



Technical Bulletin



Date: April 03, 2020
Topic: Interim Guidance on Alternative, improvised and Homemade Facemasks
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To: All Nevada Residents and Visitors

This guidance is being given while the Crisis Standards of Care (CSC) Plan is in effect.

As the COVID-19 pandemic accelerates, our national health care systems have become overwhelmed with large numbers of potentially infectious patients seeking testing and care. Preventing the spread of infection to and from health care workers (HCWs) and patients relies on the effective use of Personal Protective Equipment (PPE), gloves, face masks, air-purifying respirators, goggles, face shields, and gowns.

A critical shortage of PPE is projected to develop or has already developed in Nevada and nationwide. PPE, formerly ubiquitous and disposable in the hospital environment, is now a scarce and precious commodity in many locations when it is needed the most to care for highly infectious patients. An increase in PPE supply in response to this new demand will require a large increase in manufacturing, a process that will take time our health care systems may not have, given the rapid increase in ill COVID-19 patients.

As our state healthcare and public health systems enter Crisis Standards of Care (CSC) mode, cancellation of all elective and non-urgent procedures and outpatient appointments, for which facemasks are typically used is likely. Plans for resupply through the repurposing of industrial manufacturing seems unlikely to solve the shortage quickly enough as supply chains become more dysfunctional in time of pandemics.

Every effort should be made to obtain FDA regulated facemasks and to comply with CDC's <https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/index.html> "Strategies to Optimize the Supply of PPE and Equipment to Protect Health Care Worker from Exposure to Infectious Particles". However, currently, there are not enough masks to be used for healthcare professionals in Nevada or anywhere in the nation.

While there is no consensus if masks can reduce individuals' risks for contracting COVID-19, it is well established that even improvised homemade masks can control and reduce the spread of the virus from infected individuals. Most of those infected with COVID-19 have mild symptoms, are asymptomatic and may unwillingly spread the virus as transmission may occur prior to the development of overt symptoms. Alternative facemasks can serve as source control for an individual who may be infected as an effective approach to limit transmission of the virus.

There are many versions of non-FDA regulated facemasks. Such alternative facemasks can be homemade, improvised or manufactured.

The Nevada Governor's COVID-19 Medical Advisory Team (MAT) recognizes the challenges, concerns, and frustration about the shortage of personal protective equipment (PPE) and its impact in Nevada and nationwide. As the virus continues to spread in our communities, the MAT recommends the immediate use of source control alternatives, such as improvised or homemade masks for everyone.

It is appropriate to wear an alternative facemask in the following circumstances:

- FDA regulated PPE supply has been exhausted and all efforts to extend PPE use have been exhausted.
- When a worker in a health care facility does not have direct patient care responsibility (e.g., dietary staff, environmental services staff, administrative staff).
- Use by patients who do not have respiratory symptoms.
- Use by visitors or contract staff who are providing services to a healthcare facility.
- Asymptomatic individuals who have not had known exposures to confirmed or suspect COVID-19 cases.

Design principles for Best Performance of Improvised Masks:

1. Improvised mask should tightly enclose the area around the nose and mouth, from the bridge of the nose down to the chin, and extending onto the cheek beyond the corners of the mouth, so no gaps occur when talking or moving.
2. Material used to build improvised masks must be tightly woven but breathable. Fabric used can probably be designed in double-layer.
3. Masks must be made from washable material such as resistant fabric.
4. Fabric used should handle high temperatures and bleach without shrinking or otherwise deforming.
5. The mask should be tolerant of expected amounts of moisture produced from breathing.
6. Elastic straps that loop behind ears can be used as straps.
7. Alternate or Improvised facemasks
 - Should be properly donned and doffed to avoid self-contamination.
 - Should be changed when saturated from condensation build up from breathing, or after a gross contamination event.
 - Dirty and clean facemasks must be housed in separate, clearly labeled containers to prevent cross contamination.

Washing Alternate Facemasks:

Dirty masks should be washed between each use in hot water with regular detergent, and should be dried completely on hot setting.

Design examples:

There is no standard design for a homemade facemask therefore; innovation using the design principles above is encouraged.

Below are example designs for consideration:

- <https://vimeo.com/399324367/13cd93f150>
- <https://www.youtube.com/watch?v=xN0HH2Zb2hY>
- <https://www.allinahealth.org/-/media/allina-health/files/mask-sewing-how-to.pdf>

- <https://www.leadingagewa.org/wp-content/uploads/sites/296/2020/02/Instructions.pdf>
- <https://buttoncounter.com/2018/01/14/facemask-a-picture-tutorial/>
- <https://smartairfilters.com/en/blog/best-materials-make-diy-face-mask-virus/>
- <https://www.instructables.com/id/DIY-Cloth-Face-Mask/>

For More Information: Please contact DPBH M-F 8:00 AM to 5:00 PM at (775) 684-5911. The after-hours line can be contacted at (775) 400-0333.



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