CARPHA’s Guidance on the Use of Face Masks in the Context of COVID-19 Pandemic

April 24, 2020

Summary:

On 11 March 2020, the Director-General of the World Health Organization (WHO) declared the outbreak of a novel coronavirus disease, COVID-19 as a pandemic. As of April 22, there are 9098 cases in 33 countries/territories (including 24 CARPHA Member States), in the Caribbean Region. The risk of further importation of cases to the rest of the Caribbean remains Very High. (1)

There is widespread debate on the need for community members to wear masks as a means of personal protection against COVID-19 infection. Many countries and leaders globally and in the Caribbean are adopting the widespread use of nonmedical masks as a strategy to reduce community transmission. This has been coupled with concerns that broad use of masks could cause a run on the kind of masks that health care workers desperately need, as the supply chain for PPE has been disrupted, causing shortages worldwide.

The use of personal protective equipment such as medical (surgical) masks and respirators within the health care and home care settings, as well as during the handling of cargo has been outlined by the WHO in its updated guidance document on the rational use of personal protective equipment. (2)

According to WHO guidance, dated April 6, 2020, the use of medical masks in the community may create a false sense of security, with neglect of other essential measures, such as hand hygiene practices and physical distancing, and may lead to touching the face under the masks and under the eyes. Incorrect use of medical masks results in unnecessary costs.

The WHO indicated there is currently no evidence that wearing a mask (whether medical or other types) by healthy persons in the wider community has any value in preventing respiratory infections. (3)

There have been few randomized, controlled studies which address the effectiveness of cloth masks in the prevention of respiratory infections. However, as part of their response to COVID-19, some national health authorities have indicated that homemade/cloth masks may be better than no protection.

Whilst CARPHA acknowledges WHO’s guidance, in keeping with the mandate to wear mask in public by many Caribbean countries, CARPHA advises its Member States to employ the use of the precautionary principle and encourages the correct use of masks (cloth/homemade) by the general population while they are out in public.
Transmission of COVID-19

Currently, available data indicates that the two main routes of transmission of the COVID-19 virus are respiratory droplets and contact. Respiratory droplets are generated when an infected person coughs or sneezes. Any person who is in close contact (within 2 m/6 ft) with someone who has respiratory symptoms (coughing, sneezing, speaking) is at risk of being exposed to potentially infective respiratory droplets.

Droplets may also land on surfaces where the virus could remain viable for hours or possibly days; thus, the immediate environment of an infected individual can serve as a source of transmission even after they have exited the area (contact transmission).\(^{(2)}\)

Level of protection by type of mask

The medical (surgical) mask acts as a fluid barrier and does not offer any respiratory protection from aerosolized particles which may be present in the air.

Respirators which may include the maintenance free N95, FFP2 or FFP3 masks specifically designed for use in the healthcare setting and more enhanced respirators offer greater respiratory protection to the user. Users should undergo an evaluation to ensure they do not have any condition which may preclude them from wearing a respirator. A selection of respirators should be available to ensure a proper fit, while fit testing and user training must form part of the management for the use of respirators by healthcare workers.

Persons using any type of mask (medical mask, respirator or cloth) should be provided with detailed instructions for wearing, handling and proper disposal. Emphasis should be placed on need for frequent hand hygiene and immediate disposal of single use masks and the correct cleaning methods for reusable masks. Table 1 below summarises the newly released WHO guidance on the use of masks for different settings and target groups.
Table 1. Type of Masks to be worn by Persons during the care of persons suspected/confirmed as having COVID-19

