

The First Few X (FFX) Cases and contact investigation protocol for 2019-novel coronavirus (2019-nCoV) infection

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Main updates from version 2:

- Update of **the 'close contact' definition**: from 1 day before symptom onset, to 4 days before symptom onset. New definition for the purpose of this investigation protocol being: "Any person who had contact (within 1 meter) with a confirmed case during their symptomatic period, including 4 days before symptom onset".
- Capture **exposure also during the asymptomatic period of the confirmed case**
- Expand symptoms questions **for suspected or probable cases to gastro-intestinal symptoms** (same as for confirmed cases)
- For close contacts who are Health Care Workers, addition of risk categorisation questions to better estimate the level of the risk (high or low risk)
- Addition of a **symptom diary template** for close contacts to self-record and notify presence or absence of various symptoms
- Update **Go.Data** section, as now all FFX questionnaires are available as templates in Go.Data for country use.
- Addition of 2 appendices describing the Go.Data key features and several Go.Data hosting options for Go.Data
- Updated references, to align with latest WHO guidances
- Improved design of Figure 2 describing FFX process
- Update of Appendix B 1 "Comparison between the features and complementarity of the main 2019-novel coronavirus (2019-nCoV) early investigation protocols" now that the Health care workers' risks factors assessment has been published
- Update numbering of FFX's form and questions from where to get the data to calculate the epi parameters concerned (table of paragraph 4.3)
- Adding the new generic WHO email address as a point of contact, to streamline all Early investigations protocols queries

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Protocol summary

| The First Few X (FFX): Cases and contact investigation protocol for 2019-novel coronavirus (2019-nCoV) infection | |
|---|--|
| Study population | The first few cases of 2019-nCoV infection and their close contacts |
| Potential output and analysis | <p>Transmission dynamics, severity, clinical spectrum, through estimates of, primarily</p> <ul style="list-style-type: none"> • clinical presentation of 2019-nCoV infection and course of associated disease • Secondary infection rate (SIR) and clinical attack rate of 2019-nCoV infection among close contacts • Serial interval of 2019-nCoV infection • Symptomatic proportion of 2019-nCoV cases (through contact tracing and laboratory testing) • Identification of possible routes of transmission <p>Secondarily: estimation of:</p> <ul style="list-style-type: none"> • The basic reproductive number (R_0) • Incubation period • Preliminary infection and diseases-severity ratios (e.g. case-hospitalization and case-fatality ratios) |
| Study design | Prospective study of close contacts of confirmed 2019-nCoV case |
| Start of the study | To be initiated in the first days after the arrival in Country X of a confirmed case of 2019-nCoV. FFX is the primary protocol to be initiated. |
| Study duration | At a minimum, enrolled cases and close contacts will complete data and specimen collection at enrolment and 14-21 days later |
| Minimum information and specimens to be obtained from participants | <p>Data collection: Epidemiological data including: clinical symptoms, exposures including contact with confirmed case(s), pre-existing conditions</p> <p>Specimens: Respiratory (and other) to diagnose current 2019-nCoV infection, serum to inform seroepidemiological inferences</p> |

The methods to guide data collection and the public health investigation for the comprehensive assessment of confirmed 2019-nCoV cases and their close contacts are set out in this document.

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 the 2019-nCoV. Other 2019-nCoV investigations and studies protocols currently available include:

- Household Transmission Investigation Protocol for 2019-nCoV
- Health Care Workers risk factor assessment Protocol for 2019-nCoV

All WHO protocols for 2019-nCoV are available on WHO website <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/early-investigations> together with the technical guidance documents, including case definitions, laboratory guidance, infection prevention and control, travel guidance, clinical management, risk communication and community engagement, and more. Link: [WHO website](#)

1 Background

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 case for the novel coronavirus (2019-nCoV), first detected in Wuhan city, China in December 2019 (1).

As with many novel respiratory pathogens, key epidemiological, clinical and virological parameters of the virus and the outbreak dynamics are unknown at the beginning. At this stage, the extent of infection, the routine of transmission, the full range of disease presentation and the viral dynamics remain unknown for 2019-nCoV. As a result, understanding the epidemiological, clinical and virological characteristics of the First Few X cases (FFX) of 2019-nCoV and their close contacts is essential in order to inform targeted guidance and measures for the **Country X** Public health response.

The following protocol has been designed to investigate the First Few X cases (FFX) and their close contacts. It is an adaptation of generic protocols already in place in some countries like The First Few Hundred (FF100) Pandemic Influenza United Kingdom protocol. A harmonised global approach will facilitate rapid aggregation of data across countries.

It is envisioned that the FFX 2019-nCoV investigation will be conducted across several countries or sites with geographic and demographic diversity. Each country may need to tailor some aspects of this protocol to align with public health, laboratory and clinical systems, according to capacity, availability of resources and cultural appropriateness. However, using a standard protocol such as the protocol described below, epidemiological exposure data and biological samples can be systematically collected and shared rapidly in a format that can be easily aggregated, tabulated and analyzed across many different settings globally for timely estimates of 2019-nCoV infection severity and transmissibility, as well as to inform public health responses and policy decisions. This is particularly important in the context of a novel respiratory pathogen, such as 2019-nCoV.

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.

1.1 Objectives

The overall aim of this protocol is to gain an early understanding of key clinical, epidemiological and virological characteristics of the first cases of 2019-nCoV infection detected in **Country X** to inform the development and updating of public health guidance to manage cases and reduce the potential spread and impact of infection in **Country X**. It is important to note that the first cases likely to be identified in this investigation may present with more severe infection, and the ability to detect a greater range of cases in terms of severity will be dependent on resources.

The **primary objectives** of this FFX investigation among cases and close contacts are to provide descriptions or estimates of:

- Clinical presentation of 2019-nCoV infection and course of associated disease

- Secondary infection rate (SIR)¹ and clinical attack rate² of 2019-nCoV infection among close contacts (overall, and by key factors such as setting, age, and gender for various end points)
- Serial interval³ of 2019-nCoV infection
- Symptomatic proportion of 2019-nCoV cases (through contact tracing and laboratory testing)

The **secondary objectives** are to provide data to support the estimation of:

- The basic reproductive number (R_0)⁴ of 2019-nCoV
- Incubation period⁵ of 2019-nCoV
- Preliminary 2019-nCoV infection and disease-severity ratios (e.g. case-hospitalisation⁶ and case-fatality ratios⁷)

This information will be used to refine/update recommendations for surveillance (e.g. case definitions), to characterize the key epidemiological transmission features of the virus, help understand geographic spread, severity and impact on the community and inform operational models for implementation of countermeasures such non-pharmaceutical interventions⁸ (eg. case isolation, contact tracing, etc) and medical interventions, if possible.

1.2 Coordination of FFX investigation

Coordination of investigations and sharing of information in real time will be needed at both country and global levels. Epidemiologists, modellers, virologists, statisticians, clinicians and public health experts will all assist in developing early estimates of key epidemiological, clinical and virological parameters of the 2019-nCoV virus.

¹ In this context the **secondary infection rate** is a measure of the frequency of new **infections** of 2019-nCoV among the close contacts of confirmed cases in a defined period of time, as determined by a positive 2019-nCoV result. *Or in other words, it is the rate of contacts being infected, assessed through PCR/serological assays on paired samples*

² **Secondary clinical attack** is a measure of the frequency of new **cases** of 2019-nCoV among the close contacts of confirmed cases in a defined period of time, as determined by a positive 2019-nCoV result. *Or in other words it is the rate of clinical manifestation of the infection in close contacts*

³ The **serial interval** is defined as the period of time from the onset of symptoms in the primary case to the onset of symptoms in a contact case.

⁴ The **reproduction number R_0** is defined as the average number of secondary cases that result from one infected person in a fully susceptible population. Note we can assume that there will be very little to no immunity to 2019-nCoV.

⁵ **Incubation period** is defined as the period of time between an exposure resulting in 2019-nCoV infection and the onset of clinical symptoms of disease (*from infection or exposure to disease*)

⁶ **Case hospitalisation ratio (CHR)** is defined as the proportion of those infected with 2019-nCoV (ie. with a positive test result) who are admitted to hospital.

⁷ The **case fatality ratio (CFR)** is defined as the proportion of people with 2019-nCoV (ie. with a positive test result) who die as a direct or indirect consequence of their infection.

⁸ WHO guidance document "Non-pharmaceutical public health measures for mitigating the risk and impact of epidemic and pandemic influenza". https://www.who.int/influenza/publications/public_health_measures/publication/en/

Table 1: Coordination matrix of roles and responsibilities in *Country X*

| What ? | Who ? |
|--|--|
| Overall co-ordination of the early investigation | <i>[Cite Institution/ body/ person(s)]</i> |
| Case detection and investigation | <i>[Cite Institution/ body/ person(s)]</i> |
| Contact identification and follow-up | <i>[Cite Institution/ body/ person(s)]</i> |
| Analysis of data | <i>[Cite Institution/ body/ person(s)]</i> |
| Data management | <i>[Cite Institution/ body/ person(s)]</i> |
| Go.Data super-users (if Go.Data tool is used) | <i>[Cite Institution/ body/ person(s)]</i> |
| IT management | <i>[Cite Institution/ body/ person(s)]</i> |
| <i>[add more roles, as per country context]</i> | <i>[Cite Institution/ body/ person(s)]</i> |

The FFX system will be maintained centrally by *[Cite Institution/ body/ person(s)]*. Centralised coordination will require development of a “command and control” plan to allow for triage and prioritisation of investigations.

1.3 Harmonization of early 2019-nCoV investigations

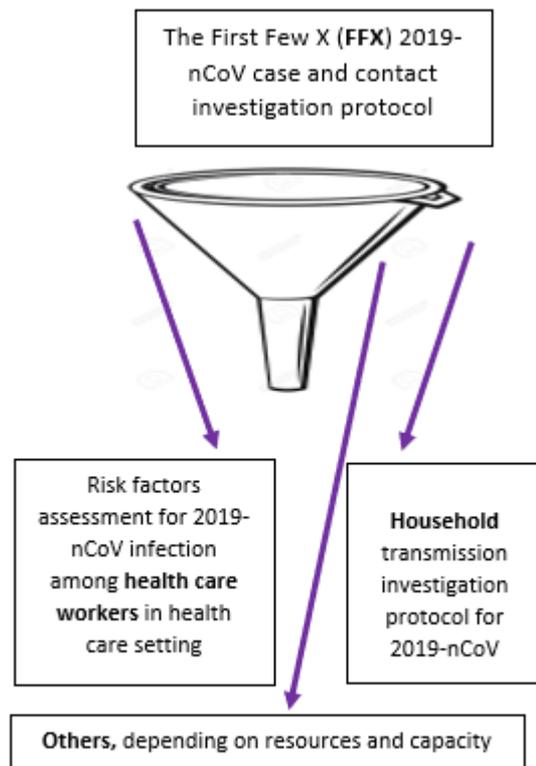
Early 2019-nCoV investigations are a suite of enhanced surveillance activities, that are harmonized to help provide detailed insight into the epidemiological characteristics of 2019-nCoV.

This **FFX protocol** outlines the process for early and rapid data collection for the first few early cases of the pandemic, which will provide critical early insight into key epidemiological characteristics such as transmissibility and severity of the 2019-nCoV. This protocol may be the first investigation to be conducted.

Other 2019-nCoV early investigations could be simultaneously or subsequently undertaken to collect further information relating to the 2019-nCoV infection depending on availability of resources and capacity. These could include prospective investigations of transmission of 2019-nCoV **in households** and also in closed environments, such for **health care workers**. These investigations will provide a more detailed insight on transmissibility and severity, the effect of interventions in reducing risk of infection and secondary infection risk and on top give an estimate the asymptomatic fraction.

All WHO early investigation protocols for 2019-nCoV are available on the [WHO website](#).

Figure 1 : *Complementarity of 2019-nCoV protocols currently available on WHO website*



2 Study procedures

2.1 Study design

This FFX investigation is a case-ascertained prospective study of all identified close contacts of a laboratory confirmed 2019-nCoV infection (see 2.2 Study population). It is intended to provide rapid and early information on the clinical, epidemiological and virological characteristics of 2019-nCoV.

This FFX investigation should be established following the identification of the first laboratory-confirmed 2019-nCoV cases in any country. It should also ideally be conducted before widespread community transmission occurs. That is, within the early phases of the 2019-nCoV epidemic in the country. The FFX aim to identify key clinical, virological and epidemiological characteristics infection with this novel virus in near real-time.

2.2 Study population

The study population are the first few confirmed cases of 2019-nCoV and their close contacts. For the purpose of this investigation, the primary case will be identified through the national or other relevant international surveillance system.

2.2.1 Case' definitions

case definitions for 2019-nCoV reporting are available on the [WHO website](#), although they are subject to further updates as more information becomes available. For the purpose of this protocol, the generic case definitions for 2019-nCoV are proposed in the table below.

