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Update on Environmental Surfaces with the Spread of COVID-19

Is environmental hygiene an important infection prevention factor in reducing the spread of COVID-19?

Yes. Both the WHO and CDC recommend that to help reduce the spread of COVID-19, substantial environmental infection control procedures should be implemented [1-4]. The CDC states routine cleaning and disinfection procedures are appropriate for the COVID-19 virus and further recommends ensuring that environmental cleaning and disinfection procedures are followed consistently and correctly [Section 10 of Reference [3]].

Can the patient environment potentially contribute to the transmission of COVID-19?

Yes. A Research Letter from Singapore's National Centre for Infectious Diseases [5] supports the importance of environmental disinfection in the context of COVID-19. The preliminary results of this study (N=140 surface measurements) found that viral RNA was detected on nearly all environmental surfaces tested in the airborne infection isolation room of a patient with symptomatic mild COVID-19 prior to routine cleaning. Furthermore, the study showed that viral RNA was not detected in the rooms of two other symptomatic patients, after routine cleaning. The study concluded that: "Significant environmental contamination by patients with SARS-CoV-2 through respiratory droplets and fecal shedding suggests the environment as a potential medium of transmission and supports the need for strict adherence to environmental and hand hygiene" [5].

Can COVID-19 persist on environmental inanimate surfaces that have not been adequately cleaned?

Yes. An initial clinical study showed that COVID-19 [6] can persist on surfaces, with similar half-lives as other coronaviruses. In addition, a literature review of studies relating to other human and veterinary coronaviruses [7] asserted the available literature supports human coronaviruses, including COVID-19, can remain on surfaces for a considerable amount of time.

Persistence of COVID-19 is dependent on the material of a given surface, with longer half-lives observed on stainless steel and plastic surfaces [6].

How do I know that my surfaces have been adequately cleaned?

Several clinical studies demonstrate the value of going beyond visual inspection and adopting an objective and quantifiable cleaning monitoring method as a critical component of a robust environmental hygiene infection prevention program [8]. Monitoring methods are used to verify environmental surfaces cleanliness of and to monitor compliance of EVS staff to cleaning protocols. ATP monitoring is a common method used to verify environmental surface cleanliness. [9-15].

Can I detect the presence of COVID-19 using ATP monitoring or other monitoring solutions?

No. As of March 27, 2020, there are no monitoring solutions applicable to environmental hygiene that can specifically detect the presence of COVID-19. The goal for monitoring environmental cleaning is not to detect the presence of COVID-19, rather to detect the presence of clinical soil (for example, expectorated aerosolized droplets or fecal shedding) that may contain COVID-19, and to assess if that contamination has been adequately removed as a result of cleaning. Physical removal (i.e. cleaning) of clinical soil from a surface can be effectively monitored using an ATP system to a standard that goes well beyond visual inspection [9-15]. Importantly, ATP monitoring has been shown to be an effective monitoring method even when the pathogen of concern (*C difficile*) is an organism (spore) that has a negligible cellular ATP content [16-19]. For example, in Donskey *et al.* [16], ATP monitoring was used as an intervention providing "an objective measure of the effectiveness of cleaning." Effective measurement of cleaning was found to contribute to a reduction of the prevalence of positive cultures from CDI rooms by 89% [16].

I've seen ATP monitoring in patient and operating rooms or in the endoscopy suite, but not in an ICU setting. Can I use it for my patient rooms in the ICU?

Yes. Clinical studies support and suggest how ATP monitoring can be effectively used to monitor cleaning in intensive care units [20-21]. These studies suggest several ICU surfaces should be monitored for discharge (terminal) cleaning efficacy. In the study by Deshpande *et al.* [21], the following surfaces in an ICU setting were monitored using an ATP system:

ICU Patient Rooms	ICU Common Areas
Bedside supply cart handle	Cardiac monitor control panel
IV pump monitor	Telephone
Bed rail	Workstation keyboard
Ventilator control panel	Medicine dispensing station
Cardiac monitor control panel	Crash Carts

Please note that the table above is not meant to be used as a comprehensive list and there may be additional surfaces to test based on the infection prevention practices of a given facility.

How do I learn more about 3M™ Clean-Trace™ ATP Surface Test UXC?

To learn more about how the 3M™ Clean-Trace™ ATP Surface Test UXC can aid in your routine environmental cleaning process monitoring, please contact your local 3M Medical Solutions Sales Representative, or the 3M Healthcare Help Line at 1-800-228-3957 in the USA. Additional information can also be found at https://www.3m.com/3M/en_US/company-us/all-3m-products/~/3M-Clean-Trace-ATP-Surface-Test-UXC/?N=5002385+3292252027&rt=rud

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