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Mini Review

The "Other E" in ELSI: The Use of Economic Evaluation to Inform the Expansion of Newborn Screening

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Abstract

The utilization and application of genomic information generated from precision medicine continues to increase with the goal of improving health outcomes. Increasingly researchers, health care professionals, and public health teams include an examination of the ethical, legal, and social issues (ELSI) in their consideration of the use of precision medicine for newborn and pediatric health. In addition to ELSI considerations, stakeholders could benefit from an understanding of economics, the other "E" in ELSI. The use of an economic evaluation could aid decision-making on whether to screen newborns who may be at risk for disease, to diagnose newborns and children who present with symptoms, to inform the treatment and management of diagnosed individuals. In this manuscript we review the core concepts of economic evaluation, the framework of decision-analysis, and key parameters for consideration in assessing the economics of NBS program(s). We describe the common language used in the economic evaluation and provide a practical overview of health economic evaluations including 1) their purpose, 2) different types and components, 3) evaluation of the different types and components of economic evaluations (i.e., cost-effectiveness vs. cost-benefit analysis), 4) impact of societal or healthcare perspectives on the analysis, 5) health outcomes, 6) time horizon for the analysis, 7) identification of appropriate comparators, and 8) resources for economic data. We conclude with a use case to demonstrate the application and understanding of economic considerations for in the advancement and expansion of NBS.

Keywords: Newborn Screening (NBS); Sequencing; Economic Evaluation; Cost-effectiveness; Cost-utility Analysis; Cost-benefit Analysis; Public Health Economics; Genomics

Introduction

Advances in genetic testing technologies in precision medicine, exome and genome sequencing (ES/GS) sequencing, are enabling healthcare professionals to diagnose an increasing number of diseases [1]. Sequencing can identify individual genetic variants that increase an individual's risk of developing a disease. Sequencing can also be used to diagnose a disease, to develop an intervention or treatment that is individualized, and to guide the management of disease across the lifespan. This is the essence of precision medicine and has a great potential to health outcomes [2,3]. As a result, sequencing is being introduced into public health and clinical settings with the goal of improving patient outcomes and population health [4,5]. This is increasingly the case in newborn screening (NBS) where the use of sequencing to screen newborns and identify individuals who are at risk for disease is being piloted and implemented in the United States (US) and the rest of the world [6-9].

The clinical validity and utility of newborn screening

results using new technology (such as sequencing), however, is not always fully understood, especially before symptoms of disease are apparent. Questions also remain as to who will pay for screening programs and what role insurance companies will play. While weighing these issues, managers, and administrators of screening programs in diverse settings, such as public health departments, self-insured employers, health care delivery systems, and others, need effective tools to analyze the costs and health benefits of an intervention in order to make appropriate decisions regarding implementation [10,11].

The decision-making process for the adoption of new genetic tests includes diverse considerations such as ethical, legal, and social issues (ELSI) and economic factors [12,5,13]. For instance, the ELSI Advantage tool aids the NBS research community in thinking about ELSI that may arise in the planning and implementation of their research (www.nbstrn.org). Likewise, an objective evaluation of the costs and outcomes of an intervention aids public health policy makers in their adoption of genetic screening programs.

The objective of this paper is to expand ELSI considerations in NBS to include economic evaluations by providing a fundamental understanding of economic evaluations that have been used in clinical and public health settings. A NBS case study is used to help clinicians, policy makers, healthcare managers, public health teams, and administrators understand the process and results of economic analyses for genetic screening methodologies.

Health Economic Evaluation: Why, What, and How

Health economic evaluations can be complex. Numerous resources are available that provide deep background and details on economic evaluations [14-18]. This section presents a concise review of why health economic evaluation is important, what it entails, and the different ways it can be conducted.

Why Conduct Economic Evaluations

Economic evaluations are performed to provide decision makers with information about the economic impact of an intervention. Unless specifically required, reports of economic analyses do not tell the policy maker what to do because there are many other factors that go into a final policy decision – such as ethical, legal, and social issues. Economic factors are just one input to the decision-making process.

What are Economic Evaluations?

Health economic evaluations can be full or partial analyses. A partial economic evaluation analyzes only a single intervention or looks only at cost or outcome. It does not compare multiple interventions, nor does it evaluate the interplay of costs and outcomes. Although perhaps helpful for other purposes, a partial economic evaluation does not provide the depth of information needed to help inform policy-making decisions [17].

