VOLUME 4

DISEASE CONTROL PRIORITIES • THIRD EDITION

Mental, Neurological, and Substance Use Disorders

DISEASE CONTROL PRIORITIES • THIRD EDITION

Series Editors

Dean T. Jamison
Rachel Nugent
Hellen Gelband
Susan Horton
Prabhat Jha
Ramanan Laxminarayan
Charles N. Mock

Volumes in the Series

Essential Surgery
Reproductive, Maternal, Newborn, and Child Health
Cancer
Mental, Neurological, and Substance Use Disorders
Cardiovascular, Respiratory, and Related Disorders
HIV/AIDS, STIs, Tuberculosis, and Malaria
Injury Prevention and Environmental Health
Child and Adolescent Development
Disease Control Priorities: Improving Health and Reducing Poverty

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.

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 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 Medicine), and to the External and Corporate Relations Publishing and Knowledge division of the World Bank. Each played a critical role in this effort.

Dean T. Jamison
Rachel Nugent
Hellen Gelband
Susan Horton
Prabhat Jha
Ramanan Laxminarayan
Charles N. Mock

VOLUME 4

DISEASE CONTROL PRIORITIES • THIRD EDITION

Mental, Neurological, and Substance Use Disorders

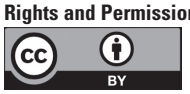
EDITORS

Vikram Patel
Dan Chisholm
Tarun Dua
Ramanan Laxminarayan
María Elena Medina-Mora

WORLD BANK GROUP

1818 H Street NW, Washington, DC 20433
Telephone: 202-473-1000; Internet: www.worldbank.org

1 2 3 4 19 18 17 16



Softcover
ISBN (paperback): 978-1-4648-0426-7
ISBN (electronic): 978-1-4648-0428-1
DOI: 10.1596/978-1-4648-0426-7

Hardcover
ISBN (hardcover): 978-1-4648-0427-4
DOI: 10.1596/978-1-4648-0427-4

Cover photo: © Curt Carnemark / World Bank. Further permission required for reuse.
Cover design: Debra Naylor, Naylor Design, Inc., Washington, DC.

Library of Congress Cataloging-in-Publication Data

Names: Patel, Vikram, editor. | Chisholm, Dan, editor. | Dua, Tarun, editor. | Laxminarayan, Ramanan, editor. | Medina-Mora, Maria Elena, editor. | World Bank, issuing body,

Title: Mental, neurological, and substance use disorders / editors, Vikram Patel, Dan Chisholm, Tarun Dua, Ramanan Laxminarayan, Maria Elena Medina-Mora.

Other titles: Disease control priorities ; v. 4. Description: Washington, DC : International Bank for Reconstruction and Development /The World Bank, [2015] | Series: Disease control priorities ; volume 4 | Includes bibliographical references and index.

Identifiers: LCCN 2015041175 (print) | LCCN 2015041905 (ebook) | ISBN 9781464804267 (alk. paper) | ISBN 9781464804274 (alk : paper : hc) | ISBN 9781464804281 (ebook)

Subjects: | MESH: Mental Disorders. | Developing Countries. | Public Health. | Substance-Related Disorders.

Classification: LCC RA790.5 (print) | LCC RA790.5 (ebook) | NLM WA 395 | DDC 362.19689—dc23

LC record available at http://lccn.loc.gov/2015041175

Contents

Foreword

I personally felt mental health's deep-rooted importance when I returned home to Rwanda in 1996, just after my people were traumatized by the 1994 Tutsi genocide. At a time when we needed mental health services the most, there was only one psychiatrist in the entire country. In an act to survive and rebuild, we turned to our communities for healing. Giving a voice to the people and collectively finding a solution to the mental health challenges that we faced at that time has helped Rwanda to resiliently move forward on a path toward recovery.

This volume of *Disease Control Priorities,* third edition *(DCP3)*, is thus a welcome call to action for augmenting the response needed to address the growing challenge of mental, neurological, and substance use (MNS) disorders. Such illnesses lurk in the shadows. Although they account for 10 percent of the global disease burden, they are left underestimated and unsupported worldwide.

In the pages that follow, the world has in its hands a series of evidence-based approaches, cost-effective strategies, and implementation guidelines for MNS disorders. This comes at an opportune time. Changing epidemiological and social determinant health profiles show the world's readiness for sustainable development goals (SDGs) to aim for universal health coverage. We, as global leaders, have a moral obligation to advocate for comprehensive, effective services backed by human-rights-oriented legal frameworks to protect those living with MNS disorders as part of this quest toward meaningful universal health coverage. Prioritizing the *supply* of quality MNS services at the community level while also improving the *demand* for such services must come with this advocacy effort.

Although these steps may seem daunting, there is reason for hope. We can build on the lessons from the world's 15-year fight against HIV/AIDS. Across low- and middle-income countries (LMICs) in the 1990s, both supply and demand for HIV/AIDS services were absent because there were no delivery platforms. No money or support was given to create a delivery structure. No laws were written to protect the human rights of those stigmatized by HIV/AIDS.

