

**GUIDANCE FOR INVESTIGATING AND MANAGING CLUSTERS AND OUTBREAKS
OF
CORONAVIRUS DISEASE (COVID-19) IN CLINICAL SETTINGS**

This document should be used as a guide for the identification and management of clusters of coronavirus disease 2019 (COVID-19) among employees, providers, patients and visitors within BJC and WU HealthCare facilities (clinical settings). COVID-19 poses a significant potential risk for health care facilities and aggressive action is required to investigate and control instances of disease transmission.

Effective identification and management of potential COVID-19 case clusters requires applying principles described in this guide and in the exposure management guides for COVID-19.

I. Principles

Management of health care associated disease clusters and outbreaks will involve strategies from infection prevention, occupational health and public health.

Infection prevention and occupational health will systematically collect, maintain and assess data about the number, timing and location of COVID-19 cases and exposures. These data will assist with understanding baseline disease activity and determining sporadic cases from outbreaks.

II. Definitions

Cluster: A group of positive cases of COVID-19 connected to a single BJC location regardless of baseline disease activity:

Employee cluster within non- COVID-19 unit: At least 2 cases identified within 14 days within the same unit or work area

Employee cluster within COVID-19 unit: At least 2 cases identified within 14 days without obvious non-occupational exposure

Patient cluster: At least 2 cases in the same hospital area that are possibly health care associated based upon epidemiological factors and incubation period; or at least 1 case likely health care associated based upon epidemiological factors and incubation period

Outbreak: An incident involving a cluster of COVID-19 cases that exceeds normal baseline disease activity

Positive Case: A laboratory-confirmed case of COVID-19

Likely healthcare associated patient COVID-19 case: inpatient case with symptom onset more than 10 days after admission.

Possibly healthcare associated patient COVID-19 case: inpatient case with symptom onset between 4 – 9 days after admission; readmitted COVID patients with symptom onset within 7 days of discharge.

III. Data Collection

A. Employee Data

Employees who develop symptoms of COVID-19 shall contact the employee call center for assessment and determination of eligibility for testing. The call center will collect and report demographic information for follow-up including employee number, dates worked, type of personal protective equipment worn and whether the employee has been working in his or her designated department or an alternate unit. Information will be shared with HSO OH department.

BJC Occupational Health Services will review daily the numbers of employees approved for testing and testing positive.

BJC Occupational Health Services and the local occupational health department will collaborate to investigate the circumstances of all employee positive cases. At a minimum, a determination will be made about whether each positive case is possibly occupationally acquired. Communicate information about any COVID positive employee who worked without proper PPE to IP for possible patient follow up. This will be an epidemiological assessment and will not factor into the processes and decisions of Workers' Compensation Administration.

B. Patient Data

The HSO Infection Preventionist will review all COVID positive lab results from patients, using electronic methods. If electronic monitoring of lab results is not available, lab personnel must work with IP to obtain the data for IP review.

The IP should develop a visual representation (e.g. epicurve) of the cases over time and determine with the team if each case is likely, possible, and unlikely to be health care associated. If the outbreak involves both employees and patients, employees should be included in the visual representation. Daily monitoring of patient COVID lab results should continue. Staff and providers should be instructed to notify IP immediately of any patient newly suspected of COVID while not on isolation precautions.

Communicate with Occupational Health any COVID positive patient that was not previously identified and/or not on correct isolation precautions. Determine any potential COVID exposures to other patients and place current patients on isolation precautions for exposure.

IV. Response Activities

A. Notifications

Upon identification of a potential cluster or outbreak, the facility infection prevention and/or occupational health department shall notify facility leadership and BJC IP, OH and Incident Command at the onset of the investigation. Washington University (WU) Occupational Health should be notified if any shared staff in the affected facilities. If BJC Incident Command has been deactivated, notification will be made to BJC Infection Prevention and BJC Occupational Health. Reporting and communication should take place with local and State health departments per regulatory standards.

