Assessing a potential framework to prioritise generalised cost-effectiveness analysis (GCEA) value elements in future decision making by evidence and relevance: case study across oncology and infectious diseases

HTA119

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PURPOSE

- Develop a framework for decision-makers to assess the relevance and applicability of GCEA value elements.
- The indications of oncology and infectious disease were selected for the case study as therapeutics for these indications frequently fail to capture the extensive value of treatments.
- Consider selected case studies of oncology therapeutics and infectious disease prevention and apply the proposed framework.

BACKGROUND

- Conventional cost-effectiveness analyses (CEA) cannot fully capture the broader and long-term benefits of infectious disease and oncology therapeutics.[1,2]
- Although GCEA value elements (Fig. 1) offer a more comprehensive framework to assess broader and long-term benefits, they are often limited within current CEA or decision making.[3,4]
- Studies that do consider extended CEA benefits are limited and often account for informal care through costs and QALY measures.[3,4]
- This study investigates the current literature available to assess the applicability and inclusion of value elements currently not captured within conventional and extended CEA.

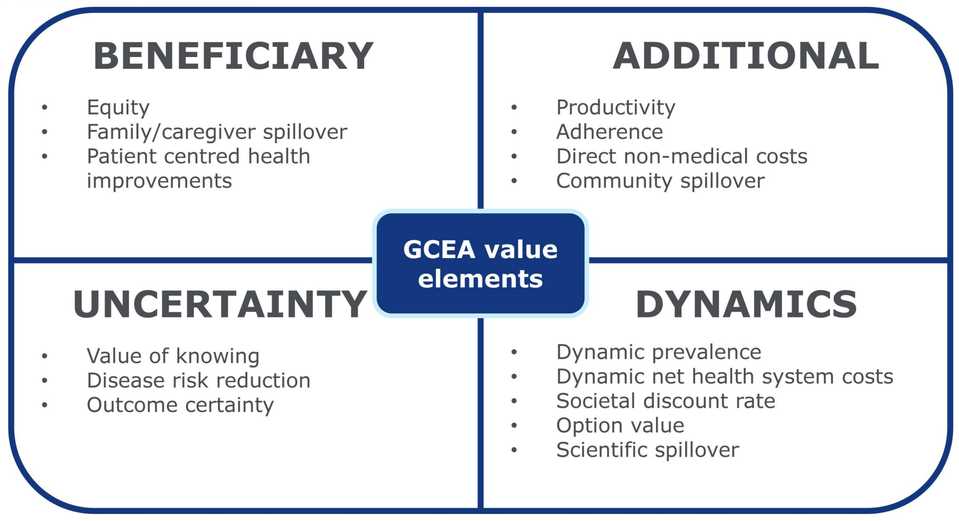
CONCLUSION

- The value framework developed offers decision-makers a tool to support the selection of relevant GCEA value elements most applicable to oncology treatments and infectious disease vaccines.
- Given the potentially devastating impact and severity of oncology, economic evaluation of treatments should include patient-relevant GCEA value elements to fully capture the incremental health benefits.[1]
- With infectious diseases, prevention is often through vaccines where GCEA value elements that consider the broader societal impact, such as community spillover effects as well as long-term and dynamic benefits, should be included.[2]
- Across both diseases, family/caregiver spillover effects and the economic burden of a disease, towards patients and caregivers, should be included in CEA. Moreover, the impact on equity and dynamic prevalence, if relevant, should be considered.[5]
- Further research to estimate and demonstrate the impact of GCEA value elements is warranted to support inclusion in future CEAs.

INTRODUCTION

- Rising healthcare costs and budget constraints have increased the importance of CEAs for new treatments.[6]
- However, current CEAs are typically limited to the traditional patient and payer perspectives, using standard value elements that fail to capture the additional effects and broader impact of a novel therapy or diagnostic. Some value elements which are likely to be relevant, such as scientific spillover and option value, have yet to be captured in CEAs.[7]
- Incorporating novel value elements could further demonstrate the full value of new treatments beyond what is captured using standard approaches.[7,8]
- The value element framework provides guidance for pharmaceutical companies and healthcare decision-makers on how to evaluate the relevance and feasibility of CEAs. This framework considers factors such as analysis perspective, population impacted, indicated disease, supporting evidence, and anticipated impact of evidence, all informed by the value flower developed by Shafrin *et al.* (Fig. 1).[8]
- This study aims to provide a framework on including GCEA value elements using oncology and infectious diseases as case studies.

Figure 1. GCEA value elements[8]



STUDY DESIGN

- A targeted literature review (TLR) was conducted to assess the applicability and relevance of GCEA value elements to decision-making across all indications.
- Results from existing CEAs which incorporated GCEA value elements informed the prioritisation of elements from a pharmaceutical and healthcare decision-maker perspective.

