

# Surveillance protocol for SARS-CoV-2 infection among health workers

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## 1 Background

Coronavirus disease 2019 (COVID-19) was first detected in Wuhan city, China in December 2019. On 30 January 2020, the Director-General of WHO declared that the outbreak constituted a Public Health Emergency of International Concern. On 11 March 2020, after evaluating its seriousness and spread, the Director-General announced that the outbreak was to be considered as a pandemic that could still be controlled. According to current evidence, the causative SARS-CoV-2 virus is primarily transmitted between people through respiratory droplets and contact routes. Transmission of the virus can therefore occur via direct contact with infected people, via indirect contact with surfaces in the immediate environment or via objects used on an infected person (for example, a stethoscope or thermometer). Airborne transmission may also be possible in specific circumstances and settings in which procedures or support treatments that generate aerosols are performed. Asymptomatic and pre-symptomatic individuals may be able to transmit infection.

People who come into contact with a COVID-19 patient, and/or who care for COVID-19 patients, are most at risk of infection. This inevitably places health workers at high risk. Health workers play a critical role, not only in the clinical management of patients but also in ensuring that adequate infection and prevention control (IPC) measures are implemented in health care facilities. Assessing the potential risk factors for SARS-CoV-2 infection among health workers is essential for characterizing virus transmission patterns, preventing future infections of health workers and preventing health-care-associated infection with SARS-CoV-2.

This surveillance protocol is based upon the use of a questionnaire (Appendix A) that can be implemented in facilities where cases of COVID-19 have been reported among health workers. It is based on the review and adaptation carried out by WHO and the Istituto Superiore di Sanità of the document: *Health workers exposure risk assessment and management in the context of COVID- 19 virus – Interim guidance 4 March 2020*, available at: [https://apps.who.int/iris/bitstream/handle/10665/331340/WHO-2019-nCov-HCW\\_risk\\_assessment-2020.1-eng.pdf](https://apps.who.int/iris/bitstream/handle/10665/331340/WHO-2019-nCov-HCW_risk_assessment-2020.1-eng.pdf).

Each country may need to tailor selected aspects of this protocol to align with their public health, testing and clinical systems related to health workers, according to capacity, availability of resources and cultural appropriateness. However, by using the standardized protocol provided below, surveillance data on COVID-19 among health workers and their epidemiological exposure can be systematically collected and rapidly shared in a format that can be easily aggregated, tabulated and analysed across settings locally, nationally and globally. This will then allow for the timely investigation of COVID-19 among health workers and their related exposure, thus informing public health responses and policy decisions. Such information is particularly important in the context of a novel respiratory pathogen such as SARS-CoV-2.

## 2 Aim of the surveillance protocol in health workers

The purpose of this protocol is to describe the epidemiology of COVID-19 among health workers, including their exposure characteristics and risk factors, as part of case investigation. The questionnaire should be used for surveillance and epidemiological purposes only and should not be used, for example, to identify health worker breaches in adherence to personal protective equipment (PPE) procedures or to expose health workers to the risk of legal action.

The results of such targeted surveillance will also support identification of the most appropriate IPC measures to be strengthened at facility and country level to better protect health workers. Furthermore, based on the findings of this surveillance, the international scientific community will obtain vital evidence to inform the updating of IPC and management guidance for the prevention of COVID-19 among health workers.

### 3 Role of WHO

WHO headquarters will provide technical support and coordination, and will host a secured database platform (Go.Data) for data collection that will be made available to countries. WHO will access the country data only if permission is granted by individual countries and will analyse data in aggregate form, if agreed. Countries will be able to access and analyse only their own data. Such targeted surveillance can also be implemented independently in countries and regions by using the current protocol along with existing national or regional data-collection systems.

### 4 Surveillance method

#### 4.1 Design

It is proposed that national, regional and local health authorities undertake COVID-19 surveillance among health workers in conjunction with their ongoing COVID-19 surveillance efforts. Health authorities should decide how best to integrate such targeted surveillance into existing mechanisms for the surveillance of COVID-19 and/or other diseases among the general population.

The surveillance method will be based on the six-part questionnaire provided in Appendix A administered in survey format. It includes a number of essential questions that should always be answered and additional questions that are also important but not essential to be answered, in particular in case of time or resource constraints. The questionnaire can be administered directly to the health worker (on paper or electronically), during a phone interview or in person. If done in person, the interviewer should take all of the IPC measures recommended for contact with COVID-19 patients. All health workers interviewed should be willing and physically able to respond to the questionnaire.

