

# Progress Toward Updating the NIOSH PPT Program “Action Plan” for Healthcare Worker Personal Protective Equipment

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# Overview

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- **Why personal protective equipment (PPE) for healthcare workers (HCWs) is a NIOSH PPT program priority**
- **Program history and current research areas**
- **Proposed framework and prioritization plan for updated action plan**
- **Process for seeking stakeholder feedback**

# Why HCW PPE is a Priority

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- **Healthcare is the fastest-growing sector of the U.S. economy, employing over 18 million workers**
- **HCWs are at higher risk of exposure to infectious respiratory and blood borne pathogens than workers in non-healthcare settings**
- **Preferred methods of reducing exposure (elimination, substitution, administrative, and engineering controls) are often not possible or practical to implement, especially during an emerging outbreak or pandemic**
  - Patients are often the source of the exposure
  - PPE can be implemented widely, quickly, and seamlessly

# Types of HCW PPE

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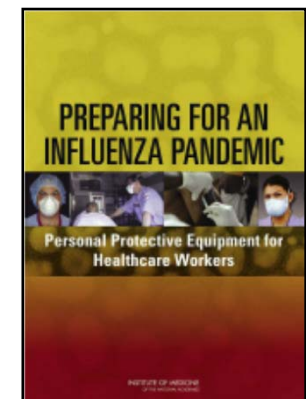
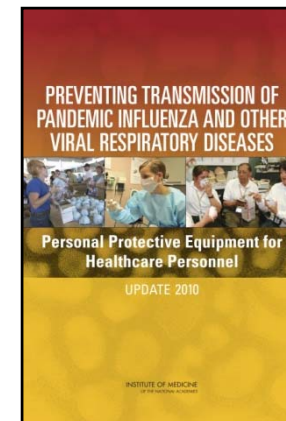
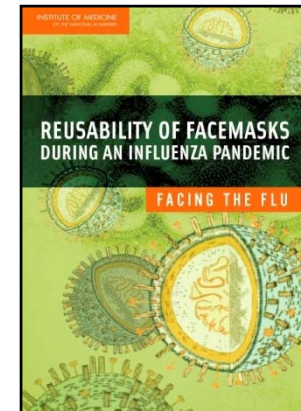
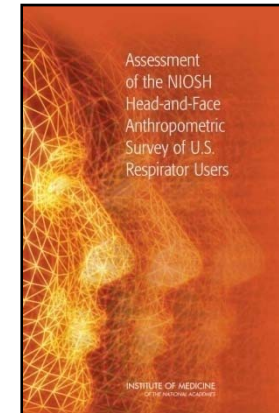
# PPE & Infection Control Precautions

<b>Type</b>	<b>Hands</b>	<b>Body</b>	<b>Face</b>
<b>Standard</b>	<b>Wear gloves when touching blood, body fluids, secretions, non-intact skin, mucous membranes, and contaminated items</b>	<b>Gown should be worn when contact of clothing or skin with blood or body fluids is anticipated</b>	<b>Surgical mask and eye protection should be worn during activities likely to generate splashes or sprays of blood or body fluids</b>
<b>Contact</b>	<b>Standard plus contact with patient or articles in close proximity to patient</b>	<b>Standard plus contact with patient or articles in close proximity to patient</b>	<b>Same as standard</b>
<b>Droplet</b>	<b>Same as standard</b>	<b>Same as standard</b>	<b>Standard + surgical mask upon entering the room</b>
<b>Airborne</b>	<b>Same as standard</b>	<b>Same as standard</b>	<b>Standard + respiratory protection upon entering the room</b>

Adapted from: Healthcare Infection Control Practices Advisory Committee (HICPAC), 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Health Care Settings  
 Goldfrank, L.R., and C.T. Liverman: Preparing for an Influenza Pandemic: Personal Protective Equipment for Healthcare Workers: National Academies Press, 2008.

