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?

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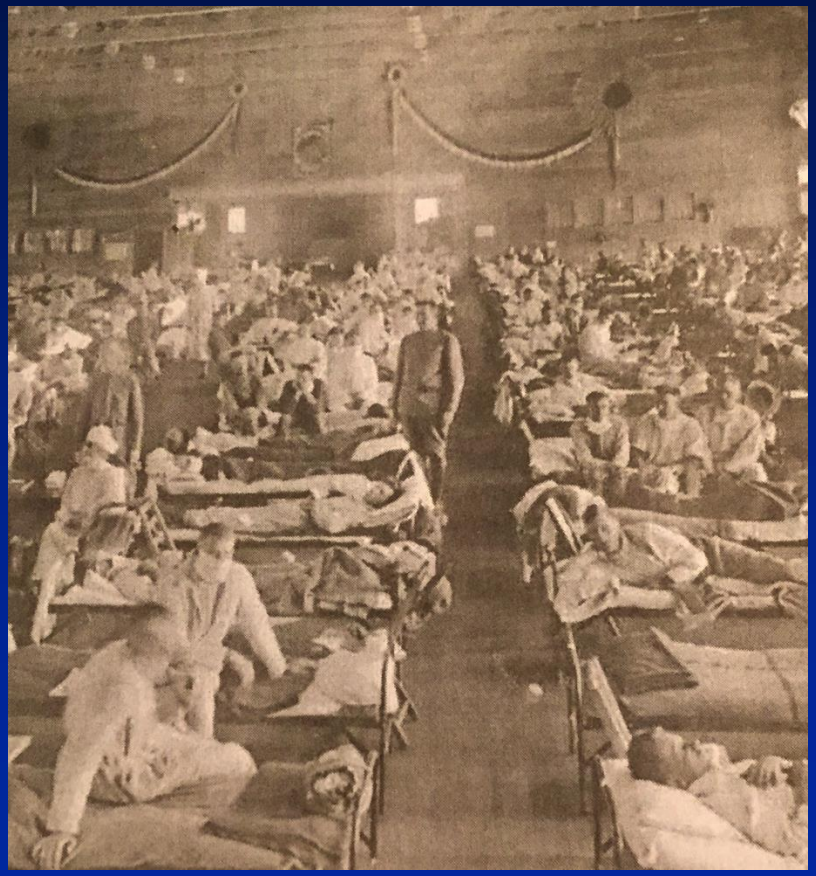
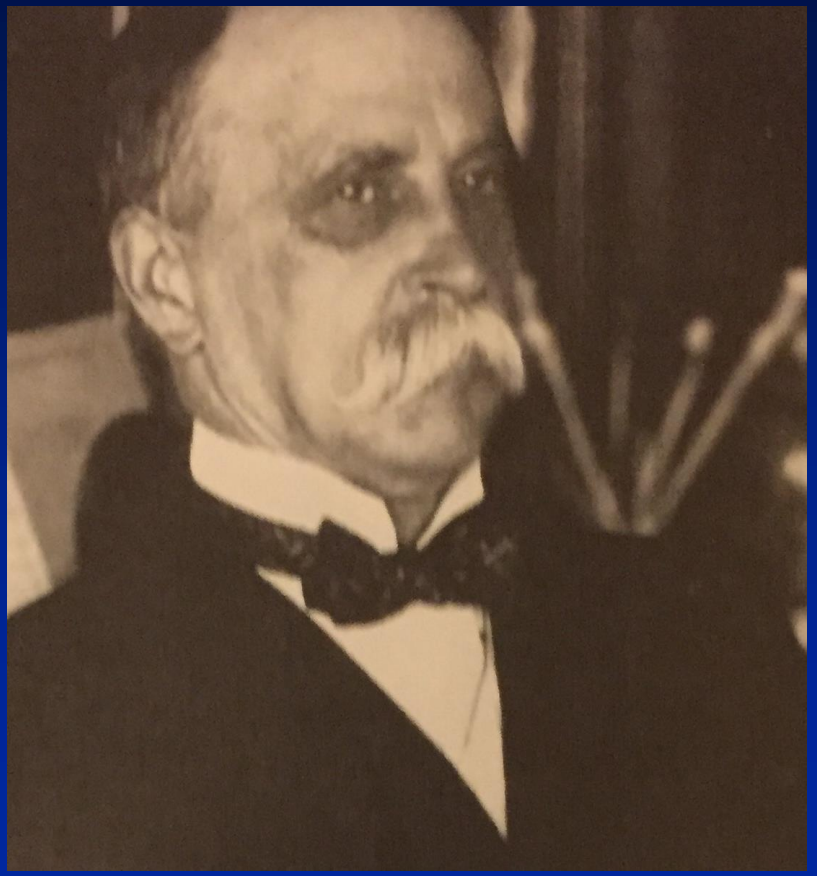
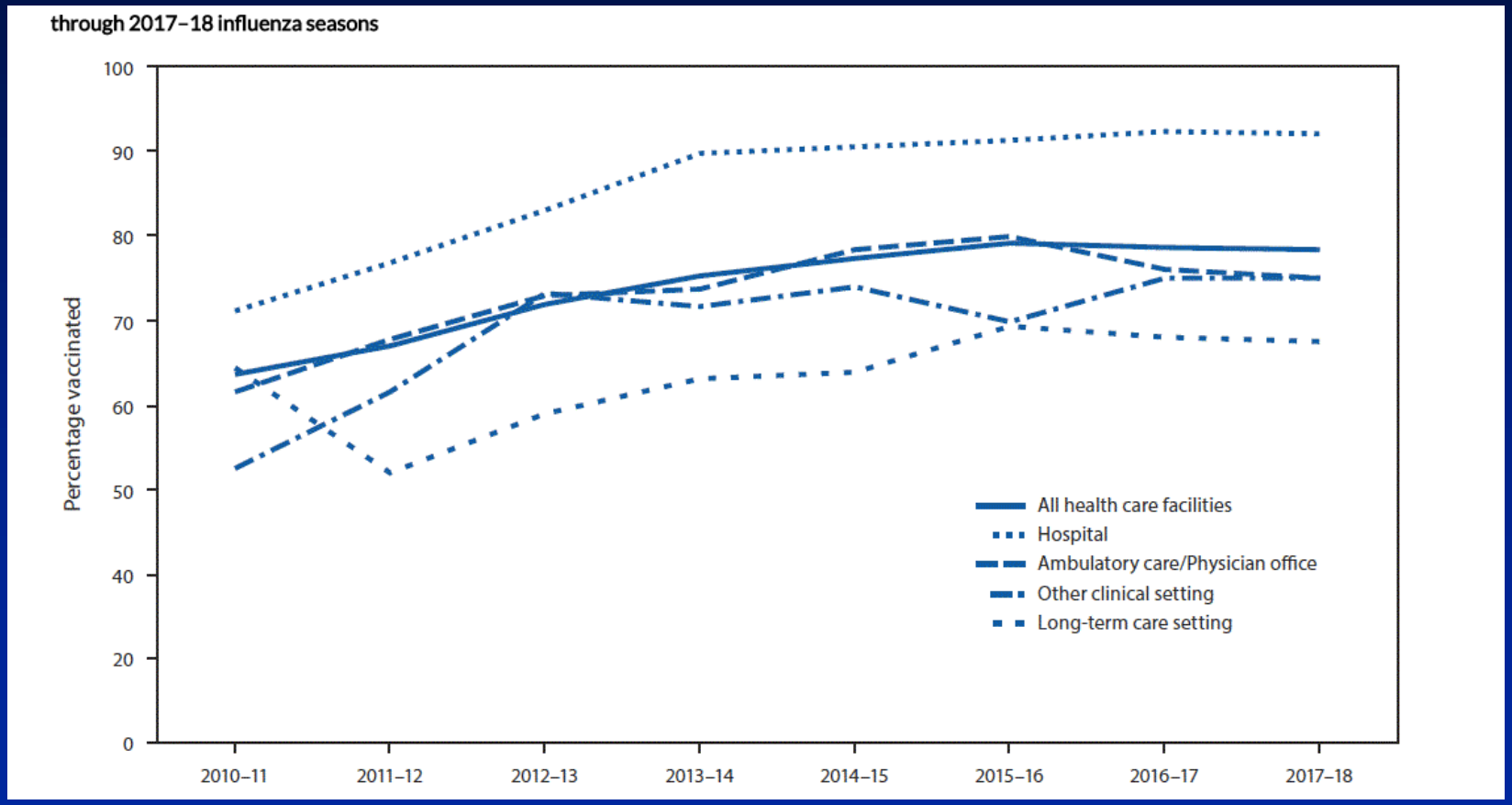




