Pathways and Pitfalls: Implementing an Employer Vaccination Requirement in a Large Healthcare System

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Immunizing Healthcare Workers: What Works & Why Does it Matter?

- Deliver Care Where Most Adults Spend Most of Their Time
- Improve Productivity
- Improve Employee Satisfaction
- Vaccines are cost-effective, safe, and profoundly under-utilized
- Improve Adult Immunization Rates
- Benefit employees, employers, communities, families
Immunizing Healthcare Workers: What Works & Why Does it Matter?
Immunizing Healthcare Workers: What Works & Why Does it Matter?
Immunization Achievements

- 20th Century Success
- Passive protection
- Life expectancy
- Healthcare costs
- Hospitalizations
- M &M
- Absenteeism
- Childhood
- Adult
Immunization Achievements

with smallpox. Public Health Images Library (PHIL) ID # 3. Source
Anti-Vaccine Movements

- Benign disease
- Vaccine doesn’t work
- Disease from vaccine
- Class Warfare
- Profit Motive
- Civil Rights
- Medical Hubris
- Clean Bodies
Burden of Adult Vaccine-Preventable Diseases

- **Invasive pneumococcal disease (IPD)**
  - 39,750 total cases and 4,000 total deaths in 2010
    - 86% of IPD cases and nearly all IPD deaths among adults

- **Pertussis (also known as whooping cough)**
  - ~28,000 cases per year for 2013 and 2014
    - ~9,000 among adults

- **Hepatitis B**
  - 3,350 acute cases reported 2010
    - 35,000 estimated cases

- **Zoster (also known as shingles)**
  - About 1 million cases of zoster annually U.S.

- **Influenza disease burden varies year to year**
  - Millions of cases and >200,000 hospitalizations annually with >75% among adults
  - 3,000-49,000 deaths annually, >90% among adults

NATIONAL ADULT IMMUNICAATION AND INFLUENZA SUMMIT. 2016
Adult & HCP Immunization

- How are we doing nationally?
- Why does it matter more for HCP?
- Consensus on decreasing risk for patients and providers
- Disagreement on how to implement workplace vaccination effectively and ethically
- Influenza vaccination is the most challenging example because it is annual
The Great Influenza

“The Great Influenza

“Epidemics appear at intervals and spread with extraordinary rapidity, so that in a few weeks an entire continent may be involved.”

– William Osler, The Principles and Practice of Medicine, 1892
INFLUENZA

Why is Flu different from all other vaccine-preventable respiratory viruses?

- Multiple hosts & high rate of genetic variability
- Multiple seasonal strains circulate globally
- New strains arise frequently, varying in severity
- Vaccines must be manufactured & given yearly
- Annual vaccine efficacy and effectiveness vary
- Vaccination is the most effective way to prevent transmission
- Vaccination can decrease transmission to patients in healthcare settings
- Vulnerable patients (elderly, infants, immune compromised) have least vaccine response
HCP and Recommended Vaccines

- Measles, Mumps and Rubella
- Varicella
- Hepatitis B
- Influenza
- Pertussis
- Meningococcal
Many vaccines are recommended for HCP
- Near Consensus
- CDC, JCAHO, SHEA, ACOEM, State DOHs

Some mandatory, some voluntary depending on healthcare settings, institutional policies, regulatory organizations, and even geographic location

My goals are to
- Present my own experience of these 2 approaches
- Describe evolution of our current Flu program
INFLUENZA VACCINE FOR HCP - Outreach and Mandates

Experience from a Large Academic Healthcare System

2004-2018
University of Pennsylvania Health System 2010

- 3 Hospitals - >21,000 employees
  - HUP 800 beds
  - PAH 500
  - PPMC 300
- 500,000 SF Ambulatory Practice/Surgery
- Outlying practices t/o SE PA
- >80,000 admissions; >2 million OPT visits
- Operational and record-keeping challenges
HCP and Vaccination 2004 onward: How were we doing with HCP?

- TDAP, HBV for all with exposure risk
- Measles, mumps, rubella, varicella for all staff
  - HCP and patients are at risk if not immune
  - Long term immunity from disease or vaccine
  - Condition of employment, assessed at hire
  - Live virus vaccines with <100% efficacy
  - Medical contra-indications: Pregnant or immune-compromised HCP
  - HCP compliance approaches 100%
  - Religious objections: rare & not accommodated for MMRV
HCP and Vaccination: How were we doing with Flu?

- Influenza
  - Killed vaccine safe, available, effective (Foppa 2015)
  - Also recommended for HCP for decades
  - Infected HCP are a risk for patients in acute & chronic care (Carman 2000, Vanhems 2011)
  - Modeling studies support similar efficacy in acute care settings (van den Dool 2008, 2009;).
  - HCP rates averaged <50% through 2004
  - Quality focus for Penn Medicine since 2004
Penn Med Voluntary Influenza Vaccine Program 2004-2006

- Free vaccine available to all HCP
- Vaccination on-site in all clinical units and non-clinical sites, all shifts
- Vaccine at cafeteria and public hospital areas
- “Flu fairs” with education, games, & incentives
- Vaccine for walk-ins in OM clinic 8-12 hours/day
- Needle-free FluMist
- Vaccination Rates <45%
- Why were staff declining vaccine?
Penn Med Voluntary Influenza Vaccine Program 2006-2007

Declination forms analyzed for HCP concerns

“Flu is not dangerous”
“The vaccine doesn’t work”
“The vaccine will make me sick”
“The vaccine isn’t safe”
“I don’t like to put foreign things into my body”
“I live a clean life so I won’t get flu”
“This is a plot against the staff”
“You must be making money from this”
Penn Med Voluntary Influenza Vaccine Program 2006-2008

- Declination forms analyzed
- Outreach & education via hospital newsletter, email, intranet, & managers’ meetings
- 2008 Flu shot music video using hospital staff
- [http://www.youtube.com/watch?v=ruGgZbAVnko](http://www.youtube.com/watch?v=ruGgZbAVnko)
HUP Voluntary Influenza Vaccine Program 2006-2008

- Results: Inadequate Improvement
  
  • <45% until 2006-07
  
  • 50% 2007-08
  
  • 54% 2008-09 (60% of clinical staff)
  
  • Barely beat the national average
Should Flu Vaccine be Required?

