Impact of Hospital Mandates on Health Care Personnel Influenza Vaccination Rates

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Background

• At health care facilities, vaccination of persons who can transmit influenza to high-risk persons is an effective measure for reducing the impact of influenza

• Vaccination of health care personnel (HCP) has been shown to decrease deaths among nursing home patients

• HCP vaccination rates are modest
Estimated HCP Influenza Vaccination Coverage 2005 - 2010
Research Questions

• Is there an association between hospital requirements for HCP influenza vaccination and their influenza vaccination rates?

• What factors are associated with implementation of institutional vaccination requirements?
Methods

- Survey based on national CDC survey completed in early 2011
- 2009 American Hospital Association (AHA) Annual Survey Database
- Survey linked to AHA database for hospital characteristics
Hospitals Grouped According to Following Policy Definitions

- Vaccination mandate with termination or other consequence for noncompliance
- Vaccination mandate without consequences for noncompliance
- No mandate for HCP influenza vaccination
Statistical Methods

• Chi-square tests were used to compare whether hospital requirements for HCP influenza vaccination differed by:
  • Hospital characteristics (total hospital beds, region, ownership, admissions, inpatient days, Medicare discharges, full-time registered nurses, or full-time personnel)
  • Strategies used to promote HCP influenza vaccination
  • Personnel to whom the policy applied
  • Exemptions and consequences for non-vaccination
  • Inclusion of vaccination declination in requirements
Statistical Methods

• One-way analysis of variance (ANOVA) was used to compare change in HCP influenza vaccination rates between pre- and post-implementation of HCP influenza vaccination policy.

• Statistical significance for all analyses was set at an $\alpha = 0.05$.

• SAS v9.3 and SPSS v18 were used for data management and statistical analysis.
Response Rate and Policy Prevalence

- Random sample of hospitals 
  \( n = 1,000 \)
- Survey reached appropriate addressee 
  \( n = 964 \)
- Responding hospitals 
  \( n = 433 \)
- Hospitals reporting influenza vaccination policy 
  \( n = 204 \)
- Hospitals reported both pre- and post-policy vaccination 
  \( n = 150 \)

36 off list for bad contact information or retired
Comparison of Rates in Facilities with Mandated Vaccination +/- Consequences for Noncompliance

- Free vaccine: 100% Yes, 99% No
- Mobile vaccination carts: 70% Yes, 66% No
- Vaccination on-site in wards & common areas: 86% Yes, 80% No
- Vaccination offered nights & weekends: 90% Yes, 85% No
Comparison of Rates in Facilities with Mandated Vaccination +/- Consequences for Noncompliance

- Education on vaccination: 97% (Yes), 96% (No)
- Vaccination offered at meetings: 63% (Yes), 52% (No)
- Visible vaccination of key personnel: 57% (Yes), 42% (No)
- Track unit-based vaccination rates: 62% (Yes), 43% (No)
Comparison of Rates in Facilities with Mandated Vaccination +/- Consequences for Noncompliance

- Feedback of vaccination rates to administration: 94% Yes, 87% No
- Incentives for vaccination: 25% Yes, 23% No
- Track vaccination rates regularly for targeting purposes: 77% Yes, 67% No
- Use more than 8 strategies (median Split): 67% Yes, 49% No
Issues leading institution to develop a mandate with consequence

- Suboptimal vaccination rates: 43%
- Resource expenditure of previous policy: 1%
- H1N1 pandemic: 36%
- State law: 5%
- Non-statutory large scale or statewide initiative: 29%
- Joint Commission: 11%
- Experience of other facilities: 39%
- Corporate policy: 16%
- Write in answer: CDC Quality: 13%
Reported vaccination rates

Those with noncompliance consequences increased vaccination rates 21.9% while those without noncompliance consequences increased 10.6% (p<0.01).
Percent Hospitals Implementing Influenza Vaccination Requirement Policy Over Time

Mandate with consequence (N=70)

Mandate without consequence (N=72)

Year of Policy Implementation
Conclusions

- The prevalence of mandates is increasing
- Primary Drivers:
  - Suboptimal vaccination rates
  - H1N1 Pandemic
  - Joint Commission’s recommendation
  - Experiences of other institutions
- Hospital vaccination mandates with consequences for noncompliance are associated with larger increases in HCP influenza vaccination rates than vaccination mandates without personal consequences