

The Proper Donning and Doffing of Personal Protective Equipment
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Purpose, Intent of QIP

The purpose of this Quality Improvement Project (QIP) is to educate students and licensed acupuncturists on the safest and most effective way to use Personal Protective Equipment (PPE).

Needs Analysis, Gaps, Reason for QIP

The safety of patients and practitioners requires vigilance. The use of PPE and proper hand washing are essential steps to minimize the risk of spreading or contracting communicable diseases. Acupuncture education does not cover the proper use of PPE. Improper use of PPE increases the chances of contaminating our patients or ourselves. The project was created to educate and instruct practitioners on the proper use of PPE. The terms “donning” and “doffing” reflect putting on and taking off PPE.

Target Audience/Group

The target audiences for this QIP are all students and licensed practitioners actively seeing patients.

Description of Intervention, Solution, End Product to Fill Needs/Gaps

Information from the Centers for Disease Control (CDC) and the World Health Organization (WHO) was researched and compared for consistency. Consultations with 4 education specialists, working in the field of a hospital setting, yielded real-world experience and expertise in the correct use of PPE. The information gathered and used in this QIP reflects the best practice standards from reputable health organizations and is used within the hospital setting.

The end products from this synthesized information are a series of videos and PDFs with the most accurate step by step instructions on how to safely put on and take off PPE. The information was centralized into one collective source to reduce the need to do multiple searches for resources. The end product will help students and acupuncturists feel more comfortable with the use of PPE and more confident in the proper application of these tools.

Method(s) of Sharing End Product with Targeted Audience

Downloadable informational videos for visual and verbal learning

Downloadable PDF files can be printed and used as reminders for best practice.

Summary, Conclusions

As healthcare professionals, we have a duty to create a safe and healing environment. Current conditions necessitate the need for PPE to protect patients and ourselves. It is essential that we use the best techniques to prevent the spread of disease. Education on the use of PPE is lacking in acupuncture schools, and many students and practitioners are confused by the overwhelming sources of information available. This project streamlines and consolidates the best practices in the use of PPE and can be used by anyone.

Proper Donning and Doffing of Personal Protective Equipment

As healthcare providers, it is always important to protect ourselves, but during an outbreak of severe respiratory disease, the importance increases substantially. It is equally important to safeguard the health of our patients by engaging in aseptic techniques during and between treatments. We take an oath to not harm our patients, so it is our responsibility to do everything we can to prevent the spread of any disease, including COVID 19.

While it is not conclusively known whether COVID 19 is spread through droplet transmission, airborne transmission, or both, certain precautionary measures must be taken to minimize the chance of spreading this disease. For clarity, each form of transmission will be explained. Disease transmission through droplets happens when a person comes into close contact with someone with respiratory symptoms. The distance between persons is generally one meter or less. Tiny drops of infected fluids are projected outwards when the ill person coughs or sneezes. The unaffected person can be exposed to the infective respiratory droplets, which can enter their body through the eyes, nose, or mouth. Droplets may also land on surfaces and disease transmission may also occur through direct contact of contaminated surfaces or objects handled by the infected person (WHO [A], 2020).

Airborne or aerosol transmission also involves droplets, but they are much smaller in size. These smaller droplets evaporate into the air rather than fall to the ground like the larger droplets. These evaporated droplets can remain suspended in the air for significant periods of time, allowing them to be transmitted over distances greater than 1 meter. When the virus travels by way of aerosol, it can be contracted by entering an empty room recently occupied by a sick person (Atkinson, 2009). There is mounting evidence to support the transmission of COVID 19 happens through aerosolization of the virus (Lewis, 2020).

The use of Personal Protective Equipment (PPE) coupled with proper hand hygiene can mitigate the chances of spreading or contracting diseases like COVID 19. Acupuncture education does not cover the proper use of these vital supplies and we are at risk of contaminating our patients or ourselves. The greatest chance of exposure to disease and contamination happens when PPE is not put on or taken off correctly. The terms most often used in PPE dressing procedures are “donning” and “doffing”. These terms are defined as follows:

Don:

1. To put on (an article of clothing)
2. To wrap oneself in

Doff:

1. To remove (an article of wear) from the body
2. To take off (the hat) in greeting or as a sign of respect
3. To rid oneself of: put aside (Merriam-Webster)

In addition to the use of PPE, proper hand hygiene is one of the most important practices we can do to avoid becoming ill or spreading germs to our patients or others. Many diseases, like COVID 19, can be spread by improper handwashing or by a lack of handwashing. Proper hand antisepsis can reduce the spread of infectious diseases. Handwashing with soap and clean, running water removes germ build-up on hands. This can help prevent infections by:

- Reducing the likelihood of transferring germs through touched surfaces.
- Reducing self-contamination and reducing the risk others will contaminate themselves. People frequently touch their eyes, nose, and mouth without even realizing it. Germs can get into the body through the eyes, nose, and mouth causing illness (CDC [A],2002).

The following are helpful videos and printable reference guides for your clinic. The videos are best viewed through Google Chrome.

