

# Proposed Investigation/Reporting Thresholds and Outbreak Definitions for COVID-19 in Healthcare Settings

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## Background

In November 2020, the Council for Outbreak Response: Healthcare-Associated Infections and Antimicrobial-Resistant Pathogens (CORHA) and the Council of State and Territorial Epidemiologists (CSTE) issued investigation and reporting thresholds and outbreak definitions for COVID-19 in healthcare settings based on available scientific resources and expert opinion. Suggested thresholds are intended to expedite facilities' investigation of COVID-19 cases and reporting to public health authorities, thus ensuring early detection of possible outbreaks and timely intervention to prevent the virus' spread. These thresholds may be adapted to reflect current conditions and to the local epidemiology of COVID-19, with recognition that limitations in resources such as staffing may impact capacity for investigation, reporting, and response.

In Spring - Summer 2022, CSTE convened a workgroup to update this guidance based upon the experience of facilities and public health jurisdictions during the first two years of the COVID-19 pandemic, especially the most recent Omicron variant surge. During periods of high community transmission or surge, specific reporting thresholds for cases among healthcare personnel (HCP) may be adjusted because of challenges identifying whether transmission occurred within or outside the facility. In these situations, healthcare facilities should shift efforts to strengthening and monitoring HCP adherence to source control and distancing in common areas and prioritize investigation and reporting of potentially hospital-acquired cases in patients. Similarly, public health jurisdiction capacity to respond to reported cases may be limited during periods of high community transmission and surge, and public health staff may need to triage the reports for which they are able to provide consultation or support.

Many states and localities have their own outbreak definitions and reporting requirements. The information provided here does not replace state and local COVID-19 reporting requirements. Detailed guidance for investigation of COVID-19 cases is available from the Centers for Diseases Control and Prevention (CDC) (1). Healthcare facilities should consult public health authorities if they have questions.

## Inpatient Setting Thresholds

		<b>Acute Care Hospitals and Critical Access Hospitals</b>	<b>Long-Term Care Facilities (LTCF)**(2) and Long-Term Acute Care Hospitals (3)</b>
Threshold for Additional Investigation by Facility	Patients or Residents	≥1 case of probable* or confirmed COVID-19 in a patient 4 or more days after admission	<ul style="list-style-type: none"> <li>• ≥1 suspect<sup>†</sup>, probable* or confirmed COVID-19 case in resident</li> <li>• ≥3 cases of acute illness compatible with COVID-19 in residents with onset within a 72h period</li> </ul>
	Healthcare Personnel	≥1 case of suspect <sup>†</sup> , probable* or confirmed COVID-19 in healthcare personnel (HCP) <sup>††</sup>	<ul style="list-style-type: none"> <li>• ≥1 suspect<sup>†</sup>, probable* or confirmed COVID-19 case in HCP<sup>††</sup></li> </ul>
Threshold for Reporting to Public Health	Patients or Residents	≥2 cases of probable* or confirmed COVID-19 in a patient 4 or more days after admission for a non-COVID condition, with epi-linkage <sup>¶</sup>	<ul style="list-style-type: none"> <li>• ≥1 probable* or confirmed COVID-19 case in a resident</li> <li>• ≥3 cases of acute illness<sup>#</sup> compatible with COVID-19 in residents with onset within a 72h period</li> </ul>
	Healthcare Personnel	<ul style="list-style-type: none"> <li>• Level of SARS-CoV-2 <a href="#">Transmission</a> in the Community is Low to Moderate: ≥3 cases of suspect<sup>†</sup>, probable* or confirmed COVID-19 in HCP<sup>††</sup> with epi-linkage<sup>§</sup></li> <li>• Level of SARS-CoV-2 <a href="#">Transmission</a> in the Community is Substantial or High<sup>¶</sup> (or ≥100/100,000 for 7-days); report any identified cluster of suspect<sup>†</sup>, probable* or confirmed COVID-19 in HCP<sup>††</sup> with epi-linkages<sup>§</sup></li> </ul>	≥1 probable* or confirmed COVID-19 case in HCP <sup>††</sup>

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\***Probable case** is defined as a person meeting presumptive laboratory evidence. Presumptive laboratory evidence includes the detection of SARS-CoV-2 specific antigen in a clinical or post-mortem specimen using a diagnostic test performed by a CLIA-certified provider (5).

<sup>†</sup>**Suspect case** is defined as a person meeting supportive laboratory evidence OR meeting vital records criteria with no confirmatory or presumptive laboratory evidence for SARS-CoV-2. Supportive laboratory evidence includes the detection of SARS-CoV-2 specific antigen by immunocytochemistry OR detection of SARS-CoV-2 RNA or specific antigen using a test performed without CLIA oversight (5).

