

Household transmission investigation protocol for coronavirus disease 2019 (COVID-19)

Version: 2.2

Date: 23 March 2020

Contact: EarlyInvestigations-2019-nCoV@who.int



Reference:

The emergence of a new virus means that understanding transmission patterns, severity, clinical features and risk factors for infection will be limited at the start of an outbreak. To address these unknowns, WHO has provided Four Early sero-epidemiological Investigation Protocols (rebranded the WHO Unity Studies). One additional study to evaluate environmental contamination of COVID-19 is also provided.

These protocols are designed to rapidly and systematically collect and share data in a format that facilitates aggregation, tabulation and analysis across different settings globally.

Data collected using these investigation protocols will be critical to refine recommendations for case definitions and surveillance, characterize key epidemiological features of COVID-19, help understand spread, severity, spectrum of disease, and impact on the community and to inform guidance for application of countermeasures such as case isolation and contact tracing.

They are available on WHO website here:

<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/early-investigations>)

COVID-19 investigations and studies protocols currently available include:

- 1. *The First Few X cases and contacts (FFX) investigation protocol for coronavirus disease 2019 (COVID-19).***
- 2. *Household transmission investigation protocol for coronavirus disease 2019 (COVID-19)***
- 3. *Protocol for assessment of potential risk factors for coronavirus disease 2019 (COVID-19) among health workers in a health-care setting.***
- 4. *Population-based age-stratified seroepidemiological investigation protocol for coronavirus 2019 (COVID-19) infection***
- 5. *Surface sampling of COVID-19 virus: a practical “how to” protocol for health care and public health professionals***

Please contact earlyinvestigations-2019-nCoV@who.int

All WHO protocols for COVID-19 are available on the [WHO website](#) together with the technical guidance documents.

Version Control

Main updates for version 2.2:

- Technically edited version including consistency check and alignment with the three other early investigation protocols.
- Capture **exposure also during the asymptomatic period of the confirmed case**.
- Update of the **Go.Data** section, as now household questionnaires are available as templates in Go.Data for country use.
- Addition of an appendix describing the key features of Go.Data and several hosting options for Go.Data (Appendix C).
- Addition of an appendix on “Comparison between the features and complementarity of the main coronavirus disease 2019 (COVID-19) early investigation protocols”, now that the risk assessment for health workers has been published (Appendix B).
- Updated references, to align with the latest WHO guidance.

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Summary

Household transmission investigation protocol for coronavirus disease 2019 (COVID-19)	
Population	All household contacts of confirmed cases of COVID-19
Potential output and analysis	Key epidemiological data to complement and reinforce the findings of <i>The First Few X cases and contacts (FFX) investigation protocol for coronavirus disease 2019 (COVID-19) (1)</i> , in the areas of, primarily: <ul style="list-style-type: none"> • the proportion of asymptomatic cases and symptomatic cases • the incubation period and the duration of infectiousness and of detectable shedding • the the serial interval of COVID-19 infection • the reproduction numbers: R_0 and R of COVID-19 • clinical risk factors for COVID-19, and the clinical course and severity of disease • high-risk population subgroups • the secondary infection rate and secondary clinical attack rate of COVID-19 infection among household contacts • patterns of health-care seeking.
Design	Prospective study of household contacts of laboratory-confirmed cases of COVID-19, ideally before widespread community transmission occurs.
Duration	At a minimum, enrolled household cases and contacts will complete data and specimen collection at enrolment (Day 1) and for 28 days of follow-up, with four home visits.
Minimum information and specimens to be obtained from participants	<ul style="list-style-type: none"> • Household visit with respiratory sample collection at Days 1, 7, 14 and 28. • Serum sample collection is needed at Days 1 and 28, and highly encouraged at Day 14. • Symptom diaries recorded by household contacts from Day 0 to Day 14 and highly encouraged until Day 28.

This document sets out the methods to guide data collection and the public health investigation for the comprehensive assessment of household contacts of confirmed COVID-19 cases.

The World Health Organization (WHO), in collaboration with technical partners, has developed a series of enhanced surveillance protocols that are harmonized to help provide detailed insight into the epidemiological characteristics of COVID-19. Other COVID-19 investigations and study protocols currently available include:

- *The First Few X cases and contacts (FFX) investigation protocol for coronavirus disease 2019 (COVID-19) (1)*;
- [Protocol for assessment of potential risk factors for coronavirus disease 2019 \(COVID-19\) infection among health workers in a health-care setting \(2\)](#); and
- [Surface sampling of COVID-19 virus: a practical “how to” protocol for health-care and public health professionals \(3\)](#).

- *Population-based age-stratified seroepidemiological investigation protocol for coronavirus 2019 (COVID-19) infection*

The scope and focus of this document and the first two listed above are compared in Appendix B.

All WHO protocols for COVID-19 are available on the [WHO website](#) (4), together with technical guidance documents (5), including surveillance and case definitions (6); patient management (7); laboratory guidance (8); infection prevention and control (9); risk communication and community engagement (10); travel advice (11); and more (12, 13).

Comments for the user's consideration are provided in purple text throughout the document, as the user may need to modify methods slightly because of the local context in which this study will be carried out.

1. Background

1.1 Introduction

The detection and spread of an emerging respiratory pathogen are accompanied by uncertainty over the key epidemiological, clinical and virological characteristics of the novel pathogen and particularly its ability to spread in the human population and its virulence (case-severity). This is the situation for coronavirus disease 2019 (COVID-19), first detected in Wuhan city, China in December 2019 (14).

Closed settings, such as households, have a defined population that may not mix readily with the larger surrounding community, and therefore such settings can provide a strategic way to track emerging respiratory infections and characterize virus transmission patterns because the denominator can be well defined. Also, exposure is within the setting, and follow-up of household contacts is generally more feasible in this well-defined setting as compared to an undefined one. Studies in household settings allow determination of the transmission dynamics (reproduction number and serial interval) of the virus, as well as aiding understanding of the clinical spectrum of illness in secondary cases (15). Closed settings are also useful to observe chains of transmission in an epidemic, as the pool of susceptible, exposed individuals is larger. Therefore, in the case of multiple waves of infection through the closed setting, unique insight into transmission dynamics can be derived in the early epidemic stages.

To date, initial surveillance has focused primarily on patients with severe disease, and, as such, the full spectrum of the disease, including the extent and fraction of mild or asymptomatic infection that does not require medical attention, is not clear. Infections identified in close contacts are potentially generalizable to naturally acquired infections (in contrast to cases presenting for emergency care, among which there would be fewer mild cases). Following close contacts with similar levels of exposure to infection from primary cases can also permit identification of the asymptomatic fraction. Principally, follow-up and testing of respiratory specimens and serum of close contacts can provide useful information about newly identified cases, as well as the spectrum of illness and frequency (by, for example, age) of asymptomatic and symptomatic infection.

With the emergence of a novel coronavirus, the initial seroprevalence in the population will be low, due to the virus being new in origin. Therefore, surveillance of antibody seroprevalence in a population can allow inferences to be made about the cumulative incidence of infection in the population. Household transmission studies also can provide the opportunity to follow up confirmed cases, to understand antibody kinetics.

The following protocol has been designed to investigate household transmission of the virus

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_24787

