STC and MAIC

Targeted Approaches to Enhance Indirect Comparisons

Evidence on the relative effectiveness of treatments is rarely available from head-to-head studies, and as a result, published results from clinical trials must often be used for indirect comparisons via network meta-analysis (NMA). Although often very effective, NMA may be challenging if there is an incomplete or disjointed evidence network, or substantial heterogeneity between studies, or when key treatments to be compared are separated by multiple intermediate steps or linking comparisons within the network. Simulated Treatment Comparisons (STC) and Matching Adjusted Indirect Comparisons (MAIC) can often help to overcome these challenges, and may also provide additional depth and a different perspective when challenges do not exist. Submissions to health authorities have successfully employed these methods, and they may be required in the future.

STC / MAIC to Overcome Challenges with NMA

NMA with an incomplete network may not produce results for key comparisons of interest (e.g., A vs. B above).

STC/MAIC can address this challenge because it does not rely on a common comparator; outcomes are compared directly after adjustment for potential confounding.

NMA with heterogeneity between studies may be unreliable due to important differences in study populations.

STC/MAIC can address this challenge by explicitly adjusting for differences between the trials.

NMA with a multi-step comparison with traditional methods when the network is broad requires multiple intermediate steps to derive the main comparison of interest.

STC/MAIC can address this challenge since comparisons are targeted to treatments of interest (i.e., they are a single step comparison).

STC / MAIC to Provide Depth and a Different Perspective

NMA with a complete network produces an average comparison of treatments across a network of published evidence, e.g., A vs. C, A vs. D, B vs. C, B vs. D.

STC/MAIC can be complementary, providing a different perspective on the comparison of interest (e.g., A vs. B) reflecting how the treatments would have been compared if studied together in the same trial.
Evidera Experience and Selected Publications

Evidera’s team of statisticians and modelers are innovators in alternative approaches to indirect comparison, with publications in this area for over five years. We have successfully supported National Institute for Health and Care Excellence (NICE) submissions where targeted approaches have been applied for indirect comparisons. We are able to leverage world-class health economics, modeling, and literature review teams for scientific and strategic support in assessing the need and suitability of targeted comparison, skillfully executing the analyses, clearly communicating the findings, and incorporating these into health economic assessments and agency submissions.


Ishak KJ, Phatak H, Masseria C. Making Sense of Novel Approaches for Indirect Comparison: Similarities and Differences of Simulation and Matching Based Approaches. Workshop Presented at ISPOR’s European Meeting, 2015, Milan, Italy.


2: Lenalidomide for the Treatment of Multiple Myeloma In People Who Have Received at Least One Prior Therapy, January 2009, http://www.nice.org.uk/guidance/ta171