<sup>††</sup>**Healthcare Personnel (HCP)**, defined by CDC, include, but are not limited to, emergency medical service personnel, nurses, nursing assistants, physicians, technicians, therapists, phlebotomists, pharmacists, students and trainees, contractual staff not employed by the healthcare facility, and persons not directly involved in patient care, but who could be exposed to infectious agents that can be transmitted in the healthcare setting (e.g., clerical, dietary, environmental services, laundry, security, engineering and facilities management, administrative, billing, and volunteer personnel)(4). Facilities should prioritize investigations of cases in HCPs whose duties require them to have close contact with patients or visitors. Healthcare facility infection prevention or occupational health personnel should, wherever feasible, interview HCP with COVID-19 to identify likely sources of exposure and assess whether there are epi-linkages with other HCP or patient cases.

<sup>†</sup>**Epi-linkage among patients** is defined as overlap on the same unit or ward, or other patient care location (e.g., radiology suite), or having the potential to have been cared for by common HCP within a 7-day time period of each other. Determining epi-linkages requires judgment and may include weighing evidence whether or not patients had a common source of exposure.

<sup>§</sup>**Epi-linkage among HCP** is defined as having the potential to have been within 6 ft for 15 minutes or longer while working in the facility during the 7 days prior to the onset of symptoms; for example, worked on the same unit during the same shift, and no more likely sources of exposure identified outside the facility. Determining epi-linkages requires judgment and may include weighing evidence whether or not transmission took place in the facility, accounting for likely sources of exposure outside the facility

<sup>||</sup>During periods of surge and high community transmission rates, it may be impossible to determine whether HCP case exposures and transmission occurred within or outside the facility. However, hospitals should still identify epi-linkages among HCP cases wherever feasible, and report suspected outbreaks. Facilities should use CDC's [community transmission rates](#) for healthcare facilities to help guide when it is advisable to switch from using discrete thresholds for reporting to public health to only reporting clusters to state and local health departments. Cases can take additional time to be reported to health departments, and HCPs may reside in areas outside the region where the facility is located, so facilities may begin to recognize a surge before it is completely reflected in disease surveillance metrics.

<sup>#</sup>If resident tests negative for both influenza and SARS-CoV-2, consider testing with a multiplex respiratory viral panel.

<sup>\*\*</sup>CMS has required that "a new COVID-19 infection in any staff or any nursing home-onset COVID-19 infection in a resident triggers an outbreak investigation." (2)

		<b>Acute Care Hospitals and Critical Access Hospitals</b>	<b>Long-Term Care Facilities (LTCF)**(2) and Long-Term Acute Care Hospitals (3)</b>
Outbreak Definition	Patients or Residents	≥2 cases of probable* or confirmed COVID-19 in a patient 4 or more days after admission for a non-COVID condition, with epi- linkage <sup>¶</sup>	≥1 facility-acquired <sup>¶¶</sup> COVID-19 case in a resident
	Healthcare Personnel	≥3 cases of suspect <sup>+</sup> , probable* or confirmed COVID-19 in HCP <sup>++</sup> with epi-linkage <sup>§</sup> AND no other more likely sources of exposure for at least 2 of the cases	≥3 suspect <sup>+</sup> , probable* or confirmed COVID-19 case in HCP <sup>++</sup> with epi-linkage <sup>§</sup> AND no other more likely sources of exposure for at least 1 of the cases

## Points for Consideration

- An outbreak response or investigation may take many forms depending on the characteristics of the outbreak and healthcare setting. It can involve site visits and facility assessments, collection of additional data that are not captured in standard case investigation or contact tracing, lab-testing of potentially exposed patients and HCPs, guidance related to infection control practices including cohorting, and other forms of technical assistance and phone-based consultations involving the affected facility and with public health jurisdictions responding to the outbreak. Detailed guidance for managing COVID-19 investigations in healthcare settings is available from Centers for Disease Control and Prevention (CDC) (1).

<sup>¶¶</sup>**Facility-acquired** COVID-19 infection in a long-term care resident refers to SARS-CoV-2 infections that originated in the nursing home. It does not refer to the following:

- Residents who were known to have SARS-CoV-2 infection on admission to the facility and were placed into appropriate Transmission-Based Precautions to prevent transmission to others in the facility.
- Residents who were placed into Transmission-Based Precautions (quarantine) on admission and developed SARS-CoV-2 infection while in quarantine.

