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Equity and efficiency in healthcare: are they mutually exclusive?

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Introduction

Conflicts between equity and efficiency are common phenomena encountered during health policy formulation as policies that are designed to improve operational efficiency often have the potential to increase health inequalities, or they may improve fairness while challenging efficiency.¹ Since the 1960s, health economic evaluations have been utilized by policy makers to assist decision making and are being increasingly applied throughout the world. In the United Kingdom, the National Institute for Health and Clinical Excellence (NICE) has been set up to make recommendations on the provision of new and existing treatment within the UK National Health Service (NHS) based on health economic evaluations.² Recently, NICE did not recommend the use of ranibizumab for the treatment of diabetic macular edema (DME) within the NHS due to its high cost.³ This led to various patient groups in the UK, including the Royal National Institute of Blind People, Diabetes UK, the Juvenile Diabetes Research Foundation, and the Macular Disease Society jointly criticizing NICE's decision, as ranibizumab has been proven to be an effective treatment for DME and should be made available to NHS patients.⁴ On the other side of the Atlantic, however, it has been made a statutory provision that the term 'cost-effectiveness' research be prohibited; instead 'comparative effectiveness' studies without an explicit rationing component should be substituted. With the rapid

introduction of effective, but expensive, drug therapies, it will be of interest to understand the rationale of economic evaluations and what might be done to strike an optimal balance between equity and efficiency in the provision of healthcare.

Health economic evaluations

The three main approaches for economic evaluations include cost-benefit analysis, cost-effectiveness analysis, and cost-utility analysis.⁵ Cost-benefit analysis involves placing monetary values on all the possible costs and benefits of an intervention and the total costs are then compared with the total benefits after discounting. Cost-effectiveness analysis involves assessing the costs and cost-savings in terms of a predefined unit of health outcome. The total net cost per unit of health outcome is then calculated. Cost-utility analysis is a form of cost-effectiveness analysis in which the outcome is expressed in terms of utility or quality. The unit value may be quality-adjusted life year (QALY) or disability-adjusted life year (DALY). By comparing the cost-utilities of various interventions, health policy makers may decide which interventions should be implemented.

These economic evaluations therefore aim to assist health policy makers in decision analysis for improving efficiency in resource allocation.⁶ However, it is difficult for decision makers to formulate equitable policies through economic

assessments alone since the distributional effects caused by resource allocations are frequently neglected. For example, a cost-utility analysis of providing an expensive anti-vascular endothelial growth factor (anti-VEGF) therapy, such as intravitreal ranibizumab for neovascular age-related macular degeneration (US\$12,177 per QALY),⁷ may not be demonstrably favorable compared with other ophthalmic interventions such as cataract surgery (as low as US\$245 per QALY),⁸ yet failure to provide anti-VEGF therapy could pose issues of inequity for patients who are becoming blind due to macular diseases. Therefore, it is important to understand, then perhaps reconcile, the equity versus efficiency dilemma inherent in many health policy decisions.

Ethics of equity and efficiency

According to the World Health Organization, the goal of a health system is to improve the health of the entire population through a just and equitable system.⁹ However, what is meant by just and fair? Principles of equity are dependent on the ethical values of the society as a whole. The ethics behind health policy making can be divided into decisions based on consequences and decisions that focus on rights and opportunities. The former is known as utilitarianism and the latter as liberalism (Figure).¹⁰

Utilitarianism could simply be considered as trying to achieve ‘the greatest happiness for the greatest number’.¹¹ Decisions could be made by counting and adding up the

‘utility’ of individuals. Economic evaluation in healthcare can be interpreted as utilitarianism being applied to the health sector and this method of maximizing health gains has been suggested to be compatible with equity goals.¹² Modern utilitarianism could be further subdivided into subjective utilitarianism and objective utilitarianism, which differ in the utility assessment process.¹⁰ In subjective utilitarianism, the well being or utility is defined by the individual’s personal experience; whereas in objective utilitarianism, a centralized assessment process is used in which experts will derive the group’s utility on its collective behalf. Cost-benefit analyses are based on subjective utilitarianism since the assessment process involves individuals expressing their willingness to pay for their own health gains. In contrast, cost-effectiveness and cost-utility analyses are based on objective utilitarianism since expert-determined indices of health such as QALY or DALY are used to measure the consequences.

