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Health and Safety  
Executive

## Welcome to HSE's Science and Research eBulletin

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For further information visit our [science, engineering and evidence website.](#)



### Scientists advise office CO2 monitoring to help manage COVID-19 risk

As more workers and students return to offices and schools, the PROTECT COVID-19 National Core Study has published a new paper in the Indoor and Built Environment journal detailing a new model that has been developed to predict the risk of airborne COVID-19 infection in such environments.



The model uses monitored CO2 and occupancy data to predict how many workers are likely to be infected by an asymptomatic but infectious colleague.

Find out more about the model and findings from the research in [PROTECT's press release.](#)

**Professor Andrew Curran, HSE's Chief Scientific Adviser and lead for the PROTECT study:**

*'This important research demonstrates that, while the airborne transmission route can be a significant contributor to COVID-19 infection risk in places such as offices and schools, there are achievable steps that can be taken to reduce this risk and help facilitate a safe return.'*

*Ensuring adequate ventilation is a key element, and the appropriate use of tools such as CO2 monitoring can give building managers a much better understanding of their own ventilation systems and how they are performing for each activity undertaken in the space.'*

**Read the paper:**

[Predictive and retrospective modelling of airborne infection risk using monitored carbon dioxide](#)

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### Ventilation tool to support COVID-19 controls

The [British Occupational Hygiene Society \(BOHS\)](#) has worked in collaboration with HSE Occupational Hygienists to develop a freely available tool for assessing general ventilation and COVID-19 transmission.

Good ventilation (providing fresh air) can help limit the risk of COVID-19 transmission, especially in enclosed spaces.

The [ventilation tool](#) supports employers, building users and building owners by using a simple scoring system to indicate the effect their ventilation arrangements are likely to have on reducing COVID-19 transmission. It also provides recommendations for taking action, where appropriate.

Professor Andrew Curran, HSE's Chief Scientific Adviser, commented: *'I'm really pleased to see the development of this practical tool which will help to inform decisions about ventilation in work spaces.'*

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## Discovering Safety programme

**HSE researchers are using novel data and analytical techniques to provide new insights and data-driven approaches to improving health and safety performance globally through the Discovering Safety programme.**

The [Discovering Safety programme](#) is funded by the Lloyds Register Foundation charity and delivered by HSE specialists in conjunction with a range of partners from academia, industry and technology start-ups.

HSE has always used evidence in the pursuit of better health and safety outcomes. However, novel data techniques are allowing new insights through collation and analysis of data to better understand incident causation and inform and underpin policymaking and other regulatory activities.

Businesses are collecting and using more data than ever before, presenting a valuable opportunity to use this in an innovative way to improve health and safety.

Within the Discovering Safety programme, HSE's scientists are integrating data sources, combining them with our regulatory insights and world-leading science to deliver insights into health, safety and wellbeing.

[Watch the Discovering Safety Technical Showcase on YouTube](#)

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## Latest science publications

One of our latest publications is on work collaborating with the USA Defense Threat Reduction Agency and Department of Homeland Security, looking at the model systems used to assess the hazards of the releases of toxic industrial chemicals to the atmosphere and estimate health risks.

Read the publication '[Gaps in toxic industrial chemical \(TIC\) model systems: Improvements and changes over past ten years](#)'.

It is HSE policy to make the results of research available, wherever possible. View the latest [science publications](#) and [research reports](#).

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For the latest news on HSE science follow our Chief Scientific Adviser (CSA), [Professor Andrew Curran, on Twitter](#).

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