

Resource Pack: Benefit-Cost Analysis Workshop

Citation: *Resource Pack: Benefit-Cost Analysis Workshop*. Center for Health Decision Science, Harvard T.H. Chan School of Public Health 2017; Nov 2-3. <http://repository.chds.hsph.harvard.edu/repository/collection/resource-pack-benefit-cost-analysis-workshop>

Overview



Resource Pack

Publication, Teaching Resource
2017

Resource Pack: Benefit-Cost Analysis Workshop

This resource pack includes working papers and case studies discussed at a workshop on benefit-cost analysis (Nov. 2-3, 2017) in global health and development. Funded by the Bill and Melinda Gates Foundation, the workshop is part of a project to develop guidelines for high quality benefit-cost analyses.

Preferences/Values | Priority Setting/Ethics | Costing Methods | Benefit-Cost Analysis | Cost-Effectiveness Analysis Economics/Finance |

Resource Pack

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These guidelines will provide a reference case that promotes comparability across analyses, and will include principles, methodological specifications, and reporting standards. They will build on the existing iDSI reference case, which discusses the general framework for economic evaluation and the conduct of cost-effectiveness analyses.

The papers presented at the meeting built on the [initial scoping report](#) and discuss the conceptual framework, review the relevant literature, and suggest analytic approaches that can be feasibly implemented. They are available from the [project website](#) in addition to this resource pack. The project team welcomes comments and feedback through December 8th, 2017, which can be submitted using the online form available [here](#).

The leadership team of the project includes Professor Jim Hammit and Senior Research Scientist Lisa Robinson of the Center for Health Decision Science at the Harvard T.H. Chan School of Public Health, Dean Jamison, Professor Emeritus of Global Health at the University of California, San Francisco and David de Ferranti, Founder and Chair of the Board for Results for Development Institute (R4D). Learn more about this project [here](#).

Selected Resources – At a Glance

Methods for Economic Evaluation Project

Guidelines. Methods for Economic Evaluation Project (MEEP). Bill and Melinda Gates Foundation, NICE International, Health Intervention and Technology Assessment Program 2014. <http://www.globalhitap.net/projects/methods-for-economic-evaluation-project-meep>

Evaluation of FDA Benefit-Cost Analysis of Graphic Warning Labels

Article. Chaloupka FJ, Warner KE, Acemoğlu D et al. An Evaluation of FDA's Analysis of the Costs and Benefits of the Graphic Warning Label Regulation. Tobacco Control 2015; 24: 112-119. <http://dx.doi.org/10.1136/tobaccocontrol-2014-052022>

iDSI Reference Case for Economic Evaluation

Guidelines. iDSI Reference Case for Economic Evaluation. The International Decision Support Initiative. <http://www.idsihealth.org/resource-items/idsi-reference-case-for-economic-evaluation>

The International Decision Support Initiative (iDSI)

Organization. The International Decision Support Initiative. <http://www.idsihealth.org>

CBA of Early Childhood Nutrition Intervention to Prevent Stunting in Haiti

Working Paper. Wong B, Orazem PF. Cost-Benefit Analysis of an Early Childhood Nutrition Intervention to Prevent Stunting in Haiti. Case Study. 2017. <https://cdn2.sph.harvard.edu/wp-content/uploads/sites/94/2017/09/Wong-Orazem-Nutrition-2017.10.25.pdf>

Benefit-Cost Analysis: Scoping Report

Report. Robinson LA, Hammitt JK, O'Keefe L, Munk C, Patenaude B, Geng F. Benefit-Cost Analysis in Global Health and Development: Current Practices and Opportunities for Improvement. Scoping Report. May 2017. Center for Health Decision Science, Harvard T.H. Chan School of Public Health, University of California, San Francisco, Results for Development Institute. <https://sites.sph.harvard.edu/bcguidelines/scoping>

Valuing Changes in Time Use in Low- and Middle-Income Countries

Working Paper. Whittington D, Cook J. Valuing Changes in Time Use in Low- and Middle-Income Countries, Dale Whittington (University of North Carolina) and Joseph Cook (Washington State University). Benefit-Cost Analysis Workshop, Nov 2-3, 2017. <https://cdn2.sph.harvard.edu/wp-content/uploads/sites/94/2017/09/Whittington-Cook-Value-of-Time-2017.10.11.pdf>

