Rapid COVID Air Disinfection (RCAD) Study

The COVID-19 Pandemic has wreaked havoc upon the education of a whole generation of school children. It is estimated that school children have lost at least a half of an academic year due to the pandemic.

Education analysts have assessed the numbers of children achieving or exceeding the expected level for their age in reading, writing and maths compared with pre-pandemic scores. The report shows all year groups have struggled, but it is most pronounced for Year 1 pupils aged five and six.

Whilst rates of transmission of COVID-19 have dropped during the summer months there is a high risk that if no action is taken to mitigate airborne transmission, the risk of infection is likely to increase again in the autumn and winter seasons. The result being further school closures.

The Centre for Applied Education Research is looking for primary schools to take part in a trial of air filtration technologies to assess their ability to reduce COVID-19 transmission rates and reduce children missing school through self-isolation.

What does the study entail?

The study will comprise a multicentred randomised control trial of two air disinfection technologies:

1. **Portable high efficiency particulate air (HEPA) filters**
2. **Upper-room ultraviolet germicidal irradiation (ur-UVGI)**

There is a high confidence that these technologies have the potential to mitigate the airborne transmission of the COVID-19 virus within schools.

Entry requirements to the study will be mixed form entry to provide the widest selection of schools and natural ventilation of the classrooms. Schools enrolled to the study will be randomly allocated to each arm in equal numbers and in each school, 18 rooms will be selected to either act as a control with air quality monitoring only or to be equipped with an engineering intervention.

It is anticipated that the study will yield valuable information that will shape future policy regarding the deployment of air disinfection technologies.

What's in it for my school?

The use of these technologies offers the potential to significantly reduce the transmission of all airborne viruses, not just COVID-19, and also improve general air quality. As such there should be a reduction in both student and staff absences due to illness and related increase in attendance throughout the year.

Are these technologies safe?

Upper-room UVGI, is a safe and mature technology that has been used in the USA since the 1930s. It has been used successfully to reduce the spread of measles and mumps in schools, and tuberculosis (TB) on hospital wards. It has also been shown that UV-C light readily inactivates COVID-19 virus.

Likewise, portable free-standing air purifiers, which contain HEPA filters, have been shown to be effective at removing pathogens and allergens from room air in schools, suggesting that this technology also has the ability to inhibit COVID-19 transmission.

Consequently, there is a high degree of confidence that, if deployed appropriately, these technologies have the potential to reduce viral transmission by the aerosol route, thus helping to make schools 'COVID-safe' and allowing the return of normal teaching activity.

When will these technologies be fitted in schools?

Air quality monitoring equipment will be fitted in all participating schools before the end of August 2021.

The HEPA filtration units are available as off-the-shelf units and are manufactured by Philips. As it is possible to procure these units and install them relatively quickly, this intervention will be installed in relevant schools before August 2021.

As ur-UVGI must be installed by specialists whilst the classrooms are shutdown the proposed installation for schools receiving this intervention is during August 2021 in order to minimise disruption to teaching.

Interested?

Please get in touch for an informal chat and more information.

Contact information

Project Manager: Dr Chris Brown

Telephone: 07742545851

Email: c.j.brown@leeds.ac.uk