# Background – Planning Efforts

- 2006 – IOM report on reuse of masks and N95 respirators in the event of an influenza pandemic
- 2007 – IOM report to assess the NIOSH anthropometric survey
- 2008 – IOM report on PPE for HCW
- 2009 – IOM letter report on Respiratory Protection for HCW against H1N1
- 2011 – IOM report PPE for HCW Update
- 2011 – IOM letter report on Occupational Health Nurses and Respiratory Protection



# Background

- **Since 2008, NIOSH PPT program has maintained an “action plan” for PPE for HCW**
  - Used for research prioritization and discussions with stakeholders
- **Last updated January 2010**
- **Current action plan based upon recommendations from a 2009 IOM Letter Report**
- **Action plan needs updated**

**Personal Protective Equipment (PPE) for Healthcare Workers (HCW) Action Plan to address Actions for the next 5 years**

Revision 4 (Draft) January 7, 2010

Revision 3, (Draft) September 2009  
Revision 2, March 2009  
Revision 1, August 2008  
Draft Action Plan, February 2008

Historical documents available at NIOSH Docket 129  
<http://www.cdc.gov/niosh/docket/NIOSHdocket0129.html>

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[http://www.cdc.gov/niosh/docket/archive/pdfs/NIOSH-129/0129-010710-ReportDraft4\\_doc.pdf](http://www.cdc.gov/niosh/docket/archive/pdfs/NIOSH-129/0129-010710-ReportDraft4_doc.pdf)

# Current Research Areas

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- **Ensembles**

- Isolation gowns

- **Filtration**

- Nanoparticles / Bioaerosols

- **Respirator Fit**

- Facial anthropometrics
- Frequency of fit testing
- Respirator fit test research (user seal check, novel methods, multiple donnings)

- **Respirator Comfort**

- Physiology studies
- Project BREATHE

- **Surveillance & Intervention**

- Demo & Sentinel Surveillance
- Respirator evaluation & interventions
- Best practices, outreach

- **Respirator Performance & Usability**

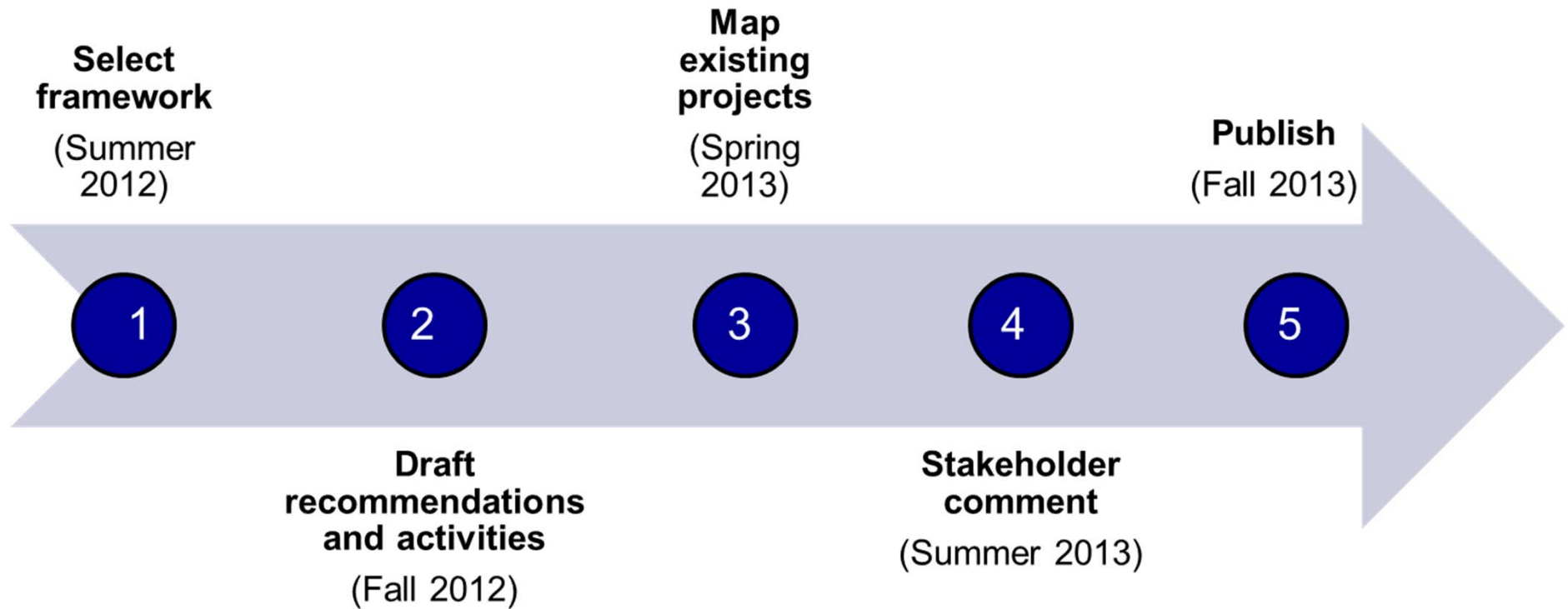
- Simulated healthcare settings
- Respirator clinical effectiveness

