



**Special Communication to City of Burlington
Emergency Operations Center and Mayor
Regarding COVID-19**

To: Brian Lowe

From: Meagan Tuttle, Kayla Donohue, Jesse Freedman of City Analytics Team

RE: UPDATED: Utilization of Facemasks by individuals during pandemic

Date: April 3, 2020, 12:15pm

Updated: from March 22 original to reflect evolving perspective on individual utilization

Key Messages:

- There is currently consensus from the WHO and CDC that those who are sick, and those who are caring for someone who is sick, should wear a mask. While there is currently consensus among these organizations urging the general public not wear masks, new guidance encouraging use of cotton masks in public is [reportedly](#) imminent. **As of noon on April 3, VT Health Commissioner advises Vermonters to [wear a cloth mask](#) when in public.**
- While many public health officials warn that mask usage by the general public may be a “moral hazard” due to offering a false sense of security, some studies suggest that widespread usage of homemade masks when individuals are in public can help reduce transmission of influenza. Particularly as it becomes [clearer that people can transmit the virus while asymptomatic](#), and that perhaps up to half of all COVID-19 patients are asymptomatic, widespread utilization of masks or other face coverings makes sense.
- Further, mask use by all may have the benefit of eliminating the stigma associated with wearing a mask and identifying yourself as sick – if everyone does, sick or not, use among the sick may increase.
- As of April 1, Riverside County, CA’s public health officer and L.A. Mayor Eric Garcetti are urging individuals to wear a non-medical mask or face covering when performing essential tasks such as grocery shopping. As of April 2, the City of Laredo, TX, issued an order, punishable by a fine up to \$1,000, that all residents to wear something that covers their nose and mouth when entering any building that is not their residence.
- Mask use will require sufficient supply and distribution channels for those who have followed CDC guidance to date and not purchased masks. On April 1, Mayor Weinberger announced an initiative to create masks using bull denim to distribute to non-medical essential workers.
- **Any public health guidance that encourages or supports mask utilization by individuals when in public should make it expressly clear that:**

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- Individuals should not be given a false sense of security about mask usage. **The purpose of mask use is primarily to reduce probability of transmission of the virus by asymptomatic people;** some mask types may offer minimal personal protection.
- **Individuals using masks should opt for homemade mask types, NOT commercial-grade masks** which are in short supply for HCP's and frontline workers.
- If individuals choose to use a mask, they **must practice mask hygiene and safety, while also continuing vigilant social distancing, respiratory etiquette, hand washing, and routine cleaning/sanitization.**

Key Resources

- [World Health Organization: Advice for the Public on when and how to use a mask](#)
- [CDC Guidance for Individuals to Prevent Getting Sick](#)
- [CDC Report on Asymptomatic Transmission in Washington State](#)
- [Testing the Efficacy of Homemade Masks: Would they protect in an Influenza Pandemic?](#)
- [Effectiveness of Surgical Masks Against Influenza Bioaerosols](#) (Journal of Hospital Infection)
- [Rational Use of Facemasks in the COVID-19 pandemic](#) (Lancet)
- [More Americans Should Probably Wear Masks for Protection](#) (NYT)
- [CDC: Article on Simple Respiratory Mask](#)
- [Details about making/delivering fabric masks by Deaconess Hospital in Indiana](#)
- [Garcetti Urges L.A. to wear face covering when doing essential tasks in public](#) (L.A. Times)

Summary of Research

Facemasks for Individuals

As of the date and time of this memo, the CDC is not recommending that the general public use masks for personal use unless they are sick or caring for someone who is sick. However, it is reported that changes to this guidance are imminent. It seems that the current recommendation is based on a number of factors: limited evidence about the reduction in transmission associated with community-wide utilization of masks, concern about the false sense of security individuals may feel when wearing low-efficacy homemade masks, and the widespread shortage of commercial-grade masks for HCP's and other frontline workers.