Full economic evaluations, on the other hand, compare two or more alternatives in terms of both their costs (net resources required) and outcomes (consequences, effects). Drummond (1997) defines full health economic evaluation as "the comparative analysis of alternative courses of action in terms of both their costs and their consequences." [14]. The alternatives are the different interventions that can be used to improve health, e.g., genetic testing, cancer treatment, screening/health promotion interventions, and so forth. In the case of an entirely new technology or approach, such as the first genetic screening method for a specific condition, the first alternative is to implement the new method and the second alternative is to not implement it (the "do nothing" alternative). Some cost analyses are modeled and some use trial data. This paper focuses on full economic evaluations.

How are Economic Evaluations Conducted?

There are different ways to approach full economic evaluations, and the selection of approach can depend on the goal of the evaluation, proposed end use of the results, and other specifics of each analysis. Table 1 describes the primary types of full economic evaluations and provides an excellent discussion of the advantages, limitations, and other factors of different type's economic evaluation [17].

Type	Description
Cost-effectiveness analysis	Cost-effectiveness evaluation compares two or more alternatives in terms of their net monetary cost and measure of net effect. The result is a ratio of net cost to net effect (called the incremental cost-effectiveness ratio (ICER). Effect metrics often used are life year (LY), cancer found, stroke prevented, disability-adjusted life-year (DALY), etc.
Cost-utility analysis	Cost-utility evaluation is a type of cost-effectiveness analysis that compares two or more alternatives in terms of their monetary costs and quality-of-life outcomes. The result is also a ratio of cost to effect. Effectiveness is estimated using a utility measure, often the quality-adjusted life year (QALY).
Cost-benefit analysis	Cost-benefit evaluation compares two or more alternatives in terms of their net cost and net effectiveness, both expressed as monetary values. The result is a single monetary value (e.g., dollar in the U.S.)
Cost-minimization analysis	Cost-minimization evaluation compares the net cost of two or more alternatives that are assumed to have equivalent health outcomes. The result is a single monetary value (e.g., dollar in the U.S.)
Cost-consequence analysis	Cost-consequence evaluation compares two or more alternatives in terms of their monetary costs and multiple outcomes of interest. The result is a list of disaggregated cost and health outcomes of interest.

Table 1: Primary Types of Full Economic Evaluations.

For all these evaluations, a threshold is determined to decide if the more expensive intervention is worth the cost. For example, in a cost-effectiveness evaluation, there are three primary outcomes (net health benefit (or harm), net monetary saving (or cost), and a ration of the monetary and health outcomes. If a new intervention is more costly but more effective than the comparators, the incremental cost-effectiveness ratio (ICER) can be determined to evaluate the relative cost-effectiveness of one intervention to the alternative. The ICER is determined by the following equation:

$$\frac{\text{Cost of Intervention} - \text{Cost of Comparator}}{\text{Effectiveness of Intervention} - \text{Effectiveness of the Comparator}}$$

The cost-effectiveness threshold is the maximum amount a decision-maker is willing to pay for a unit of health outcome [14-17]. When the ICER is below the threshold, the new intervention is considered cost-effective. ICERs—the ratio between the difference in cost and the difference in effectiveness between two alternatives-were calculated and used as the economic outcomes. If the data is available, the researchers can also estimate the ICERs using QALYs saved for each alternative.

Components of Economic Evaluation

Those conducting an economic evaluation must carefully consider many analytic elements [16]. In order to interpret and implement these analyses, policy makers, clinicians, and other readers of economic evaluation reports must also understand at least these analytic elements and how they are used in any given evaluation:

- Perspective
- Comparator(s)
- Type of economic evaluation
- Appropriate economic outcomes
- Appropriate health outcomes
- Appropriate time horizon
- Robustness of the findings

For reference, Appendix A presents a glossary of terms commonly encountered in health economic evaluations.

Perspective

Perspective refers to the viewpoint from which the analysis is conducted. The analysis may be from a narrow perspective such as the patient or provider, or a broader perspective such as the insurer, health care system, community, or society. The perspective determines, in part, the outcomes to be evaluated and the values of those outcomes. For example, assume that for a particular genetic test a laboratory pays $100 (for materials, staff, etc.) and charges $120 (i.e., $20 profit), the insurance company pays $110, and the patient pays $10 (copay). In this case, the cost of the genetic test is $100 for the lab, $110 for the insurance company, and $10 for the patient. Thus, the cost of a test varies depending on the perspective [14-17].