- Public health officials may adapt the above thresholds to reflect current conditions and local epidemiology of COVID-19, with recognition that limitations in resources such as staffing may impact both healthcare and public health partners' capacities for investigation, reporting, and response. Refer to the background section (page 1) for more information.
- Public health officials may wish to offer additional guidance to long-term care facilities about reporting cases or clusters of suspected COVID-19, tailored to the type of long-term care facility (e.g., Nursing Home vs. Assisted Living vs. Group Home or other type), including general guidance on reporting of residents with severe respiratory infection that results in hospitalization or death (not limited to those with suspected or confirmed COVID-19).
- Public health officials may collaborate with long-term care facilities who have received Clinical Laboratory Improvement Amendments (CLIA) waivers to conduct point-of-care laboratory testing on site. Collaboration would be focused on timeliness, accuracy, and completeness of laboratory reporting to the local or state public health electronic disease surveillance system (12). Additional guidance on testing in nursing homes, including follow up of point-of-care test results (13).
- Public health officials may collaborate with healthcare facilities to inform the public and potentially exposed patients through public notification. Detailed guidance for outbreak notification is available from the Council for Outbreak Response: HAI/AR Pathogens (CORHA) (6).

## Outpatient Setting Thresholds

		<b>Ambulatory Specialty Settings<sup>§§</sup></b>	<b>Emergency Department, Urgent Care, Primary Care</b>
Threshold for Additional Investigation by Facility	Patients	≥1 suspect <sup>†</sup> , probable* or confirmed COVID-19 case in patient without other significant source of exposure	N/A
	Healthcare Personnel	≥1 suspect <sup>†</sup> , probable* or confirmed COVID-19 case in HCP <sup>   </sup>	≥1 suspect <sup>†</sup> , probable* or confirmed COVID-19 case in HCP <sup>   </sup>
Threshold for Reporting to Public Health	Patients	≥3 cases of probable* or confirmed COVID-19 cases in patients with epi-linkage <sup>***</sup> AND without other significant source of exposure	N/A
	Healthcare Personnel	≥3 suspect <sup>†</sup> , probable* or confirmed cases in HCP <sup>   </sup> with epi-linkage <sup>##</sup>	≥3 cases of suspect <sup>†</sup> , probable* or confirmed COVID-19 in HCP <sup>   </sup> with epi-linkage <sup>##</sup>
Outbreak Definition	Patients	≥3 cases of probable* or confirmed COVID-19 cases in patients with epi-linkage <sup>***</sup> AND no other more likely sources of exposure for at least 2 of the cases	≥3 cases of probable* or confirmed COVID-19 in patients with epi-linkage <sup>***</sup> AND no other more likely sources of exposure for at least 2 of the cases
	Healthcare Personnel	≥3 cases of suspect <sup>†</sup> , probable* or confirmed case in HCP <sup>   </sup> with epi-linkage <sup>##</sup> , AND no other more likely sources of exposure for at least 2 of the cases	≥3 cases of suspect <sup>†</sup> , probable* or confirmed cases in HCP <sup>   </sup> with epi-linkage <sup>##</sup> , AND no other more likely sources of exposure for at least 2 of the cases

\***Probable case** is defined as a person meeting presumptive laboratory evidence. Presumptive laboratory evidence includes the detection of SARS-CoV-2 specific antigen in a clinical or post-mortem specimen using a diagnostic test performed by a CLIA-certified provider (5).

<sup>1</sup>**Suspect case** is defined as a person meeting supportive laboratory evidence OR meeting vital records criteria with no confirmatory or presumptive laboratory evidence for SARS-CoV-2. Supportive laboratory evidence includes the detection of SARS-CoV-2 specific antigen by immunocytochemistry OR detection of SARS-CoV-2 RNA or specific antigen using a test performed without CLIA oversight (5).

<sup>§§</sup>Ambulatory specialty settings include dialysis facilities, endoscopy, ambulatory surgery centers, infusion centers, dental, ENT and ophthalmology.

<sup>|||</sup>**Healthcare Personnel (HCP)**, defined by Centers for Disease Control and Prevention (CDC), include, but are not limited to, emergency medical service personnel, nurses, nursing assistants, physicians, technicians, therapists, phlebotomists, pharmacists, students and trainees, contractual staff not employed by the healthcare facility, and persons not directly involved in patient care, but who could be exposed to infectious agents that can be transmitted in the healthcare setting (e.g., clerical, dietary, environmental services, laundry, security, engineering and facilities management, administrative, billing, and volunteer personnel)(4). Facilities should prioritize investigations of cases in HCPs whose duties require them to have close contact with patients or visitors.

<sup>##</sup>**Epi-linkage among HCP** is defined as having the potential to have been within 6ft for 15 minutes or longer while working in the facility during the 7 days prior to the onset of symptoms; for example, worked on the same shift or proximity.

