

CONCISE COMMUNICATION

Barriers and Facilitators of Implementation of a Mandate for Influenza Vaccination among Healthcare Personnel

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Mandatory influenza vaccination is associated with improved healthcare personnel vaccination rates, but institutional barriers to implementation and enforcement are reported. We explored barriers and facilitators to mandatory vaccination among a national sample of hospital administrators. Support from employees and administration were cited as key to the success of a mandate.

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Despite recommendations for universal influenza vaccination of healthcare personnel (HCP) in the United States,¹ HCP vaccination rates remain below the Healthy People 2020 goal of 90%.^{2,3} To meet this goal, a number of US healthcare institutions have implemented mandatory HCP influenza vaccination policies and achieved 90% or greater vaccination.^{4,5} However, these mandatory policies have raised ethical concerns about fairness and loss of employee autonomy in implementation and enforcement.⁶

We explored institutional factors associated with implementation of an influenza vaccine mandate among Society for Healthcare Epidemiology of America Research Network (SHEA-RN) member institutions. We focused on institutional barriers and facilitators from policy proposal to enforcement. We hypothesized that institutions with a strong safety culture would be more likely to implement a mandate and that implementation of a mandate would be associated with higher HCP vaccination rates.

METHODS

Study Design

We conducted a cross-sectional survey of research network members from SHEA-RN acute care institutions in the United States.

Questionnaire Development

To guide survey development, we conducted exploratory interviews with a national convenience sample of hospital epidemiologists and infection control practitioners ($n = 4$) who had been involved with institutional decision-making regarding an influenza mandate.

Questionnaire items included institutional, respondent, and mandate characteristics (including stage of mandate development: proposed, passed, implemented, enforced), barriers and facilitators at each stage of development, institutional HCP vaccination rates, and the Safety Attitudes Questionnaire (SAQ; available from authors upon request).⁷ In our survey, we defined a mandate as a requirement for HCP to obtain influenza vaccination as a condition of continued employment or clinical privileges. We listed possible barriers and facilitators and allowed free text response. The questionnaire was pilot tested for face and content validity with administrative leaders within our health system.

Staff of the SHEA-RN requested participation from a member of the SHEA-RN at each institution by e-mail and provided a link to the electronic survey. The authors were not aware of the identity of any of the respondents. The Johns Hopkins School of Medicine Institutional Review Board approved this study.

Data Analysis

Institutions were considered to have an existing mandate if they had passed, implemented, or enforced a mandate. Free text answers were read and categorized. To examine HCP vaccination rates and SAQ scores, mandates were categorized based on self-report: no mandate (including proposed only), passed/implemented, and enforced. We conducted descriptive analyses using Stata (ver. 11IC). We used ANOVA to assess differences between mean vaccination rates and SAQ scores by mandate status.

RESULTS

Sixty-seven (44%) of the 154 SHEA-RN hospital representatives responded, and 56 (36%) completed the survey. Characteristics of responding institutions were compared with all SHEA-RN institutions (Table 1). Most respondents were hos-

TABLE 1. Characteristics of Responding and All Society for Healthcare Epidemiology of America Research Network (SHEA-RN) Institutions

Characteristic	Respondents	All SHEA-RN institutions
Institution		
<i>n</i>	58	224
Academic	44 (76)	92 (41)
Public	25 (43)	99 (44)
Region		
<i>n</i>	67	177
Northeast	13 (20)	41 (23)
South	23 (34)	51 (29)
West	11 (16)	29 (16)
Midwest	20 (30)	56 (32)

NOTE. Data are no. (%), unless otherwise indicated.

pital epidemiologists (66%) or infection control practitioners (22%) from academic medical centers (76%) and nonprofit institutions (84%; Table 2).

Thirty-eight (57%) of the 67 institutions reported an existing mandate. Of those reporting a mandate, 24 (63%) were

enforced, 9 (24%) were implemented, and 5 (13%) were passed. Twenty-three (79%) of 29 institutions without a mandatory policy had considered a mandate, of which 2 had proposed a mandate. Among the institutions reporting data on the mandate, 92% reported allowing medical exemptions,

TABLE 2. Characteristics of Respondents, Institutions, and Institutional Influenza Vaccination Mandates

