DISEASE CONTROL PRIORITIES • THIRD EDITION

1

Essential Surgery

EDITORS

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WITH A FOREWORD BY

Paul Farmer

VOLUME 1

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Series Editors

Dean T. Jamison
Rachel Nugent
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Susan Horton
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DISEASE CONTROL PRIORITIES

Budgets constrain choices. Policy analysis helps decision makers achieve the greatest value from limited available resources. In 1993, the World Bank published *Disease Control Priorities in Developing Countries* (DCP1), an attempt to systematically assess the cost-effectiveness (value for money) of interventions that would address the major sources of disease burden in low- and middle-income countries. The World Bank's 1993 *World Development Report* on health drew heavily on *DCP1*'s findings to conclude that specific interventions against noncommunicable diseases were cost-effective, even in environments in which substantial burdens of infection and undernutrition persisted.

DCP2, published in 2006, updated and extended *DCP1* in several aspects, including explicit consideration of the implications for health systems of expanded intervention coverage. One way that health systems expand intervention coverage is through selected platforms that deliver interventions that require similar logistics but deliver interventions from different packages of conceptually related interventions, for example, against cardiovascular disease. Platforms often provide a more natural unit for investment than do individual interventions. Analysis of the costs of packages and platforms—and of the health improvements they can generate in given epidemiological environments—can help to guide health system investments and development.

The third edition of *DCP* is being completed. *DCP3* differs importantly from *DCP1* and *DCP2* by extending and consolidating the concepts of platforms and packages and by offering explicit consideration of the financial risk protection objective of health systems. In populations lacking access to health insurance or prepaid care, medical expenses that are high relative to income can be impoverishing. Where incomes are low, seemingly inexpensive medical procedures can have catastrophic financial effects. *DCP3* offers an approach to explicitly include financial protection as well as the distribution across income groups of financial and health outcomes resulting from policies (for example, public finance) to increase intervention uptake. The task in all of the *DCP* volumes has been to combine the available science about interventions implemented in very specific locales and under very specific conditions with informed judgment to reach reasonable conclusions about the impact of intervention mixes in diverse environments. *DCP3*'s broad aim is to delineate essential intervention packages and their related delivery platforms to assist decision makers in allocating often tightly constrained budgets so that health system objectives are maximally achieved.

DCP3's nine volumes are being published in 2015 and 2016 in an environment in which serious discussion continues about quantifying the sustainable development goal (SDG) for health. *DCP3*'s analyses are well-placed to assist in choosing the means to attain the health SDG and assessing the related costs. Only when these volumes, and the analytic efforts on which they are based, are completed will we be able to explore SDG-related and other broad policy conclusions and generalizations. The final *DCP3* volume will report those conclusions. Each individual volume will provide valuable specific policy analyses on the full range of interventions, packages, and policies relevant to its health topic.

More than 500 individuals and multiple institutions have contributed to *DCP3*. We convey our acknowledgments elsewhere in this volume. Here we express our particular

gratitude to the Bill & Melinda Gates Foundation for its sustained financial support, to the InterAcademy Medical Panel (and its U.S. affiliate, the Institute of Medicine of the National Academy of Sciences), and to the External and Corporate Relations Publishing and Knowledge division of the World Bank. Each played a critical role in this effort.

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1 2 3 4 18 17 16 15

ISBN (paper): 978-1-4648-0346-8
ISBN (electronic): 978-1-4648-0367-3
DOI: 10.1596/978-1-4648-0346-8

Cover photo: The 16 Makara hospital in Cambodia's remote Preah Vihear province is equipped with modern equipment. The maintenance of 16 Makara is supported by the World Bank and other international donors through the Health Sector Support Program and the Cambodia Second Health Sector Support Program. Photo: © Chhor Sokunthea/World Bank. Further permission required for reuse.

