

A Potential Outcomes Approach to Monitoring Target Processes Interacting with Observation Processes

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Abstract:

We estimate campus COVID-19 prevalence under a once-per-week testing and isolation program. Even without confounding, the test-positive rate overstates true prevalence because testing frequency depends on infection status. Using a potential outcomes framework, we link observed testing data to a counterfactual world without infection, enabling unbiased prevalence estimation by modeling the testing process alone.