



Healthcare Quality Reporting Program

NURSING HOME SUBCOMMITTEE

3-4:30pm, 10/16/12

RIHCA, 57 Kilvert Street, Warwick, RI

Goals/Objectives

- To advise the Department on nursing home reporting and implement agreed-upon policies

Invitees

- | | | |
|---|---|---|
| <input checked="" type="checkbox"/> Rosa Baier, MPH | <input checked="" type="checkbox"/> Hugh Hall, MA | <input type="checkbox"/> Adele Renzulli |
| <input type="checkbox"/> Lonnie Bisbano | <input checked="" type="checkbox"/> Jim Nyberg, MPA | <input type="checkbox"/> Janet Robinson, RN, MEd, CIC |
| <input type="checkbox"/> John Gage, MBA, CNHA, CAS, FACHCA | <input checked="" type="checkbox"/> Gail Patry, RN, CPEHR (Chair) | <input checked="" type="checkbox"/> Samara Viner-Brown, MS |
| <input checked="" type="checkbox"/> Diane Gallagher | <input checked="" type="checkbox"/> Mariana Peterson, BSN | <input checked="" type="checkbox"/> Margaret Vigorito, RN, MS |
| <input checked="" type="checkbox"/> Stefan Gravenstein, MD, MPH | <input type="checkbox"/> Arthur Pullano | |

Time Topic/Notes

- | | |
|--------|--|
| 3:00pm | <p>Welcome
 <i>Gail Patry, RN, CPEHR</i></p> <ul style="list-style-type: none"> - Today's objectives - Action items: <ul style="list-style-type: none"> • Research plans for quality-based compensation (Sam) – Complete
 Sam outreached to DHS regarding the quality-based compensation plans, to ensure that they are aware of the public reporting program, including the available nursing home quality metrics and expertise. • Email Gail a list of nursing home administrators' emails (Bill) – Complete
 My InnerView (MIV) requested email addresses for all the nursing homes, to facilitate follow-up regarding contracts and mailing lists. Ann obtained the list from RIHCA and shared it with MIV. • Review MIV existing question sets (Margaret) – Complete
 Following the last meeting, Margaret used the nursing home survey responses to review available MIV question sets and recommend several additional questions. • Email Subcommittee members with MIV survey edits (Margaret) – Complete
 Margaret sent the possible additional questions to the Subcommittee for an email vote, and then worked with MIV to add five questions (see below). |
|--------|--|

3:05pm

Resident and Family Satisfaction Surveys

Rosa Baier, MPH

Gail Patry, RN, CPEHR

- After the previous meeting's discussion and subsequent email vote, Margaret worked with MIV to add five questions:
 1. How the residents and family participate in decision making (resident survey)
 2. How well the staff listen to you (resident survey)
 3. How well the staff help you when you have pain (resident survey)
 4. How well have staff helped you to make your end of life decisions? (resident survey)
 5. How the nurses and nursing assistants explain things to you in a way that was easy to understand (family survey)
- Rosa reminded the group that one of the reasons for revisiting the survey process was to assess satisfaction with the instrument and vendor, given some comments regarding confusing or not actionable questions. MIV shared that there are drill-down tools available, which nursing homes can use to determine the root cause of poor performance on a particular question.
- Rosa noted that adding the new questions, per the Subcommittee's request, delayed the start of the process by about two weeks. MIV outreached to nursing homes to communicate regarding the delay, but Hugh commented that this caused some confusion, since some facilities, like his, had already sent notification letters and then had to send a follow-up to explain the delay. Margaret confirmed that the revised timeline includes notification letters sent to the facilities and to family members on 10/19 and surveys mailed on 10/24. Rosa expects that the final results will be ready for publication in late December or early January.
- Hugh also noted a problem with contracting, explaining that facilities who had contracts from last year did not have to sign new contracts, but that this was not well communicated upfront and generated confusion.
- The group reviewed the survey instruments (handouts). Mariana asked why questions #23 and 24 were in bold print: How would you rate your overall satisfaction with this facility? What is your recommendation of this facility to others? Hugh and others noted that these are the two most critical questions regarding overall satisfaction, and are the questions benchmarked against MIV's national database. The questions added by the committee are included at the bottom of each survey (resident and family).
- The group discussed how to increase participation, asking what has happened regarding last year's audit. Rosa and Sam had shared the audit responses with Ray Rusin in the Division of Facilities Regulations, but did not know what follow-up had occurred; they will follow-up with Ray.
- Hugh commented he would be interested in collecting data from short-term residents, too, since those responses might be different. He noted that the responses are important to the individual facilities so that appropriate changes can be made, if necessary. MIV has a short-term resident survey, too, although using this instrument would require expanding the mandate and associated cost for participating nursing homes. Rosa and Margaret made a note of this request, for discussion leading into the 2013 survey process.

Healthcare Worker Flu Vaccination*Rosa Baier, MPH**Samara Viner-Brown, MS*

- Rosa included several attachments with the agenda related to the recent *Rules and Regulations Pertaining to Immunizations, Testing and Health Screening for Health Care Workers*, which mandates healthcare worker flu vaccination. The main revision was to require those that are not immunized to wear a mask when the Director of HEALTH notes a “period in which flu is widespread” within a particular facility, a defined geographic area or throughout the state, and ends when the Director declares that the outbreak is no longer widespread.
- She also provided preliminary aggregate data from 2011-2012. **These data are not checked and not for distribution:**

Healthcare Worker	Vaccinated	Declined	Unknown
	%		
CNAs	57.7%	25.1%	17.2%
RNs, LPNs	60.5%	26.6%	12.9%
MDs, NPs	47.4%	1.3%	51.3%
Others	64.0%	20.4%	15.6%
Total	59.5%	23.7%	16.4%

- Rosa also promised to benchmark vaccination rates against past performance when distributing the minutes:

Healthcare Worker	Vaccination Rate		
	2009-2010 (pre-pilot)	2010-2011 (pilot)	2011-2012 (public report)
	%		
Total	56.9%	56.7%	59.5%

- The group discussed the data, including the ongoing concern that mandatory vaccination will affect nursing home staff stability or the availability of volunteers. Rosa noted that she and Gail are working with others at Healthcentric Advisors to have a hospital Employee Health Director attend a nursing home educational event and discuss best practices to work with staff to encourage flu vaccination and collect and report those data to HEALTH.
- Virginia asked for data to demonstrate how having staff immunized impacts the health of residents. Stefan said that there are about 15 studies that address this issue, but that most focus on the link between overall vaccination rates in a facility and the spread of flu within that same facility, not specifically on healthcare worker vaccination. He will share citations for distribution with the minutes.
- There was a brief discussion about contract agency employees, and how their immunizations should be managed. Margaret suggested that Healthcentric Advisors update the Nursing Home Immunization Toolkit to add information regarding mandatory healthcare workers flu vaccination and the benefit for vaccination workers.

4:00pm

Open Forum & Next Steps

Rosa Baier, MPH

– **Action items:**

- Add short-term resident MIV survey to 2013 discussion (Rosa/Margaret)
- Follow-up with Ray Rusin re: 2011 MIV participation audit (Rosa/Sam)
- Consider updating the Immunizations Toolkit with information regarding healthcare worker flu vaccination (Gail/Nelia)

– Next meeting: 12/18/12

%Facility_Name_1%

%Facility_Name_2%

%AddressL1%

%AddressL2%

%AddressL3%

%AddressL4%

Dear resident,

%Facility_Full% is committed to providing excellent care and service. To do so, it is necessary and important to hear the voices of our residents, family members and other involved individuals.

Your responses to the survey questions will remain completely confidential. To ensure anonymity, your completed survey will be received by My InnerView in the envelope provided. My InnerView will provide a summary report highlighting the findings from the survey and identifying areas in which improvement is necessary. Your individual responses will never be disclosed to %Facility_Full%.

In addition to the survey, enclosed you will find a Comment Form. You can use this form to provide any other feedback you think is important for %Facility_Full% to know. Your handwritten comments will be transcribed into an electronic format so that your handwriting is not seen by facility staff. Your identity will not be disclosed unless you choose to include it in the body of the comment.

Thank you for your time!

INSTRUCTIONS FOR COMPLETING THE SURVEY

1. Use blue or black pen **only**.
2. To the right of each statement, blacken one circle only.
3. If you feel a statement is not applicable, leave circles blank.
4. Be sure to complete all pages of the survey.
5. Write your comments in the boxes on the form. Feel free to add an extra sheet of paper if you need additional space.
6. Return the survey (and the comment form, if completed) in the pre-addressed, postage-paid envelope.
7. Surveys must be received by My InnerView no later than the date on the front of the survey.

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Draft



Due Date:

Instructions: Please blacken the circle that best corresponds to how you would rate this facility in the following areas. Blacken only one circle for each statement. If a statement does not apply, leave the circles blank.

INCORRECT: **CORRECT:**

Resident Satisfaction Survey

RATE THIS FACILITY ON...	EXCELLENT	GOOD	FAIR	POOR
1. Meeting your choices and preferences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. The respect shown to you by staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Meeting your need for privacy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Offering you opportunities for friendships with other residents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Offering you opportunities for friendships with staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Offering you meaningful activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Meeting your religious and spiritual needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. The quality of care provided by the nurses (RNs/LVNs/LPNs)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. The quality of care provided by the nursing assistants (CNAs/NAs)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. The quality of rehabilitation therapy (occupational, physical, speech)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Providing an adequate number of nursing staff to meet care needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Meeting your need for grooming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Keeping you and your family informed about you	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. The competency of staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. The staff's care and concern for you	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Management's responsiveness to your suggestions and concerns	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. How safe it is for you	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. The security of your personal belongings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. The cleanliness of the room and surroundings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. The quality of meals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. How enjoyable the dining experience is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. The quality of laundry services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. How would you rate your overall satisfaction with this facility?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. What is your recommendation of this facility to others?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. How easy the staff make it for you and your family to participate in your care plan.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

PLEASE ANSWER QUESTIONS ON THE REVERSE SIDE

Draft



Background Information

RATE THIS FACILITY ON...	EXCELLENT	GOOD	FAIR	POOR
26. How well the staff truly listen to you	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. How well the staff helps you when you have pain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. How well have staff helped you to make your end of life decisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Background Information

29. How long have you lived at this facility? (*Blacken the circle of the highest category*)

- less than 1 month 1 to 3 months 3 to 6 months
 6 months to 1 year 1 to 3 years 3 or more years

30. Who visits you most often?

- spouse child brother or sister
 grandchild friend another person

31. How often does this person visit you?

- less than once a year once a year once every 3 months
 once a month or more once a week or more almost daily

32. How many nursing homes did you (or your family) visit before choosing this facility?

- none only this one two three four five or more

33. What is the most important reason you (or your family) chose this facility?

- convenient location good reputation doctor's or hospital's recommendation
 relative's or friend's recommendation insurance requirement other reason

34. What is your gender?

- female male

35. What is your age?

- 19 or under 20 to 29 30 to 39 40 to 49 50 to 59
 60 to 69 70 to 79 80 to 89 90 or older

36. How is this survey being completed?

- by myself (without assistance) with assistance from facility staff
 with assistance from a family member or friend with assistance from another resident/patient
 with assistance from another person

**Please mail the survey using the pre-addressed, postage-paid envelope enclosed.
THANK YOU!**



COMMENT FORM

%Facility_Full%

Tell us what we do best:

Tell us what we can do to improve:

Any other comments or suggestions:

Draft



Form C %Facility_ID% %Survey_Run_ID% %Surveyee_ID%

Draft



%Facility_Name_1%

%Facility_Name_2%

%AddressL1%

%AddressL2%

%AddressL3%

%AddressL4%

Dear family member,

%Facility_Full% is committed to providing excellent care and service. To do so, it is necessary and important to hear the voices of our residents, family members and other involved individuals.