#### 4.2 Target population

Health workers who test positive for SARS-CoV-2 regardless of their symptoms are the main target population. The criteria for inclusion are all staff involved in the provision of care to a COVID-19 patient or working in a health care facility caring for COVID-19 patients. This will include personnel present in the patient's room and personnel who may not have provided direct patient care but who could have come into contact with a patient's biological fluid/respiratory secretions, or with potentially contaminated objects or environmental surfaces. The term "health worker" includes allied health workers and auxiliary health workers such as cleaning and laundry personnel, x-ray physicians and technicians, clerks, phlebotomists, respiratory therapists, nutritionists, social workers, physical therapists, laboratory personnel, cleaners, admission/reception clerks, patient transporters, catering staff and so on).

This protocol and its associated questionnaire should be adapted to the local context (for example, to ensure that the definition of "health worker" reflects local definitions) and to testing strategies (for example, administered to all health workers at the moment of testing where the routine testing of health workers is enforced). However, it would be highly advisable to maintain the essential questions (which are clearly marked in the questionnaire) to enable comparison across different settings.

Some countries may decide to retrospectively administer the questionnaire to all infected health workers, regardless of the time of infection. To avoid recall bias, it is advisable to administer the questionnaire only to health workers who tested positive in the previous 7 days, given that they will be asked to remember the events of the 14 days prior to being tested.

Investigators should also consider the risk of response bias regarding PPE use or close contact; this bias could be reduced by administering the questionnaire at the time of testing prior to the result becoming known.

### 4.3 Data collection and analysis

Each participating authority should identify a contact person for data collection. If requested by the participating authority, WHO will provide dedicated access to the Go.Data web platform to submit data and access related technical support. If shared with WHO, data should be inserted in pseudonymized form (alphanumeric identification code) into the Go.Data platform.

All health workers identified by the surveillance process will need to complete the questionnaire provided in Appendix A. This questionnaire covers: (1) information on the interviewer; (2) demographic information on the interviewee, and on potential exposure not related to the health facility; (3) information on the health care facility and on the health worker's basic knowledge of IPC measures and PPE use; (4) activities carried out during interaction with a COVID-19 patient; (5) adherence to IPC measures and on the availability and use of PPE; and (6) information on accidental exposure to biological material. To ensure the collection of at least the minimum required amount of information, questions considered to be essential are marked with an asterisk in the questionnaire. It is advisable to collect at least this minimum dataset at facility or ward level.

Data can be analysed in aggregate form to describe both structural indicators (for example, availability and access to PPE and to IPC components at the facility level) and procedural indicators (for example, knowledge and adherence to PPE) among infected health workers. Moreover, aggregate data can be analysed to determine the number of health workers found to be positive for SARS-CoV-2, ideally over the total number of health workers caring for COVID-19 patients or based on the total number of health workers tested, at the facility and/or ward level.

### 4.4 Suggested data-collection tool

Countries and institutions implementing this targeted surveillance protocol should adopt data-collection tools according to their needs and practice. Upon request, WHO will provide a Go.Data data-implementation template of the questionnaire shown in Appendix A. If the country or institution so requires, WHO will also offer access to a secured server to host the Go.Data collection tool. WHO will then provide technical support and coordination of data collection via the Go.Data platform. If data is shared with WHO, a data-sharing agreement will be signed by both parties.

The web questionnaire on the Go.Data platform consists mainly of closed-ended questions related to demographic information, exposure risk situations and IPC measures.

Go.Data is an electronic data-collection tool that has been designed to be used by WHO, the Global Outbreak Alert and Response Network (GOARN), Member States and partners to support and facilitate outbreak investigations. The tool includes functionality for case and contact field data collection, contact follow-up and visualization of chains of transmission. The tool comprises a web application and an optional mobile app, and is intended for use by any outbreak responders, including WHO staff, and staff from ministries of health and partner institutions.