Cover and interior design: Debra Naylor, Naylor Design, Washington, DC

Library of Congress Cataloging-in-Publication Data

Essential surgery / volume editors, Haile T. Debas, Peter Donkor, Atul Gawande, Dean T. Jamison, Margaret E. Kruk, Charles N. Mock.
p ; cm. — (Disease control priorities ; v. 1)
Previously published in: Disease control priorities in developing countries, 2nd ed. c2006.
ISBN 978-1-4648-0346-8 (v. 1 : pb) — ISBN 978-1-4648-0097-9 (v. 1 : hc)
I. Debas, Haile T., editor. II. Disease control priorities in developing countries. III. Series: Disease control priorities ; v. 1.
[DNLM: 1. General Surgery—economics. 2. Developing Countries. WA 395]
RD27.42
362.197—dc23

2014037594

Contents

Foreword

The past few decades have seen enormous changes in the global burden of disease. Although many people, especially those living in (or near) poverty and other privations, are familiar with heavy burdens and much disease, the term "global burden of disease" emerged in public health and in health economics only in recent decades. It was coined to describe what ails people, when, and where, and just as reliable quantification is difficult, so too is agreeing on units of analysis. Does this term truly describe the burden of disease of the globe? Of a nation? A city?

We have also learned a thing or two about how to assess this global burden, and how to reveal its sharp local variation and transformation with changing conditions ranging from urbanization to a global rise in obesity (Murray, Lopez, and Jamison 1994; Murray and Lopez 1997; Lopez and others 2006; Mathers, Fat, and Boerma 2008; Jamison and others 2013; Lozano and others 2013). Measuring illness has never been easy, nor has attributing a death—whether premature or at the end of fourscore years—to a specific cause (Yarushalmy and Palmer 1959; Rothman 1976; Byass 2010; Byass and others 2013). Even countries with sound vital registries generate data of varying quality, given that cause of death is rarely confirmed by autopsy (Mathers and others 2005; Mahapatra and others 2007). When nonlethal or slowly debilitating illness is added to considerations of burden of disease, the challenge of both measurement and etiologic claims can appear overwhelming (Kleinman 1995; Arnesen and Nord 1999; Salomon and others 2012; Voigt and King 2014).

The challenges of measuring the burden of disease only get more complex when attempting to use the category of surgical disease. For starters, even experts do not agree on definitions of ostensibly simple terms such as "surgical disease" (Debas and others 2006; Duba and Hill 2007; Ozgediz and others 2009; Bickler and others 2010). Some illnesses rarely considered to be surgical problems pose threats to health if neglected long enough. Some trends are clear, however. Take the examples offered by Haiti and Rwanda, where different types of trauma (intentional or the result of crush injuries) account for a majority of young-adult deaths. How many of these deaths are classified as attributable to surgical disease? If someone dies of acute abdomen—and if his or her death is recorded at all—was it attributed to appendicitis or to enteric fever? Are these infectious complications of surgical disease or surgical complications of infectious disease? If a child with untreated epilepsy falls into a fire and succumbs from burns, how is this death reported, if it is registered at all? Clinicians who work in settings far from any pathology laboratory have seen infected tumors (misdiagnosed as primary infection) as often as they have discovered that a suspected breast cancer was a long-untreated canalicular abscess. Brain tumors are revealed to be tuberculomas and vice versa.

A sound grasp of the burden of disease is essential to those seeking data-driven methods to design and evaluate policies aimed at decreasing premature death and suffering (Nordberg, Holmberg, and Kiugu 1995; Taira, McQueen, and Burkle 2009; Poenaru, Ozgediz, and Gosselin 2014). But surgical disease was not often on the agenda. The immensity and complexity of the task of quantifying the surgical burden of disease has led many to avoid that task, leading to an analytic vacuum with adverse consequences. For too long, the global health movement has failed to count surgery as an integral part of public health. Prevailing wisdom dictated that the surgical disease burden was too low, surgical expenses too high, and delivery of care too complicated. The predecessor to this volume, the second edition of *Disease Control Priorities in Developing Countries*