

# Moving the Needle on Vaccination of Health Care Personnel in Long-Term Care Facilities

Litjen (L.J) Tan, MS, PhD

Chief Strategy Officer, Immunization  
Action Coalition

Co-Chair, National Adult and Influenza  
Immunization Summit

October 2<sup>nd</sup>, 2018

# Disclosures

- I have no conflicts of interests.
- I do NOT intend to discuss an unapproved or investigative use of a commercial product/device in my presentation.

# Disclaimer

The opinions expressed in this presentation are solely those of the presenter and do not necessarily represent the official positions of the Immunization Action Coalition, or the National Adult and Influenza Immunization Summit

# Rationale for our study

- Respiratory outbreaks continue to occur in LTCFs despite high reported rates of resident vaccination
- HCP flu vaccination prevents resident morbidity and mortality
- Nursing staff influenza vaccination rates in LTCFs are low

# Goals for the Study

- Prevention of influenza and pneumonia in LTCFs
- Increasing understanding of vaccine decision-making among HCPs
- Developing customized, evidence-based interventions:
  - Goal-setting and policy implementation
  - Improved documentation and tracking
  - Educational programming and staff engagement
  - Kick-off events and other vaccination opportunities
- Increasing influenza vaccine uptake among LTCF nursing staff (RNs, LPNs, CNAs)

# Gaps identified in existing vaccination programs

- Lack of clear policies
- Absence of tracking mechanisms or documentation
- Resistance from both leadership and nursing staff
- Often anti-vaccination or vaccine-reluctant
- Reactive rather than proactive
- Sustainability issues
- Turnover among leadership and nursing staff
- No communication of policies to new hires
- Misconceptions about flu and flu shots
- Lack of training or education

# Overview of intervention components

- Goal-setting
- Clear policies on staff vaccination and declination
- Improved documentation and tracking
- Educational programming
- Staff engagement and incentives
- Multiple vaccination opportunities at work

# Goal-setting and policy worksheets

## Goal-setting

---

1. Vaccination rates will be tracked for (select one):

- Nursing staff only
- All staff (including housekeeping, dietary, administration, etc.)

2. Vaccination rate goals:

75% after mass vaccination kick-off event in mid-October

95% by October 31<sup>st</sup>

95% by December 10<sup>th</sup>

95% for the influenza season overall (including anyone working in the facility Oct. – Mar.)

## Policy implementation

---

### Staff vaccination policy

1. Annual influenza vaccination offered free to all staff at work and (select one):

- Strongly encouraged by management
- Required unless a declination form is signed
- Required as a condition of employment

2. Accepted reasons (select all that apply)

- Personal reasons
- Religious objection

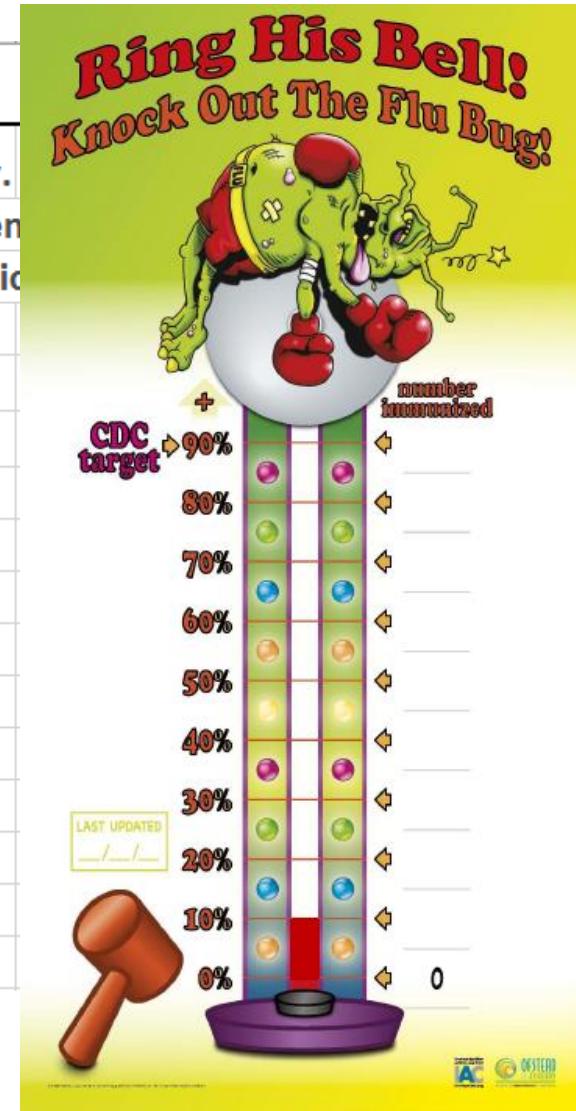


# New tracking mechanisms: A vaccination gauge and instructions for use

## How to use the vaccination rate gauge

- Step 1. Enter the total number of staff at your facility in the yellow box below.
- Step 2. Excel will calculate how many staff members correspond to each increment
- Step 3. Use these numbers to fill in the corresponding blanks on your vaccination
- Step 4. Update your vaccination gauge regularly and watch your progress!

