

Protecting the Farmworker: The Innovation-Technology-Standards Continuum

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**Personal Protective Equipment for Influenza A (H5N1) in
High-Risk Farm Settings: A Workshop**



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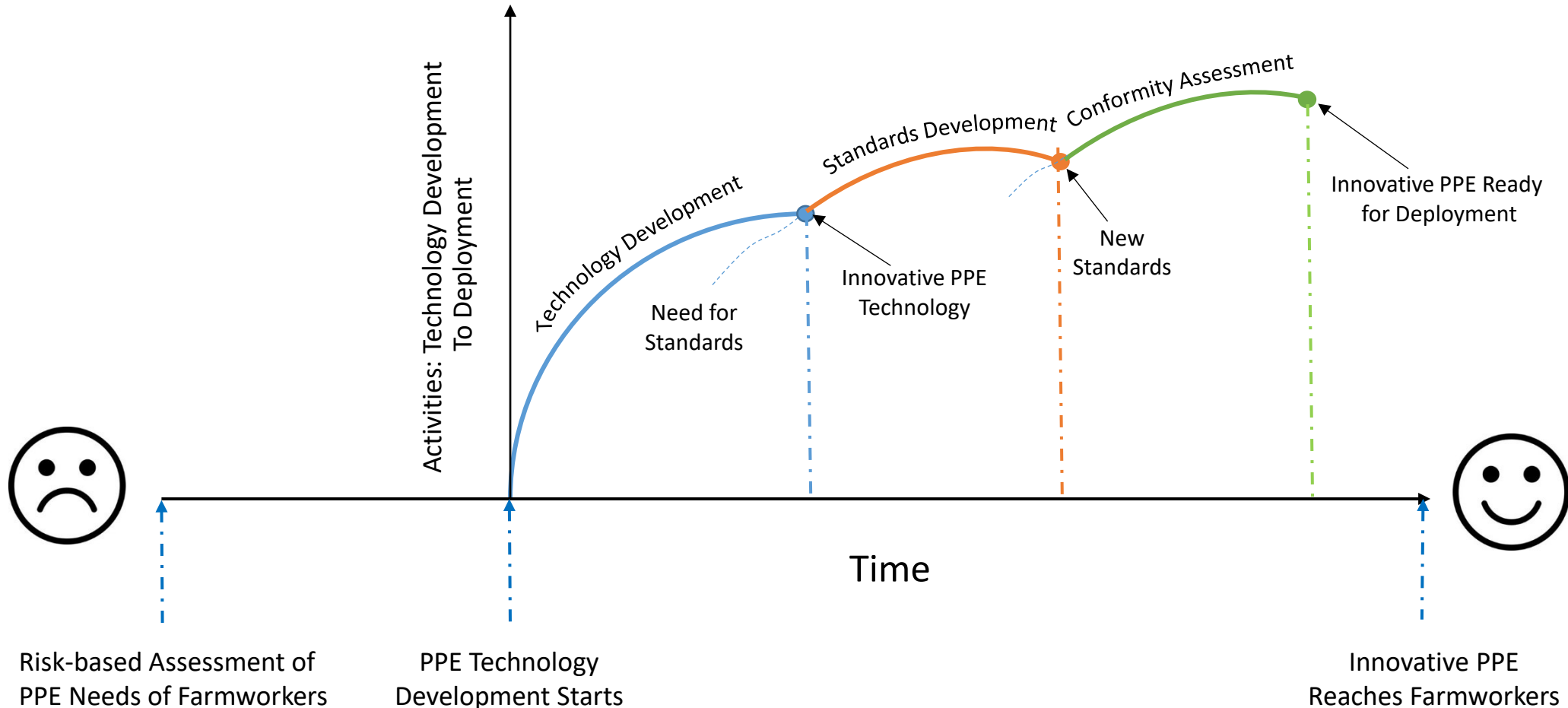
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The PPE Development Lifecycle: From Needs to Farmworkers

