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FAQs for COVID-19 Isolation Precautions and Duration of Infectivity
June 2, 2020

This FAQ guidance describes what is currently known about the duration and pattern of infectivity of the SARS-CoV-2 virus that causes COVID-19 disease.

1. **What does the PCR test for SARS-CoV-2 measure?**

   The PCR test detects viral RNA, but it is not able to distinguish infectious virus (i.e., "live" viable virus that is capable of being transmitted person to person) from non-infectious ("dead" or nonviable) viral particles.

2. **How long after initial infection does the SARS-CoV-2 PCR test remain positive?**

   After initial infection, SARS-CoV-2 PCR can remain positive anywhere from days to many weeks (as long as 11 weeks or more).[1,2]

3. **If a person's SARS-CoV-2 PCR test is still positive weeks later, does that mean s/he is still infectious and can transmit virus to others?**

   Based on currently available data, COVID-19 patients are unlikely to be infectious weeks after symptom onset, despite persistently positive PCRs. Although SARS-CoV-2 RNA may be detected by PCR-based testing of nasopharyngeal samples for many weeks after initial infection, recent studies have shown that infectious virus has not been cultured from respiratory specimens after the first 9 days of symptoms/PCR positivity, suggesting that persistently positive PCRs do not indicate ongoing infectivity.[3,4]

4. **How long do people with COVID-19 remain infectious after developing symptoms?**

   At this time, live/viable virus has not been cultured from the respiratory tract of patients after the first 9 days after symptom onset, even in the setting of persistently positive PCRs.[3,4] Based on these data, Centers for Disease Control and Prevention and New York City Department of Health & Mental Hygiene now recommend keeping patients on isolation for at least 10 days after symptom onset (longer if fever and significant symptoms persist or if the patient is immunocompromised).[5,6]

5. **When are people with COVID-19 most infectious?**

   Data show that people with COVID-19 are most likely to transmit the virus to other individuals in the first few days after symptom onset. Viral burden of SARS-CoV-2 is highest around the time of symptom onset and declines significantly after day 5 of symptoms.[3,4,7,8] Moreover, studies of contact tracing suggest that most transmission

occurs either before symptom onset or in the first 5 days of symptom onset when the viral burden is highest.[9]

6. **Can asymptomatic individuals (people without symptoms of COVID-19 but with a positive SARS-CoV-2 PCR test) transmit the virus to others?**

   Asymptomatic or pre-symptomatic people who are PCR-positive can sometimes transmit SARS-CoV-2 to others, although less frequently than those with symptoms.[10] This is why it is important to use precautions routinely, including social distancing and universal masking.

7. **According to NYP policy, what is required for a hospitalized patient with COVID-19 to be removed from transmission-based (isolation) precautions?**

   While available data suggest that patients are no longer infectious after the first 10 days of symptoms, in the hospital setting we currently take a more conservative approach by requiring at least 2 negative PCR tests before removing a patient from isolation precautions. The reason we take this more conservative approach is that hospitalized patients are sicker and often require more extensive contact with healthcare personnel (HCP).

   Hence, according to NYP policy, a COVID-19 patient is eligible to be cleared from isolation precautions after at least 14 days have passed since the date of the first positive COVID-19 diagnostic test, the patient has been afebrile for at least 72 hours without the use of antipyretics, and there has been a marked improvement in symptoms (e.g., cough, shortness of breath). At that point, repeat nasopharyngeal (NP) swab specimens can be sent. Once 2 consecutive NP swabs collected ≥ 24 hours apart are negative by PCR, Infection Prevention & Control can be contacted to discuss discontinuation of isolation. Patients with a tracheostomy or endotracheal tube who have had 2 negative NP swabs, also require at least 1 lower respiratory tract specimen (i.e., tracheal aspirate). See hospital isolation guidelines for more details:
   https://exfonet.nyp.org/EPI/Covid19Documents/Discontinuing_Hospital_Isolation_COVID-19_Patients.pdf

8. **What does it mean when a patient with COVID-19 who has been cleared from isolation based on 2 negative PCRs and the other criteria (see above) has a subsequent positive SARS-CoV-2 PCR test ("re-positive")? Is the patient again infectious? Has the patient been re-infected?**

   Initially, there was concern that patients with these "re-positive" results (positive then negative then positive again) were either re-infected or had a reactivation of the SARS-CoV-2 virus. However, based on extensive data from South Korea, no

live/viable virus has been cultured from patients with "re-positive" PCRs, suggesting that people with "re-positive" results are not infectious. Furthermore, no secondary transmission has been reported from individuals who were exposed to these people at the time of "re-positive" results.[2] Therefore, it appears that these "re-positive" (positive to negative back to positive) PCRs likely represent fluctuating results due to low levels of viral RNA just above and below the threshold of detection, but do not suggest persistent or recurrent infectivity.

9. If a patient with COVID-19 is cleared from isolation, but subsequently tests positive again ("re-positive") as above, do they need to be re-isolated?

In the absence of new symptoms consistent with COVID-19, since current evidence does not support that these "re-positive" patients are infectious, a patient with COVID-19 who is initially cleared from isolation based on at least 2 negative PCRs and then subsequently tests positive again does NOT need to be re-isolated, nor do they need to be retested.

If a patient has developed new symptoms consistent with COVID-19, while it remains unlikely that the "re-positive" PCR represents infectious virus, it is reasonable to initially place the patient on contact/droplet precautions while evaluating alternative etiologies for the symptoms. Discuss with IP&C the need to keep the patient on isolation precautions.

10. Why is a negative SARS-CoV-2 PCR test not required to discontinue isolation at home or in ambulatory settings, including for healthcare personnel (HCP) with COVID-19?

Because current evidence does not support that patients are infectious beyond the first 10 days of symptom onset/diagnosis despite persistently positive PCRs, outside of the hospital setting, repeat negative PCRs are not required to remove an immunocompetent patient from isolation in the home or ambulatory settings. Patients in these settings should remain on isolation for a minimum of 10 days and be afebrile for at least 72 hours without antipyretics and have marked improvement in other symptoms (e.g., cough, shortness of breath). The same criteria are used by Workforce Health & Safety to return HCP who are SARS-CoV-2 positive back to work.

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11. According to NYP policy, what is required for an immunocompromised patient to be removed from isolation in the home, ambulatory setting, or hospital setting?

Patients with high-risk comorbidities (e.g., obesity, diabetes, chronic heart, lung, kidney or liver disease) or severely immunocompromising conditions could potentially shed live/viable virus for longer. Therefore, according to current NYP policy, a patient with COVID-19 with one of these conditions should be retested with repeat NP swabs prior to being cleared from isolation in the home or ambulatory setting (as well as in the hospitalized setting). If repeat testing is not obtained and there is no interim illness consistent with COVID-19, isolation precautions can be discontinued if at least 4 weeks have passed since the date of the first COVID-19 test. See home/ambulatory isolation guidelines for more details: https://exfonet.nyp.org/EPI/Covid19Documents/Discontinuing_Home_Ambulatory_Isolation_COVID-19.pdf

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