Today, it is a drastically different story. Progress against HIV/AIDS for the past 15 years tells us that no evidence-based, multisectoral, holistic, and rights-based approach is too sophisticated for LMICs. It demonstrates that specialized referral service systems are possible, even for one of the most complicated and stigmatized of conditions. It illustrates that as bidirectional supply and demand is created, the much-needed link between patients' needs and an effective global care response will grow stronger.

I challenge global leaders to build upon these lessons learned from the HIV/AIDS response and apply it positively to the challenge of MNS disorders. We must no longer overlook the deleterious effects that the lack of quality MNS services has upon our communities. We should strive to build universal health care systems specifically recognizing MNS disorders' genetic, biological, and cultural roots. And as a global community, I implore us to create enabling environments to address the social determinants of health affecting MNS disorders.

This call to action need not be answered alone; let us work together as a global team to change the status quo and demand health equity for all.

Agnes Binagwaho, MD, MPed, PhD
Minister of Health, Rwanda

Preface

Mental, neurological, and substance use (MNS) disorders contribute approximately 10 percent of the global burden of disease. They often run a chronic course, are highly disabling, and are associated with significant premature mortality. Moreover, beyond their health consequences, the impact of these disorders on the social and economic well-being of individuals, families, and societies is enormous.

Despite this burden, MNS disorders have been systematically neglected in most of the world, particularly in low- and middle-income countries (LMICs), with pitifully small contributions to prevention and treatment by governments and development agencies. Systematically compiling the substantial evidence that already exists to address this inequity is the central goal of volume 4 of *Disease Control Priorities,* third edition *(DCP3)*. The evidence presented in this volume will help to build an evidence-based perspective on which policies and interventions for addressing MNS disorders should be prioritized in resource-constrained settings. These recommendations will be of relevance to ministries of health and—given the intersectoral nature of the interventions and impacts of MNS disorders—to ministries of health and social welfare, as well as to institutions and donors concerned with sustainable development. Reaching a broader audience of academics, research organizations, and public health practitioners is another goal of this effort.

MNS disorders include a large number of discrete health conditions, each with its own epidemiological characteristics and interventions for prevention and care. These disorders, like most chronic noncommunicable diseases, are caused by complex interactions among genetic, biological, social, and psychological determinants. In this volume, we chose to address only those conditions that are associated with a significant global burden. In doing so, we address the majority of the burden associated with these disorders. We have organized these heterogeneous groups of disorders into five groups: adult mental disorders, child mental and developmental disorders, neurological disorders, alcohol use disorders, and illicit drug use disorders. The volume also addresses suicide and self-harm, which are strongly associated with MNS disorders.

In addition to providing an up-to-date synthesis of the burden, prevalence, determinants, and interventions for prevention and care of the selected disorders, the volume offers a number of novel contributions to the policy-relevant evidence on MNS disorders.

- First, we present a systematic analysis of the excess mortality associated with these disorders, enhancing our understanding of the true burden of disease attributable to them.
- Second, the discussion of interventions embraces a health system perspective, such that, after a review of the effective interventions for specific disorders, these are then organized according to how they might be delivered across three distinct and complementary platforms: population, community, and health and social care. This approach allows us not only to reflect on how interventions are planned and delivered in health systems, but also to highlight the potential opportunities, synergies, and efficiencies for resource allocation.
- Third, in addition to a review of the recent evidence for cost-effectiveness, the efforts to scale up the community-based services for mental health in selected LMICs—India and Ethiopia—have been examined through the lens of extended cost-effectiveness

analysis to consider the distribution of costs and outcomes, as well as the extent to which policies offer financial protection to households.

We thank the large international group of authors who have contributed to the development of the volume for their time, effort, and thoroughness and for presentation of the evidence succinctly. We hope readers will find that the exhaustive information the authors have synthesized is presented in a manner that is clear and engaging. We thank the Bill & Melinda Gates Foundation for providing funding support to the *DCP3*, the Institute of Medicine for coordinating the peer-review process, and the World Bank staff who coordinated the publication of the volume. We are grateful to the *DCP3* secretariat, in particular, Dean Jamison and Rachel Nugent, for their expert inputs on various chapters. In addition, we thank Brianne Adderley, Kristen Danforth, and Elizabeth Brouwer for their unstinting support, and Rachana Parikh for coordinating the volume.

The findings of this volume make an emphatic case for a substantially increased investment in the prevention of and care for MNS disorders. We document highly cost-effective strategies for the prevention of some MNS disorders and affordable models of care for the delivery of treatment interventions in routine health care platforms through nonspecialist health workers. Such investments make economic sense for two reasons: the interventions we recommend are cost-effective, and the impact of these interventions on social and economic outcomes is immense. The counterfactual situation of not doing enough, which prevails in most populations, is leading to enormous loss of human capital and will hinder the ambition of sustainable development. The evidence in this volume can be translated into practice only with strong political will and commitment from the governments and developmental agencies who now have to make the necessary investments in their scale-up.

