

Influenza Research at NIOSH

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NIOSH Board of Scientific Counselors Meeting
March 21, 2013

Disclaimer: The findings and conclusions in this report are those of the author and do not necessarily represent the views of the National Institute for Occupational Safety and Health.

Overview of Presentation

- Introduction to Session
 - David N. Weissman, MD
- Occupational Influenza Transmission: An Overview of Past and Ongoing Projects
 - John Noti, Ph.D.
- Respiratory Protective Equipment – Overview of Recent Research
 - Ronald Shaffer, Ph.D.
- NIOSH Research on Implementation of Influenza Preventive Measures in Workplaces
 - LCDR Marie A. de Perio, MD

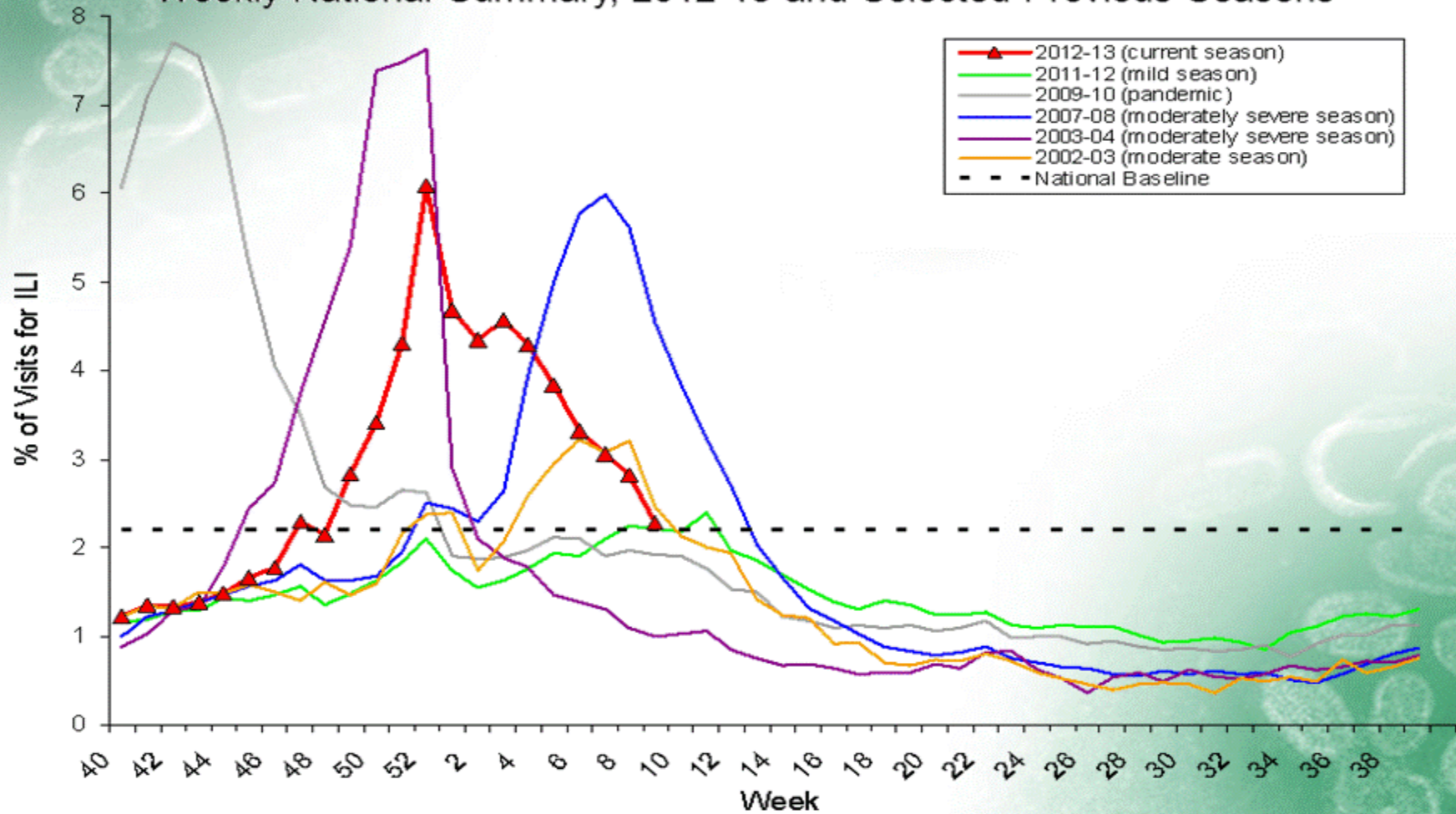
Seasonal Influenza, 2012-2013

FLUVIEW



A Weekly Influenza Surveillance Report Prepared by the Influenza Division

Percentage of Visits for Influenza-like Illness (ILI) Reported by the U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Weekly National Summary, 2012-13 and Selected Previous Seasons