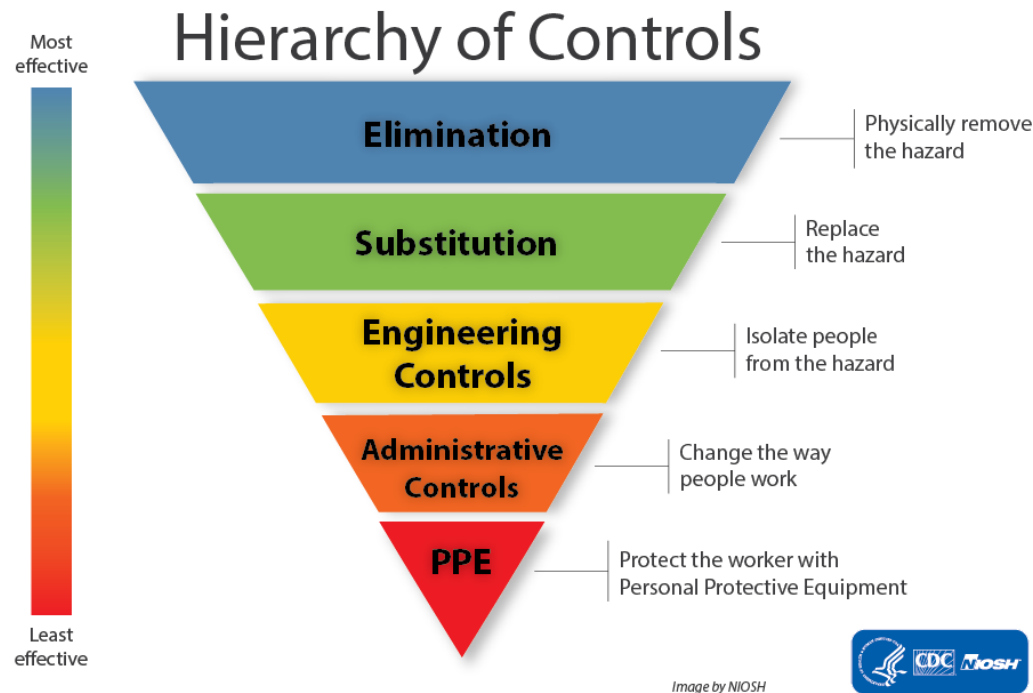


- Significant Impact On
 - Farmworker
 - Community
 - Public Health
 - Stakeholders
 - Essentials: Milk, Eggs, Meat, ...
 - Economy
- Solution: Address the Systemic Barriers
 - Demographics
 - Financial
 - Culture: Farmworker and Farm
- The Enablers: Prerequisites
 - Expertise: NIOSH/NPPTL
 - Funds: For Each Facet

