



TO ALL SMS MEMBERS/ CHIEF DIRECTORATES / DIRECTORATES / REGIONAL / DISTRICT OFFICES, SUB-STRUCTURES / ALL FACILITY MANAGERS

Circular H 46 of 2020: Best Practice guidance for the use of cloth masks only in non-healthcare settings.

Prepared by Shaheen Mehtar on behalf of the IPC Technical Working Group -Angela Dramowski, Briette Du Toit, Ronel Steinhobel, Marina Aucamp, Yolanda van Zyl, Warren Parker, and Marc Mendelson.

Introduction

There is an acute shortage of medical grade, surgical masks and N 95 respirators globally. As South Africa enters this global epidemic, the need to reserve personal protective equipment (PPE) for use by healthcare workers (HCWs) is ever increasing. Increased demand for, and use of, medical masks in the community and by non-health sector workers, threatens the availability of PPE for frontline HCWs who are at much higher risk of exposure to SARS-CoV-2 (the coronavirus that causes COVID-19 disease).

This concern has been expressed by several organisations including the The Colleges of Medicine of South Africa NPC¹. The National Department of Health (NDOH) is facing the dilemma of protecting HCWs now, and in the future with appropriate PPE that meets national standards. As prices for PPE particularly surgical masks and N 95 respirators soar, alternatives for the public and non-health workers have to be found as temporary measures. Cloth masks, usually gauze or thin cotton material have been used in low resource setting for many years to reduce spread of tuberculosis and respiratory viruses in communal settings, like healthcare clinics. While the concept is not new, it has not been explored as an alternative for use in non healthcare settings until the COVID-19 outbreak.

The WHO does not recommend the use of cloth masks² however this is currently under discussion in the WHO Expert Committee on COVID-19. The Chinese containment strategy for COVID-19 emphasised the wide use of face masks in the general population as a complementary public health intervention, that aided with 'flattening the curve' of coronavirus transmission. Finally, a randomised control trial conducted in Vietnam³ between cloth, control and medical masks reported a significantly higher rate of influenza like illness with a relative risk of 13.00 (95% CI 1.69 - 100.07), among persons using cloth masks compared with face masks and the control arm. Laboratory confirmed

¹ Reducing the transmission of COVID-19 when using public ground transport: informing public health recommendations (22 March 2020) https://www.cmsa.co.za/view_news_item.aspx?NewsID=149

² WHO/2019-nCoV/IPC_Masks/2020.2

³ MacIntyre CR, Seale H, Dung TC, et al. A cluster randomised trial of cloth masks compared with medical masks in healthcare workers. *BMJ Open* 2015;5: e006577. doi:10.1136/ bmjopen-2014-006577

virus penetration was also significantly higher (RR-1.72, 95% CI 1.01 to 2.94). Penetration of cloth masks by particles was almost 97% and medical masks 44%. Most publications on the subject of masks either for extended use or reprocessing, refer to medical masks or N95 respirators,

With this in mind, these guidelines produced in response to a great public and commercial demand to produce and use cloth masks. Available evidence will be reviewed regularly, to update and amend this interim guidance document.

Cloth masks are not recommended for healthcare use.

Rationale

With the current shortage of surgical masks and N 95 respirators during this COVID-19 epidemic, it is proposed that cloth masks (produced to standard specifications) may be used in the community setting by members of the public and non-healthcare workers. The use of the cloth masks should be implemented in tandem with other, evidence-based preventative measures already in place (the Golden Rules)⁴ such social distancing (maintaining a distance of 1.5 to 2 m between people), cough etiquette, increased hand hygiene, and self-isolation of people who develop symptoms of COVID-19. Finally, cloth masks are reusable, less expensive than disposable face masks, and if looked after, can last a long time.