Assessing the Distribution of Impacts in Global Benefit-Cost Analysis

Working Paper. Robinson LA, Hammitt JK, Adler M (supplement). Assessing the Distribution of Impacts in Global Benefit-Cost Analysis. Guidelines for Benefit-Cost Analysis Working Paper No. 3. Benefit-Cost Analysis Workshop, Nov 2-3, 2017. <https://cdn2.sph.harvard.edu/wp-content/uploads/sites/94/2017/09/Robinson-Hammitt-Adler-Distribution-2017.10.21.pdf>

Valuing Nonfatal Health Risk Reductions in Global Benefit-Cost Analysis

Working Paper. Robinson L, Hammitt JK. Valuing Nonfatal Health Risk Reductions in Global Benefit-Cost Analysis. Guidelines for Benefit-Cost Analysis, Working Paper No. 2. Benefit-Cost Analysis Workshop 2017; Nov 2-3. <https://cdn2.sph.harvard.edu/wp-content/uploads/sites/94/2017/09/Robinson-Hammitt-Nonfatal-Risks-2017.10.19.pdf>

Economy-Wide Effects of Health and Environmental Interventions in Support of BCA

Working Paper. Strzepek K et al. Assessing Economy-Wide Effects of Health and Environmental Interventions in Support of Benefit-Cost Analysis. Benefit-Cost Analysis Reference Case Guidance Project 2017. <https://sites.sph.harvard.edu/bcguidelines/methods-and-cases>

Standardized Sensitivity Analysis in BCA: An Education Case Study

Working Paper. Pradhan E, Jamison D. Standardized Sensitivity Analysis in BCA: An Education Case Study. Guidelines for Benefit-Cost Analysis Working Paper No. 5. Prepared for the Benefit-Cost Analysis Reference Case Guidance Project, Funded by the Bill and Melinda Gates Foundation 2017. <https://sites.sph.harvard.edu/bcaguidelines>

Annotated Bibliography

Methods for Economic Evaluation Project

Guidelines. Methods for Economic Evaluation Project (MEEP). Bill and Melinda Gates Foundation, NICE International, Health Intervention and Technology Assessment Program 2014. <http://www.globalhitap.net/projects/methods-for-economic-evaluation-project-meep>

CHDS repository link: <http://repository.chds.hsph.harvard.edu/repository/2382>

This report details the work of the Methods for Economic Evaluation Project (MEEP), which aims to promote a consistency in the methods used for economic evaluations. The report is targeted especially at low and middle-income countries (LMICs). The Bill and Melinda Gates Foundation is a major funder of health economic evaluations in LMICs, but there is substantial variation in the methods used and the quality of the analyses produced. The report drew on expertise from several major research institutions. It focuses on the methods of a reference case for use with economic evaluations, using it to demonstrate the a) assessment of benefits and risks, b) planning, and c) reporting of economic evaluations to improve their usefulness for decision-making. One example of a recommendation is to choose a measure for health outcomes that is appropriate to the problem, captures both length and quality of life and is generalizable across disease states. Another recommendation is to explore health effects on sub-populations.

Evaluation of FDA Benefit-Cost Analysis of Graphic Warning Labels

Article. Chaloupka FJ, Warner KE, Acemoğlu D et al. An Evaluation of FDA's Analysis of the Costs and Benefits of the Graphic Warning Label Regulation. Tobacco Control 2015; 24: 112-119. <http://dx.doi.org/10.1136/tobaccocontrol-2014-052022>

CHDS repository link: <http://repository.chds.hsph.harvard.edu/repository/2430>

The Food and Drug Administration (FDA) is required to do a regulatory impact analysis assessing the costs and benefits of its tobacco products and other regulations. This paper provides a critical review of the approach the FDA used in its proposed and final graphic warning label rule, and includes recommendations on how to improve the analysis in ways that account for the differences between tobacco use and consumption of most consumer products.

To date, FDA has issued economic impact analyses of one proposed and one final rule requiring graphic warning labels (GWLs) on cigarette packaging. Given the controversy over the FDA's approach to assessing net economic benefits in its proposed and final rules on GWLs and the importance of having economic impact analyses prepared in accordance with sound economic analysis, a group of prominent economists met in early 2014 to review that approach and, where indicated, to offer suggestions for an improved analysis. They concluded that the analysis of the impact of GWLs on smoking substantially underestimated the benefits and overestimated the costs, leading the FDA to substantially underestimate the net benefits of the GWLs.

iDSI Reference Case for Economic Evaluation

Guidelines. iDSI Reference Case for Economic Evaluation. The International Decision Support Initiative.