RESULTS

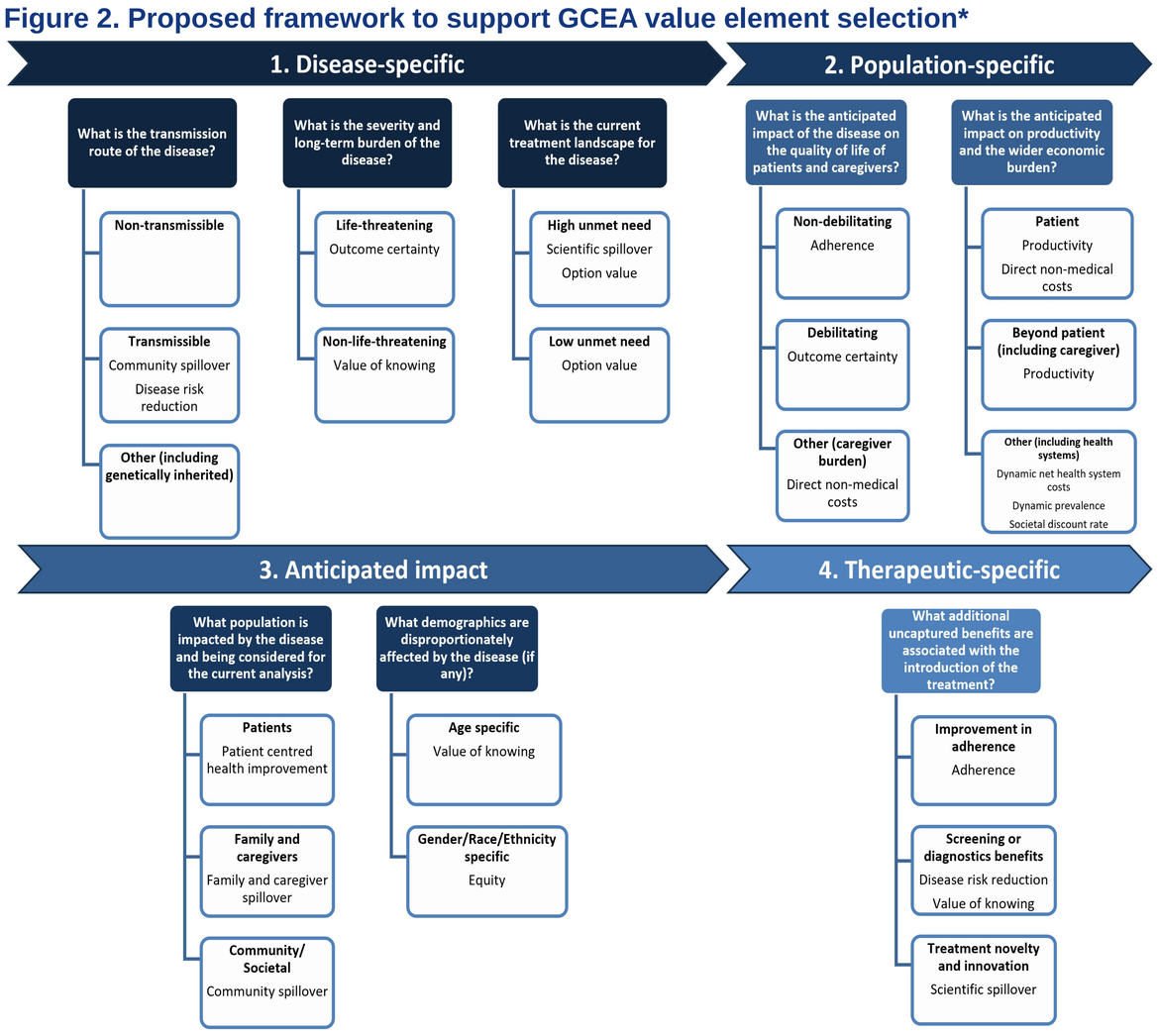
Targeted literature review

- 1,013 studies were identified, and 48 relevant studies were then extracted.
- The most frequently included value elements in existing economic evaluations were family and caregiver spillover, direct non-medical costs, and productivity.

Value element framework (Fig. 2)

- The value element framework guides healthcare decision-makers to comprehensively evaluate the relevance and applicability of GCEA value elements of a treatment.

