Hi Chris, Pete, Jean and everyone,

I think we may be trying to compare apples to oranges here.

Quarantine keeps someone who might have been exposed to COVID-19 away from others to prevent transmission (e.g. new admissions/readmissions). With persons with unknown COVID-**19 status**, you do not know about their exposure prior to admission and/or if they could be in their incubation period, which is why you place them in quarantine and use precautions. Based on existing literature, the incubation period (the time from exposure to development of symptoms) of SARS-CoV-2 ranges from 2–14 days. At this time, studies show that early testing during this time period may not be reliable. The Federal Drug Administration's Fact Sheet for Healthcare Providers says "A negative test result for this test means that SARS-CoV-2 RNA was not present in the specimen above the limit of detection. However, a negative result does not rule out COVID-19 and should not be used as the sole basis for treatment or patient management decisions. A negative result does not exclude the possibility of COVID-19". CDC's Test for Current Infection webpage says "If you test negative for COVID-19, you probably were not infected at the time your sample was collected. However, that does not mean you will not get sick. The test result only means that you did not have COVID-19 at the time of testing. You may test negative if the sample was collected early in your infection and test positive later during your illness. You could also be exposed to COVID-19 after the test and get infected then. This means you could still spread the virus."

In order to reduce the risk of new admissions/readmissions entering your facility from transmitting COVID-19 to others, residents should be placed in quarantine their first 14 days. We recommend the use of transmission-based precautions—including full PPE (with N95 respirator)—during this period so that you protect your staff and other residents if one of the new admissions/readmissions turns out to be COVID positive.

Isolation is used to *separate people infected with the virus* (those who are sick with COVID-19 and those with no symptoms) from people who are not infected. Transmission-based precautions are used during the isolation period to protect your staff and other residents. For **patients with confirmed COVID-19**, the test-based strategy or time-based strategy are used to determine when to <u>discontinue transmission-based precautions</u> (including removing patients from isolation). This is based on current understanding of how long confirmed positive cases are a risk for transmitting to others.

Here is a graphic that may help. Marika has modified it slightly to include testing points, and provided an explanation below.



Figure 1.18 Natural History of Disease Timeline

Source: Centers for Disease Control and Prevention. Principles of epidemiology, 2nd ed. Atlanta: U.S. Department of Health and Human Services;1992. https://www.cdc.gov/csels/dsepd/ss1978/lesson1/section9.html

Modifications in red from Marika Mohr to show impact of timing of test.

You cannot change the natural history of the disease, but you can adjust the timing of testing.

- If you test at the point of the first red arrow during the incubation period, and the test is negative, the patient may be below the threshold of viral detection and could still develop COVID-19. The negative test can provide false reassurance.
- If you test at the second point (3-8 days after symptoms develop), and the patient has a negative test, you should strongly consider other diagnoses; however if the patient continues to be symptomatic and no other cause is identified, you should consider retesting.
- If the patient is tested for COVID-19 after resolution of symptoms and has two negative tests, based on current research, you can be somewhat confident that they are unable to spread the disease, assuming at least temporary immunity is conferred from the illness.

To answer Jean's question, the CDC's quarantine and isolation recommendations are for all congregate settings, including nursing homes and assisted living facilities.