



Knowledge, Attitude And Practice Survey Regarding Pertussis Vaccination Among Transplant Health Care Workers

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ABSTRACT

Background: Pertussis is a vaccine-preventable respiratory infection caused by *Bordetella pertussis*. Advisory Committee on Immunization Practices (ACIP) recommends that all Health Care Workers (HCWs) who have not received or are unsure of the status of their pertussis vaccination, should receive a dose of Tdap as soon as feasible. There is scant data regarding pertussis vaccination status of HCWs and compliance with current ACIP recommendations.

Methods: A survey questionnaire was created and validated to assess the knowledge, attitude and practices regarding Pertussis vaccination. The survey was conducted among all the HCWs in a Transplant Center at a tertiary care suburban New York hospital. This paper based survey questionnaire was distributed to all the HCWs in September 2016.

Results: A total of 139 transplant HCWs were surveyed with a response rate of 100%. Only 53/139 (39%) of the respondents had received pertussis vaccination in last 3 years. 55/139 (40%) of respondents were aware of the current recommendations regarding Pertussis vaccination.

Conclusion: Rate of vaccination and knowledge regarding the current guidelines of pertussis vaccination remains inadequate among HCWs. Based on these results, the rates of vaccination could be improved by sustained education regarding the knowledge of current guidelines for pertussis vaccination and safety and tolerability of vaccination. HCWs should also be educated about the potential risks of spread of pertussis via HCWs especially in at risk patients including neonates and immune-compromised hosts.

INTRODUCTION

There has been a steady increase in the number of reported cases of pertussis in the United States from 1980 (1730), 2000 (7867) to 2014 (32,971). In hospital settings, transmission has occurred from HCWs to patients and from patients to HCWs. Tdap coverage is sub-optimal in HCWs. Post-exposure to pertussis work up in HCWs can be costly and disruptive including exclusion from work.

MATERIALS AND METHODS

A survey questionnaire was created and validated to assess the knowledge, attitude and practices regarding Pertussis vaccination. The survey was conducted among all the HCWs in a Transplant Center at Westchester Medical Center (WMC). WMC is a tertiary care, academic teaching hospital located in suburban New York. This paper based survey questionnaire was distributed to all the HCWs in September 2016.

Questionnaire

Age: < 25 26- 35 36- 45 46 – 55 > 55

Sex: M F

Health care worker
 Attending Physician Trainee Physician Nurse Medical Student Other hospital staff

Do you work or live with infants, children or pregnant women: Yes No

Do you have direct patient contact: Yes No

Have you / your spouse been pregnant in the past 3 years Yes No

Are you aware of current guidelines for Pertussis vaccination: Yes No

Who do you think should be getting the Pertussis Vaccination?
 Everyone All Health Care Workers Adolescents Children Pregnant women

Have you had a Pertussis/Whooping cough vaccination as an adult? Yes No

If yes, where did you receive vaccination – Employee health Clinic Hospital

If yes, who recommended pertussis vaccine/ Tdap for you?
 Primary Physician Your child's Pediatrician Ob/Gyn Others

If you never received the vaccine as an adult, are you willing to get the vaccination: Yes No

If you are not willing to receive the vaccine, please check one of the below:.
 Concern about the safety
 Risk of exposure to pertussis might not be high in my baby
 Pertussis does not seem to be a serious disease
 Medical doctors have not recommended it
 Government / Health care centers have not recommended it

Do you know anyone who developed pertussis / whooping cough? Yes No

Are you aware of any pertussis outbreak in hospital / community? Yes No

Demographics

1. Age		Percentage
<35	39	28%
>36	97	70%
2. Sex		
Male	35	25%
Female	104	75%
3. Health Care Worker		
Attending Physician	27	19%
Nurse	62	45%
Other hospital Staff	50	36%
4. Do you work or live with infants, children or pregnant women		
Yes	57	41%
No	70	50%
5. Do you have direct patient contact?		
Yes	122	88%
No	16	12%
6. Have you/ your spouse been pregnant in the past three years?		
Yes	13	9%
No	124	89%

RESULTS

- A total of 139 transplant HCWs were surveyed with a response rate of 100%.
- 53/139 (39%) of the respondents had received Pertussis vaccination in last 3 years.
- 55/139 (40%) of respondents were aware of the current recommendations regarding Pertussis vaccination.

Increased likelihood of receipt of vaccination was seen in:

- HCWs who have direct patient contact (p= 0.024, OR: 5.0)
- HCWs who have been pregnant or had a pregnant spouse (p= 0.012, OR: 6.3)
- HCWs who were aware of the current vaccination guidelines (p= 0.0061, OR: 3.5)

Of the HCWs who received vaccination:

- 62% received it at their primary care clinic
- 26% at employee health clinic
- 12% during their hospitalizations.

HCWs who did not receive the pertussis vaccination cited:

- Concerns about the safety of the vaccine (55%)
- Their physicians not recommending it (14 %)
- Lack of awareness of current guidelines (14 %)

DISCUSSION

Tdap vaccine demonstrates vaccine effectiveness at 66-78%. Post-exposure to pertussis work up in HCWs can be costly and disruptive including exclusion from work. Despite of current ACIP recommendation that all HCWs should receive a booster with Tdap, Tdap coverage is sub-optimal in HCWs.

Vaccinating HCWs with Tdap will not only protect then against pertussis but is also expected to reduce transmission to patients, other HCWs, household members and persons in the community.

Tdap can be an cost-effective part of controlling spread of pertussis and controlling pertussis outbreaks in the hospitals. Based on probabilistic modeling, vaccinating HCWs results in net saving and benefit-cost ratio of 2.38 for the hospitals.

CONCLUSION

Rate of vaccination and knowledge regarding the current guidelines of pertussis vaccination remains inadequate among HCWs.

Based on our survey, the rates of vaccination could be improved by sustained education regarding the knowledge of current guidelines for pertussis vaccination and safety and tolerability of vaccination. HCWs should also be educated about the potential risks of spread of pertussis via HCWs especially in at risk patients including neonates and immune-compromised hosts.

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