

Symptom prevalence and Secondary Attack Rate of SARS-CoV-2 in Rural Kenyan Households: a prospective cohort study

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Abstract

Background We estimated the secondary attack rate of SARS-CoV-2 among household contacts of PCR-confirmed cases of COVID-19 in rural Kenya and analysed risk factors for transmission. **Methods** We enrolled incident PCR-confirmed cases and their household members. At baseline, a questionnaire, a blood sample, and naso-oro-pharyngeal swabs were collected. Household members were followed 4, 7, 10, 14, 21 and 28 days after the date of the first PCR-positive in the household; naso-oro-pharyngeal swabs were collected at each visit and used to define secondary cases. Blood samples were collected every 1-2 weeks. Symptoms were collected in a daily symptom diary. We used binomial regression to estimate secondary attack rates and survival analysis to analyze risk factors for transmission. **Results** A total of 119 households with at least one positive household member were enrolled between October 2020 and September 2022, comprising 503 household members; 226 remained in follow up at day-14 (45%). A total of 43 secondary cases arose within 14 days of identification of the primary case, 81 household members remained negative. The 7-day secondary attack rate was 4% (95%CI 1-10%), the 14-day secondary attack rate was 28% (95%CI 17-40%). Of 38 secondary cases with data, 8 reported symptoms (21%, 95%CI 8-34%). Antibody to SARS-CoV-2 spike protein at enrolment was not associated with risk of becoming a secondary case. **Conclusion** Households in our setting experienced a lower 7-day attack rate than a recent meta-analysis indicated as the global average (23-43% depending on variant), and infection is mostly asymptomatic in our setting.

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