<http://www.idshealth.org/resource-items/idsi-reference-case-for-economic-evaluation>

CHDS repository link: <http://repository.chds.hsph.harvard.edu/repository/2574>

This is a reference case which gives 12 principles to guide the planning, conduct and reporting of health economic evaluations in low- and middle-income countries (LMICs). The [International Decision Support Group](#) (iDSI) is a network of health, policy and economic experts. It builds on the approaches of the National Institute for Health and Care Excellence (NICE) in the UK, the Health Intervention and Technology Assessment Program (HITAP) in Thailand and the World Health Organization. iDSI provides decision makers with methods to calculate value for money and to consistently spend their health budgets in order to achieve Universal Health Coverage and the [Health Sustainable Development Goal](#) (SDG 3).

The International Decision Support Initiative (iDSI)

Organization. The International Decision Support Initiative. <http://www.idsihealth.org>

CHDS repository link: <http://repository.chds.hsph.harvard.edu/repository/2679>

[The International Decision Support Initiative](#) (iDSI) is a global network of health, policy and economic expertise, working to achieve Universal Health Coverage and [the health Sustainable Development Goal](#) (SDG 3). They are committed to robust evidence, analysis and decision-making that policymakers, funders and researchers can use to balance trade-offs between different policy options and model potential results to make the best choice available. They support countries to make better decisions about how much public money to spend on healthcare and how to make that money go further.

Available resources include a [knowledge gateway](#) that contains journal articles, technical reports and tools such as the [iDSI Reference Case](#).

Their values include:

- Everyone should have fair access to health, receiving the right treatment and the right medicines at the right time.
- Health systems need to develop and maintain their own skills so they can make the best use of finite resources to solve problems for current and future generations.
- Sustainable and progressive health systems are only possible when they engage and involve those with a stake in its success, from the public through to funders.

iDSI is supported by funding from Bill & Melinda Gates Foundation, the UK Department for International Development, and The Rockefeller Foundation.

CBA of Early Childhood Nutrition Intervention to Prevent Stunting in Haiti

Working Paper. Wong B, Orazem PF. Cost-Benefit Analysis of an Early Childhood Nutrition Intervention to Prevent Stunting in Haiti. Case Study. 2017. <https://cdn2.sph.harvard.edu/wp-content/uploads/sites/94/2017/09/Wong-Orazem-Nutrition-2017.10.25.pdf>

CHDS repository link: <http://repository.chds.hsph.harvard.edu/repository/2682>

This is one of two case studies that was conducted to support the Benefit-Cost Analysis Reference Case Workshop, held on November 2-3, 2017, which is part of the second phase of a project funded by the Bill and Melinda Gates Foundation to develop guidelines for high quality benefit-cost analyses.

These guidelines will provide a reference case that promotes comparability across analyses, and will include principles, methodological specifications, and reporting standards. They will build on the existing iDSI reference case, which discusses the general framework for economic evaluation and the conduct of cost-effectiveness analyses.

Access the workshop agenda [here](#).

Benefit-Cost Analysis: Scoping Report

Report. Robinson LA, Hammitt JK, O'Keeffe L, Munk C, Patenaude B, Geng F. Benefit-Cost Analysis in Global Health and Development: Current Practices and Opportunities for Improvement. Scoping Report. May 2017. Center for Health Decision Science, Harvard T.H. Chan School of Public Health, University of California, San Francisco, Results for Development Institute. <https://sites.sph.harvard.edu/bcaguidelines/scoping>

CHDS repository link: <http://repository.chds.hsph.harvard.edu/repository/2684>

This report supports the scoping phase of the project, Benefit-Cost Analysis Reference Case: Principles, Methods, and Standards, funded by the Bill and Melinda Gates Foundation. The report reviews and evaluates the current use of benefit-cost analysis, focusing on investments in health and development in low- and middle-income countries.

In the scoping report, the authors:

- Discuss the relationship of this effort to the existing iDSI Reference Case and describe the overall benefit-cost analysis framework.
- Identify and evaluate available benefit-cost analysis guidance and examine key commonalities, differences, and gaps.
- Evaluate selected recent benefit-cost analysis to better understand the diversity of data and methods used.
- Explore the major barriers, challenges and opportunities associated with improving and expanding the use of benefit-cost analysis.
- Discuss the implications of the results for the subsequent phases of this project.