BJC Incident Command if activated or BJC Occupational Health will be responsible for notifying the BJC Central Staffing Office of the cluster or outbreak investigation. BJC Incident Command if activated or BJC Occupational Health will be responsible for ensuring the BJC Central Staffing Office is provided information about the status of the investigation and the number of affected employees including their job title and department.

B. Investigation Steps

1. Follow steps in the COVID-19 Exposure Management Plan. Ensure that current COVID positive patients, PUIs, and exposed patients are on COVID 19 precautions and that employees are using correct PPE and following infection prevention protocols.
2. Compare observed cases to determine if they meet BJC definitions for a case cluster or outbreak. Develop a line list using the tool in Appendix A and assess possible links between observed cases.

3. Verify that purported cases have been accurately diagnosed and recorded.
4. If a group of cases meets the definition of an outbreak, establish a case definition and a contact definition that will be used for further investigation. The case definition should include objective clinical criteria (example: positive COVID-19 test result or fever of at least 100 degree Fahrenheit with cough prescription or over-the-counter cough suppressants).

Case definitions may also include a time, geographical or demographic element. For example, it could require symptom onset after a specific date, time spent on a specific unit and no previous positive COVID-19 test. The case definition will be used during the investigation to determine whether potential additional cases should be counted as linked to the outbreak.

5. Prospectively evaluate patients and employees who have a positive COVID-19 test for alignment with the case definition and inclusion in the outbreak. A retrospective review of all patients and employees with a positive COVID-19 test or compatible respiratory symptoms should be conducted for at least the previous 14 days. Employees or patients identified during the retrospective review should be included in the outbreak if they meet the case definition. A second retrospective analysis should be conducted covering at least the previous 14 days from that symptom onset of that patient or employee.
6. Using data recorded in the line list from Appendix A assess the descriptive epidemiology of the outbreak, including patient demographics, time progression and geographic factors.
7. Based upon data obtained from the investigation and descriptive epidemiology, develop hypotheses to explain the outbreak source, exposure pathways and risk factors for transmission.
8. Implement control measures tailored to address the identified hypotheses. In addition to these outbreak-specific control measures, several universal control measures should be considered. Universal control measures include enhanced rounding by infection prevention, occupational health (BJC and WU) and facility leaders to remind and assess frontline staff compliance with personal protective equipment, social distancing and universal masking. Frequency and intensity of environmental cleaning should be increased when staffing and other resources permit. Active symptom-monitoring before start of shift for all employees working on a unit with cluster or outbreak should be considered.
9. A brief summary of the investigation including the size of the cluster or outbreak; findings, including exposure routes and risk factors; and corrective actions taken should be developed in collaboration with HSO, and WU (as appropriate), OH and IP, and submitted to facility leadership, WU OH leadership, and BJC Incident Command. If BJC Incident Command has been deactivated, the report should be provided to BJC Infection Prevention and BJC Occupational Health.

V. Contact Tracing

A. Strategy

Upon identification of a symptomatic or asymptomatic individual with a positive test for COVID-19 during a cluster or outbreak investigation, it is necessary to identify all potential contacts within the facility, including BJC employees, WU employees, licensed independent practitioners and contractors. The facility, and WU as applicable, occupational health departments will be responsible for identifying and following up with potential contacts). The facility infection prevention department will be responsible for identifying and following up with potential patient and visitor contacts.

Anyone who meets the definition of a contact during an outbreak will be encouraged to be tested at the employer's expense. Additional investigation will be required to identify the contacts of anyone who tests positive. Investigation of the contacts of contacts who test positive will follow the procedures described in this guide.

Additional exposure management strategies are likely to be required for employees, providers, contractors, patients and visitors who meet the exposure definition for COVID-19. Follow guidelines described in the patient and employee exposure management guidelines.