<table>
<thead>
<tr>
<th>Setting</th>
<th>Target group</th>
<th>Activity</th>
<th>Type of mask</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare facility inpatient/outpatient</td>
<td>Healthcare Worker (HCW)</td>
<td>Screening or triage</td>
<td>Medical mask when physical distance is not feasible and there is no physical patient contact</td>
</tr>
<tr>
<td></td>
<td>Patients with symptoms suggestive of COVID-19</td>
<td></td>
<td>Provide medical mask if tolerated by patient.</td>
</tr>
<tr>
<td></td>
<td>Patients without symptoms suggestive of COVID-19</td>
<td></td>
<td>No mask required</td>
</tr>
<tr>
<td>Healthcare facility inpatient</td>
<td>HCW</td>
<td>Providing direct care to COVID-19 patients, in the absence of aerosol-generating procedures</td>
<td>Medical mask</td>
</tr>
<tr>
<td></td>
<td>Providing direct care to COVID-19 patients in settings where aerosol-generating procedures are frequently performed</td>
<td>Respirator N95 or FFP2 or FFP3 standard, or equivalent.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Any activity that does not involve contact with COVID-19 patients</td>
<td>No mask required</td>
<td></td>
</tr>
<tr>
<td>Laboratory staff</td>
<td>Manipulation of respiratory samples Specimen handling for molecular testing requires BSL-2 or equivalent facilities.</td>
<td>Medical mask</td>
<td></td>
</tr>
<tr>
<td>Janitorial staff</td>
<td>Entering the room of COVID-19 patients</td>
<td>Medical mask</td>
<td></td>
</tr>
<tr>
<td>Visitors</td>
<td>Entering the room of a COVID-19 patient</td>
<td>Medical mask</td>
<td></td>
</tr>
<tr>
<td>All staff including HCW</td>
<td>Areas of transit where patients are not allowed (e.g. cafeteria, corridors)</td>
<td>No mask required</td>
<td></td>
</tr>
<tr>
<td>All staff including HCW</td>
<td>Administrative areas</td>
<td>No mask required</td>
<td></td>
</tr>
<tr>
<td>Setting</td>
<td>Target group</td>
<td>Activity</td>
<td>Type of mask</td>
</tr>
<tr>
<td>---------------------------------</td>
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<td>---------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Consultation Room</td>
<td>HCW</td>
<td>Physical examination of patient with symptoms suggestive of COVID-19</td>
<td>Medical mask</td>
</tr>
<tr>
<td>Outpatient facility</td>
<td></td>
<td>Physical examination of patient without symptoms suggestive of COVID-19</td>
<td>PPE according to standard precautions and risk assessment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Patients with symptoms suggestive of COVID-19</td>
<td>Provide medical mask if tolerated.</td>
</tr>
<tr>
<td>Consultation Room, Outpatient facility</td>
<td>Patients without symptoms suggestive of COVID-19</td>
<td>Any activity</td>
<td>No mask required</td>
</tr>
<tr>
<td>Janitorial staff</td>
<td></td>
<td>After and between consultations with patients with respiratory symptoms.</td>
<td>Medical mask</td>
</tr>
<tr>
<td>Administrative areas, Outpatient facility</td>
<td>All staff including HCW</td>
<td>Administrative tasks</td>
<td>No mask required</td>
</tr>
<tr>
<td>Mortuary facility</td>
<td>Mortuary workers</td>
<td>Handling the body of a confirmed case of COVID-19 inclusive of autopsy, preparation for interment</td>
<td>Standard surgical mask or a N99/FFP3 respirator in conjunction with clear visor</td>
</tr>
<tr>
<td>Home care</td>
<td>Patients with symptoms suggestive of COVID-19</td>
<td>Any</td>
<td>Provide medical mask if tolerated, except when sleeping.</td>
</tr>
<tr>
<td></td>
<td>HCW</td>
<td>Providing direct care or assistance to a COVID-19 patient at home</td>
<td>Medical mask</td>
</tr>
<tr>
<td></td>
<td>Un/trained Caregiver</td>
<td>Entering patient’s room, providing direct or indirect care</td>
<td>Medical mask</td>
</tr>
<tr>
<td>Setting</td>
<td>Target group</td>
<td>Activity</td>
<td>Type of mask</td>
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</tr>
<tr>
<td>Ambulance or transfer vehicle</td>
<td>HCW</td>
<td>Transporting suspected or confirmed COVID-19 patients to the referral health care facility</td>
<td>Medical mask</td>
</tr>
<tr>
<td>Patient with suspected or confirmed COVID-19.</td>
<td></td>
<td>Transport to the referral health care facility.</td>
<td>Medical mask if tolerated</td>
</tr>
<tr>
<td>Driver</td>
<td></td>
<td>Assisting with loading or unloading patient with suspected or confirmed COVID-19 No direct contact with patient with suspected or confirmed COVID-19, but no separation between driver’s and patient’s compartments</td>
<td>Medical mask</td>
</tr>
<tr>
<td>Janitorial staff</td>
<td></td>
<td>Cleaning after and between transport of patients with suspected or confirmed COVID-19 to the referral health care facility.</td>
<td>Medical mask</td>
</tr>
<tr>
<td>Disease Surveillance</td>
<td>Public Health follow-up</td>
<td>Telephone follow-ups and monitoring of persons under quarantine at home. Other Administrative tasks</td>
<td>No mask required</td>
</tr>
<tr>
<td>Contact Tracing Staff and monitoring</td>
<td></td>
<td>Conducting home visits to identify contacts, monitoring of persons under quarantine for symptoms</td>
<td>Medical mask</td>
</tr>
</tbody>
</table>
Use of cloth masks

Research studies that provide findings of randomized, controlled clinical trials that seek to address the effectiveness of cloth masks in the prevention of respiratory infections have not been widely conducted. \(^{5,6,7,8,9}\) CARPHA has used available studies in the development of its recommendations associated with the utilization of cloth face masks when medical masks are not available.

