

## **Risk Reduction**

As churches consider re-opening following the lockdown to constrain the transmission of coronavirus covid-19, we are providing some resources and guidance to help churches with their assessments. You will find the latest documents and links gathered under tabs within this website.

The Methodist Church is emphasising two overriding principles, and we aim to help put them into practice:

### **1. “The overriding priority remains to save lives”**

This is a quote in the forward to HM Government’s Covid-19 strategic planning document ‘Our Plan to Rebuild’ (12<sup>th</sup> May 2020) – this must be at the heart of any planned use of church property.

### **2. Communicate and Co-operate**

The implementation of any local strategy will be based upon good communication between all parties and working together in partnership. This second principle will support the best outcomes for the first principle.

## **Covid-19: the source of the hazard**

### *In the air*

Viruses are large packages of molecules. Inside the package is the genetic material (RNA) that allows it to reproduce when attached to a living cell via its ‘spike’ proteins. The ‘bag’ is mostly a fatty membrane.

Viruses are rarely free entities in the atmosphere. If we take an atom of hydrogen as a mass of 1, then the relative masses of the molecules in our atmosphere are about 30. As the mass increases, then it becomes harder and harder for molecules to evaporate, and so they gather together as liquids or solids. For example, petrol has a molecular mass of about 110, and that of candle wax is about 350. Proteins typically have a molecular mass of 1000s and a virus a mass of the order of 10 million. As a result, viruses then are generally deposited on something. In the atmosphere that can be dust particles or water droplets. We all produce a fine, salty mist coming from perspiration and our breathing and this can act as a local carrier for viruses from an infected person. The range of transport can be very greatly increased to a few metres by projecting breath with singing, coughing and sneezing.

Viruses on aerosols and dust cannot reproduce and so will fall apart over a period of time. That depends upon humidity, temperature and uv light, but it takes of the order of 3 hours to degrade to a low level.

### *On surfaces*

The lifetime of a virus varies with the nature of the surfaces: copper affords little protection to a coronavirus, cardboard some (it may take 24 hours to breakdown) and stainless steel and plastics a lot (up to about 72 hours).

You might think of the virus a tiny polythene bag, but is not like that. It is readily broken apart by soaps or detergents. A common model of this is the effect of adding a drop of detergent onto water with a layer of fat or oil on the surface. The breakdown is very rapid.

#### **Covid-19: how can we reduce the risk**

Risk is reduced by cutting down the probability of a person encountering the virus; the hazard itself is unchanged. The transmission can be caused predominantly by three ways: direct contact, touching a surface bearing the virus, and being in contact with aerosol or particle borne virus particles.

##### *From an infected person*

- Direct person-to-person contact is an effective means of transmission and so should be avoided.

##### *From surfaces.*

- From the mixed nature of surfaces in buildings, it is clear that natural decay of the virus on surfaces might take the best part of a week, and so is not an effective approach.
- The most effective approach is thorough cleaning firstly by water and detergent to destroy the viruses and then by disinfectant. The aim is not only to remove the viruses from all treated surfaces but also to minimise the possibility of further deposition from the atmosphere onto potential replication points and create incompatible surfaces.

##### *From the air*

- The ideal environment is in clean air, where the number of air-borne particles is low, there is natural air flow, uv-light, and plenty of space between people of the same household. An example of this is the drive-in church of Stephen Skuce: (<https://www.facebook.com/bkbmethodist/posts/drive-in-church-service-on-sunday-21st-june-at-the-mart-car-park-lisnaskea-1100a/2741891799358771/>)
- A move to indoor activities will need to be managed carefully. In the initial instances, the risk of long-range exhalation may be too high. Singing is therefore problematical and anyone with symptoms of sneezing and/or coughing should withdraw.
- Current guidance is that social distancing should be set at 2 m, or this may be reducible to 1 m with other mitigations.
- Reduction of the duration of exposure, the wearing of face masks and the avoidance of face-to-face contacts are important mitigation factors. Face masks principally work by shrinking down the range of the breath from the wearer. Visors restrict this less well and are mainly designed to protect the wearer from aerosols from others.
- Enhanced clean air flow may also reduce the level of the virus in the air around individuals.
- It can be expected that air-borne viruses will have decayed between events held once per day.