How do I deliver adequate, effective, suitable ventilation in a COVID-19 environment?

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What are we trying to achieve?

Safer ventilation of some 2 million existing non domestic buildings

Dilution
The objective is to reduce the potential concentration of any viral material in the occupied spaces of a building

Dilution is improved by increasing the air supply to a space

Reduced potential exposure
Exposure will depend on the number of occupants in a space and the levels of exertion being undertaken – sedentary occupants talking quietly on the phone will generate lower levels of viral material than someone walking around the room talking loudly
The challenges

As already demonstrated by the earlier presentations, there are a number of significant unknowns in seeking to manage the risk of aerosol transmission in buildings:

- We do not know the location of any source of infection – the source, or sources, will be moving around
- The rate of production of contaminant, or infectious material, is variable in quantity as well as location
- The behaviour of any infected material is also influenced by the movement of other building users

So what we do has to address all of these unknowns
The key actions are

- Understand your ventilation system
- Run your ventilation at higher volume flow rate; this may require changes to CO₂ set points (for both mechanical ventilation and automated windows)
- Avoid recirculation/transfer of air from one room to another unless this is the only way of providing adequately high ventilation to all occupied rooms
- Recirculation of air within a single room where this is complemented by an outdoor air supply is acceptable - this helps enable more fresh air to be provided, get more fresh air to all occupants, and it can make an environment more comfortable
Summary

Increased ventilation using outside air is the primary means of mitigation of the risks of indoor aerosol transmission of SARS-CoV-2

Recirculation increases the risk of transmission

Winter poses a challenge of balancing outside air supply and thermal comfort
Thank you for listening

Questions at the end of the session, please

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