As another example, a healthcare system investment in a prevention program may cost the system not only because of the costs, but because the improved health outcomes resulting from the successful program will lead to a decrease in future revenues that would have accrued had the patients become ill. This is not to say a healthcare system should not invest in prevention programs, just that the rationale for such an investment may not be economic profit.

Perspective frames the problem to be addressed by the analysis as well as its design and the ultimate interpretation of its results. In the context of the allocation of constrained health resources, different perspectives affect the utilization of resources (e.g., the direct/indirect and medical/non-medical costs) and the value of the expected health effects (e.g., reduction of inpatient stay or improved QALY). The application of genomics programs in public health settings, such as state NBS programs, extends beyond the individual and institution because resources are allocated to a large population, where the cost, effects, and benefits are considered for those affected and those unaffected. The societal perspective considers costs broadly described (e.g., current and future medical costs paid by third-party payers or paid out of pocket by the patient, transportation costs, costs on future productivity and consumption, time costs of patients seeking and receiving care, time costs of informal (unpaid) caregiver) [16].

Comparator(s)

As noted, the comparison of one option to another (even if one of the options is "do nothing") is intrinsic to an economic evaluation. This is a critically important concept, as is the selection of comparators to achieve the goal of the analysis.

Assume that implementing a new program includes a new genetic test costing $120. Rather than the $120 being the critical value, we are interested in the *incremental* change in costs – that is, how much more (or less) is the new test compared to the current option (the comparator)?

An inappropriate choice of comparator can lead to incorrect interpretation, conclusions, and recommendations. Results showing the cost effectiveness of an option of interest may differ significantly when compared to the standard of care, the alternative competitor intervention, placebo, status quo, or no intervention (the "do nothing" approach). For example, the results of a cost-effectiveness analysis of three screening approaches for prenatal Down syndrome screening were fundamentally changed by adding a fourth approach of "not screening" [19].

In the era of personalized medicine with genomic information, if a new intervention involves the application of genomic sequencing that is a general medical practice, the comparator may be the existing "standard of care" (the best practice to address the condition before the new genomic technology became available or applicable). Or the comparator may be the 'status quo,' which is the current medical practice done in the real-world regardless of if it is the standard of care. Ultimately, cost-effectiveness analysis using the current medical practice against the new intervention can help provide meaningful baseline cost and effectiveness data. The value of comparing the new intervention to both the current medical practice and the existing standard of care can help determine the added costs and health benefits the new intervention provides over and above the existing ones.

Type of Economic Evaluation

As noted, there are different types of economic evaluations (Table 1). Before beginning an analysis, engaging the perspective of the decision-maker and establishing the objectives, scope, and interventions under consideration help to determine the best analytic approach.

Budget impact analysis, for example, focuses on the "financial consequences of adoption and diffusion of a new health-care intervention within the context of a specific health-care setting or system" [15]. It is an evaluation tool that can be used for budgetary planning, forecasting, and examining how the introduction of a new drug/process intervention might affect expenditures of the health system. A budget impact model looks only at financials, not health outcomes.

Cost-effectiveness analysis (CEA) is a "form of economic evaluation that assesses the health outcomes and costs of interventions" [16]. The health outcomes are measured in life-years gained, cases detected, disability days averted. A CEA that measures consequences in QALYs is referred to as a cost-utility analysis [18].

When cost and health outcomes are both measured in dollars, it is referred to as a cost-benefit analysis (CBA) (also called a benefit-cost analysis (BCA)). In medicine, the tendency

is to not put a dollar value on health (e.g., what is the dollar value of the symptoms of colon cancer or diabetes?). Rather, the fiscal aspect and the health aspect of care is typically separated, as is the practice in CEA. Since CBA does exactly that – assigns a dollar value to health outcomes – CEA is usually favored over CBA in health economic evaluations.

In comparing these two types of economic evaluations, a budget impact analysis may examine the "affordability" of adopting an intervention into a healthcare system, while a CEA estimates the system efficiency for the system [15]. Both budget impact analyses and CEAs share similar financial inputs and methodologic elements, but the key differences are in how these elements are incorporated into the model and the accounting for health outcomes.

