Sewing Reusable Cloth Masks

with a Non-Woven Filtration Layer and a Pocket

Tutorial by Megan Lord, MD, and Peggy Cleary

This pattern was created by Peggy Cleary and her daughter, Dr. Megan Lord, by modifying existing patterns available online. They added characteristics that Dr. Lord thought were important to protect herself and other healthcare providers, including the following:

- a layer of non-woven material (which filters small particles better than knit or woven fabric)
- a pocket to add disposable/swappable filters (like a piece of HEPA filter or vacuum cleaner bag)
- a bendable wire across the nose to form a tight fit against the wearer's face
- ability to withstand repeated hot water washing & drying in hospital laundry (which will rapidly degrade elastic)

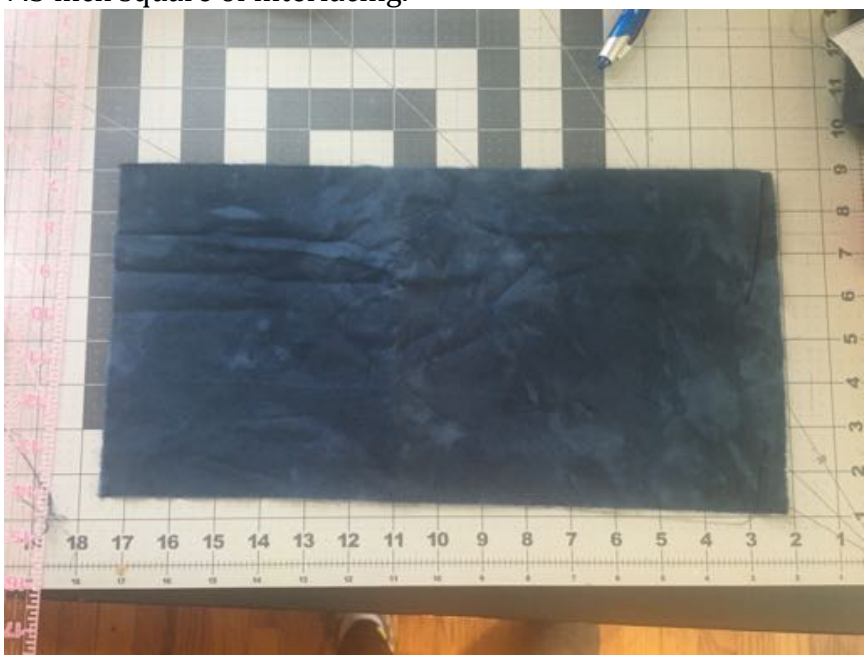
Like any fabric mask, these should be considered a last resort for use in situations when N95 or disposable surgical masks are not available, as they do NOT offer the same protection as a commercial N95 mask or commercial surgical mask. However, if N95 and surgical masks are not available, we feel that this is the best possible fabric mask.

Materials and Equipment Needed:

