

ABSTRACT *(excerpt)*

The WHO declared eradication of poliovirus (PV) types 2 and 3 in 2015 and 2019, respectively, and published Global Action Plan III (GAPIII) to establish containment requirements to mitigate the risks of a facility-associated PV reintroduction into the world. A fundamental element of GAPIII includes the use of personal protective equipment (PPE) to protect laboratorians from exposure as determined by facility-specific risk assessments. The U.S. National Authority for Containment of Poliovirus (NAC) has been charged with implementing the containment plan in the U.S. During site visits in 2018-2021, the U.S. NAC identified inconsistent PPE selection, use, and doffing procedures at poliovirus-essential facilities (PEF). It was determined that incongruities between similar but different national and international PPE testing standards, such as protective gloves and gowns, made it difficult to determine the type, level, or specific standard to apply to PPE selection. To address these issues, the U.S. NAC developed a PPE policy for U.S. PV laboratories, that incorporates published NIOSH PPE information and focuses on minimum performance criteria for specific types of PPE that meet or exceed applicable testing standards. To improve upon the current policy, a PPE survey was developed for laboratories using or storing PV.

INTRODUCTION

- Health care settings have specific PPE performance requirements.
- PPE requirements for laboratory settings have not been as well-characterized or studied.

METHODS

- Developed a PPE survey with nine (9) modules & sixty-one (61) questions that focus on laboratory practices.
- Piloted with U.S. PEFs to enhance the current policy using evidence-based recommendations.

RESULTS

- Positive facility feedback received on survey design & suggested survey improvements.
- NAC PPE Policy recommendations for PPE selection & use can be based on survey findings (Figure 1).
- Ongoing pilot of survey among U.S. PEFs found:
 - Lack of accessible PPE standard information
 - Low-moderate awareness of testing standards & knowledge on performance requirements (Table 1)
 - Worker protection is the most important PPE selection factor (Figure 2)



Personal Protective Equipment Survey for Laboratories

**This survey is designed to gather specific and detailed information regarding the use of personal protective equipment (PPE) at facilities using or storing infectious microorganisms and hazardous biological materials. You have been asked to complete this survey because:*

Introductory question to set survey logic

- My facility works with or stores poliovirus materials
- My facility works with or stores poliovirus potentially infectious materials (PIM)

Survey instructions: This survey is intended to gather information regarding PPE and PPE practices used for work and/or storage of infectious materials (or potentially infectious) at your facility. Questions are designed to prompt additional questions if a particular answer is selected. Some questions include the option to select "other" which would prompt a text box to provide additional or explanatory information. The survey is divided into categorized modules and is expected to take 60 to 120 minutes to complete. You may save your progress and return to incomplete questions at any time.

Results from the survey can be used to improve the current policy & make informed, evidence-based decisions on the selection & use of PPE

PPE SURVEY TOPICS

- 1 Work practices
- 2 Types of PPE
- 3 Selection Criteria
- 4 Quality
- 5 Decontamination & Disposal
- 6 Donning & Doffing Practices
- 7 Performance Requirements
- 8 Awareness of Requirements
- 9 Selection Preference

FUTURE DIRECTIONS

- Experimental testing of PPE commonly used in PV laboratories
- Outreach to increase knowledge & awareness on PPE performance requirements
- Increased distribution of survey

Table 1. Awareness/Knowledge of PPE Performance Standards

PPE Type	Single Use	Fluid Resistant	Facility PPE Meets Standard	
Safety Glasses/Face Shield	✗	✓	ANSI/ISEA Z87.1	UNSURE
Respiratory Protection (RP)	✗	✓	42 CFR 84	YES
Mucus Membrane Protection (MMP)	✓	✓	ASTM F2100	YES
Gloves (Nitrile)	✓	✓	ASTM 6319	UNSURE
Coverall/Gown	✓	✓	AATCC 127	YES
Shoe Covers	✓	✓	AATCC 127	UNSURE