CDC HCP Influenza Vaccination

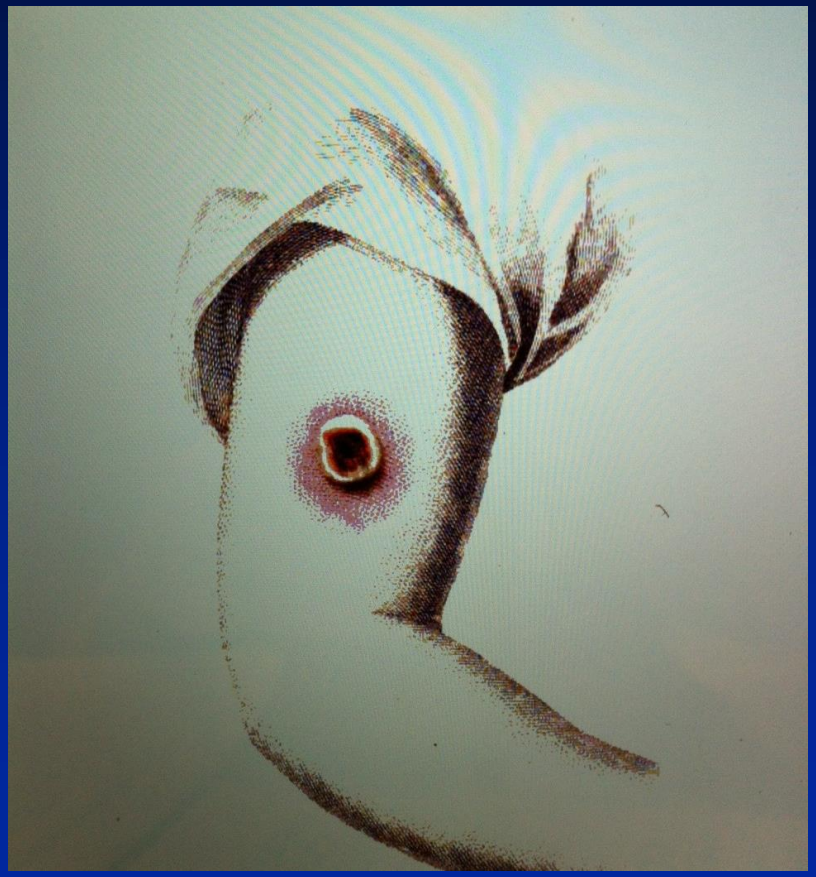
MMWR September 2018

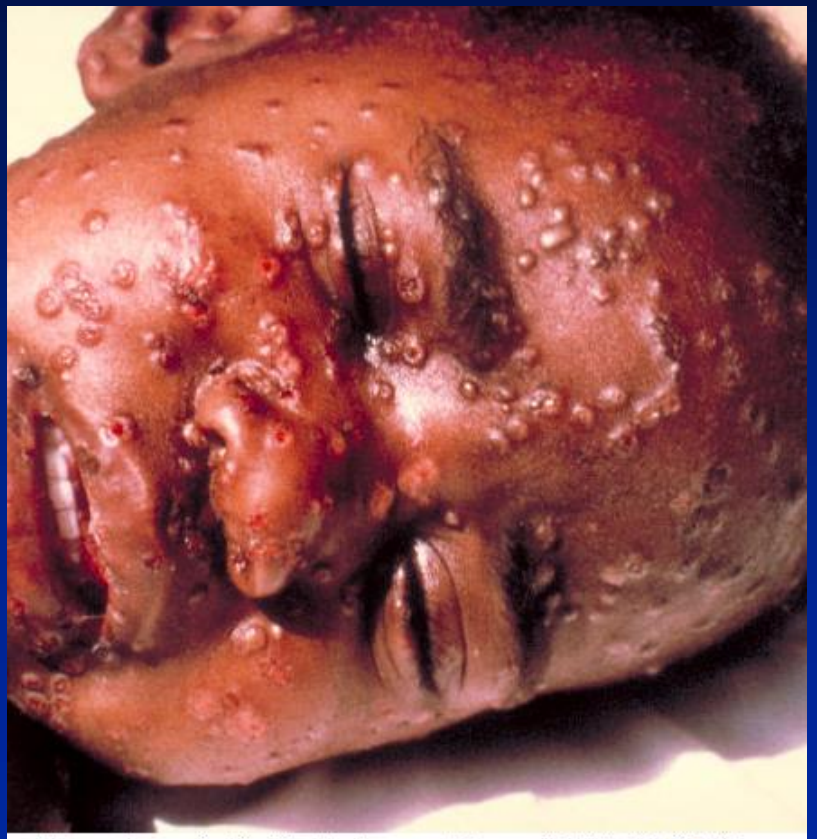


Immunization Achievements

- 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

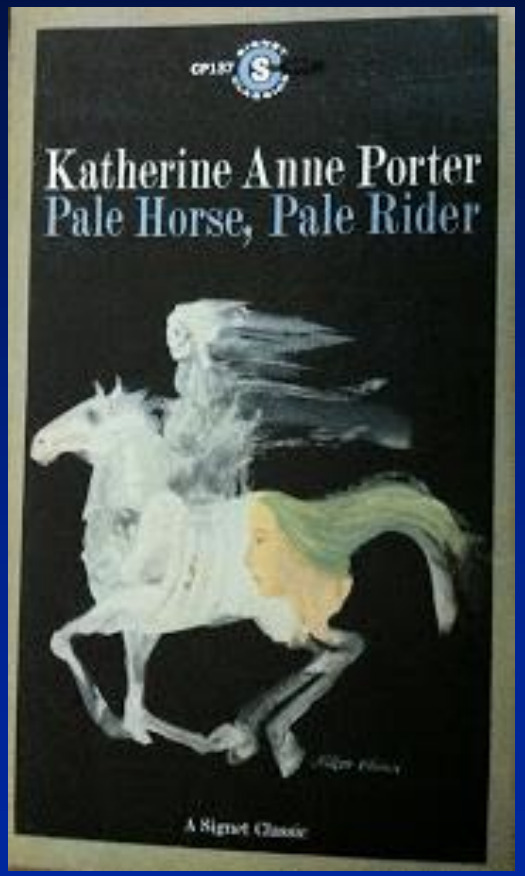
Adult & HCP Immunization

- 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

"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*

MMWR 2011;60(RR-7)

Vaccines & HCP

- 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)
  - HCP vaccination is associated with decreased ILI and mortality especially in LTC settings (Hayword, 2006, Lemaitre 2009, Shugarman 2006, Ahmed 2014).
  - 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