Your responses to the survey questions will remain completely confidential. To ensure anonymity, your completed survey will be received by My InnerView in the envelope provided. My InnerView will provide a summary report highlighting the findings from the survey and identifying areas in which improvement is necessary. Your individual responses will never be disclosed to %Facility_Full%.

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Thank you for your time!

INSTRUCTIONS FOR COMPLETING THE SURVEY

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4. Be sure to complete all pages of the survey.
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6. Return the survey (and the comment form, if completed) in the pre-addressed, postage-paid envelope.
7. Surveys must be received by My InnerView no later than the date on the front of the survey.

Draft





Due Date:

Instructions: Please blacken the circle that best corresponds to how you would rate this facility in the following areas. Blacken only one circle for each statement. If a statement does not apply, leave the circles blank.

INCORRECT: **CORRECT:**

Family Satisfaction Survey

RATE THIS FACILITY ON...	EXCELLENT	GOOD	FAIR	POOR
1. Meeting the resident's/patient's choices and preferences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. The respect shown to the resident/patient by staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Meeting the resident's/patient's need for privacy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Offering the resident/patient opportunities for friendships with other residents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Offering the resident/patient opportunities for friendships with staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Offering the resident/patient meaningful activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Meeting the resident's/patient's religious and spiritual needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. The quality of care provided by the nurses (RNs/LVNs/LPNs)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. The quality of care provided by the nursing assistants (CNAs/NAs)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. The quality of rehabilitation therapy (occupational, physical, speech)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Providing an adequate number of nursing staff to meet care needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Meeting the resident's/patient's need for grooming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Keeping you and your family informed about the resident/patient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. The competency of staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. The staff's care and concern for the resident/patient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Management's responsiveness to your suggestions and concerns	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. How safe it is for the resident/patient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. The security of the resident's/patient's personal belongings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. The cleanliness of the room and surroundings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. The quality of meals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. How enjoyable the dining experience is for the resident/patient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. The quality of laundry services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. How would you rate your overall satisfaction with this facility?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. What is your recommendation of this facility to others?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. How well have Nursing Staff explained things to you in a way that's easy to understand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

PLEASE ANSWER QUESTIONS ON THE REVERSE SIDE

Draft



Background Information

26. How long has the resident/patient lived at this facility? (*Blacken the circle of the highest category*)

- less than 1 month 1 to 3 months 3 to 6 months
 6 months to 1 year 1 to 3 years 3 or more years

27. Who visits the resident/patient most often?

- resident's/patient's spouse resident's/patient's child resident's/patient's brother or sister
 resident's/patient's grandchild resident's/patient's friend another person

28. How often does this person visit the resident/patient?

- less than once a year once a year once every 3 months
 once a month or more once a week or more almost daily

29. How many nursing homes did you (or your family) visit before choosing this facility?

- none only this one two
 three four five or more

30. What is the most important reason you (or your family) chose this facility?

- convenient location good reputation doctor's or hospital's recommendation
 relative's or friend's recommendation insurance requirement other reason

31. What is the resident's/patient's gender?

- female male

32. What is the resident's/patient's age?

- 19 or under 20 to 29 30 to 39
 40 to 49 50 to 59 60 to 69
 70 to 79 80 to 89 90 or older

33. What is your relationship to the resident/patient?

- spouse child brother or sister
 grandchild friend other relationship

Please mail the survey using the pre-addressed, postage-paid envelope enclosed.

THANK YOU!



COMMENT FORM

%Facility_Full%

Tell us what we do best:

Tell us what we can do to improve:

Any other comments or suggestions:

Draft



Form B %Facility_ID% %Survey_Run_ID% %Surveyee_ID%



**RULES AND REGULATIONS PERTAINING TO
IMMUNIZATION, TESTING, AND HEALTH SCREENING FOR
HEALTH CARE WORKERS**

[R23-17-HCW]



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

DEPARTMENT OF HEALTH

JULY 2002

AS AMENDED:

January 2007 (re-filing in accordance
with the provisions of section 42-35-
4.1 of the Rhode Island General Laws,
as amended)

January 2007

January 2012 (re-filing in accordance
with the provisions of section 42-35-
4.1 of the Rhode Island General Laws,
as amended)

October 2012

INTRODUCTION

These amended *Rules and Regulations Pertaining to Immunization, Testing, and Health Screening for Health Care Workers* [R23-17-HCW] are promulgated pursuant to the authority conferred under Chapters 23-17 and 23-17.7.1 of the General Laws of Rhode Island, as amended, and are established in accordance with the most current recommendations of the Centers for Disease Control and Prevention for the purpose of adopting prevailing standards for immunization and communicable disease screening and testing for health care workers prior to employment in Rhode Island-licensed health care facilities. In addition, the provisions of §3.5 of these Regulations, as it pertains to seasonal influenza and pertussis vaccination, shall apply to all health care workers employed in health care facilities licensed under the provisions of Chapter 23-17 of the Rhode Island General Laws, as amended, on and after the effective date of these Regulations.

Pursuant to the provisions of §§42-35-3(a)(3) and (a)(4) of the General Laws of Rhode Island, as amended, consideration was given to: (1) alternative approaches to the regulations; (2) duplication or overlap with other state regulations; and (3) significant economic impact on small business. Based on the available information, no known alternative approach, overlap or duplication was identified.

Upon promulgation of these amendments, these amended regulations shall supersede all previous *Rules and Regulations Pertaining to Immunization, Testing, and Health Screening for Health Care Workers* promulgated by the Rhode island Department of Health and filed with the Secretary of State.

TABLE OF CONTENTS

	<i>Page</i>
1.0 Definitions	1
2.0 General Requirements	2
3.0 Minimum Standards for Immunization and Communicable Disease Testing for Health Care Workers	5
4.0 Documentation of Immunity (Immunization Records)	7
5.0 Medical Exemption and Influenza Vaccination Refusal	8
6.0 [RESERVED]	10
7.0 Severability	10
References	11

Section 1.0 *Definitions*

Wherever used in these Regulations, the following terms shall be construed as follows:

- 1.1 **"Advisory Committee on Immunization Practices (ACIP) recommendations"**, as used in these Regulations, means official federal recommendations for the use of vaccines in the United States and as published by the Centers for Disease Control and Prevention. ACIP recommendations represent the standard of care for immunization practice in the United States.
- 1.2 **"Certified registered nurse practitioner (RNP)"** means a registered nurse who practices in an advanced role utilizing independent knowledge of physical assessment and management of health care and illnesses. The practice includes prescriptive privileges, and collaboration with other licensed health care professionals, including, but not limited to, physicians, pharmacists, podiatrists, dentists and nurses.
- 1.3 **"Department"** means the Rhode Island Department of Health.
- 1.4 **"Direct patient contact"**, as used in these Regulations, means any routinely anticipated face-to-face interaction with patients in a health care facility.
- 1.5 **"Director"** means the Director of the Rhode Island Department of Health.
- 1.6 **"Health care worker"** means any person who is temporarily or permanently employed by or at, or who serves as a volunteer in, or has an employment contract with, a health care facility, as defined in §2.1(a) of these Regulations, and has or may have direct contact with a patient in that health care facility. This may include, but not be limited to, a physician, physician assistant, nurse, nursing assistant, therapist, technician, clinician, behavioral analyst, social worker, occupational, physical or speech therapist, phlebotomist, emergency medical service personnel, dental personnel, pharmacist, laboratory personnel, autopsy personnel, students and trainees, contractual staff not employed by the health-care facility; other health care providers, including those have privileges at, but are not employed by, the health care facility; and persons (e.g., clerical, dietary, housekeeping, laundry, security, maintenance, administrative, billing, and volunteers) not directly involved in patient care but potentially exposed to infectious agents that can be transmitted to and from a health care worker and a patient. This term shall not apply to a patient's family member or friend who visits or otherwise assists in the care of that patient in a health care facility.
- 1.9 **"Nurse"** means an individual licensed in this state to practice nursing pursuant to the provisions of RIGL Chapter 5-34.
- 1.10 **"Physician"**, as used in these Regulations, means an individual licensed under the provisions of RIGL Chapter 5-37 or an individual licensed to practice allopathic or osteopathic medicine under the laws of another state or territory of the United States, provided those laws are deemed to be substantially equivalent to RIGL Chapter 5-37.

- 1.11 **"Physician assistant"** means an individual licensed in this state to practice with physician supervision pursuant to the provisions of RIGL Chapter 5-54.
- 1.12 **"Practitioner"**, as used in these Regulations, means a physician, certified registered nurse practitioner, registered nurse, licensed practical nurse, or a physician assistant.
- 1.13 **"Pre-employment health screening"** means the review of health records, pertinent laboratory results, and other documentation of a health care worker performed by a licensed practitioner in order to determine that the health care worker is free of the communicable diseases cited in these Regulations, and is also appropriately immunized, tested, and counseled prior to employment.
- 1.14 **"RIGL"** means the General Laws of Rhode Island, as amended.
- 1.15 **"These Regulations"** mean all parts of Rhode Island *Rules and Regulations Pertaining to Immunization, Testing, and Health Screening for Health Care Workers* [R23-17-HCW].