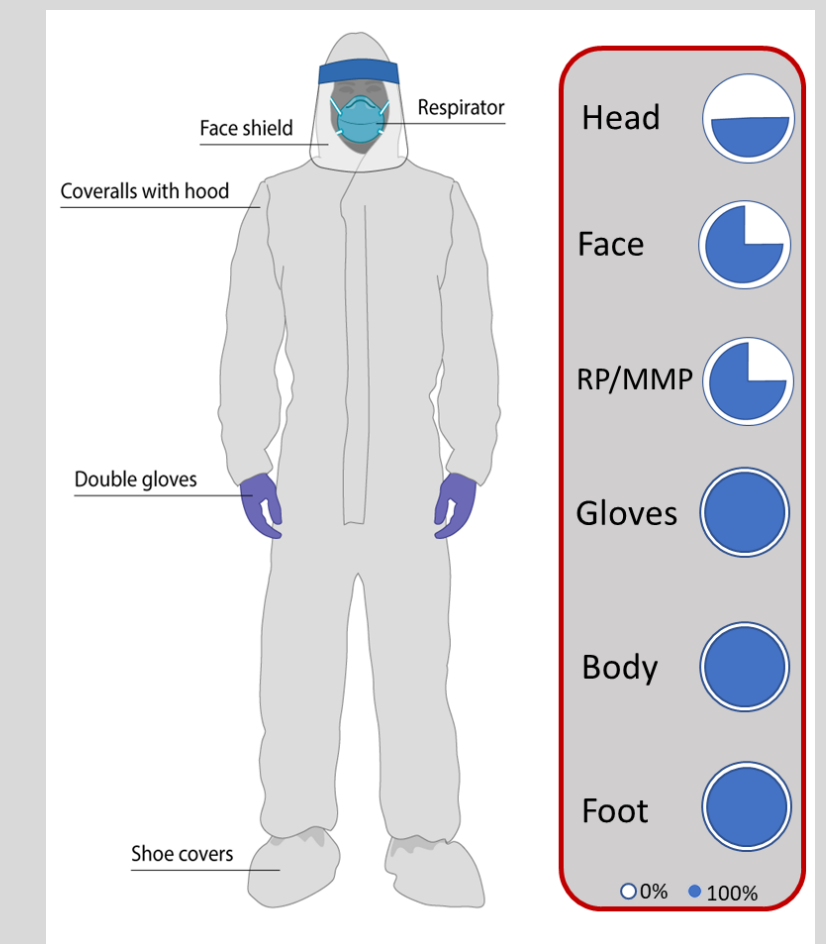


Figure 1. PPE Worn (% use)

