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## Caution on Homemade Masks for Healthcare Workers

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It's heartening to see so many people wanting to respond to the shortage of masks for those on the frontlines of the coronavirus pandemic by sewing homemade masks from fabric and a pattern. How schools of nursing respond during this crisis is key to fostering appropriate community responses. We're concerned that some schools are encouraging people to make these cotton masks for nurses and other frontline health care workers and that some hospitals are saying they will take them.

Homemade masks are not protective grade, even when made of 100% cotton and with careful use of the template that simulates the surgical mask design. Cotton is not an adequate barrier and can get moist, acting like a wick to allow the virus to travel via moisture from the outside of the mask to the wearer's face. And [proper fit](#) of any mask is crucial for protection. Making face shields might be more helpful to frontline healthcare staff.

Many are saying “it’s better than nothing”, which is why the [CDC](#) said bandanas or scarves could be used if proper masks were not available. The [WHO](#) does not agree, and we believe the outrage from many frontline staff was warranted, as the CDC’s recommendation was not evidence based. In fact, we do have [evidence](#) that cotton masks have significantly higher rates of infection from other pathogens.

Dr. Friese participated in a meeting with respiratory protection experts last week. The group did think that the barrier of homemade cotton masks could be strengthened if a liner of polypropylene can be made and inserted between the wearer's face and the cotton mask. But we are not there yet. If you have a school of engineering, you might consider engaging them in designing and testing such a solution. But even with an insert, the mask must be able to be washed in hot water and soap and changed regularly.

Cotton masks could be helpful for some non-health care workers:

- Someone who has tested positive for the virus and is isolated at home but trying not to spread it to others with whom they live.
- People with compromised immune systems who have to be around others—but they really should stay home.

- Someone who has a cough and is in public during this allergy season. It would reduce the ability of the person's cough to project the droplets into the air. There is growing evidence that the virus can also be spread through small particles, but again, anyone with a cough should be staying home.
- People who are scared and insist on wearing N95 respirators and surgical masks they were able to find, even though they don't need them and are depleting the supply of protective-grade masks available for health care workers on the frontlines.
- Should the CDC expand recommendations for mask use for the general public, as we think it may, cotton masks may blunt the damage and direct industry-tested protection to health care workers.

If you're intent on continuing to make masks, make sure you're adhering to the pattern, paying attention to materials, and letting the end user know that the mask is not protective grade. *But make that end user your community instead of health care workers.* Consider asking your community to search their homes and businesses for protective-grade surgical masks and N95 respirators (masks) or even higher-grade respirators (elastomeric respirators, for example) and swap them for one or two homemade masks. You can then donate the industry-tested masks to local hospitals.

We must get appropriate PPE to frontline workers and prevent this shortage of PPE from happening again. We can settle for nothing less. Urge the president to invoke the Defense Production Act for quickly increasing our supply of medical-grade masks, as he now has done for ventilators. And start thinking about how we can be better prepared for the next pandemic. You can read our *JAMA* blog about the latter here: <https://jamanetwork.com/channels/health-forum/fullarticle/2763478>. It's a couple weeks old and the science and numbers have changed, but the fundamental points remain relevant. If you have any questions, please contact Dr. Friese at [cfriese@umich.edu](mailto:cfriese@umich.edu).