



DIRECTIONS IN DEVELOPMENT
Human Development

Analyzing Markets for Health Workers

*Insights from Labor and
Health Economics*

Barbara McPake, Anthony Scott, and Ijeoma Edoa



THE WORLD BANK

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Preface

Improving equitable access to quality health services is one of the main pillars of the World Bank Health, Nutrition, and Population Strategy. The Bank gives high priority to ensuring equitable and sustainable improvements in health outcomes with particular attention to enhancing the well-being of the poor and vulnerable population as part of its primary mission to reduce poverty and promote shared prosperity across the globe. Within this framework, the Bank supports the aspirations of developing countries toward universal health coverage as an important goal that will contribute to each country's efforts in ensuring inclusive and sustainable development.

The Bank has identified the inadequate availability of health services and health workers, especially in rural and remote areas, as well as weak management and limited incentives—often not linked to performance—as some of the leading causes of the poor performance of health systems. The Human Resources for Health (HRH) program at the World Bank has been established to assist countries to carry out critical upstream analytic work that will inform health policy and improve the performance of health systems in an equitable and sustainable manner. The focus of the HRH program is on areas where the World Bank has a comparative advantage, including labor market analysis, the synergies between HRH and health financing policies, HRH budget and cost analysis, and assessment of health worker incentives and evaluation of performance-based pay policies.

This publication is part of the Bank's multiyear program to enhance its knowledge of HRH policies. The program's ultimate objective is to strengthen knowledge and capacity to collect evidence, analyze, and evaluate the effectiveness of HRH interventions in the context of a country's health system strengthening strategy. It specifically addresses the theoretical and empirical evidence on health labor markets in low- and middle-income countries.

Health labor market analysis has much to contribute to resolving globally widespread HRH problems, and continuing neglect of these problems provides some explanation for their persistence. Policy makers in countries promulgating or refining strategies for achieving universal health coverage will find it important to understand how key elements in their health labor market are likely to interact and how these interactions could help—or hinder—progress toward universal health coverage. These interactions are complex and multidimensional, and this publication highlights some areas where forces in the health labor market matter most.

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Anthony Scott, PhD, leads the Health Economics Research Program at the Melbourne Institute of Applied Economic and Social Research at the University of Melbourne, and jointly coordinates the University of Melbourne Health Economics Group. He has a PhD in economics from the University of Aberdeen. Dr. Scott is a principal research fellow at the National Health and Medical Research Council (NHMRC) and associate editor of the *Journal of Health Economics*. He leads the Centre of Research Excellence in Medical Workforce Dynamics (www.mabel.org.au). Funded by the NHMRC, the Centre runs Medicine in Australia: Balancing Employment and Life (MABEL), a large, nationally representative panel survey of physicians. Dr. Scott’s research interests focus on the behavior of physicians, the health workforce, incentives and performance, and primary care.

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Abbreviations

BRIC	Brazil, the Russian Federation, India, and China
DCEs	discrete choice experiments
EQUINET	Regional Network for Equity in Health in East and Southern Africa
FTE	full-time equivalent
IT	information technology
IV	instrumental variable
LMICs	low- and middle-income countries
MABEL	Medicine in Australia: Balancing Employment and Life
NHS	National Health Service
OECD	Organisation for Economic Co-operation and Development
WHO	World Health Organization

Overview

The purpose of this publication is to provide an overview of the key issues when attempting to apply economics to the analysis of health workers' labor markets. Though much has been written and planned about health human resources, a major weakness with most of this analysis is that it does not use an economic perspective. The use of an explicit economic framework applied by trained economists moves the focus away from simplistic but costly policy responses such as training more doctors and nurses, toward understanding more carefully the role of incentives, productivity, and the distribution of health workers. The health workforce is but one part of the health system, and a focus of analysis on only the health workforce is insufficient to be able to determine the optimal number of health workers. Market forces cannot be relied upon to solve health worker shortages or maldistribution, due to well-recognized market failures in health care. This also has implications for how labor economics and labor market analysis can be applied and used successfully in the health care sector.

The policy drivers of health workforce reform are a seemingly persistent mismatch between “need” and existing supply of health care services, including health workers. The document outlines how the health workforce is related to the rest of the health care system, and to other social and economic determinants of population health and well-being. It addresses the question of why market forces cannot be relied on to solve health worker shortages and why government intervention and regulation are required due to broader and well-recognized market failures in health care and health labor markets. The scale and types of government intervention vary across countries. The publication summarizes the evidence from low- and middle-income countries of market failures, government interventions, and their implications for health care provision.

The document combines the analytical framework of labor economics with an understanding of market failure provided by health economics, to provide a framework that can be used to further understanding of the dynamics of health worker labor markets. Demand-side issues include pay-setting arrangements and skill mix and task substitution. Supply-side issues include education and training, workforce participation, migration and retention, dual practice, geographic

distribution, productivity and performance, and health worker motivation. The economic approach to each of these issues is summarized, followed by a brief review of the literature in high income countries, and a more detailed review of studies from low- and middle-income countries.

