

# Contact tracing and quarantine in the context of the Omicron SARS-CoV-2 variant

Interim guidance  
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## Key points

- This document provides updated guidance for contact tracing and quarantine of contacts in the context of high levels of circulation of SARS-CoV-2, and in particular the variant of concern Omicron, which is currently circulating at high levels and overwhelming health systems around the world.
- WHO continues to recommend using a risk-based, pragmatic approach for countries to consider when introducing any changes to existing contact tracing and quarantine measures, taking into consideration the continuity of the critical functions in society and the public health risks and benefits related to any change.
- Any interruption of contact tracing or shortening of the duration of quarantine will increase the risk of onward transmission and must be weighed against healthcare capacity, population immunity and socioeconomic priorities.
- Prioritization for identification and follow-up of contacts should continue to be given to contacts at highest risk of getting infected or spreading the virus, those at highest risk of developing severe disease and health and care workers.
- SARS-CoV-2 testing [PCR or antigen based rapid diagnostic tests (Ag-RDT)] can be used as a measure to shorten quarantine, for example to seven days, if the contact shows no symptoms and presents a negative test.
- Where testing to shorten quarantine is not possible, quarantine may be ended after day 10 without testing if the contact presents no symptoms.

## What is new

This document is an update of the [Contact tracing](#)<sup>1</sup> and [Quarantine](#)<sup>2</sup> interim guidance documents published in February 2021 and June 2021 respectively in the context of high levels of circulation of SARS-CoV-2, and in particular VOC Omicron, which is overwhelming health systems around the world. This document should be read in conjunction with the WHO interim guidance: [Critical preparedness, readiness and response actions for COVID-19](#)<sup>3</sup> and WHO interim guidance: [Recommendations for national SARS-CoV-2 testing strategies and diagnostic capacities](#).<sup>4</sup>

On 26 November 2021, [WHO designated the variant B.1.1.529 a variant of concern \(VOC\)](#) and named it “Omicron”.<sup>5</sup> Based on currently available evidence, the overall risk related to Omicron remains very high. Omicron has a significant growth advantage over Delta, leading to rapid spread in the community, with higher incidence than previously seen in this pandemic. Despite a lower risk of severe disease and death following infection compared to Delta, the very high levels of transmission have resulted nevertheless in significant increases in hospitalization, continue to pose overwhelming demands on health care systems in most countries, and may lead to significant morbidity and mortality, particularly in vulnerable populations. Given the high transmissibility of the Omicron variant, WHO is issuing an update of its current [Contact tracing](#) and [Quarantine](#) interim guidance.<sup>1,2</sup>

WHO is providing public health authorities with this guidance on prioritizing contacts of COVID-19 cases in high caseload situations to minimize extensive and high-risk transmissions. Another consideration is the possible shortening of quarantine for contacts who test negative, do not develop symptoms and have recently received the primary series or a booster dose of COVID-19 vaccine.

## Introduction

This document provides updated guidance on considerations to modify existing WHO [contact tracing](#) and [quarantine](#) interim recommendations in the context of the COVID-19 pandemic.<sup>1,2</sup> The considerations outlined in this interim guidance take into account the intensity of SARS-CoV-2 spread in countries, local epidemiology and burden and capacities of their health systems and other essential services.

As with previous periods of intense SARS-CoV-2 circulation, with the rapid spread of Omicron cases worldwide, contact tracing capacities of many countries have been rapidly overstretched. The result has been prioritization of contact tracing and quarantine efforts to target contacts in specific settings or contexts to minimize the risk of transmission of the virus variant. Given this situation, countries may consider a pragmatic approach, considering that contact tracing and quarantine requirements in the community may lead to significant disruptions of essential services, including health services.