Liberalism considers that human beings should be treated with respect and certain rights should be granted to them naturally.¹⁰ Rights can be divided into positive and negative rights. Libertarian liberals believe only in negative rights, in that rights to property and personal liberty deserve protection and having these rights would guarantee individual freedom.¹³ On the other hand, egalitarian liberals believe that both positive and negative rights should be protected and they argue that since health is a special social good, it should form a component of each citizen’s opportunity. Rawls¹⁴ proposed the idea of justice as fairness and the maximin principle, in that primary social goods such as income

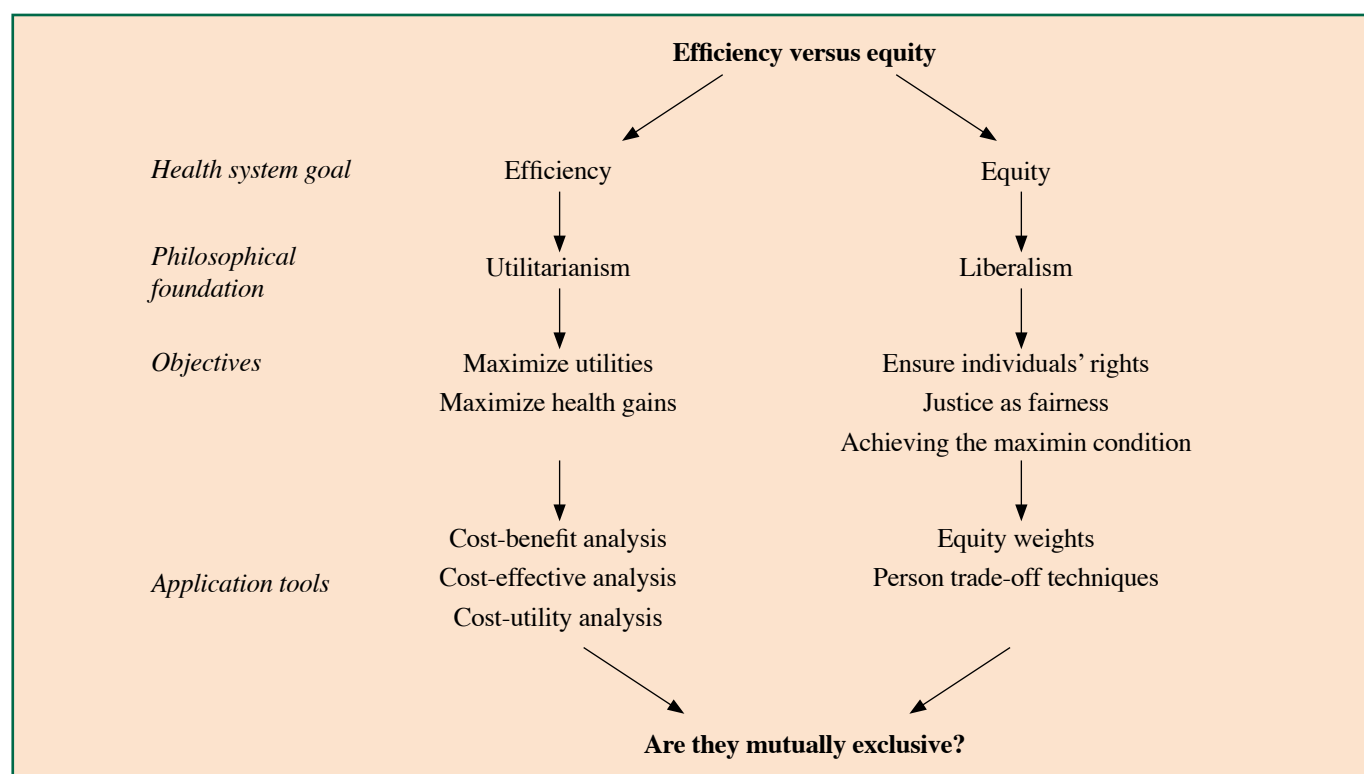


Figure. Comparison of efficiency and equity

should be redistributed in order to improve the position of the worst-off within a society. Taking these viewpoints together, it implies that health, or at least healthcare, should be redistributed in order to improve the health of the worst-off.

Objections to the utilitarian views of economic evaluation on healthcare have been raised as the interpersonal distribution of utilities and resources are completely neglected in neoclassical utilitarianism, resulting in 'unfairness' from the liberal perspective.¹⁵ Decisions based on health maximization may therefore increase health inequalities among different groups since more advantaged groups in the society may have the potential to benefit more from healthcare interventions. Moreover, the rights of individuals as advocated by the liberals are often ignored in utilitarian-based economic evaluations. Therefore, on the basis of these fundamental differences between utilitarianism and liberalism, one could see that efficiency and equity may conflict with one another.

Ways to reconcile the equity versus efficiency dilemma

In order to formulate equitable policies, health planners may need to make compromises to balance efficiency goals with the community's ethical values. Policy makers may therefore need to incorporate equity measures in economic analyses and formulate policies that can reduce social inequalities so as to reconcile this equity versus efficiency dilemma.

