nature

Update guidance on how coronavirus spreads

Catching COVID-19 from surfaces is rare. The World Health Organization and national health agencies need to clarify their advice.

A year into the pandemic, the evidence is now clear. The coronavirus SARS-CoV-2 is transmitted predominantly through the air – by people talking and breathing out large droplets and small particles called aerosols. Catching the virus from surfaces – although plausible – seems to be rare (E. Goldman *Lancet Infect. Dis.* **20**, 892–893; 2020).

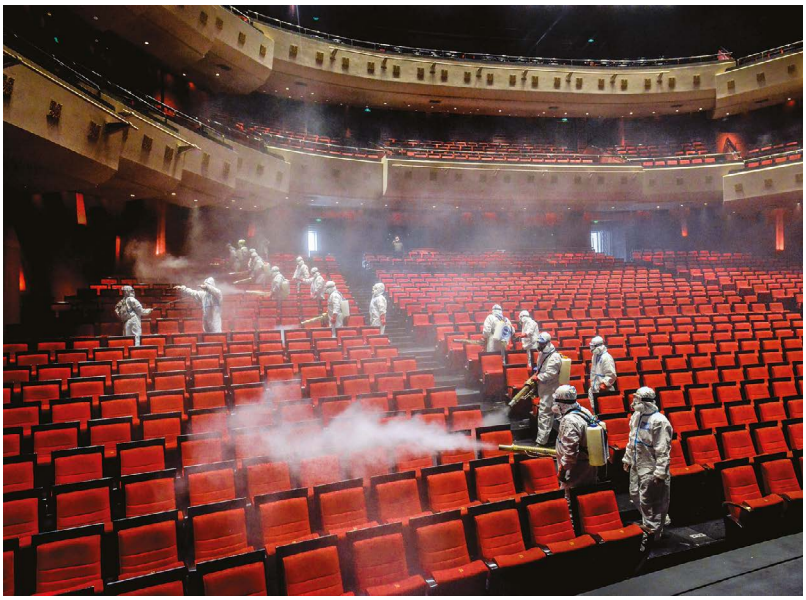
Despite this, some public-health agencies still emphasize that surfaces pose a threat and should be disinfected frequently. The result is a confusing public message when clear guidance is needed on how to prioritize efforts to prevent the virus spreading.

In its most recent public guidance, updated last October, the World Health Organization (WHO) advised: "Avoid touching surfaces, especially in public settings, because someone with COVID-19 could have touched them before. Clean surfaces regularly with standard disinfectants." A WHO representative told *Nature* in January that there is limited evidence of the coronavirus being passed on through contaminated surfaces known as fomites (see page 26). But they added that fomites are still considered a possible mode of transmission, citing evidence that SARS-CoV-2 RNA has been identified "in the vicinity of people infected with SARS-CoV-2". And although the United States Centers for Disease Control and Prevention (CDC) says on its website that surface transmission is "not thought to be a common way that COVID-19 spreads", it also says that "frequent disinfection of surfaces and objects touched by multiple people is important".

This lack of clarity about the risks of fomites – compared with the much bigger risk posed by transmission through the air – has serious implications. People and organizations continue to prioritize costly disinfection efforts, when they could be putting more resources into emphasizing the importance of masks, and investigating measures to improve ventilation. The latter will be more complex but could make more of a difference.

The New York City Metropolitan Transit Authority alone estimates that its annual COVID-related sanitation costs will be close to US$380 million between now and 2023. Late last year, the authority asked the US federal government for advice on whether to focus solely on aerosols. It was told to concentrate on fomites, too, and has so far directed more resources towards cleaning surfaces than tackling aerosols.

Now that it is agreed that the virus transmits through the air, in both large and small droplets, efforts to prevent spread should focus on improving ventilation or installing rigorously tested air purifiers. People must also be reminded to wear masks and maintain a safe distance. At the same time, agencies such as the WHO and the CDC need to update their guidance on the basis of current knowledge. Research on the virus and on COVID-19 moves quickly, so public-health agencies have a responsibility to present clear, up-to-date information that provides what people need to keep themselves and others safe.



XIA JUNJUN/VCG/GETTY

A team disinfecting the Qintai Grand Theatre in Wuhan, China, in January.

> "Efforts to prevent spread should focus on improving ventilation or installing rigorously tested air purifiers."

Members of Biden's stellar science team must pull together

A cast of eminent science advisers has a once-in-a-generation opportunity to bring a cohesive, inclusive approach to science policy.

As the world faces a pandemic, a climate catastrophe and more, US President Joe Biden is restoring leading scientists, as well as science-policy and science-diplomacy specialists, to positions of responsibility and influence. The world's scientific community is hugely relieved to see this recommitment to scientific integrity in the US government after four years of neglect, dismissal, denial, suppression and political interference.

Biden's actions are necessary, but researchers must