World Health Organization
REGIONAL OFFICE FOR Europe

WHO/Europe Interim Advice on Contact Tracing, Quarantine and Isolation considering rapid community-wide transmission of COVID-19 associated with Omicron spread

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The emergence of new SARS-CoV-2 Variants of Concern (VOC) such as Delta and now Omicron have brought additional challenges to member states in the prevention and control of COVID-19. The significantly higher transmissibility of Delta and particularly now Omicron compared to earlier VOCs has resulted in rapidly increasing case and contact numbers – both in the general population and amongst health and other critical workers. Omicron has reduced risk of hospitalization compared to Delta based on early studies from several countries including Denmark and the UK, with a decoupling between case reports and hospitalization in places of high levels of population immunity. However, the large number of people being infected translates into significant number of patients requiring hospital admission and health care workers who are infected, putting strain on healthcare systems. Older people and those with underlying conditions, of any age continue to be at greater risk for developing severe disease, particularly if unvaccinated. This situation is presenting affected countries with huge challenges to their public health systems to effectively track, trace and manage, particularly when rapid surges of infections occur within very short periods of time. There are concerns that the impact of Omicron will be even greater in countries in the Eastern part of the region where vaccine uptake in vulnerable groups is suboptimal.

The purpose of this short note is to provide considerations as countries take steps to optimize the use of limited public health resources and ensure that critical health and non-health services are maintained during periods of uncontrolled community-wide transmission of COVID-19 in Member States.

Overall considerations

- There is currently no clear shift in the scientific evidence to justify a change to current WHO guidance for the isolation of confirmed COVID-19 cases or quarantine period for contacts of cases, which aims to prevent the onward spread of COVID-19. The options provided in this document are consistent with these recommendations.
- Although there are very limited studies suggesting possible shorter incubation periods and/or serial intervals for Omicron, evidence is still accruing and there may be initial biases in data in the earliest phases of variant spread. At this stage, it is safer to assume there is no significant difference.
- As available Omicron-specific data is still limited, it is best for countries to make risk-based decisions using their own data if available, capacities, and risk tolerance to set policies for quarantine or isolation.
- Any decisions to shorten recommended periods must be taken contextually, when considered essential to ensure essential service continuity and increase compliance, and with careful consideration of the potential public health risks and benefits.
- Recommendations from health authorities need to be applicable to all circulating SARS-CoV-2 variants, recognizing that determining the variant at the patient level in a suitable timely fashion is usually not possible.
- Constructive engagement with communities is essential for quarantine and isolation measures to be accepted. WHO recommends that policy makers strengthen policies for adherence to individual preventative measures to reduce transmission of COVID-19 including mask use, vaccination, ventilation, physical distance, respiratory etiquette, hand hygiene, as well as

isolation and quarantine guidance. Policy makers should encourage the public to comply with all individual preventive measures irrespective of vaccination status or history of prior infection.

Main aspects for consideration related to isolation of cases

Based on the current available evidence, WHO criteria for discharging patients from isolation, without requiring testing are:

- For symptomatic cases: 10 days after symptom onset, plus at least 3 additional days without symptoms (including without fever and without respiratory symptoms)
- For asymptomatic cases: 10 days after positive test for SARS-CoV-2.

These criteria have been established by WHO to support release of admitted cases from isolation, and additional transmission-based precautions (note 2) without retesting, because of the potential challenges of PCR testing during the discharge process outside of a hospital setting. Consideration should be given to the following:

- ***Screening, triage, and clinical assessment:*** *Patients with mild and moderate illness may not require emergency interventions or hospitalization; however, isolation is necessary for all suspect or confirmed cases to* prevent onwards transmission*. The decision to monitor a suspect case in a health facility, community facility or home should be made on a case-by-case basis. This decision will depend on the clinical presentation, requirement for supportive care, potential risk factors for severe disease, and conditions at home, including the presence of vulnerable persons in the household.*
- **Improving timeliness:** *Isolation of cases in a health facility, community facility or home should begin as rapidly as possible, as most transmission occurs in the 2 days before (in the pre-symptomatic phase) and after symptom onset (note 1).*
- ***Individual preventive measures****: individuals in isolation should wear a medical mask (if tolerable) combined with other measures including frequent hand hygiene, respiratory etiquette, ventilation and physical distancing*

Duration of isolation period*: Shortening the recommended isolation period during rapid community-wide transmission of COVID-1919, based on resolution of acute symptoms and in combination with a negative SARS-CoV-2 test(s) result, may be considered when there is extreme pressure on the essential workforce (note 3). Rapid antigen test or PCR administered by a health professional (e.g., at day 7) may be considered. Furthermore, shortening the isolation period warrants stringent use of medical masks as well as other preventive and control measures (such as physical distance, adequate ventilation, respiratory etiquette and hand hygiene) to prevent infection from possible extended virus shedding – particularly for those working in high-risk settings. In light of the rapid spread of the Omicron, WHO recommends health workers providing care to patients with suspected or confirmed COVID-19 to wear a respirator (FFP2, FFP3, NIOSH-approved N95, or equivalent or higher-level certified respirator) or a medical mask along with other personal protective equipment (a gown, gloves and eye protection) before entering a room where there is a patient with suspected or confirmed COVID-19.Decisions to shorten the isolation period must be taken contextually, with careful consideration of the residual risks and benefits to try to enable maintenance of essential services as well as individual's health and recuperation status. There may be situations where the residual risk is considered unacceptable, for example, in individuals at high risk of transmitting the virus to vulnerable groups or those in high-risk situations or environments. Measures should not be adapted based solely on vaccination status due to lack of data showing a shorter period of infectiousness among people*

