

CONCISE COMMUNICATION

Seasonal Influenza and Tdap Vaccination Policies in Michigan Hospitals: Progress Yet Substantial Capacity to Improve

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We determined the prevalence of mandatory influenza and tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) vaccination policies for staff in Michigan hospitals and factors affecting policy implementation. Forty-one percent of responders reported a mandatory influenza vaccination policy, and 11% reported a mandatory Tdap vaccination policy. The support of hospital leadership is critical to policy implementation and overcoming barriers.

Infect Control Hosp Epidemiol 2013;34(3):321-324

Earlier studies have documented nosocomial transmission of vaccine-preventable diseases.^{1,2} The Advisory Committee on Immunization Practices (ACIP) has recommended annual seasonal influenza vaccination for healthcare personnel (HCP) since 1984 and has recommended a single dose of tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) vaccine since 2005.³ In spite of these long-standing recommendations, hospitals have been slow to adopt appropriate policies to prevent nosocomial transmission of influenza and pertussis.

The study's goals were to (i) determine the prevalence of mandatory influenza and Tdap vaccination policies for hospital staff in Michigan, (ii) determine principal factors associated with implementing mandatory policies, (iii) identify barriers associated with not implementing mandatory policies, and (iv) provide information to assist hospital leaders in implementing mandatory vaccination policies.

METHODS

We conducted a statewide telephone survey in 2011 using the 2009 American Hospital Association Annual Survey Database to identify the 177 non-Federal acute care hospitals in Michigan and determine the number of employees at each hospital. We classified hospitals as part of a health care system if a central governing authority determined their vaccination policies and as self-governing if they determined vaccination policies for themselves.

Three interviewers conducted surveys with infection control preventionists or employee health managers from August 16, 2011, through September 14, 2011. The interviewers con-

ducted follow-up telephone calls with nonresponders to achieve a 100% response rate. To determine mandatory vaccination policy status, we asked, "Do you require your staff to receive an annual flu vaccination? When I say require, I mean that it is a condition of employment and that there are actions taken if the employee/staff member does not comply." We asked a follow-up question to determine which staff members the policy applied to. A similar set of questions were asked for Tdap vaccination policies. On the basis of the literature, we included policies with a clause that allowed unvaccinated persons to wear a surgical mask during the influenza season as an affirmative response.⁴

We also inquired about principal factors that led to policy implementation and barriers to implementation for those hospitals without a mandatory policy. We gave survey respondents examples of 5 implementation factors and barriers based on a literature review; they chose an example or provided their own.⁴⁻⁶

The interviewers entered data into SurveyMonkey (<http://www.SurveyMonkey.com>), which contained the script and the survey questions with the appropriate skip logic. The data were exported to a Microsoft Excel database, and we calculated basic descriptive statistics, including frequencies.

RESULTS

Forty-one percent of Michigan hospitals (73 of 177) had a mandatory policy requiring all staff to receive an annual influenza vaccine; 96% were implemented during 2009–2011 (Figure 1). Forty-one percent (30 of 73) allowed unvaccinated staff to wear a mask during the influenza season in lieu of vaccination. An additional 3% (6 of 177) had a mandatory policy for "some staff," which included staff with direct patient contact ($n = 3$), new hires ($n = 1$), and unknown ($n = 2$). Mandatory influenza vaccination policies for all staff were more likely among hospitals in a health care system (57 [72%] of 79) than among self-governing hospitals (16 [16%] of 98). The most frequently reported influenza vaccination policy implementation factors and barriers are outlined in Table 1.

Eleven percent of hospitals (19 of 177) had a mandatory Tdap vaccination policy for all staff; 95% were implemented during 2009–2011 (Figure 1). An additional 14% of hospitals (25 of 177) had a mandatory policy for "some staff." Forty percent of policies (10 of 25) for "some staff" included new hires, 32% (8 of 25) included staff working in high-risk areas, and 28% (7 of 25) included staff with direct patient contact. Mandatory Tdap vaccination policies for all staff were more likely among hospitals in a health care system (18%; 14 of 79) than among those that were self-governing (5%; 5 of 98). The most frequently

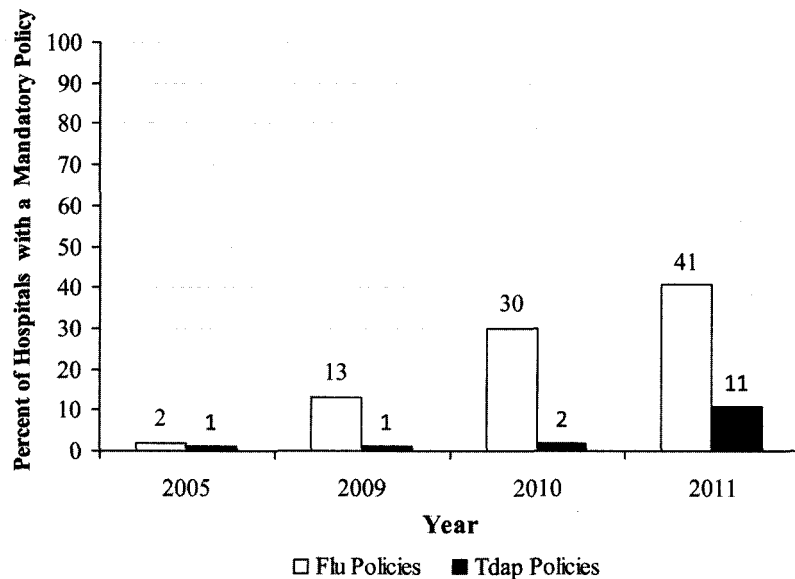


FIGURE 1. Percentage of Michigan hospitals with mandatory annual seasonal influenza or tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) vaccination policies for all staff, by year of implementation.

reported Tdap vaccination policy implementation factors and barriers are outlined in Table 1.