Table 2 : Interim case definitions for the purpose of the FFX protocol

| Case definitions: |
|--|
| <p>Suspected case:</p> <p>Two definitions:</p> <ol style="list-style-type: none">1. Patients with severe acute respiratory infection (fever, cough, and requiring admission to hospital), AND with no other etiology that fully explains the clinical presentation AND at least one of the following:<ul style="list-style-type: none">• a history of travel to or residence in China in the 14 days prior to symptom onset, OR• or other locations where cases have been reported’ OR• patient is a health care worker who has been working in an environment where severe acute respiratory infections of unknown etiology are being cared for.2. Patients with any acute respiratory illness AND at least one of the following:<ul style="list-style-type: none">• close contact with a confirmed or probable case of 2019-nCoV in the 14 days prior to illness onset, OR• visiting or working in a live animal market in China in the 14 days prior to symptom onset, OR• worked or attended a health care facility in the 14 days prior to onset of symptoms where patients with hospital-associated 2019-nCov infections have been reported. |
| <p>Probable case:</p> <p>A suspect case for whom testing for 2019-nCoV is inconclusive or for whom testing was positive on a pan-coronavirus assay.</p> |
| <p>Confirmed case:</p> <p>A person with laboratory confirmation of 2019-nCoV infection, irrespective of clinical signs and symptoms.</p> |
| <p>Further confirmed case definitions:</p> <p>A: Primary case (or index case): A primary case is an individual who tests positive for 2019-nCoV and has the earliest onset date in a particular setting e.g. household, school, hospital etc. Cases with onset dates less than 24 hours of the onset date of the primary case are considered to be “co-primary” cases.</p> <p>B: Secondary case: A secondary case is a contact who becomes a case with positive test result 24 hours or more after the latest positive test date of the primary and/or co-primary case; or with onset of symptoms 24 hours or more after the latest onset date of the primary and/or co-primary case.</p> <p>C: Imported case: An imported case is a case with a history of travel from an affected area in the 14 days before disease onset.</p> |

2.2.2 Close contact' definitions

Contacts are defined as all individuals who are associated with some sphere of activity of the case and may have similar or other exposures as the case. Contacts can include household members, other family contacts, visitors, neighbours, colleagues, teachers, classmates, co-workers, social or health workers, and members of a social group.

Close contact definition, and further classification are described in the table below

Table 3: Close contacts definition and classification ([check regularly WHO website_for any update](#))

| Contact definitions: |
|--|
| Close contact Any person who had contact (within 1 meter) with a confirmed case during their symptomatic period, including 4 days before symptom onset. COMMENT: contact does not have to be direct physical contact. |
| Further close contacts classification (For use in contact questionnaires) : |
| • Social and health care worker contact Any social or health care worker, who provided direct personal or clinical care, or examination of a symptomatic or asymptomatic confirmed case of 2019-nCoV or within the same indoor space, when an aerosol generating procedure was implemented |
| • Household contact: Any person who has resided in the same household (or other closed setting) as the primary 2019-nCoV case |

2.3 Study duration

The investigation can continue for as long as is determined feasible by the country implementing the investigation.

Initially most laboratory-confirmed cases need to be enrolled. If case numbers begin to rise rapidly, the proportion of cases to include could be reduced according to Country X capacity and needs.

Attempt to follow-up all confirmed cases in the FFX database can be resource and time intensive.

COMMENT: As an example, the UK 2009 Pandemic Influenza First Few Hundred (FF100) project ran from April–June 2009 with in total 392 confirmed cases followed up

For each enrolled participant (case and close contact), a follow-up data and specimen collection visit will be completed approximately 14-21 days after enrolment. The duration of follow-up may vary depending on the characteristics and transmission dynamics of the virus, antibody kinetics and specific research priorities.

COMMENT: As an example, the UK Pandemic Influenza First Few Hundred (FF100) project ran for 3 months

2.4 Data collection

Summary

Information on primary cases and their close contacts should be sought through a combination of face-to-face or telephone interviews of the case (or family members if the case is too ill to be interviewed), household members, self-reporting, interview of health care providers and/or review

of medical records where required.

Investigation questionnaires can be found in Appendices of this document. These forms are not exhaustive but outline the data collection required for insight into the epidemiology of 2019-nCoV and may be updated further. This will still need to be adapted based on the local setting, and outbreak characteristics.

Once a case of 2019-nCoV infection has been identified and recruited into the investigation, a visit will need to be conducted to identify all eligible close contacts, to collect relevant socio-demographic and clinical information and to allow molecular confirmation of secondary infections and establish baseline antibody status, *(or at a minimum to collect serum to test serologic status once serology capacity is available)*.

Please note regarding the **suspected cases**: Identifying and maintaining the line listing of suspected cases can be resource and time intensive. A fine balance should be found between time taken to identify suspected cases and time spent in collecting data on probable and confirmed cases; the latter being of more importance.

It is advised that a variety of **confirmed cases** are enrolled in regard to geography, age, illness severity and setting.

Every effort should be made to include all known **close contacts**, including infants and children, of the confirmed case to generate the specimen and data sampling time frame for follow-up. Some aspects to keep in mind are:

- Ask each contact to report any signs and symptoms compatible with 2019-nCoV to the relevant Health authorities
- Any contact with clinical symptoms within 14 days of the last exposure/contact with the primary case should be considered as a symptomatic contact and so a **suspected case**, and therefore managed as such.
- Contacts found to be infected with 2019-nCoV would be re-classified as **confirmed cases** (dotted line in Figure 2) and follow-up would occur as described in the case investigation algorithm (Figure 2). The fact that a close contact becomes a confirmed case may not retrigger the data collection process, depending on the country resources and the type of contact (ex: if the contact is a health care worker, then it might be worth investigating further to inform public health action)

Please note that these investigations are resource intensive. It may be best to focus initially on the follow-up of **household and health care worker contacts**, and then expand to other close contacts if resources allow. More extensive follow-up of all close contacts may be better studied in closed settings such as households, health care settings (Health care workers). These protocols are available on the [WHO website](#).

Use of Go.Data tool

Go.Data is software which has been designed to be used by WHO, GOARN, Member states and partners to support and facilitate outbreak investigation including field data collection, contact tracing and visualization of chains of transmission. The tool includes functionality for case and contact data collection, contact follow-up and visualization of chains of transmission. It has 2 components: a web application and an optional mobile app. The tool is targeted at any outbreak responders, including WHO staff, staff from MoH and partner institutions.

Go.Data can be used for running FFX investigation

Key features of the Go.Data software include (for more details and screen shots, please refer to Appendix B):

- Open source and free for use with no licensing costs.
- Go.Data offers different types of operation (server or stand-alone) on different platforms (Windows, Linux, Mac).
- Allows for case and contact data collection, including lab data.
- Go.Data is not build for a specific disease or specific country, it is highly configurable, with configurable reference and location data.
- One Go.Data installation can be used to collect data for many outbreaks.
- It provides multi-lingual support, with possibility to add additional languages though user interface.
- Granular user roles and permissions, including possibility to provide user access at outbreak level
- Outbreak templates are included for easier creation of outbreak data collection forms.
- Generates contact follow-up list and visualizes chains of transmission.
- Users with appropriate rights can configure case investigation form, contact follow-up form and lab data collection form.
- Has optional mobile app (Android and iOS) focused on contact tracing and possibility to register cases and contacts.

The standardized FFX questionnaires are available in Go.Data for country use, adaptation, and if needed translation in local language.

Several options are available for Go.Data hosting in countries. Please see in the appendix of this document.

Contact: godata@who.int . WHO weblink: <https://www.who.int/godata>

2.5 Specimen collection

COMMENT: The following is intended to guide minimum specimen collection from confirmed cases and their close contacts. It may be useful to collect respiratory specimens from study participants at more frequent intervals to provide more detailed insight into the duration of shedding and the serial interval.

2.5.1 Confirmed cases

All baseline respiratory and serum samples (as directed by specimen collection guidance in [Country X](#) should be collected from confirmed cases, including any persons without symptoms screened and found to be positive for 2019-nCoV, as soon as possible after laboratory confirmation. Liaise with the relevant local public health laboratory or the nearest relevant laboratory to determine which specimens have already been collected for confirmed cases and if they are of sufficient quality and quantity for this investigation. Collect new samples if needed.

Follow-up samples may include upper and lower respiratory tract samples, clotted blood⁹, and should be collected as described in Figure 2. Lower respiratory tract samples can also be collected, if

⁹ Adapted from WHO guidelines Infection prevention and control of epidemic- and pandemic-prone acute respiratory infections in health care, 2014.

https://www.who.int/csr/bioriskreduction/infection_control/publication/en/

feasible but recommended infection prevention and control precautions must be in place prior to collection (see 2.9.5 Prevention of 2019-nCoV infection in investigation personnel) as these are higher risk interventions.

Other specimens (oral fluid, urine, faeces, etc) may be collected according to clinical presentation, resources and observed patterns of viral shedding (described earlier) and may be collected from research staff or self-collected depending on resources, logistics and training.

Appropriate PPE should be worn when specimens are being collected from confirmed cases.¹⁰

2.5.2 Close contacts

All baseline upper respiratory specimens and serum samples should be collected at the initial home visit.

Follow-up respiratory and serum samples should be collected also

Other specimens (oral fluid, urine, faeces, etc) as described for confirmed cases, may be collected

2.5.3 Note on serology

Paired clotted blood samples should be taken for serology and handled and separated correctly by the laboratory. Paired serological samples are needed to aid the development of serological testing, to determine an accurate secondary-infection attack rate and the proportion of infections that are asymptomatic.

Serum samples should be taken on all 2019-nCoV confirmed cases, and in close contacts regardless of symptoms.

- An acute baseline clotted blood sample should be taken as soon as possible, and ideally no later than 7 days after symptom onset (for cases) and no later than 7 days after exposure with the confirmed cases (for close contacts).
- A follow up (or convalescent) clotted blood sample should be taken:
 - at least 14 days after the baseline sample,
 - or (for a case) 28 days after symptom onset if an acute sample couldn't be taken when the case was symptomatic.
 - Or (for a contact) 28 days after last exposure if an acute sample was not taken

¹⁰ Infection prevention and control of epidemic- and pandemic-prone acute respiratory infections in health care - WHO Guidelines. Geneva, World Health Organization, 2014. Available at http://apps.who.int/iris/bitstream/10665/112656/1/97892_41507134_eng.pdf

2.6 Follow up of cases and contacts

For cases, data will be collected using **Forms A0 or A1** for the first visit, followed by **Forms A2**. For close contacts, data will be collected using **Form B1** for the first visit, followed by **Form B2**.

Figure 2. Case investigation algorithm, and summary of data collection tools

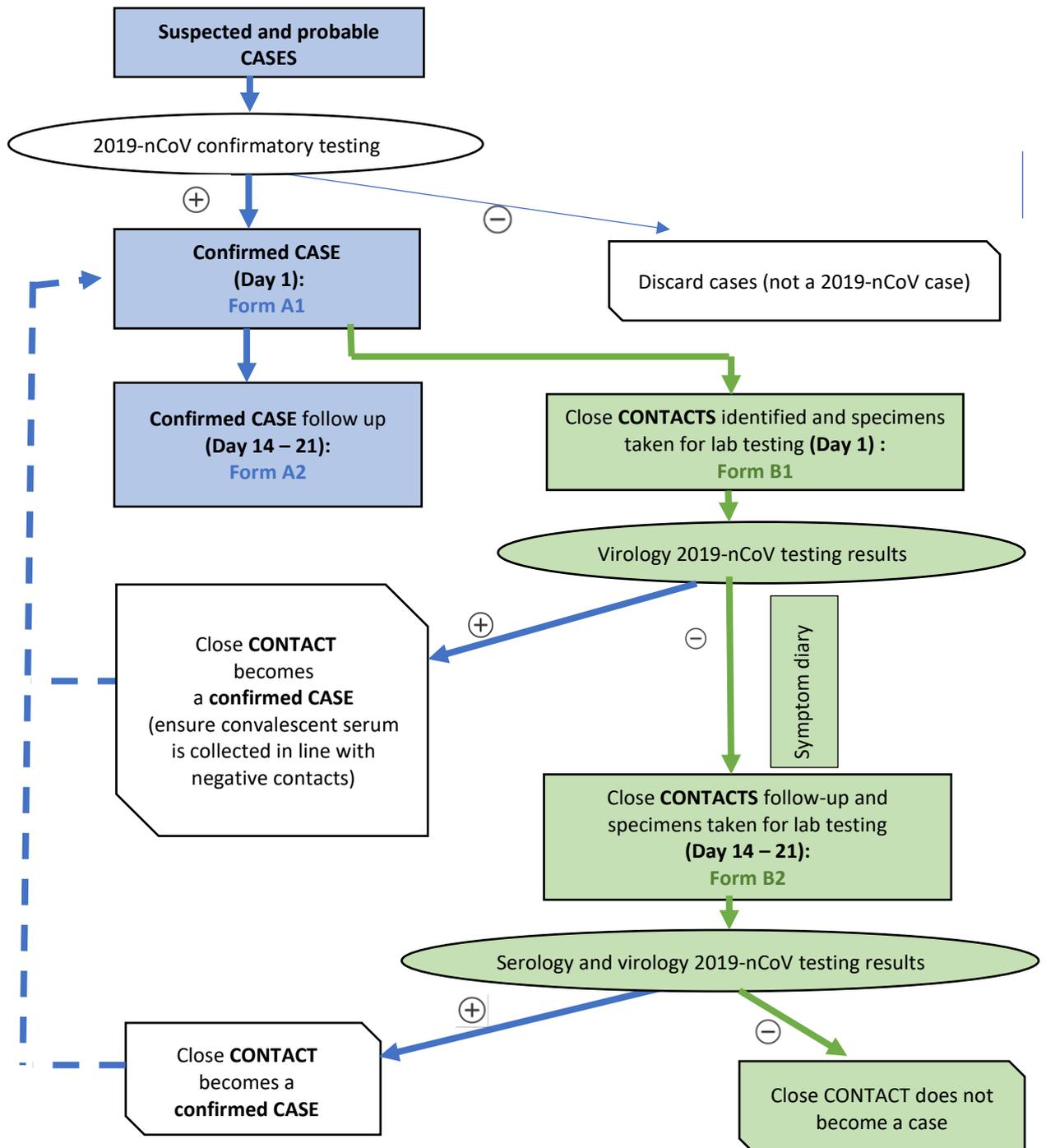


Table 4: Summary of data collection tools

| Form number | Purpose of form | Collecting from whom? | When should it be collected? |
|----------------------|--|--|---|
| CASES | | | |
| Form A0 | Minimum data reporting form | For suspected and probable 2019-nCoV cases | As soon as possible after the suspected case is detected or notified. |
| Form A1 | Case initial report form | For confirmed 2019-nCoV cases | As soon as possible after laboratory confirmation of a case (Day 1) |
| Form A2 | Case follow-up form | For confirmed 2019-nCoV cases: final outcome | 14-21 days after completion of Form A1, which is approx. 21 days after initial symptom onset of the case (Day 14-21). Updates should be sought regularly, if all the required information is not available at the time of completing this form. |
| CONTACTS | | | |
| Form B1 | Contact initial reporting form | For close contacts (of confirmed 2019-nCoV cases) | As soon as possible, ideally within 24 hours after laboratory confirmation of the primary case (Day 1) |
| Form B2 | Contact follow-up form | For close contacts (of confirmed 2019-nCoV cases): final outcome | 14-21 days after completion of Form B2 (Day 14-21) |
| Symptom diary | Record presence or absence of various signs or symptoms. | For close contacts | For a minimum of 14 days after administration of the initial questionnaire (Form B1) |

Figure 3: Timeline of data and specimen collection in the FFX

| Day since recruitment | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 to 21 |
|--|------------|------------|---|---|---|---|---|---|---|----|----|----|------------|----------|
| Home visit | | | | | | | | | | | | | | |
| Symptom diary (for close contact) | | | | | | | | | | | | | | |
| Respiratory sample | | (optional) | | | | | | | | | | | | |
| Serum sample | | | | | | | | | | | | | | |
| Other specimens sampling (if relevant) | (optional) | (optional) | | | | | | | | | | | (optional) | |

Legend:

Blue boxes indicate activities which are needed for the investigation

Green boxes indicate where additional specimens could be collected above the minimum specimen requirements of this study to increase information available.

