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Finding and understanding co-benefits

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2.1 Introduction

HiAP and “healthy public policies are well known uses” of the basic intuition behind co-benefits, but there are others. The Healthy Cities movement, for example, focused on the ways in which urban functions not always understood as being about health could contribute to better health and, therefore, better cities (Ashton, 2002; De Leeuw, 2001; De Leeuw et al., 2015).

Each of these, and other policy agendas, focused on how policies intended to do something other than improve health and how improved health and policies can contribute to another agenda. A focus on wins for the health sector, though, has the obvious drawback that people with primary goals other than health might not be interested – because their economic, political, career or other incentives and interests lead them to focus on other issues. Decades of “new public management”, for example, have explicitly tried to focus different parts of the public sector on a small number of specific goals, such as test results for schools and waiting times for health care systems. It is hard to undo such accountability systems and tell schools that they are also expected to improve student health and hospitals that they should be better employers (Box 2.1).

We propose to go beyond Health *in* All Policies to focus on Health *for* All Policies (Fig. 2.1). Health *for* All Policies is focused on *co-benefits*, policy outcomes that affect all involved sectors positively regardless of which sector provides the policy outputs (Greer et al., 2022). In this, we build on a trend in HiAP literature to focus on win-win solutions between sectors: not asking policymakers in transport, education or agriculture to solve health problems, but focusing on ways that health outcomes and policies can create win-win solutions. We can see this shift in newer work which stresses that policy should be built on the “principle of co-benefits: all parties that contribute should benefit

Box 2.1 Analysing the impact of health on other SDGs

In health systems, we want to produce policy changes that ultimately improve outcomes and equity while reducing disparities in population health. Econometrics and statistical models can be used as a tool to create robust frameworks to estimate the impact of better health on other social outcomes (Abadie & Cattaneo, 2018; Angrist & Pischke, 2008, 2015; Cunningham, 2021; Gertler et al., 2010).

Experimental designs with phased-in randomized control trials (RCTs) are a gold standard for analysing the impact of health technologies and drugs, but these are too costly or often unfeasible when it comes to evaluating the effect of programmes and policies and their influence on earning, labour, productivity, and educational attainment, among others (Dillon, Friedman & Serneels, 2021; Miguel & Kremer, 2004). However, RCTs are not the most popular in this field due to the time and resource investment they entail. Quasi-experimental methods, including difference-in-difference (DiD) estimators, regression discontinuity designs, instrumental variables, matching techniques and other robust multivariate regressions, dominate the econometrics field for causal inference (Angrist & Pischke, 2010; Dimick & Ryan, 2014). For instance, to measure different health shocks in Denmark and their effect on labour supply, authors create a DiD to look at households that experienced strokes and heart attacks, identifying the treatment effect, and constructing counterfactuals to affected households (Fadlon & Nielsen, 2021).

Econometric models can quantify the effect of a health or health policy or programme on other outcomes (Imbens & Wooldridge, 2009). This is crucial to support the development of Health for all policies and achieve cross-sectoral involvement between actors.

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Box 2.1 (cont.)

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from being involved. As well as improving health and health equity, partnerships should support other sectors to achieve their own goals, such as creating good-quality jobs or local economic stability. At the same time, a healthier population is likely to bring social and economic benefits to other sectors in the long term. This offers further rationale for cross-sectoral investment” (Greszczuk, 2019).

Co-benefits are benefits of a policy in multiple sectors: ways in which a single policy (for example, reduction of inequalities in child health) leads to a variety of beneficial outcomes (for example, reduction of inequalities in educational performance, employment outcomes and political participation). They are win-win policies which achieve goals across multiple policy sectors and, politically, help to transcend the sectoral logic of much policymaking. Health *for All* Policies captures a wider range of interactions (Fig. 2.1).