- **Influenza Pandemic / Reuse**

- Risks of handling a contaminated respirator
- Decontamination of filtering facepiece respirators (FFRs)
- Assessing modes of transmission

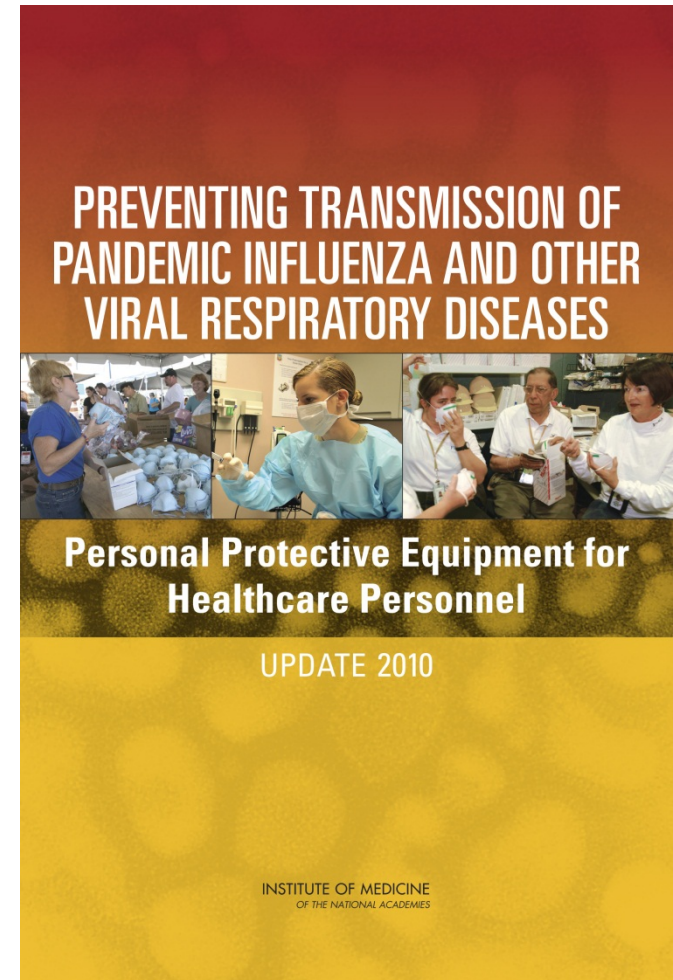


# Process for Updating the Action Plan



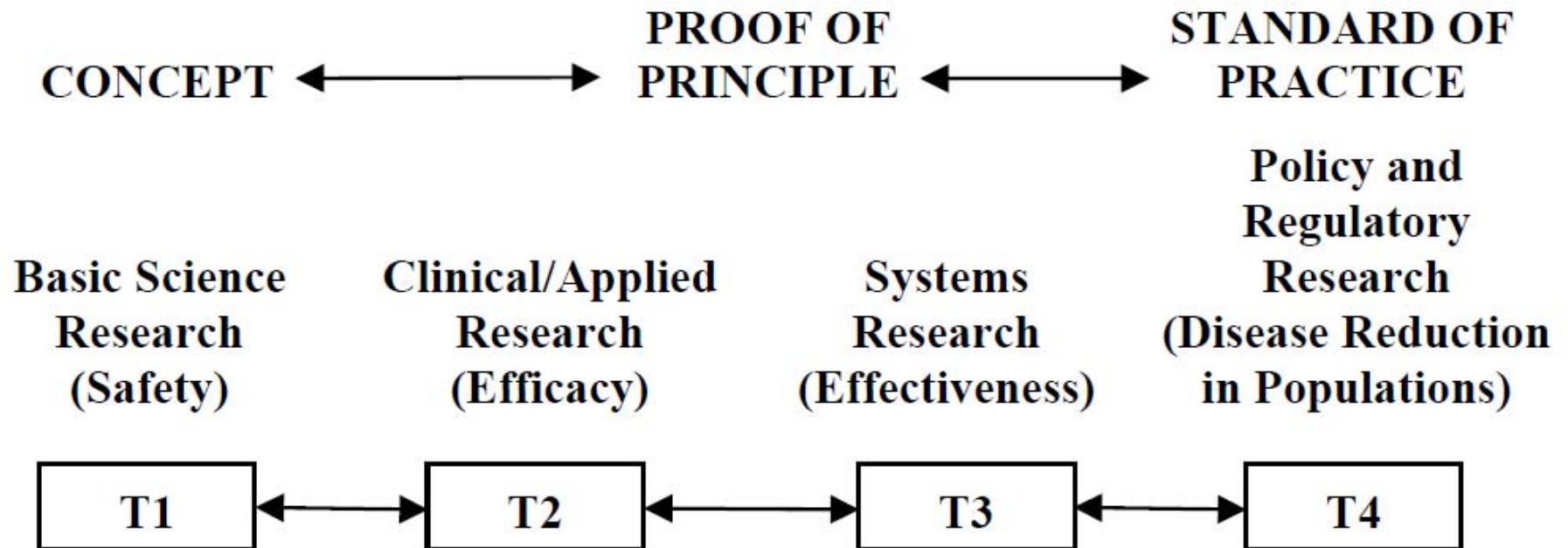
# Proposed Framework

- Use the 12 research recommendations from Jan 2011 IOM report as the framework
- Incorporate other recommendations (HHS, NIOSH HCSA)
  - <http://www.phe.gov/Preparedness/mcm/h1n1-retrospective/Documents/2009-h1n1-improvementplan.pdf>
  - <http://od.niosh.cdc.gov/ProgramPortfolioGuidance/FY14/pdfs/HSA-FY14Guidance.pdf>



