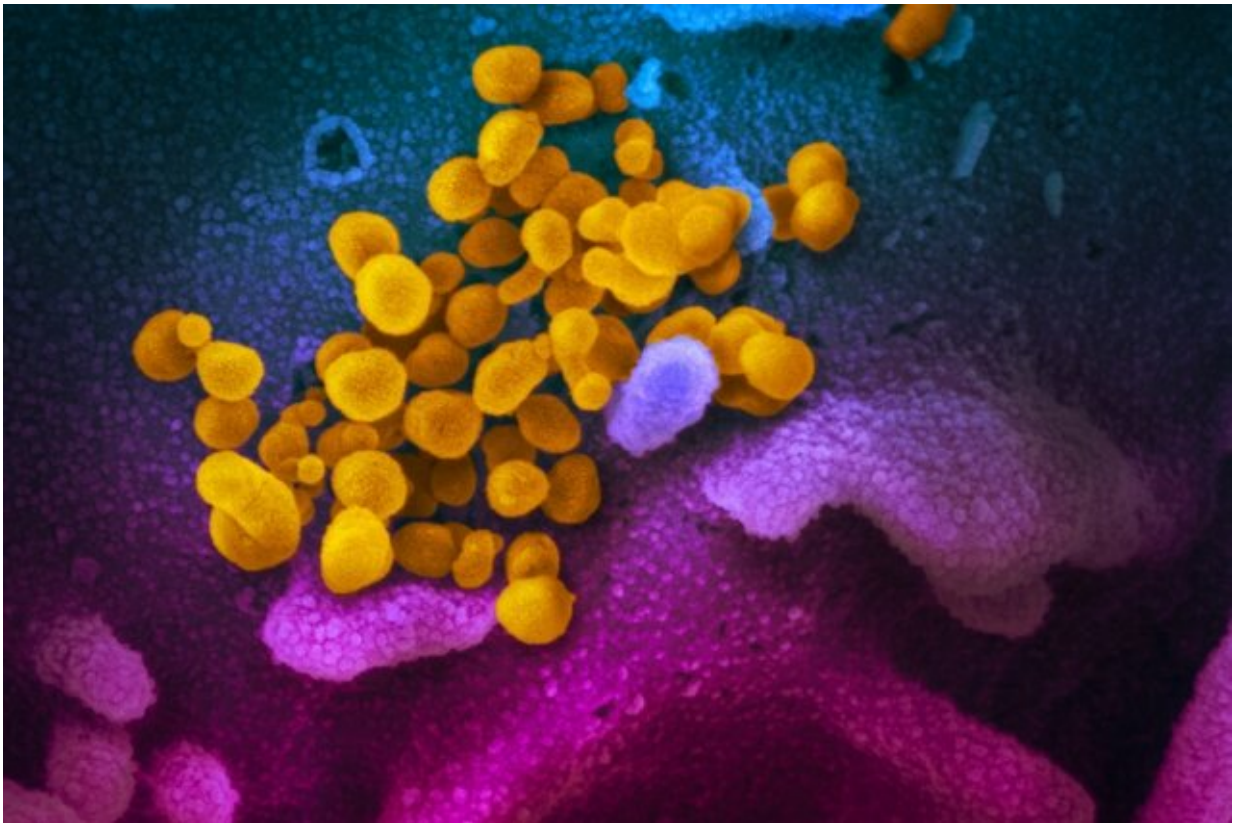


# Heightened levels of SARS-CoV-2 RNA found in the air in some patient areas

April 28 2020, by Bob Yirka

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This scanning electron microscope image shows SARS-CoV-2 (yellow)—also known as 2019-nCoV, the virus that causes COVID-19—isolated from a patient, emerging from the surface of cells (blue/pink) cultured in the lab. Credit: NIAID-RML

A team of researchers affiliated with several institutions in China has

found evidence of hotspots for airborne SARS-CoV-2 RNA at several sites in China. In their paper published in the journal *Nature*, the group describes collecting air samples from sites in China and what they learned through analyzing them.

Most medical researchers agree that the primary mode of transmission of the SARS-CoV-2 virus is through the expulsion of droplets into the air when infected people cough, or even just breathe. Researchers also believe that the virus can be transmitted through contact with objects in which the virus has come to rest. In this new effort, the researchers sought to learn more about the concentrations of the virus that persist in the air after an infected person has expelled it.

To learn more about viral [aerosol](#) persistence, the researchers set up aerosol traps inside and near hospitals that were treating COVID-19 patients in February and March. Some of the sites included hospitals that were treating those who were critically ill, while others were located in field hospitals treating those with less severe symptoms. In all, the team collected 40 samples from 31 sites.

In analyzing the samples for evidence of SARS-CoV-2 RNA, the researchers found dramatically different concentrations. As expected, they found much higher concentrations of the virus in the air where there were high concentrations of infected patients. They noted that concentrations were generally low in areas that were well ventilated. However, other areas, such as unventilated public toilets used by patients, were found to have much higher concentrations. The team was also surprised to find that aerosol concentration levels were also much higher in rooms where [medical staff](#) removed their protective equipment. This suggested that the virus could become airborne once again through the actions of removing gloves, masks and other gear. The researchers also found elevated levels of the virus in the air outside of medical treatment areas such as passageways through which large

numbers of patients walked in and out of hospitals.

The researchers suggest their study showed that viral aerosol levels can be reduced through effective ventilation—and they acknowledge that it is still not known if people can be infected by the [virus](#) through breathing the type of aerosols they found.

**More information:** Yuan Liu et al. Aerodynamic analysis of SARS-CoV-2 in two Wuhan hospitals, *Nature* (2020). [DOI: 10.1038/s41586-020-2271-3](https://doi.org/10.1038/s41586-020-2271-3)

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