From Risk-based Needs Assessment to PPE Deployment



The Innovation Journey: Hierarchy of Controls



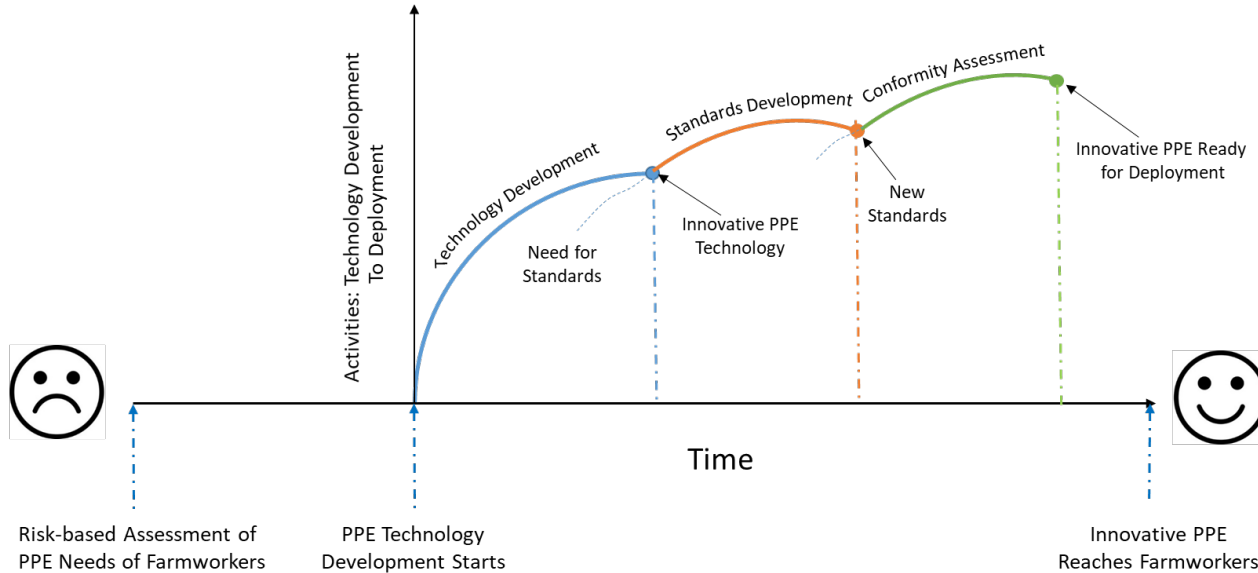
HoC: Great Launch Point for Innovation

- Low Hanging Fruit: **Process** Improvements
 - Rotating the Staff to Reduce Heat Stress
 - Enhanced Education and Training
 - Institute a Culture of Safety
- Engineering & Administrative Controls
 - Across-the-Farm Impact
 - Replicate Across Farms Nationwide
- Modify and Adapt Existing Technology
 - Cooling and Heating Vests

The Enablers

- Expertise of NIOSH/NPPTL
- Funding

Innovation and The “Valley of Death”



“Everything you can imagine is real.”
—Pablo Picasso

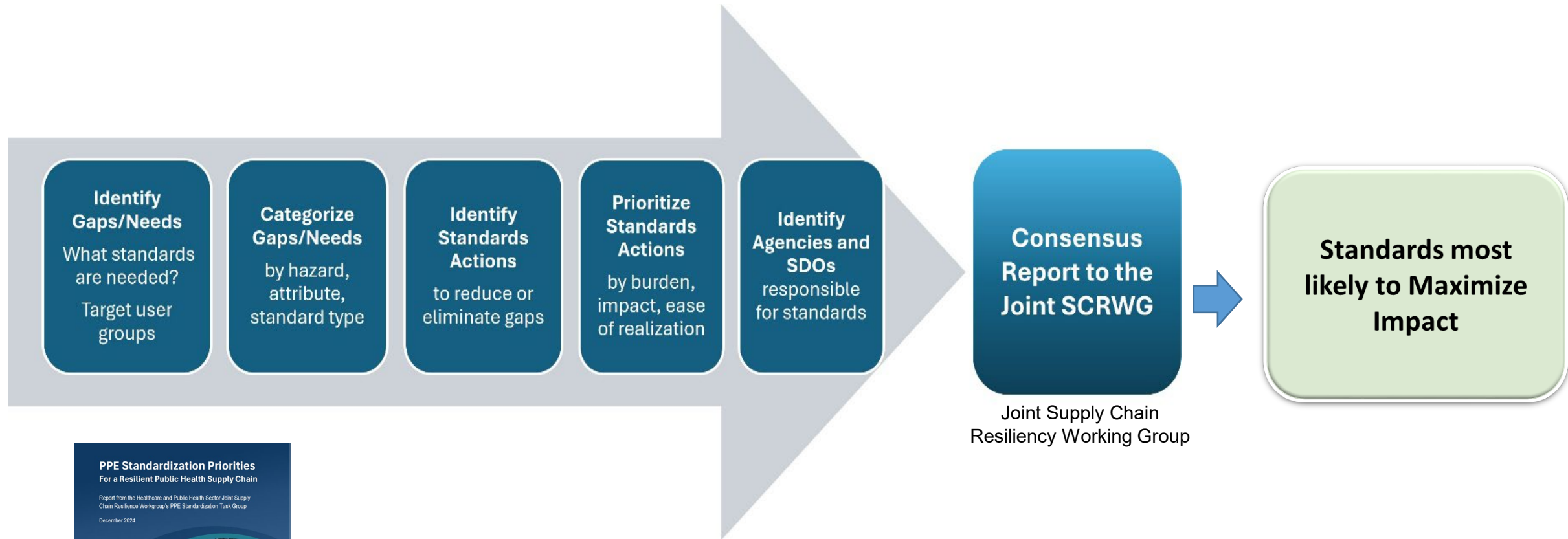
Ideas are Great Only When Realized!