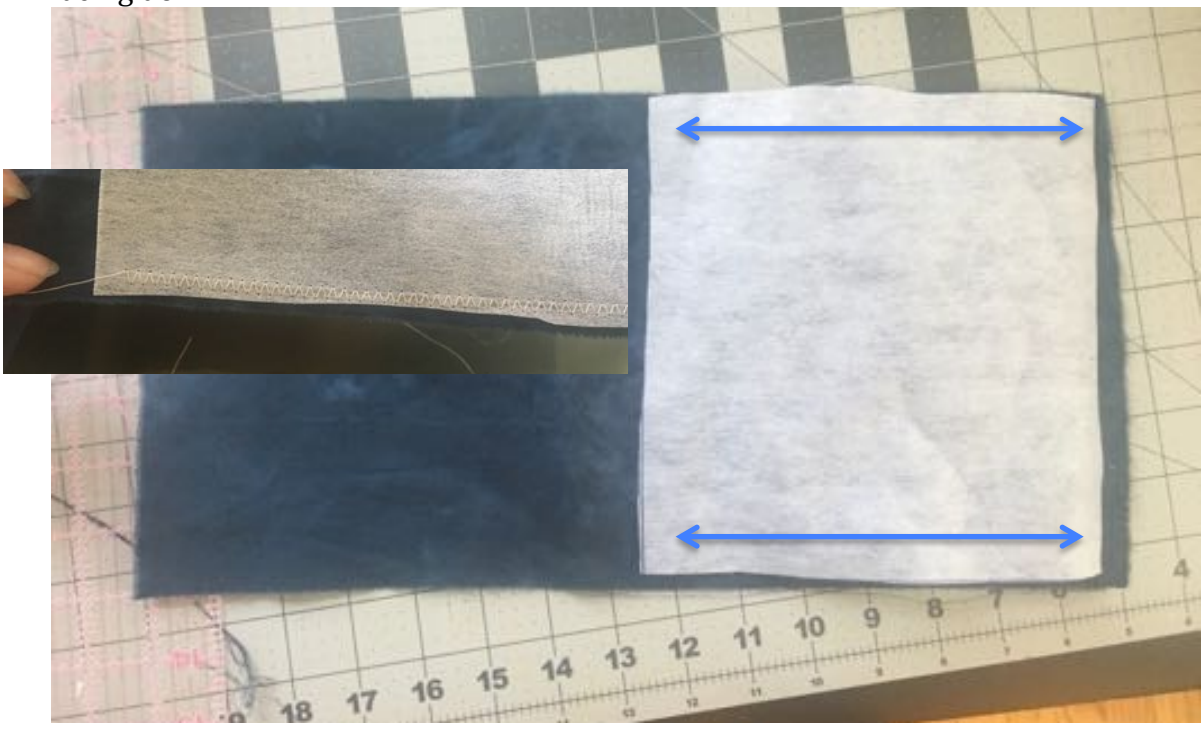
- Tightly woven cotton fabric (one 7.5x15" piece)
- Lightweight, non-woven, non-fusible interfacing (we used Pellon 910 sew-in)
- Wire that can be easily molded, will hold its shape, and will not corrode with washing (we used 14 gauge aluminum jewelry wire from Jo-Ann Fabric and Crafts)
- 64" of double-folded fabric tape for straps. This can be home made or store bought. It does NOT need to be on the bias.
- Thread that can withstand repeated washing (we used all purpose cotton)
- Sewing machine with the ability to sew straight and zigzag stitches
- Wire cutters and pliers

Step 1. Pre-shrink your outer fabric by washing in hot water and drying on hot. The interfacing does not shrink and does not need to be pre-washed

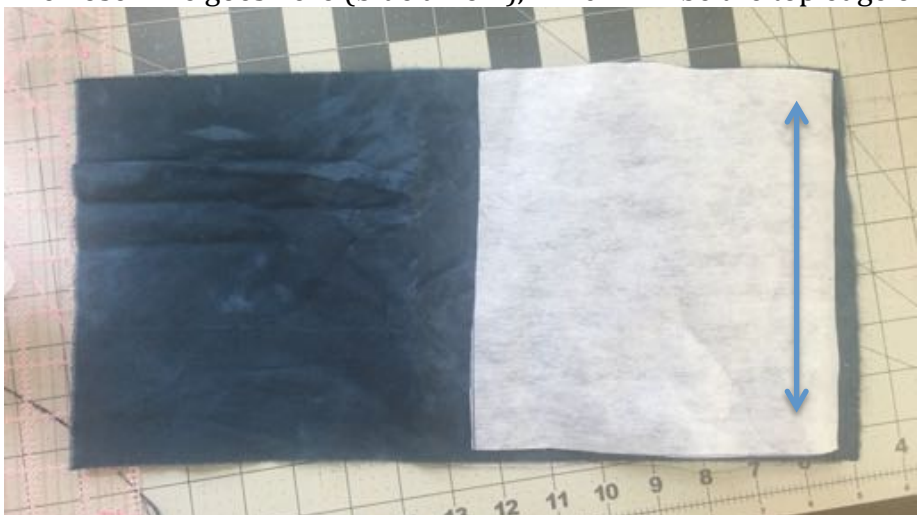
Step 2. Cut a 7.5 x 15 inch rectangle of outer fabric (shown here in dark blue) and a 7.5 inch square of interfacing.

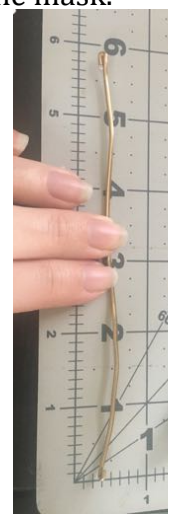


Step 3. Lay the interfacing over one half of the fabric and zigzag the sides to hold the layers together. If your fabric has a right and a wrong side, the right side should be facing down.



Step 4. Cut a 6-inch piece of wire and bend the ends back to cover any pointy ends. The nose wire goes here (blue arrow), which will be the top edge of the mask.





