

Exploration of COVID-19 health-care worker cases

Implications for action

21 August 2020



1. Introduction

1.1 Background

Health-care workers (HCWs) are at high risk of exposure to the virus causing coronavirus disease 2019 (COVID-19) from infected patients. If they become ill or have to isolate or quarantine, this can lead to a shortage of HCWs and affect the health-care system's ability to respond to the pandemic and deliver other essential health services. Infected HCWs also could become vectors of transmission within facilities.

HCWs are likely exposed to COVID-19 both in health-care facilities and in their communities (Fig. 1). For example, in the Republic of Korea, among 241 HCW cases, some were treating non-COVID patients, had a source within the hospital not related to patient care or had a source in their communities.¹ Similar reports from Singapore and Malaysia indicate that care of COVID-19 patients may not be the primary avenue of infection for HCWs.^{2,3}

1.2 Purpose

To guide responses in order to prevent further HCW cases by identifying the avenues of HCW infection. Infection while treating COVID-19 patients may indicate a breach in infection prevention and control (IPC) protocol, while infection from within a health-care facility but not from treating patients may imply transmission in common areas (e.g. cafeteria, shuttle bus). Infection in residential communities may indicate household or community transmission.

1.3 Target audience

National and subnational public health authorities and health-care facility managers.

2. Key actions for Member States

Alert HCW and facility networks to the multiple avenues of HCW exposure and establish a HCW surveillance and response system as a core component of COVID-19 surveillance and response.

3. HCW infection surveillance and response system

The system should include processes and infrastructure to detect HCW cases, investigate avenues of infections, and guide appropriate responses at the facility and public health levels.

3.1 Detection

The system should be able to communicate to health-care networks, including HCWs and facility managers, regarding the multiple avenues of HCW infection. It should also ensure that details regarding health care-related occupations are collected and included in case reporting and data entry. HCWs include all people involved in health-care delivery such as medical and nursing staff, hospital administrative and clerical staff, and community health workers.

Once a targeted surveillance system for HCWs is in place, ensure that the information is transmitted to the local and national surveillance systems in a timely manner.

The system should systematically compile all data on HCW cases at the appropriate facility or public health administrative levels. Surveillance data should be reviewed daily for any HCW cases or clusters (at least two cases from the same facility or from the same residential area with symptom onset dates within two weeks).

3.2 Investigation

The health-care facility, in close coordination with public health authorities, should investigate all possible avenues of infection when a HCW case or cluster is detected. Develop or adapt a HCW case investigation form covering all potential avenues of infection from existing guidance documents, such as on HCW exposure risk assessment⁴ and outbreak investigation protocols for Middle East respiratory syndrome coronavirus (MERS-CoV)⁵ and influenza.⁶

HCW cases or cluster detected in one health-care facility: Conduct a risk assessment for HCWs exposed to COVID-19 patients. Inquire about contact with confirmed COVID-19 cases among household members, other close contacts and other HCWs in the facility.

- *If the HCWs worked in the same area and were likely exposed to the same patients, nosocomial transmission from unknown COVID-19 patients may be suspected, and the investigation of the exposure risk should follow the HCW exposure risk assessment protocol.*
- *If the HCWs were not from the same area of assignment, consider transmission in common areas within the facility with high social interactions (e.g. cafeteria, lobby) or in modes of transportation to and from the facility.*
- *If the HCWs were not exposed to COVID-19 patients in their line of work, conduct an outbreak investigation to identify other potential avenues of infection.*

HCW cluster detected from different health-care facilities: Follow the same processes as above.

- *If the health-care facilities have been ruled out as the source of transmission and there is no known exposure to COVID-19 from household members or close contacts, follow outbreak investigation protocols to identify other potential links in the community.*
- *In areas where HCWs are prioritized for testing, trends in HCW cases can serve as an early indicator of underlying community transmission. Consider the possibility of large-scale community transmission occurring if cases are being reported from different communities.*

3.3 Response

Investigation findings (Table 1) could be used as a guide for response strategies. If multiple potential avenues of infection are identified, preventive responses can be directed for each, as appropriate, or directed to all.