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

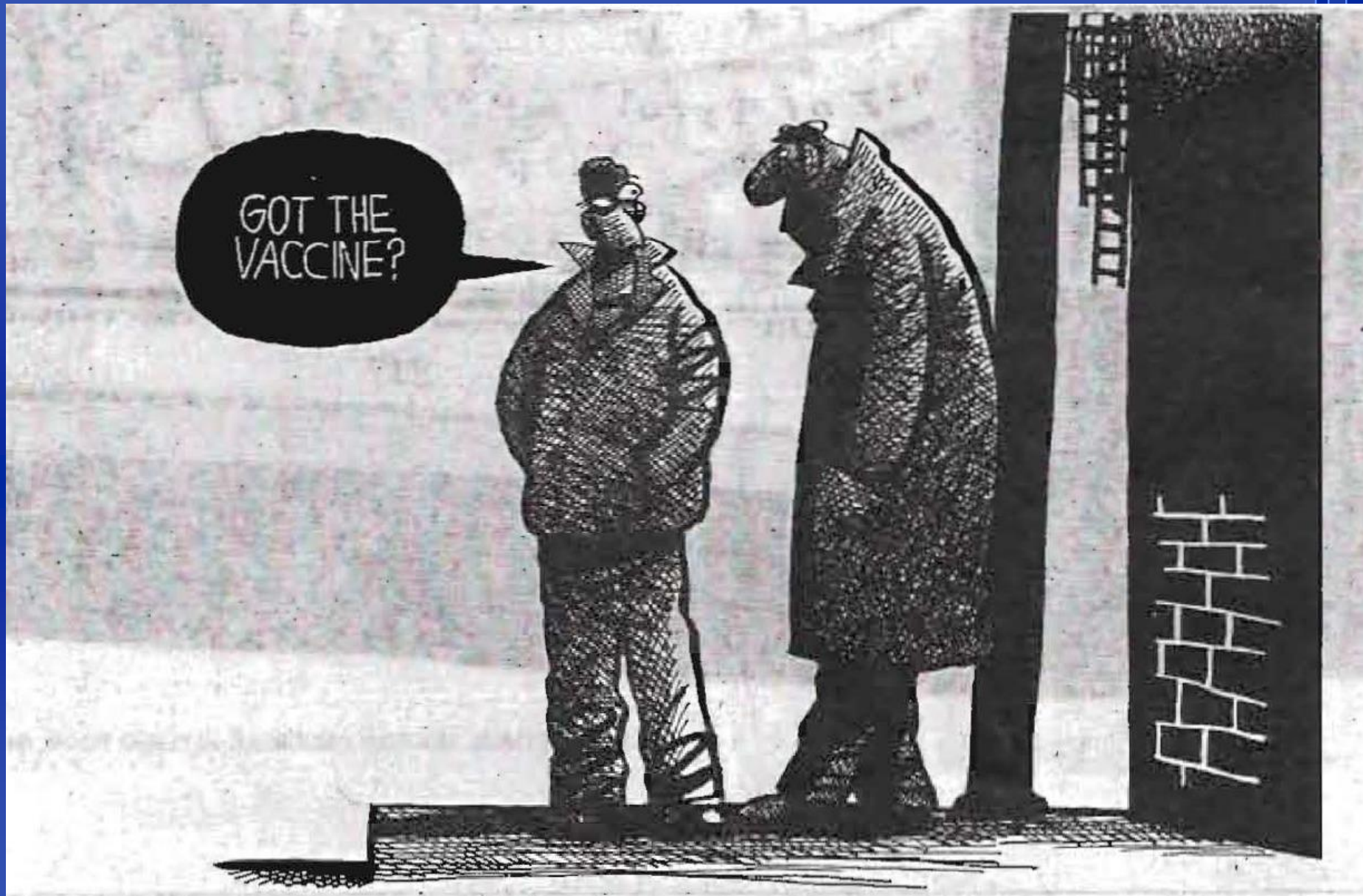
- New UPHS-wide policy requiring influenza vaccination for all HCP
- Scope: Staff, Physicians, Contractors, Volunteers, Students
- Resources - supported by
  - Educational programs, website
  - Interactive live and electronic Q&A
  - Exemption reviews, medical and religious
  - Multi-faceted outreach 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”

Penn Med Influenza Vaccine Program 2009-2010

- 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)