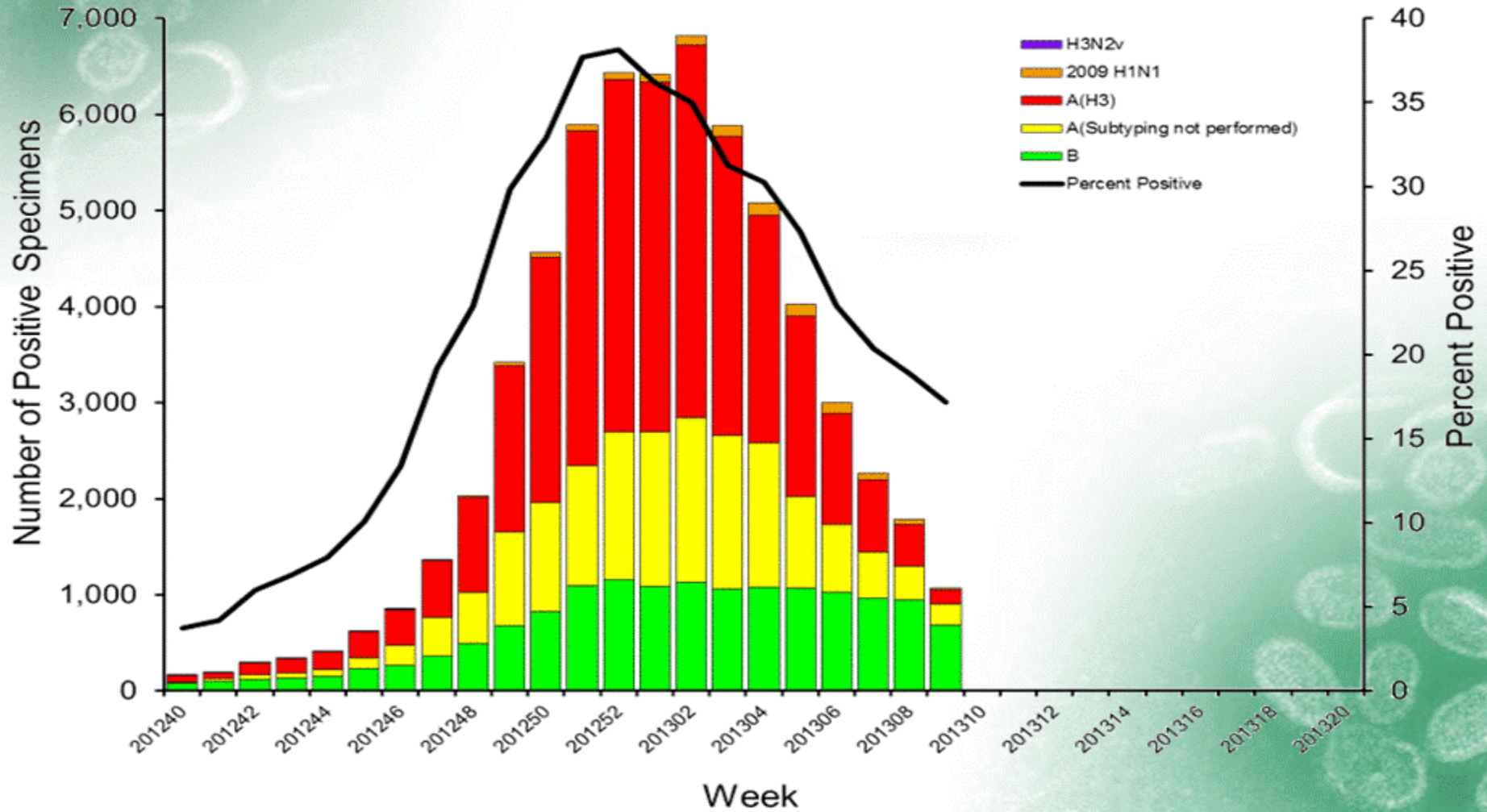


FLUVIEW



A Weekly Influenza Surveillance Report Prepared by the Influenza Division

Influenza Positive Tests Reported to CDC by U.S. WHO/NREVSS Collaborating Laboratories, National Summary, 2012-13