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

- it is open source and free for use with no licensing costs;
- it offers different types of operation (server or stand-alone) on different platforms (Windows, Linux, Mac);
- it allows for data collection from cases and contacts, including laboratory data;
- it is not built for a specific disease or specific country, and is highly configurable, with configurable reference, outbreak and location data;
- one Go.Data installation can be used to collect data for many outbreaks;
- it provides multilingual support, with the possibility of adding and managing additional languages through the user interface;

- it allows for granular user roles and permissions, including the possibility of providing user access at outbreak level;
- outbreak templates are included for easier creation of outbreak data-collection forms;
- it generates a contact follow-up list and visualizes chains of transmission;
- users with appropriate rights can configure the case-investigation form, contact follow-up form and laboratory data-collection form; and
- it has an optional mobile app (Android and iOS) focused on case and contact data collection, contact tracing and follow-up.

Several options are available for Go.Data hosting in countries (see Appendix B).

For further information contact: [godata@who.int](mailto:godata@who.int) or visit <https://www.who.int/godata>

## 5 Ethical considerations

Ethical requirements will vary by country. It should be noted that this targeted surveillance data collection is considered to be part of public health surveillance in the context of COVID-19 (emergency response) and may not require ethical approval from an institutional review board.

The purpose of the surveillance questionnaire must be explained to all health workers included in the targeted surveillance activity, and informed consent from the interviewee might be required. Depending on the local context, each participant should be informed that participation in surveillance is voluntary and that they are free to withdraw, without justification, at any time without consequences and without affecting their professional responsibilities.

Participant confidentiality must be maintained throughout, especially in the case of health workers exposed to SARS-CoV-2. An identification number should be assigned to all participants by the surveillance team. The identification numbers assigned to individuals will be kept confidential and managed by the surveillance team and the country authority (Ministry of Health or equivalent) and will not be disclosed elsewhere.

If data are shared by the implementing organization with WHO or any agency or institution providing support for data analysis, it is the responsibility of the institution collecting the data to share pseudonymized data only (based on the use of an identification number and deletion of any personally identifiable information).

If groups implementing the surveillance opt to use open source Go.Data as a tool to run this targeted surveillance, then several options are available for Go.Data hosting in countries. Detailed information on this is presented in Appendix B of this document. The group implementing the surveillance will need to consider the best approach given the setting. If the Go.Data server is to be based at WHO, then 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 B for the terms of use of Go.Data.

## Appendix A: Surveillance questionnaire for SARS-CoV-2 infection among health workers

Questions marked with an \* should be considered as essential

1. Interviewer information and contextual information (to be filled in by interviewer; some questions might require information from the health care facility administrator)	
A. Interviewer name and last name	
B. Interview date (dd/mm/yyyy)	___/___/_____
C. Interviewer phone number/email	
*D. Test date (dd/mm/yyyy)	___/___/_____
*E. Reason for test	<input type="checkbox"/> Onset of symptoms <input type="checkbox"/> Face-to-face contact (within 1 metre) with a confirmed COVID-19 case <input type="checkbox"/> Routine test <input type="checkbox"/> Other, specify:
*F. To date, how many health workers have been tested in the same facility?	
*G. Test result  <i>[If not yet known, complete when result is available]</i>	<input type="checkbox"/> Positive <input type="checkbox"/> Negative
*H. Are there COVID-19 patients in the health care facility?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown Number of patients (approximate number if exact number not known):
*I. Are there areas dedicated to COVID-19 cases in the health care facility?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
*J. Are there health workers dedicated only to the care of COVID-19 patients?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
*K. If yes, how many health workers are dedicated to the care of COVID-19 patients in the same facility?	Number of health workers: <input type="checkbox"/> Unknown

2. Health worker information	
A. Family name	
B. First name	
C. Date of birth (dd/mm/yyyy)	___/___/_____
D. Sex	<input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Prefer not to answer
E. City	
*F. Country	
G. Contact details (email and/or phone number)	
*H. Type of health personnel  <i>[Adapt to local context or review according to international terminology]</i>	<input type="checkbox"/> Medical doctor <input type="checkbox"/> Physician assistant <input type="checkbox"/> Registered nurse (or equivalent) <input type="checkbox"/> Assistant nurse, nurse technician (or equivalent) <input type="checkbox"/> Radiology/x-ray technician