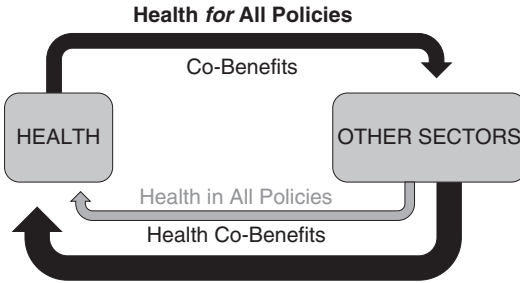


Fig. 2.1 Causal connections in Health for All Policies

There are many examples of co-benefits in practice and research literature because many kinds of policies have intended or unintended effects beyond their main targets. Reducing catastrophic health care costs can be a goal of health care coverage policy; poverty reduction is a co-benefit. Building a hospital with good walking, cycling and public transport connections can have co-benefits for cities and the climate. Greater equity in health care can help reduce a variety of disparities in the workplace.

The logic of co-benefits focuses our attention on identifying and removing problems, such as negative externalities or co-disbenefits, and identifying win-win rather than win-lose intersectoral solutions. The complexity of public policy encourages such a focus on win-win solutions because there are usually degrees of freedom in every step of policy formulation and implementation, which allow the creation of positive-sum relationships instead of tradeoffs. Without denying the existence of tradeoffs and zero- or negative-sum policy conflicts, we can still emphasize thinking about policymaking in ways that reduce their extent.

There are two compelling reasons to consider policies in a Health for All Policies framework. The first, the subject of the rest of this chapter, is that it allows us to do more with less. COVID-19 came against the backdrop of decades of austerity and recalibration, rather than growth, in social and health policy expenditure. Pandemic response was a fiscal policy challenge for many governments, and even those that mustered the resources for a successful social policy response are likely to be having debates about retrenchment and priorities. Investments in health are more likely to be palatable if they can be shown to produce benefits

outside the health sector, just as investments in other sectors might become more attractive if they produce health.

Using this logic, we can gain more value from our health policies and investments. Health care is an immense area of public expenditure, and one with a large physical infrastructure, workforce at all levels of qualifications and income, extensive science and research base, strong impact on mobility patterns, and large consumption of goods from potatoes to very high technology instruments. Purchasing, employment, locational and other decisions in the health sector are often made without much systematic regard for their effects on broader policy areas. Support for health care investment – and actual ability to achieve other goals – would be higher if policymakers tapped the potential impact of health care decisionmaking on broader policies. Public health interventions, likewise, are often framed purely in terms of aggregate health status or equity effects, but the economic, social and environmental consequences should be part of their justification. The COVID-19 pandemic, in good and bad ways, showed the need to understand the impact of public health measures and their effects on other goals such as education, unemployment and social services (Greer et al., 2021; Sagan et al., 2021).

The second reason is that it allows us to build new and stronger political coalitions. One of the problems of Health in All Policies is that it could look like health ministers trying to divert other departments' resources at the expense of their own obligations, priorities, politics, skills and accountability relationships. Its focus on benefits to the health sector can imply a negative-sum relationship between sectors, one that is visible in government budgeting practices that clarify how money spent on health is not being spent on anything else. By contrast, a focus on co-benefits is a search for win-win solutions: ways that other sectors can benefit from health policy and investment, and ways that health policy and investment can produce benefits for other sectors.

2.2 The two routes to co-benefits

There are two ways in which health policy can contribute to achieving other goals, i.e., co-benefits (see Fig. 2.2). The first is through the *contribution of health status to other outcomes*, or the way in which improved health status and reduced health inequalities contribute to goals outside the health domain. On this route, better and more equal

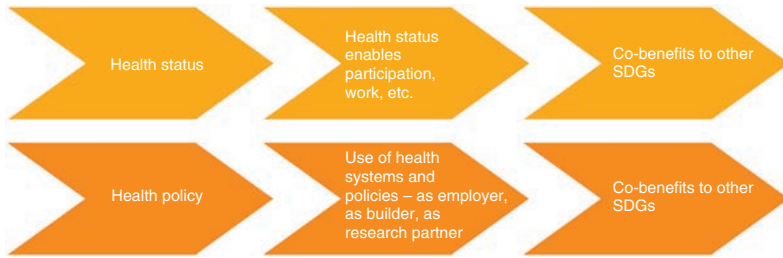


Fig. 2.2 Two causal pathways

population health contributes to the attainment of other goals. For example, the health of children influences their educational attainment (SDG4), and health inequities influence the ability of women (SDG5), the poor, and vulnerable groups (SDG10) to receive the benefits of education and then secure equal access to good jobs (SDG8). Health status even influences political participation and civil society engagement (SDG16), and ill health can cause catastrophic health care payments that can make people fall into poverty (SDG1).