However, some experts note that "there is an essential distinction between absence of evidence and evidence of absence." [\[source\]](#) There is [some evidence](#) from prior outbreaks that wearing a mask, especially in combination with good hand washing, can reduce disease transmission. [A 2013 study](#) suggests that during an influenza pandemic, the use of masks by individuals when in public could help significantly reduce transmission if utilized widely, but that only approximately 50% of individuals utilize them. It found that improvised facemask could be useful for aerosol organisms for which particles are of a similar size to influenza.

Josh Sharfstein, MD, of John's Hopkins University summarizes the mixed guidance from experts:

"Increasingly, there are some experts recommending that everyone wear makeshift masks in public, even though homemade masks do not fully protect against droplet transmission. The logic behind this recommendation is to reduce the chance of shedding virus without symptoms and to reinforce the concept of social distancing. Others, however, point out these benefits are not well proven and express the concern that

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*people may reduce social distancing of a mistaken sense of security. **A nuanced position would be to support people wearing masks if they feel comfortable doing so, while emphasizing the importance of social distancing as the primary way to prevent the spread of the infection.*** (JS, 4/1/20)

Mask Material

An essential point in the debate about mask utilization stems from the efficacy of the mask design and material as 1) source control (assumes the mask wearer is the infected person) and/or 2) personal protection or PPE (assumes the mask protects the wearer from airborne droplets).

This [article from a CDC publication](#) advises that boiled (washed), unused 100% cotton t-shirts were the most suitable household material for preparing improvised personal masks. Many of the tutorials and guidance available online for individuals constructing masks looks as these materials.

A research team at the University of Minnesota's Center for Infectious Disease Research and Policy (CIDRP) published a [commentary](#) on April 1, 2020 analyzing the available research on mask use and respirators both as PPE and as source control to better understand the science-based data to inform ongoing COVID-19 decision-making. Overall, **the conclusions from the CIDPR was that cloth masks are ineffective as source control and PPE, [surgical masks](#) have some role to play in preventing emissions from infected patients, and respirators are the best choice for protecting healthcare and other frontline workers, but not recommended for source control.**

Understanding these conclusions, and other data that shows that heavier, less breathable fabrics typically have a higher efficacy, the City has connected with the Lahey Clinic in Massachusetts to test masks made from bull denim fabric, rather than standard cotton. It is believed that this fabric may perform more similar to surgical masks, and the team is awaiting research conclusions from Northeastern.

Regarding Improvised Facemasks for HCPs

Personal Protective Equipment (PPE) is an essential tool for healthcare providers (HCP), first responders, and other frontline workers in the COVID-19 pandemic. Many efforts are underway to ramp up the production and redistribute the available supply of N95 and hospital grade facemasks. The CDC has produced guidance on [Optimizing the Supply of PPE](#), including Facemasks, which consider the utilization rate and appropriateness of various PPEs during conventional, contingency, or crisis capacity.

There have been numerous calls for and individuals offering to prepare non-commercial grade masks, sewn by volunteers and utilizing common household materials. In fact, some hospitals in the northeast and Vermont have issued calls for donations of these mask types. The Deaconess Hospital in Indiana, has posted information for volunteers interested in making masks for hospital staff online. Hospitals note that these masks are not being used as a primary PPE resource for HCP's, or for COVID-19 patients, but are being collected as a crisis response option when other supplies are exhausted (per CDC PPE Optimization guidance), or for use in other areas of patient care when PPE are depleted.

It is important to note that the CDC guidance recommends the use of homemade masks by HCP only as a last resort when there is no supply of PPE available. While [some testing suggests](#) that while

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homemade masks are better than no protection in crisis capacity, they are not advised as a PPE method. Surgical masks may also offer some modest protection over nothing at all, based on research on influenza. CDC advised that caution should be exercised when deciding to use homemade masks, and that they should ideally be used in conjunction with a face shield.

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