Personal Protective Equipment COVID-19

The Department of Safety and Professional Services
Law Enforcement Focused
March 27, 2020
Objectives

- Train the Trainer – use the Notes view to see the included commentary
- COVID-19 as of March 18, 2020 – Law Enforcement PPE Recommendations
- Provide information on the selection and use of PPE

This training was developed to provide Personal Protective Equipment (PPE) information and resources for law enforcement.
Check the Wisconsin Department of Health Services website for updates and resources.

Click on the link above to access “Memos Issued by DHS”
Resources

Need to check daily for updates

- What Law Enforcement Personnel Need to Know about Coronavirus Disease 2019 (COVID-19) (CDC- CS315526-A - 03/16/2020)

Click on the link above to access CDC’s resources for Law Enforcement
Law enforcement who must make contact with individuals confirmed or suspected to have COVID-19 should follow CDC’s Interim Guidance for EMS. (DPH Memo 20-02)

- Gloves
- Coveralls
- Respirators/masks
- Face shields/safety glasses
- Goggles
- Different styles of PPE may be necessary based on duty gear
<table>
<thead>
<tr>
<th>Personal Protective Equipment (PPE)</th>
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<tbody>
<tr>
<td>• Gloves – protect hands</td>
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<tr>
<td>• Coveralls – protect skin and/or clothing</td>
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<tr>
<td>• Respirators/masks – protect mouth/nose</td>
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<tr>
<td>• Respirators protect respiratory tract from airborne infectious agents</td>
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<tr>
<td>• Face shields - protect face, mouth noise and eyes</td>
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<tr>
<td>• Safety Glasses or goggles must be worn under a face shield</td>
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<tr>
<td>• Goggles – protect eyes from liquid and particles</td>
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<td>• Safety glasses – protect eyes from particles</td>
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This slide shows the purpose of each kind of personal protective equipment.

Follow CDC guidance as to what PPE is needed for the situation. Is the person confirmed or suspected to have COVID-19?
### Factors Influencing PPE Selection

- Type of exposure anticipated
  - Splash/spray versus touch
  - Category of precaution, low risk versus high risk
- Durability and appropriateness of the PPE for the task
- Fit, will PPE create a different risk
Gloves

- Limited/no protection when heavily soiled, torn or have holes
- Avoid “touch contamination”
  - Don’t touch your face or adjust PPE with contaminated gloves
  - Don’t touch other surfaces except as necessary

- Change Gloves
  - During use if torn and when heavily soiled
  - When contamination event is over, don’t begin another task until you have decontaminated
- Discard gloves in appropriate receptable
- Never re-use disposable gloves even if you think that they are clean
Coveralls

- Used to protect skin and/or clothing
- Disposable
- Resistant to fluid penetration, but not impervious
<table>
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<th>Eye and Face Protection</th>
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<tr>
<td><strong>Eye</strong></td>
</tr>
<tr>
<td>- Goggles, should fit snuggly over and around eyes</td>
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<tr>
<td>- Used for liquid splashes and/or particles</td>
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<tr>
<td>- Safety glasses, used for protection against particles</td>
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<tr>
<td><strong>Face</strong></td>
</tr>
<tr>
<td>- Face shields protect face, noise, mouth and eyes</td>
</tr>
<tr>
<td>- Should cover forehead, extend below chin and wrap around side of face</td>
</tr>
<tr>
<td>- Goggles or safety glasses need to be worn under a face shield</td>
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</table>
Respiratory Protection

- Protects against inhalation of harmful materials
- Protection is based on the type of respirator selected and the type of cartridges/filters if applicable
- Protection is also based on the respirator being worn as instructed by the manufacturer
  - Initial fit testing to ensure ability to obtain a face “seal”
  - User seal check (fit check) every time before use to ensure a face seal

