SOCIETAL PERSPECTIVE IN ECONOMIC EVALUATION

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ABSTRACT

Background: Before an economic evaluation begins, it is important to specify the study perspective which essentially defines the basis of analysis and determines the relevant cost that need to be accounted for. The aim of this paper is to explore the perspectives in an economic evaluation specifically focusing on societal perspectives, on how it affect costs, its application, as well as its advantages and limitations expected in an economic evaluation.

Materials and Methods: Literature search was conducted on Google Scholar and PubMed by using keywords such as perspective of economic evaluation, societal perspective, and economic evaluation. Based on the relevant reports, articles and other publications, details on societal perspective in economic evaluation was summarized in the result and discussion section.

Result and Discussion: A model demonstrating societal effects that captured by cost-benefit analysis for cancer patient in New South Wales, Australia was used as an example to see the application of societal perspective, where four different scenarios were discussed on how societal impacts of loss of productivity and income affected the patients, employer and their family members. Among the advantages of incorporating societal perspective in economic evaluation studies is that it may result an optimal resource allocation in decision making and also supports an informed public discussion. However it is also prone to disadvantages, such as it may not always be possible to be included in an economic evaluation in certain setting due to funding or time constraints.

Conclusion: Societal perspective is recommended option for public health economic evaluation as it take into account all of the perspectives point of view. Health economic evaluation that were conducted from a narrow perspective and only considered direct costs in the analysis is likely to be biased and could significantly undermine the true benefit of the interventions for society. Furthermore, without societal perspective, it may result in suboptimal resource allocation thus incur losses in the total welfare of society.

Keywords: Perspective, Societal perspective, Health Economic, Economic Evaluation
1.0 Introduction

The fundamental aim of any health care system is to maximise the health and welfare of the population, but due to scarcity of resources in relation to the health care needs, a series of choices must be made. This has given rise to the field of Health Economic. Role of health economics is to provide a set of analytical techniques to assist decision making, usually in health care sector, on how to allocate limited health care resources in the most efficient and effective manner (Shiell et al., 2002). It is important that resources are used as efficiently as possible in the sense that society should make the most of the resources available by comparing what is gained from using those resources with the gain from alternative uses. Economic evaluation is thus about determining whether an intervention is an efficient use of society’s resources and can be defined as the comparative analysis of alternative courses of action in terms of both their costs and consequences (Drummond et al., 2015). The tasks in an economic evaluation involves identifying, measuring and valuing both the inputs (costs) and outcomes (benefits) of the intervention and their selection is dependent upon the problem being addressed and the perspective of the study (Hughes & Margetts, 2012). Within the health care sector, economic evaluation is used as a generic term for a range of techniques that may be used to assemble evidence on the expected costs and consequences of different procedures or programmes. There are four main approaches commonly employed which is Cost-minimisation analysis, Cost-effectiveness analysis, Cost-utility analysis and Cost-benefit analysis (Robinson, 1993). Before an economic evaluation begins, it is important to specify the study perspective which essentially defines the basis of analysis and determines the relevant cost that needs to be accounted for. Health economics is concerned with society welfare and therefore, economic evaluation should include the impact of an intervention on the welfare of the whole of society, not just on the individuals or organisations directly involved (Byford & Raftery, 1998). An item may be a cost from one perspective but not another, for example, patient’s travel costs are a cost from a patient’s or society’s perspective, but not from healthcare provider’s perspective.

1.1 Types of perspectives in economic evaluation

There are two broad areas of perspective for economic measurement, which is from provider perspective, and societal perspective (Hughes & Margetts, 2012). Provider or narrow perspective is when the evaluation is designed for a particular customer, and the organisation commonly fund the intervention to understand the costs involved, the potential savings resulting from the intervention and what improvements in health the target population will gain. Whereas, in societal perspective, the evaluation consider broader impact in term of costs not only borne by providers but an aggregate of all costs and benefits that affects the society as a whole(Luce & Elixhauser, 2012). Apart from provider and societal perspectives, other significant perspectives that need to be considered are patient’s perspective. Cost components of the mentioned perspectives were shown in Table 1.
Table 1: Perspectives and it cost components in economic evaluation (Source: (Dunet, 2012)