Figure 2. Proposed framework to support GCEA value element selection*



- The framework aids other stakeholders to assess the broader value of a therapeutic or diagnostic across indications, therefore highlighting a product's 'true' value beyond that captured by conventional CEAs. The framework can be used to inform a CEA by incorporating additional value elements that are typically excluded, or to evaluate the appropriateness of additional value elements.
- To ensure all aspects of a treatment (indication or treatment benefit) and perspectives of an analysis (population and societal impact) are considered, the framework is split into four sections that addresses the following key questions:
  1. What is the disease that the treatment is indicated for and the current treatment landscape for the disease?
  2. What is the population affected by the disease, and what are the population subgroups that may be disproportionately affected?
  3. What is the impact of the disease both on affected populations and from a societal perspective?
  4. What are the additional benefits associated specifically with the treatment?

Case study results (Fig. 3)

- Spillover effects, caregiver burden, and productivity impact, are relevant to both indications. However, community spillover effects related to disease transmission are specifically applicable to infectious disease and may be applicable to oncology indications if the disease can be genetically inherited.

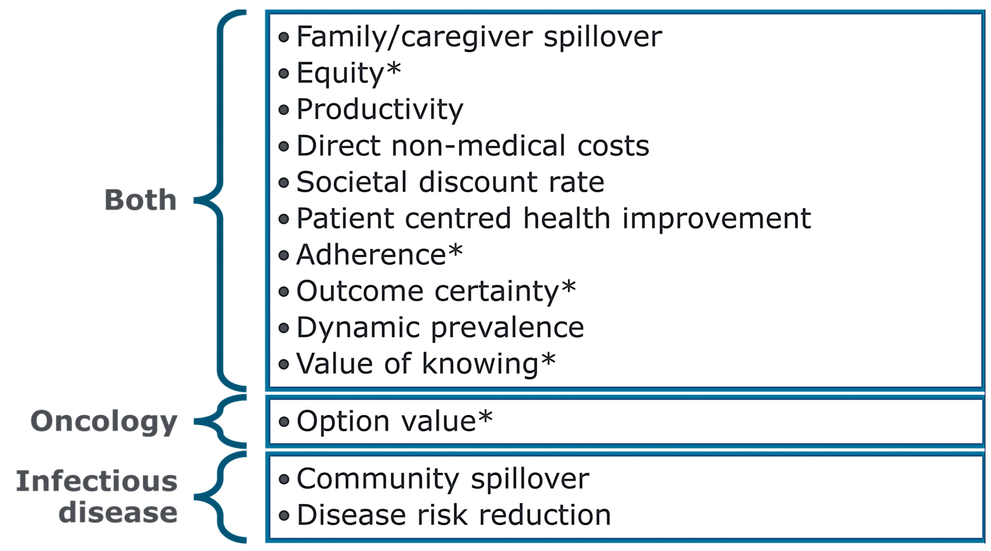
Oncology

- The relevance of specific value elements are dependent on the cancer type, staging, and line of treatment.
- Patient-relevant value elements (including patient centred health improvement, outcome certainty, value of knowing) should be prioritised as the baseline quality of life of patients are permanently impacted, often for a longer time horizon. Therefore, patients will likely have differing risk preferences that should be considered in an economic evaluation.
- The patient centred health improvement value element is especially applicable to more advanced cancer staging to account for the increased value of incremental health benefits when more severely affected by the disease.

Infectious diseases

- Broader societal impact and long-term benefits should be prioritised as the impact of the disease can extensively affect individuals beyond the patient population.
- The dynamic prevalence of a disease is a particularly relevant value element in terms of managing an infectious disease outbreak, which consequently affects societal and economic spillover.

Figure 3. Case study outcomes



DISCUSSION

- Value elements that are relevant and applicable to include in an economic evaluation are highly specific to the indication and therapeutic, thus the generalisability of the case study results are limited.
- There is a lack of evidence and reference cases for incorporating specific novel value elements into CEAs (including scientific spillover, equity, value of knowing) for health technology assessment appraisals.
- Further research into estimating and demonstrating the impact of GCEA value elements in economic analyses are needed to more appropriately capture and reflect the broader value of treatments.

FOOTNOTES

***Value element definitions**

- Value of knowing: Improved knowledge leading to better decision making and subsequently improved patient health outcomes, costs, or quality of life due to future planning value[8]
- Option value: Improved survival, health-related quality of life or disease progression which allows patients to benefit from future innovations[8]
- Scientific spillover: Treatment innovations that can generate knowledge spillovers for manufacturers to make future innovations or follow-on drug development[8]
- Equity: Societal value in reducing health disparities across patient subgroups and improving health equity[8]

Abbreviations: CEA – Cost-effectiveness analysis; GCEA – Generalised cost-effectiveness analysis; TLR – Targeted literature review; QALYs – Quality adjusted life years

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