There is limited available scientific evidence on key epidemiologic parameters for the Omicron and how they impact implementation of contact tracing and quarantine measures.<sup>6</sup> WHO therefore continues to recommend adopting a risk-based, pragmatic approach for countries to consider when introducing any changes to existing measures, taking into account the continuity of the critical functions in society and public health risks and benefits in relation to the pandemic.<sup>1,2</sup>

The risk-based approach should consider the local level of transmission, the severity of disease of circulating variants, the levels of infection and vaccine-derived immunity, the capacity to track and trace contacts, access to rapid and accurate SARS-CoV-2 testing, the capacity to assess the risk of exposures in health and care workers and other essential services personnel and the health care systems' capacities. Any interruption of contact tracing or shortening of the duration of quarantine will increase the risk of onward transmission and must be weighed against healthcare capacity, population immunity against Omicron and socioeconomic priorities.

The primary target audience of this interim guidance is the national public health authorities globally. However, other users such as non-government organizations, research institutions and members of the public may also find the guidance useful.

## Current knowledge and uncertainties

Available evidence on Omicron does not change our current understanding of transmission of SARS-CoV-2.<sup>7</sup> However, when compared with the Delta variants, based on preliminary evidence, it appears to have a shorter serial interval (2.2-3.5 days)<sup>8-10</sup> and a shorter incubation period (2.9-3.2 days).<sup>9,11,12</sup> Its secondary attack rate is higher<sup>13,14</sup>, and it has demonstrated significant immune escape properties.<sup>11,14-16</sup> Consequently, it is spreading more readily than previous variants. Disease severity appears to be intrinsically lower than for previous variants<sup>12,17,18</sup>, further compounded by more preserved vaccine effectiveness against severe disease than against infection. However, the large number of cases that have occurred in a short time frame has nevertheless resulted in large numbers of hospitalized and critically ill patients. Current evidence suggests that vaccine protection against infection and onward transmission for Omicron infection is lower than for previous variants<sup>19-21</sup>, although vaccines (especially after booster dose) remain effective against hospitalization and severe disease.<sup>6,22,23</sup> However, data on vaccine effectiveness are limited, and only four vaccines have been evaluated to date.<sup>6</sup> Over time other more evaluations expected to occur and be published.

## Prioritizing contacts to follow up

WHO recognizes that in situations where SARS-CoV-2 incidence is very high, it may not be possible to identify, monitor and quarantine all contacts.<sup>3</sup> In these situations it may not be practical or even possible for large numbers of contacts, particularly health and care workers and other essential services personnel, be quarantined. These measures would lead to a depletion of the workforce and disruption of health care delivery and societal functioning.

In situations where contact tracing capacity is overstretched, the aim may need to focus on reducing morbidity and mortality rather than attempting to break all chains of transmission. In these situations, prioritization for contact tracing should be given to:

- contacts at highest risk of getting infected and those such as health and care workers who are at highest risk of spreading the virus to vulnerable people, particularly those working in nursing homes, long-term care facilities and hospitals; and other frontline essential workers
- contacts at highest risk for development of severe disease, such as people with comorbidities, the immunosuppressed, the elderly and unvaccinated or under-vaccinated adults with no known prior SARS-CoV-2 infection.

Contacts need to be identified, notified of their exposure and consulted on the potential risks. When it is impractical to trace individual contacts, priority should be given to contact tracing in settings where the above high-priority contacts are more likely to be found (e.g. long-term care settings). If notification of individual high-risk contacts by health authorities is not possible, all cases, when aware of their status, should be encouraged to privately notify their known contacts of their possible exposure, and public messaging by health authorities should provide guidance on self-quarantine.

After the initial notification, where active follow-up is possible, it should be prioritized for contacts at high risk for developing severe disease. Given the amount of work required for follow-up, remote technologies such as phone calls or automated messaging with relevant information about testing and access to care in case of need should be put in place for known high-risk contacts.

As per WHO guidance, if a contact develops symptoms, that individual should be considered as being suspected of having COVID-19, and a referral pathway to testing should be available and recommended.<sup>4</sup> In resource-constrained settings and/or when testing capacity is limited and thus testing of all symptomatic contacts is not possible, highest-risk contacts should be [prioritized](#), as noted above.

