Disease Control Priorities, 3rd edition: improving health and reducing poverty

In 1993 the World Bank published the first edition of *Disease Control Priorities in Developing Countries* (DCP1), an attempt to systematically assess the cost-effectiveness of interventions for the major sources of disease burden in low-income and middle-income countries.[1] World Bank staff in the early 1990s were just beginning to receive requests from countries to finance projects to control AIDS and non-communicable diseases (NCDs). A major motivation for DCP1 was thus to identify reasonable responses in resource-constrained environments to the emergence of AIDS and to the growing burden of NCDs.[2,3] The World Bank's first (and so far only) *World Development Report* dealing with health drew on findings from DCP1 both to conclude that a number of specific interventions against AIDS and against NCDs, including tobacco control, were attractive and to underscore the cost-effectiveness of immunisation and the treatment of childhood infections.[4]

Disease Control Priorities in Developing Countries, 2nd edition (DCP2),[5] published in 2006, updated and extended DCP1 in several aspects, notably to explicitly consider implications for health systems of expanded intervention coverage.[6] One way health systems achieve expanded intervention coverage is through investing in platforms that deliver interventions that require similar logistics, but which address heterogeneous health problems (table). Platforms often provide a more natural unit for investment than do individual interventions. For this reason, analysis of the costs of providing platforms—and of health improvements they can generate in a given epidemiological environment—can often provide a more helpful guide to health-system investments than can analysis only of interventions. Platforms examined included the district hospital as a whole, the surgical and emergency room platforms within the district hospital, and school-based health programmes. Both DCP1 and DCP2 also stimulated and informed specific country-level analyses, for example, in India.[8]

	Population health policies*	Service delivery platforms†			
		Community-based services	Primary health centres	First-level hospitals	Referral and specialised hospitals
Essential surgery‡	..	..	Management of non-displaced fractures (urgent)	Appendectomy (urgent)	Repair of cleft lip/palate (non-urgent, time limited)
Reproductive, maternal, newborn, and child health	..	..	..	..	..
Essential reproductive health	..	Provision of condoms, intrauterine devices, and oral contraceptives (non-urgent, time limited)	..	..	..
Essential maternal and newborn health	..	..	Normal delivery (urgent)	Antiretrovirals for HIV infection (continuing intervention for chronic conditions)	Antenatal steroids for preterm labour·(urgent)
Essential child health	..	Immunisation (non-urgent, time limited)	..	..	..
Essential cancer	Tobacco taxation and bans (non-urgent, time limited)	Palliative care (non-urgent, time limited)	..	Treat early stage cervical cancer (non-urgent, time limited)	..
Essential mental health	Alcohol regulation (non-urgent, time limited)	..	Lithium for bipolar patients (continuing intervention for chronic conditions)	..	Expert nursing for acute psychosis (urgent)

In addition to developing essential packages some DCP3 volumes identify one or more "augmented" packages that delineate next steps after the essential interventions are available population wide. A reasonable goal for essential package implementation would be by 2020; for the augmented packages the goal might be 2025–30. *These policies fall into five broad categories: information and communication, taxes and subsidies, regulation and legislation, mass screening and treatment, and engineering (eg, installation of speed bumps).[7] †All procedures listed for lower level platforms are frequently provided at higher levels. Similarly, each facility level represents a spectrum and diversity of capabilities. In DCP3 community facility implies primarily outpatient procedure provision, such as much of dental care. Clinic denotes a facility with overnight beds and 24-h staff, needed in procedures such as normal delivery. ‡Table shows three of 44 essential surgical interventions.

Table: Packages, policies, and platforms in DCP3

Now, the nine-volume *Disease Control Priorities*, 3rd edition (DCP3), is published in 2015–16. DCP3's broad aim is to assist decision makers in the allocation of tightly constrained budgets so that health-system objectives are maximally achieved. Countries differ in the problems they face, in their capacities, and in their objectives. Thus the analyses that DCP3 reports are intended simply as starting points and sources of information for within country priority setting.