Valley of Death: *Lurks* Between Innovation and Reality!

Enabling the Transition: From Needs to Innovative PPE

- The Will to Make it Happen
- Participation of All Stakeholders
 - Farms, Farmworkers, Industry, Regulatory, ...
- Expertise: NIOSH/NPPTL, Researchers, Outreach, ...
- Funding

PPE Standards Development: Process Flow & Outcome



Source:



Enablers: NIOSH/NPPTL Expertise and Funding

Protection Category and Prioritization for Development of Standards

Hazard/Protection Category

Respiratory Protection (respirators, medical masks, BFCs and public safety masks)

Eye/Face Protection (goggles, face shields, spectacles)

Hand Protection

Protective Apparel (gowns, drapes, coveralls, other apparel)

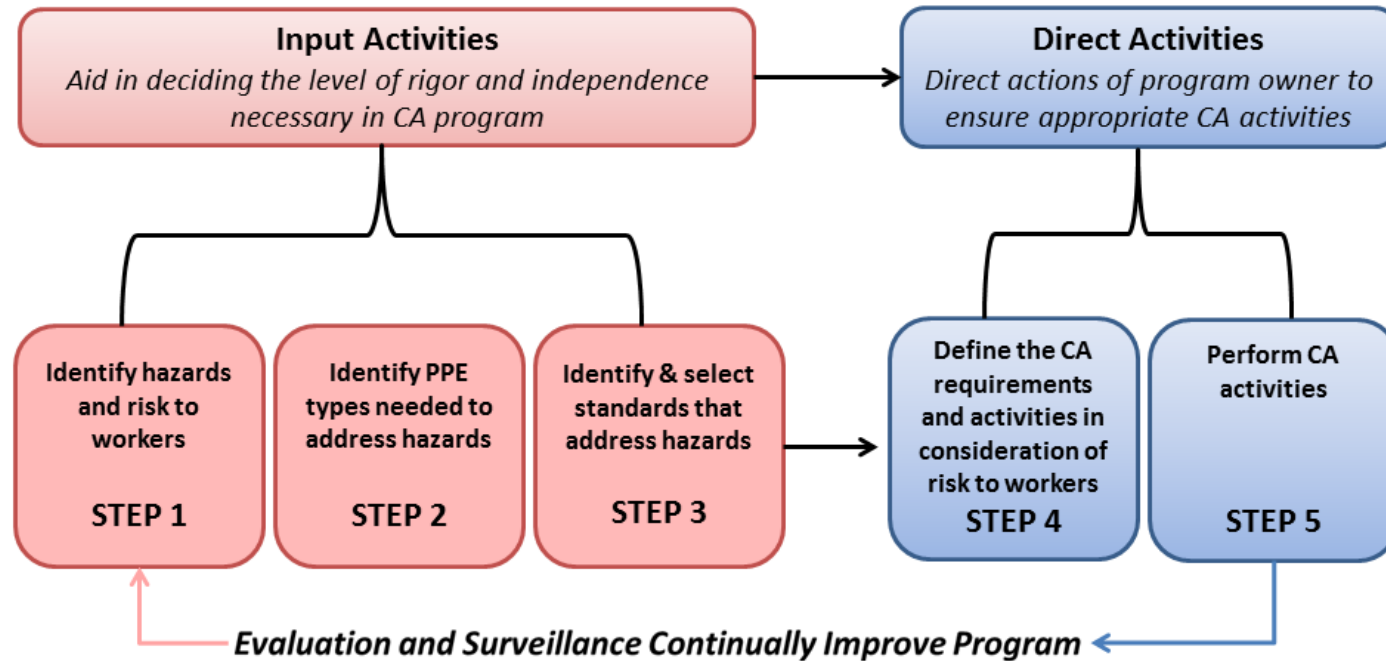
Supply Chain Gaps

Source:



Priority 1A	Gaps requiring standards actions that will provide maximum health and safety outcomes and eliminate a substantial gap when fully implemented, and that can be completed within 1 year
Priority 1B	Gaps requiring standards actions that will provide maximum health and safety outcomes and eliminate a substantial gap when fully implemented, and that can be completed within 1 to 3 years
Priority 1C	Gaps requiring standards actions that will provide maximum health and safety outcomes and eliminate a substantial gap when fully implemented, and that will require more than 3 years to complete
Priority 2	Gaps requiring standards actions that will provide a significant level of health and safety outcomes and significantly reduce important gaps when fully implemented
Priority 3	Gaps requiring standards actions that will provide a minimal improvement to health and safety outcomes and reduce some standards gaps when fully implemented.

The PPE Conformity Assessment Process

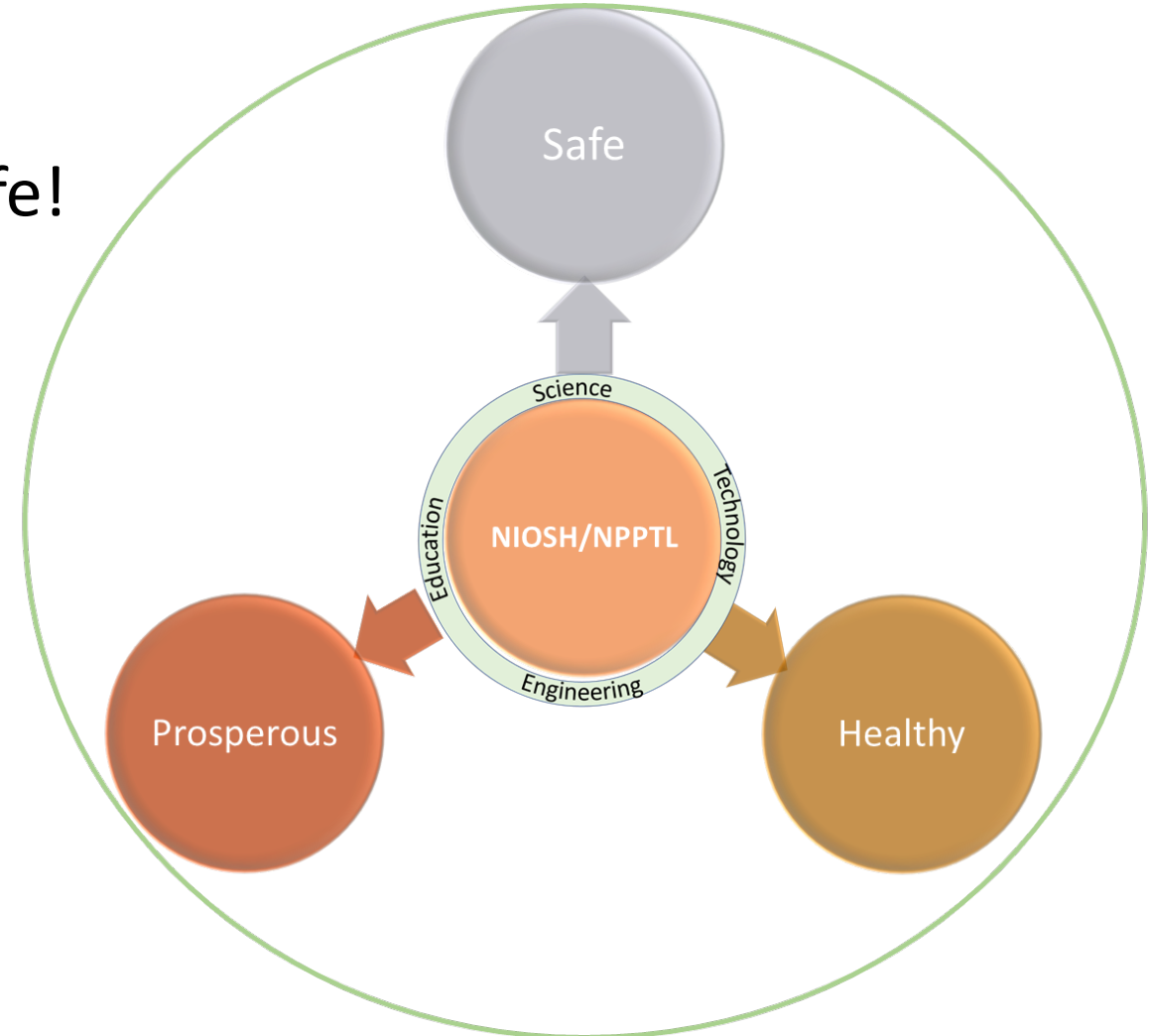


Source: NIOSH, 2017

Enablers: NIOSH/NPPTL Expertise and Funding

Standards and Conformity Assessment: Blessing or Barrier?

- It is Hard to Put a Price on Human Life!
- Innovation
