

SYNOPSIS

11/03/2020

Review of “Interim Guidelines for Detecting Cases of Reinfection by SARS-CoV-2”

Article citation: Pan American Health Organization / World Health Organization. Interim guidelines for detecting cases of reinfection by SARS-CoV-2 [Internet]. Washington, DC: Pan American Health Organization / World Health Organization; 2020 [cited 2020 Nov 03]. Available from: <https://www.paho.org/en/documents/interim-guidelines-detecting-cases-reinfection-sars-cov-2>

One-minute summary

- This Pan American Health Organization (PAHO) document proposes interim case definitions for detecting and documenting reinfection by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).
- **Suspected case** requires ruling out alternate etiologies and prolonged viral shedding. After initial infection, a suspected case requires a positive test result:
 - at least 45 days later for those with coronavirus disease 2019 (COVID-19) symptoms, or
 - at least 90 days later for those with or without COVID-19 symptoms.
- **Confirmed case** is a suspected case plus epidemiological and laboratory evidence:
 - Being symptom-free or cleared of viral shedding for a period or having a negative test result after initial infection, and
 - **Complete genomic sequencing of samples from both episodes** showing etiology of different viral lineages, or that the number of single nucleotide variations suggests different viral lineages.
- **Public health measures and clinical management remain unchanged** for the first and subsequent episodes of infection.
- PAHO encourages documentation of reinfection using the case definitions above to expand the evidence base of reinfection by the virus, thereby validating these definitions and informing measures for preventing, controlling and managing SARS-CoV-2 infections.

Additional information

- **Six cases of reinfection by SARS-CoV-2 have been documented worldwide as of October 19th, 2020** (Belgium 1, China [Hong Kong SAR] 1, Ecuador 1, India 2, United States 1):
 - 4 males, 2 females; median age: 30.5 years (range: 25–52).
 - All were immunocompetent, one patient had asthma.
 - Median time between first and second episodes: 101 days (range: 48–142).
 - Clinical presentation of the second episodes varied:
 - 3 cases were symptomatic for both episodes
 - 2 were asymptomatic for both episodes

- 1 was symptomatic in the first episode but asymptomatic in the second
- 1 was hospitalized during the re-infection episode
- Infections were confirmed by reverse transcription polymerase chain reaction of oropharyngeal swabs (for all first episodes and 3 second episodes); saliva samples and oropharyngeal swabs viral RNA-positive in both episodes for one case.
- Among the seasonal human coronaviruses, mild reinfections often occur with HCoV-229E, HCoV-NL63, HCoV-HKU1 and HCoV-OC43.

PHO reviewer's comments

- Currently, there is no widely accepted definition for SARS-CoV-2 reinfection, which requires laboratory support not readily available in many areas.
- The PAHO suspected reinfection definition has limitations as it is not possible to rule out persistent viral shedding in the absence of whole genome sequencing. Further evaluation of this definition is recommended.
- As noted by the [European Centre for Disease Prevention and Control](#),¹ epidemiological and clinical information alone are insufficient for confirming reinfection by SARS-CoV-2:
 - SARS-CoV-2 RNA has been detected in upper respiratory specimens for varying lengths of time (up to 104 days) after symptom onset.
 - Intermittent viral RNA-negative results have been reported when specimen virus concentration is low or near the detection limit of a test.
 - Viral RNA shedding is not equivalent to the presence of viable, infectious virus.
- Further understanding of the frequency of SARS-CoV-2 reinfection is needed to inform public health measures, including immunization strategies when vaccines become available.

Additional references

1. European Centre for Disease Prevention and Control. Reinfection with SARS-CoV: considerations for public health response [Internet]. Stockholm: European Centre for Disease Prevention and Control; 2020 [cited 2020 Nov 02]. Available from: <https://www.ecdc.europa.eu/sites/default/files/documents/Re-infection-and-viral-shedding-threat-assessment-brief.pdf>

Citation

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