<table>
<thead>
<tr>
<th>Perspective</th>
<th>Cost components</th>
</tr>
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| Healthcare Provider | - Includes all costs incurred by the provider in delivering health service to a patient.  
|                |   - Consist of salaries of health care professionals, costs of medications, equipment, consumables, fixed assets etc.                      |
| Patient       | - All costs that a patient has to bear for seeking healthcare treatment including:  
|                |   - Out of pocket payments (treatment, transport, lodging)  
|                |   - Cost of taking time off from work (lost wages)                                                                                     |
| Societal      | - All costs incurred by society (including those of patient and healthcare provider) in delivering health service.  
|                |   - All medical and non-medical costs (hospitalisation, long-term care, home care, social welfare services)  
|                |   - Productivity losses (employee taking leaves)                                                                                     |

1.2 Why societal perspective matter in economic evaluation?

Economic evaluation in Health and Medicine intended to help allocate health resources in the public interest and conducted from the perspective of society as a whole. This perspective requires that an analysis measure all health effects and changes in resource use caused by an intervention. Taking only narrow perspective in the analysis may create an unavoidable tensions among the parties to medical decisions which is patients, their families and friends, clinicians, and third-party payers (Russell et al., 1999). But by estimating all gains and losses, calculations that reflect the safety, effectiveness, and side effects of an intervention as well as its costs, application of societal perspective in the economic analyses can help resolve those tensions and provide the basis for decisions that are fair to all parties. Use of the societal perspective asks that all parties be aware of and consider the interests of others. Some process or procedure needs to be developed for presenting economic analyses information to the parties most likely to be affected by decisions, soliciting their views, and negotiating an acceptable decision. This process could be used by government decision makers or by managed care organizations, professional societies, or payers.

This aim of this paper is to explore the various perspectives that need to be consider before conducting an economic evaluation, focusing on societal perspectives. The societal perspective will then be evaluated on how it affect costs, its application in economic evaluation model, as well as its advantages and limitations expected in an economic evaluation.
2.0 Materials and Methods

The information used in this manuscript are collected from reports, articles, journals and other publications that are related to health economic evaluation and perspective aspect in an economic evaluation which published by various sources such as academic institutions and international organizations. The available literatures were accessed using online databases such as PubMed, google scholar and manual searches. The keywords include; ‘perspective of economic evaluation’, societal perspective’, ‘economic evaluation’.

3.0 Result and Discussion

3.1 How perspective influence which costs are counted in a cost analysis

There are four perspectives as shown in Table 2, which is societal, insurer, employer and patient. In the first row are direct medical costs, where these would be costs such as clinical services, hospitalization, and medication. Direct medical costs would be counted no matter which perspective was used in a study. In the second row is direct non-medical cost such as transportation or child care expenses incurred because of an illness or disability. Because a health insurance company or an employer would not pay for such costs, they would not be counted as costs in a study that took those perspectives. Using a societal perspective ensures that these costs are counted. Indirect costs, shown in the third row, include time lost from work. Such costs would not be included in a study from the perspective of the insurer. An employee’s lost time from work would, however, be counted as a cost to the employer whose workforce is impacted, the patient who misses work, and again, to society in terms of the productivity of that employee that is lost. In the last row are intangible costs such as pain and suffering. Although these are often difficult to measure, they represent a cost to the patient and a cost to society, often in terms of quality of life.

Table 2: Cost counted in a cost analysis by perspective (Source: (Dunet, 2012))

<table>
<thead>
<tr>
<th>Cost</th>
<th>Perspective</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Societal</td>
</tr>
<tr>
<td>Direct medical</td>
<td>Yes</td>
</tr>
<tr>
<td>Direct non-medical</td>
<td>Yes</td>
</tr>
<tr>
<td>Indirect</td>
<td>Yes</td>
</tr>
<tr>
<td>Intangible</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Counting only from a single or narrow perspective usually does not serve an interest or benefits to other perspective point of view. An insurer perspective may be looking to reduce its expenditures for direct medical costs and in the process may simply shift costs from itself to someone else. For example, outpatient surgery may reduce the medical expenses for a procedure by reducing in-hospital care. However, the costs of patient care do not disappear, as they are simply shifted from the insurer to the patient, for example when a patient’s family member must take time off from work or leisure activities to provide home care. The important point to understand from the table is that the perspective taken in an economic analysis can have an important influence in how an intervention is assessed and the results
obtained and interpreted. Societal perspective is thus the recommended option for public health economic evaluation as it takes into accounts all of the perspectives point of view.