It is important to remember that the economic evaluation rarely determines policy. For example, simply finding that something is (or is not) cost-effective does not usually, by itself, dictate that it should (or should not) be done [13,21]. Decision makers typically also take into account additional issues, e.g., ethical, legal, social, equity, budget constraints, and so forth, when making policy decisions.

Appropriate Economic Outcomes

Perspective is a strong factor in determining the appropriate type of economic evaluation and which economic outcomes should be evaluated. For example, for a personal perspective, out-of-pocket costs and time costs related to travel and lost work may be the only costs of interest. A healthcare system, however, may be interested in the direct and indirect costs of providing the service. Costs from the societal perspective would include resource costs, other costs from within the healthcare sector, and costs from outside the health care sector (e.g., costs related to housing, legal, and education).

The following general approach can be used to evaluate economic costs:

1. Determine the perspective of the analysis.
2. Be clear on the comparator(s).
3. Differentiate "costs" from "price" or "charge" since you are more interested in the value of the resources consumed than the price tag.

Appropriate Health Outcomes

A measure of health outcomes may at first seem straightforward – simply measure the intended outcome. However, often the health outcome assessment should be more comprehensive than just that. For one, in addition to measuring the intended outcome, such as cancer prevented, one is often interested assess unintended consequences, such as the effects of false positive results, side effects of treatment, and unexpected positive benefits of treatment. This oftentimes requires expert judgment since clinical trials may not provide complete or sufficient information.

The multiple outcomes can then be assessed (e.g., cancer detected early, positive treatment outcomes, side effects both negative and positive, etc.) and then presented in a way that can be used in the CEA. Since the cost-effectiveness analysis is a ratio of costs to health outcomes, the health outcome measure must be interval-level data.

The simplest approach is to use the primary outcome of interest (e.g., cancer prevented) and the cost-effectiveness ratio could be "dollars per cancer prevented." This approach dismisses all of the other important outcomes. This omission can be addressed in one of two ways:

- The other important outcomes are tabulated and presented for the decision maker to review; however, such an approach does not allow all the outcomes to figure into the cost-effectiveness analysis.
- All the health outcomes are combined into a single outcome, often the QALY. The major advantages of this approach are that all outcomes are assessed, and programs can be easily compared since the denominators are equivalent. The major disadvantages of the QALY are some theoretical limitations and difficulty calculating QALY in some situations. Still, the QALY remains the "gold standard" for assessing health outcomes from the societal perspective [18].

On another note, policy makers are often look for the 'net benefits' of a new intervention compared to the current (status quo) or no intervention because monetary assessment provides them the opportunity to examine both the costs of and savings from providing, and both the health benefits and the side effects.

Appropriate Time Horizon

The time horizon is how far into the future the economic and health outcomes will be counted. For example, imagine a childhood immunization program. If the analytic time horizon were one year, then the immunization would not be cost-effective: all the economic and health costs (e.g., price of drug and administration, side effects) will occur within the analytic window, but essentially all of the economic and health benefits (e.g., cost and health savings from prevented disease) will occur in the future beyond the time horizon. This example demonstrates the critical importance of the time horizon, which must be selected carefully.

At first, it may seem that "lifetime of the individual" should be the time horizon. However, some perspectives (e.g., a state

government or a health center) may be more interested in short-term budget impacts and choose a shorter time horizon. In general, terms, the time horizon should extend far enough to assure that all important consequences are captured [21].

Discounting

There are several reasons future economic outcomes are valued less than current outcomes (e.g., a dollar earned in 10 years is worth less than a dollar earned today). These reasons include, among others, inflation, investment potential, and uncertainty. This means a program that costs $100 today and saves $100 in 10 years is considered to have a net cost (the future $100 is worth less than the present $100). For this reason, future financial outcomes are "discounted," or reduced in value. Standard discount rates range from 2% to 6%. It is also the convention to discount future health outcomes.

Robustness of Findings

As noted, an economic evaluation includes many assessments, and these assessments will oftentimes be estimates or averages. For example, perhaps the analysis uses $120 as the cost of the test, but the test cost ranges from $100 to $150 in different labs. Perhaps economies of scale impact a cost estimate. Or perhaps the side effects of treatment vary with comorbidity, and comorbidity varies in different populations. In such case, any single analysis will not provide generalizable results. To help address this, the analyst should evaluate how sensitive the analytic findings are to variations in the values used in the analysis. This "sensitivity analysis" helps describe the robustness of the findings and identifies areas in which more research may be needed to better "fine tune" the estimates.