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

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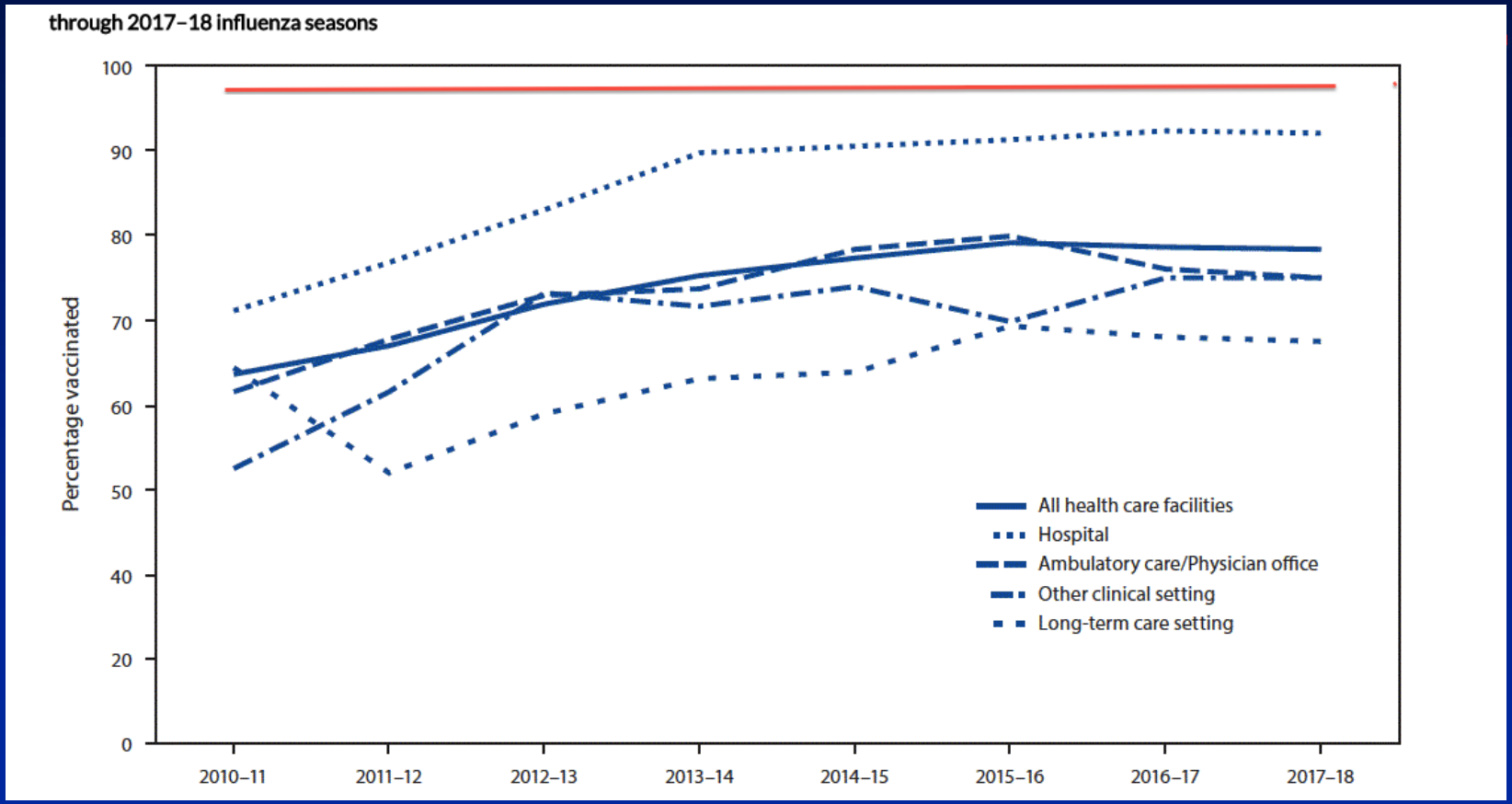
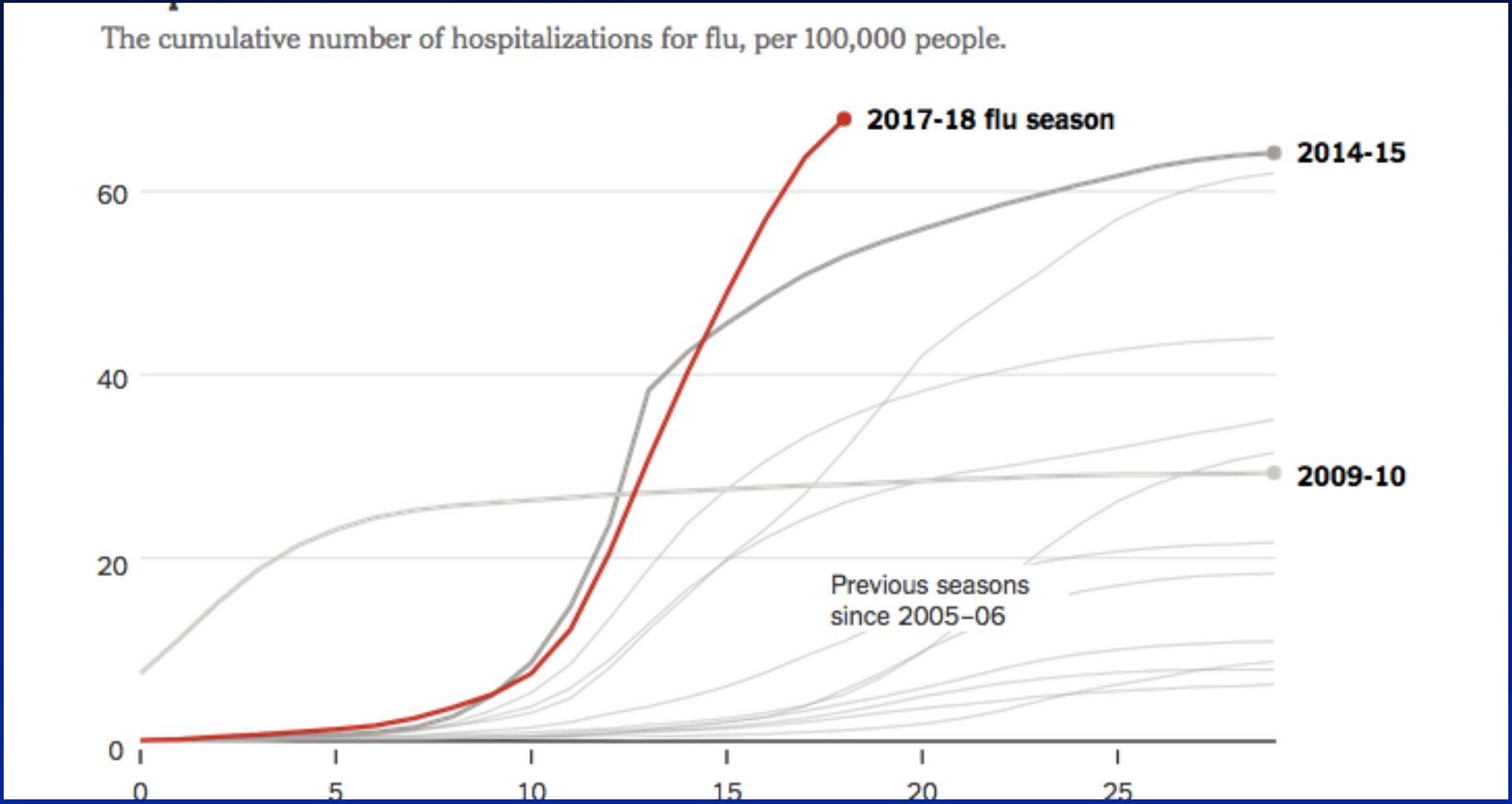


Conclusions, Comments, & Questions

- 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

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Questions & Comments?