Survival analysis workshop

"We fitted a non-stratified Gompertz distribution to the time to treatment discontinuation data because it had the lowest AIC, and provided the most plausible extrapolation compared to our registry data."

On October 10, 35 enthusiastic Young-NVTAG'ers were reunited in Utrecht to (re)discover what this sentence meant during the Young-NVTAG workshop on survival analysis. The evening began with a short refreshing session by Xavier Pouwels on what time-to-event data is, the Kaplan-Meier curve, and the different parametric survival models. In the context of cost-effectiveness analyses, (parametric) survival models are used to extrapolate time-to-event data beyond the observed time horizon because observed time-to-event data is limited in time and decision-makers are often interested in lifetime estimates of costs and benefits. (Parametric) survival models are thus a cornerstone of cost-effectiveness analysis. Since different (parametric) survival models may result in substantially different extrapolation and different cost-effectiveness outcomes, the selection of (parametric) survival models for cost-effectiveness analyses should be made carefully.

After this introduction, Bram Ramaekers introduced a tool he developed to support the selection of parametric survival model for cost-effectiveness analyses. This tool was inspired by the Technical Support Document 14 of the Decision Support Unit (National Institute for Health and Care Excellence). The tool only requires minimal input from the user to produce all necessary information to support and justify the parametric survival model selection process, e.g. with plots to assess the proportional hazard assumption, the statistical fit of fitted models and the extrapolated survival probabilities.

A case study was used to illustrate how to interpret the output of the tool. The participants were asked to justify which parametric survival model they would select to model the time-to-event data of the case study. During the discussion of the answers with the participants it became clear that selecting the 'right model' requires making multiple subjective assessments.

We would like to thank you all for your participation! And we hope that all participants enjoyed this productive evening as much as we did!
The Young-NVTAG board