Section 2.0 **General Requirements**

- 2.1 Health care facilities shall adopt, at a minimum, the standards of immunization and communicable disease testing and standards for health screening contained in §3.0 of these Regulations. For the purpose of these Regulations:
- (a) "Health care facility" means any institutional health service provider, facility or institution, place, building, agency, or portion thereof, whether a partnership or corporation, whether public or private, whether organized for profit or not, used, operated, or engaged in providing health care services, including but not limited to hospitals; nursing facilities; home nursing care provider (which shall include skilled nursing services and may also include activities allowed as a home care provider, or as a nursing service agency); home care provider (which may include services such as personal care or homemaker services or as a nursing service agency); rehabilitation centers; kidney disease treatment centers; health maintenance organizations; free-standing emergency care facilities, and facilities providing surgical treatment to patients not requiring hospitalization (surgi-centers); hospice care, physician ambulatory surgical centers and podiatry ambulatory surgery centers providing surgical treatment and nursing service agencies licensed under the provisions of RIGL Chapter 23-17.7.1.
- (b) Except as provided in §2.1(c) of these Regulations, health care facility also includes organized ambulatory care facilities which are not part of a hospital but which are organized and operated to provide health care services to outpatients such as central services facilities serving more than one health care facility or health care provider, treatment centers, diagnostic centers, outpatient clinics, infirmaries and health centers, school-based health centers and neighborhood health centers.
- (c) The term "health care facility" shall not apply to organized ambulatory care facilities owned and operated by professional service corporations as defined in RIGL Chapter 7-5.1, as amended (the "Professional Service Corporation Law"), or to a private practitioner's (physician, dentist, or other health care provider) office or group of the practitioners' offices (whether owned and/or operated by an individual practitioner,

alone or as a member of a partnership, professional service corporation, organization, or association).

(d) Any provider of hospice care who provides such hospice care without charge shall be exempt from the licensing provisions of RIGL Chapter 23-17, but shall meet the "Standards of a Hospice Program of Care."

(e) Facilities licensed by the Department of Behavioral Healthcare, Developmental Disabilities and Hospitals and clinical laboratories licensed in accordance with RIGL Chapter 23-16.2, as well as Christian Science institutions (also known as Christian Science Nursing Facilities) listed and certified by the Commission for Accreditation of Christian Science Nursing Organizations/Facilities, Inc. shall not be considered health care facilities for purposes of RIGL Chapter 23-17.

2.2 It shall be the responsibility of the administrative head, or his/her designee, of any health care facility to secure compliance with these Regulations.

2.3 Each health care facility shall develop policies, procedures, and/or protocols for compliance with the requirements described in these Regulations.

2.4 **[REMOVED]**

2.5 Transient employees or outside contractors who are not involved in direct patient contact are exempt from the requirements stated in these Regulations.

2.6 **[REMOVED]**

2.7 Health care facilities and health care workers shall comply with additional immunization and screening requirements that the Director may prescribe from time to time in order to control communicable diseases.

2.8 Persons discovering communicable diseases (e.g., physicians, physician assistants, registered nurse practitioners), in the process of screening health care workers shall comply with the reporting requirements contained in the most current version of the *Rules and Regulations Pertaining to the Reporting of Communicable, Environmental and Occupational Diseases* [Reference 3].

2.9 In accordance with ACIP recommendations, for all vaccines discussed in these Regulations, vaccine doses administered less than or equal to four (4) days before the minimum interval or age shall be counted as valid. Doses administered five (5) or more days earlier than the minimum interval or age shall not be counted as valid doses and shall be repeated as age-appropriate. The repeat dose should be spaced after the invalid dose by the recommended minimum interval as provided in ACIP recommendations. [See References 1 and 2].

2.10 Health care workers who receive the first dose of a multi-dose vaccine series may begin to work after this first dose is received.

Section 3.0 *Minimum Standards for Immunization and Communicable Disease Testing for Health Care Workers*

- 3.1 A pre-employment health screening shall be required for each health care worker involved in direct patient contact. Acceptable evidence shall be provided by the health care worker that testing and/or immunization for the communicable diseases listed in these Regulations for pre-employment health screening have been completed.
- 3.2 The health care facility shall document, in written or electronic form, that said acceptable evidence has been provided by the health care worker and validated by the practitioner as being acceptable in accordance with §4.0 of these Regulations. Copies of said acceptable evidence shall be maintained in the health care worker's file.
- 3.3 A practitioner shall have responsibility for performance of the pre-employment health screening. Such a practitioner may be an employee of the facility where employment is sought or may be an independent non-employee, contracted practitioner.
- 3.4 A health care worker who is not in compliance with these requirements shall be excluded from attending patients in a health care facility until the requirements are met.

Immunization and Testing Requirements

- 3.5 In accordance with the guidelines set forth by the [Advisory Committee on Immunization Practices \(ACIP\)](#) for immunization of health care personnel, evidence of immunity is required for all health care workers (with the exception of health care workers who receive a medical exemption) against:

3.5.1 *Measles, Mumps and Rubella*

- (a) **Pre Employment:** Two (2) doses of MMR (measles-mumps-rubella) vaccine. Alternatively, two (2) doses of a live measles-containing vaccine, two (2) doses of a live mumps-containing vaccine and one (1) dose of a rubella vaccine. The first dose of vaccine must have been administered on or after the first birthday. The second dose of a measles or mumps containing vaccine must be administered at least four (4) weeks after the first dose. **OR**
- (b) Laboratory evidence of immunity or laboratory confirmation of disease (i.e., laboratory report of positive IgG titers for measles, and mumps and rubella). An equivocal laboratory result for measles, mumps and/or rubella are considered negative and vaccination is required.
- (c) **Current Health Care Workers.** For unvaccinated health care workers born before 1957 who lack laboratory evidence of measles immunity or laboratory confirmation of disease, two (2) doses of MMR vaccine is recommended.
- (d) **Outbreak Control.** For unvaccinated health care workers born before 1957 who lack laboratory evidence of measles immunity or laboratory confirmation of disease, health-care facilities shall require two (2) doses of MMR vaccine during an outbreak of measles.

3.5.2 *Varicella (Chickenpox)*

- (a) Two (2) doses of varicella vaccine. The second dose of varicella vaccine must be administered at least four (4) weeks after the first dose; **OR**
- (b) Laboratory evidence of immunity or laboratory confirmation of disease; **OR**
- (c) A healthcare provider diagnosis of varicella or healthcare provider verification of history of varicella disease; **OR**
- (d) History of herpes zoster based on healthcare provider diagnosis.

3.5.3 *Tetanus, Diphtheria and Pertussis (Whooping Cough):*

- (a) Pre-employment: One (1) single dose of Tdap (tetanus-diphtheria-pertussis) vaccine is required for all health care workers who have not previously received a dose of Tdap vaccine.
- (b) Effective 1 January 2014: This requirement shall apply to current employees, as well as new employees.

3.5.4 *Annual Seasonal Influenza*

- (a) Annual influenza vaccination is required for all health care workers as defined in §1.6 of these Regulations, subject to §5.8 of these Regulations when there is insufficient vaccine supply as determined by the Department.
- (b) Each health care facility shall develop a specific plan to require annual influenza vaccination of all health care workers in a timely manner in keeping with ACIP guidelines, and at no cost to the health care worker.
- (c) Each health care facility shall maintain an active surveillance program to track and record influenza vaccination levels among health care workers, including vaccinations obtained outside of the formal health care facility program.
- (d) Each health care facility shall be responsible for reporting to the Department:
 - (1) The number of health care workers who are eligible for vaccination;
 - (2) The number of health care workers who received vaccination; and
 - (3) The number of health care workers who decline annual influenza vaccination for medical or personal reasons, reported by each of the two (2) categories.
 - (4) Such reporting shall occur according to procedures and format required by the Department.

3.5.5 *Tuberculosis (TB)*

- (a) **Pre-employment.** Evidence that the health care worker is free of active tuberculosis based upon the results of a negative two-step tuberculin skin test shall be required.
 - (1) If documented evidence is provided by the health care worker that a two-step tuberculin skin test, performed within the most recent twelve (12)

months prior to hire, was negative, the requirements of this section shall be met.

- (i) For health care workers who can present documentation of serial tuberculin testing with negative results in the prior two (2) years (or more), a single baseline negative tuberculin test result is sufficient evidence of absence of TB infection.
- (2) A negative FDA-approved blood assay for Mycobacterium tuberculosis (BAMT) may be used instead of a two-step tuberculin skin test. If the baseline BAMT is positive, screening should proceed as indicated below for positive PPD.
- (3) Documentation shall include date and result of the tuberculin skin test (PPD), and reaction size in millimeters or an actual copy of the laboratory test result from a BAMT.
- (4) If the PPD test or BAMT is positive, consistent with the most current Centers for Disease Control and Prevention{CDC} guidance, or a previous one is known to have been positive, a physician's or other licensed practitioner's (acting within his/her scope of practice) certification that the health care worker is free of active disease shall be required. Such certification shall be based on documentation of adequate chemotherapy for TB disease or chemo-prophylaxis for latent TB infection in the past, and a current history of freedom from signs and symptoms of TB. In the absence of documentation of chemotherapy or chemo-prophylaxis, a negative chest X-ray shall be required for certification. The chest x-ray shall have been performed at any time after the most recent positive PPD test result.
- (5) A physician, certified registered nurse practitioner, or a physician assistant may certify that the health care worker is currently free of TB based on his/her clinical judgment for complex cases or unusual circumstances that do not fit the above criteria.

(b) Current Health Care Workers

- (1) Periodic follow up testing of all health care workers must be based on the most current [CDC Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Settings](#).
- (2) Effective 1 January 2013, health care workers with newly detected latent TB infection (LTBI) at initial or periodic testing are required to be referred for care with intent to obtain treatment for latent TB infection. Referral of previously (prior to 1 January 2013) known LTBI for care is recommended.
- (3) Effective 1 January 2013, LTBI cases detected in health care workers must also be reported to the [RI TB Program](#) on standard reporting forms.

