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Review Article

Health technology assessment: a tool for evidence-based decisions for quality health care in India

Suraj Chawla[1]*, Vikas Gupta[2], Manisha Kocher[3]

[1]Department of Community Medicine, [3]Department of Physiotherapy (Orthopaedics), SHKM Government Medical College, Nalhar, Haryana, India
[2]Department of Community Medicine, Government Medical College, Shahdol, Madhya Pradesh, India

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***Correspondence:**
Dr. Suraj Chawla,
E-mail: surajpgirohtak@gmail.com

ABSTRACT

Health technology assessment is widely used methodology internationally for optimization of healthcare resource allocation. It is a multidisciplinary process that gathers policy relevant evidence about the clinical effectiveness, cost effectiveness, ethical and social issues related to the use of a health intervention in a systematic, comprehensive, transparent and robust manner to help policy makers in decision making while formulating policies for incorporating or excluding health interventions from the health system. In order to achieve the ultimate goal of universal health coverage, Government of India has set up health technology assessment in India under the department of health research, ministry of health and family welfare. The health technology assessment framework in India must utilize its entire capacity to guide government and policy makers in explicit priority setting that ensures that available health budgets are spent after weighing all options, and coming to a fair and just conclusion.

Keywords: Health technology, Cost-effectiveness, Decision making, Policy

INTRODUCTION

Health policy decisions are becoming more important because the opportunity costs of making inadvertent decisions continue to grow, particularly in countries like India where health sector is underfunded. A finite health budget means that policy makers are faced with difficult decisions regarding choice of technology and prioritization of health services on a daily basis.[1]

Health Technology Assessment (HTA) is a multidisciplinary decision-making process that uses information about the medical (clinical), social, economic, organizational and ethical issues associated with the use of a health technology like medicines, vaccines, biologicals, medical devices and clinical interventions in a an exceedingly systematic, transparent, unbiased, and robust manner. It aims to support the formulation of safe and effective health policies that are patient centered and seek to achieve cost effectiveness and better patients' health outcomes.[2,3]

Many a times, there are certain questions that need to be answered for devising new health care policies. For instance, should government introduce a new diagnostic for measuring anaemia, which might cost higher per test, but is more specific or accurate? Is the increase in accuracy and ease of diagnosis worth the much higher spending by the government? Or for cataract surgery should the insurance scheme reimburse for extra capsular surgery or just for cryosurgery or both, though there is a wide variation of costs between the two procedures? Another set of questions relates to programme design. For example, should government limit screening for hypertension to only those who come to a health centre, or should there be an effort to actively screen everyone within the population? Should periodic screening for breast cancer be offered annually to all above 30 or is it

better to offer once in three years to those above 45 years only?[1]

At a more complex level, when government plays the role of strategic purchaser of healthcare, policy-makers would be confronted with many tough decisions. For instance, the government may be sanctioned some additional resources and have to decide whether to spend it on reimbursement of elderly with chronic renal illness being treated with renal dialysis or for treating children with leukemia or for diagnosing and treating patients' chronic hepatitis? One woman with breast cancer may be treated with chemotherapy for the same cost as treating lakhs of children for intestinal worms.[1]

HTA offers scientific solutions to such difficult problems and helps policy makers in taking evidence-based prudent decisions. In order to solve such issues judiciously, HTA is a widely used methodology internationally for optimization of resource allocation in health. Recognizing the importance of HTA in healthcare decision making, Government of India has set up Health Technology Assessment in India (HTAIn) under the Department of Health Research (DHR), Ministry of Health & Family Welfare (MoHFW). It is entrusted with the responsibility to analyze evidences related to cost-effectiveness, clinical-effectiveness and equity issues regarding the deployment of health technologies viz. medicines, devices and health programmes.[4-6]

NEED OF HTA IN INDIA

In order to achieve the ultimate goal of Universal Health Coverage (UHC), the Government of India is committed to extend healthcare services to its more than a billion population.[7] One of the most important challenges in India that warrant immediate attention is increasing catastrophic out of pocket expenditures (OOP) in healthcare. According to world health report 2018, the OOP spending on healthcare in India to be as high as 63%.[8] Extending adequate healthcare services to the population requires optimal utilization of existing resources to make sure that the greatest amount of health is bought for every rupee spent. National Health Policy 2017 also proposes a responsive and robust regulatory framework so that challenges of quality of care, cost escalations and impediments to equity are addressed effectively.[9]

The primary purpose of the HTAIn is to assist in explicit and evidence-based priority setting of health resources towards providing universal health coverage (Figure 1).[1] HTA will help to bridge the evidence to policy gap and ensure alignment of academic and policy interests towards the common goal of improving healthcare decision-making. Dissemination of research findings and resulting policy decisions will educate and empower the general public to make better informed decisions for health.[6]

ECONOMIC EVALUATION IN HTA[10-12]

Despite policy being subject to negotiation among multiple stakeholders, HTA must be firmly rooted in research and the scientific methods. HTA employs the principles of economic evaluation to identify the most cost- effective health technology. Economic evaluation refers to comparative analysis of alternative courses of action in terms of both their costs and effectiveness. The aim of the health economic evaluation is to explain the relationship between the costs and consequences of a given health technology compared with its alternatives.