Proper hand hygiene videos

Handwashing – Soap and Water

<https://www.youtube.com/watch?v=3PmVJQUcm4E>

Handwashing FAQs

<https://youtu.be/d914EnpU4Fo>

Hand Sanitizer

<https://youtu.be/ZnSjFr6J9HI>

Printable Hand Hygiene Reference Guides

Handwashing: https://www.who.int/gpsc/5may/How_To_HandWash_Poster.pdf

Hand Sanitizer: https://www.who.int/gpsc/5may/How_To_HandRub_Poster.pdf

Combination Poster: <https://www.who.int/gpsc/tools/GPSC-HandRub-Wash.pdf>

When to Clean: https://www.who.int/gpsc/5may/Your_5_Moments_For_Hand_Hygiene_Poster.pdf

(WHO [B], 2020).

The following are the CDC guidelines for donning and doffing personal protective equipment.

“How to Put On (Don) PPE Gear

More than one donning method may be acceptable. Training and practice using your healthcare facility’s procedure is critical. Below is one example of donning.

1. **Identify and gather the proper PPE to don.** Ensure choice of gown size is correct
2. **Perform hand hygiene using hand sanitizer.**
3. **Put on isolation gown.** Tie each tie on the gown.
4. **Put on NIOSH-approved N95 filtering facepiece respirator or higher (use a facemask if a respirator is not available).** If the respirator has a nosepiece, it should be fitted to the nose with both hands, not bent or tented. Do not pinch the nosepiece with one hand. Respirator/facemask should be extended under chin. Both your mouth and nose should be protected. Do not wear respirator/facemask under your chin or store in scrubs pocket between patients.
 - **Respirator:** Respirator straps should be placed on crown of head (top strap) and base of neck (bottom strap). Perform a user seal check each time you put on the respirator.
 - **Facemask:** Mask ties should be secured on crown of head (top tie) and base of neck (bottom tie). If mask has loops, hook them appropriately around your ears.
5. **Put on face shield or goggles.** When wearing an N95 respirator, select the proper eye protection to ensure that the respirator does not interfere with the correct positioning of the eye protection, and the eye protection does not affect the fit or seal of the respirator. Face shields provide full face coverage. Goggles also provide excellent protection for eyes, but fogging is common.
6. **Put on gloves.** Gloves should cover the cuff (wrist) of gown.
7. **Healthcare personnel may now enter patient room.**

Donning PPE

<https://youtu.be/H4jQUBAIBrl>

How to Take Off (Doff) PPE Gear

More than one doffing method may be acceptable. Below is one example of doffing.

1. **Remove gloves.** This is the first step if healthcare professional is double gloved. Ensure glove removal does not cause additional contamination of hands. Gloves can be removed using more than one technique (e.g., glove-in-glove or bird beak).
2. **Remove gown.** Untie all ties (or unsnap all buttons). Some gown ties can be broken rather than untied. Do so in gentle manner, avoiding a forceful movement. Reach up to the shoulders and carefully pull gown down and away from the body. Rolling the gown down is an acceptable

approach. Gloves are removed when sleeves are rolled off the arms when single gloved. Roll the gown into a ball, touching only the inside of the gown. Dispose in trash receptacle.

3. **Healthcare personnel may now exit patient room.**
4. **Perform hand hygiene.**
5. **Remove face shield or goggles.** Carefully remove face shield or goggles by grabbing the strap and pulling upwards and away from head. **Do not** touch the front of face shield or goggles.
6. **Remove and discard respirator (or facemask if used instead of respirator). Do not** touch the front of the respirator or facemask.
 - **Respirator:** Remove the bottom strap by touching only the strap and bring it carefully over the head. Grasp the top strap and bring it carefully over the head, and then pull the respirator away from the face without touching the front of the respirator.
 - **Facemask:** Carefully untie (or unhook from the ears) and pull away from face without touching the front.
7. **Perform hand hygiene after removing the respirator/facemask”** (CDC [B], 2020).

Doffing PPE

<https://youtu.be/PQxOc13DxvQ>

Printable Donning and Doffing Reference Guides

<https://www.cdc.gov/hai/pdfs/ppe/PPE-Sequence.pdf>

<https://www.cdc.gov/HAI/pdfs/ppe/ppeposter1322.pdf>

Best practice guidelines dictate the use of gloves when treating patients. If full PPE is not necessary, gloves should still be worn when touching patients. It is important to use proper technique when donning and doffing gloves to avoid contamination.

Gloving

<https://youtu.be/KHR5do-b7zY>

There are a variety of face masks in use during this time. For the practitioner’s safety, it is important to know how to properly don and doff each type of mask.

Masks

Cloth face mask

https://youtu.be/o_k7VBV3czw

Surgical Face mask

<https://youtu.be/adB8RW4I3o4>

N95

1860 style: https://youtu.be/M9Wklu_g0OM

1870 style: <https://youtu.be/05wyH1-mLGk>

Reference Guide for 1860 style

<https://multimedia.3m.com/mws/media/8948970/health-care-respirator-1860-1860s-wearitrightposter-english.pdf>

Reference Guide for 1870 style

<https://multimedia.3m.com/mws/media/1641960/wear-it-right-particulate-respirator-surgical-mask-1870.pdf?&fn=70-2009-4361-4.pdf>

References

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