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## Guidance Document 2

# Reducing the transmission of COVID-19 when using cloth face-masks: informing public health recommendations (31 March 2020)

### Rapid review of research evidence<sup>1</sup>

- COVID-19 is caused by the SARS-CoV-2 virus and spreads from person-to-person through respiratory droplets produced when an infected person coughs or sneezes, and from touching contaminated surfaces.
- Close contact with infected people should be avoided, and the risk of transmission mitigated using infection prevention and control measures, including personal protective equipment (PPE) such as face masks
- The pandemic has led to a global shortage of PPE, including masks and respirators. Masks are critical in healthcare settings to protect healthcare workers from becoming infected, and are being widely promoted in community settings to prevent transmission in the general population. This is particularly relevant with SARS-CoV-2, since transmission prior to symptom onset is thought to be important
- Homemade or cloth masks have been used in several settings prior to the COVID-19 pandemic, and have been suggested as a stopgap in community settings in order to save medical masks for use in healthcare workers. The evidence for their effectiveness, however, is unclear.
- Guidance from global oversight bodies varies. See Table overpage.

### Risk of community transmission of Sars-Cov-2 in South Africa

As South Africa went into its Covid-19 lockdown on March 27, confirmed cases climbed above 1,000, and the outbreak was now reaching the stage of local transmission and of clustered and community transmission where it is no longer a majority-imported disease.

The World Health Organisation (WHO) categorises the coronavirus and the disease it causes (COVID-19) into four categories: Stage 1 - imported by travellers; Stage 2 - clustered transmission; Stage 3 - local transmission, and Stage 4 - widespread community transmission.

At 1,000 positive tests, South Africa is on the boundary of community transmission.

Community transmission is of particular concern in densely populated informal settlements with limited water supply and sanitation where engineering and administrative infection prevention and control measures are challenging.

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<sup>1</sup> Siegfried N, Rees K, Kredon T, Balakrishna Y, Chetty T. 2020 Should cloth masks be used by the general public for preventing transmission of SARS-CoV-2?: a rapid review to inform public health recommendations during the COVID-19 pandemic. 31 March 2020

**Panel: Recommendations on face mask use in community settings**

**WHO<sup>1</sup>**

- If you are healthy, you only need to wear a mask if you are taking care of a person with suspected SARS-CoV-2 infection.

**China<sup>2</sup>**

- People at moderate risk\* of infection: surgical or disposable mask for medical use.
- People at low risk† of infection: disposable mask for medical use.
- People at very low risk‡ of infection: do not have to wear a mask or can wear non-medical mask (such as cloth mask).

**Hong Kong<sup>3</sup>**

- Surgical masks can prevent transmission of respiratory viruses from people who are ill. It is essential for people who are symptomatic (even if they have mild symptoms) to wear a surgical mask.
- Wear a surgical mask when taking public transport or staying in crowded places. It is important to wear a mask properly and practice good hand hygiene before wearing and after removing a mask.

**Singapore<sup>4</sup>**

- Wear a mask if you have respiratory symptoms, such as a cough or runny nose.

**Japan<sup>5</sup>**

- The effectiveness of wearing a face mask to protect yourself from contracting viruses is thought to be limited. If you wear a face mask in confined, badly ventilated spaces, it might help avoid catching droplets emitted from others but

if you are in an open-air environment, the use of face mask is not very efficient.

**USA<sup>6</sup>**

- Centers for Disease Control and Prevention does not recommend that people who are well wear a face mask (including respirators) to protect themselves from respiratory diseases, including COVID-19.
- US Surgeon General urged people on Twitter to stop buying face masks.

**UK<sup>7</sup>**

- Face masks play a very important role in places such as hospitals, but there is very little evidence of widespread benefit for members of the public.

**Germany<sup>8</sup>**

- There is not enough evidence to prove that wearing a surgical mask significantly reduces a healthy person's risk of becoming infected while wearing it. According to WHO, wearing a mask in situations where it is not recommended to do so can create a false sense of security because it might lead to neglecting fundamental hygiene measures, such as proper hand hygiene.

\*People at moderate risk of infection include those working in areas of high population density (eg, hospitals, train stations), those have been or live with somebody who is quarantined, and administrative staff, police, security, and couriers whose work is related to COVID-19. †People at low risk of infection include those staying in areas of high population density (eg, supermarket, shopping mall), who work indoors, who seek health care in medical institutions (other than fever clinics), and gatherings of children aged 3–6 years and school students. ‡People at very low risk of infection include those who mostly stay at home, who do outdoor activities, and who work or study in well-ventilated areas.

Source: Feng, 2020, published on 20 March 2020 <sup>2</sup>

### Evidence of effectiveness of cloth masks for preventing community transmission

The rapid review of the current research evidence (up-to-date on 31 March 2020) assessed the effects of cloth masks for preventing transmission of SARS-CoV-2 in the community setting. A single cluster trial of 15 hospitals conducted in Hanoi, Vietnam was included. This was not a trial in the community setting, but a trial of healthcare workers, and we have interpreted the evidence as indirectly related to the general population. The review found that:

- Clinical and laboratory-confirmed respiratory infections may increase approximately 1.5 times when wearing cloth masks compared with medical masks
- 28 more people per 1000 may develop clinical respiratory infections if they wear a cloth mask compared to a medical mask. This could be 0 fewer to 71 per 1000 more infections
- 22 more people per 1000 may develop laboratory confirmed respiratory infections if they wear a cloth mask compared to a medical mask. This could be 2 fewer to 63 per 1000 more infections
- There is very low certainty evidence that influenza-like illness is increased approximately 1.6 times when wearing cloth masks compared with medical masks.