Comparison of Face Masks for Healthcare Workers

In a cluster-randomised trial conducted in Hanoi Vietnam in 2011, researchers assessed the effectiveness of cloth and medical face masks for the protection of healthcare workers.\(^8\) The findings showed that influenza-like-illness was 50% more common in the cloth mask arm. In another study which compared masks used by HCWs, it suggested that HCWs should not use cloth masks as protection against respiratory infection.\(^{6,8}\) Cloth masks resulted in significantly higher rates of infection than medical masks and also performed worse than the control arm.

The first use of any type of mask has been traced to the late 19\(^{th}\) century with the use of double layered gauze masks to protect healthcare workers (HCWs) from respiratory infection.\(^6\) It was reported that there were low rates of respiratory infections among HCWs as a result of these masks.\(^6\)

In 2013, Davies \textit{et al}, looked at various materials’ ability to filter either \textit{Bacillus atrophaeus} (larger than SARS-CoV-2) or the \textit{Bacteriophage MS2} (smaller than SARS-CoV-2).\(^{7,8}\) This study stated that the surgical masks have a significant effect in preventing the dispersal of large droplets and some smaller particles when healthy volunteers coughed.\(^7\) While both the surgical and homemade masks significantly reduced the number of microorganisms expelled by volunteers, the surgical mask was 3 times more effective in blocking transmission than the homemade mask.\(^7\) Homemade masks made with cotton blend materials were 78\% as effective as medical masks at filtering \textit{B. atrophaeus} and 56\% as effective as medical masks at filtering \textit{Bacteriophage MS2}.\(^6\) This study also stated that the pillowcase and the 100% cotton t-shirt were found to be the most suitable household materials for an improvised face mask.\(^7\)

Mask Use in Outbreaks/ Pandemics

Although cloth masks have previously been used in low/ middle income countries,\(^{5,6,7,8,9}\) there is minimal policy acknowledgment of the need for cloth masks, and a lack of evidence on their efficacy and use.\(^{6,8}\)

During an extended respiratory illness outbreak or influenza pandemic, the use of cloth masks may be the only option available in low resource settings.\(^{6,7,8,9}\) Recently, the high demand for masks and the potential reliance on cloth masks during an influenza pandemic, was acknowledged by the Institute of Medicine (IOM) when preparing their report on the reusability of facemasks. The committee members did not advise against the use of cloth masks,\(^{6,7}\) however they recommended further research\(^{5,6,7}\) be undertaken on the use of cloth masks, including commonly used fabrics.
**Personal Control & the COVID-19 Pandemic**

Public health practitioners’ goals are to encourage people to protect themselves from COVID-19 by sharing information and recommending various methods of personal and family protection. Various strategies of health education and health promotion are used to keep the global population informed. However, the uncertainty of the pandemic leaves people feeling extremely vulnerable. The levels of personal control or feeling of being able to determine the events and outcomes of events in their lives and the lives of their loved ones \(^{(11)}\) is very low. Thus, many laypersons will wear cloth face masks even though there is not sufficient scientific evidence to prove the effectiveness.

**Cleaning of Cloth Masks**

Facemasks made of a washable material that are to be re-used, should be washed immediately after use, with a detergent in hot water (60°C/140°F). Once masks have been washed, they should be dried in the sun or in a dryer if the material permits this. Washed masks should be stored in a clean area until ready for use.

**Recommendations**

1. Whilst CARPHA acknowledges the WHO’s position that there is currently insufficient evidence for or against the use of masks by healthy persons in the community. \(^{(2,3)}\), in keeping with the recent policy decisions to wear masks in public by several CARPHA Member States, CARPHA advises its Member States to employ the use of the precautionary principle and encourages the use of masks (cloth/homemade) by the general population while they are out in public.

   Physical distancing, hand hygiene and cough etiquette must still be observed.

   It is imperative that the general public are educated on the preferred use, handling, and cleaning of the cloth/homemade mask as per Appendix 1.

2. CARPHA strongly encourages Member States which adopt the policy for use of masks in the public domain, to use this opportunity to conduct research on the efficacy of cloth masks in reducing the transmission of COVID-19 in community settings.

   CARPHA will provide guidance with the development of study protocols or frameworks for such research in collaboration with Member States.
Appendix 1

CARPHA Infographic on Use of Various Face Masks

Wearing face masks in public may help to limit the spread of COVID-19. Face masks help to reduce the release of tiny droplets from the nose or mouth of persons infected with the coronavirus.

