

# **Implementation of a Successful Seasonal Influenza Vaccine Strategy in a Large Healthcare System**

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# Influenza Is the Leading Cause of US Vaccine-Preventable Disease Deaths

## VPD Cases & Deaths, US 1989-1998

<b>Disease</b>	<b>Cases</b>	<b>Deaths</b>
<b>Influenza</b>	<b>(millions)</b>	<b>~500,000</b>
Pneumococcal diseases	(millions)	~120,000
Hepatitis A	282,650	1013
Hepatitis B	146,644	9694
Measles	60,189	132
Mumps	24,075	7
Rubella	4412	21
Pertussis	53,634	65
Tetanus	486	77

CDC. *MMWR*. 2006;55:511-515.

Thompson W et al. *JAMA*. 2003;289:179-186.

Felkin D et al. *Am J Public Health*. 2000;90:223-229.

# The Inconvenient Truths

- **Influenza is the leading cause of vaccine-preventable deaths in the US**
- **Influenza vaccines are safe and effective**
- **Influenza can be transmitted by both symptomatic and asymptomatic healthcare workers (HCWs)**
- **Hospitalized patients can have increased length of stay and severe life-threatening illnesses as a result of influenza transmission from HCWs**
- **Up to 25% of HCWs have evidence of influenza each season**
- **50% of HCWs who have influenza infections are asymptomatic or have only minor symptoms**
- **Influenza vaccination of HCWs has demonstrated decreased HCW illness, absenteeism, and mortality**
- **Influenza vaccination rates among HCWs remains unacceptably low**
  - **CDC 39% in 2008; RAND sample – 49% in 2009**

## **Interventions to Improve Healthcare Influenza Vaccination Rates**

- **Education**
- **Free vaccine**
- **Improving Access & Convenience**
  - **Mobile carts**
  - **Extended hours**
- **Incentives**
- **Declination form acknowledging education about benefits and risks to selves and patients**
- **(Rarely to date) Mandatory vaccination**

**Table 1. Relative Impact of Various Strategies on Health Care Worker Influenza Vaccination Coverage**

Intervention and study	Preintervention immunization rate, %	Postintervention immunization rate, %	Overall change in vaccination rate, %	Randomized, controlled trial of intervention	Implemented with other interventions
<b>Declination</b>					
Polgreen et al [23]	54	65	+11	No	Yes
Bertin et al [25]	38	55	+17	No	Yes
Ribner et al [27]	43	65	+22	No	Yes
<b>Mandatory vaccination</b>					
Virginia Mason [37]	30	98	+68	No	Yes
BJC HealthCare [39]	71	99	+28	No	Yes
<b>Education and promotion</b>					
Harbarth et al [31]	13	37	+24	No	Yes
Thomas et al [32]	8	46	+38	No	Yes
<b>Mobile cart</b>					
Sartor et al [29]	7	32	+25	No	Yes
Cooper et al [30]	8	49	+41	No	Yes
Incentives (raffle) [35]	38 <sup>a</sup>	42	NS	Yes	Yes
Educational letter from leadership [35]	38 <sup>a</sup>	39	NS	Yes	Yes
On-site expert education [33]	21 <sup>a</sup>	22	NS	Yes	Yes