	<input type="checkbox"/> Phlebotomist <input type="checkbox"/> Ophthalmologist <input type="checkbox"/> Physical therapist <input type="checkbox"/> Respiratory therapist <input type="checkbox"/> Nutritionist/dietician <input type="checkbox"/> Midwife <input type="checkbox"/> Pharmacist <input type="checkbox"/> Pharmacy technician or dispenser <input type="checkbox"/> Laboratory personnel <input type="checkbox"/> Admission/reception clerk <input type="checkbox"/> Patient transporter <input type="checkbox"/> Catering staff <input type="checkbox"/> Cleaner <input type="checkbox"/> Other [ <i>specify</i> ]:
<p>*I. Health care facility unit type in which the health worker works</p> <p>[<i>Adapt to local context</i>]</p>	<p>[<i>Tick all that apply</i>]</p> <input type="checkbox"/> Outpatient <input type="checkbox"/> Emergency <input type="checkbox"/> Medical unit <input type="checkbox"/> Intensive care unit <input type="checkbox"/> Cleaning services <input type="checkbox"/> Laboratory <input type="checkbox"/> Pharmacy <input type="checkbox"/> Other [ <i>specify</i> ]:
<p>J. Date of communication of the test result (dd/mm/yyyy)</p> <p>[<i>If not yet known, complete when result is available</i>]</p>	<p>___/___/___</p>
<p>*K. In the 14 days prior to the onset of your symptomatology and/or day of the test, you have been <b>during your work</b> in close contact with:</p>	<input type="checkbox"/> Confirmed COVID-19 case <input type="checkbox"/> Health worker with confirmed COVID-19 <input type="checkbox"/> Neither of the above <input type="checkbox"/> Unknown
<p>*L. In the 14 days prior to the onset of your symptomatology and/or day of the test, you have been in close contact with:</p>	<input type="checkbox"/> Confirmed COVID-19 case or symptomatic person to whom you were providing care outside of your primary working context (e.g. while providing medical assistance to acquaintances) <input type="checkbox"/> Confirmed COVID-19 case or symptomatic person at home <input type="checkbox"/> Confirmed COVID-19 case or symptomatic person outside your working and domestic environments (e.g. means of transport, supermarket) <input type="checkbox"/> None of the above <input type="checkbox"/> Unknown

3. Health worker and health care facility information	
<p>A. Date of health worker first exposure to confirmed COVID-19 patient (dd/mm/yyyy)</p>	<p>___/___/___</p> <input type="checkbox"/> Not known
<p>B. Name of health care facility where the COVID-19 patient received care:</p>	



*C. Type of health care setting where the health worker was exposed to a COVID-19 patient	<input type="checkbox"/> Hospital <input type="checkbox"/> Outpatient clinic <input type="checkbox"/> Primary health centre <input type="checkbox"/> Home care for mild cases <input type="checkbox"/> Other [ <i>specify</i> ]:
D. City	
*E. Country	
F. Number of health workers in the facility	
G. Number of health worker tested for COVID-19 in the facility in the same period	
*H. Are you part of the staff dedicated to the care of COVID-19 patients?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
*I. Have you attended training courses on infection prevention and control (IPC) programmes?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
*J. When did you attend the most recent IPC training course in the health care facility in which you work?	<input type="checkbox"/> Date (dd/mm/yyyy): ___/___/_____ <input type="checkbox"/> I don't remember/I'm not sure <input type="checkbox"/> I don't know what IPC is
*K. How much training time on IPC (standard precautions, additional precautions) did you receive in the health care facility in which you work?	<input type="checkbox"/> < 2 hours <input type="checkbox"/> > 2 hours <input type="checkbox"/> I don't know what IPC is
*L. Have you participated in training courses on the use of personal protective equipment (PPE)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
*M. Was the PPE training carried out remotely or were practical sessions on standard precautions/additional precautions carried out?	<input type="checkbox"/> Only remote/theoretical <input type="checkbox"/> Just practical <input type="checkbox"/> Both <input type="checkbox"/> I don't know what standard/additional precautions are
*N. Do you know the 5 recommended moments for hand hygiene in health care?	<input type="checkbox"/> I don't know them <input type="checkbox"/> I know them and practise them for each patient <input type="checkbox"/> I know them and practise them when I can <input type="checkbox"/> I know them, but I don't have time to practise them
*O. Is alcohol-based hand rub available at the point of care (in the ward, near the patient's bed)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Sometimes <input type="checkbox"/> I don't know
*P. Is appropriate personal protective equipment (PPE) continuously available for care to COVID-19 patients	<input type="checkbox"/> Yes <input type="checkbox"/> Yes, but not all equipment (click on all applicable items) <ul style="list-style-type: none"> <li><input type="checkbox"/> Medical mask always available</li> <li><input type="checkbox"/> Respirator (N95 or FFP2 or FFP3 standard, or equivalent) always available</li> <li><input type="checkbox"/> Disposable gown always available</li> <li><input type="checkbox"/> Gloves always available</li> <li><input type="checkbox"/> Eye protection (goggles or face shield) always available</li> </ul> <input type="checkbox"/> I don't know