Step 5 (optional) Use the zigzag stitch on your sewing machine to (carefully!) zigzag the wire onto the short edge of the rectangle. (Note: we used a regular presser foot)

Step 6: Fold the top edge (with attached wire) over and stitch down to encase the wire.

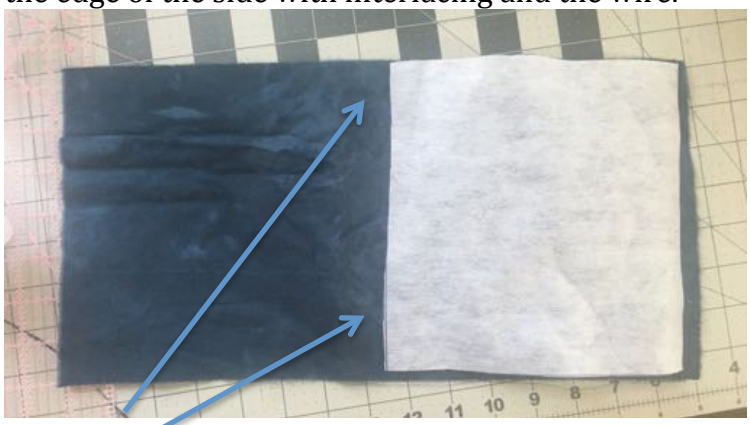
Note: if you skipped zigzagging the wire down, also sew across the ends of this casing ¾" in from either edge, to keep the wire in place.

Step 7. Fold over the other short edge and stitch down

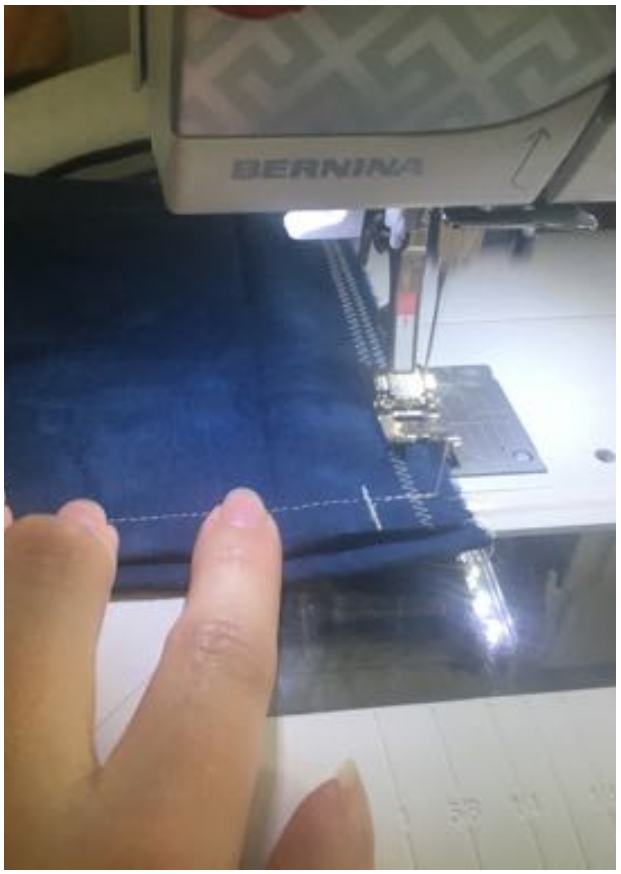
You should now have something that looks like this:

wire in casing raw edge hemmed in step 7

Step 8. Fold in half along the edge of the interfacing and zigzag or baste down the sides (in the same place you zigzagged before) to hold all of the layers together. If possible, the edge of the side without the interfacing should extend just barely past the edge of the side with interfacing and the wire.



Fold here



Step 9: Pinch up the fabric and pin down to create 3 pleats that open downward (away from the nose wire)

Wire

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Step 10: Attach fabric straps made from double-fold fabric tape. I used a bias binder attachment for my sewing machine, but any double-folded fabric tape will work equally well. You can make your own or buy pre-made. You will need 32 inches of tape for each side of the mask, 64" total per mask.

Stitch the binding tape closed for approximately 14 inches (a little under half of your tape), then insert the mask and stitch into the fabric tape, and continue stitching the tape closed past your mask. Repeat on the other side. This creates a very durable strap that won't come off with wear and washing.

Step 11: Fold over and tack down the ends of the straps.

You're done!