A Use Case: Economic Evaluation of NBS for Spinal Muscular Atrophy

Spinal muscular atrophy (SMA) is a neuromuscular disorder with an incidence of approximately 1 in 11,000 births. Newborn screening programs throughout the U.S. is a population-based screening that tests roughly 4 million babies each year to identify conditions that can affect a child's long-term health or survival [22,23].

In June 2008, the nomination for SMA to be added to the Recommended Uniform Screening Panel (RUSP) was submitted to the federal Health Resources and Services Administration's (HRSA) Advisory Committee on Heritable Disorders in Newborns and Children. SMA was not approved to be added to RUSP based on the evidence at that time. The Committee recommended further pilot studies of screening methods to test their reproducibility, and assessment of other therapies that focused on more than nutritional and respiratory care support [24].

Thereafter, a new screening test was developed for SMA that is coupled with screening for another genetic disorder, severe combined immunodeficiency (SCID) [25,26]. New promising earlier treatments were also developed that can stop SMA from worsening and help protect nerve cells from damage. These advanced made SMA a stronger candidate to be considered for universal screening. The updated SMA nomination was submitted to the Committee and, in March 2018, it was recommend that SMA be added to the RUSP [27].

Costs and cost-effectiveness were not part of the RUSP nomination review process. Economic evaluation studies have, however, been conducted outside the nomination process to assess costs and outcomes of caring for SMA patients, such as evaluation of:

- Treatment with the drug nusinersen (Spinraza®) versus standard of care (n = 3)
- Two drug treatments, nusinersen and onasemnogene abeparvovec-xioi (Zolgensma®), versus each other and no treatment (n = 1)
- Nusinersen versus onasemnogene abeparvovec-xioi (n = 1)
- Standard of care versus nusinersen with and without newborn screening (n = 1)

Here we assess the key components of economic analysis used in the [28] evaluation of the cost-effectiveness of nusinersen treatment with and without universal NBS for infantile-onset SMA [28].

What perspective was chosen?

To assess whether public dollars should be invested in a public health program such as NBS, the authors conducted the analysis from a societal perspective by including both direct medical costs and the indirect costs of a caregiver's work-related income loss.

What comparators were used?

The study goal was to evaluate the cost-effectiveness of nusinersen treatment with and without universal newborn screening for infantile-onset SMA. To that end the authors evaluated the following alternatives:

- Nusinersen treatment with universal screening
- Nusinersen treatment without universal screening
- Universal screening and no treatment (but there are a benefit of knowledge for families)
- No screening and no treatment

What type of economic evaluation was used?

Since there were various available drug treatments and a new gene therapy option at the time of the analysis, it is anticipated that earlier treatment would yield better health outcomes. However, since universal NBS for SMA had only begun in 2018, it had not yet been determined if it would be cost-effective to start much earlier treatment in the presence NBS. To explore the possibility, they conducted a cost-effectiveness evaluation to compare different sets of treatment options in terms of their effectiveness and cost.

What economic outcomes were selected?

Economics outcomes were evaluated at one-month intervals and then simulated using models for the lifetime of the cohort. Economic cost includes single dose injection of medication (nusinersen), marginal cost of SMA newborn screening, lumbar puncture with image and guidance, sedation services for patient, and other non-medical cost.

What health outcomes were selected?

The primary health outcome used in the study was the expected discounted event-free life years saved (LY). This approach is commonly used for cost-effectiveness outcomes because it is easy to measure and is well understood. However, as mentioned, using the QALY, with weighting life years by the quality of life (called "utilities) over time, is a more sophisticated approach. At the time of the analysis, however, there were no published utility valuations of pediatric SMA patients. The authors therefore used utility weights based on asthma as a proxy for SMA patients surviving into adulthood event-free (without permanent ventilator assistance). They used QALY results to supplement their primary evaluation based on LY.

What time horizon was evaluated?

In this study, the time horizon was 30 months (2.5 years). At first, it may be seemed it was a short time frame to conduct a cost-effectiveness analysis to demonstrate whether to invest in upfront cost of supporting screening of four millions babies; however, the authors limited their model's month-to-month time horizon to 30 months, because there do not exist data on the long-term survival rates of patients with type 1 SMA treated with nusinersen.