Characteristic	<i>n</i> (%)
Position (<i>n</i> = 58) ^a	
Hospital epidemiologist	38 (66)
Occupational health	1 (2)
Hospital administrator	6 (10)
Professor	10 (17)
Infection control	13 (22)
Clinical staff	3 (5)
Other	2 (3)
Institutional affiliation (<i>n</i> = 58)	
Academic medical center	44 (76)
Public hospital	25 (43)
Nonprofit hospital	49 (84)
Rural hospital	6 (10)
Stage of mandate at time of survey completion (<i>n</i> = 67)	
Not considered	6 (9)
Considered	21 (31)
Proposed	2 (3)
Passed	5 (7)
Implemented	9 (13)
Enforced	24 (36)
Accepted exemptions to vaccination policy (<i>n</i> = 26) ^b	
Medical	24 (92)
Religious	19 (73)
Neither	2 (8)
HCP receiving medical exemptions during the 2012–2013 academic year, % (<i>n</i> = 25) ^b	
<1	9 (36)
1–2	8 (32)
>3	4 (16)
Not sure	4 (16)
HCP receiving religious exemptions during the 2012–2013 academic year, % (<i>n</i> = 26) ^b	
<1	13 (50)
≥1	6 (23)
Not sure/not applicable	7 (27)
Terminations during the 2012–2013 academic year as a result of the policy (<i>n</i> = 26) ^b	
0	12 (46)
1–2	3 (12)
≥3	4 (15)
Not sure	7 (27)
Department responsible for enforcing the policy (<i>n</i> = 25) ^{b,c}	
Occupational health	16 (64)
Infection control	7 (28)
Human resources	20 (80)
Medicine/administration	12 (48)

NOTE. Data are missing for position and institutional characteristics for 9 respondents, for exemptions and terminations for 7 respondents, and for medical exemptions and enforcement for 8 respondents. HCP, health-care personnel.

^a Ten respondents indicated multiple positions.

^b Only respondents indicating an implemented or enforced mandate (*n* = 33) were asked about exemptions, terminations, and enforcement.

^c Seventeen respondents indicated multiple departments responsible for enforcement.

and 73% allowed religious exemptions; 16% of institutions reported 3% or more of employees received a medical exemption, and 27% of institutions reported any terminations in the previous year.

The most frequently noted barriers to passage of a mandate among institutions that had considered or had an existing mandate were lack of support from employees (33%), administration (25%), and unions (20%). The most frequently noted facilitators to passage among institutions with an existing mandate were the recommendations of a task force/expert (59%) and a local champion (53%).

Among institutions with an existing mandate, well-defined exemptions (57%), safety culture (50%), well-defined HCP population (40%), and adequate information systems (40%) were the most frequently noted facilitators of implementation, while lack of support of employees was the most frequently reported barrier (22%). Support of occupational health (50%) and human resources (47%) personnel and employee education (41%) were the most frequently noted facilitators of enforcement of the mandate, while inadequate information systems was the most frequently noted barrier (26%).

Institutions with an enforced mandate had a higher reported mean vaccination rate (95%) than institutions that had passed or implemented but not enforced a mandate (83%) or those with no mandate (73%; $P < .001$ for comparison). The mean total SAQ score did not vary on the basis of mandate policy status (83 for enforced, 76 for passed, 82 for no mandate; $P = .27$).

DISCUSSION

More than half of responding SHEA-RN institutions reported an existing mandate. Our survey is the first to examine institutional barriers and facilitators of these policies across institutions at a national level. Support from personnel—including employees, administration, and a local champion—appears to be important for passage of a mandate. Clear definitions of covered HCP and exemptions, support from occupational health and human resources, and adequate information systems appear to be important for implementation and enforcement.

Previous single health system reports have noted some of these barriers, though employee opposition has been less common than anticipated at some of these institutions.^{4,5} A statewide survey of institutions in Michigan revealed leadership support to be the most commonly cited facilitator of mandatory influenza policies and staff resistance to be the leading barrier.⁸ In our study, administration was the second most frequently noted barrier to passage, a topic that has not received much attention in the published literature.

Institutions with an enforced mandate reported significantly higher HCP vaccination rates than institutions without enforcement, as seen previously.⁹ In our study, on average, only institutions with an enforced mandate met the Healthy

People 2020 goal. Institutions with an unenforced mandate had vaccination rates similar to national averages² but higher than study institutions without a mandate. The impact of increases in HCP vaccination on healthcare-acquired influenza has to date been difficult to establish.

Changes occurring with the mandate (eg, education), or preexisting differences in institutions might explain some differences in vaccination rates. Alternately, it might be easier for institutions with a higher HCP vaccination rate to implement a mandate. While safety culture was commonly reported as a facilitator to implementation, SAQ scores as reported by hospital epidemiologists did not correlate with mandate status.

Because responding institutions included predominantly academic medical centers, our results may not be generalizable to other hospital settings, including nonacademic and for-profit institutions. Our results are subject to bias because of our incomplete survey response rate. Respondents may have been hesitant to reveal perceived institutional weaknesses or challenges; we tried to minimize this through an anonymous survey. Response options may not have been representative of actual perceived barriers and facilitators; we tried to mitigate this through exploratory interviews, inclusion of free text answers, and piloting. The SAQ as reported by respondents may not represent institutional HCP SAQ results. The relationship between safety culture and vaccination mandate may merit additional inquiry.

Garnering early and broad-based support from employees, administration, human resources, and occupational health appears important for development of an influenza vaccine mandate. Recruiting a local champion, maintaining adequate information systems, and establishing well-defined policies prior to implementation may also be valuable. Qualitative research methods could improve our understanding of the barriers and facilitators to success of an influenza vaccine mandate.

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