SUSAN GRUBER, Harvard School of Public Health
Triple-Robust Targeted Minimum Loss-Based Estimation

An efficient double robust estimator solves the efficient influence curve estimating equation for the parameter of interest. New results show that solving one particular component of the efficient influence curve estimating equation guarantees consistent parameter estimation, even under dual misspecification of the outcome regression and censoring/treatment mechanism models. This result motivates a new triple-robust targeted minimum loss-based estimation (TMLE) procedure that ensures the TMLE solves the required D_{CAR} component of the efficient influence curve estimating equation. Simulation studies demonstrate the consistency properties under correct specification of at least one of the three components of the estimation procedure.