

[Critical Priority] - H0595 : [COVID-19] Routine and Terminal Cleaning of Suspected or Confirmed COVID-19 Patient Rooms [ECRI Exclusive Hazard Report]
Medical Device Hazard Report

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UMDNS Terms:

- Germicides [18159]
- Towelettes, Surface Disinfection [18776]

Geographic Regions: Worldwide

Suggested Distribution: Anesthesia, Cardiology/Cardiac Catheterization Laboratory, Clinical/Biomedical Engineering, Critical Care, Dialysis/Nephrology, Emergency/Outpatient Services, Infection Control, Nursery, Nursing, Obstetrics/Gynecology/Labor and Delivery, Oncology, OR/Surgery, Orthopedics, Pediatrics, Pulmonology/Respiratory Therapy, Diagnostic Imaging, Facilities/Building Management, Diabetes Education/Coordination, Home Care, Gastroenterology, Dentistry/Oral Surgery, Ophthalmology, Phlebotomy, Radiation Oncology/Medical Physics, Physical Therapy/Rehabilitation, Internal Medicine, Dermatology, Otolaryngology, Point-of-Care Coordination, Sleep Laboratory, Vascular Laboratory, Pain Clinic, Staff Education, NICU, Behavioral Health/Psychiatry, EMS/Transport, Perfusion, Pharmacy, IV Therapy, Central Sterilization Reprocessing, Materials Management

Problem:

1. The coronavirus disease (COVID-19) patient surge has contributed to a worldwide shortage of personal protective equipment (PPE), which has altered care practices in many healthcare facilities.
2. To conserve PPE, facilities may temporarily change policies and procedures that affect healthcare personnel (HCP) workflow, such as:
 1. Requiring different HCP to perform routine cleaning and disinfection (C&D) of devices and equipment within patient rooms during a planned patient encounter.
 2. Limiting PPE for Environmental Services (EVS)/Housekeeping staff to use during terminal cleaning of suspected/confirmed COVID-19 patient rooms.
3. If not carefully implemented, modified HCP workflow may lead to:
 1. HCP exposure to SARS-CoV-2 virus during the COVID-19 pandemic
 2. Cross-contamination of devices and equipment used for patient care

ECRI Recommendations:

Facilities, Quality, and Risk Management:

1. Ensure that your facility's ventilation/HVAC inspection and preventive maintenance program complies with OSHA requirements (1).
2. Create a list of rooms within your facility that are used, or are planned to be used for, performing aerosol-generating procedures (AGPs) on suspected/confirmed COVID-19 patients (i.e., an AGP room list). Include patient triage and ICU rooms.
 1. For each room that could potentially host AGPs, document:
 1. Ventilation efficiency
 2. Air changes per hour
 3. Minimum Elapsed Time Before Safe Room Entry for terminal cleaning and disinfection (i.e., the minimum time required for airborne particle removal). [Refer to these tables](#) .
3. Distribute the AGP room list to facility administrators, Infection Prevention and Control (IPC) staff, EVS management, and other relevant HCP.

Administrators, Infection Prevention and Control Staff, and Environmental Services Management:

1. Review and update existing facility policies and procedures, including checklists for terminal cleaning, to ensure compliance with CDC's current [COVID-19 IPC guidance](#) (3).
 1. Determine if the low-level disinfectants used in your facility:
 1. Appear on the U.S. Environmental Protection Agency (EPA) [List N: Disinfectants for Use Against SARS-CoV-2](#) .
 2. Are approved for use by the manufacturers of medical devices and equipment that are within suspected/confirmed COVID-19 patient rooms. Review the device/equipment instructions for use (IFU) or consult with the vendor to identify approved C&D products and procedures.
 2. Review the product labels of disinfectant(s) in your facility to determine the contact time(s). Routine and terminal C&D checklists should state to reapply disinfectant as needed to keep the surface visibly wet for the contact time.
 3. For creating/modifying routine C&D checklists, ECRI has created a Checklist for Routine Cleaning and Disinfection of Suspected or Confirmed COVID-19 Patient Rooms, which is available at the end of this report and attached as a Source Document.
2. Procure a manufacturer-recommended disinfectant that appears on EPA List N if needed. Note the disinfectant contact time on the

