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2022

Reducing risk of Covid-19 and infectious diseases at Trade Union Meetings and Conferences

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8/8/2022

Reducing risk of Covid-19 at Trade Union Meetings and Conferences

This has been written in response to concerns raised by trade union members attending meetings and conferences and equally applies to all indoor events.

As Covid-19 infections and other diseases continue to circulate in our communities and workplaces, it is essential to take the risk of infection with Covid-19 seriously at any in-person conference or meeting. It is advisable therefore, to continue to control the risks of infections to ensure that those who are vulnerable are able to participate in our conferences and meetings, if possible in person. Where that is not possible then hybrid meetings should be held (i.e. on-line and in-person) to protect vulnerable people and those unwilling to put themselves and their families at risk of infection; and those who are unable to attend in person because of other circumstances, in addition to controlling the risks of infection for those attending in person.

It is important to know who has the legal duty to ensure the health, safety and welfare of those attending the event and also who has the duty to ensure that mitigation including ventilation meets the legal requirement. However, we all share in the responsibility of preventing infections and protecting the health of those attending, if not legally but morally.

It is possible to hold low-risk conferences and meetings with appropriate protection measures in place, but if no measures are put in place there is considerable risk of transmission.

In addition to the organisations legal responsibilities, individuals also have a responsibility not to knowingly infect others and to limit infections.

This document will provide information on:

- How to reduce the infection risks by:
 - Checking the venue about procedures for controlling the risks of infection through improved and increased ventilation and air filtration units
 - Understanding what needs to be asked and calculated to ensure good air quality
- What can conference organisers do before and at an event to prevent transmission
- What information should be shared with delegates/applicants
- What public health information needs to be circulated to attendees and what additional equipment should be provided to attendees
- How will risks be assessed and controlled and how will this be monitored and maintained throughout the event
- What contingency plans will be put in place if an outbreak occurs, an individual presents with Covid symptoms or an individual is taken ill during the event

Reducing the risk of Covid-19 spread

The following measures should be considered to reduce the risk of Covid-19 spread as much as possible and a risk assessment completed – see below for template:

1. **Prior to booking a venue, information should be sought about how, and at what level, their rooms are ventilated** – naturally via windows, doors and trickle vents in walls, or by mechanical heating ventilation and air conditioning, HVAC (*Re detailed information about HEPA filters in the conference and meetings guide: responsibility lies with the venue to ensure adequate ventilation and air filtration*). Keep the conversation positive, as it may take a number of conversations to establish an agreed position.
 - a. Naturally ventilated rooms need to be assessed by a competent person to ensure there is sufficient ventilation to guarantee required air flow for the number of occupants and the activity being carried out. This should be measured in Air Changes per Hour or litres/cubic metres of air per person per second/hour.
 - b. Where mechanical ventilation is provided then information should be provided by the venue on the specification of the equipment being used, and its performance confirmed by a recent system maintenance check by a competent person.
 - c. Where there is no specific guaranteed ventilation available (this could be for a range of reasons including if a building is listed), then consideration should be given to finding a less risky venue. During Covid-19 pandemic, we do not recommend holding events in a room with virtually no ventilation.

2. **Determining the necessary air quality of a venue and its rooms:**
 - a. Ventilation is necessary to bring in fresh air containing more oxygen and to remove carbon dioxide and stale air etc. The Workplace Health, Safety and Welfare Regulations state: *‘Effective and suitable provision shall be made to ensure every enclosed workplace is ventilated by a sufficient quantity of fresh or purified air’*.
 - b. To reduce relative risk of COVID Transmission, WHO and other experts recommend a MINIMUM air flow of 6 Air Changes per Hour (ACH), or 10 litres per person per sec/36 m³ per hour per person, to dilute, disperse and remove Covid bearing respiratory aerosols from the air and reduce risk of inhalation.
 - c. If the ventilation is below that standard, then HEPA (High Efficiency Particulate Air) filters can be used to supplement it by cleaning the air in the room. They filter out particles down to 0.1 microns including the respiratory aerosols that carry Covid-19 virus. HEPA filtration does not replace ventilation as it does not add more oxygen or remove carbon dioxide, but in terms of removing virus-containing aerosols, it can add the equivalent of more air flow in addition to existing ventilation to bring it up to 6 ACH or 36 m³ per person per hour.

