Development of Improved Test Methods for Assessing Liquid and Viral Penetration through Healthcare Worker and Emergency Medical Service PPE

Objectives

1) To evaluate ASTM F1670 and F1671 test methods, to solve inconsistences that contributes to variable and false results and to propose improved methods
2) To determine relative importance of pressure, time, carrier fluid and virus type on viral penetration through coveralls
3) To propose improved test methodology that realistically simulates worker exposure and prioritizes factors of greatest impact

Proposed Scope

A laboratory study will quantify dependent variables that affect fluid and viral penetration (pressure, time, synthetic fluid and virus type)

- Standard F1670/F1671 testing apparatus will measure viral penetration via hydrostatic pressure
- A programmable materials tester will measure viral penetration via mechanical pressure
- Both test will compare multiple carrier fluids (high and low penetrability)

Milestones

FY16: Complete external peer review of study protocol
FY17: Complete manuscript on synthetic carrier fluids
FY18: Complete manuscript on penetration factors; ballot new ASTM test method

Applicable Standards related activities

ASTM F1670 and F1671; ISO 16603 and 16604

Key Partners

FDA / CDRH; ASTM International; Johnson, Moen & co. Inc.; Nelson Laboratories

Stakeholders

Infection Control/Safety Practitioners; Garment Manufacturers; Standards Organizations; Federal Agencies & NGOs

Outputs

- Manuscripts submitted to peer reviewed journals
- Presentations to stakeholders or conferences
- Presentations to committee and public meetings

Outcomes

- Manuscripts are used for citations in scientific literature
- Project data is used in guidance documents, standards and regulations
- Recommendations are used as guidance for government and non-government organizations to select healthcare worker PPE
- New and/or improved ASTM method for testing healthcare worker PPE