

Why Hospital Staff Catch the Flu: Assessing Modes of Transmission – FY17 (939ZNRW) – Ed Fisher

Objectives

- Measure influenza contamination on PPE (FFRs and SMs) of healthcare workers and in the environment (in the air and on surfaces) in a healthcare facility
- Measure contact transfer of virus from contaminated FFRs to hands
- To develop a control banding tool for assessing occupational risk during public health emergencies

Stakeholders

- Healthcare workers
- Hospital administrators
- Policy makers

Key Partners

- Johns Hopkins University
- Veterans Administration
- NIOSH (DSHEFS, HELD)

Applicable Standards

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

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 – Laboratory study to on contact transmission from contaminated PPE using MS2 phage and human test subjects (NPPTL)
- FY15 – Full-scale field study. Measure environmental and PPE influenza contamination. Relate contamination to influenza rates of subjects in the ResPECT study (JHU)
- FY16 - Establish contracts and IPA for control banding study
- FY-17 - Publish papers in peer-reviewed journal
- FY18 – Develop control banding tool for other routes of transmission

Outputs

- Lindsley, William G., et al. "Efficacy of face shields against cough aerosol droplets from a cough simulator." JOEH 11.8 (2014): 509-518.
- Fisher, Edward M., et al. "Validation and application of models to predict facemask influenza contamination in healthcare settings." Risk Analysis 34.8 (2014): 1423-1434.
- Fisher, EM and Shaffer, RE. "Considerations for Recommending Extended Use and Limited Reuse of Filtering Facepiece Respirators in Health Care Settings." JOEH 11.8 (2014): D115-D128.
- Presentation Transfer of Influenza from Contaminated FFRs to the Hands of Healthcare Workers NIOSH PPT Program Healthcare Stakeholder Meeting June 18, 2013 Atlanta, GA.
- Presentation Can Filtering Facepiece Respirators (FFRs) and Surgical Masks (SMs) serve as fomites? SEIU-NIOSH Meeting: Contact Transmission Risks - Surgical Masks January 14, 2014

Milestones FY17

- Q2: Submitted proposal for Fiscal Year 2017 LaSSI Funding
- Q3: Publish Phase 5 Manuscript in JOEH (submitted)
- Q3: Publish Phase 4 manuscript in JOEH
- Q4: Publish Phase 3 Manuscript
- Q4: Publish Phase 4 Manuscript

Outcomes

- CDC/NIOSH Recommended Guidance for Extended Use and Limited Reuse of N95 Filtering Facepiece Respirators in Healthcare Settings <http://www.cdc.gov/niosh/topics/hcwcontrols/RecommendedGuidanceExtendedUse.html>
- Other researchers will use the findings of this project to explore the modes of influenza transmission and examine the efficacy of PPT

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