Target audience

Cloth masks may be used by the community who are undertaking non-healthcare duties or are entering public places where no physical contact is required, for example:

- Community healthcare visitors who are not undertaking treatment of patients;
- South African Police Services;
- Municipal street cleaners;
- Taxis and passengers;
- Retail staff and cashiers;
- General public who have to go to crowded areas such as shops or government institutions;
- Risk of exposure via close contact during social/ cultural ceremonies in large gatherings.

What (protection) can a cloth mask offer?

- Cloth masks will not necessarily protect the wearer, but may help to reduce viral transmission by containing respiratory droplets generated when the wearer speaks, sneezes and coughs.
- All masks provide a physical barrier when covering the wearer's nose and mouth⁵ and may reduce inhaling a large number of droplets. While cloth masks are considered less effective than medical/ surgical face masks, these will provide a physical barrier to reduce expulsion and inhalation if the cloth mask is made of a heavy, tight weave.
- Cloth masks act as a physical barrier and may help to stop people touching their face, mucous membranes and mouth
- Cloth masks may reduce virus exposure in overcrowded areas such as taxis, shops of government buildings
- Cloth masks will create greater awareness around COVID-19

Cloth masks are inexpensive and can be produced in large numbers under clear specifications

⁴ <https://www.westerncape.gov.za/department-of-health/news/covid-19-cloth-masks-public-use>

⁵ Tang JW, et al. A schlieren optical study of the human cough with and without wearing masks for aerosol infection control, J. R. Soc. Interface (2009) 6, S727–S736 doi:10.1098/rsif.2009.0295.focus

When should cloth masks be used

Cloth masks can be used by the community or non-healthcare work and where no physical contact is expected

- Travel to and from work in public transport
- When stepping outside the house to go shopping or seeking healthcare
- During self isolation in shared accommodation, when contact with others is necessary such as having meals together (remember distancing in the social circle)
- When stopping and talking to members of the public (traffic police)
- When conducting interviews during house to house visits (community health workers)
- When cleaning the streets of domestic rubbish (municipal workers)

When can cloth masks NOT be used

Cloth masks should NEVER be used by health care workers dealing directly with patients i.e. at the clinical interface

- Many non-health organizations already have PPE policies in place, such as for municipal workers, and these must be followed in order to protect the worker.
- Some examples of **when not to use** cloth masks for non-health organizations are shown below.
 - Municipal workers: who come in contact with sewerage, household waste, or similar and there is no policy to cover this kind of work
 - SAPS -when dealing with a road traffic accident or physical contact with the public

How to make a mask

A cloth mask can be made in any non- industrial or domestic setup, and is relatively simple to make. There are many videos on YouTube demonstrating a step by step guide on how to make a cloth mask with varying design.

Size

Usually it is square pieces of cloth with three pleats that can cover the face **from ABOVE the nose to BELOW the chin and almost up to the ears.**

Materials

- The material selected for making cloth masks must be breathable, washable, heat resistant and have a tight weave. Bearing in mind this is a best practice guide, specifications may change once cloth masks are in use.
 - The finished product should be thick, malleable yet comfortable to wear over a period of time.
 - The cloth mask must have two ties, one below and the other one above to ensure a secure fit.
 - The finished product if properly made with the correct materials, will restrict breathing to some extent. This reflects the tightness of the weave and reduced entry and exit of virus carrying droplets.
1. **Outer layers:** Two layers, inner and outer surface of the mask
 - a. thick weave cotton like denim, calico or upholstery cotton fabric that can be easily washed. African print cottons are thick, colourful and may be used.
 - b. two different patterns on the cloth if possible to distinguish between inside and outside of the cloth mask
 2. **Inner layer:**
 - a. ordinary cotton used for linen or condemned hospital linen;
 - b. heat resistant material which is breathable
 3. **Strings or straps** which can be tied behind the head. Hooking strings behind the ears is acceptable as long as there is a good, comfortable fit. Elastic bands are not as efficient and do not withstand washing and ironing.