The second way health policy can contribute to achieving other goals, i.e., co-benefits, is through the *contribution of health policy to other outcomes*, or co-benefits coming from health policies. This route alludes to specific health policy interventions that contribute to goals outside the health domain. Health policies and systems are big economic and social actors that affect their societies. Their behaviour as employers can shape labour markets. Their decisions about buildings and design can affect urban life and environmental sustainability. The extent of financial protection that they afford to their users can affect poverty and inequality (Thomson et al., 2020).

If we consider this first route, the contribution of health status to other SDGs, we find that there is an extensive existing literature to build upon (Haines, 2017; Howden-Chapman & Chapman, 2012; Jack & Kinney, 2010; Sharifi et al., 2021; Shaw et al., 2014). In relation to education (SDG4), Alam (2015) shows, using longitudinal data and panel-data methods, that in Tanzania, a father's illness decreases children's school attendance by 5% and decreases children's likelihood of completing primary school by 25%, leading to one and a half fewer years of schooling. Concerning employment (SDG8), Dillon, Friedman and Serneels (2021) use a phased-in randomized design, showing that

preventing malaria infection in Nigeria can increase earnings by about 10%. Fadlon and Nielsen (2021) show, using differences-in-differences and matching methods, that severe non-fatal health shocks such as a heart attack or stroke in Denmark reduce earnings by 18% and household income by 3.4%; in contrast, fatal health shocks lead to increases in surviving spouses' labour force participation by 7.5% and annual labour income by 6.8%. Jockers et al. (2021), using an instrumental variable method, show that large-scale HIV antiretroviral therapy programmes in South Africa improve life expectancy and reduce absenteeism rates among workers living with HIV by about twelve days per year. Eriksen and colleagues, using differences-in-differences methods, show that the onset of type 1 diabetes in children induces mothers to shift to part-time work and experience a long-term 4–5% decrease in wage income in Denmark (Eriksen et al., 2021). For political participation (SDG16), Constantino, Cooperman and Moreira (2021) show that higher COVID-19 incidence near the time of the election in Brazil is associated with lower voter turnout. These various pieces of literature can inform how health status affects other aspects of life by estimating the likely effect of improvements in health status on other goals.

Researchers have made great progress in developing quantitative methods that can inform policy. Box 2.1 and 2.2 show two useful approaches, discussed in more detail in Greer et al. (2022). Box 2.1 focuses on quantitative empirical approaches, showing how they can develop firm quantitative evidence about the impact of health status and outcomes on other policy areas. Box 2.2 shows how modelling can then allow policymakers to anticipate the impact of improved health on other areas.

Box 2.2 Harnessing models for Health for All Policies

Mathematical models use theoretical frameworks and equations to relate components of a system to each other (Panovska-Griffiths et al., 2021; Vanagas et al., 2019). In practice, these models can support the development of Health for All Policies by conceptualizing systems and how they will react to policies.

An understanding of the relationships between health and other sectors in a given context is critical in taking a Health for All Policies approach. System dynamics modelling can be useful in mapping these

Box 2.2 (cont.)

relationships. System dynamics is a complex systems approach to modelling that can be used to both identify *which parts* of the system interact, and characterize *how* they interact through feedback loops, delays and non-linear effects (Darabi & Hosseinichimeh, 2020). Moreover, system dynamics models can serve in a diagnostic capacity: identifying which modelled parameters and structures require change in order to achieve a desired outcome (Homer & Hirsch, 2006).

These models are particularly well suited to a Health *for* All Policies approach as they are not bound by directionality in their representations of relationships. While most system dynamics applications have used a Health *in* All Policies frame (Homer & Hirsch, 2006), extending the scope of these models to capture broader dynamics can expand the existing complex systems' perspective to health policy (Adam & de Savigny, 2012; Peters, 2014) and help inform the development of policies that produce co-benefits.