As before, the analysis attempts to make the best use of the evidence available for informing important decisions, rather than reporting what the best available evidence has to say. This distinction is important. For malaria, as an example, evidence is available on the effect of vector control on malaria mortality in specific environments and also on the efficacy of treatment for the disease. Very little evidence, however, exists on how different combinations of vector control and treatment affect mortality. But this is the important question for policy: no malaria control programme manager is likely to rely on a single control method. Similar issues arise for NCDs, and they are often of greater importance because most of the literature on available intervention research originates in high-income countries. Our task in all the DCPs has been to combine the science about interventions implemented in specific locales and under specific conditions with informed judgment to reach reasonable conclusions about the impact of different combinations of interventions in diverse environments. This distinguishes the policy analysis objective of DCP from the meta-analysis of scientific studies that characterises a systematic review. Policy analysis must incorporate but go beyond systematic review. DCP contributors differ in the relative weights they accord to systematic review and to policy analysis, but the broad objective of policy relevance holds throughout.

The first volume of DCP3 is *Essential Surgery*[9] and is the focus of the analytic overview by Charles Mock and colleagues[10] in *The Lancet*. During 2015–16, *The Lancet* will publish overviews of the findings of most or all of the nine DCP3 volumes (panel). DCP3 differs importantly from DCP1 and DCP2 by extending and consolidating the concepts of platforms and of packages and by offering explicit consideration of the financial risk protection objective of health systems. An understanding of the costs and effects of individual interventions is integral to our analyses in DCP3.

DCP3 defines packages of interventions as conceptually related—eg, by health issue, target population, or method of delivery. Examples are the set of interventions needed to address cardiovascular disease, individuals in a certain age group, or those delivered in a surgery unit. An objective of each DCP3 volume is to define an essential package in a given area and, for some topics, expanded packages that might be acquired at a later stage on the pathway to universal health coverage (UHC).[11] The essential packages comprise interventions that are cost effective, implementable, and address substantial disease burden; for these reasons, essential packages might reasonably be publicly financed early on the pathway to UHC.

Platforms are defined in DCP3 as logistically related delivery channels. Drawing on the work of Global Health 2035,[12] the table shows how illustrative interventions included in a given package will typically be carried on different types of platforms. The table also shows the

population health policies relevant for each package. The temporal character of interventions—urgent, non-urgent but time-limited, and continuing—matters critically for health-system development.[13] Patients who require non-urgent but specialised intervention (eg, repair of cleft lips and palates) can be accumulated over space and time to enable efficiencies in achieving high-volume service delivery. Urgent interventions, which include a large proportion of essential surgical interventions, are ideally continuously available in reasonably well-resourced facilities close to where patients live; this has important implications for dispersal of relevant platforms and integration of different services. Most continuing interventions to address chronic conditions, such as antiretroviral therapy for individuals with HIV infection, can potentially be provided close to the community without requiring advanced facilities. DCP3 offers explicit categorisation of all essential interventions into these three temporal categories. DCP3 also reviews policies that affect the uptake of interventions (eg, conditional cash transfers) and the quality with which they are delivered (eg, clinical guidelines or checklists).

In populations without 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. WHO's *World Health Report 2010* documented the substantial rates of medical impoverishment and pointed to the value of UHC for addressing both the health and financial protection needs of populations.[14] Although many studies document the extent of medical impoverishment, most economic evaluations of health interventions and their finance (including those in DCP1 and DCP2) do not address the important question of efficiency in the purchase of financial protection. In work undertaken for DCP3, Verguet and colleagues[15] provide an approach to explicitly include financial protection in economic evaluation of health interventions. Others address the same concern from a somewhat different perspective.[16] Verguet and colleagues' extended cost-effectiveness analysis (ECEA)[15] of public finance for extending tuberculosis treatment coverage in India is the approach that DCP3 has used. This approach addresses issues of both reduction in financial risk as well as the distribution across income groups of financial and health outcomes resulting from policies (eg, public finance) to increase intervention uptake. ECEA has been used to evaluate tobacco taxation and regulatory policies.[17] ECEAs of intervention packages can reveal the two dimensions of financial risk protection and distributional impact and enable DCP3 to address poverty reduction as well as health objectives.

DCP3 is a large-scale enterprise that involves many authors, editors, and institutions. After 4 years, it is now emerging volume by volume. The nine volumes will be released in an environment in which serious discussion continues about quantifying Sustainable Development Goals (SDGs) for health. DCP3's analyses are well-placed to assist in choosing the means to attain SDGs and assessment of the costs of attaining them.[18,19] When the eight topic-specific volumes, and the analytic efforts on which they are based, are completed we will be able to explore broad policy conclusions and generalisations. The final DCP3 volume will report DCP3-wide findings. Each individual volume, however, will provide valuable specific policy analyses on the full range of interventions, packages, and policies relevant to its health topic.

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