## SURVIVAL EXTRAPOLATION IN COST-EFFECTIVENESS STUDIES

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Clinical effectiveness of new health interventions is usually established in randomised controlled trials. Almost invariably RCTs have short duration of patient follow up and the full survival pattern of trial participants is not observed. An integral part of cost-effectiveness is extrapolation of survival to the lifetime of the patient group. It is unlikely that simple extrapolation of short-term mortality rates observed during RCTs will be accurate. However, other sources of information on long-term survival may exist, such as patient registries or government population statistics. In the absence of long-term survival estimates from RCTs or meta-analysis we show how population data can be used to estimate survival patterns. We synthesize evidence from different sources such as patient registries, population statistics and meta-analyses, using implantable cardioverter defibrillators for prevention of sudden cardiac death as a motivating example. Additionally, we extend these methods to cause-specific time-to-event data. The methods are implemented using a Bayesian approach although the ideas can be transferred to a classical framework.