Number of staff:			
10%			
20%			
30%			
40%			
50%			
60%			
70%			
80%			
90%			
100%			



# Baseline influenza vaccination rates among nursing staff (2013-2014)

Site	Annual turnover rates	Influenza vaccination rates for nursing staff in 2013-2014	
		Method 1	Method 2 (includes turnover)
Site A	81%	68%*	<b>34%</b>
Site B	99%	8%	<b>5%</b>
Site C	141%	94%	<b>75%</b>
Site D	22%	69%	<b>62%</b>

Method 1: Accepted / Accepted + Declined + Unknown (at a particular point in time)

Method 2: Accepted / Current staff + Terminated staff (during the entire flu season; accounting for turnover)

\*Data quality issues

Data from 2014 administrative spreadsheets

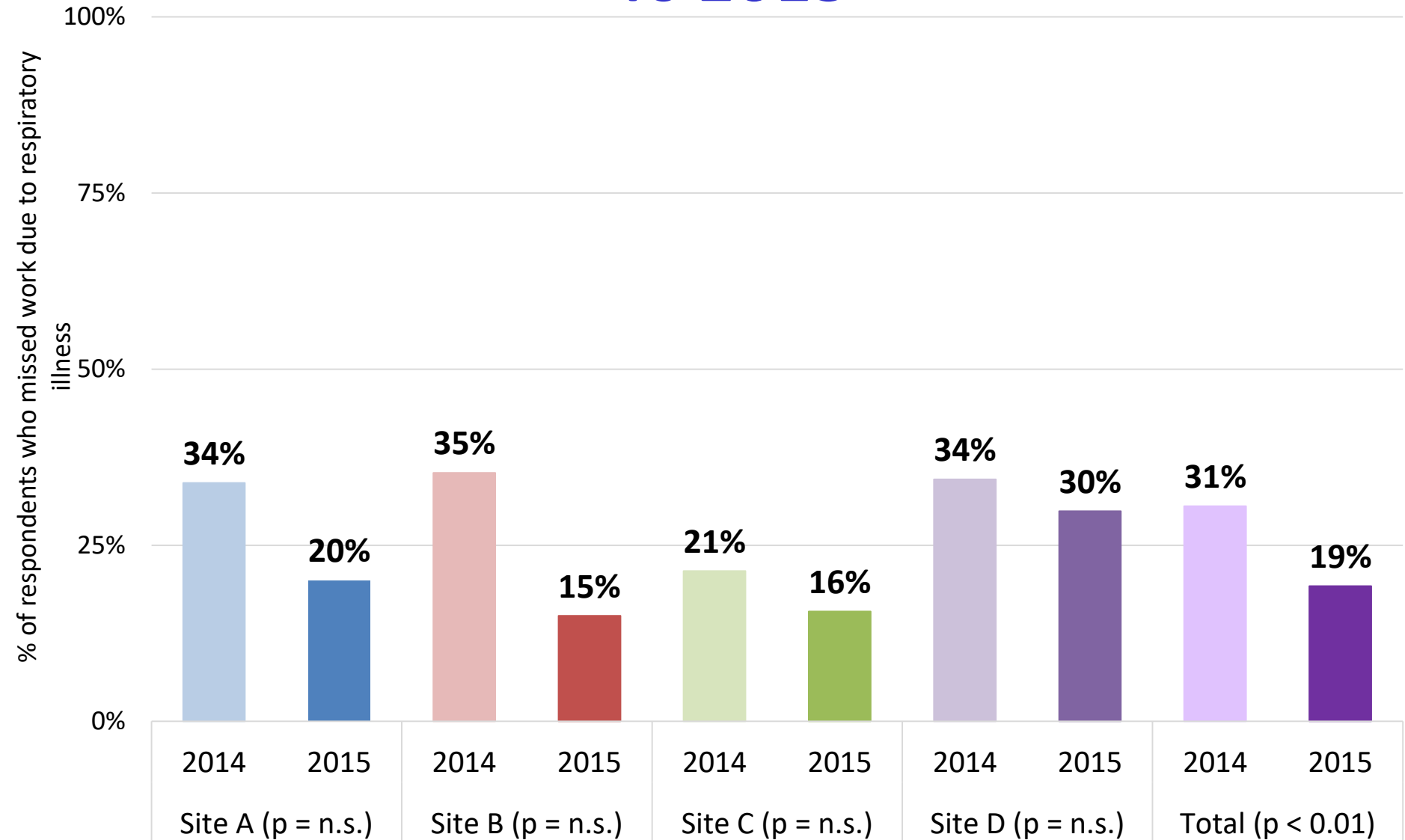
# Vaccination rates achieved by sites *for all employees*

Site	Campaign kick-off weeks	After kick-off week	October 31 <sup>st</sup>	December 10 <sup>th</sup>	Season over-all (March 31 <sup>st</sup> )
Site A	Oct. 15-22	68%	67%	89%	<b>84%</b>
Site B	Oct. 8-15	46%	73%	76%	<b>71%</b>
Site C	Oct. 1-8	97%	98%	99%	<b>96%</b>
Site D	Oct. 20-27	30%	74%	79%	<b>83%</b>