2.7 Specimen transport

All those involved in collection and transporting specimens should be trained in safe handling practices and spill decontamination procedures. For details regarding the transport of samples collected and infection control advice, please refer to case management algorithm and laboratory guidance in the country or WHO laboratory guidance, available on the [WHO website](#).

For each biological sample collected, the time of collection, the conditions for transportation and the time of arrival at the study laboratory will be recorded. Specimens should reach the laboratory as soon as possible after collection. If the specimen is not likely to reach the laboratory within 72 hours, specimens should be frozen, preferably at -80°C, and shipped on dry ice. It is, however, important to avoid repeated freezing and thawing of specimens. The storage of respiratory and serum specimens in domestic frost-free freezers should be avoided, owing to their wide temperature fluctuations. Serum should be separated from whole blood and can be stored and shipped at 4°C or frozen to -20°C or lower and shipped on dry ice.

Transport of specimens within national borders should comply with applicable national regulations. International transport of specimens should follow applicable international regulations as described in the [WHO Guidance on Regulations for the Transport of Infectious Substances 2019- 2020](#).

2.8 Ethical considerations

Ethical requirements will vary by country. In some countries, this investigation may fall under public health surveillance (emergency response) acts and may not require ethical approval from an Institutional Review Board.

2.8.1 Informed consent and assent

The purpose of the investigation will be explained to all known contacts of a confirmed 2019-nCoV infected patient. Informed consent will be obtained from all cases and contacts willing to participate in the investigation before any procedure is performed as part of the investigation by a trained member of the investigation team. Consent for children under the legal age of consent will be obtained from a parent or legal guardian. Each participant must be informed that participation in the investigation is voluntary and that s/he is free to withdraw, without justification, from the investigation at any time without consequences and without affecting professional responsibilities.

COMMENT: The age of consent may vary by country. Check the requirements of local, regional or national authorities.

Informed consent will seek approval to collect blood, respiratory samples and epidemiological data for the intended purpose of this investigation, that samples may be shipped outside of the country for additional testing and that samples may be used for future research purposes.

2.8.2 Risks and benefits for subjects

This investigation poses minimal risk to participants, involving the collection of a small amount of blood and respiratory specimens. The direct benefit to the participant is the possibility for early detection of 2019-nCoV infection which would allow for appropriate monitoring and treatment. The primary benefit of the study is indirect in that data collected will help improve and guide efforts to understand transmission of 2019-nCoV and prevent further spread of 2019-nCoV.

2.8.3 Confidentiality

Participant confidentiality will be maintained throughout the investigation. All subjects who participate in the investigation will be assigned a study identification number by the investigation team for the labelling of questionnaires and clinical specimens. The link of this identification number to individuals will be maintained by the investigation team and the Ministry of Health (or equivalent) and will not be disclosed elsewhere.

If the data is shared by the implementing organization to WHO or any agency or institution providing support for data analysis, data shared will include only the study identification number and not any personally identifiable information.

Article 45 of the IHR (2005) describes the “treatment of personal data”.¹¹ Person identifiable data collected under the IHR should be kept confidential and processed anonymously, as required by national law. However, such data may be disclosed for assessments and management of public health risks, provided the data are processed fairly and lawfully.

2.8.4 Terms of use: Go.Data

If groups implementing the investigation opt to use open-source Go.Data as a tool to run this investigation, several options are available for Go.Data hosting in countries. Please see in the appendix of this document

The group implementing the study will need to consider the best approach for the investigation setting.

If the Go.Data server is to be based at WHO, access to the Go.Data application on this server will be restricted to users who have valid login credentials for the Go.Data application. Please see Appendix for Go.Data term of use

2.8.5 Prevention of 2019-nCoV infection in investigation personnel

All personnel involved in the investigation must be trained in infection prevention and control procedures (standard contact, droplet or airborne precautions, as determined by national or local guidelines). These procedures should include proper hand hygiene and the correct use of surgical or respiratory face masks, if necessary, not only to minimize their own risk of infection when in close contact with 2019-nCoV infected patients, but also to minimize the risk of spread among contacts of 2019-nCoV infected patients.

WHO technical guidance on infection prevention and control specific to 2019-nCoV can be found on the [WHO website](#).

3 Laboratory evaluations

COMMENT: laboratory testing guidance is subject to change depending on the context of the specific evolution of the epidemic.

Laboratory guidance for 2019-nCoV can be found on the [WHO website](#).

Several assays that detect the novel coronaviruses have been recently developed and the protocols or SOPs can also be found on the [WHO website](#).

¹¹ <https://www.who.int/ihr/publications/9789241580496/en/>

4 Statistical analyses

4.1 Statistical considerations

FFX investigation will not be able to answer every question we have about 2019-nCoV infection, but it will contribute key data in the early stages of an outbreak which can inform public health interventions. Other protocols for investigations adapted for 2019-nCoV can assist in providing supplementary data to help with the calculation of key epidemiological parameters. All WHO protocols for 2019-nCoV are available on the [WHO website](#).

The combination of epidemiological, virological (genomic, antigenic) and serological data can provide unparalleled early situational awareness of the pandemic, which will promote a proportionate and targeted public health response.

A descriptive analysis of the FFX should provide preliminary insight into the clinical spectrum and course of disease due to 2019-nCoV infection from individual cases; the initial population groups most affected initially with symptomatic confirmed infection, by age, and underlying risk factors for example.

Genomic analysis of the specimens generated through this study can help provide a detailed insight into the origin of the pandemic, monitor the potential spread of antiviral resistance mutation and identify transmission chains using the confirmed case as a potential origin (by comparing the relatedness of two virus isolates), which in turn helps to estimate the reproductive number. The latter can be incredibly useful to determine the extent of community transmission that is occurring in the early stages of the pandemic and if the strain was locally acquired or imported from another region.

4.2 Sample size

The sample size of **Country X** will be determined by the number of contacts within each social sphere of the confirmed 2019-nCoV infected individual and assumptions made relating to the transmissibility of the 2019-nCoV. Every effort should be made to include all contacts of the confirmed 2019-nCoV infected individual to maximize the statistical power of the investigation. In 2009, many countries used a sample size of 300-400 cases using different power and attack rates for their calculations.

4.3 Epidemiological parameters

The table below outlines the **epidemiological parameters** that are desirable to be calculated during a pandemic using the FFX forms/questionnaires and specimens generated. The table includes a comments/limitations section, which provides insight into the strengths and weaknesses of this protocol.

Table 5 : Epidemiological parameters able to be estimated during a FFX early investigation

| Parameter | Definition (<i>in bracket: "simplified" expression of it</i>) | FFX's form and questions where to get the data to calculate the parameters concerned | Comments, limitations |
|--|---|--|---|
| Course of disease (time, person and place) | A description of the distribution of cases by time, person and place | Demography Date of laboratory confirmation Location Form A0: Q3, Q4 Form A1: Q5, Q7, Q12 Form A2: not applicable (na) Form B1: Q3, Q5, Q6 Form B2: Q3, Q4, Q7 | -Location will need to be supplemented by notification data to recognize geospatial trends |
| Health care seeking behaviors | To determine the proportion of people who sought healthcare (not necessarily just hospitalization) | Form A0: Q7 Form A1: Q7, Q8, Q10, Q11 Form A2: Q3, Q5 Form B1: Q7 Form B2: na | |
| Symptomatic proportion of cases, and asymptomatic fraction | The proportion of cases who show symptoms or signs of 2019-nCoV infection or The proportion of cases who do not show symptoms or signs of 2019-nCoV infection | Laboratory confirmation and symptoms Form A0: Q4 Form A1: Q7, Q12 Form A2: Q4, Q8 Form B1: Q6 Form B2: Q4, Q6, Q7 | -Through contact tracing and laboratory testing |
| Hospitalization rate or incident hospitalizations | A measure of the frequency of hospitalized cases of 2019-nCoV among the confirmed cases in a defined period of time. | Hospitalization data and complications Form A0: Q6, Q7 Form A1: Q6, Q7, Q8, Q10, Q112 Form A2: Q5 Form B1: Q7 Form B2: | |
| Secondary clinical attack rate | The number of cases of 2019-nCoV infection that occur amongst contacts within the incubation period (range) following exposure to a primary case in relation to the total number of exposed contacts; the denominator is restricted to susceptible contacts when these can be determined (<i>The rate of clinical manifestation in close contacts</i>) It is a good measure of person-to-person spread of disease after the disease has been introduced into a population | Symptoms and dates of contact with confirmed cases Form A0: na Form A1: na Form A2: na Form B1: Q5, Q6 Form B2: Q4 | -Note that early estimates are likely to be biased due to some cases being able to more successfully produce secondary cases -Note that these estimates will be specific to setting and contact type |
| Secondary infection rate (also called secondary infection incidence) | A measure of the frequency of new cases of 2019-nCoV among the close contacts of confirmed cases in a defined period of time, as determined by a positive 2019-nCoV result. (<i>The rate of contacts being infected.</i>) <i>Assessed through serological assays/PCR on paired samples</i> It is a good measure of person-to-person spread of the infection after the infection has been introduced into a population | Laboratory confirmation (serology and/or virology testing (ex.PCR) Form A0: na Form A1: na Form A2: na Form B1: Q9 Form B2: Q7 | |
| Case hospitalization ratio | Case hospitalization ratio (CHR) is defined as the proportion of those affected (with symptoms) that are admitted to hospital compared to cases who do not require hospitalization | Hospitalization data and complications Form A0: Q6, Q7 Form A1: Q6, Q7, Q8, Q10, Q11 Form A2: Q5 Form B1: Q7 | -Note that initial cases being recruited are likely to be more severe and so this may be biased due to such recruitment. Secondary |

| | | | |
|--|--|--|--|
| | <i>(Proportion of cases who require hospitalization)</i> | Form B2:na | cases may be more representative of "typical" infections |
| Clinical presentation | The range of clinical symptoms in cases and contacts. <i>(Clinical symptoms and severity)</i> | Symptoms Form A0: Q4, Q6 Form A1: Q7, Q8 Form A2: Q4, Q5 Form B1: Q6 Form B2: Q4 | -In-hospital clinical studies will enhance understanding of clinical course, severity and risk determinants, as well as case fatality |
| Clinical risk factors, especially for critical illness | Underlying clinical conditions and comorbidities | Co-morbidities and pre-existing medical conditions Form A0:na Form A1: Q9 Form A2: Q6 Form B1: Q8 Form B2: | -For estimating risk factors for severe disease, we may need something like a hospitalization case-control study to do so accurately |
| Serological response to infection | Change in serum level of specific antibodies to 2019-nCoV <i>(Increase in titre)</i> | Laboratory results Form A0: na Form A1: Q12 Form A2: Q8 Form B1: Q6 Form B2: Q7 | -This will only be able to be calculated with the addition of laboratory data -Will be supplemented by findings of clinical studies and first few outbreak investigations to confirm that seroconversion following an infection is anticipated |
| Incubation period | The time period between exposure to 2019-nCoV and the appearance of the first sign or symptom of the disease <i>(from infection to disease)</i> | Date of onset of symptoms and dates of contact with confirmed case. Form A0: Q4, Q7, Q9 (optional) Form A1: Q7 Form A2: Form B1: Q5, Q4, Q6 Form B2: Q3, Q4 | |
| Serial interval distribution | The time between onset of symptoms in the case to onset of symptoms in the close contact <i>(from clinical onset to clinical onset)</i> | Symptoms and dates Form A0: Q4 Form A1: Q7 Form A2: Q4 Form B1: Q6 Form B2: Q4 | -Will be greatly enhanced by information from first few outbreaks where transmission chains may be more identifiable and prolonged |
| Generation time distribution | Time between infection in the case and infection in the close contact <i>(from infection to infection)</i> | Specimens and dates Form A0: Form A1: Q12 Form A2: Q8 Form B1: Q5 Form B2: Q7 | -Will be greatly enhanced by information from first few outbreaks where transmission chains may be more identifiable and prolonged |
| Case fatality ratio | The number of deaths causes by 2019-nCoV in cases compared to the total number of cases with 2019-nCoV <i>(Proportion of 2019-nCoV cases who die)</i> | Death/alive status and case confirmation Form A0: Q1, Form A1: Q1, Q8, Q12 Form A2: Q3, Q8 Form B1: Q7 Form B2: Q6, Q7 | -Will likely need a large number of cases before we see a significant number of deaths to have reliable estimates through the FFX (also follow-up may end before we can observe deaths due to secondary infections) -More likely to be overestimate in FFX due to reporting/selection bias of the initial cases |

