

Personal Protective Equipment – Design and Manufacture

Downley Covid Action Group wish to provide personal protective equipment in the form of face masks and gloves to all those street reps and community volunteers who are making deliveries of shopping, medicines and any other essentials to vulnerable and self-isolating households, in order to minimise the transmission of disease-bearing aerosols and to provide some reassurance to the vulnerable.

DCAG will be procuring face masks and disposable latex gloves online while they are still available, although it is likely there could be a huge demand for these as we approach the relaxation of lockdown, so supply is likely to be temporary. These items are generally single-use only so the combination of rapid consumption and limited supply will necessitate moving to reusable masks and gloves. The total number of street reps and volunteers is approx. 100 and if each volunteer makes one delivery per week, then approx. 100 each of face masks and gloves will be required.

It is important that the general public does not purchase masks that would otherwise be used by medical professionals so it will be preferable to move quickly to home-made non-surgical masks.

How to make and test

It is proposed that each volunteer should be provided with at least two so that one can be worn while the other is being cleaned and decontaminated, hence a total of 200 masks will be required. Gloves can be provided by the volunteer themselves so long as they are decontaminated after each use.

It is important that the material used be capable of preventing the transmission of aerosols. The following Youtube video shows a simple test that can be used to identify material that is suitable. This is typically close woven cotton material such as old pillowcases or sheets.

Spray Test video - <https://www.youtube.com/watch?v=1ZuwUAwlf8>

It is proposed that those in the village that have a sewing machine and have some spare textile material suitable for the purpose start making face masks according to the pattern identified below.

Face mask pattern - <https://sarahmaker.com/how-to-sew-a-surgical-face-mask-for-hospitals-free-pattern/>

Other designs are available but DCAG wish to keep to the following principles:

- The mask should fit closely to the face
- It should include a replaceable insert (eg a sheet of folded kitchen roll) to absorb moisture
- be made of tight weave material and multiple layers to prevent aerosol transmission

If elastic is difficult to source then tapes that tie behind the head are acceptable.

Each mask should include a space between two outer layers within which can be inserted an additional layer of absorbent filter material such as kitchen roll that can absorb moisture exhaled by the wearer and reduce the extent of wetting of the mask.

The folds need to be pointing down on the outside. Makers should mark FACE SIDE on the mask.

Contact DCAG at info@downley.org or 01494 528133