

Healthcare Personnel Influenza Vaccination Reporting Pilot, 2010-2011

Nosocomial transmission of influenza is an important cause of patient morbidity and mortality which is why Centers for Disease Control and Prevention (CDC) recommends that all healthcare personnel (HCP) receive the influenza vaccine annually.¹ Despite the importance of HCP influenza vaccination, a majority of HCP are not vaccinated. In 2008, the estimated national immunization rate among HCP in the United States was only 45%.² The 2020 Health and Human Services Healthy People goal for HCP seasonal influenza vaccination is 90%.²

The Joint Commission, National Foundation for Infectious Diseases, Society for Healthcare Epidemiology of America, and Healthcare Infection Control Practices Advisory Committee recommend measurement of influenza vaccinations among HCP as an important part of patient safety. There is substantial variation in healthcare facility policies regarding HCP influenza vaccination, including tracking of the data. A standardized measure for reporting HCP influenza vaccination data would facilitate the comparison of rates within and between different facility types and the identification of HCP target groups with low vaccination rates.³

The National Quality Forum (NQF) issued a time-limited endorsement to a CDC-sponsored standardized measure of HCP influenza vaccination. The measure was designed to ensure that reported HCP influenza vaccination data are accurate and complete within a single institution and comparable across institutions. This measure was pilot tested by a variety of healthcare facilities to assess the feasibility of collecting and reporting HCP influenza vaccination data.

Methods

Pilot participants and NM recruitment. Healthcare institutions were recruited in four participating localities: Western Pennsylvania; New York City; California; and New Mexico. Facility types included acute care hospitals (AC), long-term care facilities (LTCF), dialysis

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centers (DC), ambulatory surgery centers (ASC), and physician offices (PO). New Mexico Department of Health (NMDOH) Healthcare-associated Infections (HAI) Program staff worked with CDC project leaders to develop protocols and implement the pilot. In collaboration with NM Medical Review Association (NMMRA), Association for Professionals in Infection Control and Epidemiology (APIC)-NM, and NM Hospital Association, HAI Program staff conducted a training webinar to review the pilot protocol and recruit participants.

HCP categories. The denominators consisted of all HCP, with or without direct patient contact, working full-time or part-time at a healthcare facility, grouped into three mutually exclusive categories: employees were defined as all persons who received a paycheck from the healthcare institution; credentialed non-employees were defined as licensed practitioners affiliated with the institution who did not receive a paycheck from the institution (including physicians or other midlevel providers with clinical or admitting privileges at the facility or technicians or therapists with professional credentialing or licensure); and other non-employees were defined as non-credentialed/licensed persons affiliated with the institution who did not receive a paycheck from the institution (including students or trainees, resident physicians or fellows, and contractually-provided on-site laboratory services staff). Participants were asked to report the total number of HCP working at the healthcare institution for any length of time between October 1, 2010 and the end of the data collection period (i.e., all personnel as of October 1, 2010 plus new personnel through March 31, 2011).

The numerators consisted of four mutually exclusive categories, reported separately for each of the three groups of HCP (employees, credentialed non-employees, and other non-employees): total number of HCP that received an influenza vaccination offered by the healthcare institution; total number of HCP that received an influenza vaccination elsewhere; total number of HCP determined to have a medical contraindication (defined by Advisory Committee on Immunization Practices) to influenza vaccination; total number of documented HCP that were offered an influenza vaccination but declined for a non-medical reason. Numerator data was counted as of the day the healthcare institution began administering influenza vaccine for the 2010-2011 influenza vaccination season through March 31, 2011.

Survey collection period. Participating healthcare facilities were asked to submit three data reports to a secure CDC website: an initial report of denominator data from October 1, 2010–October 31, 2010; an interim report of numerator and denominator data as of December 31, 2010; and a final report of numerator and denominator data as of March 31, 2011. In addition to the numerical data, feedback was obtained about barriers to collecting HCP influenza vaccination data.