- d. HEPA filters must provide a sufficient Clean Air Delivery Rate (CADR) to ensure this and the venue management must have access to a HVAC specialist to confirm the ventilation rate and any HEPA filter calculations (as a rough guide see calculations below)
 - e. The venue will also need to continuously monitor ventilation rate. This can be done using CO₂ as a proxy of ventilation using carbon dioxide monitors to ensure the level is below 800 ppm which roughly corresponds to the required air flow of 6 Air Changes per Hour(ACH), or 10 litres per person per sec/36 m³ per hour per person. The CO₂ monitors should be Non Dispersive Infra Red (NDIR) and portable handheld monitors are a convenient and reliable way of doing this.
3. **Conference Documentation sent out beforehand should include a section on Covid safety measures, and include asking delegates to abide by risk assessment regarding:**
- a. Someone with symptoms or a close contact of someone who tests positive or who has typical symptoms * (see individual risk assessment below)
 - b. Pre conference LFT (Lateral Flow Test) testing
 - c. Traveling to and from the venue
 - d. Wearing face mask during conference to minimum FFP2 standard
4. **At the conference venue:**
- a. Conference chair/spokesperson to make clear statement at the beginning as well as including information in the conference packs about precautions being taken at the conference to reduce and control the infection risks
 - b. FFP2/3 Face masks and LFT testing kits should be made available
 - c. Posters about Covid measures should be displayed and stewards should staff the doors to remind delegates about wearing face masks
 - d. If appropriate doors and windows opened before, during and after workshops/break out rooms to ventilate between occupancy.
5. **Conference organisers should make contingency arrangements for emergencies**
- a. How to support that person who tests positive or becomes unwell returning home and precautions to take if using public transport if they are well enough to travel.
 - b. If ventilation levels are insufficient, there is no HEPA filtration, and readings on carbon dioxide monitors rise above 800ppm, then action should be taken to increase ventilation or reduce occupancy level of room.

6. PORTABLE HEPA AIR FILTRATION

For events held inside trade union premises, if the ventilation is assessed as insufficient, unions should purchase or hire HEPA filter units to ensure that sufficient air cleaning occurs to make the space safe for attendees. Costs are reasonable (a few hundred pounds each) and maintenance is straightforward.

Selecting suitable HEPA Filters and ensuring the Clean Air Delivery Rate is sufficient.

We don't recommend specific manufacturers but set out criteria to meet:

- Have inner HEPA or true HEPA filter not 'HEPA like'. HEPA filters are guaranteed to catch over 99.97% of 0.3 micron particles, but in practice filters out down to 0.1 microns (millionths of a metre) i.e all the aerosols containing virus
- Have sufficient Clean Air Delivery Rate, CADR, for room size , number of occupants and activities
- **VERY SIMPLIFIED calculation: Desired number of ACH x Volume of room = CADR in m³ per hour**
- **Low Noise level – as quiet as possible: this will be listed in decibels dB(A)** Guide- 50-65 DB = normal speech; 40 dB = quiet library 30 dB = whisper nearby; 20 dB = whisper at 5 metres. May need two, will be quieter on lower fan speed
- **Not have Ultra Violet light, plasma, ionisation or any other devices/chemicals, only HEPA filtration**
- **Additional outer filters are good as trap larger particles, protecting the inner HEPA filter**
- **Check cost of replacement filters, how often need changing and how to do safely.**

List of studies on HEPA efficiency for Covid: <https://tinyurl.com/ykapz89y>

SAGE Advice <https://tinyurl.com/4jrzbtr>

CIBSE: Air cleaning technologies <https://tinyurl.com/yu85z6s4>

Good comparisons for purchasing portable air cleaners can be found at:

Portable HEPA Air Cleaner Guide Clean Air Crew <https://cleanaircrew.org/air-cleaners/>

Good UK HEPA filter list: <https://www.fullplasticscientist.co.uk/air-purifier-comparison>

Clean Air Stars: <https://cleanairstars.com/filters/>

- There is some good work being undertaken on home-made filtration units and a good Corsi-Rosenthal Box using MERV 13 (Minimum Efficiency Reporting Value) or better filters would provide about 1,000 m³ CADR for around £100. These have been shown to be as efficient or more, for less cost than commercial HEPA units and may be appropriate for some settings and events. [This article discusses the potential for widespread adoption of DIY filters as an effective tool in the pandemic:

“Can 10× cheaper, lower-efficiency particulate air filters and box fans complement High-Efficiency Particulate Air (HEPA) purifiers to help control the COVID-19 pandemic?”
<https://tinyurl.com/2r5unr7s>

7. Additional Information – How to work out the Clean Air Delivery Rate

Rough calculations to work out the Clean Air Delivery Rate needed from HEPA filtration units, two methods:

- a. Example: Ventilation provides about 1 room ACH and you need 6 ACH minimum, so you need 5 more ACH.

