

## Generalized Cost Effectiveness Analysis (GCEA)

### What is GCEA?

- Generalized Cost-Effectiveness Analysis (GCEA) was developed by the World Health Organization (WHO) and popularized by No Patient Left Behind (NPLB) to address concerns that standard cost-effectiveness analysis (CEA) assumptions, such as those used in assessments relying on the quality-adjusted life year or QALY, do not reflect real-world values, prices, or broader health and non-health outcomes.
- GCEA aims to incorporate many of the elements of value conceptualized as part of the ISPOR Value Flower, but has not been able to operationalize all of them in practice.

### How is GCEA different?

- NPLB uses GCEA as a method to address methodological shortcomings in traditional CEA, such as QALY-based analyses. For example, historically CEA:
  - Fails to account for societal benefit;
  - Ignores drug prices often decrease dramatically over time as competition reduces net prices, drugs lose market exclusivity and generic competitors are introduced;
  - Generally undervalues an intervention's benefits by failing to consider the level of disease severity or many non-health benefits and costs; and
  - Ignores how new patients may start and benefit from treatment over time, particularly important for diseases involving many years of chronic treatment.
- By contrast, GCEA attempts a more comprehensive approach that considers factors such as the impact of drug pricing changes over time (e.g., a drug going generic or facing brand competition), its benefits for caregivers, and its potential benefits for healthy individuals by:
  - Considering the varying value of health improvements for individuals with different health conditions;
  - Accounting for new cohorts of patients who acquire the disease and are treated;
  - Considering the differential value of health gains for individuals with varying health statuses (such as how a severe condition may make seemingly small quality of life gains more valuable than for a person with a less severe condition and good health);
  - Accounting for price declines as products lose market exclusivity; and
  - Considering the societal perspective when estimating benefits.

### How Does GCEA Measure Up?

- As used by NPLB, GCEA incorporates generalized risk-adjusted cost-effectiveness (GRACE), which can lead to greater value estimates for treatments for more severe illness or disabling conditions. The tradeoff is lower value estimates for less severe conditions. As a result, GRACE may give less value to treatments for common conditions

such as peptic ulcer disease, hypertension, sleep apnea, and osteoarthritis or any other therapies that manage symptoms.

- GCEA, like traditional CEA, relies on approximations of a “representative individual” that do not account for differences across populations, or the perspectives of patients and people with disabilities.
- GCEA has not explicitly incorporated equity concerns related to race, ethnicity, or socioeconomic factors. It has not accounted for implicit bias or structural inequities within healthcare systems, disparities in access to healthcare services and treatments, or social determinants of health. Addressing these concerns would require actively involving affected communities in decision-making processes.
- Despite taking a broader view of health impacts, measurement of health gains using GCEA may still omit many clinical symptoms and impacts most important to patients, depending on the choices made by the entity conducting the study.
- The implementation of GCEA requires extensive and detailed data, particularly regarding risk factors and their impacts on cost-effectiveness across various health interventions. This includes information on patients’ risk profiles, comorbidities, and other relevant factors that can influence the effectiveness and cost-effectiveness of treatments. Currently, such comprehensive data is often lacking or fragmented, making it challenging to apply effectively in real-world settings. As a result, GCEA is currently used mainly as a theoretical tool, lacking widespread implementation in practice.

#### **Who is using GCEA?**

- Currently, no organizations or entities are using NPLB’s definition of GCEA, but NPLB has released several papers, videos, and presentations on the methodology.
- In the 2023 Inflation Reduction Act revised guidance, GCEA was listed as a methodology to be evaluated to determine if it violates the law’s patient protections and can be used by the government to evaluate the value of certain pharmaceuticals.

#### **What is the broader community saying?**

- NPLB advertises GCEA as “better math” and has stated: *“Instead of doing conventional CEA, we can do better math, called generalized cost-effectiveness analysis (GCEA), which asks a broader set of questions that more fully capture the value of a medicine.”*
- NPLB partnered with Entity Risk, Inc. to review 20 drugs previously assessed by the Institute for Clinical and Economic Review (ICER). Using GCEA and accounting for additional value elements, at least 85% of them provided good value for money, contrary to ICER’s findings: *“Traditional CEA methods omit sources of social value that appear quantitatively significant. Applying GCEA in health technology assessment can lead to more complete and accurate estimates of societal value, facilitating more efficient resource-allocation better aligned with the welfare of patients present and future.”*