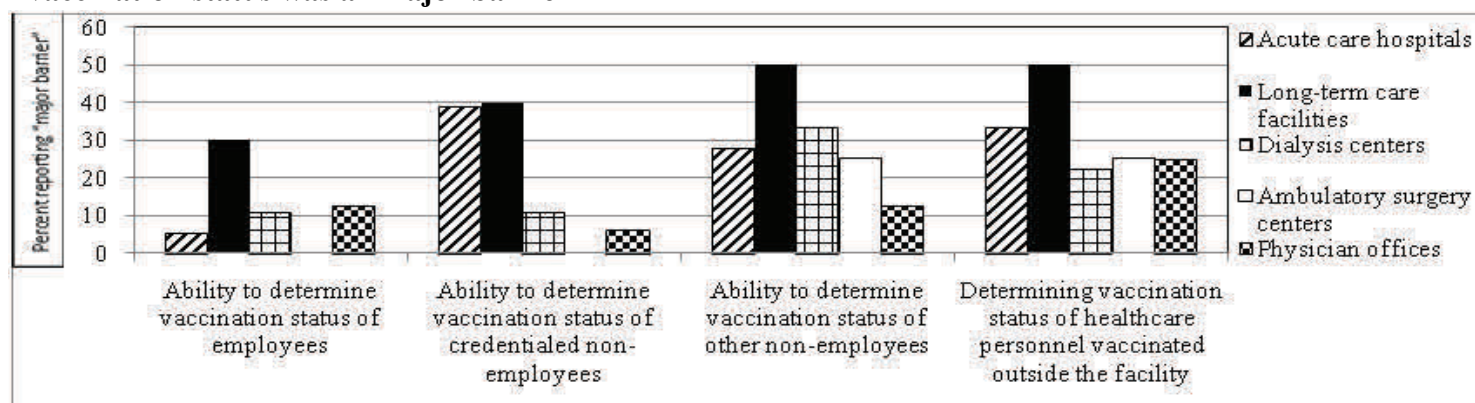
Validation and NHSN beta test pilot components. To assess the validity of the data reported in the surveys, face validity, convergent validity and case studies were analyzed. Face validity was measured using a panel of 9 external experts and a modified Delphi process. Convergent validity was assessed by reviewing the correlation between vaccination campaign elements and vaccination rates. To assess the reliability of the data reported in the surveys, test-retest reliability and inter-

rater reliability methods were used. Inter-rater reliability was used to assess agreement of the classification of individual-level numerator and denominator data between two raters (i.e., facility staff vs. state staff) by reviewing documentation maintained at the facilities during either a site visit or phone interview. Another component of the pilot was an evaluation of the utility of the CDC National Healthcare Safety Network (NHSN) database as a potential platform for reporting HCP influenza vaccination summary data.

Results

Facility characteristics. Seventy NM participants were recruited, of which 57 completed all three surveys. Of the 57 NM pilot institutions, 18 were acute care facilities (AC), 10 were long term care facilities (LTCF), nine were dialysis centers (DC), four were ambulatory surgery centers (ASC), and 16 were physician’s offices (PO). A total of 234 facilities from all jurisdictions nationally completed the three surveys (Table). The majority (55.1%) of facilities recruited for the national pilot were located in urban areas whereas the majority (61.4%) of NM facilities were located in rural areas. Among national participants, 40.2% reported that their institution had five or more years of experience measuring HCP influenza vaccination rates, although 93.8% of ASC participants and 63.2% of PO participants reported never measuring HCP vaccination rates. Among NM participants, 38.6% reported that they had no experience measuring HCP vaccination rates. A majority (54.4%) of national participants reported that their HCP influenza vaccination policy is based on a “declination statement required with no consequences”. The majority of national pilot ASC, DC and PO participants along with 56.1% of NM participants indicated that vaccination is “recommended but not required” at their institution.

Figure. Barriers to reporting: percentage of NM participants who reported their ability to determine vaccination status was a “major barrier”



Vaccination rates. The focus of this pilot was the feasibility of reporting HCP influenza vaccination rates and not the rates themselves. A review of the data showed variation in “employee” vaccination rates reported among the different institution types. Of the 57 NM institutions, the overall average “employee” influenza vaccination rate was 68% (median of 75% and range of 5-100%).

