Background

- Understanding key drivers of health-economic outcomes is essential already at an early stage in product development. Cost-effectiveness modeling is a useful tool to generate these insights.
- Alternatives to an expensive, bespoke cost-effectiveness model (CEM) are needed to reduce costs at this early stage in the product lifecycle.

Objective

- Develop a simple and transparent CEM for oncology, requiring limited data input and resource investment.
- Help inform early-stage commercialization planning across a variety of indications.
- Help validate cost-effectiveness assessments.

Methods

- A partitioned-survival CEM was built in Microsoft Excel with the states 'progression-free survival', 'progressed disease' and 'death'.
- Model outcomes include life-years gained, quality-adjusted life-years gained and costs. Outcomes are presented stratified by health states.
- Model inputs include structural settings (currency, time horizon, discount rate), costs (drug acquisition, administration, health care resource use, adverse events) and utilities (health states, adverse events).
- One intervention and up to two comparators can be modeled and compared at the same time.
- There are several options for including efficacy data in the model:
  1. Enter Kaplan-Meier data for progression-free and overall survival for intervention and comparator, automatically fitted with exponential and Weibull parametric curves to extrapolate survival.
  2. Enter fitted parametric curves created in external software such as R or SAS.
  3. Enter Kaplan-Meier data or parametric curves for comparator and a hazard ratio for the intervention or vice versa.
- Additional modules for probabilistic sensitivity analysis (PSA), cost-effectiveness acceptability curve (CEAC), one-way sensitivity analysis (tornado diagram), and value of information are currently in development.

A FREELY AVAILABLE GENERIC COST-EFFECTIVENESS MODEL IN ONCOLOGY FOR EARLY-STAGE DECISION MAKING

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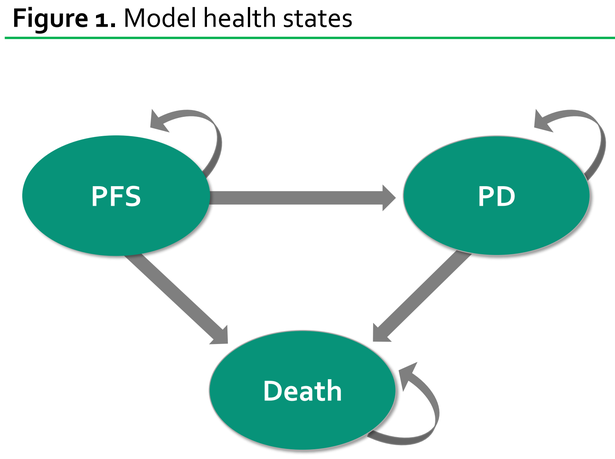
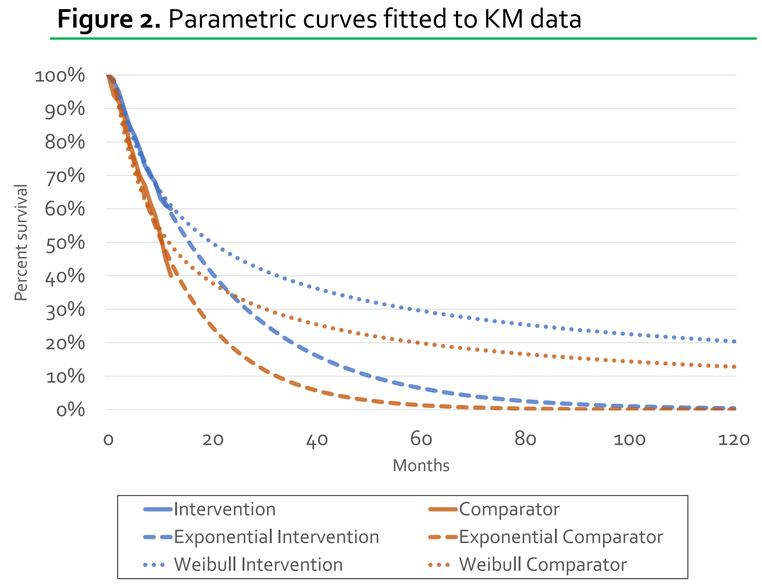
A generic model was developed, adaptable to various indications and interventions, to provide **early cost-effectiveness analysis of oncology products** and **validation of existing assessments**, available at **no cost**.

Figure 1. Model health states



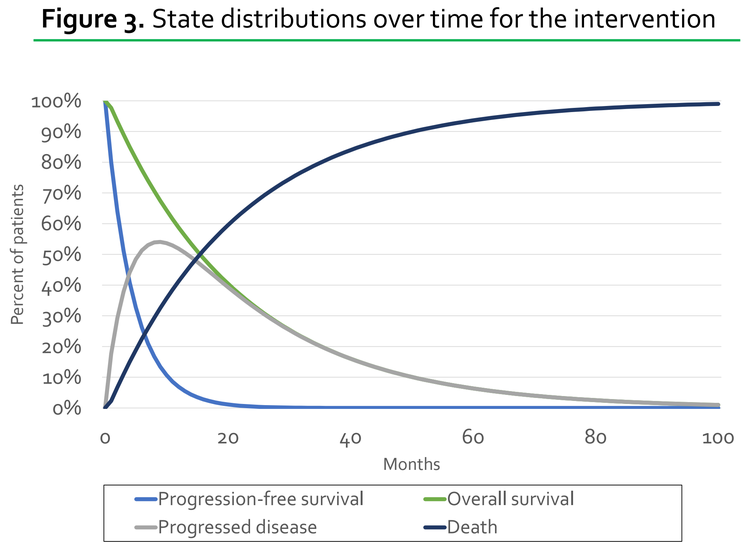
PFS: Progression-free survival, **PD**: Progressed disease

Figure 2. Parametric curves fitted to KM data



Note: Mock data was used for graphs, not based on data from clinical trials

Figure 3. State distributions over time for the intervention



DISCLOSURES RL, KG, ML and ÅB are employed by Quantify Research.

Take a picture of the QR code to **access the model website**