4. Health worker activities performed on confirmed COVID-19 patient	
*A. Did you provide direct care to a confirmed COVID-19 patient?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
*B. Did you have close contact (within 1 metre) with a confirmed COVID-19 patient in a health care facility?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
- If yes, what was the longest period of close contact with the COVID-19 case?	<input type="checkbox"/> < 2 minutes <input type="checkbox"/> 2–5 minutes <input type="checkbox"/> 5–15 minutes <input type="checkbox"/> > 15 minutes <input type="checkbox"/> Unknown
*C. During the health care interaction with the COVID-19 patient, did you wear PPE?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
<p>If yes, for each item of PPE below, indicate how often you used it as follows:</p> <ul style="list-style-type: none"> <li>• “Always, as recommended” should be considered as wearing the PPE when indicated more than 95% of the time.</li> <li>• “Most of the time” should be considered as 50% of the time or more, but not 95–100%</li> <li>• “Occasionally” should be considered as 20% to less than 50% of the time.</li> <li>• “Rarely” should be considered as less than 20%.</li> </ul>	
1. Single gloves	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
2. Medical mask	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
3. Respirator (e.g. N95, FFP2 or equivalent)	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
4. Face shield or goggles/protective glasses	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
5. Disposable gown	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
D. During the health care interaction with the COVID-19 patient did you remove and replace your PPE according to protocol (e.g. when a medical mask became wet, disposed of the wet PPE in the waste bin, performed hand hygiene, etc.)?	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
E. During the health care interaction with the COVID-19 patient did you perform hand hygiene before and after touching the patient?	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
<b>[Note: this is irrespective of wearing gloves]</b>	
F. During the health care interaction with the COVID-19 patient did you perform hand hygiene before and	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time

after any clean or aseptic procedure was performed (e.g. inserting peripheral vascular catheter, urinary catheter, intubation, etc.)?	<input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
G. During the health care interaction with the COVID-19 patient did you perform hand hygiene after exposure to body fluid?	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
H. During the health care interaction with the COVID-19 patient did you perform hand hygiene after touching the patient’s surroundings (e.g. bed, door handle, etc.)?  <b>[Note: this is irrespective of wearing gloves]</b>	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
I. During the health care interaction with the COVID-19 patient were high-touch surfaces decontaminated frequently (at least three times daily)?	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
J. Did you have direct contact with the environment in which the confirmed COVID-19 patient was cared for (e.g. bed, linen, medical equipment, bathroom, etc.)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
*K. Were you involved in health care interaction(s) (paid or unpaid) in another health care facility during the above period?	<input type="checkbox"/> Other health care facility (public or private) <input type="checkbox"/> Ambulance <input type="checkbox"/> Home care <input type="checkbox"/> No other health care facility

<b>5. Adherence to IPC measures when performing aerosol-generating procedures; e.g. tracheal intubation, nebulizer treatment, open airway suctioning, collection of sputum, tracheostomy, bronchoscopy, cardiopulmonary resuscitation, etc.)</b>	
*A. During aerosol-generating procedures on a COVID-19 patient did you wear PPE?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
If yes, answer the following questions (if not, go to section 6):	
B. What type of aerosol-generating procedure was carried out?	<input type="checkbox"/> Tracheal intubation <input type="checkbox"/> Non-invasive ventilation <input type="checkbox"/> Manual ventilation before intubation <input type="checkbox"/> Tracheostomy <input type="checkbox"/> Bronchoscopy <input type="checkbox"/> Cardiopulmonary resuscitation <input type="checkbox"/> Other [ <i>specify</i> ]:
C. During the health care interaction with a COVID-19 patient did you wear PPE?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
If yes, for each item of PPE below, indicate how often you used it as follows: <ul style="list-style-type: none"> <li>• “Always, as recommended” should be considered as wearing the PPE when indicated more than 95% of the time.</li> <li>• “Most of the time” should be considered as 50% of the time or more, but not 95–100%</li> <li>• “Occasionally” should be considered as 20% to less than 50% of the time.</li> <li>• “Rarely” should be considered as less than 20%.</li> </ul>	
1. Single gloves	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely

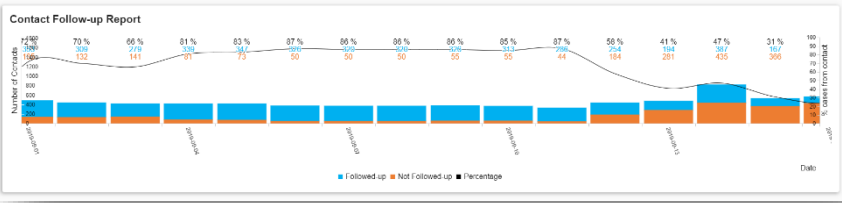
2. N95 mask (or equivalent respirator)	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
3. Face shield or goggles/protective glasses	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
4. Disposable gown	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
5. Waterproof apron	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
D. During aerosol-generating procedures on the COVID-19 patient did you remove and replace your PPE according to protocol (e.g. if the respirator became wet, disposed of the wet PPE in the waste bin, performed hand hygiene, etc.)?	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
E. During aerosol-generating procedures on the COVID-19 patient did you perform hand hygiene before and after touching the patient?  <b>[Note: this is irrespective of wearing gloves]</b>	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
F. During aerosol-generating procedures on the COVID-19 patient did you perform hand hygiene before and after any clean or aseptic procedure was performed (e.g. inserting peripheral vascular catheter, urinary catheter, intubation, etc.)?	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
G. During aerosol-generating procedures on the COVID-19 patient did you perform hand hygiene after touching the patient's surroundings (e.g. bed, door handle, etc.)?  <b>[Note: this is irrespective of wearing gloves]</b>	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
H. During aerosol-generating procedures on the COVID-19 patient were high-touch surfaces decontaminated frequently (at least three times daily)?	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely

6. Accidental exposure to biological material	
<p>*A. During the health care interaction with a COVID-19 patient were you accidentally exposed to biological fluid/respiratory secretions?</p> <p><b>[See below for examples]</b></p>	<p><input type="checkbox"/> Yes      <input type="checkbox"/> No</p>
<p>If yes, which type of accident?</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Splash of biological fluid/respiratory secretions in the mucous membrane of the eyes</li> <li><input type="checkbox"/> Splash of biological fluid/respiratory secretions in the mucous membrane of the mouth/nose</li> <li><input type="checkbox"/> Splash of biological fluid/respiratory secretions on non-intact skin</li> <li><input type="checkbox"/> Puncture/sharp accident with any material contaminated with biological fluid/respiratory secretions</li> </ul>



Name	Area	Date of last contact	Date of the onset of the disease	Outcome
RE_2019_2583	REC02 - KAMBALE KISA	2019-09-21	2019-09-11	Not followed up
RE_2019_2584	REC03 - KAMBALE KALI	2019-09-24	2019-09-14	Not followed up
RE_2019_2585	REC07 - KAMBALE KALI	2019-09-24	2019-09-14	Not followed up
RE_2019_2586	REC03 - KAMBALE KISA	2019-09-21	2019-09-11	Not followed up
RE_2019_2587	REC04 - KAMBALE KISA	2019-09-23	2019-09-13	Not followed up
RE_2019_2588	REC02 - KAMBALE KISA	2019-09-22	2019-09-12	Not followed up
RE_2019_2589	REC04 - KAMBALE KISA	2019-09-23	2019-09-13	Not followed up
RE_2019_2590	REC04 - KAMBALE KISA	2019-09-23	2019-09-13	Not followed up
RE_2019_2591	REC02 - KAMBALE KISA	2019-09-24	2019-09-14	Not followed up
RE_2019_2592	REC02 - KAMBALE KISA	2019-09-22	2019-09-12	Not followed up
RE_2019_2593	REC04 - KAMBALE KISA	2019-09-23	2019-09-13	Not followed up
RE_2019_2594	REC01 - KAMBALE KISA	2019-09-21	2019-09-11	Not followed up
RE_2019_2595	REC04 - KAMBALE KISA	2019-09-19	2019-09-09	Not followed up
RE_2019_2596	REC01 - KAMBALE KISA	2019-09-24	2019-09-14	Not followed up
RE_2019_2597	REC04 - KAMBALE KISA	2019-09-23	2019-09-13	Not followed up
RE_2019_2598	REC04 - KAMBALE KISA	2019-09-23	2019-09-13	Not followed up
RE_2019_2599	REC02 - KAMBALE KISA	2019-09-22	2019-09-12	Not followed up
RE_2019_2600	REC02 - KAMBALE KISA	2019-09-22	2019-09-12	Not followed up

**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 the form of lists, graphs and operational dashboards. Contact tracing coordinators can review the workload of each contact tracing team.