Multiply the volume of room (width x length x height = volume in m³) by the number of Air Changes an Hour required to give Clean Air Delivery Rate, CADR, in m³/hour your need from HEPA Units.

Volume of room 150 m³ x 5 ACH =750 m³/hr CADR . Source 2 HEPA units that can deliver 375 m³/hr, or 3 at 250 m³/hr. Go for a bit higher CADR rather than lower to account for inefficiency and less noise, keep well under 50 dB noise level.

- b. Example: If room carbon dioxide, CO², settles around 1,500ppm the ventilation rate is approximately 5 litres per person per sec (l/p/s) of fresh air flow. To keep room well ventilated, reduce chance of inhaling other people’s exhaled air and keep CO² level below 800ppm you need 10 litres per person per second or 36 m³ per person/hour. So you can size HEPA filter CADR, to add equivalent of another 5 litres per person per second. Take number of people, multiply by extra l/s/p you want and then multiply by 3.6 to convert to m³ per person per hour. Now you have CADR needed in m³/hr

Example for room with 1,500ppm CO² with 32 people

32 x 5 x 3.6 = CADR of 576 m³ per hour. Maybe buy two HEPA filters with CADR of 300 m³/hr each.

Room may not reach steady state of 1,500 ppm CO₂, it may just rise and rise due to inadequate ventilation and we should stop using such rooms. If forced to use room temporarily then HEPA filtration with higher CADR would be urgently needed. Rooms regularly +constantly over 1,500 ppm CO₂ should not be used unless reduced number of occupants /time can make the ventilation rate suitable

8. Individual risk assessment

While the conference/meeting organisers do their best, using the above measures, to make the environment as safe as possible from Covid, it is important that we all individually do our bit to stay safe and to prevent any potential spread of infection to others. This means doing the following:

- a) Check if you have any symptoms of possible Covid-19 infection;
- b) Carry out a lateral flow test (LFT- this is the same thing as a Rapid Antigen Test RAT), on the day you travel to the conference.

- c) Wear a good quality respirator mask (FFP2 or FFP3) – these can be bought for about £2 each; the conference organisers may be able to provide these.
- d) Observe hand hygiene
- e) Stay safe travelling to and from the venue
- f) If you become unwell at the conference, stay away from others and inform the organisers

a) Symptoms of Covid-19 (i.e. Omicron)

If you have symptoms of Omicron you should not attend the conference/meeting. The commonest symptoms are:

1. Runny nose
2. Headache
3. Sneezing
4. Fatigue
5. Sore/scratchy throat
6. Persistent cough
7. Loss of smell/taste
8. Aches and pains
9. Fever/night sweats
10. Nausea (vomiting can occur)
11. Breathlessness

Only 50% of people who get Covid in the recent Omicron waves experience any of the classic symptoms of fever, cough, or loss of sense of smell or taste. Loss of smell and taste has become much less common; only 1 in 5 people experience it with recent Covid infection.

<https://joinzoe.com/learn/omicron-symptoms>

Please note: If someone in your household currently has Covid-19, you are likely to be infected and you should not attend the conference

b) Do an LFT on the day of the conference, before you leave home.

If the test is positive then do not attend the event. Please be aware that the line on a positive LFT test may be very faint; this still means you have the virus and are infectious. Also please note that early infection may not show up on the LFT test, **so if you have symptoms of Covid, do not attend the event, even if your LFT test is negative.** If the LFT test is positive you definitely have Covid, if its negative you could still have it.

If you have recently had Covid, you should stay in isolation until 10 days after the onset of your symptoms or a positive test. To leave isolation you should have had no symptoms for 48 hours, **and** have had two negative LFT tests 24 hours apart. If you feel fine but are still

testing positive, then you are still infectious, as the LFT test picks up live virus. So stay in isolation until you have two negative test 24 hours apart.

c) Wear a good quality respirator face mask

The main way Covid spreads is through the air, therefore a “respirator” face mask, i.e. FFP2 or FFP3 masks are essential. These are tested to ensure they protect the wearer from inhaling fine airborne particles like virus-containing aerosols; they will also stop virus being breathed out by someone who is infected. They are designed to fit closely on the face and form a good seal around the nose and mouth. They are highly effective when used properly, especially if everyone else wears one too. A “surgical” or “medical” mask is not good enough - their seal is poor and viruses get in through the sides or above the nose, so the level of protection is not good enough.

d) Observe hand hygiene

Covid spread is overwhelmingly airborne, but there is a theoretical risk of contact spread, so it is a good idea to wash your hands several times a day. On its own hand hygiene is not enough to prevent infection however, measures to prevent breathing in the virus are far more effective.