3.5.6 *Hepatitis B Vaccination and Testing.*

- (a) Health care facilities shall abide by the Occupational Safety and Health Administration (OSHA) Blood Borne Pathogens Standard (29 CFR 1910-1030), including the offering of hepatitis B vaccination along with all recommendations for infection control training and provision of protective equipment to those health care workers at risk.
- (b) An exposure control plan shall be in place in all health care facilities licensed by the Department, pursuant to the provisions of RIGL Chapter 23-17.
- (c) Employees at risk of exposure to blood-borne pathogens shall be offered hepatitis B vaccine within ten (10) days of employment.
 - (1) The hepatitis B vaccination series consists of three (3) doses of vaccine given as two (2) doses four (4) weeks apart followed by a third dose five (5) months after the second dose.
 - (2) It is recommended that testing for anti-HBs be performed one (1) to two (2) months after the last dose.
 - (3) Persons failing to develop a titer shall be offered a repeat three (3) dose series with follow up titers.
 - (4) Employees have the option of signing a standard OSHA declination form if they choose not to be vaccinated and should be counseled regarding risk.
- (d) If the health care worker, upon hire, has written documentation of a full hepatitis B vaccine series administered in accordance with ACIP guidelines, testing for anti-HBs shall not be necessary. If the health care worker has a subsequent exposure to HBV, hepatitis B immunoprophylaxis should be administered following ACIP guidelines for a person who has been vaccinated, but the immune response is not known.

Section 4.0 *Documentation of Immunity and Testing (Immunization Records)*

4.1 Acceptable documentation of completion of immunizations shall include the day, month, year and type/name of each dose of vaccine administered. The record of such evidence shall be signed by a practitioner (the signature of the health care worker is not acceptable).

4.1.1 Acceptable documentation of completion of immunization consists of:

- (a) An official immunization record card, school immunization record, medical passport, World Health Organization immunization record, a copy of a medical record indicating administration of vaccine; or other official immunization records acceptable to the Director; **OR**
- (b) An electronically stored and/or transmitted documentary record (facsimile transmission, computerized record, including, but not limited to, a record on magnetic media or similar record) as may be utilized by a school; **OR**

- (c) Presentation of laboratory evidence of immunity is made in the case of measles, mumps, rubella, varicella, or hepatitis B.

Section 5.0 *Medical Exemption and Influenza Vaccination Refusa*

- 5.1 A health care worker shall be exempt from the immunization requirements described in these Regulations provided that a physician, physician assistant, or certified registered nurse practitioner signs a medical exemption stating that the health care worker is exempt from a specific vaccine because of medical reasons, in accordance with Advisory Committee on Immunization Practices (ACIP) guidelines, and determined as acceptable by the facility. [See References 1 and 2 in the endnotes to these Regulations.]
- 5.2 A "period in which flu is widespread" is defined for purposes of these Regulations as a period that commences when the Director declares that there is an outbreak of influenza that is widespread within a particular facility, or within a defined geographic area in which the facility is located, or throughout Rhode Island; and that ends when the Director declares to such a health care facility or facilities that the outbreak is no longer widespread. Whenever the Director declares a "period in which flu is widespread" in a health care facility, within a defined geographic area, or throughout Rhode Island, the requirements in §5.0 of these Regulations for wearing surgical face masks shall apply only to those nonimmunized health care workers at facilities or in geographic areas for which the period is declared.
- 5.3 Any health care worker who provides proper annual notice of a §5.1 medical exemption to annual seasonal influenza vaccination prior to December 15 of each year to each health care facility in or at which he or she is employed or volunteering, or with which he or she has an employment contract, shall be required during any declared period in which flu is widespread -- as part of his or her professional licensing obligation -- to wear a surgical face mask for the duration of each direct patient contact in the performance of his or her duties at any health care facility. "Direct patient contact" is defined in §1.4 of these Regulations.
- 5.4 Any health care worker may refuse the annual seasonal influenza vaccination requirements described in these Regulations; provided, however, that he or she provides proper annual written notice of such refusal prior to December 15 of each year to each health care facility in or at which he or she is employed or volunteering, or with which he or she has an employment contract; and provided, however, that he or she who so refuses shall be required during any declared period in which flu is widespread -- as part of his or her professional licensing obligation -- to wear a surgical face mask during each direct patient contact in the performance of his or her duties at any health care facility. "Direct patient contact" is defined in §1.4 of these Regulations
- 5.5 Each such yearly notice required by §5.4 of these Regulations shall contain the following statement: *"I refuse to obtain the annual seasonal influenza vaccination. I understand that, by refusing such vaccination, it is my professional licensing obligation to wear a surgical face mask during each direct patient contact in the performance of my professional duties at any health care facility during any declared period in which flu is*

widespread. I understand that the consequence for failing to do so shall result in a one hundred dollar (\$100) fine for each violation. Failing to do so may also result in a complaint of Unprofessional Conduct being presented to the licensing board that has authority over my professional license. I understand that such licensing complaint, if proven, may result in a sanction such as reprimand, or suspension or revocation of my professional license.” Such statement shall be signed and dated by the health care worker each year that it is submitted to each health care facility at or in which the health care worker is employed, or with which he or she has an employment contract. No health care worker shall be required to explain his or her refusal to obtain an annual seasonal influenza vaccination, nor shall any health care facility inquire into the basis of such refusal.

- 5.6 Any health care worker who holds a license issued by the Department and who shall violate §5.3, §5.4 or §5.5 of these Regulations shall be subject, pursuant to RIGL §23-1-25, to a fine of one hundred dollars (\$100) for each such act. Each such act shall be considered to meet the definition of “unprofessional conduct” as used in each chapter of the Rhode Island General Laws that governs each health care worker’s respective professional license.
- 5.7 Each act that violates §5.3, §5.4 or §5.5 of these Regulations shall form a separate basis for each complaint that may be brought for disciplinary action, based on unprofessional conduct, before the licensing board that has authority over the health care worker’s license issued by the Department. The requirements of §5.3, §5.4 and §5.5 of these Regulations apply to each health care worker regardless of any provision in any collective bargaining agreement or other contract to which the health care facility and health care workers are parties, or of any written policy of the health care facility.
- 5.8 If the Director declares that a shortage exists for annual seasonal influenza vaccine, the Director shall be permitted to modify and/or suspend any requirement for some or all health care workers to obtain an annual seasonal influenza vaccination and/or any requirement for health care workers to wear surgical face masks during any direct patient contact in the performance of his or her professional duties in any health care facility; and shall be permitted to extend the deadlines in §5.3 and §5.4 of these Regulations.
- 5.9 Any health care facility that knowingly, willingly and expressly refuses to require its health care workers who have refused an annual seasonal influenza vaccination, or who have a §5.1 medical exemption, to wear a surgical face mask during each direct patient contact in the performance of his or her professional duties in any health care facility during any declared period in which flu is widespread shall be subject, pursuant to RIGL §23-1-25, to a fine of one hundred dollars (\$100) for each such violation committed by any health care worker who is employed or volunteering in, or has an employment contract with, such facility. No health care facility shall be fined for the act of any health care worker who falsely informs such facility about his or her medical exemption and/or refusal pursuant to §5.1 or §5.4 of these Regulations.
- 5.10 Each health care facility shall provide at no financial charge an adequate supply of surgical face masks -- during any declared period in which flu is widespread at the

facility, in the geographic area in which it located, or statewide -- to any health care worker who has claimed a medical exemption to or has refused the annual seasonal influenza vaccination.

- 5.11 The purpose of these Regulations relating to annual seasonal influenza vaccination for health care workers is to protect the public as a whole, patients at health care facilities, and in particular those vulnerable to contracting annual seasonal influenza due to compromised immunity and other medical conditions. Health care workers each have a potential for spreading the disease of influenza to their patients, and it is the right of patients in health care facilities to be as safe as possible from the spread of this and other infectious diseases. The reasonable precaution of having each health care worker receive annual seasonal influenza vaccination is expected to significantly reduce the incidence of seasonal influenza in health care facilities. The purpose of allowing health care workers to wear surgical masks during direct patient contact during any declared period in which flu is widespread -- in the event they refuse, or have a medical exemption to, an annual seasonal influenza vaccination -- is to ensure patient safety and to reduce the chance of health care workers spreading the influenza virus. Scientific research has shown that the wearing of surgical face masks reduces the transmission of the influenza virus to other human beings. It is not the intent of these regulations to impose an unnecessary burden on health care workers but to effectively protect the public.

Section 6.0 **[RESERVED]**

Section 7.0 ***Severability***

- 7.1 If any provision of these Regulations or the application thereof to any person or circumstances shall be held invalid, such invalidity shall not affect the provisions or application of these Regulations which can be given effect, and to this end the provisions of these Regulations are declared to be severable.

REFERENCES

1. CDC. *Recommendations of the Advisory Committee on Immunizations on Immunization Practices (ACIP)*. MMWR, 2011; 60(No. RR-2): 1-61. Available online: <http://www.cdc.gov/vaccines/pubs/ACIP-list.htm>
2. CDC. *Immunization of Health-Care Personnel: Recommendations of the Advisory Committee on Immunization Practices (ACIP)*. MMWR, 2011; 60(No. RR-7): 1-46. Available online: www.cdc.gov/mmwr/pdf/rr/rr6007.pdf
3. *Rules and Regulations Pertaining to the Reporting of Communicable, Environmental and Occupational Diseases [R23-5-6, 10, 11, 23-24.6-CD/ERD and R23-24.5 ASB]*, Rhode Island Department of Health, July 2008. <http://health.ri.gov/diseases/for/providers/>
4. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC), Morbidity and Mortality Weekly Report, *Targeted Tuberculin Testing and Treatment of Latent Tuberculosis Infection*, June 9, 2000. Available online: <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr4906a1.htm>
5. "Blood Borne Pathogens", Occupational Safety and Health Administration (OSHA), 29 *Code of Federal Regulations* Section 1910.1030. Available online: http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051
6. Guidelines for Preventing the Transmission of *Mycobacterium tuberculosis* in Health-Care Settings, <http://www.cdc.gov/tb/publications/guidelines/infectioncontrol.htm>
7. "Licensing of Health Care Facilities", Chapter 23-17 of the Rhode Island General Laws, as amended. Available online: <http://www.rilin.state.ri.us/Statutes/TITLE23/23-17/INDEX.HTM>

The revision dates of all regulations cited above were current when these amended regulations were filed with the Secretary of State. Current copies of all regulations issued by the RI Department of Health may be downloaded at no charge from the RI Secretary of State's Final Rules and Regulations Database website: <http://www.sos.ri.gov/rules/>



Frequently Asked Questions:
Rhode Island Rules and Regulations for
Immunization and Testing For Healthcare Workers

I. GENERAL

1. *What are the major changes to the immunization and testing requirements for healthcare workers?*
Major changes are summarized in the table below in the order in which they appear in the regulations.
This table does not include all of the changes.