Rates include vaccination status for all employees at each facility

*Data from communications with sites and 2015 vaccination rosters*

# Absenteeism due to respiratory illness: 2014 vs 2015

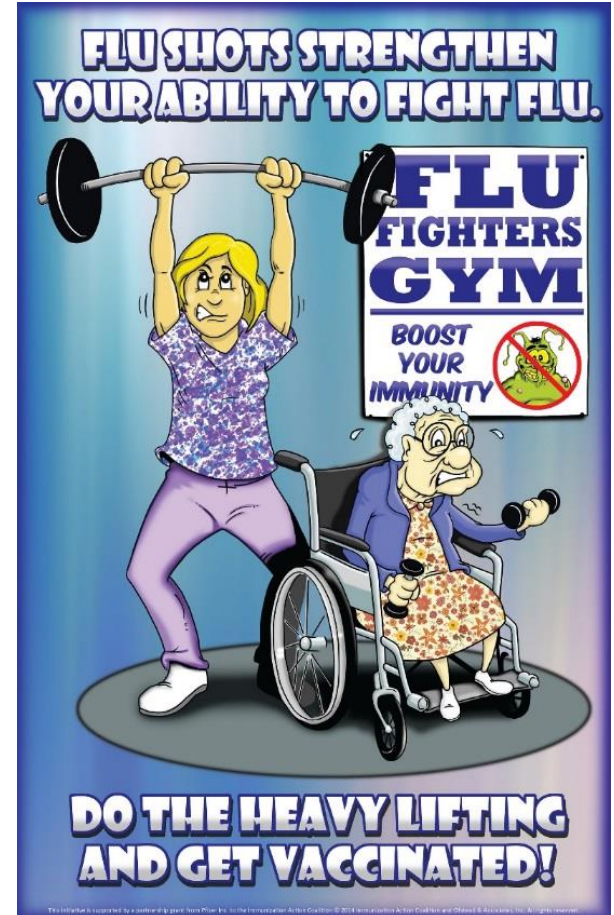
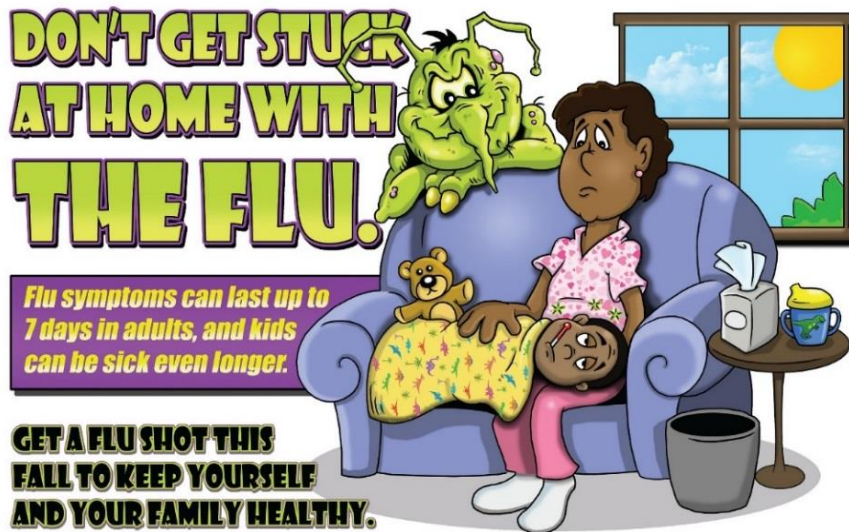


*Data from 2014 survey; n = 347; 2015 survey; n = 323*

# Quotes from 2015 interview: *What went well this year?*

“The poster piece went very well – staff looked at it, read it – same with the vaccination gauge. It was displayed in a common area where everyone could see it.”