with omicron vaccine breakthrough infections. The abovementioned considerations are intended for (shorter) periods of intense community transmission where full-scale contact tracing and quarantine is not feasible because of limited resources and because of the burden on health services and other essential societal functions caused by a substantial number of people being contacts of COVID-19 cases and thus requiring quarantine. Similarly, large numbers of COVID-19 cases and the requirement to isolate for 10 +3 days is likely to cause a strain on essential functions in society wherefore, at times of high transmission levels, considerations may be given to amending existing national recommendations. When transmission levels are declining, it is recommended to resume full-scale contact tracing operations and quarantining of contacts to rapidly break chains of transmission and prevent new surges of COVID-19 cases.

Supportive evidence and WHO guidance

1. WHO recognizes that the proportion of transmission from infections in the period up to 2 days before symptom onset is very high, which will limit the efficacy of symptom-based interventions. Furthermore, a large fraction of transmission is likely to occur on the same day and the 2-3 days after onset of symptoms[1]. This highlights the importance of ensuring fast and robust track and trace systems to rapidly identify and isolate cases, but also that individuals need to self-isolate as soon as they notice symptoms to reduce their risk of onward transmission.
2. The WHO criteria for discharging patients from isolation (without requiring retesting) apply to all COVID-19 cases regardless of isolation location or disease severity[2]. WHO's initial recommendation of two negative PCR tests at least 24 hours apart was revised in June 2020 following consultations with global expert networks and Member States. With widespread community transmission, these initial criteria for SARS-CoV-2 posed several challenges:
    a. Long periods of isolation for individuals with prolonged viral RNA detection after resolution of symptoms, affecting individual well-being, society, and access to healthcare.
    b. Insufficient testing capacity to comply with initial discharge criteria in many parts of the world.
    c. Prolonged viral shedding around the limit of detection, having negative results followed by positive results, which unnecessarily challenges trust in the laboratory system.
3. Such decisions must be taken contextually, with careful consideration of the potential risks and benefits to try to enable maintenance of essential services. WHO is reviewing the evidence on a continuous basis and will update its clinical guidance on the basis of any changes to the infectious periods of COVID-19 disease caused by all circulating variants of SARS-CoV-2.

Main aspects for consideration related to contact tracing and quarantining of contacts:

WHO currently recommends quarantine of contacts of persons with confirmed and probable SARS-CoV-2 infection for a duration of 14 days from last contact ***to minimize risk of onward transmission*** *[3]. However, when transmission levels are extremely high, resources for contact tracing become constrained, and when comprehensive quarantining of contacts may negatively impact continuity of health services and other critical societal services, considerations may be given to the following:*

[1] Ferreti et al. The timing of COVID-19 transmission. https://www.medrxiv.org/content/10.1101/2020.09.04.20188516v1

[2] WHO Criteria for releasing COVID-19 patients from isolation https://www.who.int/news-room/commentaries/detail/criteria-for-releasing-covid-19-patients-from-isolation

[3] WHO Considerations for quarantine of contacts of COVID-19 cases *https://www.who.int/publications/i/item/WHO-2019-nCoV-IHR-Quarantine-2021.1*.

- ***Prioritization of contact tracing:*** *Very high local transmission may necessitate prioritization of contact tracing efforts by focusing on contacts at high risk of infection and/or contacts at high risk of severe outcome, i.e., household contacts, vulnerable contacts, and high-risk closed settings such as healthcare settings including hospitals and long-term care facilities.*

- ***Improving timeliness of contact identification****: As the majority of transmission is recognized to occur in the 2-3 days before and after onset of symptoms, public health authorities are encouraged to focus on reaching contacts as rapidly as possible (note 1).*

- ***Duration of quarantine****: Current WHO recommendations do not include a requirement of testing and a country can add testing in any setting where there is transmission with a quarantine period that is reduced. When transmission is high and when quarantining large numbers of contacts has an impact on essential societal functions, consideration may be given to shortening the quarantine period. Ideally this should be in combination with testing to end quarantine (e.g., if asymptomatic at day 10) together with use of masks along with other infection prevention and control measures. This approach would be further supported if the possible shorter incubation period of Delta and Omicron compared to earlier variants is confirmed (note 2). Such changes should be based on local assessment of risks and benefits (notes 3-5) but may result in the failure to interrupt a proportion of transmission chains, which may be particularly relevant for high-risk contacts and/or settings.*
- ***Individual preventive measures****: irrespective of vaccination status or history of prior infection, individuals should comply with mask wearing, hand hygiene and respiratory etiquette, physical distance and ventilation policies.*