This project is funded by the Bill and Melinda Gates Foundation (grant number OPP1160057). Lisa A. Robinson is the Principal Investigator and James K. Hammitt is the co-Principal Investigator (Harvard T.H. Chan School of Public Health); the Leadership Team also includes Dean Jamison (University of California, San Francisco) and David de Ferranti (Results for Development Institute). David Wilson (Bill and Melinda Gates Foundation) is the Program Officer.

Valuing Changes in Time Use in Low- and Middle-Income Countries

Working Paper. Whittington D, Cook J. Valuing Changes in Time Use in Low- and Middle-Income Countries, Dale Whittington (University of North Carolina) and Joseph Cook (Washington State University). Benefit-Cost Analysis Workshop, Nov 2-3, 2017. <https://cdn2.sph.harvard.edu/wp-content/uploads/sites/94/2017/09/Whittington-Cook-Value-of-Time-2017.10.11.pdf>

CHDS repository link: <http://repository.chds.hsph.harvard.edu/repository/2685>

Valuing changes in time use, particularly travel times, is often a critical parameter in the economic evaluation of development programs in low- and middle-income countries. Standard economic guidance suggests that when increases in travel time displace time on the job for salaried workers, these changes should be valued at the cost to employers (pre-tax and including benefits and indirect supervision costs). When time changes occur in a household's activities outside of salaried employment, however, the value may be more uncertain, particularly if travel time displaces time spent in leisure or on other unpaid household work.

Despite a robust empirical literature in industrialized countries using nonmarket valuation techniques, there are relatively few studies examining the value of travel time in these settings. This paper reviews the ten existing studies that value changes in time use in low and middle-income countries. The authors describe a benefit transfer approach to estimating the value of time changes in low and middle-income countries and describe possible sources of wage data, and a stated preference approach that can be used to estimate the value of time for a specific development project (i.e., an estimate for a specific local context where households time use patterns will be affected by a development project). They close with recommendations on what a benefit-cost analyst should do if one of the outcomes of a development project being appraised in a low or middle-income country is a change in households' time use patterns.

Access the PDF [here](#).

Assessing the Distribution of Impacts in Global Benefit-Cost Analysis

Working Paper. Robinson LA, Hammitt JK, Adler M (supplement). Assessing the Distribution of Impacts in Global Benefit-Cost Analysis. Guidelines for Benefit-Cost Analysis Working Paper No. 3. Benefit-Cost Analysis Workshop, Nov 2-3, 2017. <https://cdn2.sph.harvard.edu/wp-content/uploads/sites/94/2017/09/Robinson-Hammitt-Adler-Distribution-2017.10.21.pdf>

CHDS repository link: <http://repository.chds.hsph.harvard.edu/repository/2686>

There is widespread agreement that benefit-cost analyses should be supplemented with information on how the impacts are distributed across different members of the population. This agreement is reflected in the international

Decision Support Initiative (iDSI) Reference Case which provides general guidance on the economic evaluation of policies in low- and middle-income countries. Yet reviews of completed analyses suggest that such information is rarely provided.

The goal of this paper is to encourage analysts to provide information on the distribution of net benefits across population subgroups in addition to assessing the overall impacts of the policy. It is one of a series of methods papers which will ultimately be used to expand the iDSI Reference Case to address the conduct of benefit-cost analysis. Although these papers will provide the basis for the benefit-cost analysis reference case guidance, the reference case may ultimately deviate from their recommendations in some cases.

Valuing Nonfatal Health Risk Reductions in Global Benefit-Cost Analysis

Working Paper. Robinson L, Hammitt JK. Valuing Nonfatal Health Risk Reductions in Global Benefit-Cost Analysis. Guidelines for Benefit-Cost Analysis, Working Paper No. 2. Benefit-Cost Analysis Workshop 2017; Nov 2-3.

<https://cdn2.sph.harvard.edu/wp-content/uploads/sites/94/2017/09/Robinson-Hammitt-Nonfatal-Risks-2017.10.19.pdf>

CHDS repository link: <http://repository.chds.hsph.harvard.edu/repository/2687>

The approach for valuing nonfatal health risk reductions in benefit-cost analysis, regardless of whether they are associated with illness, injury, or another form of disability, is very similar to the approach for valuing mortality risk reductions. In both cases, estimates of individual willingness to pay (WTP) are generally the most appropriate approach for valuation, given the underlying conceptual framework.

