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Equity in Pharmaceutical Pricing and Reimbursement: Crossing the Income Divide in Asia Pacific

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ABSTRACT

Objectives: The article takes a three-dimensional approach (triangulation) in defining international pricing policy for pharmaceuticals using cost-effectiveness analysis (CEA), willingness-to-pay (WTP) analysis, and ability-to-pay (ATP) analysis. It attempts to find a balance between the various economic methods of which some focus on effectiveness while others are geared toward incorporating equity in the equation. **Methods:** A critical review of the first two established economic methods and their ability to evaluate not only "efficacy" but also "fairness" in pricing decisions identifies a gap in the latter. Therefore, a third analytic method is presented that measures the ATP based on a country's score in the human development index of the United Nations Development Program for 120 countries. This approach allows practicing differential pricing among and within countries. To refine this equity-driven pricing concept, two additional parameters can be added to the model: the Oxford "Multidimensional Poverty Index" and the "Out-of-Pocket" or "Self Pay" health expenditure as reported by the World Bank. **Results:** There is no hierarchy between the above three pricing methods. Because one method provides further insight into the other, however, it is recommended to start with CEA followed by WTP analysis. These types of analysis are closely linked in that the first provides the CE ratio for the compound investigated and the other sets the anticipated ceiling threshold of the payer's WTP (in a particular country). The ATP method provides a supplementary "equity" check and facilitates the process of equity-based differential pricing. **Conclusions:** A third method should be used in conjunction with the standard CEA and WTP analysis that measures the ATP with the human development index as yardstick to provide sustainable and equitable access to medicines. We recommend that ATP analysis becomes an additional practice in policy decision making and in defining international pricing strategies for pharmaceuticals.

Keywords: ability-to-pay, access to medicines, equity, pharmaceutical pricing.

Introduction

Providers of health technology are increasingly urged to give payers insight into the associated costs and benefits, and demonstrate value for money. This necessitates the use of cost-effectiveness analysis (CEA) in defining strategies that support pricing and reimbursement decisions. Although CE is an important criterion, it does not provide a complete picture. A good health policy and related pricing strategy must not only aim to be efficient but should also ensure equitable access to medicines.

To fulfill the requirements of health technology assessment (HTA) agencies and reimbursement committees in an increasing number of countries, this requires not only generating data that prove clinical efficiency but also CE. The premise of CEA is that it helps policymakers and executives make decisions by setting a maximum cost threshold for a benefit outcome, often expressed as quality-adjusted life-year (QALY) gained. Reimbursement is granted if the incremental cost-effectiveness ratio (ICER) falls within an acceptable range where there is debate about its cutoff point. CE methods, however, provide an incomplete picture especially when they are conducted from an institutional perspective. In CEA, the efficiency-driven outcome is measured against a standard that reflects the economic considerations of the health system as a whole more than the willingness to pay (WTP) of patients and citizens.

This has led to a search on how to incorporate a patient's or society's WTP for new and existing health technologies. WTP/QALY assessments are often based on contingent valuation techniques. They are based on a hypothetical market that uses the price an individual is willing to pay to obtain a beneficial intervention. However, the estimation of WTP is subject to considerable variability. The challenge is to avoid biases in surveying populations that due to government and insurance coverage may underestimate the preparedness to pay. Hence, the WTP/QALY ratios derived from specific patient populations may not accurately reflect the attitudes of society. The WTP/QALY obtained through data describing human behavior or preferences (utilities) not only yields disparate results, but the process of aggregating utility outcomes is also not firmly grounded in theory. Last but not the least, WTP for improved health is influenced by income and standards of living.

Conflict of Interest: The authors have indicated that they have no conflicts of interest with regard to the content of this article.

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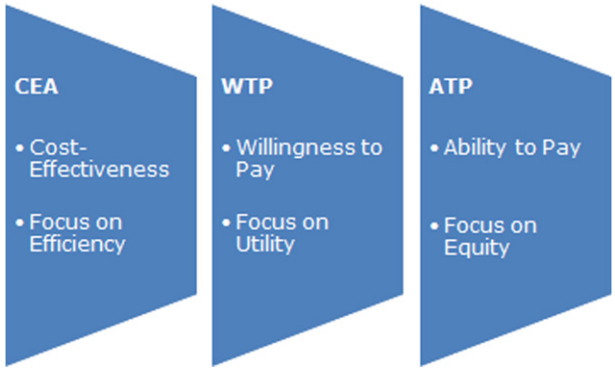

Fig. 1 – International pricing policy framework and process. ATP, ability to pay; CEA, cost-effectiveness analysis; WTP, willingness to pay.

