



This mask is made of two layers of Halyard H600 medical fabric. It has a roundish shape and darts to snug the mask under the chin. There is no binding on this mask. The raw edges are topstitched after insertion of the nose wire and attachment of the ties.

**The mask has passed the Respirator Fit Test. NOTE: The masks will be sterilized after they are returned to the hospital.**

**INSTRUCTIONAL VIDEOS CAN BE VIEWED AT:**  
**[anest.ufl.edu/clinical-divisions/alternative-n95-mask-production](http://anest.ufl.edu/clinical-divisions/alternative-n95-mask-production)**

#### **SUPPLIES NEEDED:**

- **Halyard H600 FABRIC** supplied by the hospital.
  - Cut 2 pieces 10" × 6.5"
  - Cut 4 pieces 1" × 20" (these are for the ties)
- **MASK TEMPLATE** provided for a pattern
  - Thick cardstock or other material to make a firm template for tracing
- **100% ACRYLIC YARN**, size medium #4
  - Cut 8 pieces 20" (used for the ties)

Note: We are testing materials to make this easier, but for now this is how we are doing it. The strength of the ties is critical to get a snug fit. (We have tested double zigzag stitching without yarn and it does not work.)

- **16-GAUGE CRAFT WIRE** for the nose wire.
  - Cut 1 piece 5". Make a loop at each end of the wire. All loops should face the same way. Press the loops flat with your pliers to make sure there are no sharp edges sticking up. (*Loops are needed to keep the wire from poking through the fabric.*)

**Note: If you do not have 16-gauge wire, use 20-gauge wire, but cut three pieces and make a loop on all ends.**

- **TOOLS:**
  - Sewing machine that can do a straight stitch and zigzag stitch. Your presser foot needs to be able to accommodate the zigzag stitch.
  - Ruler
  - Scissors
  - Pins or clips
  - Jewelry pliers that have tapered round ends and cutter or needle-nose pliers and wire cutters
  - Ink pen to trace the pattern onto the fabric
  - EXTRA HELPFUL: cutting mat, long ruler and rotary cutter!

**Machine setting:** 2.5 stitch length or whatever the “normal” stitch is for your machine. The zigzag stitch setting used is 2.0 length and 7.0 for width. If your machine does not go to 7.0 for width, use the widest setting.

**Step 1: MASK TEMPLATE.** Print the template and glue to a thin cardboard such as a cereal box or cardstock or use template plastic. The thin “cutting mats” are also good template material. Trace the pattern onto a 10” × 6.5” piece of fabric.

Carefully cut it out. There are cutouts for the two darts. Cut out the darts on the solid line. **DO NOT CUT OUT THE TIE PLACEMENT MARKINGS.**

Layer the two mask pieces and clip.

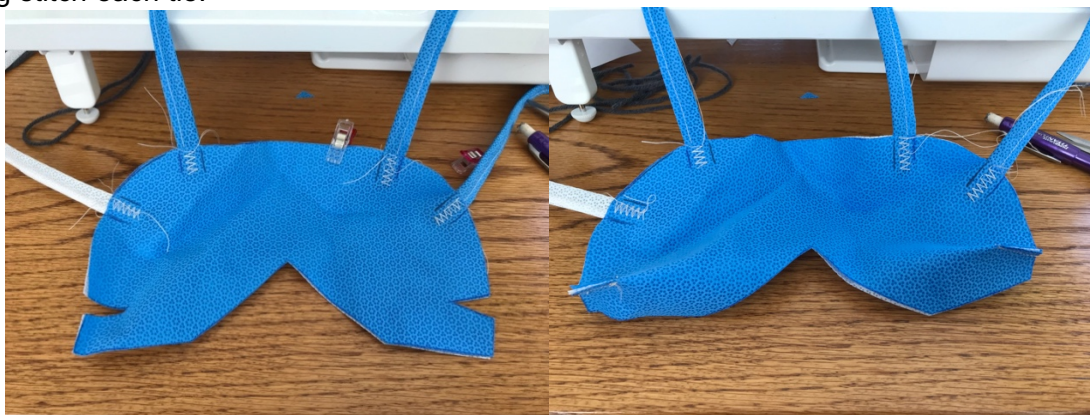
**Step 2: Making the mask ties and attaching to the mask.**

Take a piece of the 20” × 1” medical fabric and two pieces of yarn. You will be folding the fabric in half lengthwise, tucking the yarn into the fold and sewing with a 3/8” seam. As you sew, continue tucking the yarn into the fold until you reach the end. Repeat until you have four ties. (We like to sew at an angle across the end of the tie to secure the yarn. Do not worry about the first end as it will be sewn into the mask.)