Section	Topic	Changes including additions, deletions and clarifications
1.6	Definition of HCW <i>Note: See question # 3 below for the exact language used to define HCW or refer to regs</i>	Added language to clarify that for the purpose of these regulations: <ul style="list-style-type: none"> ▪ Any person who is temporarily or permanently employed by or at, or who serves as a volunteer in, or has an employment contract with, a healthcare facility, as defined in §2.1(a), and has or <u>may have</u> direct contact with a patient in that healthcare facility is considered a HCW ▪ Specifies/clarifies that requirements apply to: <ul style="list-style-type: none"> ○ Healthcare providers who have privileges at, but are not employed by the healthcare facility ○ Volunteers, students and trainees ○ Persons not directly involved in patient care but potentially exposed to infectious agents that can be transmitted to and from a HCW and patient (e.g. clerical, dietary, billing etc.) ▪ Specifies/clarifies that requirements do not apply to a patient's family member or friend who visits
3.5.1	MMR	Added language that: <ul style="list-style-type: none"> ▪ Recommends 2 doses of MMR vaccine for existing <u>unvaccinated</u> HCWs born before 1957 who lack laboratory evidence of measles immunity or confirmation of disease ▪ Requires 2 doses of MMR vaccine for <u>unvaccinated</u> HCWs born before 1957 in the event of an outbreak
3.5.2	Varicella	No change
3.5.3	Tdap	Added language to: <ul style="list-style-type: none"> ▪ Clarify that only a single dose of Tdap vaccine is required for HCWs who have <u>not</u> previously received a dose of Tdap regardless of age or the interval since the last Td vaccine ▪ Require proof of Tdap vaccination in all HCWs (effective 1/1/2014) Deleted language: <ul style="list-style-type: none"> ▪ Specifying vaccine was only required for HCWs under 65 years of age ▪ Specifying a 2 year interval since the last tetanus containing vaccine was needed
3.5.4	Influenza	Added language that: <ul style="list-style-type: none"> ▪ Requires flu vaccine for all HCWs as defined in §1.6 ▪ Outlines changes to reporting requirements
3.5.5(b)	TB	Added language that: <ul style="list-style-type: none"> ▪ Requires periodic follow-up testing of all HCWs based on most current CDC guidelines ▪ Requires (effective 1/1/2013) referral for care with intent to obtain

		<p>treatment with newly detected latent TB infection (LTBI) at initial or periodic testing</p> <ul style="list-style-type: none"> ▪ Recommends referral of previously known (prior to 1/1/2013) LTBI for care ▪ Requires (effective 1/1/2013) cases detected in HCWs to be reported to the RI TB Program on standard reporting forms.
3.5.6(d)	Hep B	<p>Added language to:</p> <ul style="list-style-type: none"> ▪ Clarify that if the HCW upon hire has written documentation of a full hepatitis B vaccine series, the HCW is not required to have testing for anti-HBs ▪ Antibody testing in this situation would only be needed if the HCW has a subsequent exposure to hepatitis B

2. How are changes to the immunization requirements for healthcare workers determined?

New requirements or changes to the regulations reflect the most current recommendations of CDC’s [Advisory Committee on Immunization Practices \(ACIP\): Immunization of Health-Care Personnel](#) issued on November 25, 2011.

3. What is the definition of a healthcare worker in the regulations?

Healthcare worker is defined in §1.6 as “any person who is temporarily or permanently employed by or at, or who serves as a volunteer in, or has an employment contract with, a healthcare facility, as defined in §2.1(a) of these Regulations, and has or may have direct contact with a patient in that healthcare facility. This may include, but not be limited to, a physician, physician assistant, nurse, nursing assistant, therapist, technician, clinician, behavioral analyst, social worker, occupational, physical or speech therapist, phlebotomist, emergency medical service personnel, dental personnel, pharmacist, laboratory personnel, autopsy personnel, students and trainees, contractual staff not employed by the health-care facility; other healthcare providers, including those who have privileges at, but are not employed by, the healthcare facility; and persons (e.g., clerical, dietary, housekeeping, laundry, security, maintenance, administrative, billing, and volunteers) not directly involved in patient care but potentially exposed to infectious agents that can be transmitted to and from a healthcare worker and a patient. This term shall not apply to a patient’s family member or friend who visits or otherwise assists in the care of that patient in a healthcare facility.”

4. What is the definition of “direct patient contact”?

“Direct patient contact”, as defined in the Regulations, means any routinely anticipated face-to-face interaction with patients in a healthcare facility. (§1.4)

5. In what types of healthcare facilities do the regulations apply?

The healthcare facilities in which these regulations apply include (but are not limited to):

- Hospitals
- Nursing facilities
- Nursing service agencies
- Home nursing care providers
- Home care providers
- Rehabilitation centers
- School-based health centers
- Community health centers
- Podiatry ambulatory surgery centers
- Health maintenance organizations
- Free-standing emergency care facilities
- Surgi-centers
- Physician ambulatory surgical centers
- Hospice care
- Kidney treatment centers

For the full definition of “healthcare facility,” see §2.1 of the regulations.

6. In what types of facilities do these regulations not apply?

The healthcare facilities in which these regulations do **not** apply include (but are not limited to):

- Assisted living facilities and adult day care centers
- Private practitioners offices (e.g. dentists' and physicians' offices)
- Providers of hospice care who provide hospice care without charge are exempt from these regs but must meet the "Standards of a Hospice Program of Care."
- Facilities licensed by the Department of Behavioral Healthcare, Developmental Disabilities and Hospitals
- Clinical laboratories licensed in accordance with RIGL Chapter 23-16.2,
- Christian Science institutions (also known as Christian Science Nursing Facilities) listed and certified by the Commission for Accreditation of Christian Science Nursing

7. Whose responsibility is it to ensure that HCWs are in compliance with the required immunization and testing?

It is the responsibility of the administrative head, or his/her designee, of any healthcare facility to secure compliance with the Regulations.

8. Does my healthcare facility need policies and procedures to assure compliance with the regulations?

Yes. Each healthcare facility is required to develop policies, procedures, and/or protocols for compliance with the requirements described in the Regulations.

9. Why are people in certain healthcare settings (e.g. private practitioners' offices, adult day care centers) not required to comply with these regulations?

HEALTH's regulations only apply to the facilities that HEALTH oversees. Facilities such as assisted living centers, adult day care centers, and physicians' offices are not required to comply with these regulations because these settings are not regulated by HEALTH.

II. Tdap VACCINE

10. What is the requirement for Tdap vaccine for healthcare workers?

- For Pre-employment: One (1) single dose of Tdap (tetanus-diphtheria-pertussis) vaccine is required for all healthcare workers who have **not** previously received a dose of Tdap vaccine.
- Effective January 1 2014: This requirement shall apply to current employees, as well as new employees

11. I am hiring a new employee at my healthcare facility who has documentation of receiving a dose of Tdap vaccine in 2006. Does this employee need another dose?

No. Healthcare workers who have documentation of a previous dose do not need to be revaccinated.

12. How soon after a dose of Td can a healthcare worker receive a dose of Tdap?

If they have not previously received Tdap, HCWs should receive a single dose of Tdap as soon as feasible and without regard to the dosing interval since the last Td. The ACIP no longer recommends a "minimum interval" one needs to wait between receiving Td and Tdap.

13. Is there an upper age limit for Tdap administration? For example, should I vaccinate a 67-year-old HCW?

There is no upper age limit for Tdap vaccination. A one-time dose of Tdap is recommended for all adults.

III. HEPATITIS B VACCINE

14. For a pre-employment physical, a HCW states she received all three hepatitis B vaccine doses as an adolescent. Should I do a titer to test for anti-HBs (hepatitis B antibodies)?

No. If the healthcare worker, upon hire, has written documentation of a full hepatitis B vaccine series administered in accordance with ACIP guidelines, testing for anti-HBs is **not** necessary. If the healthcare worker has a subsequent exposure to hepatitis B virus, hepatitis B immunoprophylaxis should be administered following [ACIP guidelines for post exposure prophylaxis](#) for a person who has been vaccinated, but the immune response is not known. This language has been added to the regulations in §3.5.6(d).

For more information about hepatitis B and the healthcare worker see: Hepatitis B and the Healthcare Worker--CDC answers frequently Asked Questions <http://www.immunize.org/catg.d/p2109.pdf>

IV. INFLUENZA VACCINE

15. What is the purpose of the requirements related to annual influenza vaccination for healthcare workers?

The purpose of these regulations relating to annual seasonal influenza vaccination for healthcare workers is to protect the public as a whole, patients at healthcare facilities, and in particular those vulnerable to contracting annual seasonal influenza due to compromised immunity and other medical conditions. Healthcare workers each have a potential for spreading the disease of influenza to their patients, and it is the right of patients in healthcare facilities to be as safe as possible from the spread of this and other infectious diseases. The reasonable precaution of having each healthcare worker receive annual seasonal influenza vaccination is expected to significantly reduce the incidence of seasonal influenza in healthcare facilities. The purpose of allowing healthcare workers to wear surgical masks during direct patient contact in the event they refuse, or have a medical exemption to, an annual seasonal influenza vaccination is to ensure patient safety and to reduce the chance of healthcare workers spreading the influenza virus. Scientific research has shown that the wearing of surgical face masks reduces the transmission of the influenza virus to other human beings. It is not the intent of these regulations to impose an unnecessary burden on healthcare workers but to effectively protect the public (§5.11).

16. Is there a date by which healthcare workers must be vaccinated against the flu?

Yes. Healthcare workers must be vaccinated against the flu by December 15 every year.

17. Can healthcare workers refuse influenza vaccination?

Please see Medical Exemption and Influenza Vaccination Refusal section below.

18. What do the regulations require for reporting influenza vaccination of HCWs?

Section 3.5.4(d) each healthcare facility is responsible for reporting to the Department:

- The number of healthcare workers who are eligible for influenza vaccination;
- The number of healthcare workers who received influenza vaccination; and
- The number of healthcare workers who decline annual influenza vaccination for medical or personal reasons, reported by each of the two (2) categories.