e) Stay safe travelling to and from the conference

Remember public transport, taxis and car-sharing have the potential to spread Covid – they are small enclosed spaces with other people close to you. Wear your FFP2/3 mask all the time, and open any windows as widely as you can. If trains and buses are very crowded, wait for the next one if possible and try to spend as little time as possible in very crowded spaces.

f) If you become unwell at the conference

If you become unwell, do your best to stay away from other people and inform the conference organisers. They will be able to assist you to make arrangements to return home or call for help from medical services. Please don't just ignore your symptoms, hoping they will go away; you could be developing Covid and can easily pass this on to other people in the early stages of infection.

9. Advice

If you would like further advice or to discuss the measures in this guide; please contact us by email: info@hazardscampaign.org.uk or doctorsinunite59@gmail.com

10. Further reading:

- See Hazards Campaign latest update of Clean Air /Ventilation/Filtration notes and links:
<https://drive.google.com/file/d/1waITWqleAcfGKWxkBBsZY8tyn8yFRXdG/view?usp=sharing>
- Hazards Magazine: Venting <https://www.hazards.org/infections/venting.htm>
- Research: Outcomes of SARS-CoV-2 Reinfection:
<https://www.researchsquare.com/article/rs-1749502/v1>

Covid-19 Risk Assessment for organisers for an inside event

Organisation name: _____

Assessment carried out by: _____

Date of next review: _____ Date assessment was carried out: _____

GENERAL GUIDANCE:

- Advise delegates/attendees not to attend conference if experiencing symptoms or testing positive for Covid-19
- Advise delegates/attendees of symptoms and how the virus is spread

Complete any additional details, information and if additional risks have been identified add them to the Risk Assessment. This information must be shared in advance of the event with everyone involved in the organisation and stewards.

WHAT IS BEING ASSESSED? _____

What are the hazards?	Who might be harmed and how?	What are you already doing to control the risks?	What further action do you need to take to control the risks?	Who needs to carry out the action?	When is the action needed by?	Done
<p>Person infected with Covid-19 attends a event. This could include unidentified asymptomatic cases or people who have not self-isolated in accordance with advice.</p>	<p>The general public, attendees, staff at the event, emergency services staff could contract the Covid-19 virus via direct or indirect contact, large droplets or aerosols</p>	<p>Attendees, prior to attendance, must take a LFT test and are advised that if they are experiencing any Covid-19 symptoms they must NOT attend.</p>	<p>Preventing exposure to the virus is preferable to trying to deal with an exposure after it has happened.</p> <p>Therefore, measures to prevent attendance in the first place, by anyone infected, is the most appropriate control.</p>	<p>Everyone</p>	<p>In advance of the event</p>	

<p>Spread of Covid-19 to other people via respiratory droplets and aerosols from talking, coughing or sneezing.</p>	<p>Anyone could contract the virus via contaminated respiratory droplets and aerosols from an infected person at the event.</p>	<p>The event is held indoors, which increases risk. Attendees are encouraged to wear a high quality face covering or preferably FFP2 minimum face mask where appropriate and to avoid touching their eyes, nose and mouth.</p> <p>Attendees to maintain physical distancing of at least 2 metres.</p>	<p>Advise attendees in advance of appropriate precautions, with reminders on the day from platform and from stewards.</p> <p>Ventilation must be increased either through mechanical ventilation or leaving doors and windows open. (Opening windows where no one is sitting to avoid drafts). Also periodically opening doors to dilute air which may contain virus and vacating the space.</p> <p><i>If necessary, introduce air filtration units</i></p> <p>Discourage people talking face to face close to each other and to maintain physical distance where reasonably practicable.</p> <p>Ensure a self-standing sound system is available so that anybody addressing the conference does not need to shout.</p>	<p>Everyone</p>	<p>In advance of the event</p> <p>On the day</p>	
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What are the hazards?	Who might be harmed and how?	What are you already doing to control the risks?	What further action do you need to take to control the risks?	Who needs to carry out the action?	When is the action needed by?	Done
<p>Spread of Covid-19 by attendees travelling to or from the event.</p> <p>This could involve attendees from different households travelling together in cars, or on public transport.</p>	Attendees could catch coronavirus or spread it to the public.	Attendees are asked to wear FFP2 minimum face mask where appropriate if travelling with others and to avoid touching their eyes, nose and mouth and increasing ventilation in any cars by opening windows and keeping distance from each other if possible.	Advise attendees in advance of appropriate precautions.	Everyone Organisers	In advance of the event	