Annals of Global Health
VOL. ■, NO. ■, 2017

ISSN 2214-9996/$36.00
http://dx.doi.org/10.1016/j.aogh.2017.05.005

ORIGINAL RESEARCH

On Essentiality and the World Health Organization's Model List of Essential Medicines

Victoria A. Marks, BS Candidate, Stephen R. Latham, JD, PhD, Sandeep P. Kishore, MD, PhD
New Haven, Connecticut, and New York, New York

Abstract

BACKGROUND In 1977 the World Health Organization created its first Model List of Essential Medicines—a list designed to aid countries in determining which medicines to prioritize on their National Essential Medicines Lists. In classifying drugs as "essential," the World Health Organization has historically stressed drugs' ability to meet priority health needs of populations and cost.

OBJECTIVES In this paper we trace the fluctuations in the application of cost and priority status of disease as criteria for essential medicines throughout the reports published by the WHO Expert Committee on Selection and Use of Essential Medicines since 1977.

METHODS We analyzed essential medicines lists published on the World Health Organization website since 1977 for trends in criteria concerning cost and priority status of disease. Where, available, analyzed the World Health Organization Expert Committee analysis rationalizing why certain medicines were or were not added and were or were not removed.

RESULTS The application of the criteria of cost and priority status of essential medicines has fluctuated dramatically over the years.

CONCLUSIONS The definition of essential medicines has shifted and now necessitates a new consensus on normative definitions and criteria. A more standardized and transparent set of procedures for choosing essential medicines is required.

KEY WORDS essential medicines, governance, World Health Organization

INTRODUCTION

The World Health Organization (WHO) currently defines essential medicines as "those that satisfy the priority health care needs of the population"[1] and describes the criteria for their selection as "disease prevalence and public health relevance, evidence of clinical efficacy and safety, and comparative costs and cost-effectiveness."[1] These standards for defining and selecting an "essential medicine" are quite general; moreover, their application to particular cases has been unpredictable in recent years. This paper explores some of that recent history, and raises normative questions about how—by whom, and using what procedures—essentiality of medicines should be understood and, ultimately, defined.

The current definition of "essential medicines" is coded into the WHO Model List of Essential Medicines (EML). Developed in 1977, this list was created to serve as a guideline for the National Essential Medicines Lists for countries globally. The WHO's original intent was to assist developing

Conflict of interest: Sandeep P. Kishore, MD, PhD has authored applications to the World Health Organization Expert Committee to add and delete medications.

From the Department of Chemistry, Yale University, New Haven, CT (VAM); Yale Interdisciplinary Center for Bioethics, New Haven, CT (SRL); Arnhold Institute for Global Health at Icahn School of Medicine at Mount Sinai, New York, NY (SPK). Address correspondence to S.P.K. (Sunny.kishore@gmail.com).

countries in establishing priority lists of medicines by offering to them an expert opinion on the cost and proven efficacy of medicines addressing their priority medical needs.[2] Over the years, however, the notions of both "cost" and "priority" have migrated, sometimes inconsistently.

METHODS

The WHO Model List of Essential Medicines has been updated every two years since 1977 and posted on the website of the WHO. We analyzed each of these lists, as well as the reports released by the WHO Expert Committee on Selection and Use of Essential Medicines rationalizing all additions and deletions from the list. We tracked citation of the criteria cost and priority status of disease for essential medicines throughout these reports. Fluctuation and trends in the application of these criteria were analyzed in order to assess the consistency and transparency of the selection process.

RESULTS

Cost. When the WHO first published its list, it stated that affordability was considered a "major selection criterion."[2] This criterion included not only "cost comparisons between drugs"[2] but also "the cost of the total treatment"[2] for a given drug; for example, a low-cost, efficacious drug that requires constant monitoring to prevent side effects may ultimately be expensive in a country where such maintenance is difficult. The WHO's wording in this era suggested that although cost was not the *only* consideration, a drug *could* be excluded from the list solely on account of high cost, despite having an otherwise favorable profile. At the end of the 1977 report, a recommendation to inquire more about the cost/effectiveness ratio was noted,[2] though not pursued thereafter.

The idea that drugs could be kept off the list based on their "absolute cost" was maintained for 15 years. It was not until the 1992 report[3] that the WHO Expert Committee on the Selection and Use of Essential Medicines first referenced the cost/benefit ratio as a "major consideration in the choice of some drugs for the list."[3] At this point, the WHO began to assert that cost alone should never bar a medicine from the list. In 2000, the term *cost-effectiveness* was introduced.[4] Cost-effectiveness analysis dictates that a high-cost medicine may nonetheless be "essential" if its value outweighs that cost.[4]

In 2001 the WHO outlined a revised procedure for updating the Model List of Essential Medicines.[5] No longer could the absolute cost "constitute a reason to exclude a medicine from the Model List"[5] if that medicine "otherwise met the stated selected criteria."[5] The required cost-effectiveness analysis is to consider not only the total cost of treatment compared with that of other medicines in the same therapeutic group but also the direct and indirect nonmedical costs of each drug,[5] such as costs of, for example, refrigerated storage.

It is important to note that the relationship between cost and the EML is 2-fold; not only may cost affect the inclusion of a medicine on the list, but the inclusion of a medicine on the list may also affect the cost and availability of the medicine in return.[6] On the supply side, the WHO EML guides mass drug donation by both public and private sector stakeholders.[6] On the demand side, nations adapt the international EML to national EMLs to guide their purchasing and reimbursement of therapies. Inclusion of a medicine on the EML has been reported to increase its availability and affordability.[1,3] This fact makes it vital that cost considerations be treated carefully and consistently.

Nonetheless, throughout the 21st century, cost has been taken into account, though with varying—and sometimes inexplicable—degrees of importance. In 2011 the Expert Committee rejected the inhalation drug sevoflurane, with the only explanation being "due to cost"[7]— not even unfavorable cost-effectiveness. On the other hand, the Expert Committee added artesunate to the Model List without any consideration of cost analysis because of the medication's other advantages.[7] In 2015, cost came to the forefront of the Expert Committee's discussion when several high-cost cancer medicines, including imatinib, trastuzumab, and rituximab, were recommended.[8] Ultimately, the Expert Committee "approved inclusion…on the EML in spite of their high price."[8] Notably, the Expert Committee stated that "where the total cost of a new medicine is high, countries will need to consider the 'opportunity cost' and affordability for the health system as a whole,"[8] acknowledging that regardless of a favorable cost-effectiveness analysis, investment in some essential medicines still might not be beneficial for some countries. Although cost was obviously highly considered in the 2011 and 2015 reports, the 2007 and 2010 reports indicate a marked decrease in cost considerations compared with reports from years both before and after.