3.2 Which economic evaluation method is best in incorporating societal perspective?

Health outcomes research typically uses cost-effectiveness or cost-utility analysis. These approaches take a narrow perspective of the individual effects, typically from the payer or the provider point-of-view. However, using these narrow perspectives misses macro-level, or societal level, benefits and costs that could significantly alter whether an intervention is considered beneficial or cost-effective. The societal perspective accounts for all the effects impacting patients, their families, the public, and government expenditures for a healthcare intervention. Such a perspective is vital for healthcare interventions for illnesses where morbidity and long absences from work are probable. A cost-benefit analysis would account for all the societal benefits and costs, allowing policy-makers to observe an outcomes analysis more closely reflective of the real impacts, hence is the tool of choice when incorporating societal perspective (Polimeni et al., 2013).

3.3 Application of societal perspective in economic evaluation

In an economic evaluation, societal perspective must be a part of healthcare interventions, especially for diseases such as cancer where patients, family members, firms, and caregivers are affected. An example of societal perspective been applied to economic evaluation was demonstrated by (Polimeni et al., 2013), where he simulated a simplistic model that illustrate the societal effects that was captured by cost-benefit analysis for cancer patient, adapted from cost of cancer done in New South Wales, Australia (Economics, 2007). This model assumes wages are equal to productivity and that the relationship is linear in time, where societal impacts of lost productivity, foregone wage increases, lost income, and impact on family members and caregivers are significant.

![Minimal Productivity Loss - Covered Entirely by Sick Leave](image)

**Figure 1:** Minimal Productivity Loss, Income Covered Entirely by Sick Leave
(Source: (Polimeni et al., 2013))

Figure 1 shows a best-case scenario for cancer patient who is able to return to work before his or her sick leave expires. In this case, the worker does not suffer a loss of income and the firm loses productivity only for a short period, during the time the worker is on leave. Therefore,
the patient does not forgo any future wage increases and the firm suffers only minimal adverse effects.

**Figure 2: Minimal Productivity Loss, Income Covered Partially by Sick Leave**  
(Source: (Polimeni et al., 2013))

In the next scenario, as illustrated in Figure 2, it incur some losses for the worker, as in this case, the illness is prolonged and the worker have to take unpaid leave due to expiry of the sick leave. While on paid sick leave, the income is not affected, but once paid sick leave is used, their income will fall to zero until they are able to return to work, in which their income will be reinstated. Due to the time off while on unpaid leave, the patient will have lost earnings increase opportunities and, as a result, their future income will be lower over time. The firm, as in the previous scenario, loses productivity while the worker is on leave.

**Figure 3: Significant Productivity and Income Loss Due to Permanent Disability**  
(Source: (Polimeni et al., 2013))
In the third scenario as illustrated in Figure 3, shows a case where a worker is permanently disabled due to his or her cancer illness. In this scenario, the worker receives disability pay which is a percentage of his or her normal wages. As a result there will be a permanent reduction in income. In regards to the firm, since the patient is permanently removed from the labour force, there will be a lasting reduction in productivity. The firm, in response, will incur a cost by having to hire additional labour to compensate for the lost production. Additionally, the firm experiences a loss from the cost of the job search and training the new employee.

![Figure 3: Significant Productivity Loss - Disability](image)

**Figure 3:** Significant Productivity Loss - Disability

The final scenario, depicted in Figure 4, is the case when the patient is diagnosed and dies from his or her cancer illness. In this case, the patient suffers a reduction in income while ill. Upon death, income falls to zero, adversely impacting his or her family financially. The firm also suffers negatively as they must hire a new worker to compensate for the lost production. The firm also incurs a cost of having to do a job search, hiring and training a new worker.

![Figure 4: Significant Productivity and Income Loss Due to Death](image)

**Figure 4:** Significant Productivity and Income Loss Due to Death

(Source: (Polimeni et al., 2013)

This simplistic model illustrates the effects that cost-benefit analysis captures while cost-effectiveness and cost-utility analysis do not. Furthermore, while just some of the societal impacts of cancer are shown, the example illustrates the significance of these effects and why the societal perspective must be a part of healthcare interventions, especially for diseases such as cancer where patients, family members, firms, and caregivers are affected.

