

Supplementary file 2: Scoring Standard for Wearing and Removing Personal Protective Equipment for Biosafety

I. Gown Wearing (25 points)

Projects		Operation Content	Scoring	Assessment Details	Deductions
Preparation	Operator Preparation	Work clothes, work shoes, no jewelry or watches, no nail polish, trimmed nails	1	Deduct 1 point for each non-compliance	
	Item Preparation	Quick hand sanitizer, gloves, medical protective mask, disposable medical gown, work cap, medical face shield, medical waste bin	1	Deduct 1 point for each missing or incorrect item	
Operation Process	Hand Washing	Disinfect hands with quick-drying hand sanitizer (six steps).	1		
	Wearing a Medical Protective Mask	Hold the mask with one hand, with the nose clip side facing out.	1		
		Cover nose, mouth, and chin with the mask, nose clip upward close to face	1		
		Use the other hand to pull the lower strap over the head to place it under the ears behind the neck.	1		
		Pull the upper strap to the middle of the top of the head.	1		
		Place fingertips on the metal nose clip, starting from the center, press inward and move and press along the sides to shape the nose clip according to the bridge of the nose.	1		
		Check seal.	1		
	Wearing a Work Cap	Wear the work cap, tuck hair into the cap.	1		
	Wearing a Face Shield	Put on the face shield, adjust comfort.	1		
	Wearing Disposable Medical Gown	Hold the collar with the right hand, put the left arm through the sleeve with the right hand pulling up the collar to expose the left hand.	1.5		
		Switch to holding the collar with the left hand, put the right arm through the sleeve to expose the right hand.	1.5		
		Hold the collar with both hands, tie the neck strap at the back along the edge.	1.5		
		Then secure the cuffs.	1		
		Grab the edge about 5cm	1.5		

Projects		Operation Content	Scoring	Assessment Details	Deductions
		below the waist on one side and pull forward until the edge is visible.			
		Similarly grasp the edge on the other side, align both edges at the back with both hands.	1		
		Fold to one side, hold the fold with one hand, use the other hand to pull the belt to the folded area at the back.	1.5		
		Cross the belt at the back, bring it to the front and tie it securely.	1.5		
	Wearing Latex Gloves	Pinch the folded part of the glove (inside surface) with one hand and take out the glove, align fingers to wear them.	1		
		Insert the gloved fingers into the inner surface of the folded edge of the other glove, wear the glove properly.	1		
		The folded part of the glove should cover the outside of the gown sleeves.	1		

II.Isolation Gown Removal (25 points)

Item		Operation Content	Score	Evaluation Criteria	Deductions
Operation Process	Hand washing	Disinfect hands with quick-dry hand sanitizer (six steps).	1		
	Remove isolation gown	Untie the waist belt and make a bow knot in the front.	1		
		Loosen the cuffs, tuck hands inside the sleeves, fully expose hands, and disinfect hands.	1.5		
		Untie the neck strap.	1.5		
		Insert right hand into left wrist sleeve, pull down sleeve over the hand.	2		
		Cover left hand to hold the outside of the right sleeve of the isolation gown, pull the right sleeve.	2		
		Gradually withdraw hands from sleeves, remove the isolation gown.	2		
		Hold the collar with left hand, align both sides with right hand, hang the contaminated side outward in the contamination area; if hung outside the contamination area, face the contaminated side inward.	2		
		If the isolation gown is no longer used, roll it with the contaminated side	1.5		

Item		Operation Content	Score	Evaluation Criteria	Deductions
		inward into a bundle and dispose of it in the medical waste container.			
	Hand washing	Disinfect hands with quick-dry hand sanitizer (six steps) .	0.5		
	Latex gloves	Use gloved hand to pinch the edge of the contaminated side of the other glove to remove it.	1		
		Hold the removed glove with gloved hand, use the hand without glove to pinch the edge of the clean side (inside) of the other glove and remove it.	1		
		Pinch the inside of the glove and dispose of it in the medical waste container.	1		
	Hand washing	Disinfect hands with quick-dry hand sanitizer (six steps).	0.5		
	Remove face shield	Pinch one side near the head or ear to remove it, place in medical waste bin.	1		
	Hand washing	Disinfect hands with quick-dry hand sanitizer (six steps).	0.5		
	Remove work cap	Use fingers to touch the inside of the cap to remove it, place in medical waste bin.	1		
	Hand washing	Disinfect hands with quick-dry hand sanitizer (six steps) .	0.5		
	Remove medical protective mask	Do not touch the front (contaminated side) of the mask.	1		
		Untie the bottom strap first, then the top strap.	1		
		Only hold the mask straps and dispose of it in the medical waste container.	1		
	Hand washing	Disinfect hands with quick-dry hand sanitizer (six steps).	0.5		