- product label, which is variable among disinfectants.
3. Provide a table that can be accessed at the point-of-care that contains:
 1. Devices/equipment within suspected/confirmed COVID-19 patient rooms
 2. An available manufacturer-recommended disinfectant for each device
 3. Contact time for each disinfectant
 4. Distribute checklists for routine and terminal cleaning of suspected/confirmed COVID-19 patient rooms to the HCP that are expected to perform this work.
 5. As needed, provide HCP with education and hands-on training of:
 1. Isolation precautions and PPE requirements for their job responsibilities
 2. PPE donning and doffing
 3. Routine and terminal C&D checklists
 6. Ensure that frontline HCP have the required PPE to safely complete C&D of suspected/confirmed COVID-19 patient rooms.
 1. If HCP are expected to be present during one or more AGPs on a suspected/confirmed COVID-19 patient, HCP should use an N95 or higher level respirator, faceshield, isolation gown, and gloves as PPE (3,4).
 2. If HCP are expected to provide routine care to suspected/confirmed COVID-19 patients, HCP should use a facemask, faceshield, isolation gown, and gloves as PPE (3,5)
 3. If HCP are expected to perform terminal cleaning of AGP rooms after suspected/confirmed COVID-19 patients have vacated them:
 1. After the Minimum Elapsed Time Before Safe Room Entry (see above), HCP may enter the vacant room wearing an isolation gown and gloves as PPE. A facemask and eye protection should also be worn if the selected cleaners and disinfectants require it or splashes/sprays during C&D are anticipated (6).
 7. Ensure that all C&D materials (i.e., cleaner), disinfectant (diluted per product label instructions, if applicable), water, containers, and clean or new cloths/sponges/wipes are available at or near the point-of-care. If available, ready-to-use products are preferable to products that require dilution.
 8. Ensure that all frontline HCP that perform routine and terminal C&D have a truncated version of your facility's AGP room list that covers their work areas.

Frontline HCP that perform routine C&D of COVID-19 patient rooms:

1. Review your facility's routine C&D checklist. Request education and hands-on checklist training if needed.
2. Complete the checklist at least once per 12-hour shift during a planned patient encounter.
3. After a suspected/confirmed COVID-19 patient has vacated a room where AGPs occurred:
 1. Identify the patient room on your facility's AGP room list.
 2. Write on a piece of paper:
 1. The time that the patient left
 2. The room's Minimum Elapsed Time Before Safe Room Entry
 3. The time that HCP can enter the room, calculated by adding points 1 and 2 above
 3. Secure the paper to the door (e.g., with tape, inserted in a PPE holder)
 4. Notify frontline HCP that perform terminal C&D of patient rooms:
 1. When a suspected/confirmed COVID-19 patient room is vacant
 2. The time that they can enter the room

Frontline HCP that perform terminal C&D of COVID-19 patient rooms:

1. Review your facility's terminal C&D checklist. Request education and hands-on checklist training if needed.
2. Before entering a suspected/confirmed COVID-19 patient room:
 1. Check your facility's AGP room list to determine if the patient room is on the list.
 1. If the room is on the AGP room list:
 1. Look for a paper with the time that the patient left and the room's Minimum Elapsed Time Before Safe Room Entry. If you do not see this paper, ask nearby HCP for assistance.
 2. Calculate the room entry time by adding the time that the patient left to the room's Minimum Elapsed Time Before Safe Room Entry. Do not enter the room until the room entry time.
 2. Don an isolation gown and gloves. A facemask and eye protection should also be worn if the selected cleaners and disinfectants require it or splashes/sprays during C&D are anticipated (6).
3. Complete the terminal C&D checklist as needed.

