



Managing Cleaning and Disinfection in the Healthcare Environment: Prioritizing Disinfectants



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COVID-19 (caused by SARS-CoV-2) has had a large impact on all aspects of our world. Infection Preventionists, Infectious Disease physicians and Environmental Services are asking the question “how do we perform effective cleaning in a time when disinfectants are being depleted?”

In a matter of weeks since COVID-19 started to significantly impact healthcare and communities across the world, routine products required for healthcare, such as personal protective equipment (PPE) and disinfectants had started to become scarce, requiring Infection Prevention and Control and EVS to consider available options.

The EPA List N: ‘Products with Emerging Viral Pathogens AND Human Coronavirus claims for use against SARS-CoV-2’ (<https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>) and Health Canada’s ‘Disinfectants for Use Against SARS-CoV-2’ (<https://www.canada.ca/en/health-canada/services/drugs-health-products/disinfectants/covid-19/list.html#tbl1>) are updated as information is received.

Considerations

Diversey is providing some suggestions to provide guidance as you assess and prioritize your facility’s needs. These may change as more information becomes available. During this COVID-19 pandemic, a facility may run low on disinfectants for high touch surfaces (HTS) or sanitizers for food contact surfaces. While it is ideal to disinfect or sanitize all surfaces that should be disinfected or sanitized, if supplies are limited, we suggest that surfaces be prioritized so that disinfectant and sanitizer continue to be used on the highest risk surfaces as long as possible using these considerations.

The review for the MDT/EPC consists of 4 parts:

- Part 1:** Assess and categorize the areas of care
- Part 2:** Gather and assess inventory
- Part 3:** Evaluate emergency changes – considerations
- Part 4:** Protocol / logistics considerations

Part 1: Assess and categorize the areas of care

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Each healthcare facility should utilize a multi-disciplinary team (MDT) or Emergency Preparedness Committee (EPC) to conduct a risk assessment for disinfectant use within their facility. This may include leadership, EVS, internal laundry and possibly foodservice and clinical staff. While the facility's MDT should always follow its own internal protocols and policies, Diversey's suggestion for possible categorization are listed below.

Suggested High Risk Areas

- Operating Rooms
- Emergency department
- ICUs
- Patient rooms w/confirmed COVID-19, possibly also rooms of patients under investigation (PUI)
- Equipment that is shared (e.g., stretchers, wheelchairs) or for diagnostics (e.g., portable X-Ray), that is used within rooms of COVID-19 patients
- Laboratories
- PACU
- Cath Lab

Suggested Medium Risk Areas

- Public restrooms
- Post op surgical unit
- Medical unit
- Pre and post-operative areas

Suggested Low Risk Areas

- Office spaces
- Cafeteria
- Wait areas (non-emergency room)
- Medical Office Building (MOB) visitor chairs, counters, etc.

Part 2: Gather and Assess Inventory

- Evaluate current stock of cleaning chemicals and cleaning tools (microfiber/cotton), categorizing products as disinfecting, sanitizing or cleaning chemicals.
- Gather / inventory all of these products in house: everything. The MDT/ EPC needs to have visibility and control of this process.
 - In order to understand the comprehensive inventory, temporarily remove and centralize dispensed chemicals (disinfectants, sanitizers and cleaners) to a central deployment location and compile an inventory for the entire facility. Check all closets, carts, storage rooms, clean and dirty utility rooms throughout the hospital, and on and off-site medical office buildings (MOBs) for any and all chemicals.
 - Gather all wipes and disinfectants from nursing stations, hallways, and other areas to a central location for allocation.
- Once ALL chemicals have been gathered, group them into: hospital disinfectant chemistry and contact time, i.e., hydrogen peroxide, quat, quat/alcohol, bleach etc.; sanitizers (if available); cleaners: glass general/all-purpose cleaners, neutral cleaners degreasers, etc.
- Inventory and assess average daily supply/use of disinfectants, sanitizers and cleaning chemicals, along with cleaning tools, jointly with MDT/EPC.

NOTE:

Understand that the facility demand will increase with the number of expected cases coming in, and the severity of those that may be hospitalized.

