

Risk assessment and management of exposure of health care workers in the context of COVID-19

Interim guidance

19 March 2020



Current evidence suggests that the virus that causes COVID-19 is transmitted between people through close contact and droplets. People most at risk of acquiring the disease are those who are in contact with or care for patients with COVID-19. This inevitably places health care workers (HCWs) at high risk of infection. Protecting HCWs is of paramount importance to WHO. Understanding how HCW exposure to COVID 19 virus translates into risk of infection is critical for informing infection prevention and control (IPC) recommendations. This data collection form and risk assessment tool can be used to identify IPC breaches and define policies that will mitigate HCW exposure and nosocomial infection.

This tool is for health care facilities with COVID 19 patients. The form should be completed for all HCWs who have been exposed to a patient with confirmed COVID-19. This tool aids in the risk assessment for HCWs after exposure and provides recommendations for their management.

The objectives are:

- To determine the risk categorization of each HCW after exposure to a COVID-19 patient (see below Part 1: COVID-19 virus exposure risk assessment form for HCWs);
- To inform the management of the exposed HCWs based on risk (see below Part 2: Management of health worker exposed to COVID-19 virus).

Facilities using these forms are encouraged to share deidentified data with WHO to guidance related to IPC. Data shared with WHO should not include any personally identifiable information (Questions 2A, 2B and 2G).

Part 1: COVID-19 virus exposure risk assessment form for HCWs

1. Interviewer information	
A. Interviewer name:	
B. Interview date (DD/MM/YYYY):	__/__/____
C. Interviewer phone number:	
D. Does the HCW have a history of staying in the same household or classroom environment with a confirmed COVID-19 patient?	<input type="checkbox"/> Yes <input type="checkbox"/> No
E. Does the HCW have history of traveling together in close proximity (within 1 meter) with a confirmed COVID-19 patient in any kind of conveyance?	<input type="checkbox"/> Yes <input type="checkbox"/> No

Yes, to questions 1 D – 1E is considered **community exposure to COVID-19**. HCWs should be managed as such. The management recommendations in Part 2: Management of health workers exposed to COVID-19 virus apply only to exposure in health care settings.

2. Health worker information	
A. Last name:	
B. First name:	
C. Age	
D. Sex:	<input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Prefer not to answer
E. City:	
F. Country:	
G. Contact details (phone number):	
H. Type of health care personnel:	<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/dietitian <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 (specify):
I. Type of health care facility:	Tick all that apply: <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, specify:
3. Health worker interactions with COVID-19 patient information	
A. Date of health worker first exposure to confirmed COVID-19 patient:	Date (DD/MM/YYYY): ___/___/_____ <input type="checkbox"/> Not known
B. Name of health care facility where patient received care:	
C. Type of health care setting:	<input type="checkbox"/> Hospital <input type="checkbox"/> Outpatient clinic <input type="checkbox"/> Primary health centre <input type="checkbox"/> Home care for patients with mild symptoms <input type="checkbox"/> Other (specify):
D. City:	
E. Country:	
F. Multiple COVID-19 patients in health care facility	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, number of patients (approximate if exact number not known):

4. HCW activities performed on COVID-19 patient in health care facility	
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 face-to-face 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
C. Were you present when any aerosol-generating procedures were performed on the patient? See below for examples	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
- If yes, what type of procedure?	<input type="checkbox"/> Tracheal intubation <input type="checkbox"/> Nebulizer treatment <input type="checkbox"/> Open airway suctioning <input type="checkbox"/> Collection of sputum <input type="checkbox"/> Tracheotomy <input type="checkbox"/> Bronchoscopy <input type="checkbox"/> Cardiopulmonary resuscitation (CPR) <input type="checkbox"/> Other (specify):
D. Did you have direct contact with the environment where 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
E. Were you involved in health care interaction(s) (paid or unpaid) in another health care facility during the period above?	<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

If the health worker responds ‘Yes’ to any of the Questions 4A – 4D the health worker should be considered as being **exposed to COVID-19 virus**.

5. Adherence to IPC procedures during health care interactions	
For the following questions, please quantify the frequency with which you wore PPE, as recommended: ‘Always, as recommended’ means more than 95% of the time; ‘Most of the time’ means 50% or more but not 100%; ‘occasionally’ means 20% to under 50% and ‘Rarely’ means less than 20%.	
A. During a health care interaction with a COVID-19 patient, did you wear personal protective equipment (PPE)?	<input type="checkbox"/> Yes <input type="checkbox"/> No
- If yes, for each item of PPE below, indicate how often you used it:	
- 1. Single-use 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. 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
B. During a health care interaction with the COVID-19 patient, did you remove and replace your PPE according to protocol (e.g. when medical	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally

mask became wet, disposed the wet PPE in the waste bin, performed hand hygiene, etc.)?	<input type="checkbox"/> Rarely
C. During a health care interaction with the COVID-19 patient, did you perform hand hygiene before and after touching the COVID-19 patient (whether or not you were wearing gloves)?	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
D. During a health care interaction with the COVID-19 patient, did you perform hand hygiene before and after any clean or aseptic procedure was performed (e.g. while inserting a 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
E. During a 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
F. During a health care interaction with the COVID-19 patient, did you perform hand hygiene after touching the patient's surroundings (bed, door handle, etc.), regardless of whether you were wearing gloves?	<input type="checkbox"/> Always, as recommended <input type="checkbox"/> Most of the time <input type="checkbox"/> Occasionally <input type="checkbox"/> Rarely
G. During a 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