The main difference relates to the lack of high quality valuation research for many nonfatal conditions. Given the multitude and diversity of these effects, this deficiency is perhaps unsurprising; a large research program would be needed to provide valid and reliable estimates for all the potential effects of concern. The challenge is thus to determine how to best value these risk changes when estimates of individual WTP of reasonable quality are not available. This paper explores this challenge and evaluates approaches for addressing it.

This paper is one in a series of methods papers which will ultimately be used to develop guidance on the conduct of benefit-cost analysis in global health and development.

Access the PDF [here](#). Access the workshop agenda [here](#).

Economy-Wide Effects of Health and Environmental Interventions in Support of BCA

Working Paper. Strzepek K et al. Assessing Economy-Wide Effects of Health and Environmental Interventions in Support of Benefit-Cost Analysis. Benefit-Cost Analysis Reference Case Guidance Project 2017.

<https://sites.sph.harvard.edu/bcguidelines/methods-and-cases>

CHDS repository link: <http://repository.chds.hsph.harvard.edu/repository/2688>

This paper outlines relevant literature, makes pragmatic near-term recommendations, and suggests longer-term directions for research to enhance the potential to apply economy-wide modeling approaches to health and environmental improvements in low and middle income country settings.

The authors describe a case study funded by the Uganda Ministry of Water and Environment, with World Bank support, that evaluates a broad set of planned health and environmental interventions, separately and together, over 25 years and considers impacts of each GDP and overall income.

This paper is one in a series of methods papers which will ultimately be used to develop guidance on the conduct of benefit-cost analysis in global health and development.

Access the PDF [here](#). Access the workshop agenda [here](#).

Standardized Sensitivity Analysis in BCA: An Education Case Study

Working Paper. Pradhan E, Jamison D. Standardized Sensitivity Analysis in BCA: An Education Case Study. Guidelines for Benefit-Cost Analysis Working Paper No. 5. Prepared for the Benefit-Cost Analysis Reference Case Guidance Project, Funded by the Bill and Melinda Gates Foundation 2017. <https://sites.sph.harvard.edu/bcaguidelines>

CHDS repository link: <http://repository.chds.hsph.harvard.edu/repository/2697>

Benefit-cost analysis of education in low- and middle-income countries have historically used the effect of education on future wages as an estimate of its benefits. In addition to wage increases, strong evidence points to (female) education reducing both under-five and adult mortality rates. A full BCA for education would add the value of mortality reduction to wage increases. The authors aim to utilize the multiple plausible approaches to valuing mortality deduction provided by the BCA literature in performing a health-inclusive cost-benefit assessment of education investments.

The Gates-funded BCA reference case aims to recommend a ‘standardized sensitivity analysis’ or SSA for BCAs of interventions affecting the mortality outcomes. A widely-agreed SSA would serve at least three purposes: It would provide a short menu of plausible options that analysts could choose among for their headline analysis; second, others could see whether results differ if they use their own preferred assumptions and third, comparable results could be accumulated over time.

This paper is one in a series of methods papers which will ultimately be used to develop guidance on the conduct of benefit-cost analysis in global health and development. Access the workshop agenda [here](#).

Valuing Protection against Health-Related Financial Risks

Working Paper. Jamison D, Skinner J. Valuing Protection against Health-Related Financial Risks. Guidelines for Benefit-Cost Analysis, Working Paper No. 9, Prepared for the Benefit-Cost Analysis Reference Case Guidance Project. Funded by the Bill and Melinda Gates Foundation, October 2017 Review Draft. <https://sites.sph.harvard.edu/bcaguidelines>

CHDS repository link: <http://repository.chds.hsph.harvard.edu/repository/2698>

There is interest in both developing and developed countries towards expanding health insurance coverage to improve the distribution of health outcomes in a population and to reduce the financial risk facing vulnerable populations. Yet conventional economic evaluation of health interventions and policies have focused (almost) exclusively on measuring health outcomes, with less attention to net benefits arising from the reduction of financial risk.

In this paper, the authors use approaches from the finance and economics literatures to provide a framework for evaluating the overall value of health insurance by focusing on 3 dimensions of insurance’s net social benefit: It pools the risk of unexpected medical expenditures between healthy and sick households, facilitates the smoothing of consumption over time, and can (but does not always) facilitate the redistribution of income from high to low income recipients.

This paper is one in a series of methods papers which will ultimately be used to develop guidance on the conduct of benefit-cost analysis in global health and development. Access the workshop agenda [here](#).