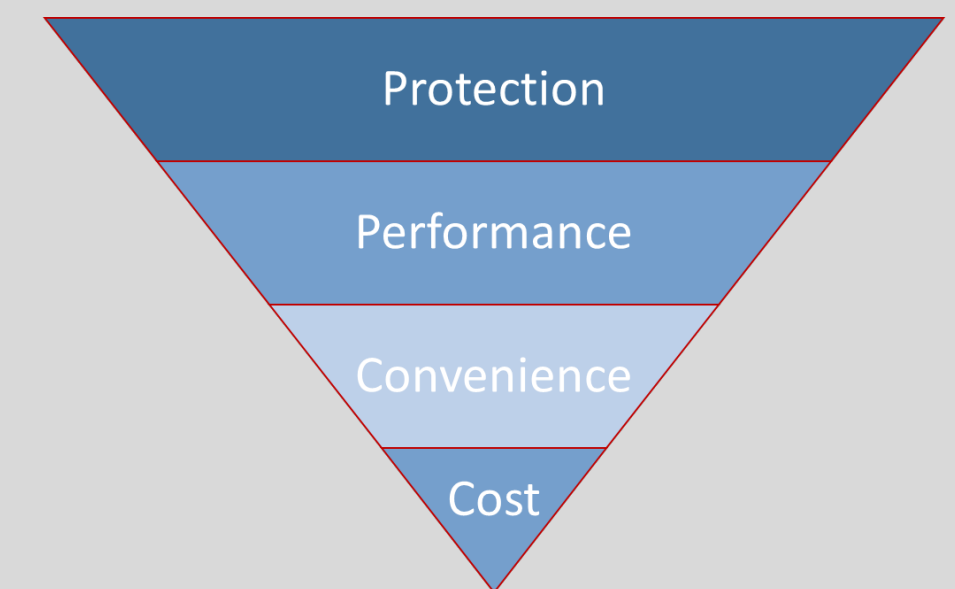
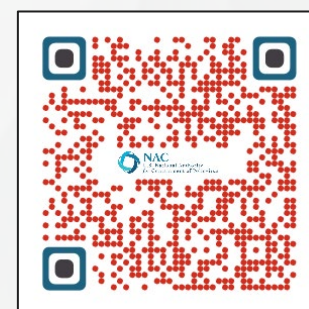
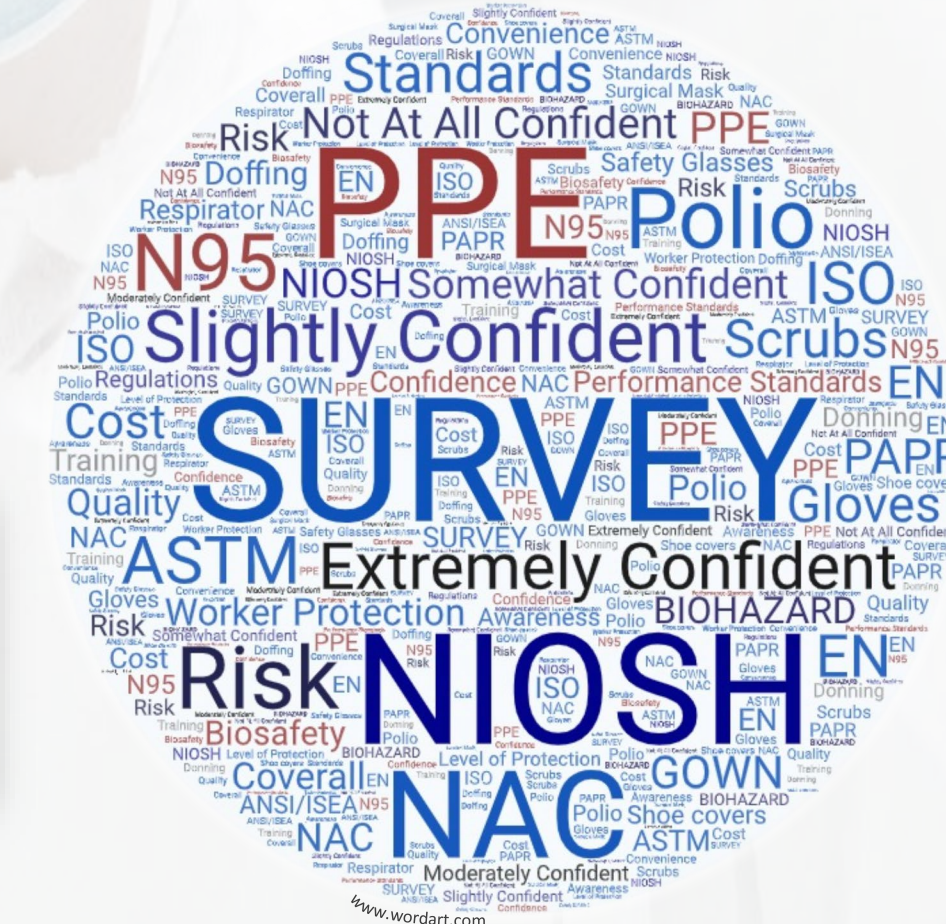


Figure 2. PPE Selection Factors by Order of Importance



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