- Reporting shall occur according to procedures and format required by the Department.

V. MEDICAL EXEMPTIONS AND INFLUENZA VACCINATION REFUSAL

19. Do the regulations allow for a HCW who has a medical contraindication to one or more vaccine requirements?

Yes. Section 5.1 of the regulations state that: a healthcare worker shall be exempt from the immunization requirements described herein in these Regulations provided that a physician, physician assistant, or certified registered nurse practitioner signs a medical exemption stating that the healthcare worker is exempt from a specific vaccine because of medical reasons, in accordance with Advisory Committee on Immunization Practices (ACIP) guidelines, and determined as acceptable by the facility.

20. Do I need to send a copy of the Medical Exemption Certificate to the Department of Health?

No. Exemption certificates should not be sent to the department. The healthcare facility must keep the exemption in the HCW's file.

21. Do I need to report all medical exemptions to the Department of Health?

No. You are only required to report the total number of medical exemptions to **influenza vaccine** when you complete your annual reporting (see question # 18 above).

22. When will the HCWs who refused influenza vaccine have to wear a mask?

In accordance with §5.2 of the Regulations, A "period in which flu is widespread" is defined for purposes of the Regulations as a period that commences when the Director declares that there is an outbreak of influenza that is widespread within a particular facility, or within a defined geographic area in which the facility is located, or throughout Rhode Island; and that ends when the Director declares to such a healthcare facility or facilities that the outbreak is no longer widespread. Whenever the Director declares a "period in which flu is widespread" in a healthcare facility, within a defined geographic area, or throughout Rhode Island, the requirements in §5.0 of these Regulations for wearing surgical face masks shall apply only to those non-immunized healthcare workers at facilities or in geographic areas for which the period is declared.

23. Do HCWs have to file a notice of refusal with their employers?

Yes. By December 15 of each year, any HCW who refuses to obtain the influenza vaccine must file a form with their employer but not with the Department of Health. The form must state: "I refuse to obtain the annual seasonal influenza vaccination. I understand that, by refusing such vaccination, it is my professional licensing obligation to wear a surgical face mask during each direct patient contact in the performance of my professional duties at any healthcare facility during any declared period in which flu is widespread. I understand that the consequence for failing to do so shall result in a one hundred dollar (\$100) fine for each violation. Failing to do so may also result in a complaint of Unprofessional Conduct being presented to the licensing board that has authority over my professional license. I understand that such licensing complaint, if proven, may result in a sanction such as reprimand, or suspension or revocation of my professional license."

24. What happens if the Director declares a period in which flu is widespread for my healthcare facility and I refuse to wear a surgical face mask during routinely anticipated direct patient contact?

If you are found to be in violation of the Healthcare Worker Immunization regulations, you may be fined \$100 by the Health Department for each occurrence, as described in §5.6 of the Regulations. Also, a disciplinary complaint may be opened against you, and you would be subject to disciplinary

action against your health professional license. The regulations define refusal to wear a mask when required as unprofessional conduct, which can result in sanctions as severe as license revocation.

25. Do I have to explain to anyone why I am refusing to get a flu shot, and can my employer ask me why I am refusing?

No.

If you have a question not addressed above, contact:

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(401) 222-4640

Barbara.mcneilly@health.ri.gov

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RESOURCES

Immunization of Health-Care Personnel: Recommendations of the Advisory Committee on Immunization Practices

<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6007a1.htm>

CDC Influenza Vaccination Information for Healthcare Workers

<http://www.cdc.gov/flu/healthcareworkers.htm>

Immunization Action Coalition: Mandatory influenza vaccination for all healthcare workers is imperative! Refer to the position statements of these leading medical organizations to guide you in developing and implementing a mandatory influenza vaccination policy at your healthcare institution or medical setting.

<http://www.immunize.org/honor-roll/>

Influenza Vaccination Coverage Among Health-Care Personnel — 2011–12 Influenza Season, United States

Influenza vaccination of health-care personnel (HCP) is recommended by the Advisory Committee on Immunization Practices (ACIP) (1). Vaccination of HCP can reduce morbidity and mortality from influenza and its potentially serious consequences among HCP, their family members, and their patients (1–3). To provide timely estimates of influenza vaccination coverage and related data among HCP for the 2011–12 influenza season, CDC conducted an Internet panel survey with 2,348 HCP during April 2–20, 2012. This report summarizes the results of that survey, which found that, overall, 66.9% of HCP reported having had an influenza vaccination for the 2011–12 season. By occupation, vaccination coverage was 85.6% among physicians, 77.9% among nurses, and 62.8% among all other HCP participating in the survey. Vaccination coverage was 76.9% among HCP working in hospitals, 67.7% among those in physician offices, and 52.4% among those in long-term care facilities (LTCFs). Among HCP working in hospitals that required influenza vaccination, coverage was 95.2%; among HCP in hospitals not requiring vaccination, coverage was 68.2%. Widespread implementation of comprehensive HCP influenza vaccination strategies is needed, particularly among those who are not physicians or nurses and who work in LTCFs, to increase HCP vaccination coverage and minimize the risk for medical-care-acquired influenza illnesses.

For the Internet panel survey, two source populations were recruited through e-mails and pop-up invitations. Clinical professionals (e.g., physicians, nurses, and other health professionals [dentists, nurse practitioners, and physician's assistants]) were recruited from the current membership roster of Medscape, a web portal managed by WebMD Professional Services. Other HCP such as assistants, aides, administrators, clerical support workers, janitors, food service workers, and housekeepers were recruited for a health survey from SurveySpot, a general population Internet panel operated by Survey Sampling International that provides its members with

online survey opportunities in exchange for nominal cash and rewards.* Among the 2,518 HCP who completed the screening questions and entered the two panel survey sites, 2,348 (93.2%) completed the survey.† Of those, 1,724 (73.4%) were clinical professionals, and 624 (26.6%) were other HCP.

Survey categories included demographics, occupation type, work setting, self-reported influenza vaccination, reasons for nonvaccination during the current influenza season, and employer vaccination policies. Based on their responses to the questionnaire, HCP from both Internet sources were divided into three groups for this analysis: physicians, nurses, and all other HCP with occupations listed on the screening questionnaire. Sampling weights were calculated based on each occupation type by age, sex, race/ethnicity, medical-care setting, and census region to be more representative of the U.S. population of HCP. Because opt-in Internet panel surveys are not random

* Additional information available at <http://www.surveysampling.com>.

† A survey response rate requires specification of the denominator at each stage of sampling. During recruitment of an online opt-in survey sample, such as the Internet panel used for this report, these numbers are not available; therefore, the response rate cannot be calculated. Instead, the survey completion rate is provided.

INSIDE

- 758 Influenza Vaccination Coverage Among Pregnant Women — 2011–12 Influenza Season, United States
- 764 Influenza A (H3N2) Variant Virus-Related Hospitalizations — Ohio, 2012
- 768 Postvaccination Serologic Testing Results for Infants Aged ≤ 24 Months Exposed to Hepatitis B Virus at Birth — United States, 2008–2011
- 772 Announcements
- 773 QuickStats

Continuing Education examination available at http://www.cdc.gov/mmwr/cme/conted_info.html#weekly.



samples, statistical measures such as computation of confidence intervals and tests of differences cannot be performed.[§]

By occupation, influenza vaccination was most common among physicians (85.6%), followed by nurses (77.9%), and other HCP (62.8%) (Table). Vaccination coverage was 76.9% among HCP working in hospitals, 67.7% among those in physician offices, and 52.4% among those in long-term care facilities (LTCFs). By occupation and work setting, influenza vaccination was most common among physicians who worked in hospitals (86.7%) and lowest among other HCP who worked in LTCFs (50.2%) (Table). Among HCP working in hospitals that required influenza vaccination, coverage was 95.2%; among HCP in hospitals not requiring vaccination, coverage was 68.2%.

Coverage among HCP aged ≥60 years (75.7%) was higher than coverage for other age groups. Among racial/ethnic groups, coverage did not differ more than 5 percentage points. Vaccination coverage was higher among HCP with vaccination available at no cost on multiple days at their worksite (78.4%), compared with those not offered vaccination at no cost (48.4%). Overall, 496 (21.1%) of participating HCP reported being required to be vaccinated by their employers. Influenza vaccination was more common among those who reported that their employers promoted influenza vaccination

(75.8%), compared with those whose employers did not promote influenza vaccination (55.8%) (Table).

Overall, 33.1% of HCP reported not receiving influenza vaccination. The three most common answers to a question asking for the main reason a participant did not get vaccinated for influenza were 1) a belief that they did not need it (28.1%), followed by 2) concern about vaccination effectiveness (26.4%) and 3) concern about side effects (25.1%).

Reported by

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Editorial Note

The overall HCP influenza vaccination coverage estimate from this Internet panel survey for the 2011–12 season was 66.9%, compared with previous CDC Internet panel estimates, from

[§]Additional information available at http://www.aapor.org/opt_in_surveys_and_margin_of_error1.htm.

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TABLE. Percentage of health-care personnel (HCP)* who received Influenza vaccination, by selected characteristics — Internet panel surveys, United States, 2011–12 influenza season

Characteristic	Unweighted no. of participants in sample	% vaccinated [†]	Percentage point change from 2010–11 survey
Overall	2,348	66.9	3.4
Occupation by work setting			
Physician	418	85.6	1.4
Hospital	247	86.7	5.4
Physician office	311	86.2	0.0
Long-term care facility	— [§]	— [§]	— [§]
Other work setting [¶]	— [§]	— [§]	— [§]
Nurse	373	77.9	8.1
Hospital	252	78.1	2.7
Physician office	91	75.6	1.4
Long-term care facility	54	72.2	— [§]
Other work setting [¶]	— [§]	— [§]	— [§]
All other HCP**	1,557	62.8	1.8
Hospital	688	75.5	6.5
Physician office	345	62.1	7.5
Long-term care facility	375	50.2	-16.7
Other work setting [¶]	261	58.4	6.3
Work setting			
Hospital	1,187	76.9	5.8
Physician office	747	67.7	6.2
Long-term care facility	455	52.4	-12.0
Other work setting [¶]	277	61.5	9.1
Age group (yrs)			
18–29	228	63.9	7.5
30–44	690	68.8	11.0
45–59	962	63.8	-5.2
≥60	332	75.7	1.5
Race/Ethnicity			
White, non-Hispanic	1,427	66.4	-0.2
Black, non-Hispanic	344	65.5	4.4
Hispanic	334	70.3	12.7
Other or multiple race, non-Hispanic ^{††}	243	69.0	19.4
Vaccination available at no cost			
More than 1 day	1,355	78.4	3.6
1 day	297	67.7	15.6
None	682	48.4	6.7

two surveys with varying methods, of 63.5% for the 2010–11 season (4) and 63.4% for the 2009–10 season (5) (Figure 1). Earlier estimates of influenza vaccination coverage levels in HCP based on the National Health Interview Survey (NHIS) were 10% in 1989, 38% in 2002 (6), and 49% in 2008 (7). In the Internet panel surveys for the three most recent influenza seasons, vaccination coverage was highest among physicians and nurses and lowest among all other HCP. From the 2009–10 season to the 2011–12 season, coverage increased among physicians from 80.5% to 85.6%, and among nurses from 68.5% to 77.9%. Coverage among all other HCP was similar from 2009–10 through 2011–12 in the Internet panel surveys.