In summary, there is moderate evidence that cloth masks increase the risk of acquiring infection compared to medical masks. The evidence for the effects of cloth masks in the general population compared to not wearing a mask remains unknown. Review of ecological studies on widespread use of cloth facemasks versus not using any form of facial covering is still required.

<sup>2</sup> Feng S, Shen C, Xia N, Song W, Fan M, Cowling BJ. 2020. Rational Use of face masks in the COVID-19 pandemic. The Lancet Respiratory Medicine. DOI: [https://doi.org/10.1016/S2213-2600\(20\)30134-X](https://doi.org/10.1016/S2213-2600(20)30134-X)

### **Additional factors to consider for the possible use of cloth facemasks for preventing community transmission**

Considering the limited evidence for the use of cloth facemasks in the reduction of community transmission the following were also taken into account in developing the guidance:

- We develop guidance using the overriding ethical principle of “first do no harm”
- Most single intervention measures will be insufficient to contain the spread of Sars-Cov-2; but combinations of measures may reduce the reproduction number below 1<sup>3</sup>
- Subversion of other measures of prevention of transmission including hand hygiene, respiratory hygiene and physical distancing may occur, should facemask use become widespread
- Water, sanitation and hygiene are not equally accessible and social distancing measures are not feasible in many communities, thus alternative additional options would be important to consider in these communities
- Cloth facemasks may be considered for high-risk transmission settings where physical distancing is difficult, such as public transport, queuing (such as for shopping and grant collection) and waiting areas (such as at health facilities)
- Societal norms and possible stigmatisation with use or not of facemasks<sup>4</sup>
- Consideration of presymptomatic and asymptomatic transmission, which may or may not be prevented by the wearing of facemasks
- Studies which indicate that cloth masks become saturated due to breath condensation which may increase the porous nature of the cloth

### **Recommendations regarding cloth face-masks to reduce community transmission of COVID-19 – South Africa**

The rapid review has informed the suite of options and combinations of options outlined below:

#### **1. Cloth masks must NOT be used as Personal Protective Equipment (PPE)**

- Cloth masks must NOT be used by health care workers.
- Cloth mask usage only as a last resort and must not be used as Personal Protective Equipment (PPE).

#### **2. Medical Masks and N95 respirators must be reserved for particular categories**

- This is particularly imperative in resource-constrained settings, where there is a shortage of medical masks.
- N95 respirators should only be used by health care workers
- Medical masks should only be used by frontline workers (e.g. police, military) and those caring for those who have COVID-19, when faced with limited resources. This is to protect those at higher risk of infection.
- Medical masks should be used by those already infected with COVID-19. This is to prevent further infection of those around them by droplet spread, whilst in self-isolation

#### **3. General Infection prevention and control measures must continue**

- Hand-hygiene (regular hand washing with soap and water for 20 seconds)
- Respiratory hygiene (sneeze and cough into your bent elbow away from other people)
- Physical distancing (no physical contact, remain 2 arms-lengths away from other people)

<sup>3</sup> Jefferson T, Jones MA, Al-Ansary L, Bawazweer GA, Beller EM, Clark J, Conly JM, Del Mar C, Dooley E, Ferroni E, Glasziou P, Hoffmann T, Thorning S, van Driel M. 2020. Physical interventions to interrupt or reduce the spread of respiratory viruses. Part 1 - Face masks, eye protection and person distancing: systematic review and meta-analysis – Update. doi.org/10.1101/2020.03.30.20047217. Pre-print. Not yet peer-reviewed.

<sup>4</sup> Feng S, Shen C, Xia N, Song W, Fan M, Cowling BJ. 2020. Rational Use of face masks in the COVID-19 pandemic. The Lancet Respiratory Medicine. DOI: [https://doi.org/10.1016/S2213-2600\(20\)30134-X](https://doi.org/10.1016/S2213-2600(20)30134-X)

- Isolation for positive cases
- Quarantine for contacts of positive cases
- Reduction in gathering and congregation of people
- Disinfecting and sanitisation of surfaces

#### **4. Cloth masks, home-made masks and/or facial coverings for community use cannot at this stage be recommended based on uncertainty of the evidence**

- There is uncertainty of the evidence as to whether the benefits outweigh the harms of cloth facemasks and if wearing, especially prolonged, may increase risk of acquisition of infection.
- Should cloth facemasks be advised for community use, it would be imperative to be implemented only in conjunction with particular and clear messaging around design, production, and safe-use, including donning, doffing, not touching your face / mask while wearing, cleaning, disinfecting and disposal, as well as rigorous emphasis on other hygiene measures. In other words “Masks + Message”.

#### **5. Further Research**

- It is recommended that urgent research to determine the benefits and harms of cloth masks in a community setting is undertaken. This may be prudent to combine with the current rollout of widespread community screening and testing intervention.

#### **Summary statement**

- Cloth masks must not be used as Personal Protective Equipment (PPE) for Health Care Workers.
- Medical Masks and N95 respirators must be reserved for particular categories, viz. health care workers, frontline workers, persons tested positive with COVID-19 and those caring for them.
- Cloth masks, home-made masks and/or facial coverings for community use cannot at this stage be recommended, based on uncertainty of the evidence as to whether they reduce or could even increase the risk of transmission.
- Should cloth facemasks be advised for community use, it would be imperative to be implemented only in conjunction with particular and clear messaging around design, production and safe-use, as well as rigorous emphasis on other hygiene measures. In other words “Masks + Message”.
- Based on current evidence, there is potential that cloth masks are worse than no masks, just as the opposite could be true. Further research is therefore recommended to determine the benefits and harms of cloth masks in a community setting.

Released by the College of Public Health Medicine COVID-19 Evidence-based Guidance Task Team and the CEO for the CMSA, Prof Eric Buch  
Version 1 2 April 2020

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