Models can also quantify co-benefits of health policies through the application of decision analyses. These methods employ decision models which provide a structural framework capable of synthesizing available data from a range of fields and evaluate outcomes of policy alternatives (Briggs et al., 2006; Kuntz et al., 2016). The specific models utilized will depend on the policy context and question at hand. They can include decision trees, Markov models and agent-based models. A key advantage of using decision models to estimate policy outcomes is their ability to handle data poor contexts and uncertainty (Kuntz et al., 2016). Decision models not only provide a structural framework for synthesizing data from disparate sources, but also allow for extrapolations that are often required to reflect the decision context appropriately.

Among decision analytic methods, Cost-Benefit Analysis (CBA) is particularly conducive to measuring co-benefits. Given that CBA measures all outcomes in monetary terms, it facilitates the inclusion of costs and effects beyond the domain of health (Owens et al., 2016). While the traditional application of CBA prioritizes efficiency over co-benefits, disaggregation among the costs and benefits allows for the identification and quantification of *win-win* outcomes characteristic of a co-benefiting policy. CBA has often been employed to evaluate impacts at the intersection of environmental and health policy (OECD, 2018), a practice that can be built upon with the Health for All Policies approach.

Box 2.2 (cont.)**Sources:**

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2.3 Identifying co-benefits of health systems and policies

The core of this book is a focus on the second causal pathway, the one linking health systems and policies to other SDGs. How can the many decisions taken in the health sector, from infrastructure to hiring to purchasing, produce co-benefits that will work to the maximal benefit of citizens?

Identifying and estimating co-benefits from health systems and policies presents different methodological challenges. It is more dependent on sector-specific knowledge of causal mechanisms as well as contextual factors such as budgeting procedures, urban design or labour law, as seen in Box 2.3. Chapters 5–13 are chosen to illustrate the different ways we can understand the impact of health systems and policies, show the importance of policy expertise. It is difficult to “green the hospital” or turn health care expenditure into industrial development without a deep and interdisciplinary understanding of how the systems work. Expertise, and more often than not qualitative research, is necessary to understand the complexities of issues such as employment discrimination, infrastructure sustainability, and purchasing. That expertise and research can then be used, as we show in the chapters of this book, to identify the research approaches that can convincingly specify the relationships, identify the best approaches, and quantify the results.

Box 2.3 Understanding the impact of health systems and policies

How can we understand the impact of a given health policy on other SDGs, given the multiple causal pathways extending from hospital procurement to sustainability or health research policies to innovation?

It is possible to identify co-benefits in three steps. The goal is to build a logic model that can be used to argue for policies with co-benefits. The first is to understand basic relationships between the health care system and policies and the issue in question. This need not be hard: there is an obvious connection between the location and development of health care infrastructure and the sustainability, equity and attractiveness of the surrounding neighbourhoods. Health care systems’ connection with good work and employment, or many aspects of equity, come through their role as employers.

The second step is to develop a logic model of the way policies can influence those relationships. For example, how can decisions about

Box 2.3 (cont.)

building a hospital (Box 1.2) influence different goals such as equitable employment and reducing carbon emissions? This asks for knowledge of the policy sector in the country context as well as the broader international literature on the relationships involved. The quality and extent of the international scholarly literature varies greatly from topic to topic, but it can map out basic mechanisms as well as some estimates from possibly relevant contexts. A policy model can also enable commissioning rapid research on particular topics in a particular context if necessary.

The third step is to identify the policies or actions with significant potential co-benefits and the most realistic chances of success and implementation. This means two things. It means trying to develop quantitative estimates of the benefits of a given policy. This quantitative research comes fairly far along in the process because it depends on a competent model of the relationship between the variables and a good understanding of how they can be convincingly specified. It means further analysis of the organizational requirements and barriers to implementation combined with an analysis of the potential coalition of supporters. This latter is very likely to involve qualitative research.

