

The Use of Electronic Surveys to Promote Vaccination Against Pertussis

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Pertussis- A Reemerging Infection

Prior to the introduction of a pertussis vaccine in the 1940's, whooping cough was a leading cause of death in children under the age of 14 (Dale,2003).

With widespread vaccine use, incidence of pertussis infection reached its lowest point in the 1970's.

There has been a “steady and disproportional increase” in the number of cases in adolescents and adults since that time (Kretsinger, et al., 2006,p.6).

This is believed to be due to waning antibody production (Wendelboe, Van Rie, Salmaso, and Englund, 2005) .

Implications of Pertussis Infection

Pertussis is a serious disease in infants and young children.

Prolonged coughing can lead to respiratory, neurological and nutritional compromise.

Risk of death in the young infant is between 0.3 and 1.3 % (Rudolph, 2003).

In adolescent and adults, pertussis infections range from asymptomatic to severe .Complications in adults include rib fractures, pneumothorax, pneumonia, seizures and rarely, death (Rothstein and Edwards, 2005; Kretsinger, et al., 2006).

Prevention Efforts

Effective but underutilized vaccines (Tdap) have been available since 2005 .

Only 2.1 percent of eligible adults have received Tdap in the past two years (Trust for America's Health [Trust], 2010, para. 3).

The March of Dimes has created the “Sounds of Pertussis” campaign in an effort to increase vaccination rates in adolescents and adults (March of Dimes, 2010).

Pertussis activity in 2010:

In California, there have been 910 reported cases of pertussis this year, and five infants have died. The state declared an epidemic in June.

Texas -1,154 cases; Ohio- 523 cases; Michigan -380 cases; Arizona -163 cases (Staff, 2010, para 1-3).

Risk of pertussis among school and college employees

- In one study of a pertussis outbreak at a military school /college, 14.1% of cases were diagnosed in staff members. (Berger, et al., 2010)
- In a Canadian study, teachers were at approximately a fourfold higher risk for pertussis compared with the general population during a period when high rates of pertussis occurred among adolescents. (Kretsinger et al., 2006).

Target Population



TWU CAMPUS STATS AS OF 5-31-2010

<i>FACULTY</i>	DEN	HOU	DED	DPH	TOTAL FACULTY
<i>(Full-time faculty)</i>	294	68	49	14	425
<i>(Part-time faculty)</i>	9	9	3	1	22
TOTAL FACULTY	303	77	52	15	447
<i>STAFF</i>	DEN	HOU	DED	DPH	TOTAL STAFF
<i>(Full-time staff)</i>	698	56	33	12	799
<i>(Part-time staff)</i>	24	7	3	2	36
TOTAL STAFF	722	63	36	14	835
	DEN	HOU	DED	DPH	TOTAL GA & ADJ
GRAD ASSTS (GA)	331	18	10	2	361
ADJUNCTS (ADJ)	223	15	29	6	273
TOTAL GA & ADJ	554	33	39	8	634
TWU TOTALS	1579	173	127	37	1916

PLEASE NOTE:

These figures exclude undergraduate students and temporary staff employees.

Compensation &
Classification

Objectives

- To increase awareness of need for pertussis vaccination among the faculty and staff members of Texas Woman's University
- To measure respondent intent to obtain vaccination after receiving an email survey.
- To explore relationships between type of survey (content -light vs. content- rich) and intent to obtain vaccination.
- To provide sources for vaccination and educational material.

Research Question and Hypothesis #1

Hypothesis: Respondents who complete a content-rich survey will report a significantly higher level of intention to obtain pertussis vaccination than respondents who complete a content-light survey.

Null hypothesis: There is no significant relationship between type of survey and level of intention to obtain pertussis vaccination.

PICO question: Among faculty and staff members who have completed a survey recommending pertussis vaccine, is there significant difference between type of survey (content-rich or content-light) and self-reported intention to obtain pertussis vaccine?

Research Question and Hypothesis #2

Research question #2:

Hypothesis: Among respondents who complete a survey recommending pertussis vaccination, there is a significant correlation between the number of years since last pertussis vaccination and self-reported intention to obtain pertussis vaccine.

Null hypothesis: There is no correlation between number of years since last pertussis vaccination and self-reported intention to obtain pertussis vaccination among respondents who complete a survey recommending pertussis vaccination.

PICO question: Among faculty and staff members, is there a correlation between the number of years since last pertussis vaccine and self-reported intention to obtain pertussis vaccine after completion of a survey recommending immunization?

