

Sampling for a Household Based COVID-19 Testing Survey in Paraíba State - Brazil

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Abstract

In a partnership of the Observatory of Respiratory Syndromes of the Federal University of Paraíba, the Paraíba State Government and SCIENCE, the epidemiological survey "*Continuar Cuidando PB*", a household-based sample survey conducted in November and December 2020, collected sociodemographic and symptoms data together with testing of residents for the diagnosis of COVID-19. The total sample of 394 census enumeration areas (CEAs) was stratified into four macro-regions of the state and subdivided within these strata for collection over eight weeks, with equal collection load per week in each stratum. In each selected CEA, a concurrent household listing and sampling protocol was applied using a combination of Bernoulli plus inverse sampling. Listing and sampling of new households stopped when the number of residents tested with the RT-PCR test in interviewed households totaled 25 or more. When a household was sampled and agreed to participate, all residents were tested, even if this meant that the total number of tested individuals in a selected CEA would go above 25. This protocol enabled speedy performance of the data collection, the release of partial results every two weeks, and strong linkage between the data obtained in the socioeconomic questionnaires with the results of the tests performed for COVID-19. The survey provided the public health administration in Paraíba State indicators that enabled better decision-making on public policies related to the management of the pandemic and enabled informing society about the evolution of the disease in that state. Data collection was performed in partnership with teams from the municipal and state health departments, who were responsible for the application of rapid (finger blood sample) and RT-PCR tests, for the timely return of results to the tested participants, and for the provision of appropriate care services to all who tested positive for the disease. The RT-PCR test samples were analyzed by the Central Laboratory of Public Health of Paraíba (LACEN-PB). All health and safety precautions were taken to protect the team of interviewers and health professionals involved in the data collection, as well as the residents of the selected households who participated in the survey.

Keywords: Serum-prevalence survey; inverse sampling; Bernoulli sampling; household listing; health surveillance.