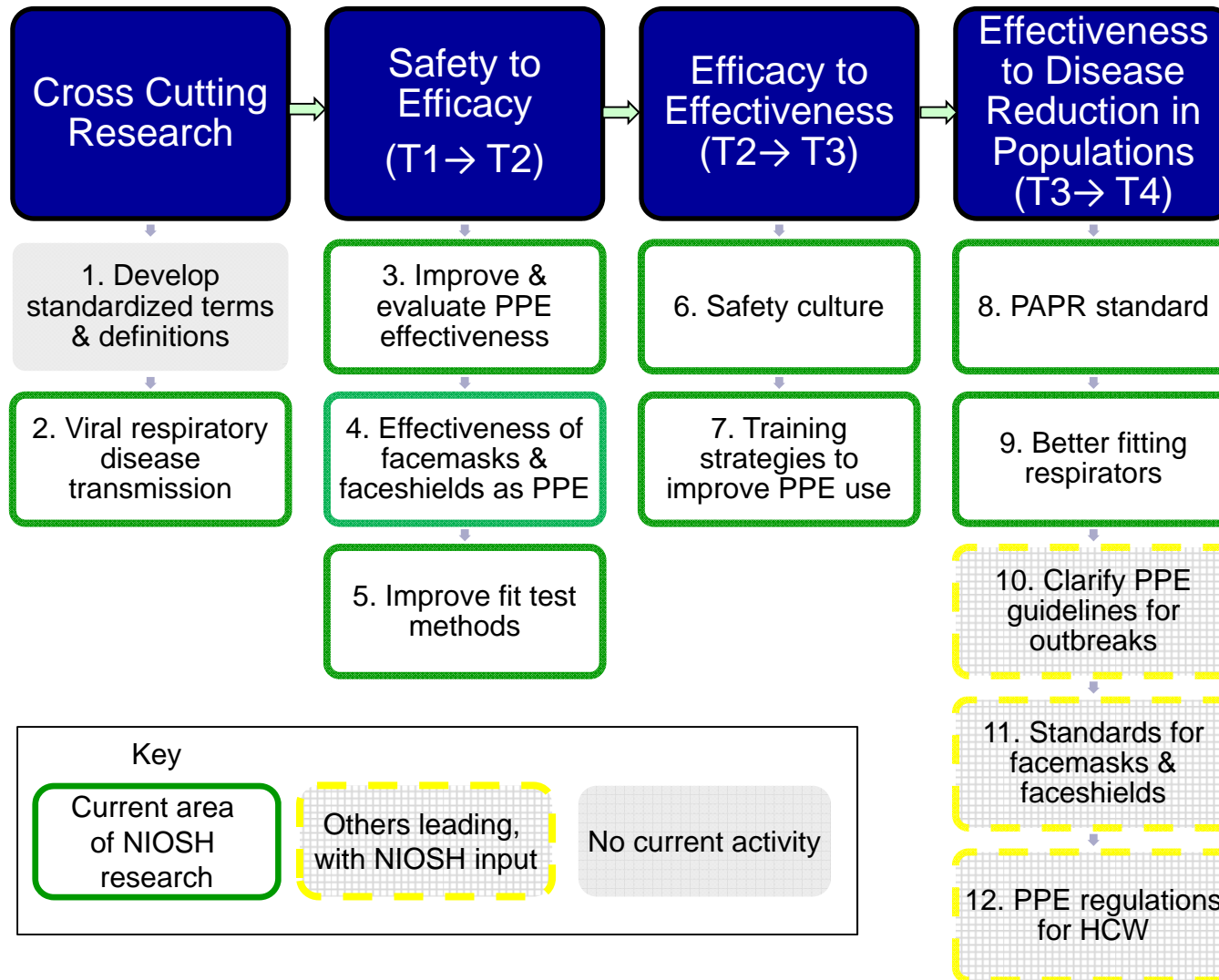
[http://www.nap.edu/catalog.php?record\\_id=13027](http://www.nap.edu/catalog.php?record_id=13027)

# IOM's Integrated Approach to Research



An integrated system moving research into practice, depicting the translation of research from basic science research (T1) through policy and regulatory research (T4). Source: IOM report, Page 26, Figure 1-2, which was adapted from Henderson and Palmore (2010).

