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The Independent Scientific Advisory Group for Emergencies (SAGE)

The Independent SAGE Report 8

Policy for England on face coverings to reduce transmission of SARS-CoV-2

An Independent SAGE Report following public consultation on 14th July 2020

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Recommendations

The Government should

1. Launch a comprehensive public information campaign to promote effective wearing of face coverings in enclosed public indoor spaces where distancing from others is not possible. It should
 - a. tailor the campaign to communities, using a range of languages and media (including non-digital media) in a culturally appropriate manner.
 - b. explain how face coverings can provide a benefit, what kinds of coverings to use, as well as how they should be worn, stored, and disposed of or cleaned, and why some people will not be able to wear face coverings.
2. Promote adherence to wearing face coverings by engaging with communities, explaining and encouraging, with enforcement kept light touch as in Scotland.
3. Ensure equity, including access to free face coverings for those who cannot afford to buy them.

The Government, employers and other relevant organisations should

4. Ensure that face coverings are used alongside, not instead of, other protective measures such as continued rigorous hand cleansing regimen, physical distancing measures, cough and sneeze etiquette, as well as improving ventilation.
5. Engage with appropriate organisations to address the needs of those with physical or mental health conditions or disabilities.

Aims

This report sets out recommendations for maximizing the benefits of face coverings while minimizing their risks, taking into account evolving evidence and the behavioural factors that must be addressed. It raises issues that need to be tackled by Government involving, and in partnership with, employers, communities, and relevant organisations.

Relevant evidence

Evidence on the positive impact of using face coverings is accumulating. Although it remains uncertain and more research is urgently needed on costs and benefits, the WHO updated its guidance on June 5th 2020 to recommend wearing face coverings in enclosed spaces where social distancing is not possible (1). A recent report by the UK's Royal Society and British Academy raised some but not all of the issues that need to be considered when developing policies to promote use of face coverings (2).

The evidence on potential benefits and harms falls into three categories: the biomechanics of virus transmission, studies in clinical settings, and studies in community settings including whole populations.

The biomechanics of transmission: SARS-CoV-2 virus transmission occurs because virus particles are expelled from the mouth or nose of an infected person, who may be asymptomatic, and ingested via the mouth, nose or eyes of another person (3). Evidence from laboratory studies indicates that certain types of face covering can trap droplets of the kind that could carry virus particles that are expelled from the mouth or nose during coughing, sneezing, singing or talking (4). Note, however, that SARS-CoV-2 can enter the body via the eyes which are not protected by a face covering.

It has become increasingly evident that SARS-CoV-2 can be transmitted via very small droplets (aerosols) that are suspended in the air for several hours and can travel several metres from the source in indoor spaces, and conversely that very little transmission occurs outdoors (5–8).

Protection in clinical settings: There is clear evidence that use of personal protective equipment, including face masks made to appropriate specifications, is effective when used by trained professionals in clinical settings (9).

Protection in community settings: Evidence from randomised controlled trials is equivocal on whether or not wearing face coverings reduces infection rates in community settings (10,11). Note that the studies do not indicate no effect; rather, the findings leave open the question of whether or not there is a reduction in infection rates.

Comparative observational studies have found that use of surgical-type masks in community settings are associated with a reduction in infection risk (10). In most of these studies there is a significant probability that the association could be due to confounding with other precautionary behaviours. However, in a recent study involving the crew of a US Navy aircraft carrier, an apparent protective effect was found and the risk of this being due to confounding appears to be low (12).

Population-level studies, and most notably a recent longitudinal study from Germany which used a synthetic control method to analyse the effect of the staged introduction of mandatory face mask wearing in different parts of the country (13), strongly suggest that mandating use of face coverings in public spaces can substantially reduce infection rates.

Issues that need to be addressed

What types of face covering? Face coverings need to be made in such a way that they trap droplets of as small a size as possible while allowing users to breathe comfortably (14). Arguably, reusable face coverings may be preferable because of the issue of plastic waste, cost and there is evidence that these can trap virus particles (15). However, in a higher risk environment of a hospital setting one study was found that cloth face coverings were less effective than surgical masks (16). Current advice is for face coverings to have a double or triple layer of fabrics that have different weaves and electrostatic properties (1,17).

