Comparison of Facemask & Respirator Filtration Test Methods
FY15 (927PP02-B)

Objectives:
- Understand the differences among common test methods used to measure filter efficiency.
- Support NIOSH request for information by providing requested data on performance of facemasks and filtering facepiece respirators (FFRs)

Hypothesis:
- Because of the test parameters (flow rate, charge neutralization, particle size, etc.), results from the NIOSH sodium chloride test will be lower than those from the biological filtration efficiency (BFE), virus filtration efficiency (VFE), and particle filtration efficiency (PFE).

Project Scope
- 3 Surgical N95 FFRs (Dual FDA + NIOSH), 6 FFRs (NIOSH-approved only), and 3 Surgical Masks (FDA-cleared only) were tested for filter efficiency by Nelson labs
- Compare results from NIOSH sodium chloride test, BFE, VFE, and PFE.
- Compare results FDA cleared vs. non-FDA cleared FFRs (3M 9210 vs 1870, KC 46727 vs 62126)

FY15 Milestones
- Q2. Submit draft manuscript for internal peer review

Applicable standards
- 42 CFR Part 84
- Food and Drug Administration (FDA) 510(k) clearance of surgical masks (21 CFR 807)

Key Partners
- Nelson Labs

Stakeholders
- Respirator manufacturers, FDA, and healthcare professionals

Outputs
- Manuscript in a peer-reviewed journal (planned)
- Presentation at the FDA Regulatory Science Workshop (May 2014)

Outcomes
- NIOSH and FDA will use project outputs to update/validate filter requirements for FFR used in healthcare settings.
- CDC will use project outputs to update/validate current FFR recommendations for use during public health emergency situations

Updated: 17 Feb 2015