Parametric G Formula Overview

Implementing the parametric g formula consists of four steps:

1 Setup:

- Define the estimand
- Causally order relevant variables
- Specify models
- Tie them together using the law of total probability

2 Implementation:

- Fit specified models to original empirical data
- Select (large) Monte Carlo Sample (with replacement) from original empirical data and keep baseline and first time point
- Simulate follow-up

3 Validation:

- Compare summaries of simulated variables under natural course to summaries of empirical data (e.g., means, medians, CDF)
- Evaluate sensitivity to causal ordering
- Evaluate sensitivity to Monte Carlo Sample Size

4 Interpretation:

- Quantify contrasts of interest and interpret in light of:
  - Counterfactual consistency
  - Interference
  - Exchangeability
  - Correct Model Specification
  - Positivity