Read and follow the manufacturer’s instructions

Tight fitting respirators require the user to be clean shaven for the area where the respirator forms a seal; facial hair and hair styles must not interfere with the respirator sealing area.
### Respirator - N95
- Evaluated, tested and approved by NIOSH
- Reduces wearer's exposure to particles including small particle aerosols and large droplets
- Tight fitting face seal
- Fit testing required
- User seal check required each time respirator is put on
- Filters out at least 95% of airborne particles including large and small particles
- When properly fitted and worn, minimal leakage occurs around respirator edges when user inhales
- Single use, or replacement if damaged, deformed or soiled

### Mask
- Cleared by the U.S. Food and Drug Administration
- Fluid resistant and provides the wearer protection against large droplets, splashes, or sprays of bodily or other hazardous fluids. Protects the patient from the wearer's respiratory emissions.
- Loose-fitting
- No fit test required
- No user seal check required
- Does NOT provide the wearer with a reliable level of protection from inhaling smaller airborne particles and is not considered respiratory protection
- Leakage occurs around the edge of the mask when the user inhales
- Disposable
### Particulate Respirator Options

<table>
<thead>
<tr>
<th>Percentage of 0.3 µm airborne particles filtered out</th>
<th>Resistance to Oil</th>
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<tbody>
<tr>
<td>95</td>
<td>N – not resistant to oil</td>
</tr>
<tr>
<td>99</td>
<td>R – somewhat resistant to oil</td>
</tr>
<tr>
<td>100</td>
<td>P – strongly resistant to oil</td>
</tr>
</tbody>
</table>

**What does N95 or P100 mean?** The respirators look similar?

95 means the respirator must capture 95% of the 0.3 µm (0.000012-inch) particles in the air passing thru the respirator.
0.3 µm??

Particles ranging from 0.3 to 0.9 micron present the greatest health concern because they are small enough to get past the tiny hairs that line our breathing passages and are too large to be easily exhaled.

How big is 0.3 µm?
Particles that size are about 300 times smaller than the diameter of a human hair, and 25 to 50 times smaller than we can see.

Why does it matter?
A P100 respirator is resistant to oil and filters out 99.97% of particles 0.3 μm or larger in size.

N95 means it filters out 95% of 0.3 μm or larger airborne particles and the mask is not resistant to oil mist.

P100 means it filters out 100% of 0.3 μm or larger airborne particles and the mask is strongly resistant to oil mist.

The photo is of a P100 respirator, notice the large sealing area on the inside of the respirator. This larger sealing area helps the user obtain a better fit which translates into a higher protection factor.
Respirators, cont.

- Must be NIOSH certified
- Beware of fraudulent respirators

Not all respirators are the same. Especially now, “knock-off” respirators may enter the market. The CDC has a list of approved respirators.

https://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/
Respirators Require:
- Medical Evaluation - questionnaire
- Training
- Fit Testing
- Seal check (Fit check) before each use
- Written respiratory protection program

The DSPS website has resources, under the program area “Public Sector Employee Safety”.

Respiratory Protection Program Template: https://dsps.wi.gov/Documents/Programs/PublicSafety/TemplateRespiratoryProtection.pdf

Respiratory Protection Checklist: https://dsps.wi.gov/Documents/Programs/PublicSafety/RespiratoryProtectionChecklists.pdf
How to safely put on, use and remove PPE

PPE manufacturers will provide instructions and warnings for their equipment. These instructions and warnings must be followed in order for the equipment to be effective.
Key Points About PPE

- Put on before potential incident
- Use carefully – don’t spread contamination, e.g. touching surfaces with contaminated gloves
- Remove and discard carefully, contaminated PPE is a source of exposure to you
- Immediately wash your hands and/or body parts as applicable to your situation

Kindly and effectively provide feedback to your co-workers if you notice that they are not properly wearing their PPE.
Example Sequence for Putting on PPE

1. Coveralls
2. Respirator
3. Goggles
4. Face shield
5. Gloves

While PPE provides protection, you need to be careful when selecting PPE to ensure that the PPE doesn’t create a greater hazard than the one you are protecting against.