For certain categories, vaccination coverage among HCP differed from 2010–11 to 2011–12, according to the Internet

TABLE. (Continued) Percentage of health-care personnel (HCP)* who received Influenza vaccination, by selected characteristics — Internet panel surveys, United States, 2011–12 influenza season

Characteristic	Unweighted no. of participants in sample	% vaccinated [†]	Percentage point change from 2010–11 survey
Required by employer to be vaccinated			
Yes	496	93.7	-4.4
Hospital	362	95.2	-2.9
Non-hospital	134	91.3	-6.7
No	1,829	59.7	1.4
Hospital	818	68.2	4.7
Nonhospital	1,011	55.0	-0.4
Employer promotion ^{§§}	390	75.8	11.1
Hospital	253	75.3	13.4
Nonhospital	134	76.3	8.4
No requirement or promotion	1,450	55.8	-1.3
Hospital	561	65.9	1.7
Nonhospital	865	51.5	-1.6

Source: CDC. Influenza vaccination coverage among health-care personnel—United States, 2010–11 influenza season. *MMWR* 2011;60:1073–7.

* Persons who worked in a medical-care setting or whose work involved hands-on care of patients.

[†] Weighted estimate. Sampling weights were calculated based on each occupation type by age, sex, race/ethnicity, medical-care setting, and census region to be more representative of the U.S. population of HCP.

[§] Estimate suppressed because sample size was <30.

[¶] Included dental offices, pharmacies, nonhospital laboratories, medical-related schools, emergency medical technician sites, and home medical-care sites.

** Includes dentists, nurse practitioners or physician's assistants, allied health professionals, technicians or technologists, assistants or aides, administrative support staff members or managers, and nonclinical support staff members (e.g., food service workers, housekeeping staff members, maintenance staff members, janitors, and laundry workers).

^{††} American Indian, Alaska Native, Asian, and Native Hawaiian or other Pacific Islander.

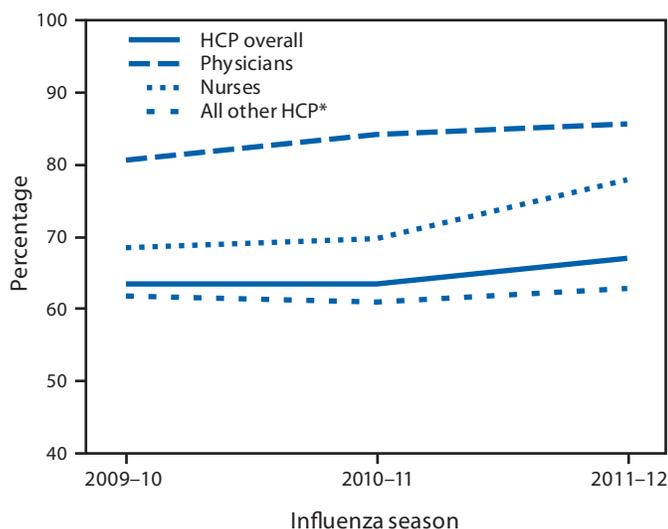
^{§§} Employer promoted influenza vaccination among employees through public recognition of vaccinated persons; financial incentives or rewards to persons; incentives or reminders/invitations, and special events.

panel surveys. Coverage in physician's office settings increased from 61.5% during the 2010–11 season to 67.7% during the 2011–12 season, and coverage in hospitals increased from 71.1% to 76.9% (4). Among LTCFs, influenza vaccination coverage was lower in 2011–12 (52.4%), compared with 2010–11 (64.4%). The 2011–12 coverage in work settings other than hospitals, physician's offices, and LTCFs was higher (61.5%) than in 2010–11 (52.4%) (4) (Figure 2).

For the 2011–12 influenza season, vaccination coverage among physicians (85.6%) neared the *Healthy People 2020* target of 90% (8). Among HCP work settings, hospitals were associated with the highest coverage, whereas coverage was lowest among HCP other than physicians and nurses working in LTCFs. Increased vaccination coverage was associated with employer vaccination requirements, employer promotion of HCP vaccination, and vaccination offered at no cost for multiple days.

These results indicate that targeted intervention and promotion programs developed for HCP groups other than physicians

FIGURE 1. Percentage of health-care personnel (HCP) who received influenza vaccination, by occupation — Internet panel surveys, United States, 2009–10, 2010–11, and 2011–12 influenza seasons

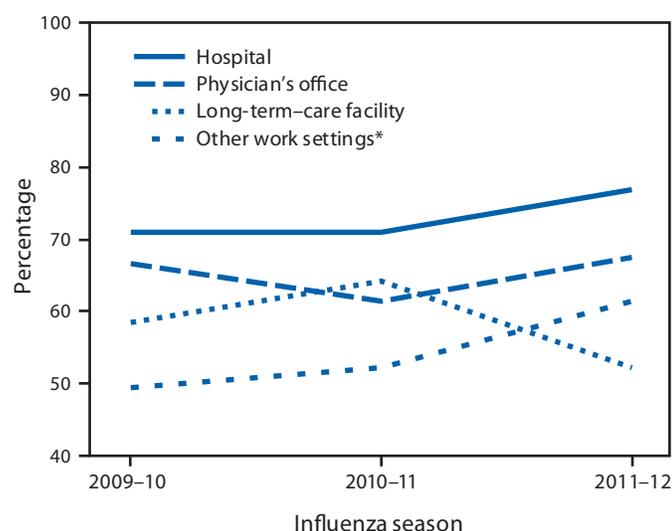


Sources: CDC. Interim results: influenza A (H1N1) 2009 monovalent and seasonal influenza vaccination coverage among health-care personnel—United States, August 2009–January 2010. *MMWR* 2010;59:357–62.

CDC. Influenza vaccination coverage among health-care personnel—United States, 2010–11 influenza season. *MMWR* 2011;60:1073–7.

* Includes dentists, nurse practitioners or physician's assistants, allied health professionals, technicians or technologists, assistants or aides, administrative support staff members or managers, and nonclinical support staff members (e.g., food service workers, housekeeping staff members, maintenance staff members, janitors, and laundry workers).

FIGURE 2. Percentage of health-care personnel (HCP) who received influenza vaccination, by work setting — Internet panel surveys, United States, 2009–10, 2010–11, and 2011–12 influenza seasons



Sources: CDC. Interim results: influenza A (H1N1) 2009 monovalent and seasonal influenza vaccination coverage among health-care personnel—United States, August 2009–January 2010. *MMWR* 2010;59:357–62.

CDC. Influenza vaccination coverage among health-care personnel—United States, 2010–11 influenza season. *MMWR* 2011;60:1073–7.

* Includes dental offices, pharmacies, nonhospital laboratories, medical-related schools, emergency medical technician sites, and home medical-care sites.

What is already known on this topic?

To help reduce influenza-related morbidity and mortality that occurs in medical-care settings, the Advisory Committee on Immunization Practices recommends annual influenza vaccination for all health-care personnel (HCP). Estimates of overall HCP vaccination coverage were 63.4% and 63.5% from Internet panel surveys, and 57.5% and 55.8% from the National Health Interview Survey for the 2009–10 and 2010–11 seasons, respectively.

What is added by this report?

For the 2011–12 season, overall influenza vaccination coverage among HCP was 66.9%. By occupation and work setting, coverage was highest among physicians (86.7%) and nurses (78.1%) who worked in hospitals and lowest (50.2%) among other HCP who worked in long-term care facilities (LTCFs).

What are the implications for public health practice?

A comprehensive intervention strategy that includes targeted education, promotion to encourage vaccination, easy access to vaccine at no cost on multiple days, and routine monitoring can increase HCP influenza vaccination coverage. Beginning in January 2013, the Centers for Medicare & Medicaid Services (CMS) will require acute care hospitals to report HCP influenza vaccination levels as part of the Hospital Inpatient Quality Reporting Program. Targeted intervention and promotion programs developed specifically for HCP who are not physicians or nurses, and particularly for those who work in LTCFs, might be important components in improving overall HCP vaccination coverage.

and nurses, and especially for those who work in LTCFs, might be important components in improving overall HCP vaccination coverage. Raising vaccination coverage of HCP working in LTCFs is especially important given that LTCF residents are at increased risk for serious influenza complications and that HCP vaccination might reduce the risk for death among LTCF residents (2,3). To increase vaccination coverage for HCP, each medical-care facility should develop a comprehensive intervention strategy that includes education and promotion to encourage vaccination and easy access to vaccine at no cost. Educational programs should include emphasis on vaccination effectiveness and its safety, knowledge of influenza transmission, and the benefits of HCP vaccination for staff, patients, and family.

The findings in this report are subject to at least five limitations. First, the sample was not selected randomly from the approximately 18 million HCP in the United States. The sample consisted of a much smaller group of several thousand volunteer HCP (a nonprobability sample) who had already enrolled in Medscape or SurveySpot. Second, all results are based on self-report and are not verified by employment or medical records. Third, the definition of HCP used in this Internet panel survey might vary from definitions used in other surveys of vaccination coverage. Fourth, occupation categories

could not always be separated because of small sample sizes and questionnaire design or other limitations. Finally, the 2011–12 estimates might not be directly comparable to those made for previous influenza seasons using Internet survey panels and NHIS, because different methods of recruitment were used each year. Compared with the population-based estimates of NHIS, influenza vaccination among HCP from the Internet panel surveys differed (63.4% versus 57.5%) for 2009–10 (5). A similar difference (63.5% versus 55.8%) was observed for 2010–11 (4) (CDC, unpublished data, 2012).