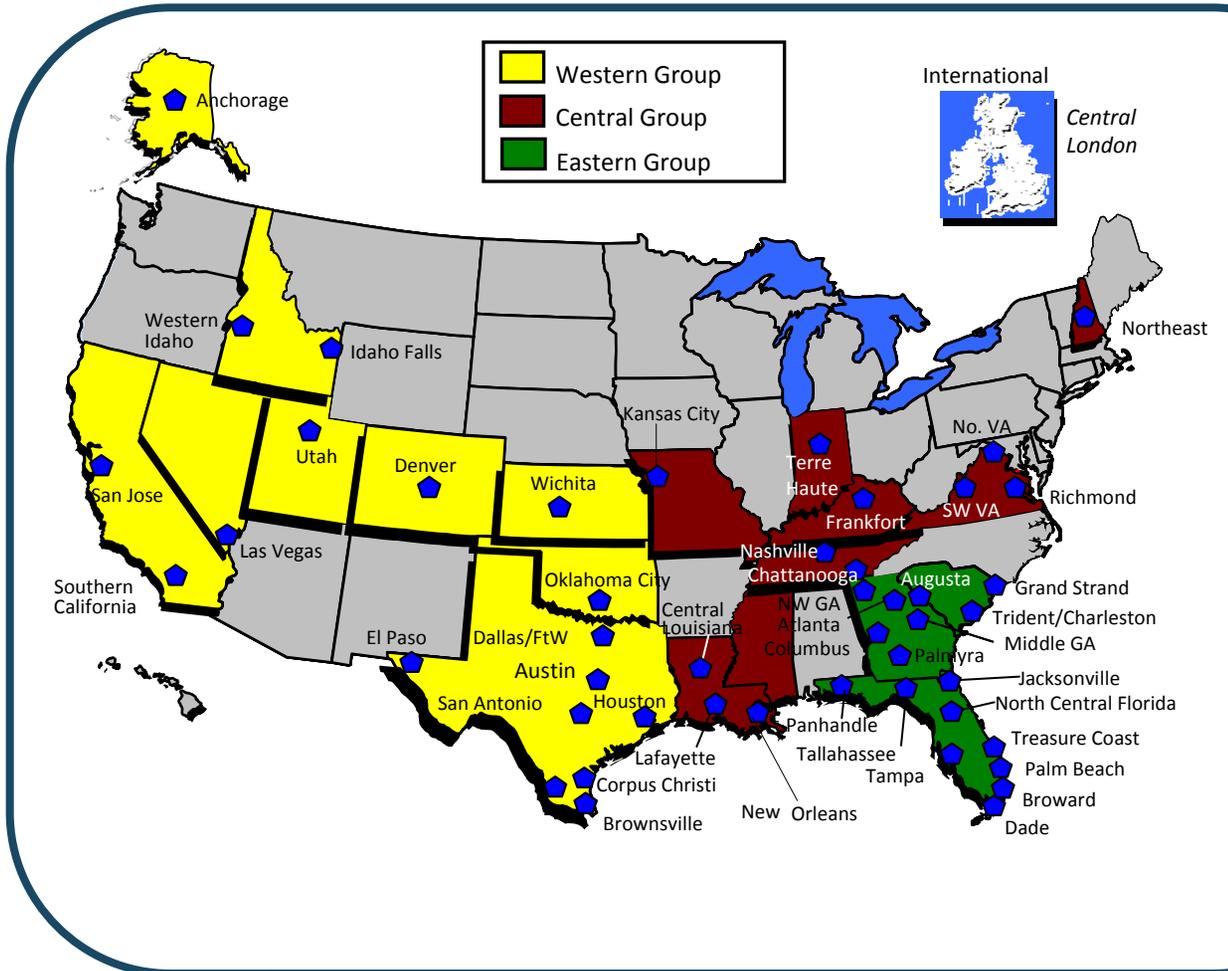
**NOTE.** NS, nonsignificant.

<sup>a</sup> Rate from nonintervention arm of concurrent randomized trial of intervention.

TABLE 2. Number and percentage of health-care personnel\* who reported their employer has a policy† for vaccination against seasonal influenza or 2009 pandemic influenza A (H1N1), by policy requirement — United States, January 2010

Employer policy	Reported policy			Vaccinated			
	No.	%	(95% CI <sup>§</sup> )	%	(95% CI)	Relative risk <sup>¶</sup>	(95% CI)
All health-care personnel	1,417	100.0					
Seasonal influenza vaccination**							
Required	163	11.1	(8.4–13.8)	97.6	(95.4–99.8)	2.6	(2.0–3.4)
Recommended	957	65.4	(61.1–69.7)	64.5	(61.1–69.7)	1.7	(1.3–2.2)
Neither	293	23.5	(19.4–27.5)	23.5	19.4–27.5)	Referent	Referent
2009 H1N1 influenza vaccination**							
Required	110	8.4	(5.8–11.0)	87.0	(75.3–98.7)	7.8	(4.8–12.7)
Recommended	917	61.8	(57.4–66.2)	43.0	(37.9–48.1)	3.9	(2.4–6.2)
Neither	377	29.8	(25.5–34.0)	11.3	(6.1–16.4)	Referent	Referent

