Impact of Vaccine Promotion Strategies and Facility Type on Health Care Employee Influenza Vaccination Rates in Oregon

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BACKGROUND

- To reduce morbidity and mortality among patients, and to reduce health care worker (HCW) illness and absenteeism, the Advisory Committee on Immunization Practices recommends annual influenza vaccination for HCW.[1]
- Healthy People 2015 and 2020 objectives include HCW vaccination rates of 75% and 90%, respectively.[2]
- The Oregon Health Authority (OHA) began mandatory reporting of HCW influenza vaccination rates for hospitals in 2009, skilled nursing facilities (SNFs) in 2010, and ambulatory surgery centers (ASCs) in 2011.[3]
- During the 2012–2013 and 2013–2014 influenza seasons, OHA required reporting of vaccine promotional strategies.

OBJECTIVES

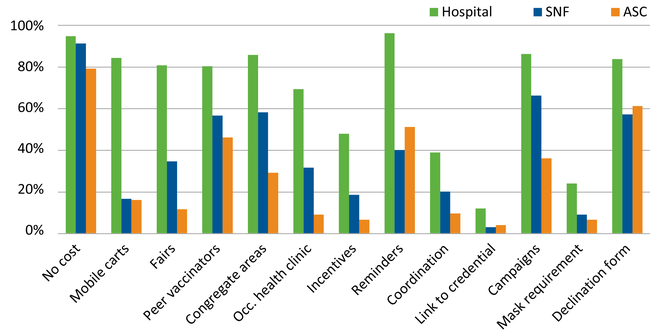
1. Examine differences in the use of vaccine promotion strategies by facility type.
2. Assess the impact of vaccine promotion strategies on employee vaccination rates in hospitals, ASCs and SNFs.

METHODS

- Influenza vaccination rates and promotional strategies collected from 61 hospitals, 139 SNFs, and 88 ASCs for 2012–13 and 2013–14 influenza seasons:
  - Data were submitted through the National Healthcare Safety Network (NHSN), SurveyMonkey or fax, and verified by OHA in direct follow-up.
  - We excluded non-employee data and focused on employee data because facility strategies should, in theory, affect employees the most.
- The impact of each vaccine promotion strategy on employee vaccination rates was modeled with GEE logistic regression, controlling for repeated observations at the facility level and influenza season.

RESULTS

Figure 1. Use of vaccine promotion strategies by facility type: averaged over 2012–13 and 2013–14 influenza seasons



Overall promotional strategy use (all facility types combined)

- Most common:
  - No cost vaccine (88%)
  - Required declination form (64%)
- Least common:
  - Link to credential (5%)
  - Mask required if declined (12%)

Table 1. Aggregate and average employee vaccinate rates

Season	Hospital	SNFs	ASCs
2012–13	77%	57%	70%
2013–14	83%	58%	71%
Average	80.0%	57.5%	70.5%

Table 2. Health care employee vaccination rates among adopters of vaccine promotion strategies, difference in vaccination rates between adopters and non-adopters, significance of association between promotional strategy adoption and vaccine rates, and prevalence of promotion strategy adoption for hospitals, skilled nursing facilities (SNFs), and ambulatory surgical centers (ASCs)

	Hospitals				SNFs				ASCs			
Vaccine Promotion Strategy	Vaccine rate for hospitals using strategy	Difference in vaccine rate between strategy users and non-users	P<0.05 for difference in GEE models	Prevalence of strategy use among hospitals	Vaccine rate for SNFs using strategy	Difference in vaccine rate between strategy users and non-users	P<0.05 for difference in GEE models	Prevalence of strategy use among SNFs	Vaccine rate for ASCs using strategy	Difference in vaccine rate between strategy users and non-users	P<0.05 for difference in GEE models	Prevalence of strategy use among ASCs
No cost: influenza vaccine offered for free to all HCW at facility	80%	0%		95%	58%	11%		91%	73%	23%	Yes	79%
Mobile carts: vaccine brought directly to HCW at work station	81%	5%		85%	63%	7%	Yes	17%	75%	8%	Yes	16%
Fairs: mass vaccine offered at centrally located area	81%	6%	Yes	81%	57%	0%		35%	74%	5%		12%
Congregate areas: an area where employees tend to gather such as a break room	81%	5%	Yes	81%	58%	1%		57%	74%	6%		46%
Peer vaccinators: vaccine is offered by employee coworkers at any time	81%	2%		86%	57%	-2%		58%	74%	10%	Yes	29%
Occ. health clinic: vaccine is available in the occupational health clinic	81%	6%	Yes	70%	61%	4%		32%	68%	-2%		9%
Incentives: items given such as coupons for free coffee or food	83%	6%	Yes	48%	61%	5%		19%	62%	-9%		7%
Reminders: employees are reminded of availability of vaccine through email messages or posters	80%	17%		97%	56%	-2%		40%	72%	6%	Yes	51%
Coordinate w/other programs: offer vaccine during events such as mandatory training or conferences	83%	4%		39%	60%	3%		20%	82%	12%	Yes	10%
Link to credential: vaccine is required to receive credentialing to work	77%	-4%		12%	51%	-6%		3%	67%	-3%		4%
Campaigns: events spanning over several days including posters, emails, buttons and meetings to remind employees of vaccine	80%	1%		87%	59%	5%		66%	72%	4%		36%
Mask requirement: employee must wear a mask while on duty if he/she does not receive the vaccine	86%	9%	Yes	24%	59%	2%		9%	86%	17%	Yes	7%
Declination form: form required from employee that provides a reason why he/she refused the vaccine	81%	9%		84%	62%	11%	Yes	57%	71%	2%		61%

CONCLUSIONS

Summary of findings:

- Employee vaccination rates were highest at hospitals and lowest at SNFs.
- Both SNFs and ASCs used vaccine promotion strategies less frequently than hospitals.
- Different types of vaccine promotion strategies are associated with vaccine rates in different settings:
  - Mask use is effective in hospitals and ASCs.
  - Mobile carts and declination forms are effective in SNFs.

Limitations:

- When an employee's vaccination status is unknown, the individual is considered unvaccinated, which could affect rates.
- The degree to which a facility implemented a promotional strategy was not assessed.
- For some strategies, there may have been insufficient variability to assess significance of association.

Recommendations:

- Vaccination campaigns should be tailored to facility type for maximum effectiveness.
- Future surveys of promotional strategies should include specific implementation practice questions.

REFERENCES

1. CDC. Immunization of health-care personnel: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR Recomm Rep 2011;60(No. RR-7)
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3. Oregon Health Authority. Healthcare Worker Influenza Vaccination Rates 2013-2014. http://public.health.oregon.gov/DiseasesConditions/CommunicableDisease/HAI/Documents/Reports/Flu_Vacc_Report_2014.pdf

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