

## Performance Level: Masks

Midwives may use the following table to determine the level of mask to acquire. For clients with suspected or confirmed COVID-19, midwives should do their best to acquire a *level 1 or level 2 mask for conducting home and clinic visits* and a *level 2 or level 3 mask for attending a birth*. The differences in protection between level 2 and level 3 masks are minimal. (see Table 2) The mask performance level is typically indicated on the outside of the box.

**Table 1: Mask Performance Levels**

	Barrier	Fluid Protection	Masks
Level 1	LOW barrier	Resists a splash or spray at venous pressure.	
Level 2	MODERATE barrier	Resists a splash or spray at arterial pressure.	
Level 3	HIGH barrier	Resists a splash or spray during tasks like surgery or trauma.	

**Table 2: Understanding ASTM Face Mask Performance Level**

TEST	LEVEL 1	LEVEL 2	LEVEL 3
<b>BFE (Bacterial Filtration Efficiency)</b> at 3.0 micron ASTM F2101	≥ 95%	≥ 98%	≥ 98%
<b>PFE (Particulate Filtration Efficiency)</b> at 0.1 micron ASTM F2299	≥ 95%	≥ 98%	≥ 98%
<b>Delta P (Differential Pressure)</b> MIL-M-36954C, mm H <sub>2</sub> O/cm <sup>2</sup>	< 4.0	< 5.0	< 5.0
<b>Fluid Resistance to Synthetic Blood</b> ASTM 1862, mm Hg	80	120	160
<b>Flame Spread</b> 16 CFR part 1610	Class 1	Class 1	Class 1

Source: American Society for Testing and Materials, 2020

Mask levels are based on 5 criteria which help determine the performance level of each mask.

- **BFE - Bacterial Filtration Efficiency:** Percentage of aerosol particles filtered at a size of 3 microns.
- **PFE - Submicron Particle Filtration Efficiency:** Percentage of submicron particles filtered at 0.1 microns.
- **Delta P - Differential Pressure:** Pressure drop across mask, or resistance to air flow in mmH<sub>2</sub>O/cm<sup>2</sup>. Greater resistance = better filtration but less breathability.
- **Fluid Resistance:** Mask resistance to penetration by synthetic blood under pressure (mmHg). Higher fluid resistance = Higher protection.
- **Flame Spread:** Measures the flame spread of the mask material.

## Performance Level: Gowns

The choice of gown should be made based on the level of risk of contamination. If the risk of bodily fluid exposure is low or minimal, gowns that claim minimal or low levels of barrier protection (Level 1 or Level 2) can be used. These gowns should not be worn during surgical or invasive procedures, or for medium to high risk contamination patient care activities. Midwives may use the following table to determine the level of gown to acquire. For clients with suspected or confirmed COVID-19, midwives should do their best to *acquire level 2 gowns for conducting home or clinical visits* and *level 3 gowns for attending a birth*.

	Barrier	Description & Fluid Protection	Use Case Examples	
Level 1	MINIMAL risk situations	<ul style="list-style-type: none"> <li>• Generously sized for full coverage, medium weight, multilayer nonwoven yellow material</li> <li>• Over-the-head style with side waist ties and non-restricted elastic wrists and neck ties</li> <li>• Provides a slight barrier to small amounts of fluid penetration</li> <li>• Feature nonrestricted elastic wrists and neck ties</li> </ul>	<ul style="list-style-type: none"> <li>• Basic care</li> <li>• Standard hospital/medical unit</li> </ul>	
Level 2	LOW risk situations	<ul style="list-style-type: none"> <li>• Made from a medium weight, multiply material with side ties</li> <li>• Available with elastic or thumb loop wrists</li> <li>• Provides a barrier to larger amounts of fluid penetration through splatter and some fluid exposure through soaking</li> </ul>	<ul style="list-style-type: none"> <li>• Blood draw from a vein</li> <li>• Suturing</li> <li>• Intensive care unit</li> <li>• Pathology lab</li> </ul>	
Level 3	MODERATE risk situations	<ul style="list-style-type: none"> <li>• Knit cuffs, long waist ties, and hook and loop closures at the neck</li> <li>• Provides a barrier to larger amounts of fluid penetration through splatter and more fluid exposure through soaking.</li> </ul>	<ul style="list-style-type: none"> <li>• Arterial blood draw</li> <li>• Inserting an IV</li> <li>• Emergency Room</li> <li>• Trauma</li> </ul>	
Level 4	HIGH risk situations	<ul style="list-style-type: none"> <li>• Has 3 densely-packed layers sandwiched between 2 strong spunbonded outer layers</li> <li>• Prevents all fluid penetration and may prevent VIRUS penetration for up to 1 hour</li> </ul>	<ul style="list-style-type: none"> <li>• Pathogen resistance</li> <li>• Infectious diseases (non-airborne)</li> <li>• Large amounts of fluid exposure over long periods</li> </ul>	

## Performance Level: Coveralls

There have been no clinical studies done to compare the efficacy of gowns compared to coveralls but both have been used effectively by healthcare workers in clinical settings during patient care. In choosing what garment to wear, midwives should consider:

- Coveralls, unlike surgical/isolation gowns, provide 360-degree protection, covering the back and lower legs, and sometimes the head and feet
  - This coverage may be particularly useful in a home birth setting where midwives are on their knees/ on the ground.
- Gowns are easier to put on and, in particular, to take off.
  - As gowns are generally more familiar to healthcare workers, they may be more likely to be used and removed correctly.
  - Knowing how to doff coveralls correctly is an important step to prevent self-contamination.
- Coveralls tend to be hotter to wear due to the total area covered by the fabric.