Barriers. The barriers reported by NM participants varied by institution type, participant time demands and internal policies. A significant barrier for many participants was determining the influenza vaccination status of all HCP present in their institution. The ability to determine the status of other non-employees and HCP vaccinated outside of the institution were the most consistent “major barriers” to reporting HCP influenza vaccination data (Figure). Thirty nine percent of AC and 40% of LTCF participants reported that their ability to determine the status of credentialed non-employees was a major barrier. While only 28% of AC participants reported that their ability to determine the status of other non-employee staff was a major barrier, 50% of LTCF participants reported that it was a major barrier. Time to collect vaccination data on non-employees was also reported to be a major barrier more often than for data collection on employees. Only 10% of LTCF participants reported that the time to collect data on the status of employees was a major barrier; however, twice as many (20%) reported that the time to collect vaccination data of credentialed non-employee staff was a major barrier. 5.6% and 38.9% of AC participants reported that time required to collect vaccination data on employees and credentialed non-employees, respectively, were major barriers to reporting HCP vaccination data.

Discussion

The goal of this pilot was to evaluate the feasibility of reporting HCP influenza vaccination data. Even when substantial HCP influenza vaccination programs are in place, there were barriers to accurately tracking HCP influenza vaccination status. Non-employees created particular difficulties. A barrier associated with tracking credentialed non-employees is that many healthcare practitioners have privileges at numerous facilities. As a result, the completeness and quality of current data on file at each of those facilities can vary based on the amount of time the practitioner is present or their degree of affiliation with the facility. The barriers to

tracking the other non-employee HCP include difficulties in tracking high volumes of students, volunteers and trainees who might circulate through a large AC or LTCF.

Differences in barriers to tracking HCP vaccination status in NM might explain some of the variations in influenza vaccination rates reported by different facility types. These differences include access to vaccine; internal policies regarding vaccination of staff and record-keeping methods; level of experience collecting vaccination information; and data collection methods. The small staff numbers in participating PO, DC and ASC facilities might have eased the burden of reporting vaccination data, indicated by fewer reports of barriers and higher vaccination rates compared with other facility types. A limitation to comparing data among facility types was the limited number of participating facilities in some facility categories (e.g., ASC).

Even though in some cases the non-employee groups were difficult to track, they comprised 31% of the HCP at participating NM acute care hospitals. Because of the potential source of influenza transmission that they represent to patients, they have been considered for inclusion in influenza vaccination tracking and reporting efforts. Based on the data collected from the surveys and the information gained during validation exercises, CDC and participating jurisdictions made specific recommendations to NQF. One of those recommendations was to narrow the non-employee categories to non-employees present in the facility for 30 days or more (instead of any length of time) during the data collection period. Another recommendation was to narrow the list of non-employees to physicians, advanced practice nurses, physician assistants, students and volunteers. The development and refinement of a feasible measure for HCP influenza vaccination will allow for effective and efficient tracking of HCP influenza vaccination and targeting of groups with low rates in order to improve patient safety.

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Table. Distribution of facility type and experience measuring HCP influenza vaccination: national pilot data

Facility Type (total number of facilities)	Overall (234)	Acute care hospitals (78)	Ambulatory surgery centers (16)	Dialysis centers (43)	Long-term care facilities (59)	Physician offices (38)
Area	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
Urban	55.1 (129)	57.7 (45)	62.5 (10)	48.1 (21)	52.5 (31)	57.9 (22)
Suburban	22.7 (53)	21.8 (17)	31.3 (5)	27.9 (12)	27.1 (16)	7.9 (3)
Rural	22.2 (52)	20.5 (16)	6.3 (1)	23.3 (10)	20.3 (12)	34.2 (13)
Previous experience measuring HCP vaccination						
Never measured	28.2 (66)	0.00	93.8 (15)	23.3 (10)	28.8 (17)	63.2 (24)
During 2009-2010 only	8.1 (19)	2.6 (2)	0.0	16.3 (7)	11.9 (7)	7.9 (3)
2-4 years	23.5 (55)	44.9 (35)	6.3 (1)	11.6 (5)	15.3 (9)	13.2 (5)
5 or more years	40.2 (94)	52.6 (41)	0.00	48.8 (21)	44.1 (26)	15.8 (6)
Institutional policy on HCP vac- cination						
Recommended but not required	39.9 (91)	24.7 (19)	50.0 (8)	57.1 (24)	26.3 (15)	69.4 (25)
Declination required with no con- sequences	54.4 (124)	66.2 (51)	37.5 (6)	40.5 (17)	68.4 (39)	30.6 (11)
Declination required with conse- quences	3.1 (7)	7.8 (6)	0.0	0.0	1.8 (1)	0.0
No policy	2.6 (6)	1.3 (1)	12.5 (2)	2.4 (1)	3.5 (2)	0.0

Bold indicates the highest percentage.