DO NOT USE STRETCHY MATERIAL WITH A LOOSE WEAVE such as T-shirt material. These offer no protection at all.

Use of colourful fabric and designs is encouraged to differentiate these cloth masks from medical face covers (surgical masks and N95 respirators), the latter being reserved for use by healthcare workers.



Check the mask before using it

- Put the mask on and breathe in and out as usual. If there is slight difficulty in breathing in (resistance), that means there is certain amount of filtration.
- Make sure the strings are tied properly to ensure a firm fit around the nose and mouth.
- If you find it uncomfortable, remove the inner layers and try again.
- Make sure the mask is CLEAN and DRY when you put it on.

How to use a cloth mask

DO NOT SHARE CLOTH MASKS BETWEEN MEMBERS OF THE FAMILY! MAKE SURE THERE ARE AT LEAST TWO CLOTH MASKS PER PERSON IN THE HOUSEHOLD, INCLUDING CHILDREN.

A cloth mask may be worn when in public areas or gatherings. It should be treated with care when putting on and taking off because the outer surface might be contaminated and this will contaminate your hands and transfer the virus to your mouth, nose or eyes, or to others.

1. Take your time when wearing a mask, don't hurry!
2. Wash hand thoroughly before putting on your mask
3. Place the mask with the correct side facing your nose and mouth and covering both well
4. Tie the strings behind your head, or if you are using elastic bands, make sure these are tight
5. Make sure it fits well. Move it around to get the best fit
6. Once you have put on the cloth mask and you are comfortable with the fit, DO NOT TOUCH YOUR FACE again until you take it off
7. When you take it off, undo the ties, and carefully fold the mask inside out OR
8. Hold it by the strings and place the mask in a dedicated, big enough container ready to be washed
9. Wash hands thoroughly and dry before doing anything else
10. Wash your cloth mask daily to reduce the chance of it becoming contaminated with bacteria and viruses.

Maintaining the mask

Get or make at least two per person so you will be able to wash one and have a clean one ready for use.

- Hand or machine wash the mask daily in soap and hot water (as hot as can be tolerated)
- Rinse thoroughly and dry
- IRON THE MASK- this is the best and cheapest means of disinfection!
- If you do not have an iron, place the mask with the outside facing down on a metal sheet and place it in the sun; leave it there for a couple of hours- the heat should disinfect it.

DO NOT SOAK THE MASK IN CHEMICALS AS THESE GET ABSORBED AND MAY BE INHALED CAUSING DAMAGE TO THE RESPIRATORY TRACT.

Distribution of cloth masks

Many non-governmental organisations, charities and other such institutions are prepared to produce cloth masks and distribute them (possibly for free) at strategic points.

These points could be

- Taxi ranks
- Police stations
- Municipal outlets
- Train stations
- Supermarkets
- Shopping complexes
- Via community healthcare workers conducting house to house visits
- Charities
- Religious groups distributing them at burials and other areas of public contact

It is recommended that at least two cloth masks per person will be needed for the period of the outbreak. It may be difficult to prevent hoarding, but a system of distribution should be devised where cloth masks are delivered to each household that needs it.

Branding of the cloth masks should be encouraged to provide free distribution for those in need.

Summary

Cloth masks may only be used by non-healthcare workers and members of the public. Healthcare workers should use only medical-grade masks. Cloth masks may have a role to play in reducing viral transmission by containing expelling respiratory droplets and reducing inhalation of viral particles.

This is a community initiative where the community can take responsibility for reducing the transmission of coronavirus with support from organizations prepared to make and distribute cloth masks. In return, branding of the masks should be allowed.

Enquiries may be directed to Prof S Mehtar at SMEHTAR@sun.ac.za and Dr Gavin Reagon at Gavin.Reagon@westerncape.gov.za

Yours sincerely



Dr Beth Engelbrecht (pp Dr Keith Cloete: Head of Health)

Head: Western Cape Department of Health

Date: 3rd April 2020

