RTI (h)(s)™

Health Solutions

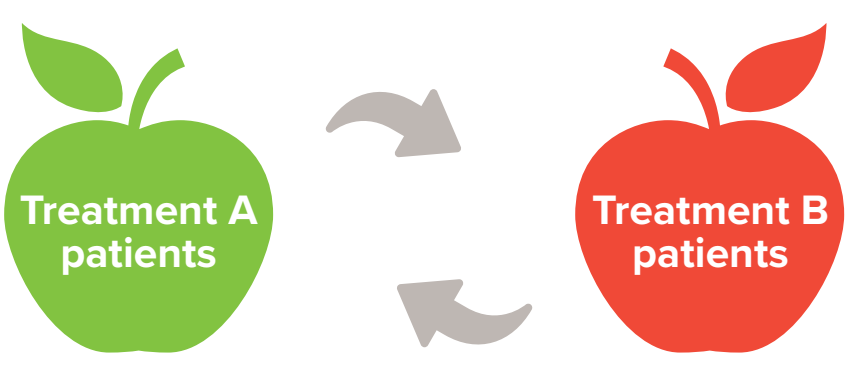
Knowledgebase

Real-World Treatment Comparisons

The Power of Propensity Scores

We want to make valid treatment comparisons.

Clinical trials ensure comparable treatment groups at study entry through randomization.



Because patients in each group, on average, have similar characteristics (both measured and unmeasured), the estimated treatment effect is likely not biased due to underlying group differences.

The real world, however, is messy.

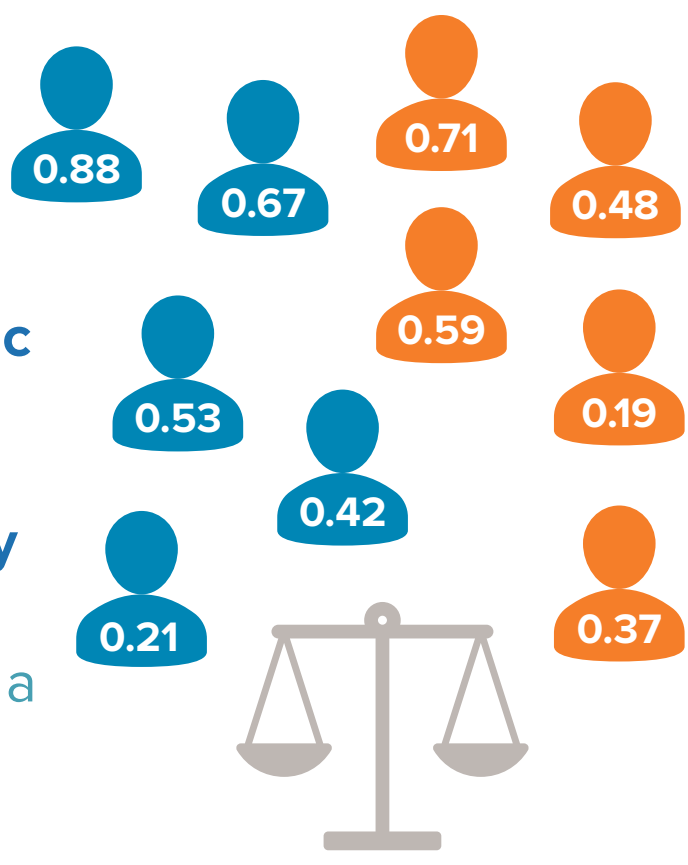
In the real world, doctors may choose to prescribe certain therapies to individuals based on factors such as age, comorbidities, disease severity, and risk willingness.

⚠ In these situations, a simplistic analysis may be biased by **overstating, understating, or reversing** the estimated advantage of a treatment.

Enter the propensity score.

The propensity score

- Summarizes the characteristics of each patient as a **single numeric value** between 0 and 1
- Represents the **probability or propensity** of receiving a specific treatment given a patient's characteristics
- Serves as a **balancing score** to allow for an "apples-to-apples" comparison between treatment groups



Reduce potential bias in treatment comparisons.

Account for the propensity score by

- Stratification
- Matching
- Weighting
- Covariate adjustment

These approaches can be incorporated into most commonly used statistical models.

Use the propensity score to **adjust simultaneously** for important differences between treatment groups to obtain the treatment effect estimate.

Learn more about our biostatistics expertise and how we can help you get the most out of your data.