



# Decision rules for allocation of finances to health systems strengthening



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## ARTICLE INFO

### Article history:

Received 7 July 2015

Received in revised form 27 May 2016

Accepted 3 June 2016

### JEL codes:

I1

I15

I18

C6

C61

C63

### Keywords:

Global health

Health systems strengthening

Resource allocation

Cost effectiveness analysis

Economic analysis

## ABSTRACT

A key dilemma in global health is how to allocate funds between disease-specific “vertical projects” on the one hand and “horizontal programmes” which aim to strengthen the entire health system on the other. While economic evaluation provides a way of approaching the prioritisation of vertical projects, it provides less guidance on how to prioritise between horizontal and vertical spending. We approach this problem by formulating a mathematical program which captures the complementary benefits of funding both vertical projects and horizontal programmes. We show that our solution to this math program has an appealing intuitive structure. We illustrate our model by computationally solving two specialised versions of this problem, with illustrations based on the problem of allocating funding for infectious diseases in sub-Saharan Africa. We conclude by reflecting on how such a model may be developed in the future and used to guide empirical data collection and theory development.

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## 1. Introduction

The notion of health system strengthening (HSS) has become increasingly important in global health discourse in recent years, manifest for example in a declaration at the 2008 G8 Toyako Summit (Takemi and Reich, 2009). This focus of attention arises from a recognition that attempts to implement disease-specific vertical projects often founder in the face of weak health systems: for example, a donor might purchase malaria medications or insecticide treated bednets for a low-income country, but the Ministry of Health as the implementing in-country partner is unable to deliver the medications before they expire or the bednets to the at-risk population before the end of the rainy season. Thus, the reasoning goes, funding for such vertical projects has to be complemented with funding for “horizontal” programmes which aim at strengthening the health system as a whole.

As Ellner et al. (2011) remark, although the label *health systems strengthening* is relatively recent, the dialectic between propo-

nents of vertical and horizontal approaches is a defining feature of global health debate through much of its history. The eradication of smallpox in the 1960s and 70s is an example of a “vertical project” (as were the earlier, failed, attempts to eliminate malaria). On the other hand, the Alma-Ata declaration (WHO, 1978), with its stress on the role of primary healthcare, presents a holistic vision of health services and is often taken as a statement of the philosophy and principles of the horizontal approach. Hafner and Shiffman (2013) describe how the focus on HSS marks a renewed interest and engagement in horizontal approaches on the part of key actors, including international organisations such as the WHO, World Bank, and other international agencies and donors.

Evidence of the importance of HSS is provided by the wide variations in health system performance amongst Low and Middle Income Countries (LMICs). Balabanova et al. (2013) highlight six countries and regions (Bangladesh, Ethiopia, Kyrgyzstan, Thailand, and the Indian state of Tamil Nadu) which have achieved good health at low cost and stress the vital role of systems-level elements in delivering success in what can be extremely challenging environments. The achievements of these countries cannot be explained by increased funding alone and can to some extent be attributed to the strength of the health systems. Chowdhury et al. (2013) describe how

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