The 177 hospitals employed a total of 209,340 hospital staff. Fifty-one percent of hospital staff (106,668 of 209,340) worked at a hospital with a mandatory influenza vaccination policy for all staff. An additional 18,907 hospital staff worked at a hospital with an influenza vaccination policy for “some staff.”

Twelve percent of hospital staff (25,948 of 209,340) worked at a hospital with a mandatory Tdap vaccination policy for all staff. An additional 53,188 hospital staff worked at a hospital with a Tdap policy for “some staff.”

DISCUSSION

Our study describes the first statewide survey of mandatory seasonal influenza and Tdap vaccination policies among non-Federal acute care hospitals. Michigan hospitals reported mandatory influenza vaccination policies (41%) more frequently than mandatory Tdap vaccination policies (11%). This was expected, because of the longevity and increased awareness of HCP influenza vaccination recommendations. Similar to the national experience, our data show that Michigan hospitals accelerated implementation of mandatory vaccination policies during 2009–2011.⁷

Our study emphasizes the integral role of hospital leadership in vaccination policy implementation. Hospital leaders have the authority to ensure that policies are established, barriers to implementation are overcome, and an institutional culture exists in which meeting targeted vaccination coverage goals is expected for patient safety and hospital staff protection.

The leading barriers to mandatory influenza vaccination policy implementation identified were staff resistance and labor union policies. Previous studies have reported that successful mandatory vaccination policies incorporate effective educational campaigns and resources to address staff resistance.⁴ Overcoming labor union barriers requires education in addition to substantial collaboration among union leaders, hospital management, and public health partners to address mandatory vaccination campaigns as rudimentary health care operations. An additional approach is to include an option for unvaccinated HCP to wear masks during the entire influenza season.⁵

Our survey found that the most frequently reported barrier for the implementation of Tdap vaccination policies was a lack of consideration or policy discussion. This suggests that the first step in addressing mandatory Tdap vaccination policy barriers is to increase knowledge of Tdap vaccine recommendations and further discussions on the importance of developing and implementing a hospital staff Tdap vaccination policy.

This study has limitations. First, regardless of presurvey training and the use of scripts, variability in interpretations of responses could occur. Second, although we inquired whether the respondent was the most appropriate person to complete the survey, hospital leadership might have provided different responses. Finally, although we explained our definition of a mandatory vaccination policy, organizational definitions vary, which could impact the accuracy of responses.

Employers and HCP have a shared responsibility to prevent transmission of vaccine-preventable diseases in hospitals. For decades, the ACIP has recommended that HCP receive an annual influenza vaccination, yet each year almost half of

TABLE 1. Reported Implementation Factors and Barriers for Mandatory Annual Seasonal Influenza or Tetanus Toxoid, Reduced Diphtheria Toxoid, and Acellular Pertussis (Tdap) Vaccination Policies, Michigan 2011

Principal implementation factors and barriers	No. (%) of hospitals
Influenza policy implementation factor ($n = 73$)	
Leadership support	41 (56.2)
Pressure from professional groups	10 (13.7)
Leadership and additional factor ^a	8 (11.0)
Patient safety	8 (11.0)
Low vaccination rate	3 (4.1)
Unsure	2 (2.7)
Best practice	1 (1.4)
Tdap policy implementation factor ($n = 19$)	
Patient safety	8 (42.1)
Leadership support	6 (31.6)
Pressure from professional organizations	3 (15.8)
Best practice	1 (5.3)
Other	1 (5.3)
Influenza vaccination policy barrier ($n = 98$)	
Staff resistance	24 (24.5)
Labor union policies	20 (20.4)
Lack of leadership support	13 (13.3)
High vaccination rate without	12 (12.2)
Employee rights	6 (6.1)
Lack of time to implement	5 (5.1)
Lack of policy discussion	4 (4.1)
Lack of leadership and additional factor ^a	3 (3.1)
Not comfortable mandating	2 (2.0)
Other	9 (9.2)
Tdap vaccination policy barrier ($n = 133$)	
Lack of policy consideration/discussion	38 (28.6)
High vaccination rate without	12 (9.0)
Staff resistance	10 (7.5)
Labor union policies	10 (7.5)
Lack of leadership support	9 (6.8)
Lack of time to implement	7 (5.3)
Lack of time to develop	6 (4.5)
Bad timing	6 (4.5)
Cost of vaccine	5 (3.8)
Employee rights	5 (3.8)
Offered is sufficient	4 (3.0)
Other	21 (15.8)

^a Survey respondents could not choose an implementation factor or top barrier.

HCP go unvaccinated and put themselves and their patients at risk.⁸ Moreover, despite the HCP Tdap recommendations, as of 2010 only 20% of HCP had been vaccinated nationwide.⁹ Achieving targeted influenza and Tdap vaccination coverage levels among hospital staff is possible in Michigan and elsewhere, but it will require the engagement of hospital leaders and a commitment to address barriers inherent to mandatory vaccination policies.

ACKNOWLEDGMENTS

We thank Bob Swanson, Corinne Miller, and Jevon McFadden (MDCH) for their leadership and manuscript review. Special thanks to Nancy Tate and

Aimee Ragsdale (MDCH) for their integral role in survey completion. Additionally, we thank Morgan Brooks and Sam Watson (MHA) for collaboration and manuscript review.

Potential conflicts of interest. All authors report no conflicts of interest relevant to this article. All authors submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest, and the conflicts that the editors consider relevant to this article are disclosed here.

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Received June 13, 2012; accepted October 9, 2012; electronically published January 23, 2013.

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