How robust were the findings?

The authors conducted a threshold analysis to identify the price at which treatment would be cost-effective at various willingness-to-pay (WTP) thresholds by varying the per-dose price of nusinersen from $5,000 to its then-current price of $125,000. The authors also conducted probabilistic sensitivity analysis (PSA) to examine the impact of simultaneous uncertainty in all of the modeling parameters.

Beyond the Economics

Advances in genomics have resulted in the rapid introduction of many new genetic tests. As a result, more patients are being offered genetic testing as part of their healthcare; uptake is limited, however, by test costs and insurance coverage issues [29-32].

Selecting the "right" genetic test can be challenging given the wide variability in tests offered by different labs and their costs. It is critical that patients and clinicians make well-informed selections since insurance is unlikely to cover repeat genetic testing multiple. One way in which this challenge is often handled is by ordering a more comprehensive test than may be strictly necessary. This testing of gene panels rather than single genes can be a more cost-effective approach, particularly when a diagnosis is unknown and/or can be due to a change in one of several genes.

Opportunity cost is the loss of potential gain from other alternatives when one alternative is chosen. Opportunity cost of the clinicians and patients considering and using genomic tests has not yet been explored and may need to be evaluated for shared decision-making to be optimized for different perspectives. Thus, as genomic programming becomes more widely considered in improving population health, clinical managers and administrators need to evaluate the economics, in terms of cost and benefit, of genomic screening programs for patients, healthcare systems, and society.

Conclusions

The landscape of healthcare could change drastically as the cost of ES/GS sequencing declines and data informatics become streamlined and automated. However, the public and medical communities often have reservations on the use of ES/GS in clinical and public health settings because its clinical validity, clinical utility, and costs are not clearly understood. This is especially applicable to NBS in the US because screening of newborns occurs without parental consent in state-based public health departments and birthing hospitals [33].

This paper expanded ELSI considerations include economics and provided an overview of the purpose and application of economic evaluation in healthcare. Economic evaluation can assist in decision-making for new interventions, programs, and policies that will impact a wider population with precision medicine that will become increasingly useful and important for managers and administrators to help determine the costs, benefits, and health outcomes from the use of ES/GS.

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Disclaimer

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Disclosure statement

The authors report no conflict of interest.

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33. NBSTRN, Data Tools.

Appendix A

Term	Description
Budget Impact Analysis	An economic evaluation that assesses the monetary consequence of adopting a new intervention from the institutional perspective.
Cost-Benefit Analysis	A type of economic assessment to quantify costs and benefits (in term of monetary value) of a program or decision where all the outcomes both fiscal and health are converted to dollars to determine the net economic impact.
Cost-Effectiveness Analysis	A type of economic evaluation of the costs and measure of effectiveness associated between two or more interventions. Metrics that are often used: LY (Life years), QALY (quality- adjusted life year), ICER (incremental cost-effectiveness ratio).
Cost-Utility Analysis	A type of economic evaluation of the costs and measure of utility (i.e., quality of life) associated between two or more interventions.
Decision Analytical Model	A mathematical model used to calculate the expected value of a given health decision to determine the incremental cost-effectiveness ratio (ICER) between strategies and decisions.
Direct Cost	The cost of goods and services related to the intervention being adopted.
Dominated	A program that is both more expensive and provides poorer health outcomes than the comparator.
Incremental Cost Effectiveness Ratio (ICER)	The difference between the cost divided by the difference between the effectiveness of two interventions.
Indirect Cost	The cost not directly related to the good or services, but can impact or is impacted by the intervention (i.e., loss of productivity)
Intangible Cost	Meaningful factors in decision-making that may be difficult to monetarize (e.g., the value of happiness)
Opportunity Cost	The monetary value of the next best decision.
Perspective	A viewpoint used for accounting. For example, a copay is a cost from the patient perspective and a source of income from the provider perspective.
Quality Adjusted Life Year (QALY)	A year of life lived in perfect health.

Term	Description
Sensitivity Analysis	An analysis to assess the robustness of the model by varying the of variable(s) or different scenarios.
Societal Perspective	An analysis that includes all the cost and benefits to the society, regardless of who is paying for it.
Standard of Care	Considered as the appropriate practice under the given conditions.
Status Quo	The general medical practice in current conditions.

Table A1: Glossary of Health Economics Terms.