**Step 3. Set your machine for ZIGZAG stitch to attach the ties.** We used 2.0 for the stitch length and 7.0 for the stitch width. The darts should be cut out and you should have markings for placement of the ties.

**Tip: Make a second template and only cut out the tie placement marks. Lay it on the blue side, making marks for easier placement of the ties.**

Place the squared end of the tie 3/4” in from the edge, between the two layers at the notch. **LOOK at the template to make sure you place it in the correct place.** Hold together and place under the presser foot. Zigzag stitch from the outside edge of the mask to the end of the tie that’s between the layers; reverse stitch back to the starting point of the stitching. Carefully place and zigzag stitch each tie.



Ties attached.

Darts are sewn.

**Step 4: Darts and partial topstitch of the mask.** Next, sew the darts. NOTE: SEW THE DARTS ON THE BLUE SIDE! The dart seams will show on the outside of the mask. Fold and sew each dart using a tapering seam from the narrow point of the dart to the bottom ending with 1/4" seam. Backstitch at the beginning and end.

When the darts are completed, sew a 1/4 topstitch from one corner of the mask around to the other corner folding the darts up toward the top as you sew. (Sew from Point A through AB and to Point B). **The other seams are left until last so the nose wire can be inserted.**

**Step 5: Insert the wire.** Your prepared wire should be about 4.5" long. If it is longer, you may need to adjust it as it needs to fit between the ties sewn into the mask. Push it all the way up to the seam made when you topstitched the two layers together and used clips to hold it there. Now you will CAREFULLY sew a 3/8" topstitch from Point C to Point D between where the top two ties are sewn in. Position the presser foot so right edge is on the line of the 1/4" topstitching, so you are encasing the nose wire within the 3/8" seam. You want to go slowly so you can control where the wire is. You don't want a broken needle!



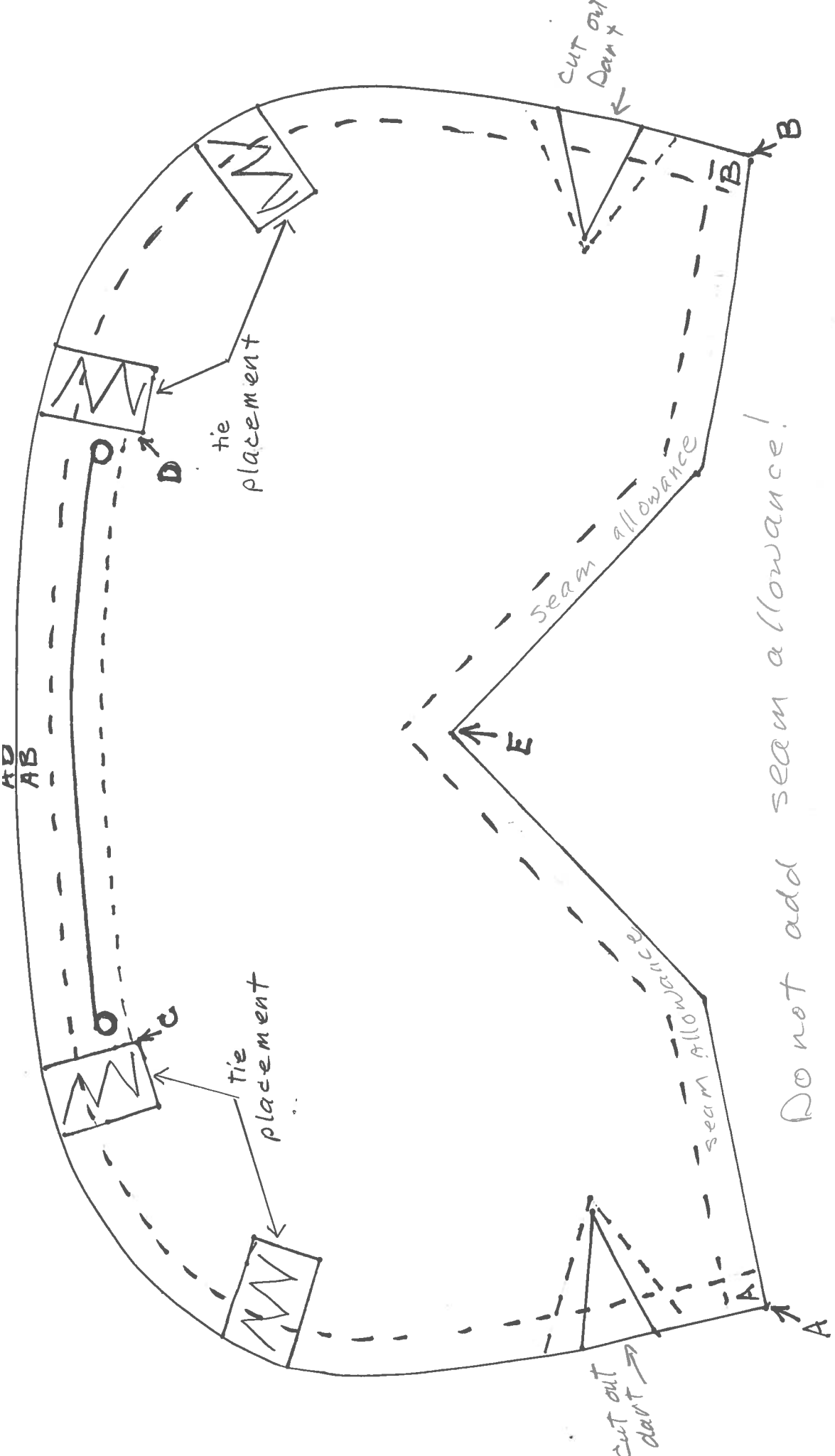
Note: If using 20-gauge wire, be sure to make that loop at each end of all wires and push and clip all three into position. All ends must have a loop: We don't want to injure health care providers!