### Quarantine in a high COVID-19 incidence area

When COVID-19 incidence is high, e.g. situational levels 3 and 4,<sup>24</sup> changes to the recommended duration of the quarantine period (current [WHO recommendation is 14 days<sup>1</sup>](#) for all contacts) may be considered. Risks and benefits should be considered if any changes are being contemplated. Modelling and observational studies based on data for previous SARS-CoV-2 VOCs have suggested that a SARS-CoV-2 diagnostic test can be added as criterion for exiting quarantine earlier than 14 days while minimizing the possibility of onward spread of COVID-19.<sup>25-28</sup> In these studies, the models have shown that quarantine may be shortened, for example to seven days, if the contact has no symptoms and presents a negative PCR or Ag-RDT, performed in an accredited laboratory or by a qualified professional, at the end of the shortened quarantine period. Based on these studies, countries may consider shortening the quarantine period to 7 days with the addition of a PCR or Ag-RDT administered by qualified personnel. WHO does not at this time recommend self-administered tests to shorten quarantine.

Where testing to shorten quarantine is not possible, the absence of symptom development after a certain number of days may be used as a proxy. For example, quarantine could be ended after day 10 without testing if the contact presents no symptoms. The post-quarantine transmission risk for 10 days of quarantine (based on pre-Omicron data) is estimated to be around 1%, with an upper limit of about 10%.<sup>25</sup>

If the quarantine period is shortened, WHO recommends individuals to continue to wear a well-fitted medical mask at all times, during all indoor and outdoor activities where interaction with other people may occur, along with other infection prevention and control (IPC) measures including physical distancing, appropriate ventilation of indoor spaces, and hand hygiene, for the remainder of the total 14 days. These individuals should also continue to carefully self-monitor for symptoms, and seek testing if symptoms arise.

### Vaccinated contacts

Current data on vaccine effectiveness (VE) against Omicron are available from observational studies, most of which are not yet peer reviewed, for four COVID-19 vaccines, and from five countries (Canada, Denmark, South Africa, the United Kingdom of Great Britain and Northern Ireland and the United States of America.<sup>15,16,19,21,23,29-37</sup> As of 7 February 2022, results from studies evaluating VE consistently show limited VE against Omicron infection or symptomatic disease after the primary series, and a higher VE against infection following boosting.<sup>6,38</sup> The vaccine-induced neutralizing antibodies immune response has been shown to wane over time, although cellular immunity appears

more long-lasting; currently no clear threshold of any biological indicator is available to use as a correlate of protection.<sup>6,39</sup>

Within 90 days after the primary series or booster vaccination, there is evidence that vaccination can reduce the likelihood of infection with Omicron.<sup>14,30,35,40</sup> Thus, where active follow-up of individual contacts is possible, recently vaccinated contacts can be considered as lower priority for contact tracing or undergo shorter quarantine as outlined above, where resources are limited and/or health systems are overstretched. Beyond approximately 90 days, due to waning protection against infection after the primary series and limited follow-up data for booster doses, vaccinated contacts should be considered the same as unvaccinated contacts.

## Reinfection

Individuals previously infected with pre-Omicron variants are at risk for infection with Omicron, although there appears to be reduced risk as compared to those without prior infection.<sup>41</sup> Although two consecutive infections with Omicron have not been reported so far, it is expected that reinfection with Omicron would be possible after a period of immune waning or, for example, if there are differences in the immune escape potential of Omicron sub-lineages (e.g. BA.1 versus BA.2).<sup>42</sup> Thus, contacts who have been infected in a context where Omicron is the dominant variant (i.e. whose infection was likely caused by Omicron) could quarantine for a shorter period, as they could be considered a lower priority in settings where contact tracing and quarantine capacities are stretched. There is as yet no evidence on the specific duration of infection-derived immunity against Omicron, but based on prior variants, immunity is expected to persist at least 90 days<sup>43</sup>, so this conservative estimate could be applied. Individuals whose prior confirmed SARS-CoV-2 infection (regardless of the variant) is more distant should be treated the same as contacts with no known history of infection.

## Considerations for health and care workers

WHO continues to advise that health workers who have had high risk of SARS-CoV-2 exposure should refrain from work and follow quarantine policies to avoid risking exposure to patients, colleagues, their families and contacts in the community.<sup>43-45</sup> However, in the context of widespread community transmission of SARS-CoV-2 (any variant), the incidence of health worker infections may rise from higher amounts of exposure in the workplace and the community, resulting in reduced capacity to respond to case surges and maintain essential health services.<sup>3</sup> Consequently, the considerations and strategies proposed above regarding quarantine in a high caseload environment are particularly relevant for health workers.