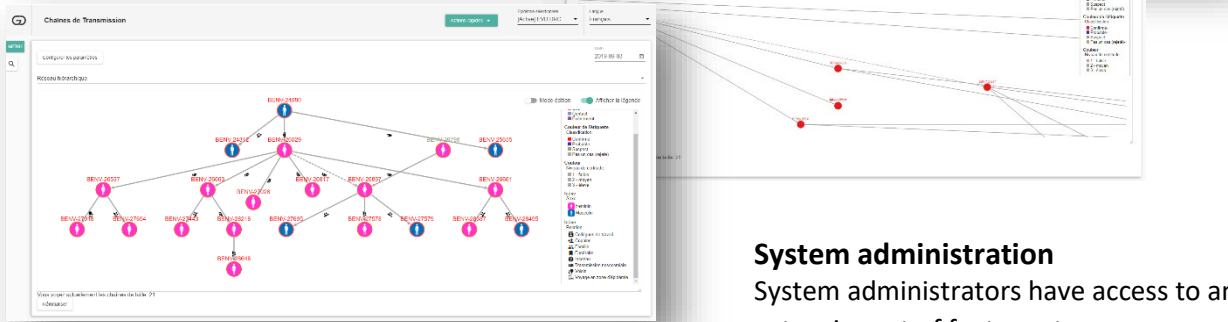


**visualization features**

Go.Data can be used to generate chains of transmission in the form of:

- networks, simple and hierarchical;
- timelines, using date of onset, date of reporting or date of last contact; and
- bar charts combining the date of onset, hospitalization data, laboratory testing data and outcome.

**Extensive**









**System administration**  
System administrators have access to an 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, and can create and restore backups and manage the settings of one Go.Data instance.

Please visit [www.who.int/godata](http://www.who.int/godata) or contact [godata@who.int](mailto:godata@who.int) for more information.

Options for Go.Data hosting in countries

<p>OPTION #1 CENTRALLY HOSTED SERVER</p>	<p>OPTION #2 COUNTRY HOSTED SERVER</p>	<p>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 own country).</p> <p> <ul style="list-style-type: none"> <li>▪ Maintenance is easier.</li> <li>▪ Installation of any updates is done centrally.</li> <li>▪ Synchronization of the mobile phones can be done from anywhere.</li> </ul> <hr/> <p> <ul style="list-style-type: none"> <li>▪ Countries may be reluctant to host detailed information that is required for contact tracing (e.g. names, addresses) on an external server.</li> <li>▪ May require agreements between centralized server owner and Member States for this arrangement.</li> <li>▪ Centralized server to manage user accounts and user access.</li> </ul> </p> </p>	<p>Separate Go.Data installation for each country. Countries install Go.Data on their infrastructure.</p> <p> <ul style="list-style-type: none"> <li>▪ Country has complete ownership and control of the server.</li> <li>▪ Synchronization of the mobile phones can be done from anywhere.</li> </ul> <hr/> <p> <ul style="list-style-type: none"> <li>▪ Likely to take more time to implement, as this option requires internal governmental approvals and provisioning infrastructure.</li> <li>▪ Requires dedicated staff/team to manage the server.</li> <li>▪ Not all countries may be in a position to host a Go.Data server.</li> </ul> </p> </p>	<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> <p> <ul style="list-style-type: none"> <li>▪ Fast to implement.</li> <li>▪ User has complete ownership and control of the computer and data.</li> </ul> <hr/> <p> <ul style="list-style-type: none"> <li>▪ In order to synchronize mobile phones, users have to be physically in the same location where the computer is.</li> <li>▪ If there are multiple instances in a country it will be required to setup consolidation point.</li> <li>▪ Personal data stored on multiple standalone computers.</li> <li>▪ Limited availability of Go.Data to when laptop is running.</li> <li>▪ Increased security risks through loss or damage of the standalone computer.</li> </ul> </p> </p>



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