6. Adherence to IPC measures when performing aerosol-generating procedures (e.g. tracheal intubation, nebulizer treatment, open airway suctioning, collection of sputum, tracheotomy, bronchoscopy, cardiopulmonary resuscitation (CPR), etc.).	
For the following questions, please quantify the frequency with which you wore PPE, as recommended: 'Always, as recommended' means more than 95% of the time; 'Most of the time' means 50% or more but not 100%; 'occasionally' means 20% to under 50% and 'Rarely' means less than 20%.	
A. During aerosol-generating procedures on a COVID-19 patient, did you wear personal protective equipment (PPE)?	<input type="checkbox"/> Yes <input type="checkbox"/> No
- If yes, for each item of PPE below, indicate how often you used it:	
- 1. Single-use 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

B. During aerosol-generating procedures on the COVID-19 patient, did you remove and replace your PPE according to protocol (e.g. when medical mask became wet, disposed 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
C. During aerosol-generating procedures on the COVID-19 patient, did you perform hand hygiene before and after touching the COVID-19 patient, regardless of whether you were wearing gloves?	<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 perform hand hygiene before and after any clean or aseptic procedure was performed?	<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 after touching the patient's surroundings (bed, door handle, etc), regardless of whether you were wearing gloves?	<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, 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

7. Accidents with biological material	
A. During a health care interaction with a COVID-19 patient, did you have any type of accident with body fluid/respiratory secretions? See below for examples	<input type="checkbox"/> Yes <input type="checkbox"/> No
- If yes, which type of accident?	<input type="checkbox"/> Splash of biological fluid/respiratory secretions in the mucous membrane of eyes <input type="checkbox"/> Splash of biological fluid/respiratory secretions in the mucous membrane of mouth/nose <input type="checkbox"/> Splash of biological fluid/respiratory secretions on non-intact skin <input type="checkbox"/> Puncture/sharp accident with any material contaminated with biological fluid/respiratory secretions

Risk categorization of health workers exposed to COVID-19 virus

1. High risk for COVID-19 virus infection

The HCW did not respond 'Always, as recommended' to Questions:

- 5A1 – 5G, 6A – 6F
- Or responded 'Yes' to 7A.

2. Low risk for COVID-19 virus infection

All other answers

Part 1: Management of HCWs exposed to COVID-19 virus

The management of HCWs exposed to COVID-19 varies according to the risk categorization, as above.

Recommendations for HCWs at high risk for infection:

- Stop all health care interactions with patients for a period of 14 days after the last day of exposure to a confirmed COVID-19 patient;
- Be tested for COVID-19;
- Quarantine for 14 days in a designated setting.¹

Health care facilities should:

- Provide psychosocial support to HCW during quarantine, or throughout the duration of illness if HCW is confirmed to have COVID-19;
- Provide compensation for the period of quarantine and for the duration of illness (if not on a monthly salary) or contract extension for duration of quarantine/illness;
- Provide review of IPC training for the health care facility staff, including HCWs at high risk for infection after 14-day quarantine period.

Recommendations for health workers at low risk for COVID-19:

- Self-monitor temperature and respiratory symptoms daily for 14 days after the last day of exposure to a COVID-19 patient. HCWs should call the health care facility if they develop any symptoms suggestive of COVID-19;
- Reinforce contact and droplet precautions when caring for all patients with acute respiratory illness² and standard precautions for all patients;
- Reinforce airborne precautions for aerosol-generating procedures on all suspected and confirmed COVID-19 patients;
- Reinforce the rational, correct, and consistent use of personal protective equipment;³
- Apply WHO's "My 5 Moments for Hand Hygiene" before touching a patient, before any clean or aseptic procedure, after exposure to body fluid, after touching a patient, and after touching a patient's surroundings;⁴
- Practice respiratory etiquette at all times.

References

1. WHO Considerations for quarantine of individuals in the context of containment for coronavirus disease (COVID-19): Interim guidance 28 February 2020 ([https://www.who.int/publications-detail/considerations-for-quarantine-of-individuals-in-the-context-of-containment-for-coronavirus-disease-\(covid-19\)](https://www.who.int/publications-detail/considerations-for-quarantine-of-individuals-in-the-context-of-containment-for-coronavirus-disease-(covid-19))).
2. WHO Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected: Interim guidance 25 January 2020 ([https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-\(ncov\)-infection-is-suspected-20200125](https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-(ncov)-infection-is-suspected-20200125)).
3. WHO Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected: Interim guidance 25 January 2020 ([https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-\(ncov\)-infection-is-suspected-20200125](https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-(ncov)-infection-is-suspected-20200125)).
4. WHO guidelines on hand hygiene in health care: first global patient safety challenge – clean care is safer care. Geneva: World Health Organization; 2009 (<https://apps.who.int/iris/handle/10665/44102>).

WHO continues to monitor the situation closely for any changes that may affect this interim guidance. Should any factors change, WHO will issue a further update. Otherwise, this interim guidance document will expire 2 years after the date of publication.

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WHO reference number: [WHO/2019-nCoV/HCW_risk_assessment/2020.2](https://www.who.int/publications-detail/WHO/2019-nCoV/HCW_risk_assessment/2020.2)