Check manufacturer’s instructions and warnings to ensure you know the protection limitations of the PPE you have selected.
Shoe coverings, booties or coveralls with feet, may create a slip/trip hazard. Consider the risk of slips/trips and the ability to decontaminate shoes/boots when considering shoe coverings.
Respirator

- Use the same model/size respirator that you have been fit tested for
- Follow Manufacturer’s instructions for putting on
- Perform a user seal check (fit check) EVERY TIME you put on the respirator
  - The respirator manufacturer’s instructions will tell you how to perform this check

Links to respirator training video’s, a sample written program and checklists are provided on the “Resources” slide at the end of this presentation.
These instructions are for the Sperian P100 respirator
Sperian P100 respirator instructions, continued.
These instructions are specific to a 3M 1860/1860S respirator.
Putting On Eye and Face Protection

Eye
- Position goggles or glasses over eyes and secure to your head using earpieces or headband

Face Shield
- Position face shield over face and secure on brow with headband
- Adjust to fit comfortably

It’s important to make sure that your eye and face protection is put on properly and comfortably so that you are not adjusting it with your contaminated hands or that it falls off during use.
Putting on Gloves

Put on gloves last
Select correct type and size
Insert hands into gloves
Extend gloves over arm protection cuff if present or under coverall arm sleeve

Gloves that are too big or small have the potential to decrease protection by breaking, tearing or falling off
How to Safely Use PPE

- Keep gloved hands away from your face
- Avoid touching or adjusting other PPE
- Remove gloves if they become torn, perform hand washing before putting on new gloves
- Limit surfaces and items touched

Learning not to touch your face or adjust your PPE is a difficult habit to learn, kindly assist your fellow co-workers in learning the “don’t touch” habit
Contaminated and Clean Areas of PPE

**Contaminated – Outside Front**
- Areas of PPE that have or are likely to have been in contact with body sites, materials or environmental surfaces where the infectious organism may reside

**Clean - Inside**
- Areas of PPE that are not likely to have been in contact with the infectious organism

It is safest to treat all of your used PPE as if it were contaminated.
This specific sequence is important to avoid contaminating yourself.
Frequent hand washing and/or use of hand sanitizer can result in dry or cracked hands. Make sure to use hand lotion based on your skin needs to avoid dry or cracked hands. Many people find that limited ingredient and non-scented products work best for them. Some examples are No-Crack or Udder Balm and other products that are focused on occupations that required frequent hand washing or harsh conditions.
If Hand Washing Facilities Are Not Available

- If soap and water are not readily available and illicit drugs are NOT suspected to be present, use an alcohol-based hand sanitizer with at least 60% alcohol.
Order of Removing PPE

1. Coveralls
2. Gloves
   Wash Hands
3. Face Shield/Eye Protection
4. Respirator
   Wash Hands

The order is important to reduce potential contamination
Removing Coveralls

- Unzip coveralls
- Remove arms from sleeves
- Roll down, so clean inside is facing outward
- Discard

Be careful not to touch your skin/clothing when removing your coveralls. Grossly contaminated or wet coveralls should be removed as soon as possible.
Removing Gloves

- Grasp outside edge near wrist
- Peel away from hand, turning glove inside-out
- Hold in opposite gloved hand

It takes a bit of practice to do this correctly. To save resources you can practice with reusable gloves such as dishwashing gloves to master the process.
Removing Gloves, cont.

Slide ungloved finger under the wrist of the remaining glove
Peel off from inside, creating a bag for both gloves
Discard gloves

Be careful to only touch the inside of the remaining glove
Remove Goggles or Face Shield

- Grasp ear or head pieces with ungloved hands
- Lift away from face
- Place in designated receptacle for reprocessing or disposal

If your safety glasses, goggles or face shield is grossly/visibly contaminated such as what might occur if you were splashed with a liquid, have a co-worker wearing PPE remove the items for you, or put on a clean pair of gloves and remove the items yourself.
Removing Respirator

• DO NOT TOUCH the front of the respirator – it may be contaminated

The nature of filtering face pieces, i.e. the “cloth” type material, means that the surface can NOT be decontaminated by wiping or spraying.