Supportive evidence and WHO guidance

1. The majority of transmission (about 75%) occur in the window from 2 days before to two days after symptom onset[4]. Overall, the fraction of transmission from strictly pre-symptomatic infections is recognized to be high (41%; 95%CI 31–50%). Contact tracing should thus be implemented as rapidly as possible.
2. Multiple observations indicate that nearly all cases develop symptoms within 14 days of exposure, with a median incubation period of approximately 5.4 days (IQR 3-7) for the original circulating viruses. In meta-analyses of the distribution of incubation periods, the greatest variation between studies is in the right tail of the distribution. It was estimated that 95% of all infected people would eventually develop symptoms after a median of 11 to 14.6 days after exposure. It is possible for differences in length of the incubation period to be caused by viral mutations: the median incubation period may be closer to 4 (IQR 3-5) days for the Delta variant, whereas for Omicron it is 3 days (IQR: 3–4) based on early studies from Norway[5] and the USA[6]. It is recognized though that shorter incubation periods are more likely to be seen at an early stage of an epidemic, indicating caution when using such data to determine quarantine period.
3. Factors to be taken into account when undertaking such adjustments include: the local level of transmission; the dominant circulating variant; the available track and trace systems; access to rapid,

[4] Ferreti et al. The timing of COVID-19 transmission. https://www.medrxiv.org/content/10.1101/2020.09.04.20188516v1

[5] Brandal et al. Outbreak caused by the SARS-CoV-2 Omicron variant in Norway, November to December 2021 https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2021.26.50.2101147

[6] Jansen et al. Investigation of a SARS-CoV-2 B.1.1.529 (Omicron) Variant Cluster — Nebraska, November–December 2021https://www.cdc.gov/mmwr/volumes/70/wr/mm705152e3.htm

accurate testing; whether quarantine is for community or health care worker contacts; existence of mask policy and vaccination status of contacts.

4. WHO advises that any adjustment in the quarantine period of contacts from 14 days balances the public health risks and benefits against its social and economic impact. Prolonged absence from social and economic activities is challenging for most people and is likely to affect individual adherence to quarantine recommendations. Significantly shortening the quarantine period will result in a larger proportion of contacts becoming infectious after leaving quarantine, but conversely may lead to greater compliance and result in a reduction of transmission. Testing throughout and/or at the end of a shortened quarantine will improve confidence that a contact leaving quarantine is not infected; but this relies on the availability and accuracy of such tests and rapid turnaround of the test result before the end of the quarantine period[7].
5. Health authorities may consider that contacts who had recent (within past 3-6 months) SARS-CoV-2 infection or who received full COVID-19 vaccination (including a booster dose) may be at lower risk of further infection. While initial data with earlier variants appears to support these assumptions, the lower risk of infection following full COVID-19 vaccination likely varies by COVID-19 vaccine and certainly by VOC. The Omicron VOC has a significant elevated risk of vaccine breakthrough. Given the paucity of data for all available COVID-19 vaccines, WHO recommends that countries adopt a risk-based approach for any policy decision to exempt contacts from quarantine – including the use of approaches such as daily testing and masking. Policy decisions should also consider the local epidemiological context (SARS-CoV-2 incidence and prevalence of SARS-CoV-2 VOCVOC), and the context of the exposure (risk assessment of exposure), as some settings like health-care facilities may pose a higher risk, leading to classification of health-care workers as high-risk contacts[8].
6. Proper mask fit and use is currently lacking by some members of the general public, especially after prolonged mask use. In settings where there is community or cluster transmission of SARS-CoV-2, policies should be developed, strengthened and implemented to encourage appropriate adherence to a comprehensive package of preventive measures to reduce transmission (ventilation, physical distance, hand hygiene, and respiratory etiquette) including in particular mask adherence by the general public.

Resources:

- WHO recommendations on mask use by health workers, in light of the Omicron variant of concern: WHO interim guidelines, 22 December 2021. World Health Organization. https://apps.who.int/iris/handle/10665/350925.
- COVID-19 infection prevention and control living guideline: mask use in community settings, 22 December 2021. World Health Organization. https://apps.who.int/iris/handle/10665/350927.
- Infection prevention and control (IPC) in health-care facilities in the event of a surge or resurgence in cases of COVID-19. World Health Organization. https://apps.who.int/iris/handle/10665/350647.
- Considerations for quarantine of contacts of COVID-19 cases: interim guidance, 25 June 2021. World Health Organization. https://apps.who.int/iris/handle/10665/342004.
- Contact tracing in the context of COVID-19, 1 February 2021. World Health Organization. https://www.who.int/publications/i/item/contact-tracing-in-the-context-of-covid-19
- Considerations for implementing and adjusting public health and social measures in the context of COVID-19, 14 June 2021. World Health Organization.

[7] Contact tracing in the context of COVID-19 (who.int)

[8] Considerations for implementing and adjusting public health and social measures in the context of COVID-19 (who.int)

https://www.who.int/publications/i/item/considerations-in-adjusting-public-health-and-social-measures-in-the-context-of-covid-19-interim-guidance