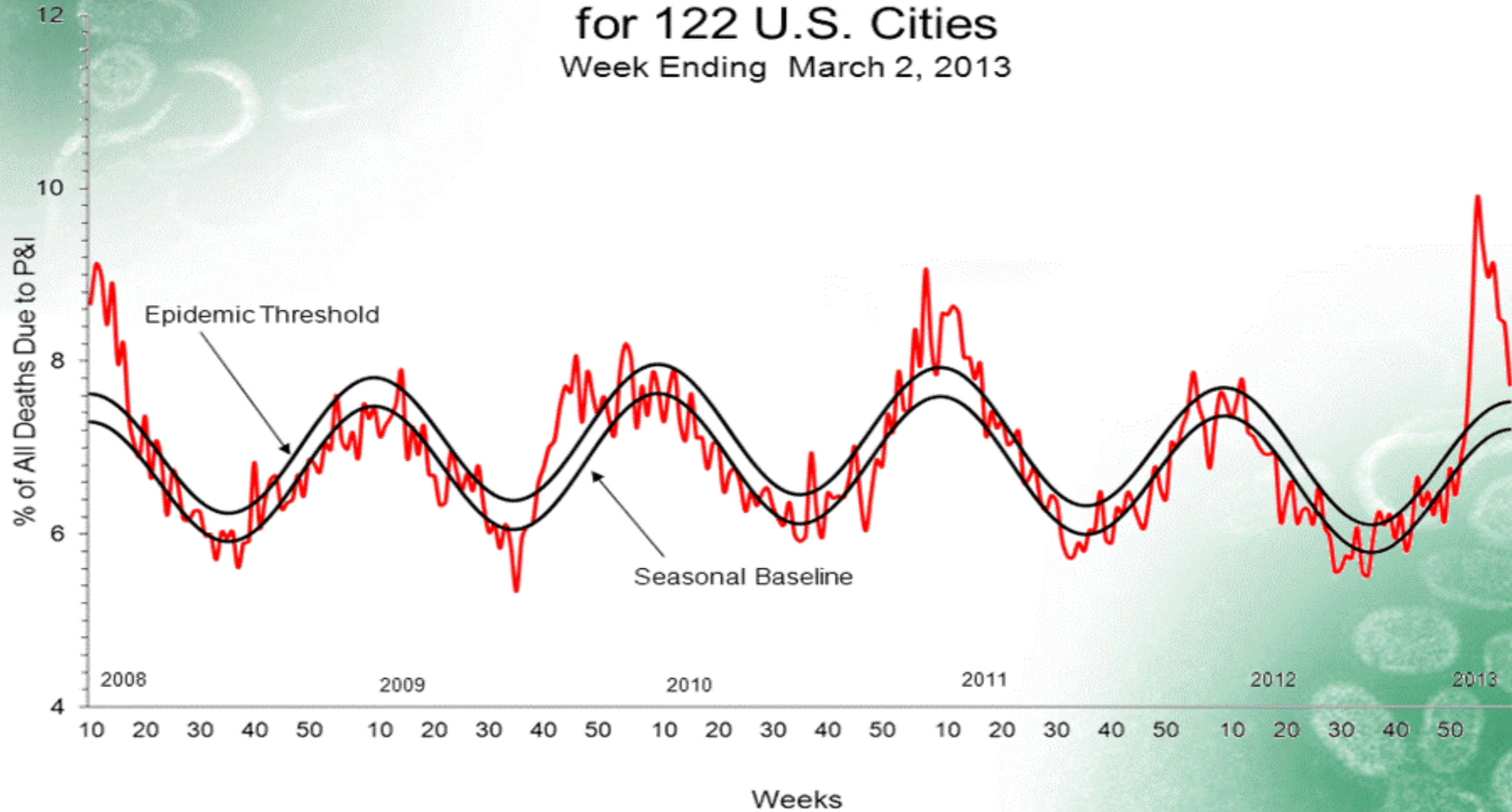
FLUVIEW

A Weekly Influenza Surveillance Report Prepared by the Influenza Division



Pneumonia and Influenza Mortality for 122 U.S. Cities

Week Ending March 2, 2013

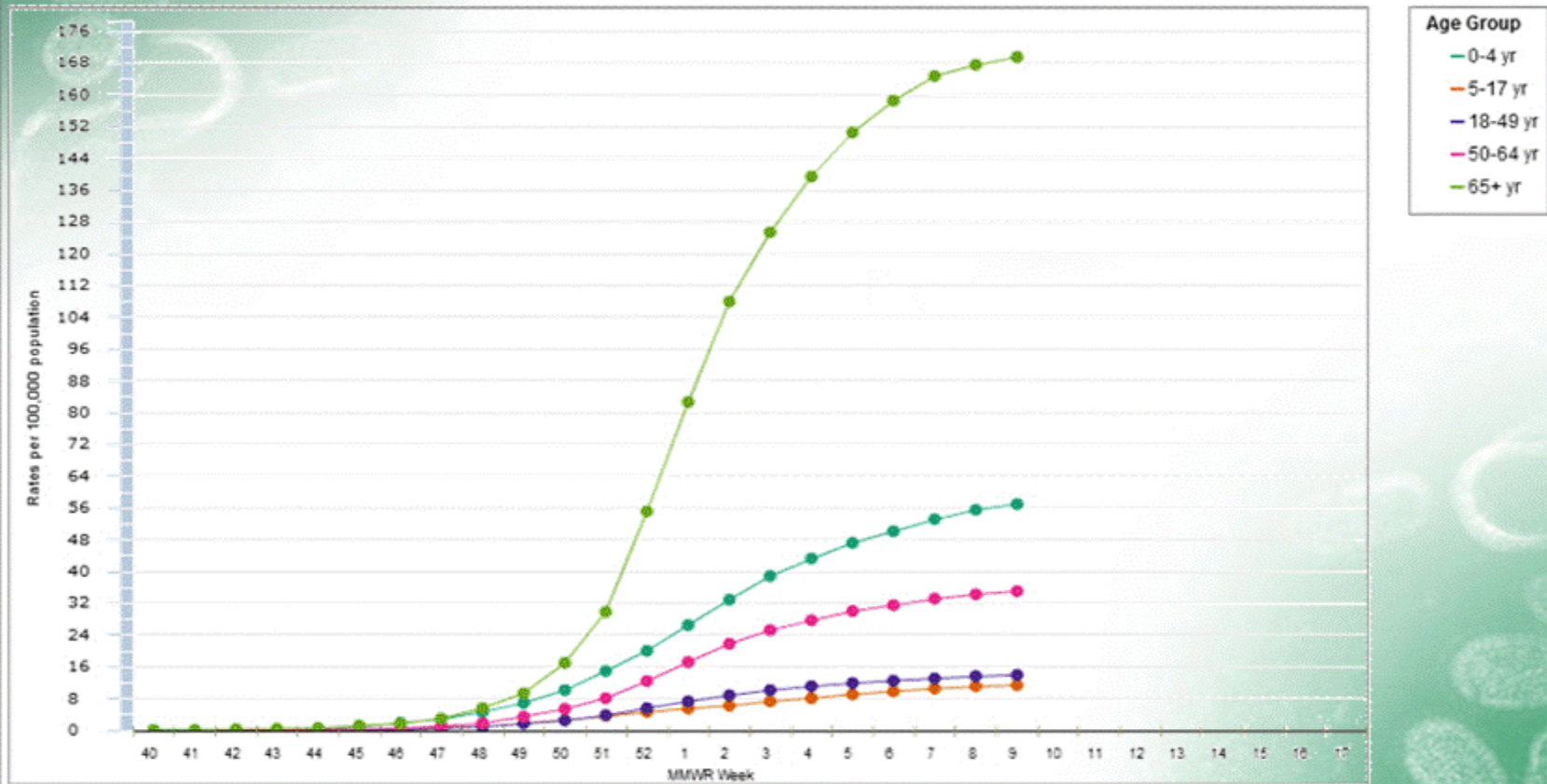


FLUVIEW

A Weekly Influenza Surveillance Report Prepared by the Influenza Division



Laboratory-Confirmed Influenza Hospitalizations Preliminary rates as of Mar 02, 2013



Data from the Influenza Hospitalization Surveillance Network (FluSurv-NET), a population-based surveillance for influenza related hospitalizations in children and adults in 15 US states. Incidence rates are calculated using the National Center for Health Statistics¹ (NCHS) population estimates for the counties included in the surveillance catchment area.



H3N2 Variant (H3N2v) Influenza

- Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people
- H3N2v was circulating in pigs in 2010; first detected in 2011
- Carries genes from avian, swine and human viruses and the 2009 H1N1 pandemic virus M gene
- To date, only limited human to human spread has been detected; no sustained community spread
- Most H3N2v infections have occurred in children with exposure to swine; many have occurred at agricultural fairs