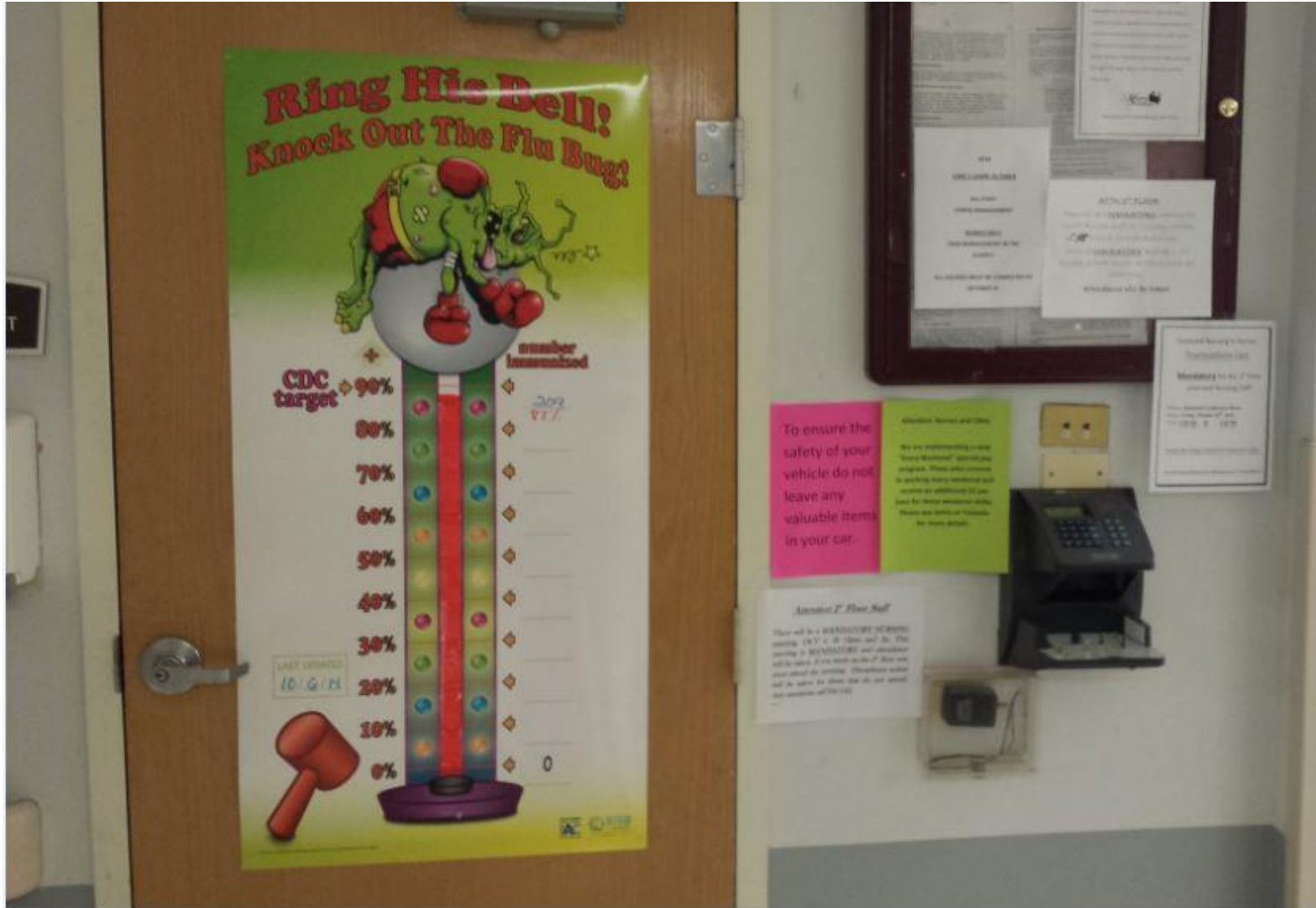
*Administrator, Site A*



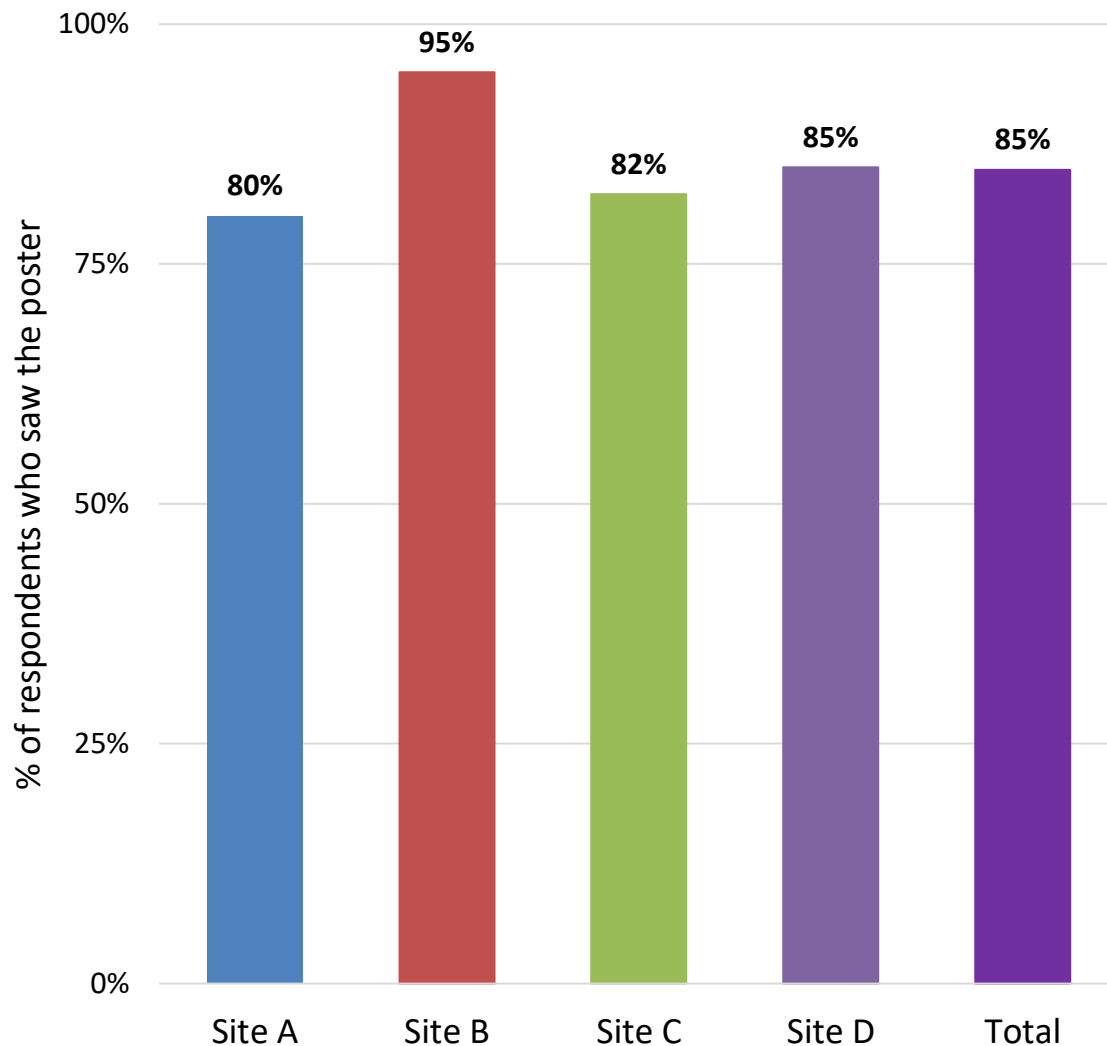
immunization  
action coalition

**IAC**  
immunize.org

# Vaccination gauge on display at Site C



# Feedback on educational posters: *“Meet your new co-worker”*



Data from 2015 survey, n = 241 (respondents with job tenure 6 months or less excluded)

# Key findings from the study

- It is possible to “move the needle” on HCP vaccination:
  - Increased the vaccination rates at all sites
  - Found reductions in illness and absenteeism
  - Observed a positive impact on vaccine advocacy by staff
- Factors contributing to success:
  - Engagement from leadership staff
  - Clear goals and strong policies
  - Improved tracking mechanisms
  - Materials customized for LTCFs
  - External support and accountability
- Each LTCF is unique, and results varied across sites

# Challenges identified

- High LTCF staff turnover impacts:
  - Vaccination rate accuracy
  - Program sustainability
- Resources limitations and competing priorities in LTCFs
- Entrenched misconceptions:
  - Persistent belief that vaccines cause flu or side effects
  - Newly reinforced belief that vaccines don't work
- Intention to receive vaccination remains lower than 90%

# Conclusions from the Study

- A customized toolkit “moved the needle” on HCP vax
- HCP vaccination associated with less illness/absenteeism
- Educational program increased vaccine advocacy by staff
- Administrators plan to continue using program elements
- But challenges remain in LTCF settings:
  - Limited resources
  - Competing priorities
  - Staff turnover
  - Misconceptions
  - Need for program customization
  - Sustainability

# For Our Consideration Today...

1. How can the group disseminate the information/ be a champion of flu vaccination of HCP on a larger scale?
2. How can we reach LTCFs that aren't implementing best practices?
3. What are gaps in resources/tools that currently exist?
4. As leaders in this area, what can we do to move the needle nationally?