- The MDT / EPC then should assess where each group of chemicals can and will be used with respect to the hierarchy of surfaces determined in PART 1, i.e. disinfected, sanitized, or cleaned surfaces, frequency, and product hierarchy to use.
- Designate a centralized location(s) for storage and distribution of all disinfectants. (e.g. clinical wipes might be stored in the Unit Director's office for distribution for cleaning and disinfection of shared medical equipment) In addition, designate a member(s) of the MDT / EPC that would be tasked with disbursement, including the dilution of chemicals via the delivery platform in use at that time (e.g. – dilution control units, manual mixing, wipes, etc.). (Ensure proper labeling is attached with contact time)

Part 3: Evaluate Emergency Changes - Considerations

All of these would be determined by the MDT/EPC

Operating Rooms, Interventional Radiology Considerations

Assess which OR products may be available (wipes, RTU and concentrates) as elective procedures are lessened

Suggest:

- Floor disinfection at end of day instead of between cases (if minimal risk of splash or spray on floor) or per AORN consultation, if floor is visibly soiled, clean and disinfect.
- Walls spot cleaned, with a full clean less frequently

High Risk / Medium Risk / Low Risk Areas Considerations

Assess processes and which parts of the daily routine process can be pared down first.

Evaluate when to switch from one chemical type to another in the event of product shortage for each risk area.

Many facilities will have a Level 1 (e.g. pre-wetted disposable wipes), Level 2 (dilutable disinfectant with cloth) and Level 3 (cleaner with cloth) product to coordinate with the risk assessment.

Assess tasks that take a large volume of disinfectant chemical such as the mopping of floors, walls and other larger surfaces and whether the facility may alternate, reduce or eliminate the use of disinfectants for floor mopping. The facility should consider whether mopping can be done with floor or other types of cleaners. Surfaces that may be lower risk may need to move to sanitizing or cleaning with spot or alternative disinfecting at a different frequency.

Other Considerations:

- Look at cleaning tools that may use less chemical so less is wasted.
- Consider spraying or applying via flip top vs. charging buckets to mitigate chemical usage and disposal
- Rationing product and using smaller volume buckets for fill.
- Published usage guidelines that can be communicated to staff.

Part 4: Protocol / Logistics Considerations:

Below are some suggestions that should be discussed, with possible areas and protocols to be considered. This is not a comprehensive list.

Disinfectant Use and Prioritization Guidance

Tiers of areas and surfaces, as well as how to address:

- 1) Disinfectant all the time
- 2) Disinfectant some of the time except on high risk surfaces or in high risk areas
- 3) Cleaning and then basic bleach solution (1000 ppm) and / or 70% alcohol on medium risk

Allocate a set number of wipes and preclean surfaces with cleaners prior to disinfection to remove soil, with an alternate disinfectant or bleach or other product available

wipes / cloths per bed.

wipes / cloths bathroom and sink

Toilet and all high touch surfaces with spray/flip top

Cleaners for non-critical or lower risk areas and surfaces with detergent

For surfaces being disinfected – possible prioritization guidance:

- Surfaces that receive the highest amount of hand contact, possible increased exposure to respiratory secretions, or high risk areas should be disinfected as long as possible
- Surfaces that receive no hand contact but are being disinfected should be changed to only being cleaned, until there is adequate disinfectant
- Surfaces that receive some amount of hand contact should be alternate between cleaning 'X' times and then disinfecting, with 'X' representing a risk assessment of the surface to contributing to surface to hand transmission of SARS-CoV-2 or other pathogens
- If supplies of disinfectant are depleted, use of a sanitizer after cleaning is better than cleaning alone
- For food contact surfaces being sanitized, similar criteria apply using a cleaner instead of a sanitizer.

A neutral cleaner with microfiber cloths should remove 2 – 3 log organisms from surfaces (Rutala 2012). If the neutral cleaner is quat-based, the facility needs to check for quat binding (Englebrecht 2013). Cleaning could be followed up by UV-C irradiation if a machine is available.

Regular household bleach could be used. CDC recommends a dilution of 1/3 cup per gallon of water (1000 ppm of chlorine). If using diluted bleach, a two-step process will need to be performed as bleach is not a cleaner. Cleaning will need to be performed first, followed by the disinfection step.

References

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Engelbrecht K, et al. Decreased activity of commercially available disinfectants containing quaternary ammonium compounds when exposed to cotton towels. Am J Infect Control 2013;41:908-11