Box 2.3 presents an abstracted version of the approach, from which policies can be modelled. The box focuses on developing an understanding of the relationships, most often through an interdisciplinary approach that might require qualitative research. It is a conceptual presentation of the approach used in the case study chapters (Chapters 5–13) in this book, and could be used for other policy areas.

2.4 Identifying co-benefits of health status

If we consider the second route, the contribution of health policies to other outcomes outside the health domain, co-benefits have also been documented in the empirical evidence. For example, with poverty (SDG1), using differences-in-differences methods Limwattananon and colleagues show that a reform which greatly extended health insurance coverage in Thailand reduced out-of-pocket expenditure by 28% and reduced catastrophic payments by two percentage points (Limwattananon et al., 2015). Using a regression-discontinuity design

approach, Bauhoff, Hotchkiss and Smith (2011) suggest that the Medical Insurance Programme for the Poor in the republic of Georgia decreased mean out-of-pocket expenditures for some groups and reduced the risk of high inpatient expenditures, though the programme did not affect the utilization of health services. In contrast, Bernal, Carpio and Klein (2017), using a regression discontinuity design, show that an expansion of health insurance coverage in Peru had large effects on measures of curative care use (individuals were more likely to visit a doctor by nine percentage points, to receive medicines by 15 percentage points, that a medical analysis is performed by five percentage points, to visit a hospital or receive surgery by eight percentage points) but increased out-of-pocket spending by 282 Soles, equivalent to 1.5% of household income, due to higher consumption of medicines, hospital visits and/or surgeries not covered by insurance financed by households due to more awareness of health need. Hu and colleagues, using synthetic control methods, show that the Medicaid expansions under the 2010 Patient Protection and Affordable Care Act in the United States reduced the number of unpaid bills and the amount of debt sent to third-party collection agencies (Hu et al., 2018).

In relation to employment (SDG8), using differences-in-differences methods, Del Valle (2021) shows that the expansion of health insurance coverage in Mexico increased labour supply by reducing the likelihood of informal workers exiting the labour market by 15%. Goodman-Bacon (2021), using differences-in-differences methods, shows that children covered by Medicaid in the United States have a higher labour supply by four percentage points. Jeon and Pohl (2019), using matching methods, show that innovations in cancer treatment in Canada during the 1990s and 2000s reduced the negative employment effects of cancer by 63% to 70%. Beuermann and Pecha (2020), using differences-in-differences methods and a regression discontinuity design, show that the elimination of user fees in public health facilities in Jamaica reduced the number of sick days by 44% for individuals who were 40 to 64 years old.

For education (SDG4), Araújo and colleagues provide evidence that a large-scale iodine supplementation programme in Tanzania increased completed years of education and income scores in adulthood (Araújo, Carrillo & Sampaio, 2021). Bütikofer and Salvanes (2020), using differences-in-differences methods, show that cohorts of children subject to a tuberculosis control programme in Norway introduced in 1948 reduced missing school days by 9% in the short term and increased

years of education by 0.5 years in the long term and earnings by 7%. Baranov and Kohler (2018), using differences-in-differences methods, show that access to antiretroviral therapy for AIDS in Malawi increases expenditures on education and children's schooling, and increases savings. Ozier (2018), using a phased randomized intervention design, shows that deworming interventions in Kenya had cognitive effects for children, which are equivalent to at least half a year of additional schooling. Brown and colleagues show that greater childhood Medicaid eligibility expansion in the United States increases college enrolment (Brown, Kowalski & Lurie, 2020). Bütikofer, Mølland and Salvanes (2018) show that the rollout of a free nutritious breakfast programme in schools in Norway increases education by 0.1 years and earnings by 2–3%.

2.5 Conclusion

The logic of co-benefits produces many theoretically interesting ideas, but to become convincing, it must be paired with competent policy analysis and evaluation. This will not always be easy, because developing methods can involve understanding complicated causal linkages between fields such as health care, urbanism, ecology and trade. But developing methods for scholarly and applied, practical government can be extremely important: how can budgeters, policy evaluators and other experts within and around government judge the plausibility of a co-benefits argument? How can their evaluative methods, so often seemingly dry and technical, support the identification and evaluation of co-benefits policies?

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