Based on these considerations, quarantine may be shortened to seven days for an exposed health worker who is asymptomatic and tests negative (either by RT-PCR or Ag-RDT) on day 7 following exposure, or to 10 days following exposure without testing. In addition, vaccination status and previous COVID-19 could be considered when setting policies for modifying quarantine criteria for health workers. In particular, when the health system is under extreme pressure because of a high caseload and when many health workers are off work due to exposures or infections, health workers who have had high-risk exposure but have received a vaccination booster or recovered from SARS-CoV-2 infection within 90 days<sup>30,35,40</sup> may continue to work with no quarantine if they are asymptomatic. Ideally, frequent testing with an Ag-RDT should be performed up to day 14 after exposure.<sup>44</sup>

Health workers with shortened quarantine or who are continuing to work following high-risk exposure must continue to follow all recommended infection IPC precautions, including continuously wearing either a well-fitted medical mask or a respirator at all times<sup>46</sup>, self-monitoring for symptoms and getting tested, if possible. Ideally and if compatible with service delivery needs, these health workers should not provide care or have contacts with immunosuppressed patients or other high-risk patients (e.g. those with co-morbidities or who are elderly).

Regardless of the intensity of SARS-CoV-2 incidence, it is critical that national authorities and health facilities continue to strengthen IPC measures in all settings, including having an IPC programme or at least a dedicated and trained IPC focal point in place. Also crucial are engineering, environmental and administrative controls, standard and transmission based -precautions, screening and triage for early identification of cases and source control and COVID-19 surveillance and vaccination of health workers. The rapid spread of Omicron and high proportion of individuals who may be infected but are asymptomatic make these measures more important than ever.

## Process and methodology

This interim guidance was developed based on available evidence on the Omicron variant current at the time of development of this guidance. A small group of WHO experts with relevant background and expertise undertook a rapid review of evidence on the Omicron variant. The search for the rapid review was conducted on the [WHO COVID-19 Global literature database](#)<sup>47</sup>, which includes peer reviewed publications, pre-print articles and grey literature sources, complemented by manual searching of additional grey literature. All publications reporting studies with original data on Omicron transmission dynamics were included, and their data were extracted and compiled in a tabular format. The information was then grouped based on main transmission indicators and synthesized. After collection and synthesis of the evidence, the group undertook a series of consultations with internal and external technical experts including the members of the WHO Health Emergencies Programme (WHE) Contact Tracing and Quarantine Guidelines Development Group (CT-GDG) and the COVID-19 Infection Prevention and Control (IPC) Guidelines Development Group. Where evidence was scarce, or in situations where the evidence was unclear, WHO sought expert opinions of GDG members and senior WHO technical staff members. Any decisions based on evidence were reached through consensus among GDG members. In addition to the modelling and observational studies referenced, evidence emerging from the practice of countries that implemented shorter quarantine rules earlier were shared and discussed.

The proposed changes are justified from published and observed evidence, as well as the need for pragmatic risk-based decisions needed to address the burden put on societies and healthcare systems by the high number of Omicron cases.

## Plans for updating

This interim guidance is specific to the present global surge of cases due to the SARS-CoV-2 Omicron variant and is meant to be read in conjunction with the current WHO guidance on [contact tracing](#) and [quarantine](#). A consolidated contact tracing and quarantine guidance with updated evidence is currently under development, which, when ready, will replace both this as well as the current [contact tracing](#) and [quarantine](#) guidance documents. Furthermore, the update of the WHO guidance on [Prevention, identification and management of health worker infection in the context of COVID-19](#) is also under way and will provide more details on evidence and guidance on this topic, and when ready, will replace the current document.

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## Declaration of interests

Declarations of interests were collected from all external contributors and assessed for conflicts of interest. There were no significant conflicts of interest declared by the external contributions to this guidance.

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