public health, and collaborative, intersectoral approaches allow us to address high-cost use from within and outside the healthcare system by aligning public health and healthcare goals.”*<sup>[p.169 - 170]</sup>

### Discussion questions

- Do you think more of our healthcare dollars should support work that creates healthy living, learning and working environments? Does this work belong to another government sector?
- In your sphere of work, what values are prominent in how resources are allocated? To what extent are those values community and population-centered? To what extent are they individual-centered?
- Where do you see opportunities to make an economic argument for investing more in upstream work? Which arguments would be most persuasive in your work environment?
- Do you see evidence of inequities in how health dollars are spent in your work environment? By region? by generation? by SES? by race or ethnicity?
- How can we broaden the discussion of how health dollars are spent, both in terms of the causes of good health and in terms of the stakeholders in good health?

## APPENDIX 1: DEFINITIONS OF HEALTH EQUITY AND ECONOMIC TERMS

**Direct costs / indirect costs** - Direct costs refer to “the value of goods and services for which payment was made and resources used in treatment, care and rehabilitation related to illness or injury.”<sup>37(p.2)</sup>

Indirect costs are “the value of economic output lost because of illness, injury-related work disability, or premature death.”<sup>37(p.2)</sup> See the definition for ‘internal/external costs’ below.

**Health inequality** refers to measureable differences in health between individuals, groups or communities. It is sometimes used interchangeably with the term ‘health disparities.’<sup>61</sup>

**Health inequity** is a sub-set of health inequality; refers to differences in health associated with social disadvantages that are modifiable and considered unfair.<sup>61</sup>

**Health equity** means all people (individuals, groups and communities) have a fair chance to reach their full health potential and are not disadvantaged by social, economic and environmental conditions.<sup>61</sup>

**Health equity** work refers to the planning, data gathering and reporting, project assessment, collaborating, advocating, and facilitating work that public health does to help reduce the gap between the least and most healthy.

**Health outcomes** are “changes in health that result from measures or specific healthcare investments or interventions.”<sup>62</sup> These changes relate to health symptoms, self-perception of health, ability to participate in life activities, and ultimately life or death.

**Health protection** involves “interventions delivered at the organizational .... local, provincial, national or international level that reduce health risks by changing the physical or social environment in which people live.”<sup>37</sup>

**Healthy public policy** includes “social or economic interventions that act on the determinants of health... but do not have health as a main policy objective.”<sup>37</sup> Examples of these policies include “restricting the placement of video gambling terminals, supportive housing, early childhood education, and the provision of income support.”<sup>45 [p.iv]</sup>

**Illness care** includes the diagnosis, management, treatment and palliation of acute and chronic disease.

**Internal / external costs** combined make up the social costs associated with a disease. Internal costs are those borne, or taken into account by, the decision-maker. External costs are those not borne or taken into account by the decision-maker. This can also apply to benefits.<sup>57</sup>

**Intervention** is “a set of actions with a coherent objective to bring about change or produce identifiable outcomes. These actions may include policy, regulatory initiatives, single strategy projects or multi-component programmes. *Public health interventions* are intended to promote or protect health or prevent ill health in communities or populations.”<sup>63 [p.2]</sup>

**Public health** in Canada is responsible for four essential functions: health protection, health surveillance, disease and injury prevention, and health promotion.<sup>19</sup>

**Morbidity and mortality** - Morbidity refers to the incidence of a disease across a population and/or geographic location during a single year. Mortality is the rate of death in a population.

**Social gradient in health or health gradient** refers to the association between people's position in the social hierarchy and their health status. People with a certain social status are healthier than those just below them in status and less healthy than those above them in status.

**Socioeconomic status (SES)** refers to people's degree of access to collectively desired resources: material goods, money, power, friendship networks, healthcare, leisure time, or educational opportunities.<sup>64</sup>

**Social determinants of health** are the interrelated social, political and economic factors that create the conditions in which people live, learn, work and play.<sup>61</sup>

**Upstream / downstream determinants** - Upstream or 'structural' determinants are the fundamental social and economic structures that create downstream or 'intermediate' determinants. Upstream determinants include income, education, inclusion/exclusion, racism, colonialism and patriarchy.<sup>27</sup> Downstream determinants "include medical care... and health behaviors, such as smoking, seeking or forgoing medical care, and not adhering to treatment guidelines."<sup>27 (p.1852)</sup>

**Upstream action** includes interventions and strategies that focus on improving the structural determinants to allow people to achieve their full health potential.<sup>61</sup>

## APPENDIX 2: ECONOMIC ANALYSIS METHODS

Economic evaluations are, put simply, the weighing of benefits and costs, or “whether a particular action or intervention is likely to result in overall benefit, and what the associated costs will be.”<sup>45 (p.1)</sup> It is important to note that economic impact research spans a wide range of ideological approaches, and studies inevitably favour some values over others.<sup>57,60</sup> In this appendix, we provide a simplified overview of economic analysis and modeling approaches, relying heavily on the work of the National Collaborating Centre for Healthy Public Policy (NCCCHPP).<sup>60</sup>