III: Protective Clothing Wearing (24 Points)

Item		Operation Content	Score	Assessment Details	Deduction
Operation Preparation	Operator Preparation	Change into separate work clothes and shoes, do not wear jewelry or watches, do not apply nail polish, trim nails.	1	Deduct 1 point for each non-compliance item.	
	Item Preparation	Quick hand sanitizer, latex gloves, boot covers, medical protective mask, protective clothing, work cap, goggles, medical waste bin.	1	Deduct 1 point for each missing or incorrect item..	
Operation Process	Hand Washing	Use quick-drying hand sanitizer to disinfect hands (six steps).	1	Deduct 1 point for each non-standard operation, until deductions are exhausted.	
	Wear Medical Protective Mask	Hold the protective mask with one hand, with the side containing the nose clip facing outward.	1		
		Cover the nose, mouth, and chin	1		

Item		Operation Content	Score	Assessment Details	Deduction
		with the mask, with the nose clip part tightly against the face.			
		Use the other hand to pull the lower tie over the top of the head and place it behind the neck and under both ears.	2		
		Pull the upper tie to the middle of the top of the head.	1		
		Place both fingertips on the metal nose clip, starting from the middle, press inward with fingers, move and press towards both sides, shaping the nose clip according to the shape of the nose bridge.	1		
		Check air tightness.	1		
	Wear Work Cap	Wear the work cap, tucking hair inside the cap.	1		
	Wear Goggles	Check goggles for damage and looseness before wearing.	1		
		Wear correctly and adjust the tightness for comfort.	1		
	Wear First Layer of Latex Gloves	Pinch the folded part of the glove (inner side) with one hand, take out the glove, and put it on aligning with the five fingers.	1		
		Insert gloved fingers into the turned edge of the other glove and put on the glove.	1		
	Wear Protective Clothing	Check the integrity of the protective clothing.	1		
		Put on pants first, then the top.	2		
		Wear the hat properly.	1		
		Zip up and fasten all zippers.	1		
		Check fit after wearing (deep squat, turn body, etc.).	1		
	Wear Second Layer of Latex Gloves	Pinch the folded part of the glove (inner side) with the other hand, take out the glove, align with the five fingers, and press the cuff with the folded edge.	1		
		Lift the other bag opening, insert gloved fingers into the turned edge of the other glove, put on the glove, and press the cuff with the folded edge.	1		
	Wear Boot Covers	Cover the trouser legs of the protective clothing with the boot covers.	2		

IV: Removal of Protective Clothing (26 points)

Item		Operation Content	Score	Evaluation Details	Deductions
Operation	Hand	Disinfect hands with quick-drying	0.5	Deduct 0.5	

Item		Operation Content	Score	Evaluation Details	Deductions
Process	Washing	hand sanitizer (six steps).		points for each non-standard operation, until no points remain.	
	Remove Boot Covers	Turn the contaminated side inward from top to bottom while removing and rolling, then dispose into medical waste bin.	2		
	Hand Washing	Disinfect hands with quick-drying hand sanitizer (six steps).	0.5		
	Remove Outer Gloves	Use the gloved hand to pinch the edge of the other glove's contaminated surface to remove it.	1		
		Use the gloved hand to hold the removed glove, use the ungloved hand to pinch the edge of the other glove's clean surface (inner side), remove it, and hold the glove inside to dispose into the medical waste container.	1		
	Remove Protective Clothing	Unfasten and open the zipper.	2		
		Pull up the hood to separate it from the head.	2		
		Remove sleeves and top.	2		
		Turn the contaminated side inward from top to bottom while removing and rolling.	2		
		After removal, place in medical waste bag.	2		
	Remove Inner Gloves	Use the gloved hand to pinch the edge of the other glove's contaminated surface to remove it.	0.5		
		Use the gloved hand to hold the removed glove, use the ungloved hand to pinch the edge of the other glove's clean surface (inner side), remove it, and hold the glove inside to dispose into the medical waste container.	0.5		
	Hand Washing	Disinfect hands with quick-drying hand sanitizer (six steps).	0.5		
	Remove Goggles	Pinch the side near the head or ears to remove and place in recycling or medical waste container.	2		
	Hand Washing	Disinfect hands with quick-drying hand sanitizer (six steps).	0.5		
	Remove Work Cap	Use fingers to touch the inside of the cap and remove, place into medical waste bin.	2		
	Hand Washing	Disinfect hands with quick-drying hand sanitizer (six steps).	0.5		
	Remove Medical Protective Mask	Untie the lower strap first, then the upper strap.	2		
		Hold only the mask's straps to dispose into the medical waste container.	2		
	Hand Washing	Disinfect hands with quick-drying hand sanitizer (six steps).	0.5		