- **Additional Slides**

# The Healthcare Worker in Immunization

- Sustaining the healthcare infrastructure
- Protecting the patients
- Protecting themselves and their families
- Role modeling the importance of vaccination to their patients

# Nosocomial influenza outbreaks can disrupts healthcare provision

- A study in an internal medicine unit in Marseille, France described a nosocomial influenza outbreak in 1999
  - Study participants: 23 patients; 22 staff
  - Attack rate: 41% in patients; 23% amongst staff
- Impact on healthcare provision
  - Staff absence: 14 person-days of sick leave
  - Scheduled admissions: 8 postponed
  - Emergency cases: all admissions suspended for 11 days
- Impact on the healthcare institution
  - *Outbreak cost: \$34,179*
  - *Outbreak cost per infected patient: \$3,798*

# Immunizing Health Care Workers - It's a patient safety issue!

- In one randomized controlled trial of influenza vaccination of HCP, 26% of unvaccinated HCP had documented serologic evidence of influenza infection; 42% could not recall having any respiratory infection<sup>1</sup>
  - Asymptomatic carriers can infect others, particularly immunocompromised patients
- Over 12 years in one hospital, vaccination coverage increased from 4% to 67%<sup>2</sup>
  - Laboratory-confirmed influenza cases among HCP decreased from 42% to 9%
  - Nosocomial cases among hospitalized patients decreased 32% to 0 (p<0.0001)

1. Wilde et al., JAMA 1999;281:908–13

2. Salgado et al., Inf Cont Hosp Epi 2004;25:923-82

# Immunizing Health Care Workers - It's a patient safety issue!

- Two randomized controlled trials evaluated impact of HCP influenza vaccination on residents in nursing homes<sup>1,2</sup>
  - > 40% decrease in overall mortality among residents in the setting of high employee vaccination levels, regardless of patient vaccination levels
- Improvement in facilities that offered the vaccine onsite, free of charge, and more than just once, however...<sup>3</sup>

1. Carman et al., *Lancet* 2000;355(9198): 93—7.
2. Potter, et al., *J Infect Dis.* 1997;175:1-6.
3. *MMWR*, August 19, 2011 / 60 (32), 1073-1077.

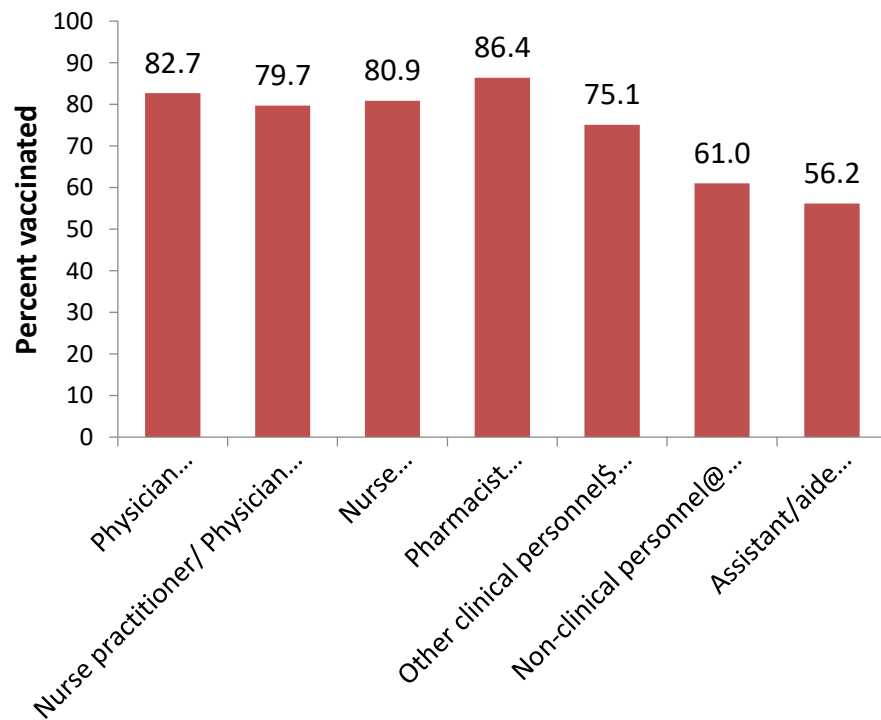
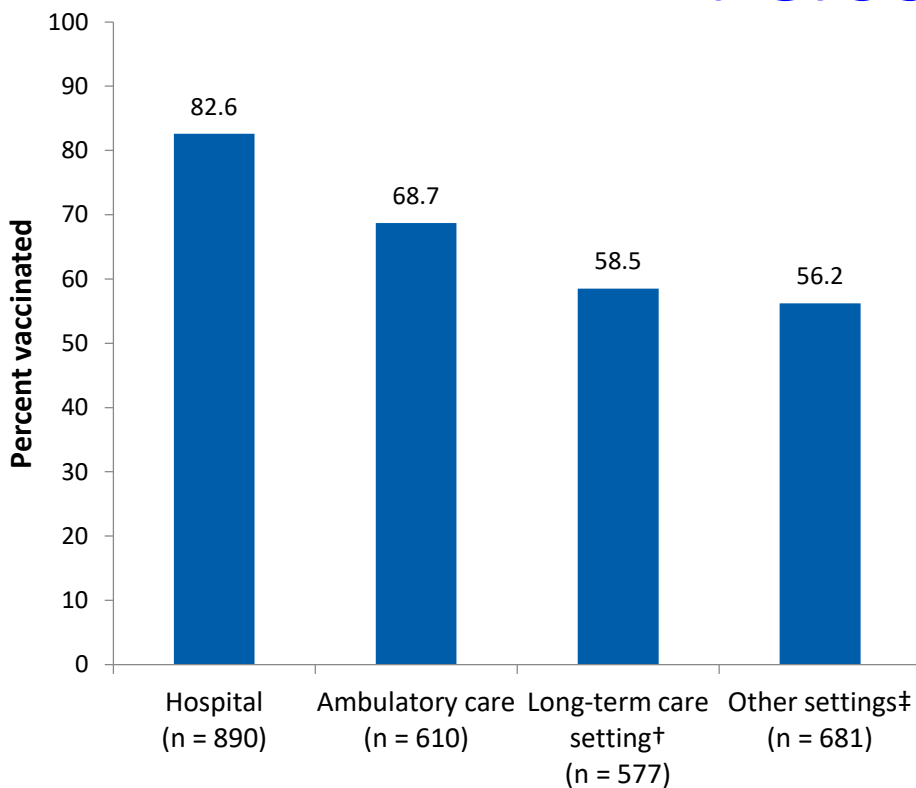
# Vaccinating Health Care Workers - Improving patient outcomes