- Standards are Essential for
 - Safety
 - Meeting Performance Requirements
- Conformity Assessment
 - Meets the Standards
 - Safe and Effective to Use
- Resource-Incentive
- Blessing and a Barrier ...

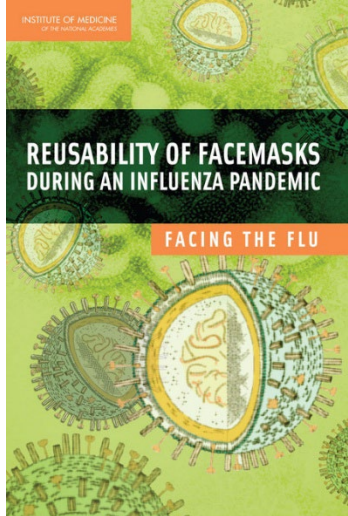


Innovation-Technology-Standards: Keeping the Farmworker Safe

- Promote Innovation to Protect Lives and Livelihood
- Standards Will Lag Technology Advancements
- Reduce the Lag: Speed up the Development of Standards
- Enhance the Conformity Assessment Process
- Address Systemic Barriers
- The Enablers: Provide Incentives for Success
 - Guidance, Time, Expertise, and Funding
 - FDA's Orphan Drug Program: Tax Credits, Market Exclusivity, ...
 - <https://www.fda.gov/industry/medical-products-rare-diseases-and-conditions/designating-orphan-product-drugs-and-biological-products>
- Remove Barriers – Make it a Blessing!

Make PPE a True Blessing ...

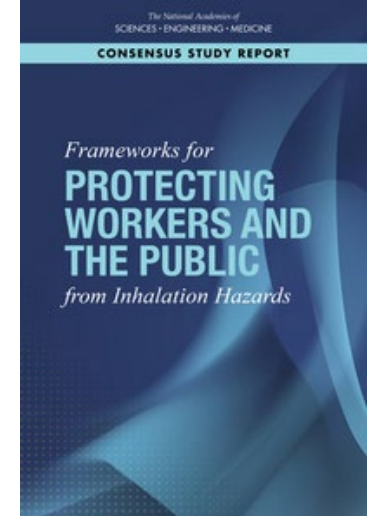
Numerous Studies and Reports Sponsored by NIOSH/NPPTL Since 2005 from NASEM



Recommendations to Keep US Safe, Healthy, and Prosperous!

The Necessary Ingredients for Success

- Expertise: NIOSH / NPPTL
 - Research, Education, Science, Technology
- Funding



Thank you