Applying the economic framework to policy issues requires an understanding of both the types of economic analysis that can be conducted, and also the data required to undertake such analyses. There are two main types of economic analysis that can be conducted. Descriptive labor market analysis examines the current state and trends in the labor market and might generate more specific research questions and hypotheses. Causal labor market analysis is concerned with examining the causal effect of factors influencing the labor market behavior of employers and health workers, and can be based on the evaluation of policy changes on a range of labor market outcomes.

To conduct these types of analyses, a range of different sources of data can be used. However, data must include the earnings of health workers, and also be a panel/longitudinal, such that health workers data can be linked over time. In addition to randomized trials, panel data provides the most powerful data that be used to examine the causal effects of policy and of factors influencing behavior. These are the two most important gaps in current data collections that need to be addressed and that are currently preventing the application of economics to the analysis of health worker labor markets. Better data will also attract those with economics and micro-econometrics training to conduct research in this area.

There are three essential ways forward: first, more systematic and consistent application of economic thinking to human resources for health issues; second, building capacity by investment in better administrative and survey data that are matched to each other, and include data on earnings; and third, building capacity by involving more health and labor economists in health workforce research.

Introduction

The aim of this publication is to examine how labor and health economics can be used to analyze and better understand the role and functions of health worker labor markets. Health workforce shortages stem not only from inadequate overall supply, but also from suboptimal allocation of health human resources by location and role. Low performance and productivity are also issues. These three problems are often compounded by a resource problem—the gap between the finances required for an “adequate” workforce and those likely available. The application of labor economics to health care labor markets needs to account for the specific institutional features and market failures in health care.

Policy responses to shortages of health workers in low- and middle-income countries (LMICs) have to date almost exclusively focused on addressing shortages through “scaling up” interventions that increase the supply of health workers. This assumes that more health workers are a cost-effective way to improve the population’s health.

Though training and numbers are clearly an issue, it is also vital to ensure that the health workers already employed are used to their best effect, are productive, and are employed at reasonable cost; and that those newly trained are retained and encouraged to provide cost-effective treatments and procedures in specialties and geographic areas where the need for health care is high. These should be key objectives of health human resource policy, taking account of the ethical and equity issues surrounding health workforce migration between countries and between urban and rural areas within a country.

Pure scaling up largely ignores the potential contribution of labor and health economics in understanding how health worker labor markets function. An economic approach to labor markets is fundamental in fully understanding issues of health workforce shortages, productivity, and performance, and the appropriate policy responses.

The issues can be categorized into four “problems”: quantity, allocation, performance, and resources (Andalon and Fields, forthcoming). Health workforce shortages are due not only to inadequate overall supply (the quantity problem),

but also to a suboptimal allocation of health human resources in a range of interdependent submarkets (the allocation problem), notably between:

- geographic areas within and between countries, including urban–rural imbalance and migration;
- public and private sectors, including issues arising from dual practice;
- medicine, nursing, and other health workers—skill mix;
- medical specialties—generalist, primary, community-based care versus specialist care; and
- treatment settings—primary care, outpatients, acute care hospitals, and informal care at home.

Low performance and productivity are also often issues. If they were increased, fewer health workers would be required and health outcomes improved.

These three issues are often compounded by the resource problem—the gap between the finances required to expand the workforce to the required degree and those available in the near future.

The aim of this document is to examine how labor and health economics can be used to analyze and better understand the role and functions of health worker labor markets. It draws on the framework of labor economics (Andalon and Fields, forthcoming; Scheffler *et al.* 2012) and the insights of health economics to provide a conceptual framework that can contribute to guiding more appropriate and effective analysis and data collection related to the health workforce. The conceptual framework of labor economics has been highlighted in publications by the World Bank and World Health Organization (WHO) (Andalon and Fields, forthcoming; Scheffler *et al.* 2012). This publication goes several steps further by reviewing the types of analysis and data requirements necessary to apply this framework to health workforce issues in LMICs in more depth than has been undertaken previously.

The application of labor economics to the analysis of general labor markets is often different from the application of labor and health economics to the analysis of health workers' labor markets (box 1.1). This is largely due to the different set of policy and institutional issues that drive theoretical and empirical research

Box 1.1 Labor and Health Economics

Labor economics is a large field of economics that provides a framework for understanding how labor markets work. Only a handful of its concepts and tools, however, have been applied to health worker labor markets.

The theoretical and empirical approaches in traditional labor economics deal with issues and market imperfections in aggregate, that is, the whole labor market. Some of these topics are less relevant to health workers as they focus on low-income workers and unemployment, minimum wages, wage inequality, and trade unions.

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