- In a UK study in 44 care homes (2604 residents)<sup>1</sup>
  - 48.2% of staff vaccinated in intervention homes vs 5.9% in control homes
  - Significantly better outcomes in residents of intervention homes during influenza activity (with no significant differences during following very mild influenza season)
    - *Fewer deaths (8.2 staff vaccinations needed to prevent 1)*
    - *Lower rates of influenza-like illness (4.5 staff vaccinations needed to prevent 1)*
    - *Lower rates of physician consultations for ILI (5.8 staff vaccinations needed to prevent 1)*
    - *Lower rates of hospital admissions with ILI (20.4 staff vaccinations needed to prevent 1)*

# Vaccination may be beneficial for workers and health systems

- Study in teaching hospital during winter 2002-3
- Beneficial outcomes among vaccinated health workers (n=423) vs non-vaccinated (n=423)
  - Significantly lower influenza-like illness prevalence (15% vs 24%;  $p < 0.001$ )
  - Fewer working days lost for ILI (315 vs 516)
- Overall cost-benefit ratio = 4.5

# Early Season 2017-2018 Influenza Vaccination Coverage – Healthcare Personnel#



# Internet Panel Survey, United States, November 2017

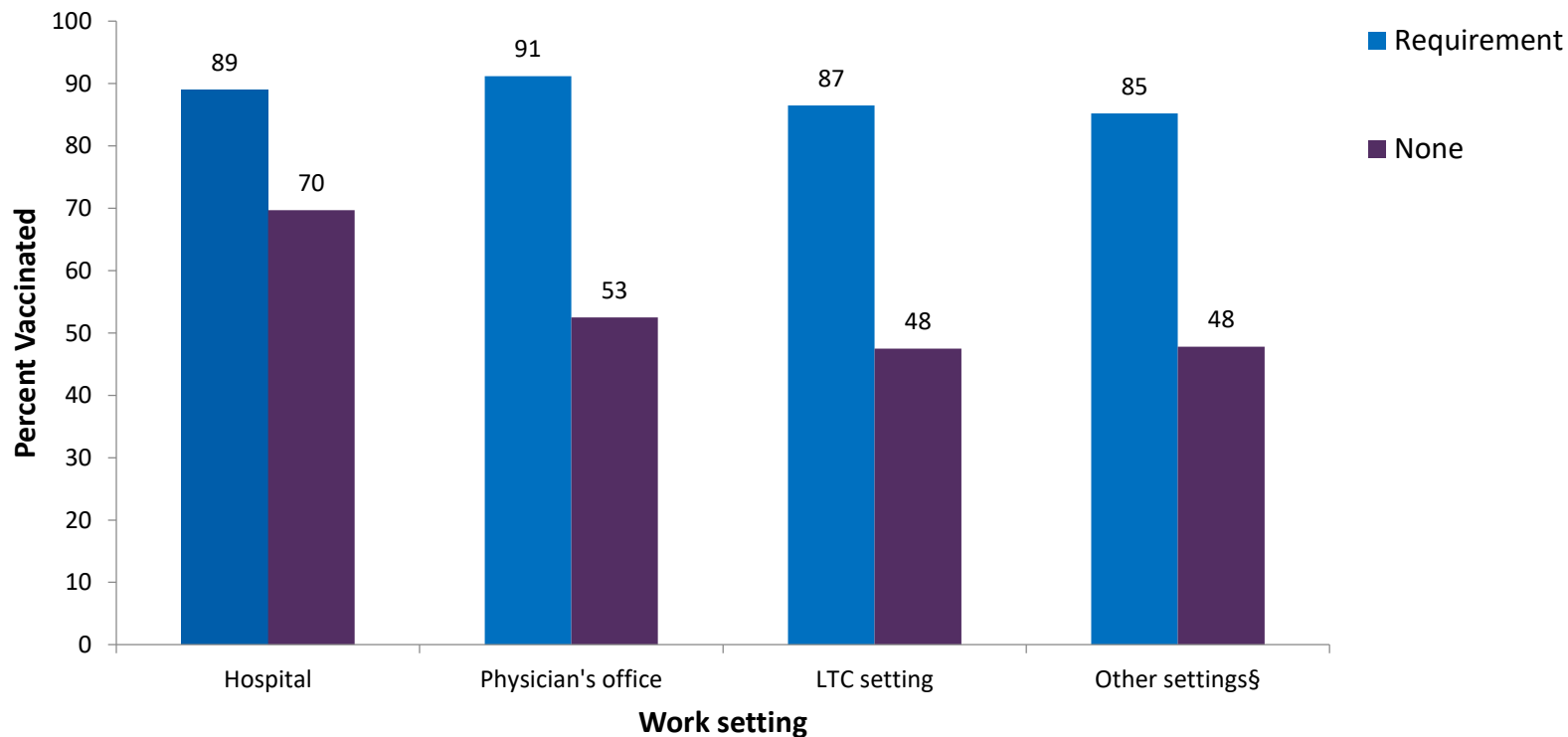
† Nursing home, assisted living facility, other long-term care facility, home health agency or home health care.