Table 1. Case Count: Detected U.S. Human Infections with H3N2v by State since August 2011

States Reporting H3N2v Cases	Cases in 2011	Cases in 2012
Hawaii		1
Illinois		4
Indiana	2	138
Iowa	3	1
Maine	2	
Maryland		12
Michigan		6
Minnesota		5
Ohio		107
Pennsylvania	3	11
Utah		1*
West Virginia	2	3
Wisconsin		20
Total	12	309

* Case in Utah occurred in April 2012.

Aug 2011 through March 2, 2012. Sixteen hospitalizations and 1 death to date.

Source: <http://www.cdc.gov/flu/swineflu/h3n2v-case-count.htm>

Why Should NIOSH be Engaged in Flu Research?

- Association of influenza with work
 - Laboratory confirmed influenza early in 2009 H1N1 pandemic: increased in *healthcare* (3-fold), *social assistance* (4-fold) [note that HCW, child care center staff, and correctional facility staff were variably targeted for surveillance] Suarhana et al., 2010
 - Adults hospitalized for flu during 2009 H1N1 pandemic: increased in *transportation and warehousing* (1.53-fold), *admin & support & waste mgmt. & remediation services* (1.51-fold), *health care* (1.47-fold), *accommodation & food services* (1.35-fold) Luckhaupt et al., 2012
- Controversial issues affecting our stakeholders
 - Respiratory protection
 - Influenza vaccination policies

NIOSH Influenza Web Page

- Home page: <http://www.cdc.gov/niosh/topics/flu/>
- Guidance:
<http://www.cdc.gov/niosh/topics/flu/guidance.html>
- NIOSH activities:
<http://www.cdc.gov/niosh/topics/flu/activities.html>

NIOSH Activities

Health Hazard Evaluations Evaluating occupational issues related to influenza	Surveillance Tracking flu cases and preventive measures
Respiratory Protection Research Testing and evaluating respirators and masks	Engineering Infection Controls Developing and evaluating engineering controls to reduce infectious disease transmission
Influenza Transmission Research Understanding how the virus is transmitted	

Questions for BSC Consideration

- What would be an optimal mix of NIOSH projects across the research continuum (e.g., basic science through policy/regulatory research) to address knowledge gaps and other barriers to prevention of work-related influenza transmission?
- What other occupational groups considered at higher risk for influenza should we be looking at, in terms of influenza preventive measures?
- *Extra credit:* What other respiratory pathogens are currently important for NIOSH to address?

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