Why Hospital Staff Catch the Flu: Assessing Modes of Transmission – FY12 (939ZUNP)

Objective

- To improve understanding of the relative contributions of direct-contact, inhalation of respirable virus-laden particles, inspiration of virus-laden particles, and direct-spray modes of influenza transmission in healthcare settings by measuring the level of influenza contamination of the environment (air and surface) and healthcare worker PPE (gloves, surgical masks, and filtering facepiece respirators) and comparing that to the incidence of lab-confirmed influenza in healthcare workers in the Respiratory Protection Effectiveness Clinical Trial (ResPECT) study.

Applicable Standards

- ASTM E2720 – 10 / E2721 – 10
- NIOSH 42 CFR Part 84
- ISO TC94/SC15
- OSHA 1910.134

Key Partners

- Johns Hopkins University
- Veterans Administration
- Air Force Research Laboratory
- CDC/DHQP
- NIOSH (DSHEFS, HELD)

Stakeholders

- Healthcare workers
- Hospital administrators
- Policy makers

Project Scope

- FY11 – write proposal, initiate contract with JHU (NPPTL)
- FY12 – Correlate influenza environmental sampling to PPE sampling in the lab (HELD)
- FY13 – Pilot field study. Measure environmental and PPE influenza contamination in healthcare setting (DSHEFS)
- FY14 – Full-scale field study. Measure environmental and PPE influenza contamination. Relate contamination to influenza rates of subjects in the ResPECT study (JHU)
- FY15 – Laboratory study to on contact transmission from contaminated PPE using MS2 phage and human test subjects (NPPTL)
- FY12-15. Manuscripts, presentations, etc.

Milestones FY12

- Q1 Submit proposal for external peer-review
- Q2 Finalize peer-review, complete site survey
- Q4 Obtain IRB/HSRB approval for FY13 pilot field study
- Q4 Complete lab studies to optimize influenza extraction protocols and correlate environmental and PPE contamination (HELD)

Outputs

- Manuscripts published in peer review journals (0 to date)
- Presentations at conferences (0 to date)
- Contractor reports (1 in progress)

Outcomes

- Outputs will be used by other government agencies for guidance in using non-pharmacological interventions for influenza transmission
- Other researchers will use the findings of this project to explore the modes of influenza transmission and examine the efficacy of PPT