

PROTECT COVID-19 Conference on transmission and environment



17-18 November 2021

University of Manchester & online

Conference programme

Day 1 (17 November):

In-person attendance for PROTECT internal/research colleagues only (no livestream).

12:00-13:00 **Registration and lunch**

Cold boxed lunch; soft drinks; tea and coffee; biscuits

Interactive science fair exhibits/demonstrations

13:00-13:30 **PROTECT all-colleague meeting**

Welcome address and objectives for the day

Professor Andrew Curran, Chief Scientific Adviser, Health and Safety Executive

Research theme lead introductions

Dr Yiqun Chen and Dr Derek Morgan, Health and Safety Executive

Professor Cath Noakes, University of Leeds

Professor Martie Van-Tongeren, University of Manchester

Allan Bennett, UK Health Security Agency

Icebreaker: perceptions of transmission risk (phone required for this activity)

Professor Martie Van-Tongeren, University of Manchester

13:30-15:00 **Parallel theme-based workshops: evaluating and looking forwards**

Work package/project introductions/lightning talks

Cross-project group work: facilitated by their respective theme leads, researchers from PROTECT's five research themes will workshop responses to a number of key programme evaluation questions:

- To what extent have we answered the key questions we set out to address?
- What evidence statements can we make about transmission of the COVID-19 virus, and at what level of confidence, based on PROTECT research?
- What evidence gaps remain and how should they be prioritised?
- What interdisciplinary methods and collaborations are needed to fill the gaps?

Responses will be captured visually and fed back for open discussion during the wrap-up session at the start of day 2.

Workshop leads:

Theme 1: *Dr Yiqun Chen and Dr Derek Morgan, Health and Safety Executive*

Theme 2: *Professor Cath Noakes, University of Leeds*

Theme 3: *Professor Martie Van-Tongeren, University of Manchester*

Themes 4 & 5: *Allan Bennett, UK Health Security Agency*

15:00-15:30 **Tea break and cross-theme networking**

Tea and coffee; biscuits

Interactive science fair exhibits/demonstrations

15:30-17:00 **Cross-theme knowledge café**

Attendees will be split into small cross-theme groups, which will rotate around five or six tables hosted by researchers from different projects in 18-minute intervals to learn about their work and relate it to their own. Groups will be allocated to one of three circuits:

Circuit 1	Circuit 2	Circuit 3
<i>Outbreak investigations</i> (Chris Keen & Matthew Coldwell, T1)	<i>Outbreak data analysis</i> (Joseph Januszewski & Anne Clayson, T1)	<i>Outbreak heat map and risk model</i> (Timothy Aldridge, T1)
<i>Environmental surface sampling</i> (Barry Atkinson & Iain Nichols, T4)	<i>Analysing behaviour from CCTV</i> (Phil James and Jennine Jonczyk, T2)	<i>Using CFD modelling to understand transmission</i> (Tim Foat & Matt Iivings, T2)
<i>Developing directed acyclic graphs for epidemiological analysis</i> (Jack Wilkinson & Sarah Rhodes, T3)	<i>Measuring ventilation in real buildings</i> (Abigail Hathway & Cristina Rodriguez-Rivero, T2)	<i>Areas of enduring prevalence: underlying causes and hypotheses</i> (Cath Lewis & Sheena Johnson, T3)
<i>Surfaces and transmission</i> (Richard Thomas, T4)	<i>Risk ranking work and social contact scenarios</i> (host Nicola Gartland & Anna Coleman, T3)	<i>Sampling infectious cases</i> (Chris O'Callaghan & Susan Gould, T4)
<i>QMRA modelling</i> (Simon Parker & Mark Cherrie, T2)		
<i>IMADGENN – aerosol and droplet sampling</i> (Ginny Moore & Nicola Yaxley, T4)	<i>Animal transmission models</i> (Jie Zhou, T5)	<i>Survival and transmission on skin</i> (Alex Byrne, T5)

17:00-18:00 **Researcher reception and networking**

Soft drinks; tea and coffee; biscuits

Day 2 (18 November):

In-person attendance for PROTECT research colleagues and invited external stakeholders; plenary sessions livestreamed for online external attendees.

9:00-10:30 **Filling the blank page: wrap-up session for PROTECT internal/research colleagues**

Chair: *Dr Derek Morgan, Health and Safety Executive*

Presenting back of evaluation workshop responses from day 1

Town hall discussion of identified themes and next steps

10:15-10:45 **Registration for in-person external attendees**

Tea and coffee; biscuits

10:45-11:45 **Opening plenary: Evidence needs for controlling virus transmission, from this pandemic to the next**

Chair: *Professor Andrew Curran, Chief Scientific Adviser, Health and Safety Executive*

COVID-19 has thrown into relief the research and analytical capacity needed to respond effectively to fast-moving global pandemics, with scientists thrust into the public spotlight as never before. However, there has also been a need to ensure research is generating useful insights that can be translated into advice for policy and practice and applied to real-world challenges by end users, including government, industry, and the general public.

In this session, a select panel of such evidence users will discuss how research on the dynamics of virus transmission did (or didn't) inform their COVID-19 responses, and what we can learn from this for future pandemics.