B. Coordination and Communication

Infection prevention and occupational health will be required to work closely to effectively investigate and manage a potential cluster or outbreak. The importance of a comprehensive strategy will necessitate data sharing and communication between the departments. Reporting and communication should take place with local and State health departments per regulatory standards.

Confidentiality of patient, and employee health records must be maintained; however, infection prevention and occupational health may share with each other data about specific contacts sufficient to ensure a complete understanding of the potential cluster or outbreak. Data sharing for these purposes includes sharing between BJC and WU OH and IP programs.

VI. Environmental Cleaning

Facility infection prevention may consider additional cleaning upon identification of a cluster or outbreak. Follow procedures for terminal cleaning using an EPA-registered disinfectant while wearing an N95 respirator or powered air-purifying respirator (PAPR), face shield, gloves and gown.

VII. Closing Units

- A. Evidence of hospital-acquired transmission of COVID-19 will require evaluation to determine whether or not the unit needs to be closed to new admissions and/or the most appropriate method for containment of respiratory illnesses on the unit (i.e. a quarantined area within the unit). Closing, re-opening and/or the creation of a quarantined area will be determined by the **(insert titles of people designated to make the determination who could include a designated physician, hospital epidemiologist, infection preventionist, clinical manager, medical director, patient care director or vice president responsible for patient care).**

VIII. Communications

- A. Communication about clusters, outbreaks and epidemiological investigations shall be coordinated between BJC Incident Command and the incident command of the affected facility and WU as applicable. If incident commands are not active, communication will be coordinated by BJC, HSO and WU IP and OH programs. Likely audiences are directly affected employees, other employees, contracted personnel and providers working in the facility, patients,

organizational leadership (HSO, BJC, WU), and the public. If BJC Incident Command has been deactivated, communication should be coordinated with BJC Communications through BJC Infection Prevention and BJC and WU Occupational Health

IX. Outbreak Response Summary

Situation	Response Activities	Additional Testing *	Follow-Up Strategy
2 patients possible health-care associated	Enhanced rounding to assess compliance with universal masking, PPE and social distancing on affected unit, including break rooms and common areas. Reminders to avoid working while ill.	Consider whether to test patients on unit, employees working on the unit and ancillary staff with contact. Active temperature and symptom screening for all employees assigned to unit.	Education about COVID-19 prevention strategies. Stress importance of not working while sick, wearing appropriate PPE, performing hand hygiene and practicing social-distancing at work.
1 patient likely health care associated	Enhanced rounding to assess compliance with universal masking, PPE and social distancing on affected unit, including break rooms and common areas. Reminders to avoid working while ill.	Investigate to determine exposure source to assess whether testing is needed.	Education about COVID-19 prevention strategies. Stress importance of not working while sick, wearing appropriate PPE, performing hand hygiene and practicing social-distancing at work.
2 employees	Enhanced rounding to assess compliance with universal masking, PPE and social distancing on affected unit, including break rooms and common areas. Reminders to avoid working while ill.	Consider whether to test patients on unit, employees working on the unit and ancillary staff with contact. Active temperature and symptom screening for all employees assigned to unit.	Education about prevention COVID-19 prevention strategies. Stress importance of not working while sick, wearing appropriate PPE, performing hand hygiene and practicing social-distancing at work.
1 patient and 1 employee	Investigate to determine possible epi link. Enhanced rounding to assess compliance with universal	If epi link identified, consider whether to test patients on unit, employees working on	Education about prevention COVID-19 prevention strategies. Stress importance of not working while sick, wearing appropriate

	<p>masking, PPE and social distancing on affected unit, including break rooms and common areas. Reminders to avoid working while ill.</p>	<p>the unit and ancillary staff with contact.</p> <p>Active temperature and symptom screening for all employees assigned to unit.</p>	<p>PPE, performing hand hygiene and practicing social-distancing at work.</p>
--	---	---	---

*Staff with previous positive COVID test who are asymptomatic and cleared for work don't need additional testing

Appendix A



Outbreak and Cluster Line List.xlsx