

Isopropyl Alcohol

- Sterile
 - Three areas to always use sterile IPA
 - 1. Sterile gloves during compounding
 - 2. Wiping the direct compounding area
 - 3. Sanitizing critical sites
 - This is the most important use and the last to discontinue in the case of a shortage
 - DO NOT USE denatured alcohol (ethanol)
 - Harmful to certain hardware and plastics
 - If you must make your own sIPA, it is recommended to pour filtered IPA (0.22 micron) into the empty sIPA bottle while inside the hood to reduce potential contamination
 - If you can't make your own sIPA and run out, change to immediate use only as the BUD
 - If you can't sterilize everything, change to immediate use
 - If available, wash hands with soap and water instead of using alcohol-based hand sanitizer
- Non-sterile
 - If out of sIPA, non-sterile IPA is acceptable to use for tasks including wiping down compounding surfaces and on gloves
 - Only difference between filtered IPA and sIPA is that the bottles that sIPA is packaged in have been irradiated

Gloves

- Double
 - CDC Guidance does not recommend double gloves when providing care to suspected or confirmed 2019-COVID patients.
- Single
 - Prioritize availability of sterile gloves above other garb for sterile compounding activities because direct contact contamination is the highest risk to the CSP

Gowns

- Regular
 - Use clean, washable, dedicated non-disposable garments (e.g., lab coats or gowns). Long-sleeved garments are preferred.
 - If no long-sleeves available, use sterile sleeve covers
 - Sleeves should *never* be reused
 - Wash garments after each shift or when visibly soiled
 - Retain and reuse disposable gowns as long as they are intact and not visibly soiled
 - Preferably, discard gowns after each day
 - Maintain garments inside of classified area or within the perimeter of the segregated compounding area
- Chemo
 - Prioritize gowns and chemotherapy gloves for preparing antineoplastic agents in Table 1 of the NIOSH list.³
 - <https://www.cdc.gov/niosh/docs/2016-161/pdfs/2016-161.pdf>
 - Begins on Page 15
 - PPE should not be reused when compounding antineoplastic drugs in Table 1 of the NIOSH list.

Face Masks

- Regular
 - Reuse of face masks is not recommended per USP797 because of the risk of introducing microbial bioburden from used masks.
 - If out of face masks, it is recommended to cover your nose and mouth with a clean fabric (e.g., bandana or washable face mask) each time before entering into the compounding area
- N95 respirators (CDC)
 - Minimize the number of individuals who need to use respiratory protection through the preferential use of engineering and administrative controls;
 - Per Critical Point, only personnel that are coming into direct contact with infected patients should wear N95 respirators
 - Use alternatives to N95 respirators (e.g., other classes of filtering facepiece respirators, elastomeric half-mask and full facepiece air purifying respirators, powered air purifying respirators) where feasible;
 - Implement practices allowing extended use and/or limited reuse of N95 respirators, when acceptable; and

- Extended use: practice of wearing the same N95 respirator for repeated close contact encounters with several patients [infected with the same respiratory pathogen and patients are placed together in dedicated waiting rooms or hospital wards] without removing the respirator between patient encounters.
 - Extended use is favored over reuse because it is expected to involve less touching of the respirator and therefore less risk of contact transmission.
- Limited reuse: practice of using the same N95 respirator for multiple encounters with patients but removing it ('doffing') after each encounter. To reduce contact transmission:
 - Discard N95 respirators following use during aerosol generating procedures.
 - Discard N95 respirators contaminated with blood, respiratory or nasal secretions, or other bodily fluids from patients.
 - Discard N95 respirators following close contact with any patient co-infected with an infectious disease requiring contact precautions.
 - Use a cleanable face shield (preferred) or a surgical mask over an N95 respirator and/or other steps (e.g., masking patients, use of engineering controls), when feasible to reduce surface contamination of the respirator.
 - Hang used respirators in a designated storage area or keep them in a clean, breathable container such as a paper bag between uses. To minimize potential cross-contamination, store respirators so that they do not touch each other and the person using the respirator is clearly identified. Storage containers should be disposed of or cleaned regularly.
 - Clean hands with soap and water or an alcohol-based hand sanitizer before and after touching or adjusting the respirator (if necessary for comfort or to maintain fit).
 - Avoid touching the inside of the respirator. If inadvertent contact is made with the inside of the respirator, perform hand hygiene as described above.
 - Use a pair of clean (non-sterile) gloves when donning a used N95 respirator and performing a user seal check. Discard gloves after the N95 respirator is donned and any adjustments are made to ensure the respirator is sitting comfortably on your face with a good seal.
- Prioritize the use of N95 respirators for those personnel at the highest risk of contracting or experiencing complications of infection.

Head/Hair Covers

- Use clean fabric to cover head and hair

- Wash fabric after each shift or when visibly soiled

Shoe Covers

- Use dedicated shoe covers for compounding areas
 - Clean regularly

For HD Compounding

- USP797 does not recommend reusing PPE when compounding HD drugs on the NIOSH list

All PPE

- Limit staff performing sterile compounding
- Critical Point suggests having the PIC assign rules regarding these recommendations using their best judgment
 - Each facility may have a different solution
- If unable to maintain sterility, assign immediate use BUD
 - Increase frequency of surface sampling if possible
- Monitoring PPE supply inventory and maintaining control over PPE supplies may help prevent unintentional product losses that may occur due to theft, damage, or accidental loss. Inventory systems should be employed to track daily usage and identify areas of higher than expected use. Inventory tracking within a health system may also assist in confirming PPE deliveries and optimizing distribution of PPE supplies to specific facilities. (CDC)

References

CDC. (2016). NIOSH List of Antineoplastic and Other Hazardous Drugs in Healthcare Settings, 2016.

Retrieved March 19, 2020, from <https://www.cdc.gov/niosh/docs/2016-161/pdfs/2016-161.pdf>

USP. (2020, March 18). USP Response to Shortages of Garb and Personal Protective Equipment (PPE) for Sterile Compounding During COVID-19 Pandemic. Retrieved March 18, 2020, from

<https://www.usp.org/sites/default/files/usp/document/about/public-policy/usp-covid19-garb-and-ppe.pdf>

USP. (2020, March 18). Compounding Alcohol-Based Hand Sanitizer During COVID-19 Pandemic.

Retrieved March 18, 2020, from <https://www.usp.org/sites/default/files/usp/document/about/public-policy/usp-covid19-handrub.pdf>

CDC. (2020, March 14). Corona Disease 2019 (COVID-19): Frequently Asked Questions about Personal Protective Equipment. Retrieved March 18, 2020, from <https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirator-use-faq.html>

NIOSH. (2018, March 28). Pandemic Planning: Recommended Guidance for Extended Use and Limited Reuse of N95 Filtering Facepiece Respirators in Healthcare Settings. Retrieved March 18, 2020, from <https://www.cdc.gov/niosh/topics/hcwcontrols/recommendedguidanceextuse.html#risksextended>