Therefore, a third method is proposed aimed at introducing proportionality by means of purchasing power parity (PPP) measured at either the national level or the household level. The method is based on the human development index (HDI) and deemed relevant especially for a global market confronted with disparity in the ability to pay (ATP) between countries and between population segments. This ATP method has been presented as a poster at the ISPOR 5th Asia-Pacific Conference in Taipei, Taiwan. In a subsequent workshop, the merits of using these methods in parallel were highlighted: CEA, WTP, and ATP (Fig. 1).

Methods

A critical review of the ability of the CEA and WTP methods was done to evaluate not only "efficacy" but also "fairness" in pricing decisions. To further explore the latter, a third analytic method is introduced that measures the ATP based on a country's score in the HDI (database of 120 countries). The values of the equity index thus obtained are plotted in a nonlinear curve. The ATP/HDI method permits the practice of differential pricing among and within countries. To accommodate the latter, two supplemental parameters are added: the Oxford "Multidimensional Poverty Index" (MPI) and the "Out-of-Pocket" (OOP) or "Self Pay" health expenditure as reported annually by the World Bank. By multiplying the ATP/HDI with either both or one of these additional factors, the position of a country's price index on the nonlinear "equity" curve is expected to vary by country. Thus, the indices MPI and OOP are used as an overlay of the HDI-based "equitable pricing curve" in countries that combine high poverty and lack of health insurance coverage.

Results

Method 1—CEA

Decisions regarding reimbursement and allocation of funds within the health care budget are being influenced by the results of CEA in an increasing number of countries. The term CE has become synonymous with health economic evaluation and has been used to demonstrate the extent to which interventions measure up to what can be considered value for money [1].

The average CE ratio may provide useful information about the overall affordability of an intervention. It is the net cost of a strategy divided by the total number of health outcomes gained. It is often more useful, however, to examine the efficiency of one strategy relative to the other. This is done by calculating ICERs. To be able to compare interventions and capture their value, the numerator in the ICER must be expressed as a "single" outcome, and is therefore indicated in "natural" units (e.g., deaths avoided, or life-years gained). Nowadays, the preferential method for capturing health benefits is QALYs, which measures the health gained as a combination of the duration of life (years) and the health-related quality of life. When using QALY as the outcome measure, the ICER represents the ratio of incremental costs per QALY gained. The usage of QALYs as a standard measure for measuring health outcome in CE studies should strictly speaking be called cost-utility. Cost-utility analysis, however, can be considered a special case of CEA, and the two terms are used interchangeably.

The result of the calculated ICER outcome can be visualized on a CE plane consisting of four quadrants [2] (Fig. 2). The y-axis usually captures the difference in intervention costs (less or more expensive), and the x-axis describes the difference in health effects. Outcomes positioned in quadrant I (upper-right) are more effective and more expensive, those in quadrant II (lower-right) are more effective and less expensive, those in quadrant III (lower-left) are less effective and less expensive, and those in quadrant IV (upper-left) are less effective and more expensive. In the latter case, when the new treatment is more expensive than the current treatment but does not lead to significant health gains, most policymakers may decide that this new treatment does not represent value for money. Conversely, if the new technology is less costly but more effective than the current comparator, the new intervention is described as dominant. The difficulty lies in assessing new technologies with an ICER that would position them in the upper-right quadrant where the new treatment is found cost-effective but the WTP may reach a threshold beyond which payers are likely not to adopt the product. In other words, there is a threshold or ceiling ratio at which point the new product is considered no longer cost-effective. This threshold represented by the diagonal line indicates the maximum WTP [3].

To summarize, CE ratios are an important criterion in health policy decisions. Using CEA (and even cost-utility analysis) alone, however, may not capture all elements needed to make informed decisions on budget allocation and do not tell whether there is a willingness to adopt the new drug, vaccine, or health technology.

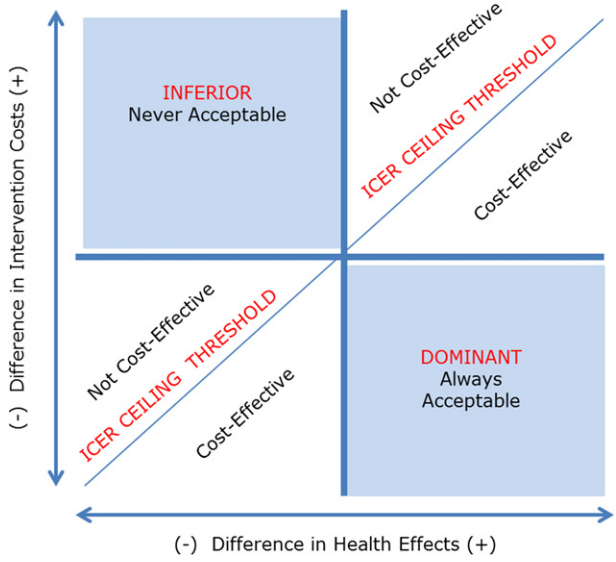

Fig. 2 – Cost-effectiveness and policy decisions. ICER, incremental cost-effectiveness ratio.