Incorporation of equity measures in economic analysis

It has been demonstrated that the general public are usually willing to sacrifice overall societal health gains in order to achieve a more equitable distribution of health gains.¹⁰ Therefore, maximization of overall health gains in economic evaluation should not be used as the sole criterion in resource allocation as this may neglect societal values by bringing about an uneven distribution of health gains.

An adjustment technique, known as equity weighting, has been proposed for achieving a more equitable distribution of healthcare resources.⁶ These weightings allow health gains to be adjusted according to the socioeconomic characteristics of the recipients such as health status, age, sex, and socio-economic status. Resource allocation decisions can then be made with the complementary aim of maximizing the equity-weighted sum of health gains.

Person trade-off (PTO) technique is another method that can be used to integrate equity measures and societal values into economic evaluations.¹⁶ PTO aims to tackle the weaknesses of cost-effectiveness or cost-utility analyses since they are based on intrapersonal assessments and adopting them for making interpersonal allocation decisions might not be appropriate.¹⁷ PTO techniques would therefore allow healthcare decisions to incorporate equity and efficiency concerns as a more comprehensive measure, and provide an

approximation for the societal values of the interventions.

Reduction of social inequalities to improve equity

Yet another approach to reconcile the equity versus efficiency dilemma is to reduce social inequalities leading to poor health by taking a more egalitarian liberal view in policy making. Observations from numerous studies at both ecological and individual levels have demonstrated that income inequality and health outcomes are inversely correlated. This phenomenon is known as the relative income hypothesis.¹⁸ It might be hypothesized, therefore, that reduction of income inequality within a population may be a way to improve the health of the whole society. Examples of possible policies to decrease health disparities within a community include the provision of a more secure social safety net, ensuring equal access to services for patients with equal needs, workers' rights protection in terms of sick leave, and targeted health promotion interventions to disadvantaged groups. Changing the healthcare financing structure may also reduce social inequalities. Compulsory health saving plans or incentivized health insurance schemes may enable redistribution of government funding within the health sector, so that existing expenditures might be redirected for healthcare provision to more disadvantaged groups.

The equity versus efficiency dilemma in Hong Kong

As with other developed economies, healthcare expenditures in Hong Kong have increased at a faster rate than the general rate of inflation in recent years. In order to slow this ever upward cost spiral, it is inevitable that the public healthcare sector needs to ration certain treatments and services. Since the founding of the Hospital Authority (HA), there have been considerable improvements in the provision of high-quality medical services by the public sector. The Harvard Report has praised Hong Kong's public healthcare infrastructure in providing an equitable healthcare system.¹⁹ The community can easily gain access to a large range of clinical services at a low cost. One of the main problems encountered by the HA was the long waiting list for some elective surgeries, including cataract surgery. In order to reduce the waiting time for elective cataract surgery, the HA has introduced the Cataract Surgery Program, in which patients already on the HA's waiting list were offered a financial subsidy to undergo cataract surgery in the private sector. This private-public partnership has been well received and, to date, over 10,000 cataract surgeries have been performed through the Program.²⁰ Similar private-public partnership proposals might have the potential to leave the healthcare system more or less equitable. The application of equity-incorporated economic analyses can assist in deciding which services should be redirected and how the impact of new policies on health inequalities could be kept to a minimum. The community may actively participate in the consultation process through generating equity weightings or using PTO techniques to assist health planners in formulating equitable policies.

Hong Kong has been experiencing progressively higher levels of income inequality. Applying the relative income hypothesis to Hong Kong, this widening income inequality might imply a decline in health outcomes for the community. A recent study has demonstrated that the Gini index, which is a measure of inequality of income or wealth, was found to be positively associated with mortality from cardiovascular diseases, respiratory diseases, and some cancers in Hong Kong from 1991 to 2006.²¹ Policy makers will need to consider the potential consequences of widening income inequality when making any changes in healthcare and social security funding, as these might have an important impact on health. In particular, with the rapidly escalating drug costs for effective, but costly, new treatments, it is important that equity-weighted economic analyses should be carried out to determine the optimal allocation of resources.

Conclusions

The conflict between the goals of equity and efficiency exists due to their respective underlying philosophical and ethical backgrounds. Economic evaluations can no doubt assist health policy makers in decision analysis through better utilization of scarce healthcare resources. However, the concept of fairness has a strong ethical stance in our community and should not be neglected. Hong Kong residents are willing to make trade-offs for better equity, sometimes even at the expense of efficiency as it is traditionally considered. Stakeholders involved in health policy making, including the government, HA, healthcare professionals, and community patient groups, should therefore take into account both equity and efficiency considerations during the policy formulation process.

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