# HCA Footprint



Accounted for approximately 5% of major hospital service in U.S.:

- Admissions > 1.5 million
- Patient Days > 7.6 million
- Deliveries > 0.23 million
- Total Surgeries > 1.3 million
- ED Visits ~ 6 million

- 163 hospitals , 112 freestanding surgery centers, and 400 physician practices in 23 states and England
- Hospitals range from complex tertiary referral & academic medical centers to urban and suburban community medical centers
- ~ 194,000 employees
- 35,000 affiliated physicians
- More than 38,000 licensed beds
- ~ 150,000 Health Care Workers

## **Rationale for HCA “ILI Bundle”**

- **2008-2009 influenza season varied from 20%-74% among facilities, with a mean of 58%**
  - **History of progressively increasing “usual approaches” including, education, free vaccine, mobile carts, and declination forms, etc.**
  - **Rate of 58% unacceptable to provide adequate protection to patients**
- **HCA believed that influenza vaccination of HCWs is a key patient safety issue, and is ethically and scientifically sound**
  - **In addition to goal of universal influenza vaccination of all health workers, developed “ILI Bundle”**

## **HCA's Mandatory Patient Safety Policy for Seasonal Influenza**

- 1. Best approach to avoiding & spreading seasonal flu-and spreading is getting a seasonal flu vaccination**
- 2. All employees were eligible for free influenza vaccine**
- 3. Employees whose routine job duties provided an opportunity to infect patients or be infected by patients were required to be vaccinated**
- 4. If vaccination was not appropriate because of medical, religious, or for philosophical reasons, the employee was required to wear a surgical mask in proximity (6 feet) of patients or reassigned to a non-patient contact area**

## Results: Seasonal Flu Vaccination



- **> 96% of HCA healthcare workers (over 160,000) were vaccinated by November 1, 2009, and the remaining ~ 3 percent are wearing masks, supporting HCA's goal of 100 percent patient safety.**

## Reasons for Declination

### Reasons (Includes non-clinical employees)

• Allergy*	848
• Contraindicated**	424
• Fear	255
• Pregnancy***	85
• Other/philosophical	6,611

**Total** **8,478**

\* Egg allergy not tested

\*\* Includes Gullian-Barre, but most often not specified

\*\*\* Given as reason, despite counsel

# Key Success Factors

- **Enterprise-wide initiative**
  - **Core multi-disciplinary “influenza team”**
    - ID, ICP, Nursing, Pharmacy, HR, Emergency Management, Communications & Marketing
- **Evidence-based & best practice approach**
- **Proactive Communications**
  - Intranet-based educational resources
  - National “Flu e-mail” account for questions
  - Site visits by influenza team members
  - Influenza update newsletter (internal “Flu-View”)
    - N.B.: Supported CDC, HHS Flu-tracking
- **Enterprise-wide software to track immunizations**
- **Senior management leadership and courage**

## **Lessons Learned**

- **Misconceptions about seasonal influenza vaccine**
- **Local leadership plays an important role**
- **Confusion between 2009 H1N1 and seasonal influenza**
- **Delayed delivery of seasonal influenza vaccine added confusion**
- **Confusion on when unvaccinated employees should wear a surgical mask**
- **H1N1 debate on mask versus respirator efficacy**

- **Universal HCW influenza vaccination is a patient safety issue; it**
  - **Protects patients**
  - **Protects HCW**
  - **Protects the institution**
  - **Protects the community**
- **Time to discuss balance of patient rights and HCW rights**
  - **Evidence shows this is a patient safety issue**
- **The challenge is not whether to vaccinate, but how to ensure patient safety**
- **The health care community has an ethical and professional obligation to protect at risk patients from vaccine preventable diseases**
- **Demonstration that 100% compliance can be achieved across systems that is highly representative of U.S. health care**

# **SHEA Position Paper: Influenza Vaccination of Healthcare Personnel**

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**For the safety of both patients and HCP, SHEA endorses a policy in which annual influenza vaccination is a condition of both initial and continued HCP employment and/or professional privileges**