Bayesian nonparametrics and g-computation for causal inference in observational studies

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We describe a general approach for causal inference from observational studies. We propose to flexibly models the joint distribution of the observed data using Dirichlet process mixture models. Separately, we make causal identifying assumptions, which can include sensitivity parameters. Prior distributions help capture uncertainty about both the observed data models and identifying assumptions. Postprocessing computation steps can then be used to obtain the posterior distributions of interest. We report results from simulation studies and from a motivating data example.