We have the evidence to act. There is a moral case to act. The time to act is now.

Vikram Patel
Dan Chisholm
Tarun Dua
Ramanan Laxminarayan
María Elena Medina-Mora

Abbreviations

ACE	Assessing Cost-Effectiveness
ADHD	attention deficit hyperactivity disorder
AEDs	anti-epileptic drugs
AIDS	acquired immune deficiency syndrome
AIMS	Assessment Instrument for Mental Health Systems
APA	American Psychiatric Association
ATS	amphetamine-type stimulants
AUDs	alcohol use disorders
BAC	blood alcohol concentration
BBV	blood-borne virus
BMT	buprenorphine maintenance treatment
BPSD	behavioral and psychological symptoms of dementia
BZP	N-benzylpiperazine
CBI	cognitive behavioral interventions
CBT	cognitive behavioral therapy
CD	conduct disorder
CDC	Centers for Disease Control and Prevention
CEA	cost-effectiveness analysis
ChEI	cholinesterase inhibitors
CHW	community health worker
CHOICE	Choosing Interventions that are Cost-Effective
CI	confidence interval
CoD	cause of death
CRA	comparative risk assessment
CSG	Consejo de Salubridad General
DALYs	disability-adjusted life years
DARE	Drug Abuse Resistance Education
DCP2	*Disease Control Priorities in Developing Countries,* 2nd ed.
DCP	Disease Control Priorities
DOH	Department of Health
DFID	Department of International Development
DSH	deliberate self-harm
DNA	deoxyribonucleic acid
DSM-5	*Diagnostic and Statistical Manual of Mental Disorders,* 5th ed.
DW	disability weight
ECT	electroconvulsive therapy

ECEA	extended cost-effectiveness analysis
EEG	electroencephalogram
EOD	early-onset dementia
ES	effect size
FAS	Fetal Alcohol Syndrome
FASD	Fetal Alcohol Syndrome Disorders
FRP	financial risk protection
GBD	Global burden of disease
GBD 2010	Global Burden of Disease Study 2010
g/dl	grams per deciliter
GDP	gross domestic product
GHE	Global Health Estimates
GNI	gross national income
GRADE	Grading of Recommendations Assessment, Development and Evaluation
HCV	hepatitis C
HICs	high-income countries
HIV/AIDS	human immunodeficiency virus/acquired immune deficiency syndrome
HIV	human immunodeficiency virus
HMT	heroin maintenance treatment
HR	hazard ratio
IASC	Inter-Agency Standing Committee
ICD	International Classification of Diseases
ICT	information and communications technology
IHD	ischemic heart disease
IHME	Institute for Health Metrics and Evaluation
IMAI	Integrated Management of Adult and Adolescent Illness
IOM	Institute of Medicine
IQs	intelligence quotients
INCB	International Narcotics Control Board
IOM	Institute of Medicine
IQR	interquartile range
LICs	low-income countries
LMICs	low- and-middle-income countries
MCH	maternal and child health
MDMA	3,4-methylenedioxy-N-methylamphetamine
MDPV	methylenedioxypyrovalerone
MHaPP	Mental Health and Poverty Project
mhGAP	Mental Health Gap Action Programme
MICs	middle-income countries
MMT	methadone maintenance treatment
MNS	mental, neurological, and substance use
MOH	medication-overuse headache
MSIC	Medically Supervised Injecting Centre
NIAAA	National Institute of Alcohol Abuse and Alcoholism
NCD	noncommunicable disease
NICE	National Institute for Health and Clinical Excellence
OCD	obsessive-compulsive disorder
ONDCP	Office of National Drug Control Policy
OOP	out-of-pocket
OR	odds ratio
OST	opioid substitution treatment
PAF	population attributable fractions
PC101	Primary Care 101

PHC	primary health care
PRIME	Programme for Improving Mental health carE
PSST	problem-solving skills therapy
PTSD	post-traumatic stress disorder
QA	quality assurance
QALYs	quality-adjusted life years
QI	quality improvement
RR	relative risk
RCT	randomized controlled trial
SAPS	South African Police Service
SAR	Special Administrative Region
SDG	sustainable development goal
SEL	social emotional learning
SHR	sustained headache relief
SIFs	supervised injecting facilities
SMART	Self-Management and Recovery Training
SMDs	severe mental disorders
SMR	standardized mortality ratio
SNRIs	serotonin-norepinephrine reuptake inhibitors
SSRIs	selective serotonin reuptake inhibitors
TC	therapeutic community
TCA	tricyclic antidepressant
TPO	Transcultural Psychosocial Organization
TTH	tension-type headache
TQ	Ten Question
UHC	universal health coverage
UI	uncertainty interval
UMICs	upper middle-income countries
UNDCP	United Nations International Drug Control Programme
UNODC	United Nations Office on Drugs and Crime
UPF	universal public finance
WHO	World Health Organization
WMH	World Mental Health
WONCA	World Organization of Family Doctors
YLDs	years lived with disability
YLLs	years of life lost