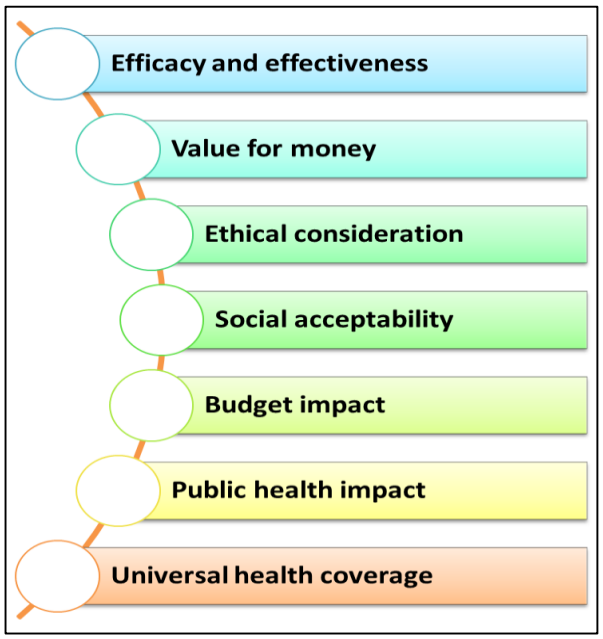

Figure 1: Scope of health technology assessment.[1]

Health economic evaluation is primarily of four types: cost minimisation analysis (CMA), cost-effectiveness analysis (CEA), cost-utility analysis (CUA), and cost-benefit analysis (CBA). Cost minimisation analysis is the simplest form of economic evaluation which assumes that the health advantage arising from the use of the health technologies being compared are identical. Thus, it is sufficient to assess the costs of all the alternatives under consideration. In cost-effectiveness analysis, both the costs and consequences arising from use of the health technologies are identified, measured and valued and compared. The implications are assessed in natural units, e.g., mm Hg reduction in systolic blood pressure, cases prevented, deaths averted, life years gained. Cost-utility analysis differs from cost-effectiveness analysis in that the consequences are measured and valuated in the form of quality-adjusted life years (QALYs). The years of life gained are therefore quality-adjusted with health-related quality of life so as to assess QALYs. This sort of analysis makes it possible to compare outcomes of interventions across different activities in the health care setting, where natural units of outcomes are different otherwise. Cost-benefit analysis is the broadest type of

economic evaluation where both the costs and outcomes are measured and valued in monetary terms, net gain can thus be calculated directly.

Economic evaluations provide evidence on ways to maximize health benefits within a given budget, accounting for the societal value of health. It, however, does not generally provide information about the distributional value of health-related benefits in a given setting. Therefore, apart from comparing the health and economic consequences of available policy options, HTA also assesses their feasibility of implementation pertaining to social, legal and ethical aspects. Social aspects like effect on out-of-pocket expenditure, catastrophic health expenditure, impoverishment rates are assessed by carrying out equity analysis, so that the proposed health technology confers to the principles of distributional justice. There are various ways to perform equity analysis such as mathematical programming, measurement of distribution of opportunity costs, multi-criteria decision analysis, distributional cost-effectiveness analysis (DCEA) and extended cost-effectiveness analysis (ECEA). However, as the term inequity goes beyond measurable differences in health status to incorporate moral and ethical dimensions also, all the organizational, legal and ethical issues are assessed with the help of stakeholders' negotiations.

PRACTICE OF HTA

HTA is an internationally-accepted and structured approach to generate evidences for priority setting and health policy decisions. It is widely used to inform healthcare resource allocation in various countries in Europe, Scandinavia, Asia, and Australia. New institutions are also being set up in South East Asia, the West Pacific, South America and Africa.[6] These countries utilize HTA for the purpose of informing content of health benefits packages, such as the universal health coverage program of Thailand, or the National Health Service (NHS) in the UK, and the essential medicines lists (NLEM) in low and middle-income countries, such as Thailand, Indonesia, the Philippines, and Mozambique.[13]

The established institutional framework for HTA in India will generate and compile evidences related to cost effectiveness, clinical- effectiveness and safety of medicines, devices, vaccines and health programmes by means of HTA studies. Establishment of HTA in India is an essential step towards achievement of UHC, one of the targets under Sustainable Development Goals (SDGs).[13]

CHALLENGES IN ADOPTING HTA

HTA in India brings with it several challenges that need to be recognized and addressed. The first and foremost challenge pertains to the gross deficiency in the human resource and institutional capacity to undertake HTA studies in India. Second challenge is ensuring technical rigour and methodological consistency across all the agencies doing HTA studies, making the results authentic and comparable. The third challenge relates to data availability and quality as the effective conduct of HTA depends on the availability of reliable data. Transparency of the process and the way of addressing conflict of interests of those performing the HTA studies poses another challenge.[5,14]

CONCLUSION

In order to accelerate the progress towards achieving UHC, health systems and programmes must be designed to yield value for money. The decisions made using evidence-based and transparent HTA processes can assist in ensuring efficient and equitable health care provision. Therefore, the established HTA framework in India must utilize its entire capacity to guide government and policy makers in explicit priority setting that ensures that available health budgets are spent after weighing all options, and coming to a fair and just conclusion.

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