Opening remarks:

Sarah Albon, Chief Executive, Health and Safety Executive (pre-recorded)

Panel members:

Professor Paul Monks, Chief Scientific Adviser, Department for Business, Energy and Industrial Strategy

Fliiss Bennee, Deputy Director for Technology, Digital and Innovation for Health and Social Services, Welsh Government

Emer O'Connell, Senior Public Health Advisor, COVID-19 Public Health Advice, Guidance and Expertise (PHAGE), UK Health Security Agency

11:45-12:00 **Tea break and networking**

Tea and coffee; biscuits

Interactive science fair exhibits/demonstrations

12:00-12:45 **Plenary 2: Understanding the role of virus characteristics in transmission**

Chair: *Professor Wendy Barclay, Head of Department of Infectious Disease and Chair in Influenza Virology, Imperial College London*

The rate of transmission of SARS-CoV-2 (the virus that causes COVID-19) is largely determined by the interaction of three sets of factors: the characteristics of the virus itself, the physical environment it is in, and the behaviour of people in that environment.

This session will examine the first set of factors, relating to the characteristics of the COVID-19 virus itself. Drawing on PROTECT research, the speakers will present and discuss what we know about how SARS-CoV-2 behaves, from its incubation period and infectivity to its ability to survive on and transfer between surfaces. The impact of different variants will be considered, as will the methods developed to study the virus and how they may be deployed in the face of future pandemics.

Professor Chris O'Callaghan, Professor of Respiratory and Paediatric Medicine, UCL – Recovering viable virus from environmental samples

Dr Susan Gould, HCID Clinical Fellow, Liverpool School of Tropical Medicine, and Nicola Yaxley, UK Health Security Agency – IMADGENN: sampling aerosols and droplets for the COVID-19 virus

Professor Wendy Barclay, Head of Department of Infectious Disease and Chair in Influenza Virology, Imperial College London – COVID-19 Human Challenge Studies

Q&A and panel discussion

12:45-14:00 **Lunch**

Cold boxed lunch; soft drinks; tea and coffee; biscuits

Interactive science fair exhibits/demonstrations

14:00-14:45 **Plenary 3: Understanding the role of environmental factors in virus transmission**

Chair: *Professor Cath Noakes, Professor of Environmental Engineering for Buildings, University of Leeds*

Following on from the theme of the previous plenary, this session examines the second set of factors affecting transmission of the COVID-19 virus: the physical environment it takes place in. Using PROTECT research, the speakers will present and discuss what we know about how these environmental factors affect transmission, and what we can change to create more 'infection resilient' environments – now and in preparation for future pandemics.

Chris Keen, Occupational Hygienist, Health and Safety Executive – COVID-OUT: outbreak investigations to understand workplace transmission in the UK

Dr Simon Coldrick, Senior Scientist, Health and Safety Executive – Modelling the physics of aerosol and droplet dispersion

Sarah Beale, PhD researcher, UCL, and Sarah Rhodes, Research Fellow, University of Manchester – Occupational risk of COVID-19 virus transmission

Q&A and panel discussion

14:45-15:00 **Tea break and networking**

Tea and coffee; biscuits

Interactive science fair exhibits/demonstrations

15:00-15:45 **Plenary 4: Understanding the role of human behaviour in virus transmission**
Chair: *Dr David Fishwick, Chief Medical Adviser, Health and Safety Executive*

The third of three connected plenaries, this session will examine the third set of factors affecting transmission of the COVID-19 virus: human behaviour. Drawing on PROTECT research, the speakers will present and discuss how the way we act in different settings and with different people can influence the spread of the virus, the role of public perceptions, and how behaviour can be effectively influenced in ways that will help us control both this pandemic and the next one.

Anne Clayson, Senior Lecturer in Occupational Hygiene, University of Manchester – *Analyses of COVID-19 outbreak data in the UK*

Dr Miranda Loh, Head of Environment and Public Health, Institute of Occupational Medicine – *How much do I touch my face? Modelers want to know - Quantitative Microbial Risk Assessment for COVID-19*

Professor Sheena Johnson, Professor of Work Psychology and Wellbeing, and Cath Lewis, Researcher, University of Manchester – *Contributing factors and mitigation strategies for areas of enduring COVID-19 prevalence: a qualitative study with Directors of Public Health*

Q&A and panel discussion

15:45-16:00 **Closing remarks**

Wrap-up and reflections

Professor Andrew Curran, Chief Scientific Adviser, Health and Safety Executive

About the science fair

Throughout the breaks in this programme, you will see time set aside for attendees to visit interactive 'science fair' exhibits and demonstrations. These will be located in the reception and networking spaces of the conference venue, and will give delegates the chance to engage directly with research methods and equipment being employed by researchers from different elements of the PROTECT programme, gaining a greater understanding of where our data comes from. Exhibits will range from instruments used to measure viral emissions and surface transfer, through computer models that predict the spread of airborne particles, to facial recognition and finger tracking technology.

Attendees will also have the chance to participate in 'citizen science' activities throughout the day, such as responding to snap qualitative polls on perception of transmission risk, and to visit poster presentations on PROTECT research.