‡ Settings other than hospitals, ambulatory care setting, or long-term care facilities; includes dentist office or dental clinic, pharmacy, EMS, and other settings where clinical care or related services was provided to patients.

\$ Allied health professional, dentist, technician, or technologist.

@ Administrative support staff or manager and nonclinical support staff (including food service workers, housekeeping staff, maintenance staff, janitor, and laundry workers).

# Impact of Employer Policy on Healthcare Personnel Vaccination (by setting)\*

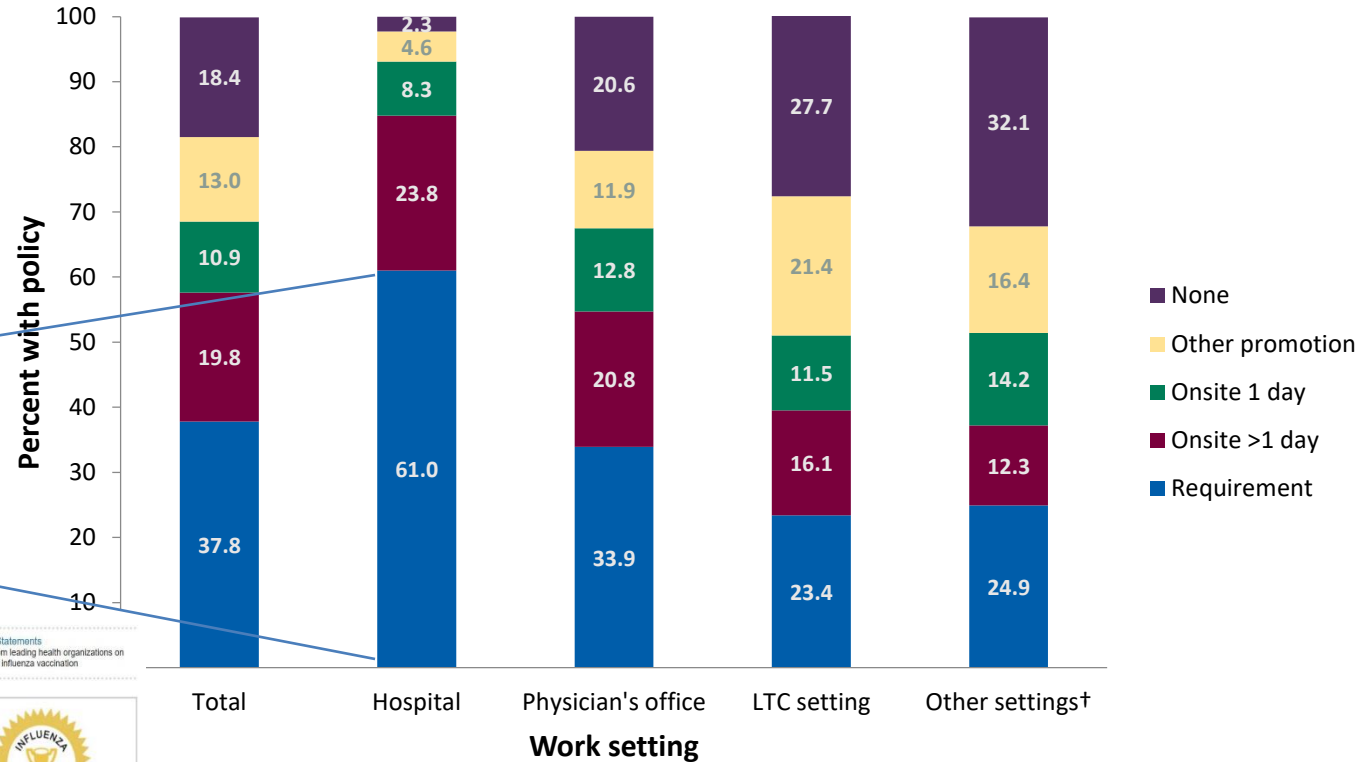


\* Respondents could select more than one work setting.

† Estimate unreliable because sample size <30.

§ Settings other than hospitals, ambulatory care setting, or long-term care facilities; includes dentist office or dental clinic, pharmacy, EMS, and other settings where clinical care or related services was provided to patients.

# Healthcare Personnel Vaccination Policy by Setting\*



More than 500 organizations!

Work setting

† Settings other than hospitals, ambulatory care setting, or long-term care facilities; includes dentist office or dental clinic, pharmacy, EMS, and other settings where clinical care or related services was provided to patients

\* Internet Panel Survey, United States, 2015-16 Influenza Season



IAC Home | Honor Roll | Influenza Vaccination HCP Honor Roll | Honorees

## Influenza Vaccination Honor Roll

Honorees with Influenza Vaccination Mandates															
AL	AK	AR	AZ	CA	CO	CT	DC	DE	FL	GA	HI				
ID	IL	IN	IA	KS	KY	LA	ME	MD	MA	MI	MN				
MS	MO	MT	NE	NV	NH	NJ	NM	NY	NC	ND	OH				
OK	OR	PA	RI	SC	SD	TN	TX	UT	VT	VA	WA				
WV	WI	WY	U.S. Territories												

Alabama [Back to top](#)

**HOSPITAL AND HEALTHCARE SYSTEM MANDATES**  
 Baptist South Medical Center, Montgomery, AL  
 Implementation date: October 1, 2014