### 3.4 Advantages of societal perspective in economic evaluation

#### 3.4.1 Performance of health economic evaluations from the societal perspective has the benefit of quantifying costs and benefits associated with relevant stakeholders in the society.

The statement above can applied with the example from cost of drugs. An expensive drug which treats headaches and reduces sick leaves might not be cost effective from the patient’s...
perspective. However the drug could be cost effective from the societal perspective since it increases productivity (SingHealth, 2012).

3.4.2 A societal perspective is necessary for making optimal societal decisions.

One of the economic evaluation analysis, the Cost-benefit analysis was developed to assess the desirability of projects from a societal perspective. Cost-benefit analysis is a widely used technique of applied welfare economics, which is used to throw light on the societal desirability of undertaking an economic project, which can be in a form of investment, introduction of a new commodity or a change in policy (Jönsson, 2009). Regulatory decisions about market authorisation of new medical technologies for example, are based on an assessment of the benefits and risks from a societal perspective. Decisions on how to reimburse and fund a new medical intervention or technologies were assist by employing studies such as Health technology assessment (HTA), where societal perspective should be put under consideration in bringing a wider perspective on the balance between potential costs and benefits associated with relevant stakeholders in the society.

3.4.3 Economic evaluation studies with non-societal perspectives may result in suboptimal resource allocation decisions and a corresponding loss in the total welfare of society.

Universal coverage for health care that is financed from general taxation such as the NHS in the United Kingdom, where the decisions on its health policy should incorporate the perspectives from all those who use and pay for the system, which is the whole population. (Byford & Raftery, 1998). Adopting a societal perspective facilitate policies aimed at maximising the welfare gains to society, thus making the system more equitable.

3.4.4 A societal perspective supports an informed public discussion and democratic decisions, and facilitates international collaboration

In all countries, it is the population at large who both pays for and receives the benefits of new health intervention. A broad societal perspective on value, for example costs and benefits, facilitates informed discussion and decisions about access and use of new health intervention. Since medical innovation is a global public good, a societal perspective facilitates international collaboration in assessing new health innovations, and helps coordinate national decisions about funding and patient access.

3.5 Disadvantages of societal perspective in economic evaluation

To certain organisations, a societal perspective may seem unnecessary. For example, a clinical directorate faced with difficult decisions within a tight budget may take a directorate perspective, in turn requiring the wider organisation to act to prevent cost shifting or other undesirable effects. For profit organisations, such as pharmaceutical companies, may well take a narrow financial perspective, in turn leading to regulation by the state to safeguard wider concerns, excluding a societal perspective (Byford & Raftery, 1998). Furthermore, in practise sometimes it may not always be possible for all the relevant costs and benefits to be included in an economic evaluation because of funding or time constraints.
4.0 Conclusion

Various perspective should be considered before conducting economic evaluation. Health economic evaluation that were conducted from a narrow perspective such as from provider point of view and only considered direct costs in the analysis is likely to be biased and could significantly undermine the true benefit of the interventions for society. In terms of measuring the societal effectiveness of a healthcare intervention, cost-benefit analysis is a better choice as it incorporates both health outcomes gained from individuals and the value gained to society, and at the same time includes all the indirect costs such as productivity and transfer costs.

From the example of societal perspective application, there is a clear outline why healthcare interventions, particularly those for cancer where technological advancements resulting in new treatment options, should be analysed using a societal perspective rather than the traditional health outcomes approaches of a payer or provider perspective. Only when a societal approach is used for healthcare interventions, especially when morbidity or prolonged periods of illness prevent the patient from working, the true measure of healthcare intervention will be shown.

Lastly, economic evaluations should be explicit about the perspective they adopt. The exclusion of items, whether for practical reasons or as a result of pre-trial assessments, must be made explicit, explained, and discussed in terms of their likely influence on the final results. Studies with non-societal perspectives may result in suboptimal resource allocation decisions and a corresponding loss in the total welfare of society.

Declaration

Author(s) declare that there were no conflicts of interest involved in the process of producing this manuscript.

Author’s contribution

Author 1 : Information gathering, analysis and preparation of draft manuscript.
Author 2 : Supervising, editing and final review of manuscript
Author 3 : Supervising, editing and final review of manuscript
Author 4 : Supervising, editing and final review of manuscript
References