| | | | |
|---|---|---|---|
| Population groups most at risk | Determining the groups who are most vulnerable to infection with 2019-nCoV (e.g. age groups, gender, occupation) | Demographic data Form A0: Q3, Q7, Q9 (optional) Form A1: Q5, Q11 Form A2: Form B1: Q3, Q5, Q4 Form B2: | -Risk groups might not show up in FFX, for example the UK Pandemic influenza FFX in 2009 only had 4 pregnant women in the 392 cases followed up. -May only be an early signal, other sources of information will need to be used to inform decision making (line listing of cases and other clinical case series) |
| Genomic data, including phylogenetic analysis | | Laboratory data Form A0:Q5 Form A1: Q12 Form A2: Q8 Form B1: Form B2: Q7 | -An alternate means to estimate the reproduction number, from comparing the relatedness of strains between cases and their close contacts and confirming transmission between individuals -May supplement other transmission data to inform transmission parameter estimates, although likely to be delayed beyond the initial public health response phase. |
| Basic reproduction number (R_0) | A measure of the number of infections produced, on average, by an infected individual in the early stages of the epidemic, when virtually all contacts are susceptible. Note we can assume that there will be very little to no immunity to a 2019-nCoV. <i>(average number of infections/disease arising from one infection)</i> Reminder: Basic reproductive ratio (R_0) – everyone is susceptible and there is no control, maximum value that R can take is equal to the transmission potential. | Laboratory data, dates of contact, symptoms in contacts Form A0: na Form A1: Q12 Form A2: Q8 Form B1: Q5, Q4, Q6 Form B2: Q3, Q4, Q7 | -Can be calculated using different approaches; identifying clusters and cluster size (using epi methods and potentially genetic information to identify how many secondary cases are occurring), and using the epidemic curve and how steep it is -R can be calculated using multiple sources of information incident case notifications, incident hospitalizations by age (as a potentially more stable alternative) or genomic data, all of which will be taken together as an estimate of transmissibility. |
| Reproductive ratio (R) | Ever-changing quantity of the amount of secondary cases produced by a primary case across time and space (i.e. context-specific) | Laboratory data, dates of contact, symptoms in contacts Form A0: na Form A1: Q12 Form A2: Q8 Form B1: Q5, Q4, Q6 Form B2: Q3, Q4, Q7 | -Not the main aim of FFX in the early stage, but if the investigation is continued and transformed into a “cohort” study we may be able to calculate it. |

5 Reporting of findings

Any investigation of this nature should include reporting on the following information, stratified by age, sex, and relevant time and place characteristics:

- (1) number of cases and number of close contacts included;
- (2) confirmed 2019-nCoV cases among the close contacts;
- (3) symptomatic and asymptomatic close contacts;
- (4) close contacts with serologic evidence of 2019-nCoV infection.

The timely dissemination of the results of this study are critical to understanding the transmission of new pandemic virus, in order to update guidance and inform national and international public health responses and infection prevention and control policies

It is also important to fully document the study design, including the definition of close contacts, the approach to ascertainment of primary cases and secondary cases, the duration of follow-up, and the laboratory methods used to ensure that data can be pooled to increase power in estimating epidemiological parameters.

Ideally, information would be collected in a standardized format according to the questionnaires and tools in this generic protocol to assist with data harmonization and comparison of results (see forms in Appendix A).

If the data is shared by the implementing organization to WHO or any agency or institution providing support for data analysis, data shared will include only the study identification number and not any personally identifiable information.

6 References

WHO 2019-nCoV website. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>

WHO Disease Outbreak News. <https://www.who.int/csr/don/en/>

WHO situation reports.

<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports/>

WHO Technical guidance

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

- Surveillance and case definitions
<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/surveillance-and-case-definitions>
- Patient management
[https://www.who.int/publications-detail/clinical-management-of-severe-acute-respiratory-infection-when-novel-coronavirus-\(ncov\)-infection-is-suspected](https://www.who.int/publications-detail/clinical-management-of-severe-acute-respiratory-infection-when-novel-coronavirus-(ncov)-infection-is-suspected)
- Country readiness
[https://www.who.int/publications-detail/national-capacities-review-tool-for-a-novel-coronavirus-\(ncov\)](https://www.who.int/publications-detail/national-capacities-review-tool-for-a-novel-coronavirus-(ncov))
- Risk communication and community engagement
[https://www.who.int/publications-detail/risk-communication-and-community-engagement-readiness-and-initial-response-for-novel-coronaviruses-\(ncov\)](https://www.who.int/publications-detail/risk-communication-and-community-engagement-readiness-and-initial-response-for-novel-coronaviruses-(ncov))

- Early investigations
<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/early-investigations>
- Laboratory guidance
<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/laboratory-guidance>
- Infection prevention and control
<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/infection-prevention-and-control>
- Disease commodity package
[https://www.who.int/publications-detail/disease-commodity-package---novel-coronavirus-\(ncov\)](https://www.who.int/publications-detail/disease-commodity-package---novel-coronavirus-(ncov))
- Reduction of transmission from animals to humans
<https://www.who.int/health-topics/coronavirus/who-recommendations-to-reduce-risk-of-transmission-of-emerging-pathogens-from-animals-to-humans-in-live-animal-markets>

2019-nCoV Training resources online on WHO open learning platform, [OpenWHO.org](https://openwho.org)

- Emerging respiratory viruses, including 2019-nCoV: methods for detection, prevention, response and control: <https://openwho.org/courses/introduction-to-ncov>
- WHO Critical Care Severe Acute Respiratory Infection course: <https://openwho.org/courses/severe-acute-respiratory-infection>
- More courses are in the pipeline, check regularly the link provided

WHO guidance document "Non-pharmaceutical public health measures for mitigating the risk and impact of epidemic and pandemic influenza".

https://www.who.int/influenza/publications/public_health_measures/publication/en/

WHO Protocol to investigate non-seasonal influenza and other emerging acute respiratory diseases

https://www.who.int/influenza/resources/publications/outbreak_investigation_protocol/en/

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*Global Influenza Programme, WHO/WHE/IHM/IPR/GIP

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APPENDIX A: Questionnaires and guidance

The First Few X (FFX): Cases and contact investigation protocol for 2019-nCoV infection

| |
|---|
| FOR CASES |
| <ul style="list-style-type: none">• Form A0: Minimum data reporting form – for suspected and probable cases• Form A1: Case initial report form – for confirmed cases (Day 1)• Form A2: Case follow-up form – for confirmed cases (Day 14-21) |
| FOR CONTACTS |
| <ul style="list-style-type: none">• Form B1: Contact initial reporting form – for close contacts (Day 1)• Form B2: Contact follow-up reporting form – for close contacts (Day 14-21)• Symptom diary (for close contact) |

The First Few X (FFX): Cases and contact investigation protocol for 2019-nCoV

1- For cases

Form A0: Minimum data reporting form – for suspected and probable cases

Unique Case ID / Cluster Number (if applicable):

| |
|--|
| |
|--|

| | |
|--|--|
| 1. Current Status | |
| <input type="checkbox"/> Alive <input type="checkbox"/> Dead | |

| | |
|--------------------------------------|----------|
| 2. Data Collector Information | |
| Name of data collector | |
| Data collector Institution | |
| Data collector telephone number | |
| Email | |
| Form completion date (dd/mm/yyyy) | __/__/__ |

| | |
|--|---|
| 3a. Case Identifier Information | |
| Given name(s) | |
| Family name | |
| Sex | <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Not known |
| Date of Birth (dd/mm/yyyy) | __/__/__ <input type="checkbox"/> Unknown |
| Telephone (mobile) number | |
| Age (years, months) | __ years __ months <input type="checkbox"/> Unknown |
| Email | |
| Address | |
| National social number/ identifier (if applicable) | |
| Country of residence | |
| Case status | <input type="checkbox"/> Suspected <input type="checkbox"/> Probable <input type="checkbox"/> Confirmed |

| | |
|---|--|
| 3b. Interview respondent information (if the persons providing the information is not the patient) | |
| First name | |
| Surname | |
| Sex | <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Not known |
| Date of Birth (dd/mm/yyyy) | __/__/__ |
| Relationship to patient | |
| Respondent address | |
| Telephone (mobile) number | |

| 4. Patient symptoms (from disease onset) | |
|---|---|
| Date of first symptom onset (dd/mm/yyyy) | ___/___/___ <input type="checkbox"/> No symptoms <input type="checkbox"/> Unknown |
| Fever (≥ 38 °C) or history of fever | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Sore throat | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Runny nose | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Cough | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Shortness of Breath | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Vomiting | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Nausea | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Diarrhea | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |

| 5. Initial sample collection | |
|--|--|
| Date respiratory sample collected (dd/mm/yyyy) | ___/___/___ |
| What type of respiratory sample was collected? | <input type="checkbox"/> Nasal swab <input type="checkbox"/> Throat swab <input type="checkbox"/> Nasopharyngeal swab <input type="checkbox"/> Other, specify |
| Has baseline serum been taken? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, date baseline serum taken (dd/mm/yyyy) ___/___/___ |
| Were other samples collected? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, which samples: If yes, date taken (dd/mm/yyyy) ___/___/___ |

| 6. Clinical Course: Complications | |
|---|--|
| Hospitalization required? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, name of hospital |
| ICU (Intensive Care Unit) admission required | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Acute Respiratory Distress Syndrome (ARDS) | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Pneumonia by chest X-ray | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable (no X-ray performed) <input type="checkbox"/> Date ___/___/___ |
| Other severe or life-threatening illness suggestive of an infection | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify: |
| Mechanical ventilation required | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Extracorporeal membrane oxygenation (EMO) | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |

| 7. Human exposures in the 14 days before illness onset | |
|--|---|
| Have you travelled within the last 14 days domestically? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, dates of travel (DD/MM/YYYY): ___/___/___ to ___/___/___ Regions: Cities visited: |

Form A0: Minimum data reporting form – for suspected and probable cases

| | |
|--|--|
| Have you travelled within the last 14 days internationally? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, dates of travel (DD/MM/YYYY): ___/___/___ to ___/___/___ Countries visited: Cities visited: |
| In the past 14 days, have you had contact with a anyone with suspected or confirmed 2019-nCoV infection? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, dates of last contact (DD/MM/YYYY): ___/___/___ |
| Patient attended festival or mass gathering | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify: |
| Patient exposed to person with similar illness | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Location of exposure | <input type="checkbox"/> Home <input type="checkbox"/> Hospital <input type="checkbox"/> Workplace <input type="checkbox"/> Tour group <input type="checkbox"/> Unknown <input type="checkbox"/> Other, specify: |
| Patient visited or was admitted to inpatient health facility | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify: |
| Patient visited outpatient treatment facility | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify: |
| Patient visited traditional healer | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify type: |
| Patient occupation (specify location/facility) | <input type="checkbox"/> Health care worker <input type="checkbox"/> Working with animals <input type="checkbox"/> Health laboratory worker <input type="checkbox"/> Student <input type="checkbox"/> Other, specify: For each occupation, please specify location or facility: _____ |

| 8. Status of form completion | |
|------------------------------|---|
| Form completed | <input type="checkbox"/> Yes <input type="checkbox"/> No or partially If no or partially, reason : <input type="checkbox"/> Missed <input type="checkbox"/> Not attempted <input type="checkbox"/> Not performed <input type="checkbox"/> Refusal <input type="checkbox"/> Other, specific: |

ADDITIONAL INFORMATION TO COLLECT (relevant for cases in China)

| 9. Human exposures to animals in the 14 days before illness onset | | |
|--|---|---|
| | Patient handled animals | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If no or unknown, skip to F |
| | Types of animals handled (e.g. pigs, chicken, ducks or others) | Specify: |
| | Nature of contact (e.g. feed, groom or slaughter, specify) | Specify: |
| | Location of animal contact | <input type="checkbox"/> Home <input type="checkbox"/> Workplace <input type="checkbox"/> Hospital <input type="checkbox"/> Tour group <input type="checkbox"/> Other, specify: |
| | Within 2 weeks before or after contact, any animals sick or dead? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes specify type and number, and proportion from flock or herd: |
| | Patient exposed to animals in the environment but did not handle them (e.g. in neighborhood, farm, zoo, at home, agricultural fair or work) | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes specify, otherwise skip to J |
| | Types of animals in that environment | Specify: |
| | Location of exposure | <input type="checkbox"/> Home <input type="checkbox"/> Neighborhood <input type="checkbox"/> Market <input type="checkbox"/> Agricultural fair/ zoo group <input type="checkbox"/> Farm <input type="checkbox"/> Other, specify |
| | Within 2 weeks before or after exposure, any animals sick or dead? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes specify type and number, and proportion from flock or herd: |
| | Patient exposed to animal by-products (e.g. bird feathers) or animal excreta | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify: |
| | Patient visited live animal market | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify: |

The First Few X (FFX): Cases and contact investigation protocol for 2019-novel coronavirus (2019-nCoV) infection

Form A1: Case initial reporting form – for confirmed cases (Day 1)

COMMENT: Information in this form may already have been completed in the Case Minimum Data Reporting Form (Form A0). It is therefore not necessary to repeat any data in these sections that has already been completed.