Project Timeline

Date	Activities
August-October 2010	Obtain approval from TWU to distribute surveys to all employees Obtain IRB approval from TWU Identify test population
October-November 2010	Initiate test surveys and make revisions Coordinate dates of release of email Surveys with IT Initiate first release Repeat release in two week
November 2010- Jan 2011	Complete statistical analysis
February- April 2011	Complete Capstone project and submit article for publication

Methods

TWU faculty, staff and employees will receive one of two randomly distributed, anonymous surveys via TWU email.

Survey A is 1 minute, content- light survey consisting of a message about need to be vaccinated, 1 question about date of last vaccination, 4 demographic questions, and 2 questions about intent to be vaccinated.

Survey B is 5 minute content- rich survey . It contains a 5 question quiz of knowledge about pertussis, specific information about the disease and vaccine, where to be vaccinated, web links to resources, as well as the 6 questions in survey A. A counter will be placed on the web resources links to determine frequency of access.

The survey will be sent in twice over the course of two weeks to maximize response rate.

Survey A

Introduction : Welcome to this anonymous study and thank you for your time. It will take about one minute to complete these 3 questions. The purpose of this e-mail is to inform you of the reemergence of whooping cough (pertussis). Whooping cough can make adults seriously ill and cause death in infants and young children. Whooping cough has been increasing in the United States. This year (2010) there have been outbreaks in Texas, Ohio, Michigan, Arizona and South Carolina, and California is in the midst of an epidemic. The U.S. Centers for Disease Control is recommending that adults between the ages of 19 and 65 receive a single dose of a vaccine against pertussis. Adolescents also need a one-time dose. Therefore we urge you to contact your doctor or health care provider to see if you or a family member should get a pertussis vaccination called "Tdap".

When did you last have a vaccination to prevent whooping cough?

1. Less than 2 years ago
2. Between 2 and 10 years ago
3. More than 10 years ago
4. I am unsure/ can't remember
5. I have never been vaccinated against whooping cough

After taking this survey, how likely are you to pursue obtaining a whooping cough vaccine?

1. Not likely at all
2. A little likely
3. Likely
4. Very likely
5. Absolutely sure
6. It doesn't apply to me- I am sure my pertussis vaccination is up-to-date.

Survey A, continued

How likely are you to recommend that a family member obtain a vaccine?

1. Not likely at all
2. A little likely
3. Likely
4. Very likely
5. Absolutely sure
6. It doesn't apply to my situation.

Do you have any comments?

Demographics:

- Age _____
- Faculty Staff Graduate Assistant Adjunct (choose one)
- Part time Full Time
- Campus: Denton Houston Presbyterian Dallas Parkland

Survey B

Introduction : Welcome to this anonymous study . The purpose of this study to inform you (TWU's staff and faculty) of the reemergence of whooping cough and the need for adults and their family members to be vaccinated, to learn more about what you know about whooping cough, and to provide information and resources. It should take about 5 minutes to complete. Thank you in advance for your time.

Quiz: (True/False Answers)

1. Adults do not get ill from whooping cough.
2. Whooping cough (pertussis) is dangerous for infants and children.
3. Whooping cough is controlled in the United States.
4. Grandparents do not give whooping cough to their grandchildren.
5. To prevent whooping cough, adults must get vaccinated once a year, like the flu vaccine.

Answers 1. False. Although whooping cough usually doesn't make adults as sick as children, it can make some adults very ill. 2. True. Before there was a vaccine, whooping cough was one of the leading causes of death for children less than 14 years old. 3. False. Every year since 1976, there has been an increase in the number of cases in the US. There was an outbreak in Texas this year and California is currently experiencing an epidemic. 4. False. Whooping cough is easily passed from grandparents, parents, siblings and caretakers to infants and children. 5. False. The current recommendation is that teenagers and adults less than 65 years old get one vaccination (Tdap) in their lifetime to protect themselves against the whooping cough.

Survey B (continued)

General Information:

The whooping cough vaccine (combined with tetanus and diphtheria vaccines)(**DTaP**) is given to children at the ages of 2 months, 4 months, 6 months, 15-18 months, and a booster at 4 to 6 years old. The effects of the vaccination against whooping cough wears off after 5 to 10 years. As a result there are many teenagers and adults who are susceptible to whooping cough. A vaccine called **Tdap** (tetanus/diphtheria/ attenuated pertussis) has been available since 2005. This is a one- time vaccination that protects adults and teenager from pertussis.

Based on the information above, when do you think you last had a vaccine to prevent whooping cough?