Cullman Regional Medical Center, Cullman, AL  
 Implementation date: October 1, 2011

**MEDICAL PRACTICE AND PHARMACY MANDATES**  
 Cullman Family Practice, Cullman, AL  
 Huntsville Pediatric Associates, Huntsville, AL

Position Statements  
 Policies from leading health organizations on mandatory influenza vaccination

Apply for the Influenza Vaccination Honor Roll  
 Fill out this online form to tell IAC about influenza vaccination mandates in your healthcare setting  
 \* Apply Now \*

Federal Mandates  
 U.S. Department of Defense: Policy for Mandatory Influenza Vaccination  
 Requirements for civilian healthcare personnel who provide direct patient care in DoD military treatment facilities.  
 Implementation date: April 4, 2008

# Immunizing Health Care Workers

- Failure of Health Belief model?
  - Many facilities do not achieve HP 2020 goals
- Ecological models need to be considered
  - Mandates demonstrate 90+% coverage
    - Make influenza immunization a condition of employment
    - Virginia Mason Hospital, Seattle – 96% coverage
    - Children’s Hospital of Philadelphia – 99.6% coverage
  - Mandates require strong leadership messaging and partnership with all HCP, and a consistent focus on the goal of patient safety and welfare consistent with the ethics of the healthcare professions
    - HCW have an ethical obligation to be vaccinated but need to consider personal autonomy arguments

# NVAC February 2012 HCW Influenza Recommendations

- US National Vaccine Advisory Committee (NVAC)
  - Advises the Assistance Secretary of Health for the United States on immunization policy
- NVAC issued recommendations February 2012 on HCW influenza immunization
  - Recommendations followed lengthy working group process
  - Recommendation on employment requirement adopted by NVAC unanimously

# NVAC Recommendation 1:

- NVAC recommends that Health Care Employers (HCE) and facilities establish comprehensive influenza infection prevention programs which include education of HCP as a key component. Comprehensive influenza infection prevention plans are recommended by the CDC as an essential step for all HCE and facilities to achieve the Healthy People 2020 influenza vaccine coverage goal.

## NVAC Recommendation 2:

- NVAC recommends that HCE and facilities integrate influenza vaccination programs into their existing infection prevention programs or occupational health programs.

# NVAC Recommendation 3:

- NVAC recommends ... efforts to standardize the methodology used to measure HCP influenza vaccination rates across settings
  - Provides comparable data to better improve rates and move facilities towards 90% vaccination
  - Standardized methodologies to measure HCP influenza vaccination rates across health care settings are available
    - National Quality Forum
    - Centers for Medicare and Medicaid Services

## NVAC Recommendation 4:

- For those facilities that have implemented Recommendations 1, 2 and 3 above and still have not consistently achieved the Healthy People 2020 goal for influenza vaccination coverage of HCP in an efficient and timely manner, **NVAC recommends that HCE strongly consider an employer requirement for influenza immunization.** In addition to medical exemptions, facilities may consider other exemptions in their requirement policies.

# Thoughts on NVAC Recommendation 4

- Employer Requirements require HCP to be vaccinated against influenza. They may or may not include exemptions (other than medical exemptions) and they may or may not define consequences for non-compliance
  - NVAC does not stipulate the scope and content of employer requirements; these decisions should be made by the facility
- Rationale: Maintains flexibility for facilities to implement policies based on local resources, patient safety, available expertise, labor concerns, and increase needed to reach a 90% vaccination rate

# Thoughts on NVAC Recommendation 4

- NVAC felt that this recommendation is necessary and appropriate because:
  - Patient health and safety should be considered infection control standards and an ethical responsibility of HCP and HCE
  - Vaccination rates have remained suboptimal and below 90% using voluntary methods

# Considerations for Implementing Employer Requirements

- Requires sufficient resources and leadership support to implement and sustain vaccination policies
- Requires the ongoing understanding and ability to address the concerns of health care workers
- Willingness to provide necessary and on-going education and support
- Labor concerns- Employer requirements may be subject to the collective bargaining process

# Worksite Interventions to Promote Seasonal Influenza Vaccinations among Healthcare Personnel (HCP)

Intervention	Status of Task Force Review
<b>Interventions with on-site, free, actively promoted vaccinations</b>	<b>Recommended</b>
<b>Interventions with actively promoted, off-site vaccinations</b>	<b>Insufficient Evidence</b>

<http://www.thecommunityguide.org/vaccines/index.html>

# Immunizing Health Care Workers

- Protecting themselves and family
  - Time lost from work – influenza disease generally results in 3 days lost from work\*
  - That is also 3 days lost from the family
  - Complications from influenza include:
    - Bacterial pneumonia
    - Ear infections
    - Sinus infections
    - Dehydration
    - Worsening of chronic medical conditions (e.g., CVD, asthma, or diabetes)
    - Children particularly vulnerable...

\*Keech, M. et al. *Pharmacoeconomics*. 2008;26(11):911-24.

# An Influencer and Role Model!

- The healthcare worker recommendation is the most important reason why a patient receives influenza immunization
  - Pregnant women receiving a healthcare professional recommendation:<sup>1</sup>
    - 5 times more likely to be vaccinated
    - More likely to have positive attitudes about the effectiveness of influenza vaccination, the safety of influenza vaccination, and the safety of influenza vaccination for their fetus
  - For parents who immunize their children, one of the most important positive predictors is a physician's recommendation.<sup>2</sup>
  - 44% of adults >65 who did not intend to get vaccinated will if they received a recommendation from their physician

1. MMWR, August 19, 2011 / 60 (32), 1073-1077.

2. Daley MF, Crane LA, Chandramouli V, et al. Pediatrics 2006; 117(2): e268 -e277.

3. NFID National Influenza Adult consumer Survey

**Thank You!**