But if Form A0 has never been completed, then all questions/ variables in Form A1 should be collected

Unique Case ID / Cluster Number (if applicable):

| |
|--|
| |
|--|

1. Current Status

| |
|--|
| <input type="checkbox"/> Alive <input type="checkbox"/> Dead <input type="checkbox"/> Unknown/ Lost to follow-up |
|--|

2. Further case classification

| |
|---|
| <input type="checkbox"/> Primary <input type="checkbox"/> Secondary <input type="checkbox"/> Imported |
|---|

3. Data Collector Information

| | |
|-----------------------------------|----------|
| Name of data collector | |
| Data collector Institution | |
| Data collector telephone number | |
| Email | |
| Form completion date (dd/mm/yyyy) | __/__/__ |

4. Interview respondent information (if the persons providing the information is not the patient)

| | |
|----------------------------|--|
| First name | |
| Surname | |
| Sex | <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Not known |
| Date of Birth (dd/mm/yyyy) | __/__/__ |
| Relationship to patient | |
| Respondent address | |
| Telephone (mobile) number | |

5. Patient Identifier Information

| | |
|--|--|
| First name | |
| Surname | |
| Sex | <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Not known |
| Date of Birth (dd/mm/yyyy) | __/__/__ |
| Telephone (mobile) number | |
| Age (years, months) | |
| Email | |
| Address | |
| National social number/ identifier (if applicable) | |
| Country of residence | |

Form A1: Case initial reporting form – for confirmed cases (Day 1)

| | |
|---------------------------------------|--|
| Nationality | |
| Ethnicity (optional) | |
| Responsible Health Centre | |
| Nursery/School/College if appropriate | |

| 6. Health care center/ treating physicians details | |
|--|---|
| Name of treating physician | |
| Name of health care center | |
| Is this case part of an institutional outbreak? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify: |
| Telephone number | |
| Fax | |
| Address | |

| 7a. Patient symptoms from onset of symptoms | |
|---|--|
| Date of first symptom onset (dd/mm/yyyy) | ___/___/___ <input type="checkbox"/> Asymptomatic <input type="checkbox"/> Unknown |
| Fever (≥ 38 °C) or history of fever | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify maximum temperature: °C |
| Date of first health facility visit (including traditional care) (dd/mm/yyyy) | ___/___/___ <input type="checkbox"/> NA <input type="checkbox"/> Unknown |
| Total health facilities visited to date | <input type="checkbox"/> NA <input type="checkbox"/> Unknown Specify: |
| 7b. Respiratory symptoms | |
| Sore throat | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, date (dd/mm/yyyy): ___/___/___ |
| Cough | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, date (dd/mm/yyyy): ___/___/___ |
| Runny nose | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Shortness of breath | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, date (dd/mm/yyyy): ___/___/___ |

| 7c. Other symptoms | |
|--------------------|---|
| Chills | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Vomiting | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Nausea | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Diarrhea | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Headache | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Rash | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Conjunctivitis | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Muscle aches | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Joint ache | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Loss of appetite | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Nose bleed | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Fatigue | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Seizures | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |

Form A1: Case initial reporting form – for confirmed cases (Day 1)

| | |
|--------------------------|---|
| Altered consciousness | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Other neurological signs | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, specify: |
| Other symptoms | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify: |

| 8. Patient symptoms: Complications | |
|--|--|
| Hospitalization | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Date of first hospitalization | ___/___/___ <input type="checkbox"/> Unknown |
| ICU (Intensive Care Unit) Admission | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Date of ICU admission (dd/mm/yyyy) | ___/___/___ <input type="checkbox"/> Unknown |
| Date of discharge from ICU (dd/mm/yyyy) | ___/___/___ <input type="checkbox"/> Unknown <input type="checkbox"/> NA |
| Mechanical ventilation | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Dates of mechanical ventilation (dd/mm/yyyy) | Start: ___/___/___ Stop: ___/___/___ <input type="checkbox"/> Unknown <input type="checkbox"/> NA |
| Length of ventilation (days) | |
| Acute Respiratory Distress Syndrome (ARDS) | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, date started (dd/mm/yyyy) ___/___/___ |
| Acute renal failure | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, date started (dd/mm/yyyy) ___/___/___ |
| Cardiac failure | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, date started (dd/mm/yyyy) ___/___/___ |
| Consumptive coagulopathy | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, date started (dd/mm/yyyy) ___/___/___ |
| Pneumonia by chest X-ray | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, date started (dd/mm/yyyy) ___/___/___ |
| Other complications | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify: |
| Extracorporeal membrane oxygenation (EMO) required | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Hypotension requiring vasopressors | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Date of discharge from hospital (if applicable) (dd/mm/yyyy) | ___/___/___ |
| Outcome | <input type="checkbox"/> Alive <input type="checkbox"/> Died <input type="checkbox"/> NA <input type="checkbox"/> Unknown |
| Outcome current as of date (dd/mm/yyyy) | ___/___/___ <input type="checkbox"/> Unknown <input type="checkbox"/> NA |

| 9. Patient pre-existing condition(s) | |
|--------------------------------------|--|
| Pregnancy | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify trimester: <input type="checkbox"/> First <input type="checkbox"/> Second <input type="checkbox"/> Third <input type="checkbox"/> NA |
| Obesity | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Cancer | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Diabetes | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |

Form A1: Case initial reporting form – for confirmed cases (Day 1)

| | |
|---|---|
| HIV/other immune deficiency | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Heart disease | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Asthma (requiring medication) | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Chronic lung disease (non-asthma) | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Chronic liver disease | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Chronic haematological disorder | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Chronic kidney disease | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Chronic neurological impairment/disease | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Organ or bone marrow recipient | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Other pre-existing condition(s) | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify: |

| 10. Health care interactions | |
|--|---|
| Contact with emergency number/ hotline | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Date of emergency contact (dd/mm/yyyy) | ___/___/___ <input type="checkbox"/> Unknown |
| Visit to primary health care PHC (GP, etc) (repeat for as many visits as required) | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Date of first PHC contact (dd/mm/yyyy) | ___/___/___ <input type="checkbox"/> Unknown <input type="checkbox"/> NA |
| Visited Emergency Department (A&E) (repeat for as many contacts as required) | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Date of first A&E contact (dd/mm/yyyy) | ___/___/___ <input type="checkbox"/> Unknown <input type="checkbox"/> NA |
| Hospitalisation (repeat for as many admissions as required) | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Date of admission to hospital (dd/mm/yyyy) | ___/___/___ <input type="checkbox"/> Unknown <input type="checkbox"/> NA |
| Name and place of hospital | |

| 11. Human exposures in the 14 days before symptom onset | |
|--|---|
| Have you travelled within the last 14 days domestically? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, dates of travel (DD/MM/YYYY): ___/___/___ to ___/___/___ Regions: Cities visited: |
| Have you travelled within the last 14 days internationally? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, dates of travel (DD/MM/YYYY): ___/___/___ to ___/___/___ Countries visited: Cities visited: |
| In the past 14 days, have you had contact with a anyone with suspected or confirmed 2019-nCoV infection? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |

Form A1: Case initial reporting form – for confirmed cases (Day 1)

| | |
|--|--|
| | If Yes, dates of last contact (DD/MM/YYYY): __/__/__ |
| Patient attended festival or mass gathering | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify: |
| Patient exposed to person with similar illness | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Location of exposure | <input type="checkbox"/> Home <input type="checkbox"/> Hospital <input type="checkbox"/> Workplace <input type="checkbox"/> Tour group <input type="checkbox"/> School <input type="checkbox"/> Unknown <input type="checkbox"/> Other, specify: |
| Patient visited or was admitted to inpatient health facility | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify: |
| Patient visited outpatient treatment facility | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify: |
| Patient visited traditional healer | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify type: |
| Patient occupation (specify location/facility) | <input type="checkbox"/> Health care worker <input type="checkbox"/> Working with animals <input type="checkbox"/> Health laboratory worker <input type="checkbox"/> Student <input type="checkbox"/> Other, specify: For each occupation, please specify location or facility:_____ |

| 12a. Molecular testing methods and results: | | | | | | | |
|---|------------------------------------|-----------------------------------|--|---|---|--------------------------|--|
| Complete a new line for each specimen collected and each type of test done: | | | | | | | |
| Lab identification number | Date Sample collected (dd/mm/yyyy) | Date Sample Received (dd/mm/yyyy) | Type of Sample | Type of test | Result | Result Date (dd/mm/yyyy) | Specimens shipped to other laboratory for confirmation |
| | ___/___/___ | ___/___/___ | <input type="checkbox"/> Nasal swab <input type="checkbox"/> Throat swab <input type="checkbox"/> Nasopharyngeal swab <input type="checkbox"/> Others, specify: | <input type="checkbox"/> PCR <input type="checkbox"/> Whole genome sequencing <input type="checkbox"/> Partial genome sequencing <input type="checkbox"/> Other, specify | <input type="checkbox"/> POSITIVE for 2019-nCoV <input type="checkbox"/> NEGATIVE for 2019-nCoV <input type="checkbox"/> POSITIVE for others pathogens Please specify which pathogens: | ___/___/___ | <input type="checkbox"/> Yes If yes, specify Date ___/___/___ If yes, name of the laboratory: ___ <input type="checkbox"/> No |
| | | | | | | | |

| 12b. Serology testing methods and results: | | | | | | | |
|---|------------------------------------|-----------------------------------|---|--|---|--------------------------|--|
| Complete a new line for each specimen collected and each type of test done: | | | | | | | |
| Lab identification number | Date Sample collected (dd/mm/yyyy) | Date Sample Received (dd/mm/yyyy) | Type of Sample | Type of test | Result (2019-nCoV antibody titres) | Result date (dd/mm/yyyy) | Specimens shipped to other laboratory for confirmation |
| | ___/___/___ | ___/___/___ | <input type="checkbox"/> Serum <input type="checkbox"/> Others, specify: | Specify type (ELISA / IFA IgM/ IgG, Neutralization assay, etc): _____ | <input type="checkbox"/> POSITIVE If positive, titre : _____ <input type="checkbox"/> NEGATIVE <input type="checkbox"/> INCONCLUSIVE | ___/___/___ | <input type="checkbox"/> Yes If yes, specify Date ___/___/___ If yes, name of the laboratory: ___ <input type="checkbox"/> No |
| | | | | | | | |

| 13. Status of form completion | |
|-------------------------------|---|
| Form completed | <input type="checkbox"/> Yes <input type="checkbox"/> No or partially If no or partially, reason : <input type="checkbox"/> Missed <input type="checkbox"/> Not attempted <input type="checkbox"/> Not performed <input type="checkbox"/> Refusal <input type="checkbox"/> Other, specific: _____ |

The First Few X (FFX): Cases and contact investigation protocol for 2019-nCoV

Form A2: Case follow-up reporting form – for confirmed cases (Day 14-21)

COMMENT: Information in this form may already have been completed in the Case Minimum Data Reporting Form (Form A1). It is therefore not necessary to repeat any data in these sections that has already been completed

Unique Case ID / Cluster Number (if applicable):

| |
|--|
| |
|--|

1. Data Collector Information

| | |
|-----------------------------------|----------|
| Name of data collector | |
| Data collector Institution | |
| Data collector telephone number | |
| Email | |
| Form completion date (dd/mm/yyyy) | __/__/__ |

2. Interview respondent information (if different from initial interview)

| | |
|----------------------------|--|
| First name | |
| Surname | |
| Sex | <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Not known |
| Date of Birth (dd/mm/yyyy) | __/__/__ |
| Relationship to patient | |
| Respondent address | |
| Telephone (mobile) number | |

3. Outcome/status

| | |
|--|---|
| Status | <input type="checkbox"/> Recovered, if yes specify date symptoms resolved __/__/__ <input type="checkbox"/> Still ill <input type="checkbox"/> Dead, if yes specify date of death __/__/__ <input type="checkbox"/> Unknown/ Lost to follow-up |
| Hospitalization ever required? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Unknown |
| (NB. If the information below is not currently available, please leave blank and send through an update as soon as results are available) | |
| If dead, contribution of 2019-nCoV to death: | <input type="checkbox"/> Underlying/primary <input type="checkbox"/> Contributing/secondary <input type="checkbox"/> No contribution to death <input type="checkbox"/> Unknown |
| If dead, was a port-mortem performed? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| If dead, cause of death on Death certificate (specify) | |
| If dead, results of post-mortem's report where available: | |

| 4a. Patient symptoms during the entirety of illness | |
|---|--|
| Maximum Temperature (specify) | °C , <input type="checkbox"/> NA |
| 4b. Respiratory symptoms | |
| Sore throat | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, date (dd/mm/yyyy) ___/___/___ |
| Cough | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, date (dd/mm/yyyy) ___/___/___ |
| Runny nose | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Shortness of breath | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, date (dd/mm/yyyy) ___/___/___ |
| 4c. Other symptoms | |
| Chills | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Vomiting | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Nausea | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Diarrhoea | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Headache | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Rash | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Conjunctivitis | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Muscle aches | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Joint ache | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Nausea | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Loss of appetite | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Nose bleed | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Fatigue | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Seizures | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Altered consciousness | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Other neurological signs | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, specify |
| Other symptoms | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify: |

| 5. Patient symptoms: Complications | |
|--|---|
| Hospitalization | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Date of first hospitalization | ___/___/___ <input type="checkbox"/> Unknown |
| ICU (Intensive Care Unit) Admission | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| ICU admission | ___/___/___ <input type="checkbox"/> Unknown |
| Date of discharge from ICU | ___/___/___ <input type="checkbox"/> Unknown <input type="checkbox"/> NA |
| Mechanical ventilation | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Dates of mechanical ventilation (dd/mm/yyyy) | Start ___/___/___ Stop ___/___/___ <input type="checkbox"/> Unknown <input type="checkbox"/> NA |

Form A2: Case follow-up reporting form – for confirmed cases (Day 14-21)

| | |
|--|---|
| Length of ventilation (days) | |
| Acute Respiratory Distress Syndrome (ARDS) | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, date started (dd/mm/yyyy) __/__/__ |
| Acute renal failure | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, date started (dd/mm/yyyy) __/__/__ |
| Cardiac failure | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, date started (dd/mm/yyyy) __/__/__ |
| Consumptive coagulopathy | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, date started (dd/mm/yyyy) __/__/__ |
| Pneumonia by chest X-ray | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, date started (dd/mm/yyyy) __/__/__ |
| Hypotension requiring vasopressors | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Other complications s | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify: |
| Extracorporeal membrane oxygenation (EMO) required | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |

