Adaptive sampling designs for epidemic prevalence estimation

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Abstract:
Intuitively, sampling is likely to be more efficient for prevalence estimation, if the cases (or positives) have a relatively higher representation in the sample than in the population. In case the virus is transmitted via personal contacts, contact tracing of the observed cases (but not noncases), to be referred to as adaptive network tracing, can generate a higher yield of cases than random sampling from the population. The efficacy of relevant designs for cross-sectional and change estimation is investigated. The availability of these adaptive sampling designs allows one to unite tracing for combating the epidemic and sampling for estimating the prevalence in a single endeavour.

Keywords:
case network; adaptive cluster sampling; panel; graph sampling

Link:
https://arxiv.org/abs/2011.08669