The British Standards Institute has produced recommendations concerning protective equipment, including face coverings, in health and care settings (6). It may make sense to commission an extension of this document to include face coverings for virus protection of the kind that would be appropriate for members of the public in community settings. In the meantime, there is a need for a public information campaign to support public choice and manufacture of face coverings, home-made or otherwise.

In what situations should face coverings be worn? Given that use for long periods can be uncomfortable it seems appropriate to restrict it to situations where they are likely to confer a benefit. In addition, if someone is infected, the longer they wear the covering the more contaminated it will become and the greater the risk that it will act as a fomite (an object that can carry infection).

The case for wearing of face coverings is strongest in enclosed spaces such as on public transport, shops, places of worship, workplaces, and entertainment venues. This is because ventilation will often be limited; there is often a high throughput of members of the public, and people working in

those spaces may receive prolonged exposure to virus particles if present. Clear guidance covering all of these settings is required and accompanied by regulation and monitoring. It should be noted, however, that face coverings are likely to provide limited protection and other (environmental and behavioural) measures will be needed to ensure the safety of people using these spaces.

It is impractical to eat and drink while wearing a face covering and taking it on and off in a bar or restaurant may increase transmission via surfaces. It is therefore unrealistic to mandate wearing of face coverings in bars and restaurants. It should be noted, however, that as long as Covid-19 transmission rates remain relatively high at many hundreds of new cases per day (18), Independent SAGE is recommending that bars and restaurants only be allowed to serve customers who remain outside of enclosed spaces when consuming their products.

The issue of mandating wearing of face coverings in enclosed spaces in schools, universities, offices, and production facilities is complex and needs further consultation and consideration. The fact that some kinds of production facility such as garment factories and meat processing plants continue to be a source of outbreaks suggests that, while wearing face coverings may reduce infection rates to some degree, much greater protection will be needed for workers in such settings (19). This may require re-engineering the facilities to ensure much better ventilation and to reduce risk of transmission by contaminated objects and surfaces and implementation of all the other usual infection control measures. This is an area where stakeholder engagement will be crucial to determining an effective and workable policy.

Given that only a small proportion of virus transmission occurs outdoors, it does not seem appropriate to mandate their use there. In the future, if infection levels are reduced sufficiently to allow large outdoor gatherings, mandating wearing of face coverings in those gatherings may be considered.

What exemptions should there be, if any? There is a need to establish what the exclusions should be (e.g. for physical or mental health reasons) and to have these clearly set out and explained in public information campaigns. A significant issue that arises with this is that it will generally not be possible to tell just by looking at someone whether they are in an exempt group. There is a possibility of hostility, discrimination, and stigmatisation. A claim to exemption may also be used by people who are not exempt as a way of avoiding wearing a face covering but experience so far suggests that this will be minimal. It will be important to follow the lead of other countries that have mandated use of face coverings without punitive enforcement, e.g. Scotland.

Is mandating use of face coverings enforceable? Countries and regions where face covering use is compulsory have shown higher adherence than those where they are voluntary (20). Survey evidence suggests that around 90% of people in England are wearing face coverings on public transport (21). Punitive enforcement of mandatory use of face coverings is impractical and likely to be counterproductive. First, evidence from other emergency public health measures shows that where authorities attempt forcible imposition it can lead to active resistance (22). Secondly, attempts at coercion risk damaging relationships and trust between authorities and the public, the consequence of which is that subsequent recommendations from authorities may be rejected. Thirdly, threatening the public with fines is built on the assumption that the public are the problem rather than part of the solution. Instead, engagement and adherence can be increased by treating the public as partners in a shared public health strategy (23,24).

Occasional violations can be tolerated because the public health benefit will still accrue if most people adhere to the rule. Moreover, legislation can be effective in changing behaviour just by virtue of the signal it sends to the community.

