VDH VIRGINIA DEPARTMENT OF HEALTH

Optimization Strategies for Personal Protective Equipment (PPE) in Long-Term Care Facilities (LTCFs)

Long-term care facilities (LTCFs) provide a variety of medical and non-medical services to people who have a chronic disease or disability. These settings may include but are not limited to nursing homes/skilled nursing facilities, inpatient rehabilitation facilities, assisted living facilities (ALFs), hospice, and senior day care services.

Risk for Residents in LTCFs

COVID-19 stands for coronavirus disease 2019; it is a new respiratory disease caused by a recently discovered coronavirus. Residents of LTCFs are susceptible to serious COVID-19 infection given their age, underlying medical conditions, and congregate settings. No specific treatment for COVID-19 is currently available. Clinical management includes prompt infection prevention and control measures and supportive management of complications.

Transmission

There is still much that is unknown about the virus that causes COVID-19. Based on the information we have so far, it appears to spread from person to person by respiratory droplets, such as when a person coughs or sneezes (although airborne transmission cannot be ruled out at this stage). Respiratory droplets might land on objects and surfaces around the infected person. Other people can catch COVID-19 by touching these objects or surfaces, then touching their eyes, nose or mouth.

Strategies for Optimizing Personal Protective Equipment (PPE)

Healthcare personnel (HCP) are the backbone for any infectious disease pandemic response. Taking into consideration the possible shortage of PPE in healthcare settings because of the increasing number of COVID-19 patients, difficult but critical decisions must be taken to optimize PPE supplies. When there is community transmission of COVID-19, HCP in LTCFs should wear the following PPE:

1- Facemask all times while in the facility. Facemask should be changed if soiled, damaged, wet, misshapen, or contaminated. See Table 2 for strategies to optimize facemask usage.
2- For any contact with resident in LTCF with respiratory infection, HCP must follow Standard, Droplet and Contact Precautions with eye protection. HCP must wear a facemask (unless for aerosol-generating procedures, where fit-tested respirator must be used); eye protection or face shield; and gloves.
3- HCP should wear a gown when performing an aerosol-generating procedure; during care activities where splashes and sprays are anticipated; and during high-contact resident care activities, such as dressing, bathing/showering, transferring, providing hygiene, changing linens, changing briefs or assisting with toileting, device care or use, wound care.

The following general strategies are suggested and can be adapted for the clinical management of COVID-19 cases in LTCFs:

- Understand your PPE inventory, supply chain and burn rate (PPE utilization rate).
- Communicate with your regional healthcare coalition about identification of additional PPE supplies.
- To maximize the use of available PPE in the event of insufficient stocks, staff should be allocated to perform a procedure, or set of procedures, in designated areas.
- Actively assess all essential individuals (staff, visitors, residents) entering the facility for a fever and respiratory symptoms. Do not allow ill people to enter the facility.
- Facilities should ensure that staff affirm absence of COVID-19 symptoms (sore throat, cough, fever) upon arrival for each shift
- Healthcare personnel (HCP) that are ill should stay home and notify their supervisor, especially if symptoms are consistent with COVID-19. If symptoms develop at work, HCP should don a mask, if was not already wearing one, and go home.
- Cohorting of COVID-19 cases to designated areas of a LTCF should be considered, to minimize PPE stock requirements.
- Restrict ill resident to their room; have them wear a facemask (if tolerated) or cover their mouth and nose with tissues if they must leave the room.
- Reduce the number of residents going to the hospital or outpatient settings except for medical necessary conditions.
- Exclude HCP not essential for resident care from entering their care area.
- Reduce close face-to-face HCP encounters with residents (keep 6 feet distance when possible)
- Restrict all visitation except for certain compassionate care situations (e.g., end of life). Offer alternate methods of visitation (e.g., Skype, FaceTime) if available.
- Maximize use of telemedicine.
- Cancel or postpone non-essential consultation service.
- Utilize reusable PPE supplies that can be reprocessed (e.g., PAPR, reusable goggles, launderable cloth isolation gowns)
- Introduce new disposable healthcare supplies like international gowns or coveralls used in healthcare settings. HCP need to be trained and demonstrate competency on how to safely use the new PPE.
- Extended use or reuse of facemasks, respirators and eye protection for care of multiple residents, which can stored in a protective casing between uses (e.g., paper bags). Masks and eye protection might be reused only if they are not damaged or soiled, misshapen or wet. HCP must be aware not to touch these PPE and to perform appropriate hand hygiene before and after adjusting or touching the PPE.
- Use of PPE beyond the manufacturer-designated shelf life. The user should visually inspect the PPE before use for any degraded material or visible damage.
- In case of respirators, facemasks, and/or eye protection shortage, designate convalescent HCP for provision of care to known or suspected COVID-19 patients.
- Exclude HCP at higher risk for severe illness from COVID-19 from contact with known or suspected COVID-19 patients.

Strategies by Type of PPE in Case of Shortages

The following specific strategies are suggested for each type of PPE in case of shortage, or unavailability and can be adapted for the clinical management of COVID-19 cases in LTCFs.

Table 1. Summary of priorities for respirator use and possible alternatives in case of severe shortage or unavailability.