<sup>\*\*\*</sup>**Epi-linkage among patients** is defined as overlap on the same unit or ward or having the potential to have been cared for by common HCP within a 7-day time period of each other.

## Points for Consideration

- The ambulatory specialty clinic thresholds and definitions assume patients are presenting for scheduled visits, not for evaluation of acute symptoms, and that patients presenting for scheduled ambulatory surgery or procedures are often tested for COVID-19 prior to their procedure.
- Public health officials may collaborate with healthcare facilities to inform the public and potentially exposed patients through public notification. Detailed guidance for outbreak notification is available from the Council for Outbreak Response: HAI/AR Pathogens (CORHA)(5).

## References/Resources

1. CDC COVID-19 Guidance for Managing Investigations During an Outbreak <https://www.cdc.gov/coronavirus/2019-ncov/php/contact-tracing/contact-tracing-plan/outbreaks.html>
2. Interim Final Rule (IFC), CMS-3401-IFC, Additional Policy and Regulatory Revisions in Response to the COVID-19 Public Health Emergency related to Long-Term Care Facility Testing Requirements: <https://www.cms.gov/files/document/qso-20-38-nh-revised.pdf>
3. Interim Final Rule Updating Requirements for Notification of Confirmed and Suspected COVID-19 Cases Among Residents and Staff in Nursing Homes <https://www.cms.gov/medicareprovider-enrollment-and-certificationsurvey/certificationgeninfo/policy-and-memos-states-and/interim-final-rule-updating-requirements->

[notification-confirmed-and-suspected-covid-19-cases-among](#)

4. CDC Infection Control, Appendix 2. Terminology <https://www.cdc.gov/infectioncontrol/guidelines/healthcare-personnel/appendix/terminology.html>
5. Update to the Standardized Surveillance Case Definition and National Notification for SARS-CoV-2 Infection (the virus that causes COVID-19). [https://www.cste.org/resource/resmgr/ps1/ps2021/21-ID-01\\_COVID-19\\_updated\\_Au.pdf](https://www.cste.org/resource/resmgr/ps1/ps2021/21-ID-01_COVID-19_updated_Au.pdf)
6. CORHA Framework for Healthcare-Associated Infection Outbreak Notification <https://corha.org/resources/corha-interim-framework-for-healthcare-associated-infection-outbreak-notification/>
7. Interim Infection Prevention and Control Recommendations for Patients with Suspected or Confirmed Coronavirus Disease 2019 (COVID-19) in Healthcare Settings <https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control-recommendations.html>
8. Preparing for COVID-19 in Nursing Homes <https://www.cdc.gov/coronavirus/2019-ncov/hcp/long-term-care.html>
9. Interim Infection Prevention and Control Guidance for Dental Settings During the COVID-19 Response <https://www.cdc.gov/coronavirus/2019-ncov/hcp/dental-settings.html>
10. Interim Additional Guidance for Infection Prevention and Control Recommendations for Patients with Suspected or Confirmed COVID-19 in Outpatient Hemodialysis Facilities <https://www.cdc.gov/coronavirus/2019-ncov/hcp/dialysis.html>
11. Coronavirus Disease 2019 (COVID-19) Outpatient Dialysis Facility Preparedness Assessment Tool <https://www.cdc.gov/coronavirus/2019-ncov/downloads/COVID-19-outpatient-dialysis.pdf>
12. 04/09/2020: Lab Update: FDA Clarifies CLIA-waived Status for Point-of-Care SARS-CoV-2 Tests under Emergency Use Authorizations [https://www.cdc.gov/csels/dls/lcs/2020/fda\\_clarifies\\_clia-waived\\_status.html](https://www.cdc.gov/csels/dls/lcs/2020/fda_clarifies_clia-waived_status.html)
13. Clinical Questions about COVID-19: Questions and Answers, Testing in Nursing Homes: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/faq.html#Testing-in-Nursing-Homes>



## Author Information

### Primary Author

Erin Epton, MD  
Medical Director / Chief  
Healthcare-Associated Infections Program  
Center for Health Care Quality  
California Department of Public Health  
850 Marina Bay Parkway  
Richmond, CA 94804-6403  
[Erin.Epton@cdph.ca.gov](mailto:Erin.Epton@cdph.ca.gov)

### Contributors

CORHA\*/CSTE Workgroup | COVID-19 Recommendations for Healthcare Outbreak Response

\*The Council for Outbreak Response: Healthcare-Associated Infections and Antimicrobial-Resistant Pathogens (CORHA)  
<https://corha.org/>