Examples of response strategies for each avenue of infection are shown in Table 1. These strategies are not universally applicable; they depend on the situation. Certain prevention strategies, however, such as hand hygiene, should be generally implemented, regardless of suspected transmission avenue.

Fig. 1: Avenues of COVID-19 infection among health-care workers

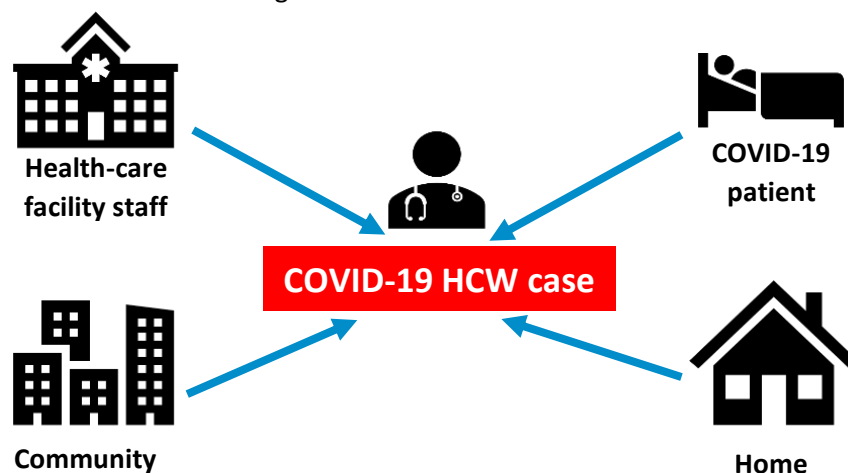


Table 1. Different avenues of infection of HCWs and examples of possible response strategies for each

Avenue of infection	Implication	Example strategies to prevent HCW infections through this avenue
HCWs infected after treating patients with known COVID-19 at the time of treatment	Potential breach in IPC protocols due to improper use, insufficient availability, etc.	<ol style="list-style-type: none"> 1. Reinforce IPC measures and supplies for HCWs exposed to COVID-19 patients following guidance.^{7,8} 2. Provide refresher training on IPC measures for all HCWs exposed to COVID-19 patients. 3. Follow risk assessment and management guidance for all HCWs working in the same area⁹.
HCWs from the same area of assignment, infected while treating non-COVID-19 patients	Insufficient screening for COVID-19 or non-adherence to IPC measures for non-COVID-19 services	<ol style="list-style-type: none"> 1. Strengthen general IPC measures the care of non-COVID-19 patients, or treat all cases as suspected cases, while considering rationalization strategies for personal protective equipment.^{7,8} 2. Reassess screening and triage strategies for patients coming to the facility.¹⁰ 3. Follow risk assessment and management guidance for all HCWs working in the same area and potentially exposed to the same patients.⁹
HCWs infected from contact in common areas within a facility	Hospital transmission in common areas (e.g., cafeteria, transportation shuttle)	<ol style="list-style-type: none"> 1. Conduct disinfection of the specific areas of potential transmission within the facility. Close the facility or areas within the facility, if necessary. 2. Conduct systematic screening and management of symptomatic HCWs following guidance.⁹ Establish mechanisms to ensure paid sick leave and backfilling if HCWs experience symptoms or require isolation. 3. Improve general physical distancing measures in common areas within the facility.
HCWs from different health-care facilities and common residential communities	Localized community transmission	<ol style="list-style-type: none"> 1. Advise HCWs to observe physical distancing and good respiratory and hand hygiene at all times in their home and community. Follow guidelines on mask wearing.⁸ 2. Provide alternative accommodations or transportation modes if physical distancing is not feasible, considering the individual circumstances of the HCWs.
HCWs from different health-care facilities and different residential communities	Large-scale community transmission	<ol style="list-style-type: none"> 1. Consider week-based shifts with accommodation for HCW, considering the circumstances of the HCWs. 2. Regularly test of HCWs if capacity allows.

References

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3. Arumugam T, Khairulrijjal R. 325 medical workers test positive for Covid-19, 23 April. *New Straits Times*; 2020 (<https://www.nst.com.my/news/nation/2020/04/586972/325-medical-workers-test-positive-covid-19>).
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