Background:

1. Routine and terminal C&D of patient rooms is normally performed by trained EVS/Housekeeping personnel:
 1. Routine C&D is performed on a periodic schedule while rooms are occupied by patients.
 2. Terminal C&D is performed after patient rooms are vacated (e.g., patient discharge, patient transfer).
2. Relevant CDC guidance states:
 1. Healthcare facilities are responsible for protecting their healthcare personnel (HCP) from exposure to pathogens, including by (3):
 1. Providing appropriate PPE
 2. Properly installing and maintaining air-handling systems (with appropriate directionality, filtration, exchange rate, etc.)
 2. As a measure to limit HCP exposure and to conserve PPE, facilities should consider:
 1. Designating entire buildings, units, or facility care areas with teams of cohorted HCP (e.g., respiratory therapists, nurses, physicians) to care for patients with known or suspected COVID-19 (3).
 2. Assigning routine C&D of high-touch surfaces to nursing personnel who will already be in the room providing care to the patient. If this responsibility is assigned to EVS personnel, they should wear all recommended PPE when in the room. PPE should be removed upon leaving the room, immediately followed by performance of hand hygiene (6).
 3. Once a suspected/confirmed COVID-19 patient has been discharged or transferred, HCP, including EVS personnel, should not enter the vacated room until sufficient time has elapsed for enough air changes to remove potentially infectious aerosols (see Reference 2 below for clearance rates under differing ventilation conditions). After this time has elapsed, the room should undergo terminal C&D before it is returned to routine use (3).
3. Relevant WHO guidance states (7):
 1. Patients should be placed in adequately ventilated single rooms.
 1. For general ward rooms with natural ventilation, adequate ventilation is considered to be 60 L/s per patient.
 2. For performing AGPs on suspected/confirmed COVID-19 patients, adequate ventilation is:
 1. Natural ventilation with air flow of at least 160 L/s per patient, or
 2. Airborne infection isolation room (AIIR) with at least 12 air changes per hour and controlled air flow direction

Checklist for Routine Cleaning and Disinfection of Suspected or Confirmed COVID-19 Patient Rooms

[Please complete this checklist](#) for routine cleaning and disinfection (C&D) of the following items, if present, within suspected/confirmed COVID-19 patient rooms. To conserve PPE, complete the checklist as part of a planned patient encounter. Use the C&D supplies provided near the point-of-care. Ensure that the wipes/cloths that you use are moist, but not dripping with fluid.

References:

1. Occupational Safety and Health Administration (OSHA). OSHA Technical Manual. Section III, Chapter 3, Ventilation Investigation [online]. [cited 2020 Apr 23]. Available [here](#) .
2. Centers for Disease Control and Prevention, U.S. Guidelines for Environmental Infection Control in Health-Care Facilities (2003), Appendix B. Air, 1. Airborne Contaminant Removal [online]. 2019 July 22 [cited 2020 Apr 23]. Available [here](#) .
3. Centers for Disease Control and Prevention, U.S. Interim Infection Prevention and Control Recommendations for Patients with Suspected or Confirmed Coronavirus Disease 2019 (COVID-19) in Healthcare Settings [online]. 2020 Apr 13 [cited 2020 Apr 23]. Available [here](#) .
4. ECRI. Strategies for Addressing Expected or Known N95 Respirator Shortages. Hazard Report Accession Number H0577. 2020 Apr 8 [cited 2020 Apr 23] Available [here](#) .
5. ECRI. Strategies for Addressing Expected or Known Facemask Shortages. Hazard Report Accession Number H0591. 2020 Apr 22 [cited 2020 Apr 23] Available [here](#) .
6. Centers for Disease Control and Prevention, U.S. Healthcare Infection Prevention and Control FAQs for COVID-19 [online]. 2020 Apr 19 [cited 2020 Apr 23] Available [here](#) .
7. World Health Organization. Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected [online]. 2020 Mar 19 [cited 2020 Apr 23]. Available [here](#) .

Comments:

- This alert is a living document and may be updated when ECRI receives additional information.

Source(s):

- 2020 Apr 28. ECRI Researched Report
- 2020 Apr 28. Routine C&D Checklist [Download](#)

- 2020 Apr 28. Room Ventilation Tables [Download](#)