6. Patient pre-existing condition(s)

| | |
|-----------|--|
| Pregnancy | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify trimester: <input type="checkbox"/> First <input type="checkbox"/> Second <input type="checkbox"/> Third <input type="checkbox"/> NA |
|-----------|--|

7. Secondary bacterial infection

Complete a new line for each specimen collected and each type of test done:

| Date of sample | Type of sample: | Positive results |
|----------------|---|---|
| / / | <input type="checkbox"/> Sputum <input type="checkbox"/> Endotracheal aspirate <input type="checkbox"/> Pleural fluid <input type="checkbox"/> CSF <input type="checkbox"/> Blood <input type="checkbox"/> Urine <input type="checkbox"/> Faeces <input type="checkbox"/> Other, please specify: | <input type="checkbox"/> <i>Haemophilus influenzae</i> <input type="checkbox"/> MRSA <input type="checkbox"/> <i>Staphylococcus aureus</i> <input type="checkbox"/> <i>Streptococcus pneumoniae</i> <input type="checkbox"/> E.coli <input type="checkbox"/> Other organism, please specify: |

| 8a. Virology testing methods and results: | | | | | | | |
|---|------------------------------------|-----------------------------------|--|---|--|--------------------------|--|
| Complete a new line for each specimen collected and each type of test done: | | | | | | | |
| Lab identification number | Date Sample collected (dd/mm/yyyy) | Date Sample Received (dd/mm/yyyy) | Type of Sample | Type of test | Result | Result Date (dd/mm/yyyy) | Specimens shipped to other laboratory for confirmation |
| | __/__/__ | __/__/__ | <input type="checkbox"/> Nasal swab <input type="checkbox"/> Throat swab <input type="checkbox"/> Nasopharyngeal swab <input type="checkbox"/> Others, specify: | <input type="checkbox"/> PCR <input type="checkbox"/> Whole genome sequencing <input type="checkbox"/> Partial genome sequencing <input type="checkbox"/> Other, specify | <input type="checkbox"/> POSITIVE for 2019-nCoV <input type="checkbox"/> NEGATIVE for 2019-nCoV <input type="checkbox"/> POSITIVE for others pathogens Please specify which pathogens: | __/__/__ | <input type="checkbox"/> Yes If yes, specify Date __/__/__ If yes, name of the laboratory: ____ <input type="checkbox"/> No |
| | | | | | | | |

| 8b. Serology testing methods and results: | | | | | | | |
|---|------------------------------------|-----------------------------------|---|---|--|--------------------------|--|
| Complete a new line for each specimen collected and each type of test done: | | | | | | | |
| Lab identification number | Date Sample collected (dd/mm/yyyy) | Date Sample Received (dd/mm/yyyy) | Type of Sample | Type of test | Result (2019-nCoV antibody titres) | Result date (dd/mm/yyyy) | Specimens shipped to other laboratory for confirmation |
| | __/__/__ | __/__/__ | <input type="checkbox"/> Serum <input type="checkbox"/> Others, specify: | Specify type (ELISA / IFA IgM/ IgG, Neutralization assay, etc): ____ | <input type="checkbox"/> POSITIVE If positive, titre : ____ <input type="checkbox"/> NEGATIVE <input type="checkbox"/> INCONCLUSIVE | __/__/__ | <input type="checkbox"/> Yes If yes, specify Date __/__/__ If yes, name of the laboratory: ____ <input type="checkbox"/> No |
| | | | | | | | |

| 9. Status of form completion | |
|------------------------------|---|
| Form completed | <input type="checkbox"/> Yes <input type="checkbox"/> No or partially If no or partially, reason : <input type="checkbox"/> Missed <input type="checkbox"/> Not attempted <input type="checkbox"/> Not performed <input type="checkbox"/> Refusal <input type="checkbox"/> Other, specific: |

The First Few X (FFX): Cases and contact investigation protocol for 2019-nCoV

2- For close contacts

Form B1: Contact initial reporting form – for close contacts (Day 1)

Confirmed Case ID / Cluster Number (if applicable):

| |
|--|
| |
|--|

Contact ID Number (C...):

Note: Contact ID numbers should be issued at the time of completion of Form A1.

| |
|--|
| |
|--|

Name of confirmed case

| |
|--|
| |
|--|

| 1. Data Collector Information | |
|-----------------------------------|----------|
| Name of data collector | |
| Data collector Institution | |
| Phone number | |
| Email | |
| Form completion date (dd/mm/yyyy) | __/__/__ |

| 2. Interview respondent information (if the persons providing the information is not the contact) | |
|---|--|
| First name | |
| Surname | |
| Sex | <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Not known |
| Date of Birth | __/__/__ |
| Relationship to patient | |
| Respondent address | |
| Telephone (mobile) number | |

| 3. Contact Details (Details of the contact) | |
|--|--|
| Given name(s) | |
| Family name | |
| Sex | <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Not known |
| Date of Birth | __/__/__ |
| Relationship to case | |
| Address (village/town, district, province/region) | |
| Telephone number | |
| Email address | |
| Preferred mode of contact | <input type="checkbox"/> Mobile <input type="checkbox"/> Work <input type="checkbox"/> Home <input type="checkbox"/> Email |
| Nationality | |
| Country of residence | |
| National social number/ identifier (optional) | |
| Have you travelled within the last 14 days domestically? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |

Form B1: Contact initial reporting form – for close contacts (Day 1)

| | |
|--|--|
| | <p>If Yes, dates of travel (DD/MM/YYYY): ___/___/___ to ___/___/___</p> <p>Regions: Cities visited:</p> |
| Have you travelled within the last 14 days internationally? | <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown</p> <p>If Yes, dates of travel (DD/MM/YYYY): ___/___/___ to ___/___/___</p> <p>Countries visited: Cities visited:</p> |
| In the past 14 days, have you had contact with anyone with suspected or confirmed 2019-nCoV infection? | <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown</p> <p>If Yes, dates of last contact (DD/MM/YYYY): ___/___/___</p> |
| Occupation (specify location/facility) | <p><input type="checkbox"/> Health care worker <input type="checkbox"/> Working with animals <input type="checkbox"/> Health laboratory worker <input type="checkbox"/> Student <input type="checkbox"/> Other, specify: For each occupation, please specify location or facility: _____</p> |

Note for next 2 sections:

- **Complete Section 4** if the contact is a Health Care Worker (HCW).
- **Complete Section 5** if the contact is NOT a Health Care Worker (HCW)

| 4 Exposure Information (if the close contact is a Health Care Worker) | |
|---|--|
| Job title (specify) | |
| Place of work | |
| Direct physical contact with the confirmed case (e.g. hands-on physical contact) | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Has the HCW had prolonged face-to-face contact (>15 minutes) with a <u>symptomatic</u> confirmed case in a health facility? | <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If yes, what type of protective equipment was used by the health care worker?</p> <p><input type="checkbox"/> Gown <input type="checkbox"/> Surgical/medical mask <input type="checkbox"/> Gloves <input type="checkbox"/> NIOSH-CERTIFIED N95, AN EU STANDARD FFP2 <input type="checkbox"/> FFP3 <input type="checkbox"/> Eye protection</p> |
| Has the HCW had prolonged face-to-face contact (>15 minutes) with an <u>asymptomatic</u> confirmed case in a health facility? | <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If yes, What type of protective equipment was used by the health care worker?</p> |

Form B1: Contact initial reporting form – for close contacts (Day 1)

| | |
|---|---|
| | <input type="checkbox"/> Gown <input type="checkbox"/> Surgical/medical mask <input type="checkbox"/> Gloves <input type="checkbox"/> NIOSH-CERTIFIED N95, AN EU STANDARD FFP2 <input type="checkbox"/> FFP3 <input type="checkbox"/> Eye protection |
| Was the contact present while any aerosol generating procedures took place? | <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, specify procedure and date Procedure: ___/___/___ Procedure: ___/___/___ Was the contact wearing any type of a mask at this/these procedures? <input type="checkbox"/> Surgical/medical <input type="checkbox"/> NIOSH-CERTIFIED N95, AN EU STANDARD FFP2 <input type="checkbox"/> FFP3 <input type="checkbox"/> None |

| 5. Exposure Information (if the close contact is NOT a HealthCare Worker) | | |
|---|--|--|
| Type of contact | <input type="checkbox"/> Household <input type="checkbox"/> Other, specify: _____ | |
| State dates of contact and duration of contact with the confirmed case from first contact, while the primary case was symptomatic (Add as many dates, as required) | Date | ___/___/___(dd/mm/yyyy) |
| | Duration | _____(mins) |
| | Setting | <input type="checkbox"/> Home/ household <input type="checkbox"/> Hospital / health care <input type="checkbox"/> Workplace <input type="checkbox"/> Tour group <input type="checkbox"/> Other, specify: _____ |
| State dates of contact and duration of contact with the confirmed case from first contact, while the primary case was asymptomatic (Add as many dates, as required) | Date | ___/___/___ (dd/mm/yyyy) |
| | Duration | _____(mins) |
| | Setting | <input type="checkbox"/> Home/ household <input type="checkbox"/> Hospital / health care <input type="checkbox"/> Workplace <input type="checkbox"/> Tour group <input type="checkbox"/> Other, specify: _____ |

Form B1: Contact initial reporting form – for close contacts (Day 1)

| 6a. Symptoms in contact | |
|---|---|
| Has the contact experienced any respiratory symptoms (sore throat, cough, running nose, shortness of breath) in the period from 10 days before onset in the confirmed case until the present? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Has the contact experienced any respiratory symptoms (sore throat, cough, running nose, shortness of breath) in the period up to 10 days after last contact or until the present date, whichever is the earliest? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Currently ill | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Date and time of first symptom onset | ___/___/___ <input type="checkbox"/> AM <input type="checkbox"/> PM |
| Maximum temperature | °C <input type="checkbox"/> NA |
| 6b. Respiratory symptoms | |
| Sore throat | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, date ___/___/___ |
| Cough | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, date ___/___/___ |
| Runny nose | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Shortness of breath | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, date ___/___/___ |
| 6c. other symptoms | |
| Chills | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Vomiting | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Nausea | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Diarrhea | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Headache | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Rash | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Conjunctivitis | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Muscle aches | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Joint ache | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Loss of appetite | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Nose bleed | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Fatigue | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Seizures | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Altered consciousness | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Other neurological signs | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, specify: |
| Other symptoms | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify: |

| 7. Outcome/status of contact (Only complete if contact has been ill or is currently ill) | |
|---|---|
| Status | <input type="checkbox"/> Recovered, if yes specify date symptoms resolved ___/___/___ <input type="checkbox"/> Still ill <input type="checkbox"/> Dead, if yes specify date of death ___/___/___ <input type="checkbox"/> Unknown/ Lost to follow-up |

Form B1: Contact initial reporting form – for close contacts (Day 1)

| | |
|--|--|
| Hospitalization ever required? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Unknown If yes, date of hospitalization and date of discharge (dd/mm/yyyy) ___/___/___ - ___/___/___ |
| (NB. If the information below is not currently available, please leave blank and send through an update as soon as results are available) | |
| If dead, contribution of 2019-nCoV to death: | <input type="checkbox"/> Underlying/primary <input type="checkbox"/> Contributing/secondary <input type="checkbox"/> No contribution to death <input type="checkbox"/> Unknown |
| If dead, was a port-mortem performed? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| If dead, cause of death on Death certificate (specify) | |
| If dead, results of post-mortem's report where available: | |

| 8. Contact pre-existing condition(s) | |
|---|--|
| Pregnancy | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify trimester: <input type="checkbox"/> First <input type="checkbox"/> Second <input type="checkbox"/> Third <input type="checkbox"/> NA |
| Obesity | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Heart disease | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Asthma requiring medication | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Chronic lung disease (non-asthma) | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Chronic liver disease | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Chronic haematological disorder | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Chronic kidney disease | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Chronic neurological impairment/disease | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Organ or bone marrow recipient | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Other pre-existing condition(s) | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify: |
| Comments if appropriate | |

| 9a. Virology testing methods and results: | | | | | | | |
|---|------------------------------------|-----------------------------------|--|---|--|--------------------------|--|
| Complete a new line for each specimen collected and each type of test done: | | | | | | | |
| Lab identification number | Date Sample collected (dd/mm/yyyy) | Date Sample Received (dd/mm/yyyy) | Type of Sample | Type of test | Result | Result Date (dd/mm/yyyy) | Specimens shipped to other laboratory for confirmation |
| | __/__/__ | __/__/__ | <input type="checkbox"/> Nasal swab <input type="checkbox"/> Throat swab <input type="checkbox"/> Nasopharyngeal swab <input type="checkbox"/> Others, specify: | <input type="checkbox"/> PCR <input type="checkbox"/> Whole genome sequencing <input type="checkbox"/> Partial genome sequencing <input type="checkbox"/> Other, specify | <input type="checkbox"/> POSITIVE for 2019-nCoV <input type="checkbox"/> NEGATIVE for 2019-nCoV <input type="checkbox"/> POSITIVE for others pathogens Please specify which pathogens: | __/__/__ | <input type="checkbox"/> Yes If yes, specify Date __/__/__ If yes, name of the laboratory: ____ <input type="checkbox"/> No |
| | | | | | | | |

| 9b. Serology testing methods and results: | | | | | | | |
|---|------------------------------------|-----------------------------------|---|---|--|--------------------------|--|
| Complete a new line for each specimen collected and each type of test done: | | | | | | | |
| Lab identification number | Date Sample collected (dd/mm/yyyy) | Date Sample Received (dd/mm/yyyy) | Type of Sample | Type of test | Result (2019-nCoV antibody titres) | Result date (dd/mm/yyyy) | Specimens shipped to other laboratory for confirmation |
| | __/__/__ | __/__/__ | <input type="checkbox"/> Serum <input type="checkbox"/> Others, specify: | Specify type (ELISA / IFA IgM/ IgG, Neutralization assay, etc): ____ | <input type="checkbox"/> POSITIVE If positive, titre : ____ <input type="checkbox"/> NEGATIVE <input type="checkbox"/> INCONCLUSIVE | __/__/__ | <input type="checkbox"/> Yes If yes, specify Date __/__/__ If yes, name of the laboratory: ____ <input type="checkbox"/> No |
| | | | | | | | |

| 10. Status of form completion | |
|-------------------------------|--|
| Form completed | <input type="checkbox"/> Yes <input type="checkbox"/> No or partially If no or partially, reason : <input type="checkbox"/> Missed <input type="checkbox"/> Not attempted <input type="checkbox"/> Not performed <input type="checkbox"/> Refusal <input type="checkbox"/> Other, specific: |

The First Few X (FFX): Cases and contact investigation protocol for 2019-nCoV

Form B2: Contact follow-up reporting form – for close contacts (Day 14-21)

COMMENT: Information in this form may already have been completed in the Case Minimum Data Reporting Form (Form B2). It is therefore not necessary to repeat any data in these sections that has already been completed.