The wire is inserted between the top two ties. Stich a 3/8" seam to encase the wire.

**Step 6: Sew the outside seams. You are going to sew on the blue side** so that the seams will be on the outside of the mask. Slightly bend the nose wire so you can line up the remaining seams and clip, blue side out. Using a 1/4" seam, backstitch at the beginning (Point E), sew to 1/4" from the corner, turn the mask and sew to the end and backstitch. Trim the seam to 1/8" inch to trim it up a little.

Now you will sew a 1/4" topstitch on the outside edge from one dart across the seam you just made and across the other dart. **You are done!**

The surgical mask information is provided as research information only and has not been tested for commercial use. The mask information is provided with permission for the recipient to freely use, copy and modify without restriction, subject to an obligation on the recipient to recognize University of Florida Health (UF Health) as the source of the information and design depicted in this material. The design is bare bones and materials should be locally available at hospitals that sterilize equipment. This design is for an adult mask for anyone at a higher risk for coronavirus, exposure or concern thereof. The mask information is experimental in nature and the safety or efficacy for use in humans has not been proven. It has been tested using the standard N95 fit test and can fit test pass most people. It should not be used without the wearer N95 fit testing before use. If reused it is advised to use one of the standard CDC N95 mask reuse protocols. The design, and masks built in accordance with the design, have not been approved by the FDA or NIOSH. **DISCLAIMER: THE MASK INFORMATION IS PROVIDED "AS-IS, WHERE-IS," WITHOUT REPRESENTATIONS, CONDITIONS OR WARRANTIES OF ANY KIND, WHETHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR THAT THE USE OF THE MASK INFORMATION WILL NOT INFRINGE ANY PATENT, COPYRIGHT, TRADEMARK OR OTHER PROPRIETARY RIGHTS. THE RECIPIENT IS SOLELY RESPONSIBLE FOR DETERMINING THE APPROPRIATENESS OF USING, REPLICATING OR REDISTRIBUTING THE MASK INFORMATION AND DESIGN. IN THIS REGARD, THE RECIPIENT ASSUMES ALL LIABILITY FOR DAMAGES, OF WHATEVER NATURE AND DESCRIPTION, WHETHER IN CONTRACT OR IN TORT, WHICH MAY ARISE FROM THE USE OF THE MASK INFORMATION AND DESIGN. THE UNIVERSITY OF FLORIDA, INCLUDING ITS EMPLOYEES AND AGENTS, WILL NOT BE LIABLE TO THE RECIPIENT OR TO ANY THIRD PARTY FOR ANY LOSS, CLAIM OR DEMAND MADE BY THE RECIPIENT, OR ANY LOSS, CLAIM, DEMAND OR JUDGMENT AGAINST THE RECIPIENT BY ANY OTHER PARTY, DUE TO OR ARISING FROM THE USE OF THE MASK INFORMATION AND DESIGN BY THE RECIPIENT.**



Do not add seam allowance!