**Challenges of calculating cost-effectiveness thresholds**

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Health systems around the globe use cost-effectiveness analysis (CEA) to support health funding decisions. CEA compares benefits associated with new technologies with benefits necessarily forsaken when resources are displaced to pay for the new technologies. Systems aiming to improve the health of their populations but facing a budget constraint should use cost-effectiveness thresholds (CETs) that reflect the health opportunity costs (HOCs) of funding decisions.1

In their recent article, Pichón-Riviere and colleagues derive CETs based on aspirational targets regarding the observed growth in life expectancy and the observed growth in health expenditure.2 Because most countries do not have such explicit targets, the paper suggests using the historical median evolution observed for these two variables in countries with similar incomes. The authors claim this approach is based on current health system efficiency and has the opportunity cost as a core principle.

We would like to highlight caution in using these values as CETs. First, we question whether the goal of achieving the historical median evolution is a reasonable target. The direction of the ‘efficiency paths’ as described in this paper is sensitive to economic crises (when health spending declines but life expectancy grows) and health crises (when health spending is expanded but life expectancy declines), risking counterintuitive values as CETs. These examples, linked to our recent history, illustrate our second concern: the large degree of confounding and reverse causality between health and health spending implies that the proposed CETs are unlikely to reflect the HOC of funding decisions. Health spending is only one among several determinants of health, and the relationship between health spending and health outcomes is strongly affected by changes in healthcare needs. The causes and direction of changes in needs for healthcare should be incorporated in analyses aiming to estimate HOCs.3 Using the values proposed by Pichón-Riviere et al. as HOC-based CETs assumes that observed changes in life expectancy are due solely to changes in health expenditure and that observed historical relationships between health expenditure and health outcomes are achievable prospectively. Both assumptions imply that the need for healthcare remains constant over time.

The use of causal inference methods in previous studies may represent a barrier for non-specialist audiences. However, basing impactful estimates on assumed relationships could be misleading. Therefore, health systems aiming at improving population health given available resources should make efforts to ensure that their CETs truly reflect the opportunity costs of funding decisions.

**References**

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