1. Less than 2 years ago
2. Between 2 and 10 years ago
3. More than 10 years ago
4. I am unsure/ can't remember
5. I have never been vaccinated against whooping cough

Survey B (continued)

Who should be vaccinated

- Adolescents age 11 through 18 should receive one dose of Tdap instead of a tetanus booster (Td) if they have completed the recommended childhood vaccination series.
- Adults 19 through 64 years of age should receive one dose of Tdap in place of a tetanus booster (Td) if they never received Tdap before.

It is especially important for you to be vaccinated if :

- You are an adult (grandparents, parent, other relative or caretaker) who expects to have close contact with an infant younger than 12 months of age.
- You are a healthcare worker who has contact with patients in hospitals or clinics.
- You are planning to become pregnant. Women should be vaccinated before pregnancy or very soon after their baby is born if they have never received Tdap.

A two year interval since your last tetanus booster is recommended, but not required in all cases.

Survey B (continued)

Where can you get a Tdap Vaccination?

- **TWU:**

Denton campus: TWU Health Services– cost is \$60.00 for employees.

<http://www.twu.edu/student-health-services> Denton campus

Houston campus: UT Health Services Center x<http://www.uth.tmc.edu/uths/>

- **Your primary care provider**

- **Convenience care clinics**

Minute Clinic- CVS Pharmacy (<http://minuteclinic.com>) 866-389-2727

Take Care Health Centers-Walgreens (www.takecarehealth.com) 866-TAKE-CARE

- **Urgent care centers**

Dallas/ Denton:

CareNow: www.carenow.com

Primacare: www.primacare.com

Houston:

Houston Urgent Care:www.urgentcarehouston.com

Survey B (continued)

County Health Departments

Dallas County

http://www.dallascounty.org/department/hhservices/services/immunization/imm_clinic_hours.htm

Denton County <http://www.co.denton.tx.us/dept/main.asp?Parent=98&Link=112>

Harris County <http://www.hcphes.org/dcocp/lochrsold.htm>

Demographics:

- Age _____
- Faculty Staff Graduate Assistant Adjunct (choose one)
- Part time Full Time
- Campus: Denton Houston Presbyterian Dallas Parkland

Survey B (continued)

After taking this survey, how likely are you to pursue obtaining a pertussis vaccine?

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5. Absolutely sure
6. It doesn't apply to me- I am sure my pertussis vaccination is up-to- date.

How likely are you to recommend that a family member obtain a vaccine?

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3. Likely
4. Very likely
5. Absolutely sure
6. It doesn't apply to my situation.

Do you have any comments?

Web Resources

This video features stories from adults who had whooping cough.

<http://www.helppreventwhoopingcough.com/real-stories.html>

Follow this link to view a video of children with whooping cough

<http://www.vaccineinformation.org/video/pertussis.asp>

This information is from YouTube <http://www.dipity.com/timetube/YouTube-Whooping-Cough>

General information about whooping cough from the Centers for Disease Control

<http://www.cdc.gov/vaccines/vpd-vac/pertussis/in-short-both.htm#who>

Statistics

1. Demographics

Age- mean, standard deviation

Employment category: median and mode, frequency

Work status: median, mode, frequency

Campus location: median, mode, frequency

2. a. **What percent of recipients responded to the surveys?**
b. **Is there a significant difference between type of survey and response rate to that survey?** A Mann- Whitney U test will be calculated to determine if there is a significantly different response rate to the two surveys.
3. a. **What percentage of respondents are already vaccinated?**
b. Is there any significant difference between the type of survey and vaccination status? A Mann- Whitney U test will be calculated to determine if there is a significant difference between survey type and vaccination status.
4. a. What is the amount of time since last vaccine? (Median, mode, frequency)
b. Is there a significant difference between type of survey and the amount of time since last vaccination? A Mann- Whitney U test will be calculated to determine if there is a significant difference between survey type and amount of time since last vaccination.

Statistics

5. a. **What is level of intent to pursue obtain vaccine?**(For self and for family members) – median, mode, frequency.
b. **Is there a significant difference between type of survey and level of intent to obtain vaccine?** A Mann- Whitney U test will be calculated to determine if there is a significant difference between survey type and level of intent to obtain vaccine.
6. a. **Is there a significant correlation between number of years since last vaccine and level of intent to obtain vaccine?** A Spearman's Rho will be calculated for each survey and combined results.

For survey B only:

7. a. **What are the relationships between the number of years since last vaccine, level of intent to obtain vaccine and utilization of web resources**(as determined by number of times resource is accessed) These relationships will be explored utilizing a one –way ANOVA .

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