Type of PPE	Priorities for respirator use	Other alternatives if respirators are not available
Respirator (N95)*	• Aerosol-generating procedures (bronchial suctioning, and sputum induction)^ • If there is an insufficient stock of respirators, then staff engaged in environmental cleaning and waste management should wear a surgical mask, in addition to gloves, goggles and gown	• Consider using PAPRs • Use alternatives to N95 respirator where feasible • Use elastomeric respirators • Use respirators used in other countries that are similar to NIOSH-approved N95 respirators • Use ventilated headboards if no respirators are available • If respirators are no longer available, HCP may use of non-NIOSH approved masks or homemade masks. However, that should be the last option and caution shall be exercised when considered this option. • Filtering Face piece Respirators FFR) decontamination and reuse under crisis standard of care. For decontamination recommendations, check the link: https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/decontamination-reuse-respirators.html • For more information, CDC Respirator Crisis/Alternate Strategies

*HCP must be fit-tested prior the initial use of respirator with the same make, model, style and size of respirator that will be used annually after that and whenever a different respirator is used. https://www.osha.gov/memos/2020-03-14/temporary-enforcement-guidance-healthcare-respiratory-protection-annual-fit

^Airborne Infection Isolation Rooms (AIIRs) are not required

Table 2. Summary of priorities for facemask use and possible alternatives in case of severe shortage or unavailability.

Type of PPE	Priorities for facemask use	Other alternatives if facemasks are not available
Facemask	• For caring for symptomatic confirmed cases of COVID-19, if no respirators are available • For provision of essential invasive procedures (wound debridement) • During care activities where splashes and sprays are anticipated • During activities where prolonged face-to-face or close contact with a potentially infectious resident is unavoidable • For performing aerosol generating procedures, if respirators are no longer available	• Use a face shield that covers the entire front (that extends to the chin or below) and sides of the face with no facemask • For residents, they need to cover their mouth and nose with tissues if they must leave the room • Homemade masks (bandana, scarf) as a last resort. • For more information, CDC Facemask Crisis/Alternate Strategies

Table 3. Suggested facemask or respirator use, based upon distance from a patient with suspected or confirmed COVID-19 and use of source control*

HCP planned proximity to the patient during encounter	Facemask or respirator determination	
	Patient masked for entire encounter (i.e., source control in place)	**Unmasked patient or mask needs to be removed for any period of time during the patient encounter**
HCP will remain at greater than 6 feet from symptomatic patient	HCP remaining at this distance from the patient should not need to enter the patient care area; if entry required: no facemask or respirator	
HCP will be within 3 to 6 feet of symptomatic patient	HCP remaining at this distance from the patient should not need to enter the patient care area; if entry required: facemask	
HCP will be within 3 feet of symptomatic patient, including providing direct patient care	Facemask^	N95 respirator/ elastomeric /PAPR (preferred) or facemask

HCP will be present in the room during nasopharyngeal or oropharyngeal specimen collection	N95 respirator/ elastomeric /PAPR (preferred) or facemask; patient should be placed in private room with door closed, based on availability
HCP will be present in the room during aerosol generating procedures (e.g., sputum induction, open suctioning of airways) performed on symptomatic persons	N95 respirator/ elastomeric /PAPR, based on availability; patient should be placed in Airborne Infection Isolation Room, based on availability

*Based on availability, organizations may require and/or individuals may voluntarily choose to utilize higher levels of protection.

^When the supply chain is restored, facilities with a respiratory protection program should return to use of respirators for patients with known or suspected COVID-19.

Table 4. Summary of priorities for gown use and possible alternatives in case of severe shortage or unavailability.

Type of PPE	Priorities for gown use	Other alternatives if gowns are not available*
Gowns	• During care activities where splashes and sprays are anticipated, which typically includes aerosol generating procedures • During the following high-contact resident care activities, such as: dressing, bathing/showering, transferring, providing hygiene, changing linens, changing briefs or assisting with toileting, device care or use, wound care	• If gowns are not available, consider use of coverall. • Use launderable cloth isolation gowns • Consider other fluid-resistant and impermeable protective clothing options available in the marketplace • Use disposable aprons • Use gowns or coveralls conforming to international standards^ • Extended use of isolation gowns might be considered when caring for more than one resident, if not visibly soiled and when interacting with residents known to be infected with the same infectious disease and housed in the same location provided there are no additional co-infection *C.diff, CP-CRE,C.auris*, etc.) • Suspend the use of gowns for the care of patients with endemic MDROs, such as MRSA, VRE, and ESBL-producing Gram-negative bacilli except as required for Standard Precautions. ^ • For more information, CDC Isolation Gown Crisis/Alternate Strategies

* Current U.S. guidelines do not require use of gowns that conform to any standards

^ Facilities should assess their local epidemiology to determine which MDROs are considered endemic. More information is available here: https://www.cdc.gov/coronavirus/2019-ncov/infection-control/infection-prevention-control-faq.html

Table 5. Summary of priorities for eye protection/face shield use and possible alternatives in case of severe shortage or unavailability.

Type of PPE	Priorities for eye protection/face shield use	Other alternatives if eye protection/face shield are not available*
Eye protection/ face shield^	• During care activities where splashes and sprays are anticipated, which typically includes aerosol-generating procedures. • During activities, where prolonged face-to-face or close contact with a potentially infectious patient is unavoidable.	• Consider preferential use of powered air purifying respirators (PAPRs) or full-face elastomeric respirators which have built-in eye protection • Consider using safety glasses (e.g., trauma glasses) that have extensions to cover the side of the eyes • If no goggles or eye protection are available, use other products that can be decontaminated* • For more information, CDC Facemask Crisis/Alternate Strategies

^Personal eyeglasses and contact lenses are not considered adequate eye protection

* Ensure appropriate cleaning and disinfection between users if goggles or reusable face shields are used.

Because it is rapidly evolving situation and recommendations might change as we learn more about the virus causing COVID-19, it is advised to continuously check the following links for CDC updates: Interim Guidance for Healthcare Facilities and Infection Control Guidance.

More information on PPE can be found here: https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/index.html