Confirmed Case ID / Cluster Number (if applicable):

| |
|--|
| |
|--|

Contact ID Number (C...):

| |
|--|
| |
|--|

Name of confirmed case:

| |
|--|
| |
|--|

| 1. Data Collector Information | |
|-----------------------------------|----------|
| Name of data collector | |
| Data collector Institution | |
| Phone number | |
| Email | |
| Form completion date (dd/mm/yyyy) | __/__/__ |

| 2. Interview respondent information (if the persons providing the information is not the contact) | |
|---|--|
| First name | |
| Surname | |
| Sex | <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Not known |
| Date of Birth (dd/mm/yyyy) | __/__/__ |
| Relationship to patient | |
| Respondent address | |
| Telephone (mobile) number | |

| 3. Exposure Information (if the close contact is NOT a HealthCare Worker) | | |
|--|--|--|
| Type of contact | <input type="checkbox"/> Household <input type="checkbox"/> Health Care workers <input type="checkbox"/> Other, specify: _____ | |
| State dates of contact and duration of contact with the confirmed case from first contact, while the primary case was symptomatic (Add as many dates, as required) | Date | __/__/__ (dd/mm/yyyy) |
| | Duration | ____ (mins) |
| | Setting | <input type="checkbox"/> Home/ household <input type="checkbox"/> Hospital / health care <input type="checkbox"/> Workplace <input type="checkbox"/> Tour group <input type="checkbox"/> Other, specify: _____ |
| State dates of contact and duration of contact with the | Date | __/__/__ (dd/mm/yyyy) |

Form B2: Contact follow-up reporting form – for close contacts (Day 14-21)

| | | |
|---|----------|--|
| confirmed case from first contact, while the primary case was asymptomatic (Add as many dates, as required) | Duration | _____ (mins) |
| | Setting | <input type="checkbox"/> Home/ household <input type="checkbox"/> Hospital / health care <input type="checkbox"/> Workplace <input type="checkbox"/> Tour group <input type="checkbox"/> Other, specify: _____ |

4a. Symptoms in contact

| | |
|---|--|
| Has the contact experienced any respiratory symptoms (sore throat, cough, running nose, shortness of breath) in the period from 10 days before onset in the confirmed case until the present? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Has the contact experienced any respiratory symptoms (sore throat, cough, running nose, shortness of breath) in the period up to 10 days after last contact or until the present date, whichever is the earliest? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Currently ill | <input type="checkbox"/> Yes <input type="checkbox"/> No |

Please only complete following section if contact has demonstrated symptoms since last follow up:

| | |
|--------------------------------------|--|
| Date and time of first symptom onset | ___/___/___ <input type="checkbox"/> AM <input type="checkbox"/> PM |
| Maximum temperature | ___°C <input type="checkbox"/> NA |
| Fever (>38°C) or history of fever | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, dates (dd/mm/yyyy - dd/mm/yyyy) ___/___/___ - ___/___/___ |

4b. Respiratory symptoms

| | |
|---------------------|--|
| Sore throat | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, dates (dd/mm/yyyy - dd/mm/yyyy) ___/___/___ - ___/___/___ |
| Cough | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, dates (dd/mm/yyyy - dd/mm/yyyy) ___/___/___ - ___/___/___ |
| Runny nose | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Shortness of breath | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, dates (dd/mm/yyyy - dd/mm/yyyy) ___/___/___ - ___/___/___ |

4c. other symptoms

| | |
|----------------|---|
| Chills | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Vomiting | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Nausea | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Diarrhea | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Headache | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Rash | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Conjunctivitis | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Muscle aches | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Joint ache | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |

Form B2: Contact follow-up reporting form – for close contacts (Day 14-21)

| | |
|--------------------------|---|
| Loss of appetite | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Nose bleed | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Fatigue | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Seizures | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Altered consciousness | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown |
| Other neurological signs | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, specify: |
| Other symptoms | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify: |

5. Contact pre-existing condition(s)

| | |
|-----------|--|
| Pregnancy | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, specify trimester: <input type="checkbox"/> First <input type="checkbox"/> Second <input type="checkbox"/> Third <input type="checkbox"/> NA |
|-----------|--|

| 6a. Virology testing methods and results: | | | | | | | |
|---|------------------------------------|-----------------------------------|--|---|--|--------------------------|--|
| Complete a new line for each specimen collected and each type of test done: | | | | | | | |
| Lab identification number | Date Sample collected (dd/mm/yyyy) | Date Sample Received (dd/mm/yyyy) | Type of Sample | Type of test | Result | Result Date (dd/mm/yyyy) | Specimens shipped to other laboratory for confirmation |
| | __/__/__ | __/__/__ | <input type="checkbox"/> Nasal swab <input type="checkbox"/> Throat swab <input type="checkbox"/> Nasopharyngeal swab <input type="checkbox"/> Others, specify: | <input type="checkbox"/> PCR <input type="checkbox"/> Whole genome sequencing <input type="checkbox"/> Partial genome sequencing <input type="checkbox"/> Other, specify | <input type="checkbox"/> POSITIVE for 2019-nCoV <input type="checkbox"/> NEGATIVE for 2019-nCoV <input type="checkbox"/> POSITIVE for others pathogens Please specify which pathogens: | __/__/__ | <input type="checkbox"/> Yes If yes, specify Date __/__/__ If yes, name of the laboratory: ____ <input type="checkbox"/> No |
| | | | | | | | |

| 6b. Serology testing methods and results: | | | | | | | |
|---|------------------------------------|-----------------------------------|---|--|---|--------------------------|--|
| Complete a new line for each specimen collected and each type of test done: | | | | | | | |
| Lab identification number | Date Sample collected (dd/mm/yyyy) | Date Sample Received (dd/mm/yyyy) | Type of Sample | Type of test | Result (2019-nCoV antibody titres) | Result date (dd/mm/yyyy) | Specimens shipped to other laboratory for confirmation |
| | __/__/__ | __/__/__ | <input type="checkbox"/> Serum <input type="checkbox"/> Others, specify: | Specify type (ELISA / IFA IgM/ IgG, Neutralization assay, etc): _____ | <input type="checkbox"/> POSITIVE If positive, titre : _____ <input type="checkbox"/> NEGATIVE <input type="checkbox"/> INCONCLUSIVE | __/__/__ | <input type="checkbox"/> Yes If yes, specify Date __/__/__ If yes, name of the laboratory: ____ <input type="checkbox"/> No |
| | | | | | | | |

| 7. Final contact classification (at final follow-up) | |
|--|--|
| Please mark | <input type="checkbox"/> Never ill/ not a case <input type="checkbox"/> Confirmed secondary case <input type="checkbox"/> Lost to follow-up <input type="checkbox"/> Suspected case <input type="checkbox"/> Probable case |

| 8. Status of form completion | |
|------------------------------|--|
| Form completed | <input type="checkbox"/> Yes <input type="checkbox"/> No or partially If no or partially, reason : <input type="checkbox"/> Missed <input type="checkbox"/> Not attempted <input type="checkbox"/> Not performed <input type="checkbox"/> Refusal <input type="checkbox"/> Other, specific: |

Symptom diary (for close contact)

Symptom diaries will be provided to each close contact to record presence or absence of various signs or symptoms for a minimum of 14 days after the administration of the initial contact questionnaire (Form B2).

The symptom diary template provided below is generic. In the context of a new virus with uncertain clinical presentation and spectrum, symptom diaries may be broadened to include vomiting, diarrhea, abdominal pain, etc., as relevant and may be altered to include symptom data for longer than 14 days.

In the event the contact develop any of these symptoms, ask him/her to inform your local Public Health Team.

| Day | Symptoms* | | | | | | |
|-----|--|--|--|--|--|--|-------------------------|
| | No symptoms (check if none experienced) | Fever ≥38°C | Sore throat | Cough | Runny nose | Shortness of breath | Other symptoms: specify |
| 0 | <input type="checkbox"/> None | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 1 | <input type="checkbox"/> None | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 2 | <input type="checkbox"/> None | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 3 | <input type="checkbox"/> None | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 4 | <input type="checkbox"/> None | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 6 | <input type="checkbox"/> None | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 7 | <input type="checkbox"/> None | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 8 | <input type="checkbox"/> None | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 9 | <input type="checkbox"/> None | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 10 | <input type="checkbox"/> None | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 11 | <input type="checkbox"/> None | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 12 | <input type="checkbox"/> None | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 13 | <input type="checkbox"/> None | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| 14 | <input type="checkbox"/> None | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

*Please select Yes to no symptoms. If no symptoms are experienced, then consider the entry complete.

FFX reporting forms: completion guidance

These notes are to provide guidance in completing the forms. It is suggested that these investigations could be divided into teams – these could include

- a **'case reporter' team**,
- a **'contact reporter' team** and
- **'go to' team** who would liaise with additional data sources other than the case or contact such as hospitals, laboratories etc.

a) Form A0: Minimum data reporting form – for suspected and probable cases – This form should be completed predominately by the 'Case' reporter team.

| Section | Sources | Verified against |
|---------------------------------------|--------------------|--|
| Case Classification | Case Reporter | |
| Reporter Details | Case Reporter | |
| Informant Details | Informant | |
| Patient Details | Informant | |
| Physician Details | Informant | GP Database |
| Presenting illness | Informant | Healthcare provider/ review of medical records |
| Exposures in the 10 days before onset | Informant | |
| Medical History | Informant | Healthcare provider/GP/review of medical records |
| Hospitalization | Informant/Hospital | Hospital health information system |
| Test results | Testing laboratory | Lab database |
| Contact details | Informant | |

b) Form A1: Case initial report form – for confirmed cases (Day 1) +

Form A2: Case follow-up form – for confirmed cases (Day 14-21). These forms should be completed by 'Case' reporter team Lab

| Section | Sources | Verified against |
|---|--|---|
| Final case classification | Contact Reporter /Hospital | |
| Reporter details | Contact Reporter | |
| Informant details | Informant | |
| Outcome/Status | Informant | Statistical data, mortality, GP / hospital |
| Illness | Informant | Healthcare provider / review of medical records |
| Clinical Course/Complications | Informant / interview with healthcare provider | Review of medical records |
| Interaction with National security system | Informant / Hospital | National Social Health Information system |
| Reference Test Results | Testing laboratory | Lab database |
| Bacterial Infections | Testing laboratory | Lab database |

- c) **Form B1: Contact Initial Reporting Form – Contacts (Day 1)** – This form should be completed by the ‘Contacts’ reporter team and should be completed after the Initial Case Report form has been completed by the ‘Case’ Reporter team, ideally within 24 hours

| Section | Sources | Verified against |
|----------------------|--------------------|--|
| Reporter Details | Contact reporter | |
| Informant Details | Informant | |
| Contact Details | Informant | |
| Exposure Information | Informant | |
| Illness in contacts | Informant | Healthcare provider / review of medical records |
| Outcome/Status | Informant | Statistical data, mortality, GP / hospital |
| Case classification | Contact reporter | |
| Virological Tests | Testing laboratory | Lab database |
| Medical History | Informant | Healthcare provider / GP / review of medical records |

- d) **Form B2: Contact Follow-up reporting Form – Contacts (Day 14-21)** This form should be completed by the ‘Contacts’ reporter team

| Section | Sources | Verified against |
|-------------------------------|---------------------------------------|---|
| Reporter Details | Contact reporter | |
| Informant Details | Informant | |
| Final Contact Classification | Contact reporter | |
| Exposure Information | Informant | |
| Illness in contacts | Informant | Healthcare provider / review of medical records |
| Clinical Course/Complications | Informant / interview with healthcare | Review of medical records |
| Virological Tests | Testing laboratory | Lab database |

- e) **Contact symptom diary (Day 1 to 14)** This form should be completed by the ‘Contacts’ themselves

Symptom diaries will be provided to each close contact for them to record presence or absence of various signs or symptoms for a minimum of 14 days after the administration of the baseline questionnaire

The symptom diary template provided is generic. In the context of a new virus with uncertain clinical presentation and spectrum, symptom diaries may be broadened to include vomiting, diarrhea, abdominal pain, etc., as relevant and may be altered to include symptom data for longer than 14 days.