As with seat belts and other areas of safety legislation, it will be important to use public information campaigns so that most of the public understand the need for the legislation and accept it. Endorsement and wearing by role models such as celebrities, including musicians, actors, and sports figures, could play an important role.

Who do face coverings protect? It is widely believed that the primary role of face coverings is to prevent emission of the virus into the air from an infected person, who may or may not have symptoms, and that it confers little if any protection to the wearer. However, the comparative observational studies suggest there is also a benefit for the wearer. The government should review this evidence and consider the appropriate ways to communicate it in its public information campaign.

Is false reassurance a major problem?

Evidence from the German study (13) suggests that if false reassurance is a problem it is outweighed by the benefit. There is also a potentially serious issue that employers and indeed government may use wearing of face coverings as a way of relaxing rules regarding physical distancing, and environmental and other protective measures. This would unfairly expose employees or others to risky situations. Recent Government messaging has referred to wearing face coverings as a way of increasing people's confidence to go out and about into enclosed spaces such as shops; promoting it in this way may falsely reassure and undermine perceptions of the inherent riskiness of such situations and the need for other protective measures.

How should we address problems of incorrect use, storage, and disposal of face coverings? Face coverings should cover the nose and mouth and fit tightly against the skin. Wearers should put them on and take them off touching only the sides. There is little evidence on the prevalence of incorrect use of face coverings but informal observation of use of face coverings by the public shows that in many cases they are not worn correctly (e.g. not covering the nose, or pulled down when speaking or to sneeze), and they are frequently handled in ways that are not safe.

National and international guidance emphasises not touching the front of the face covering, keeping it on, storing it in a bag kept for that purpose, and washing in hot (60°C) water as soon as practicable. To minimise risk of contamination, users of face coverings should arguably always carry hand sanitiser and use it whenever they touch their mask.

Face coverings should be sold with clear instructions for wearing and disposing. It will also be important to mount public information campaigns to address these issues and ensure that instructions are readily found on social and print media.

What harms might arise from mandating wearing of face coverings?

Legislation to compel behaviours for the sake of public health should always be accompanied by an equality impact assessment. It is important that policies on face coverings do not exacerbate inequalities already increased by Covid-19. Given that many people are facing serious financial hardship, the Government should offer people free reusable facemasks where needed.

Harm could arise from employers considering that face coverings provide sufficient protection to require staff to return to the workplace when the environmental conditions and working practices have not been sufficiently adapted to ensure safety. Return to work guidance for employers needs to make clear their responsibilities for providing a safe environment for their staff and employers need to abide by it.

Wearing of face coverings may reduce ability to communicate. An estimated 1 in 6 of the UK population has a significant hearing deficit (25) and for those who rely on lip-reading and facial expressions for communication, this will clearly be an issue. It may be that transparent face coverings or asking people to temporarily remove their face covering could help communication in specific situations, but this is an issue that requires detailed examination with key stakeholders.

What indirect benefits might arise from mandating wearing of face coverings?

One possible benefit may be to remind people that we are still in the midst of a deadly pandemic. This could reinforce messaging about the importance of the full range of protective behaviours and communicate that such protective behaviours are 'the new normal'. Particularly in winter, face coverings in addition to established measures such as handwashing and physical distancing will potentially also serve to reduce transmission of the seasonal flu.

Besides mandating wearing of face coverings, what else can be done to promote their effective use?

As noted above, public information campaigns will be important to address issues that arise with a new policy on face coverings. These should be alongside engagement with relevant communities such as trade unions, employers, role modelling, and those that are found to be least likely to adhere. Given that this is an issue that will be with us for months if not years, investment in such campaigns will be worthwhile.

Much of this can be done online, including use of, for example, videos on YouTube and Instagram, although provision should be ensured for those without access to digital media and the messaging is tailored in a culturally appropriate way to reduce risk of disparities in diverse populations. Government and government agencies have a responsibility to undertake or commission this, but other agencies and organisations may also play a valuable part. For example, creating norms around wearing of face coverings, and making this practice attractive, is something in which the fashion industry is already playing a role.

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Following the science