The filtering media is considered porous and a disinfecting solution is not able to reach all the surface areas unless the material is soaked entirely as in laundering, which is not feasible for this type of respirator. Filtering facepieces are not made to be laundered and will more than likely have limited or no protection if not destroyed if laundered.
Removing Respirator, cont.

• Without touching the respirator - Remove by pulling the bottom strap over the back of your head, followed by the top strap
• Discard respirator
• WASH YOUR HANDS

These are general removal instructions; your respirator manufacturer is required to provide specific instructions for their product. You must follow the respirator manufacturer’s instructions.
You must also follow the storage and shelf life instructions. A damaged respirator will not provide protection.
Hand Hygiene

- Perform hand hygiene immediately after removing PPE
  - If hands become visibly contaminated during PPE removal, wash hands before continuing to remove PPE
- Wash hands with soap and water or use an alcohol-based hand sanitizer with at least 60% alcohol

As previously mentioned, frequent hand washing and/or use of hand sanitizer can result in dry or cracked hands. Make sure to use hand lotion based on your skin needs to avoid dry or cracked hands. Many people find that limited ingredient and non-scented products work best for them. Some examples are No-Crack or Udder Balm and other products that are focused on occupations that required frequent hand washing or harsh conditions.
A fit test determines your ability to achieve an adequate seal with that specific brand/model/size of respirator. If you are unable to pass a fit test, a different size, model or style of respirator may need to be tested/used.

A user seal check makes sure that you have properly put on the respirator and have achieved an adequate seal for this instance. If the seal is broken or the respirator is damaged, you must leave the area and remove your respirator safety.

A proper seal is important, imagine snorkeling with a facemask and/or breathing tube that leaks.
Basic Disinfecting Guidelines

- Air out vehicle/area if possible
- PPE – required to be listed on label or product sheet
- EPA N List
  - FOLLOW directions
  - Contact times must be followed for disinfection to occur
- Clean before disinfect, remove visible dirt/debris
- Adequate ventilation when using disinfectant

The product label and instructions are controlled by the Environmental Protection Agency (EPA) and are based in part on scientific data submitted by the manufacturer that demonstrates the products effectiveness. If the product is not used according to the manufacturer’s instructions, the product may not be as effective.

“More is better” is NOT applicable when using disinfecting solutions, in fact sometimes using a greater concentration makes the product less effective.

The product label will specify the “contact time” needed for the solution to be used as a disinfectant. The contact time is the minimum time needed for the solution to destroy bacteria/viruses.
Resources

- Wisconsin Department of Health Services - COVID-19: Health Care Providers
- What Law Enforcement Personnel Need to Know about Coronavirus Disease 2019 (COVID-19)
- OSHA "Respiratory Protection in General Industry", 10-minute video that can be used to provide basic respiratory protection training – workplace specific training must also be provided to employees
- OSHA Respiratory Fit Testing, 12-minute video on fit testing that can be used to provide basic respiratory protection training – workplace specific training must also be provided to employees
- CDC/NIOSH - Understanding the Difference Between Surgical Masks and N95 Respirators
- CDC/NIOSH - Required Labeling of NIOSH-Approved N95 Filtering Facepiece Respirators
- Template Written Respiratory Protection Program provides a basic template that needs to be modified to reflect your program/practices
- Respiratory Protection Checklists provides checklists for the different aspects of a respiratory protection program

The listed resources are from recognized sources. Be cautious of resources that you use, there is a lot of misinformation out there.

The first two resources should be checked daily for updates.
Examples of Fit Testing Products

- 3M Quick Reference Guide: Qualitative Fit Testing, if you are using another brand of a fit testing kit, you must refer to that manufacturer’s fit testing kit instructions
- Moldex Qualitative Fit Test Kit

These are only two product examples; your respirator manufacturer may be able to provide you with additional fit testing resources.
Questions?

DSPSSBHealthandSafetyTech@wi.gov

Or contact your District Occupational Safety and Health Inspector:
Public Sector District Safety Inspectors