

Dr .Van Kerkhove
World Health Organization
Avenue Appia 20
1211 Geneva, Switzerland

6th July 2020

Dear Dr .Van Kerkhove,

Three months have passed since our petition in early April, asking WHO to recognize the significance of aerosol (airborne) spread of SARS-CoV-2 (COVID-19) and the specific preventive measures required for mitigation.

Since then substantial and independent new evidence has emerged pointing to aerosol transmission as a major route of SARS-CoV-2 spread. At the same time the evidence to support the hypothesis that direct contact (touch) as the predominant mode of SARS-CoV-2 transmission has not increased - and, indeed, has even decreased, relative to the increasing support for aerosol transmission.

A comparison with measles and chickenpox has been made on several occasions, but it is not right to do such comparison. Not only because both these infections are truly systemic with high blood levels of virus (mostly absent in COVID-19), but because both measles and chickenpox have obvious and distinctive symptoms, with <1% of cases being asymptomatic. This means that secondary cases can easily be detect, providing much more certainty about disease acquisition over longer distances. COVID-19 is different and, like many of the other respiratory viruses (including influenza), there is a large proportion of mild or asymptomatic cases that may not present for testing. Thus, the R0 value for SARS-CoV-2 is likely underestimated - as has been discussed in many models since the beginning of the COVID-19 pandemic. Even seroprevalence studies may underestimate the number of COVID-19 cases because many do not produce detectable antibodies, or lose them quickly, and the tests vary significantly in their sensitivity. This means is that we really do not know how many have been infected with SARS-CoV-2, and it may be many more than we have so far estimated. Because of this, we cannot be certain about the distances over which it can spread and therefore, we cannot exclude its transmission via aerosol by comparing it with the patterns of disease typical of measles and chickenpox.

The significance of aerosol spread of SARS-CoV-2 is now being recognized by many major national institutions and governments. For example, the United Kingdom government, as part of the relaxation of their 2 m distancing guidance, has just published recommendations that recognize aerosols as one of the transmission mechanisms ([the link](#)). The recently updated US CDC guidelines no longer emphasise direct contact (via touch) as a route of transmission but rather focus on the role of droplets produced when an infected person talks, i.e. with possible inhalation into the lungs ([the link](#)).

European Centre for Disease Prevention and Control recently launched guidance on ventilation where they conclude that it is possible for SARS-CoV-2 aerosols (small droplets and droplet nuclei) to spread through HVAC systems within a building or vehicle and stand-alone air-

conditioning units if air is recirculated ([the link](#)). The German Robert Koch Institute states: “The main transmission pathway for SARS-CoV-2 is the respiratory uptake of virus-containing fluid particles that are produced when breathing, coughing, speaking and sneezing” ([the link](#)). In addition, much earlier, REHVA (the European Federation of Heating and Ventilation and Air Conditioning Associations) and ASHRAE (the American Society of Heating, Refrigeration, and Air Conditioning Engineers) had recommended the avoidance of recirculation, the opening of windows and increased ventilation to control the spread of virus aerosols ([the link](#) & [link](#)). Therefore, it is abundantly clear that multiple national and international authorities have already recognised the risks of aerosol transmission with SARS-CoV-2.

The group who signed the petition has since published a paper: “How can airborne transmission of COVID-19 indoors be minimised?” ([the link](#)). Now, as a larger body of 239 signatories from 32 countries, we are publishing our call in *Clinical Infectious Diseases*, aimed at the medical community and relevant national and international bodies, to recognize the role of aerosol SARS-CoV-2 transmission in spreading COVID-19 (please see attached, the embargo will lifted by the journal tomorrow).

We appeal again for WHO to join these scientists and national healthcare organizations to acknowledge the new data and update their stance, by acknowledging that aerosol spread is one of the main modes of transmission of SARS-CoV-2. This will provide urgent and much needed global leadership to unify the multiple and varied approaches required to control the spread of SARS-CoV-2, as new clusters continue to break out across the world.

Only by identifying and countering all the modes of transmission of SARS-CoV-2 will we be able to mitigate the pandemic while awaiting a safe effective vaccine.

As always, we would be happy to discuss these matters and offer our help and expertise.

Respectfully submitted on behalf of the Scientists,

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