In the event a contact develops any of these symptoms, the contact needs to inform your local Public Health Team

APPENDIX B:

1-Comparison and complementarity of the main 2019-nCoV early investigation protocols

| | First Few X cases (FFX) Protocol | Households transmission Protocol | Health Care Workers' risk factors assessment protocol |
|--------------------------------------|---|---|--|
| Population | First Few X number of confirmed cases and their close contacts | Household close contacts of confirmed cases (smaller epidemiological unit than FFX) | Health care workers in a health care setting in which a confirmed 2019-nCoV case has received care |
| Aim | Transmission dynamics, severity, clinical spectrum, in a proxy of the general population | Transmission dynamics, severity, clinical spectrum, in household settings | Transmissibility, severity, clinical spectrum, in a closed settings such as hospitals and health care centers |
| Design | Prospective case finding, and prospective follow-up of contact | Case-ascertained ¹² prospective study, ideally before widespread community transmission occurs, within first 2-3 months after identification of initial cases. | Prospective study of health care workers involved in care of any confirmed 2019-nCoV case, irrespective of symptoms |
| Potential output and analysis | Transmission dynamics, severity, clinical spectrum, through estimates of, primarily <ul style="list-style-type: none"> • clinical presentation and course of associated disease • Secondary infection rate (SIR) and clinical attack rate among close contacts • Serial interval • Symptomatic proportion | Provide key epidemiological data to complement and reinforce findings of FFX in the areas of: <ul style="list-style-type: none"> • Clinical risk factors • Clinical course of disease and severity • High-risk population subgroups | Transmissibility in healthcare settings, through estimates of: <ul style="list-style-type: none"> • Secondary Infection rate (SIR) among healthcare workers • Range of clinical presentation, risk factors for infection • Serologic response following symptomatic 2019-nCoV infection |

¹² Study participants and closed settings are identified from those with laboratory confirmed influenza infection, which is distinct from a closed setting cohort study in which a group of disease-free individuals in a closed setting are recruited and then followed over time.

| | | | |
|---------------------------|---|--|--|
| | <p>(through contact tracing and laboratory testing)</p> <ul style="list-style-type: none"> • Identification of possible routes of transmission <p>Secondarily: estimation of:</p> <ul style="list-style-type: none"> • The basic reproductive number (R_0) • Incubation period <p>Preliminary infection and diseases-severity ratios (e.g. case-hospitalization and case-fatality ratios)</p> | <ul style="list-style-type: none"> • Geographical mapping of outbreaks • Health-care seeking patterns <p>Generate epidemiological modeling parameters such as:</p> <ul style="list-style-type: none"> • Reproduction numbers: R_0 and R • Serial intervals specific to setting • Incubation period • Proportion of asymptomatic cases and symptomatic cases <p>Infection and clinical attack rates</p> | <ul style="list-style-type: none"> • Identification of possible routes of transmission |
| Start of the study | <p>To be initiated in the first days after the arrival in Country x of 2019-nCoV</p> <p>FFX is the primary protocol to be initiated in the case of a 2019-nCoV outbreak upon identification of the initial laboratory-confirmed cases of 2019-nCoV virus in Country x in the early epidemic/pandemic phases.</p> | <p>Ideally before widespread community transmission occurs: as early as possible after first cases confirmed and at least within first 2-3 months after identification of initial cases</p> <p>Subsequent tracing of household contacts of early laboratory-confirmed cases of 2019-nCoV in Country x in the early epidemic/pandemic phases.</p> | <p>To be initiated with first identification of laboratory-confirmed cases of 2019-nCoV in an health care setting.</p> <p>Subsequent tracing of HCW contacts of early laboratory-confirmed cases of 2019-nCoV in Country x in the early epidemic/pandemic phases</p> |
| Design | <p>Retrospective or prospective case finding, and prospective follow-up of contact</p> | <p>Case-ascertained¹³ prospective study</p> | <p>Prospective study</p> |

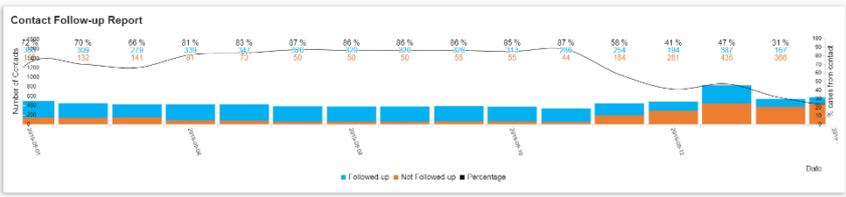
¹³ Study participants and closed settings are identified from those with laboratory confirmed infection, which is distinct from a closed setting cohort study in which a group of disease-free individuals in a closed setting are recruited and then followed over time.

| | | | |
|---|---|--|--|
| Duration | Participants- min 2 home visits within 14-21 days from enrolment (day 1) to final follow up | Households will complete a minimum of 4 home visits within 28 days of enrolment/follow-up. Study enrolment could be extended as far as desired, however but the most valuable period in order to use data for targeted public health action is in the early phases of the epidemic/pandemic (first 2-3 months). | Health Care Workers and health care facilities will complete a minimum of 2 sit visits within 21 days of enrolment/follow-up. |
| Recruitment | The first few confirmed cases of 2019-nCoV in Country x, and their close contacts will be first few participants to be recruited. To be noted: Previous FF100/FFX studies for Pandemic Influenza have recruited 300-400 cases along with their household contact. | Household contacts of primary cases with 2019-nCoV virus (laboratory confirmed). | HCW contacts of early laboratory-confirmed cases of 2019-nCoV in Country x in the early epidemic/pandemic phases. |
| Minimum information and specimens to be obtained from participants | Clinical history and assessment with collection of respiratory sample and serum. Detailed case follow-up with home visit. To be noted: Serum highly recommended to inform early seroepidemiological inferences, and respiratory (and other) to diagnose current 2019-nCoV infection. . | Household visit with respiratory sample collection at day 1; 7; 14;28. Serum sample collection needed at day 1 and 28, and highly encouraged at day 14 Symptom diaries record by household contacts from day 0-14 and highly encouraged till day 28. To be noted: Serum mandatory to inform early seroepidemiological inferences, and respiratory (and other) samples to diagnose current 2019-nCoV infection. | Health care setting visit with serum sample collection of day 1 and day >21. Symptom diaries record by household contacts from day 0-14 and highly encouraged till day 28. To be noted: Serum mandatory to inform early seroepidemiological inferences |

| Name | Area | Date of last contact | Seen no signs | Seen with signs | Not seen | Not performed |
|-------------|------------------------|----------------------|---------------|-----------------|----------|---------------|
| BE_2019_081 | REGIO 3 - KAMBULE WSA | 2019-09-21 | 2019-09-11 | | | |
| BE_2019_073 | REGIO 3 - KAMBULE KALU | 2019-09-24 | 2019-09-11 | | | |
| BE_2019_074 | REGIO 3 - KAMBULE KALU | 2019-09-24 | 2019-09-14 | | | |
| BE_2019_082 | REGIO 3 - KAMBULE KALU | 2019-09-24 | 2019-09-11 | | | |
| BE_2019_083 | REGIO 3 - KAMBULE KALU | 2019-09-24 | 2019-09-11 | | | |
| BE_2019_084 | REGIO 3 - KAMBULE KALU | 2019-09-24 | 2019-09-11 | | | |
| BE_2019_085 | REGIO 3 - KAMBULE KALU | 2019-09-24 | 2019-09-11 | | | |
| BE_2019_086 | REGIO 3 - KAMBULE KALU | 2019-09-24 | 2019-09-11 | | | |
| BE_2019_087 | REGIO 3 - KAMBULE KALU | 2019-09-24 | 2019-09-11 | | | |
| BE_2019_088 | REGIO 3 - KAMBULE KALU | 2019-09-24 | 2019-09-11 | | | |
| BE_2019_089 | REGIO 3 - KAMBULE KALU | 2019-09-24 | 2019-09-11 | | | |
| BE_2019_090 | REGIO 3 - KAMBULE KALU | 2019-09-24 | 2019-09-11 | | | |
| BE_2019_091 | REGIO 3 - KAMBULE KALU | 2019-09-24 | 2019-09-11 | | | |
| BE_2019_092 | REGIO 3 - KAMBULE KALU | 2019-09-24 | 2019-09-11 | | | |
| BE_2019_093 | REGIO 3 - KAMBULE KALU | 2019-09-24 | 2019-09-11 | | | |
| BE_2019_094 | REGIO 3 - KAMBULE KALU | 2019-09-24 | 2019-09-11 | | | |
| BE_2019_095 | REGIO 3 - KAMBULE KALU | 2019-09-24 | 2019-09-11 | | | |
| BE_2019_096 | REGIO 3 - KAMBULE KALU | 2019-09-24 | 2019-09-11 | | | |
| BE_2019_097 | REGIO 3 - KAMBULE KALU | 2019-09-24 | 2019-09-11 | | | |
| BE_2019_098 | REGIO 3 - KAMBULE KALU | 2019-09-24 | 2019-09-11 | | | |
| BE_2019_099 | REGIO 3 - KAMBULE KALU | 2019-09-24 | 2019-09-11 | | | |
| BE_2019_100 | REGIO 3 - KAMBULE KALU | 2019-09-24 | 2019-09-11 | | | |

Performing contact follow-up

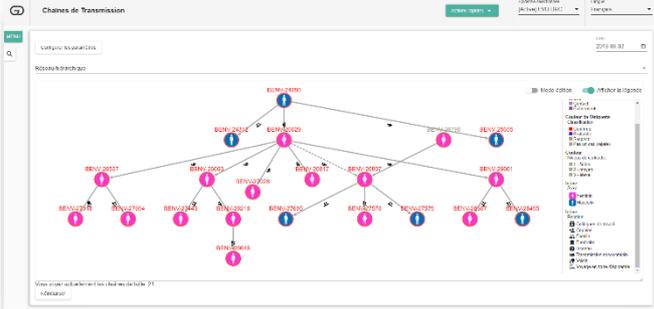
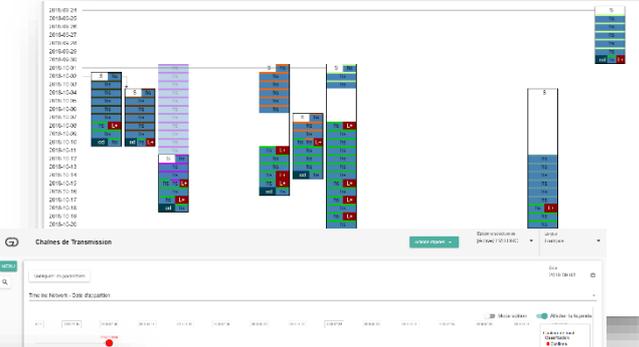
Go.Data has features to perform contact tracing using the web app or optional mobile app. Contact follow-up data are presented in form of lists, graphs and operational dashboards. Contact tracing coordinators can review workload of each contact tracing team.



Extensive visualization features

You can use Go.Data to generate chains of transmission in a form of:

- Networks, simple and hierarchical,
- Timelines, using date of onset, date of reporting or date of last contact,
- Bar charts combining date of onset, hospitalization data, laboratory testing data and outcome.



System administration

System administrators have access to extensive set of features to manage users, assign roles and permissions and limit access to specific outbreak(s) only. In addition, they have access to usage logs, can create and restore backups and manage settings of one Go.Data instance.

Please visit www.who.int/godata or contact godata@who.int for more information

3-Options for Go.Data hosting in countries for 2019-nCoV

| <p style="text-align: center;">OPTION #1 CENTRALLY HOSTED SERVER</p> | <p style="text-align: center;">OPTION #2 COUNTRY HOSTED SERVER</p> | <p style="text-align: center;">OPTION #3 STANDALONE INSTALLATION</p> |
|--|---|---|
| <p>One Go.Data installation for the entire region or for multiple countries. Separate outbreak is created for each country on the central server instance of Go.Data, and user access is provided at outbreak level (i.e. users from one country can only access case and contact data from their country).</p> <ul style="list-style-type: none">  <ul style="list-style-type: none"> ▪ Maintenance is easier. ▪ Installation of any updates is done centrally. ▪ Synchronization of the mobile phones can be done from anywhere. <hr/> <ul style="list-style-type: none">  <ul style="list-style-type: none"> ▪ Countries may be reluctant to host detailed information which is required for contact tracing (e.g. names, addresses) on an external server. ▪ May require agreements between Centralized server owner and member states for this arrangement ▪ Centralized server to manage user accounts and user access. | <p>Separate Go.Data installation for each country. Countries install Go.Data on their infrastructure.</p> <ul style="list-style-type: none">  <ul style="list-style-type: none"> ▪ Country has complete ownership and control of the server. ▪ Synchronization of the mobile phones can be done from anywhere. <hr/> <ul style="list-style-type: none">  <ul style="list-style-type: none"> ▪ Likely to take more time to implement as this option requires internal governmental approvals and provisioning infrastructure. ▪ Requires dedicated staff / team to manage the server. ▪ Not all countries may be in a position to host Go.Data server. | <p>Go.Data is installed on one or more computers in the country. These are typically personal computers or notebook / laptop computers. Data can be replicated across the computers.</p> <ul style="list-style-type: none">  <ul style="list-style-type: none"> ▪ Fast to implement. ▪ User has complete ownership and control of the computer and data. <hr/> <ul style="list-style-type: none">  <ul style="list-style-type: none"> ▪ In order to synchronize mobile phones, users have to be physically in the same location where the computer is. ▪ If there are multiple instances in a country it will be required to setup consolidation point. ▪ Personal data stored on multiple standalone computers. ▪ Limited availability of Go.Data to when laptop is running. ▪ Increased security risks through loss or damage of the standalone computer. |

4- Go.Data terms of use and software license agreement

Please read these Terms of Use and Software License Agreement (the “**Agreement**”) carefully before installing the Go.Data Software (the “**Software**”).

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11.4. Paragraph headings in this Agreement are for reference only.

11.5. Any matter relating to the interpretation or application of this Agreement which is not covered by its terms shall be resolved by reference to Swiss law. Any dispute relating to the interpretation or application of this Agreement shall, unless amicably settled, be subject to conciliation. In the event of failure of the latter, the dispute shall be settled by arbitration. The arbitration shall be conducted in accordance with the modalities to be agreed upon by the parties or, in the absence of agreement, in accordance with the UNCITRAL Arbitration Rules. The parties shall accept the arbitral award as final.

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