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## COVID-19 pandemic and the stethoscope: Do not forget to sanitize



The SARS-CoV-2 (COVID 19) pandemic has resulted in unprecedented rapid generation and dissemination of published data in short-order, in almost “real-time.” Thanks to rapid review and publication, as a medical community we are rapidly learning more of the epidemiology, clinical manifestations, complications, and potential reservoirs of SARS-CoV-2 that may enhance transmission. Clinicians in all specialties are able to keep current due to this rapid turnaround of essential information. Providers who work on the “front-lines” as first-responders or in the emergency department, as well as in hospital wards, the intensive care unit, or the outpatient setting, need to implement a variety of mechanisms to help curb the spread of this viral pandemic.

Indirect pathogen transmission from inanimate objects is of potential concern not only for the general public, but also for healthcare professionals whose hands come into frequent contact with hard surfaces. Indeed, nosocomial infectious outbreaks from bacterial contamination of thermometers<sup>1</sup> and blood pressure cuffs<sup>2</sup> have been reported. Viral pathogens have also been isolated on hard surfaces in the healthcare setting,<sup>3,4</sup> but have not received as much attention as a risk for nosocomial and person-to-person transmission until very recently with the COVID-19 pandemic.

In addition to efficient spread *via* respiratory secretions/droplets, SARS-CoV-2 can survive on solid surfaces found in the healthcare setting.<sup>5</sup> van Doremalen et al. elegantly demonstrated that SARS-CoV-2 can remain viable, and thus potentially transmissible, for prolonged periods on stainless steel and plastic, and to a lesser extent, cardboard.<sup>5</sup> This has raised concern regarding nosocomial transmission and supports public health officials' urging of the public to sanitize their hands frequently when coming into contact with public surfaces. Other coronaviruses such as the Middle East Respiratory Syndrome (MERS) coronavirus and SARS-CoV-1, have been reported to remain viable on inanimate surfaces such as glass, plastic or metal for up to nine days, but can be inactivated by alcohol solutions, hydrogen peroxide, and sodium hypochlorite.<sup>6,7</sup>

Coronavirus viability could, in turn, result in self-innoculation if one touches their face or transmission to another person *via* hand contact.<sup>7</sup>

Healthcare personnel constantly come into contact with countertops, computers, phones, doorknobs, hospital charts, and stethoscopes, which have been shown to be colonized with a variety of bacterial pathogens.<sup>8</sup> The stethoscope is utilized by countless healthcare personnel in various settings and has been shown to harbor potentially pathogenic bacteria and transmit bacteria to human skin.<sup>9</sup> Cleaning the plastic diaphragm with standard cleaning solutions found in the healthcare setting can decrease bacterial load.<sup>9</sup> Respiratory syncytial virus (RSV) has been shown to survive on

stethoscope diaphragms and eradicated with standard alcohol wipes.<sup>4</sup> The severe fever with thrombocytopenia syndrome (SFTS) virus, an emerging fatal viral hemorrhagic fever in East Asia, has been recovered from stethoscopes and other hard surfaces in patient rooms who were diagnosed with SFTS, also raising concern for nosocomial transmission of highly pathogenic viruses.<sup>3</sup> In light of the recent data that SARS-CoV-2 can survive on plastic surfaces,<sup>5</sup> it is important for healthcare workers to clean the plastic stethoscope diaphragm at the same time as sanitizing their hands. Furthermore, “community” stethoscopes used by multiple individuals and sharing of stethoscopes should be avoided, if possible, in the midst of this pandemic in order to prevent nosocomial spread and potential self-inoculation. Although the stethoscope is a small piece of our equipment, as healthcare professionals, we can employ small maneuvers in attempt to curtail the spread of this virus, and this includes regular sanitizing of our stethoscopes.

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