**Cons**

- Nobody likes being compelled – esp annually
- Threatens HCP autonomy
- May reduce efforts to educate & improve voluntary vaccination and other IC measures
- Better voluntary programs can be created
- May produce resentment and adversarial feelings
- Expensive to monitor and enforce
- Some voluntary programs have achieved >80-90% flu vaccine rates
Should Flu Vaccine be Required?

**Pros**

- There may be real limits to voluntary programs
- Even 80-90% coverage rates don’t provide maximal risk reduction
- Compliance for mandated MMRV immunity approaches 100% with negligible objections
- Early mandatory influenza vaccine programs for HCP reported >95% - doubling prior rates (*Rakita 2010; Babcock 2010*)
- HCP are generally healthy younger adults with optimal vaccine responses *in contrast to the elderly and medically fragile persons*
Should Flu Vaccine be Required?

2007-2008 - Consensus among IC and OM staff

2008 Institutional debate and discussion of mandates to enhance patient and staff safety

Early 2009 Leadership commitment
- Medical Boards - CMO
- Nursing Leadership - CNO
- Housestaff/GME
- Human Resources - CHROs
- Administration - EVP, Dean, Admin
- OGC
Should Flu Vaccine be Required?

HUP IM/EM Physician survey spring 2009 supported a mandatory vaccine policy (DeSante et al 2010)

- 90% believed HCP have an obligation to their patients to be vaccinated
- 85% believed HCP vaccination should be mandatory
- Those with more patient contact were more likely to be vaccinated, more likely to support mandates, and more likely to vaccinate their patients
Penn Med Influenza Vaccine Program 2009-2010

• New UPHS-wide policy requiring influenza vaccination for all HCP
• Scope: Staff, Physicians, Contractors, Volunteers, Students
• Resources - supported by
  – Educational programs, website
  – Interactive live and electronic Q&A
  – Exemption reviews, medical and religious
  – Multi-faceted outreach to all staff @ all locations
Penn Med Influenza Vaccine Program 2009-2010

- Exemptions: Medical & Religious
- Consequences: Masking, Admin Penalties
- Facilitating Sick Day Utilization
- Lab testing HCP with ILI
- Strict furlough for HCP with Flu/ILI
- **Coincided with H1N1 Epidemic**
- Visiting age raised
- Masking all ED patients and visitors
- Maintain protocols for future “Flu Emergencies”
Challenges
- 2 vaccines, shortages, triage/rationing
- Sub-optimal database
- Some skeptical and hostile staff
- Geographically dispersed staff

Aided by public health concerns for H1N1

Outcome: Accepted as Patient Safety/Staff Safety initiative
- 99.3% seasonal influenza
- 69% H1N1 (triaged to supply limits)
GOT THE VACCINE?

Jeff Stahler Columbus Dispatch, United Feature Syndicate
Penn Med Influenza Vaccine Program 2010-2018

- Stable level of staff objection
  - Vent Lunch
  - Voluntary exemption withdrawals
- Single vaccine; No supply issues
- Decrease in public health and media
- Accepted as Patient & Staff Safety Program
- Strong PA State support
- >98% seasonal influenza vaccination
- Exemptions stable
  - ~1% acute care
  - <2% nonclinical areas
Penn Med Influenza Vaccine Program 2010-2018

- Exemptions standardized & review simplified
  - Overall exemption rate 1.3%
  - Highest for nonclinical areas
  - Primarily medical: Increase Allergy consults

- Consequences
  - Masking dropped
  - Exempt staff transferred from high risk areas
  - Managers notified via compliance software
  - Penalties: warning, suspension, loss of raises, potential job loss
  - No terminations to date
  - Ongoing resentment but much less anxiety

- Minimal /No pushback related to annual efficacy data
Penn Med Flu Vaccines 2018-2019

- Quadrivalent injectable
  - Free of latex, thimerosal
  - Options to ensure abx allergy safety
- Flu-Mist only on request
- Egg-free Flu Blok
- High dose vaccine available for staff >65
- Calendar (adapted from years with shortages)
  - Inpatient Units and High Risk Clinical Practices
  - Mass Flu Clinics in Clinical Areas (all shifts)
  - Mass Flu Clinics in Non-clinical Areas
  - Walk-ins
  - All staff welcome at all sites at all times
CDC HCP Influenza Vaccination

*MMWR* September 2018
Conclusions, Comments, & Questions

● Are influenza vaccines for HCP effective in reducing risk for patients and staff?
  – Analysis is complicated by
    • Other similar diseases
    • Year to year variability in vaccine characteristics
    • Roles of other IC interventions
  – More difficult to demonstrate in Acute Care
  – Clearly effective in LTCFs

● Are mandates effective in raising HCP rates? YES

● Employer Requirements achievable and desirable in LCTFs
Influenza Hospitalizations 2005-2018

The cumulative number of hospitalizations for flu, per 100,000 people.
FLU SEASON

IS COMING
Questions & Comments?