### Medical face masks
- Also known as surgical or procedure face masks
- Disposable, flexible barrier device
- Cleared by the FDA
- Used in the hospital setting or by healthcare workers
- Protects the wearer from large droplets, splashes and sprays
- Controls the spread of droplets from the person wearing the face mask; protects others nearby

### Respirators
- Also known as filtering face pieces
- Can have various types
- Tight-fitting, tougher device that should be fit checked
- Cleared by the NIOSH and FDA
- Used by healthcare workers, especially during aerosol generating procedures or in high risk areas (e.g. ICU)
- Protects the wearer from solid and liquid aerosols (tiny particles)

### Non-medical face masks
- Also known as ‘cloth’ masks or ‘community’ masks
- Can include many types of self-made/“do-it-yourself” or commercial masks
- Usually made from cloth, other textiles or materials
- Not approved by regulatory bodies
- Should not be used in the hospital setting or by healthcare workers
- Effects are not proven but may protect both the wearer of the mask and others nearby
Priority must be given to healthcare workers regarding the use of medical face masks. Do not take away masks from those in healthcare who need them most.

Community members may consider wearing face masks when visiting busy, closed spaces, such as groceries and pharmacies. The use of face masks may be considered when using public transportation.

Face masks are a complementary measure. They do not replace recommended preventative measures.

Use face masks properly!
When you use face masks correctly, you can better protect yourself and those around you.

- Perform hand hygiene using soap and water or an alcohol-based hand rub before putting on the mask. Hand hygiene should be done after taking off the mask as well.
- Carefully dispose of the mask by wrapping it in some tissue and placing into a bin.
- When putting on and taking off the mask, hold the mask by the straps ONLY. Do not touch the inside or the outside of the mask.
- If your face mask is reusable, wash it immediately after use with detergent at 60°C.
- Make sure the face mask covers your face from the bridge of your nose down until your chin.
- Keep updated with current information from reliable sources on the use of face masks.

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CARPHA Infographic on the Use of Non-medical/Cloth/Homemade Face Masks

**HOW TO WEAR, USE AND REMOVE A CLOTH/HOME-MADE FACE MASK**

*Coronavirus (COVID-19)*

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- **Perform hand hygiene using either soap and water or an alcohol-based hand rub.**
  - This must be done before putting on the face mask and after removing it.

- **Hold the face mask by the straps ONLY.** Place loops over each ear. Do not touch the inside of the mask.
  - Make sure the mask completely covers your nose and mouth.

- **The face mask should fit from the bridge of your nose down to your chin.**
  - Make sure that there are no gaps between your face and the mask.

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- **Only wear the mask for tasks/activities which require its use.**
  - Do not touch your face or your mask. If you touch your mask accidentally, perform hand hygiene.

- **Hold the face mask by the straps and remove the mask by pulling it away from your face.**
  - Do not touch the front of the mask. Perform hand hygiene after removing the mask.

- **After using a cloth mask, place it in a resealable plastic bag.** Wash immediately after use with detergent at 60°C.
  - Keep clean cloth masks in one bag and used ones in another bag.

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1. Should I wear a face mask when I am driving alone in my car? **No**

2. Should I wear a face mask when I am driving with my immediate family in our car? **No**

3. Should I wear a face mask when I am riding my bicycle or motorcycle? **No**
4. Should I wear a face mask when I am walking on the street and there aren’t any other persons close by?  
   ☑ Yes

5. Should I wear a face mask when I am waiting for a taxi at the taxi stand?  
   ☑ Yes

6. Should I wear a face mask when I am travelling with other persons in a taxi/bus?  
   ☑ Yes

7. Should I wear a face mask when I am in a line to get into the open market/supermarket/bank/other business?  
   ☑ Yes

8. Should I wear a face mask when I am shopping/conducting a transaction in the open market/supermarket/bank/other business?  
   ☑ Yes

9. Should I wear a face mask when I am filling up my tank in the gas station?  
   ☑ Yes

10. Should I wear a face mask when I am visiting my elderly relatives to check on them or deliver food/ensure their wellbeing?  
    ☑ Yes

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References

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   Online: https://carpha.org/Portals/0/Documents/COVID%20Situation%20Reports/Situation%20Report%2036%20-%20April%22,%202020.pdf

2. WHO Rational use of personal protective equipment for coronavirus disease (COVID-19) and considerations during severe shortages: Interim guidance (6 April 2020) Online: https://apps.who.int/iris/handle/10665/331695