In 2013, the WHO published a landmark report that recognized it had for too long not connected its work on health economics<sup>66</sup> with its work on the social determinants of health.<sup>67</sup> In *The Economics of Social Determinants of Health and Health Inequalities: A Resource Book*, the WHO recognized that “greater synergies had to be forged”<sup>57 (p.5)</sup> between health economics and investing in “socially determined health inequalities.”<sup>57 (p.1)</sup> The authors of this report found very few studies that calculated the return on investment in the social determinants of health on health outcomes; most looked at outcomes like education and income. In addition, they found that health equity is seldom taken into account in the analysis of health sector spending and health outcomes. The authors point out that most economic analyses in this area treat everyone as equal.

*“In standard social cost–benefit analysis, the net benefits of an intervention are calculated without regard to how the benefits and costs are distributed to different members of society. As a result, even though [an intervention] generates large benefits for disadvantaged populations,*

*reductions in health inequities will not necessarily lead to positive net benefits in a cost–benefit analysis. As explained by Harberger, a pioneer of social cost–benefit analysis, the equal weighting of benefits and costs without regard to their distribution is fundamentally ‘a technical convention’ which permits us to separate resource allocation from distributional effects in the analysis of any given problem”*<sup>57 (p. 48)</sup>

Work by the NCCCHPP<sup>60</sup> points to the same predominance of methodological individualism in the majority of economic analyses. Most studies focus on individual health and wellbeing, and personal decisions, as the fundamental units of measure. As a result, the evidence suggests solutions in the realm of individual responsibility.<sup>60</sup>

Goldsmith et al. point out that “most healthcare interventions have never been subject to economic evaluation and the interventions that have been assessed tend to be those most easily studied (rather than those for which the need for evidence is most pressing).”<sup>45 (p. iii)</sup> Upstream interventions are not easily studied. The majority of health-related economic studies look at the impact of clinical prevention (e.g., educational support for patients with diabetes) or behaviour change (e.g., wearing seatbelts); few look at the impacts of investing upstream, let alone health equity.<sup>37,57,58</sup> In Quebec, Astrid Brousselle, Éric Tchouaket and others – recognizing both the importance and the high cost of economic analyses of public health interventions – have investigated the potential for repurposing existing data to support public health decision-making.<sup>68</sup>

### **A. Cost benefit analysis (CBA)**

CBA expresses both the costs and benefits of a policy in dollars. This allows competing policies or interventions to be compared directly. Placing a dollar value on indirect benefits can be very difficult. While CBA often looks at very individual-focused benefits, it “is also the method that can include the widest possible array of benefits in its calculation.”<sup>60(p.7)</sup> Furthermore, “once costs and benefits are translated into dollar amounts, policy recommendations boil down to seeing which policy option under consideration results in the highest ratio of benefits to costs.”<sup>[71 (p.4)]</sup>

### **B. Cost effectiveness analysis (CEA)**

CEA states overall benefits in standardized, non-monetary, health-related units like mortality rates or disease incidence.<sup>60</sup> These overall benefits are compared to the overall opportunity cost (i.e., how the money could have otherwise been spent).<sup>57 (p.14)</sup> CEA was developed to counter some of the perceived weaknesses in CBA. It focuses on maximizing health, and health-related gains, rather than monetary efficiency alone. CEA “avoids the question of whether benefits can accurately be valued in dollars on the basis of subjective preferences”<sup>69(p.7)</sup> or willingness to pay.

### **C. Cost-utility analysis (CUA) or the quality-adjusted life year (QALY) approach**

CUA is a “major offshoot of CEA that has gained widespread acceptance in economic evaluation for policy making, particularly in health and health-related disciplines.”<sup>[71 (p.9)]</sup> While CEA compares efficiency across single benefits, CUA analyzes the impact of interventions on a broader measure of quantity and quality of life. The challenge has been to define a unit of measure that reflects the complexity of “quality of life,” and that can be generalized across settings and goals. The measure that has gained the most acceptance is the ‘quality-adjusted life year’ or QALY (pronounced kwa-lee), which assesses benefit in terms of self-reported health status. This measure looks at the number of years lived at a determined level of self-reported health.<sup>58,69</sup> More recently, organizations have been using a single metric, incorporating both mortality and disability, which makes comparisons of values and disease conditions more transparent; the indicator is called the ‘disability adjusted life year’ or DALY.<sup>22</sup>

### **D. Cost of illness / burden of illness studies**

These studies investigate the overall economic costs of a disease or health inequity and can highlight the importance of a health inequity.<sup>57</sup> The overall scale of a population health service need<sup>58</sup> can be described as number of lives, life-years or quality adjusted life years.<sup>70</sup> While economic burden studies can be used to highlight the size and importance of health inequality as a policy problem, they cannot help to make the case for particular policy solutions.<sup>57</sup>

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Centre de collaboration nationale  
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