# Mapping NIOSH Research Projects to Proposed Recommendations



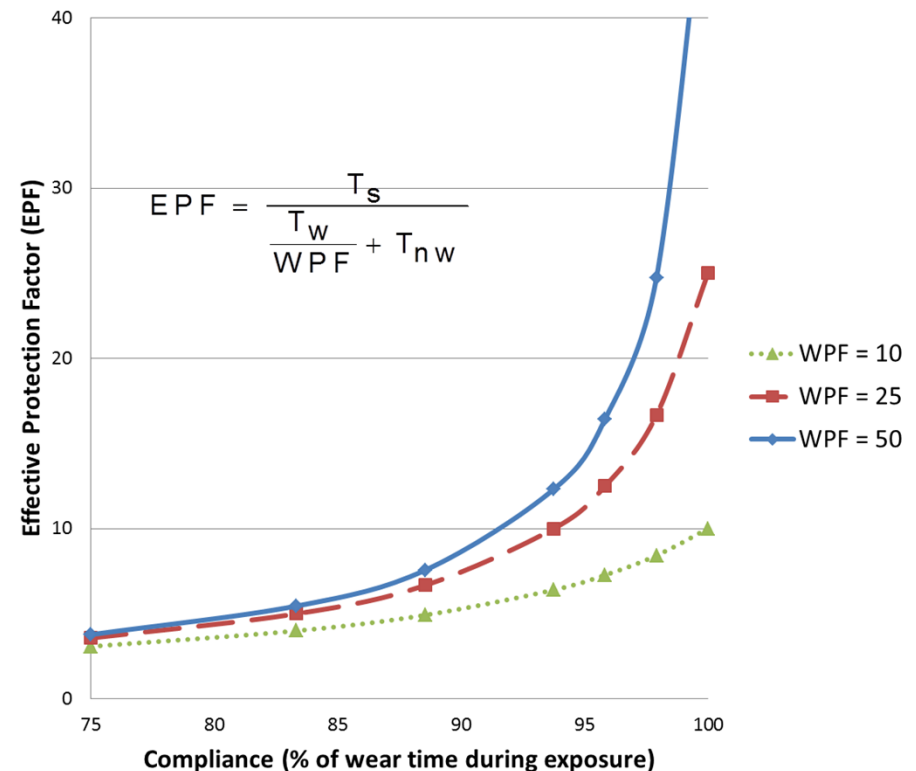
# Prioritization

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- **During times of increased budget scrutiny, government agencies and other funding sources will not be able to fund all of the necessary research projects, but will need to make difficult decisions on where to focus research**
- **Tools for prioritization are needed to guide and assist NIOSH and partners to implement the action plan**

# Rationale for Increased PPE Compliance as a Goal for Prioritization

- Respiratory protection is dependent on filter efficiency, fit, maintenance, and compliance
- If a respirator is not worn properly or at all during the exposure, it will provide little protection (if any)
- Compliance needs to be > ~75% to see a significant difference in EPF (i.e., exposure reduction) for better performing respirators



$T_e$  = Exposure duration,  $T_w$  = Time Worn,  $T_{nw}$  = Time Not Worn, WPF = Workplace Protection Factor

Source: adapted from American Industrial Hygiene Association Respiratory Protection Committee – Terms and Definitions

# Improving Compliance = Unifying Goal

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## Reported Reasons for PPE Non-Compliance

Lack of accountability for non-compliance

Workload issues

Time constraints

Risk perception

Effectiveness concerns

Availability

Uncomfortable

Interference with work tasks

Inability to communicate

## Some Reported Ways to Improve Compliance of PPE and Other Interventions

Improve safety culture

Better training strategies

Develop & communicate clear recommendations

Risk communication

Conduct effectiveness studies

More accessible / less burdensome interventions

Better PPT

# Stakeholder Comment

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- **Proposed use of the 2011 IOM report as the basis for the 12 recommendations and 36 activities in next revision of the action plan**
- **Proposed use of improving HCW PPE compliance as the overarching goal for prioritization**
- **Specific actions that NIOSH and the NIOSH PPT program should take to address the proposed recommendations**



# Recent and Next Steps

<b>Dates</b>	<b>Milestone</b>
<b>May – June 2013</b>	<ul style="list-style-type: none"><li>• <b>Published NIOSH Science Blog seeking comments on research needs to improve PPE compliance in healthcare</b></li><li>• <b>Discuss at the NIOSH PPT Program Healthcare Stakeholder Meeting</b></li></ul>
<b>July – Sept 2013</b>	<ul style="list-style-type: none"><li>• <b>Publish Federal Register Notice seeking public comment via NIOSH Docket #129</b></li><li>• <b>NIOSH PPT Working Group drafts initial action plan</b></li></ul>
<b>Oct – Dec 2013</b>	<ul style="list-style-type: none"><li>• <b>NIOSH PPT Working Group revises draft action plan</b></li><li>• <b>Final action plan is published</b></li></ul>

# Concluding Remarks

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- **NIOSH has an active HCW PPE research program, involving numerous partners, with projects related to ensembles and respirator filtration, fit, comfort/tolerability, understanding barriers to proper use, performance, and specific issues related to Pandemic Influenza**
- **PPE for HCW action plan is a guiding document for NIOSH program planning**
- **Your input will help us keep the action plan relevant**

# Quality Partnerships Enhance Worker Safety & Health

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## Disclaimer:

The findings and conclusions in this presentation have not been formally disseminated by the National Institute for Occupational Safety and Health and should not be construed to represent any agency determination or policy.

# Contact Information

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