

Multi-List Methods Using Incomplete Lists in Closed Populations

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Multi-list methods have become a common application of capture–recapture methodology to estimate the size of human populations, and have been successfully applied to estimating prevalence of diabetes, human immunodeficiency virus (HIV), and drug abuse. A key assumption in multi-list methods is that individuals have a unique “tag” that allows them to be matched across all lists. This article develops multi-list methodology that relaxes the assumption of a single tag common to all lists. Estimates are found using estimating functions. An example illustrates its application for estimating the prevalence of diabetes, and a simulation study investigates conditions under which the methodology is robust to different list and population sizes.