A comprehensive intervention strategy that includes targeted education, promotion to encourage vaccination, and easy access to vaccination at no cost on multiple days can increase HCP vaccination coverage (1). Targeting undervaccinated HCP groups and regularly monitoring vaccination coverage are activities needed to stimulate increases in HCP influenza vaccination. CDC's National Healthcare Safety Network (NHSN), a longitudinal surveillance system, has introduced a module for reporting HCP influenza vaccination at the hospital level, based on the HCP influenza vaccination measure endorsed by the National Quality Forum (9). Beginning in January 2013, the Centers for Medicare & Medicaid Services will require acute care hospitals that they reimburse to report HCP influenza vaccination levels as part of the Hospital Inpatient Quality Reporting Program.[‡] CDC will continue to use Internet panel surveys to monitor self-reported HCP vaccination coverage and reasons for nonvaccination across multiple occupation categories and work settings.

[‡]Additional information available at <http://www.cms.gov/medicare/quality-initiatives-patient-assessment-instruments/hospitalqualityinits/hospitalrhqdapu.html>.

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Influenza Vaccination Coverage Among Pregnant Women — 2011–12 Influenza Season, United States

Pregnant women and their newborns are at elevated risk for influenza-associated hospitalization and death (1). The Advisory Committee on Immunization Practices (ACIP) and the American College of Obstetricians and Gynecologists (ACOG) have recommended influenza vaccination for all women who are or will be pregnant during the influenza season, regardless of trimester (1,2). To estimate influenza vaccination coverage among pregnant women for the 2011–12 influenza season, CDC analyzed data from an Internet panel survey (3) conducted April 3–17, 2012, among women pregnant at any time during the 4-month period October 2011–January 2012. Among 1,660 survey respondents, 47.0% reported they had received influenza vaccination; 9.9% were vaccinated before pregnancy, 36.5% during pregnancy, and <1.0% after pregnancy. Overall, 43.7% of women reported receipt of both a health-care provider recommendation and offer of influenza vaccination; these women had higher vaccination coverage (73.6%) than women who received only a recommendation but no offer of vaccination (47.9%) and women who received neither a recommendation nor an offer (11.1%). Continued efforts are needed to encourage providers of medical care to routinely recommend and offer influenza vaccination to women who are pregnant or who might become pregnant.

To provide timely end-of-season estimates of influenza vaccination coverage and information on knowledge, attitudes, and behaviors related to influenza vaccination among women pregnant during the 2011–12 influenza season, CDC conducted an Internet panel survey during April 3–17, 2012 that was similar to a survey conducted in April 2011 (3). Women aged 18–49 years who were pregnant at any time since August 2011 were recruited from a SurveySpot panel operated by Survey Sampling International.* Of 7,485 women who visited the Internet survey site during the study period, 2,223 were determined to be eligible for the survey based on the timing of their pregnancies; of those, 2,096 (94%) completed the online survey. Data were weighted to reflect the age group, racial/ethnic, and geographic distribution of the total U.S. population of pregnant women during 1995–2005.† The same questions used to determine pregnancy status in the April 2011 survey (3) were used in this survey. In addition,

women pregnant since August 2011 but no longer pregnant at the time of their response were asked to provide the start and end months of pregnancy. For this analysis, the study population was limited to 1,660 women reporting pregnancy any time during the usual peak influenza vaccination period of October 2011–January 2012.

Survey respondents were asked questions about their knowledge and attitudes regarding influenza and influenza vaccination; their vaccination status before, during, and after pregnancy; their physician's practices regarding influenza vaccination, place of vaccination, and reasons for not receiving influenza vaccination. Weighted analyses were conducted. Because opt-in Internet panels are not random samples, statistical measures such as compilation of confidence intervals and tests of differences cannot be performed.§

Of the 1,660 women pregnant at any time during October 2011–January 2012, 47.0% reported influenza vaccination since August 1, 2011: 9.9% were vaccinated before pregnancy; 36.5% during pregnancy; and 0.6% after pregnancy (Table 1). By trimester of pregnancy, the percentages vaccinated were similar (10.1%, 12.6%, and 11.8% during the 1st, 2nd, and 3rd trimester, respectively). Women aged 18–24 years had lower vaccination coverage (42.3%) than women aged 25–49 years (49.4%). Non-Hispanic black women had lower vaccination coverage (39.8%) than Hispanic women (48.8%), non-Hispanic white women (47.9%), and other non-Hispanic women (53.7%). Vaccination coverage estimates varied by U.S. Census regions from 43.9% in the south to 49.7% in the northeast (Table 1). Women with education beyond a college degree had higher coverage (61.3%) than those with a college degree (49.4%) or less than a college degree (42.8%). Women with private or military medical insurance had higher vaccination coverage (50.2%) than those without medical insurance (36.9%) (Table 1).

Of women in the April 2012 survey, 39.8% reported having received influenza vaccination for the 2010–11 influenza season. Among these women, vaccination coverage for the 2011–12 season was 86.5%, compared with 20.7% for those who did not receive vaccination for the 2010–11 season (Table 1).

Among women who received a health-care provider recommendation to be vaccinated, 81.6% were offered vaccination during a provider visit. Among women who received both a

*Additional information available at <http://www.surveysampling.com>.

†The sample of pregnant women was weighted to reflect the age group, racial/ethnic and geographic distribution of total pregnant women in the United States during 1995–2005. Source: CDC. Estimated pregnancy rates for the United States, 1990–2005: an update. *Nat Vital Stat Rep* 2009;58(4).

§Additional information available at http://www.aapor.org/opt_in_surveys_and_margin_of_error1.htm.

TABLE 1. Percentage vaccinated among women pregnant at any time during October 2011–January 2012, by selected characteristics — Internet panel surveys, United States, 2011–12 influenza season

Characteristic	Unweighted no. of participants	Unweighted %	Weighted %	Weighted % vaccinated	Percentage point change from 2010–11 survey*
Vaccinated	802	48.3	—	47.0	-2.0
Before pregnancy	165	9.9	—	9.9	-1.8
During pregnancy	625	37.7	—	36.5	4.3
1st trimester	172	10.4	—	10.1	—
2nd trimester	218	13.1	—	12.6	—
3rd trimester	200	12.1	—	11.8	—
After pregnancy	12	0.7	—	0.6	-4.5
Unvaccinated	858	51.7	—	53.0	
Age group (yrs)					
18–24	428	25.8	33.8	42.3	-1.3
25–49	1,232	74.2	66.2	49.4	-2.4
Race/Ethnicity					
Hispanic	234	14.1	23.5	48.8	-4.4
White, non-Hispanic	1,179	71.0	54.2	47.9	1.4
Black, non-Hispanic	132	8.0	17.2	39.8	-7.3
Other, non-Hispanic	115	6.9	5.2	53.7	-10.1
Census regions					
Region 1: Northeast	273	16.5	17.4	49.7	-4.5
Region 2: Midwest	420	25.4	21.2	48.5	-6.1
Region 3: South	591	35.7	35.2	43.9	-0.5
Region 4: West	373	22.5	26.2	48.1	0.9
Education					
Less than college degree	845	50.9	55.5	42.8	-0.6
College degree only	603	36.3	34.3	49.4	-5.5
More than college degree	186	12.8	10.2	61.3	-5.6
Married					
Yes	1,161	69.9	64.3	49.1	-4.5
No	499	30.1	35.7	43.1	0.8
Medical coverage					
Any public	555	33.4	37.4	44.0	-2.2
Private/Military only	1,000	60.2	55.9	50.2	-3.9
None reported	105	6.3	6.7	36.9	1.9
Working status†					
Working	816	49.2	47.5	47.9	-6.7
Not working	843	50.8	52.5	46.2	1.6
Income‡					
<\$50,000	814	49.5	53.0	44.8	1.3
≥\$50,000	832	50.6	47.0	49.7	-4.5
High-risk condition¶					
Yes	602	36.3	37.4	52.4	-5.8
No	1,058	63.7	62.6	43.8	-1.9
Vaccinated for previous influenza season					
Yes	691	41.7	39.8	86.5	3.0
No	968	58.4	60.2	20.7	-0.2
Provider recommendation/Offer					
Recommended and offered	744	44.8	43.7	73.6	2.7
Recommended with no offer	181	10.9	9.9	47.9	15.1
No recommendation and no offer	413	24.9	26.4	11.1	2.6
Unknown status for recommendation and offer	243	14.6	15.0	30.9	1.8
Did not visit a provider since August 2011	79	4.8	5.0	50.5	5.7

* **Source:** CDC. Influenza vaccination coverage among pregnant women—United States, 2010–11 influenza season. MMWR 2011;60:1078–82.

† Those who were employed for wages and the self-employed were grouped as working. Those who were out of work, homemakers, students, retired, or unable to work were grouped as not working.

‡ For those who only reported a range for income, the mid-point of the range was used for the actual household income.

¶ Conditions associated with increased risk for serious medical complications from influenza, including chronic asthma, a lung condition other than asthma, a heart condition, diabetes, a kidney condition, a liver condition, obesity, or a weakened immune system caused by a chronic illness or by medicines taken for a chronic illness.

What is already known on this topic?

Pregnant women are at increased risk for influenza-associated complications and are recommended to receive inactivated influenza vaccination regardless of trimester. Vaccination coverage among pregnant women was estimated at 32% (National 2009 H1N1 Flu Survey) and 47% (Pregnancy Risk Assessment Monitoring System) for the 2009–10 season and 38% (Behavioral Risk Factor Surveillance System) and 49% (Internet panel survey) for the 2010–11 influenza season.

What is added by this report?

Approximately 47% of pregnant women in the Internet panel survey reported being vaccinated for influenza for the 2011–12 influenza season; 9.9% were vaccinated before pregnancy; 36.5% during pregnancy; and <1.0% after pregnancy. Women who received both health-care provider recommendations and offers to vaccinate had substantially higher vaccination coverage (73.6%) compared with other women (47.9% for those with recommendations but no offers, and 11.1% for those with neither).

What are the implications for public health practice?

Continued efforts are needed to encourage health-care providers to educate their patients about the safety and effectiveness of vaccination and continually recommend and offer influenza vaccination to their pregnant patients. To overcome their concerns and fears, messages to pregnant women should emphasize the safety and effectiveness of maternal influenza vaccination for both the mother and baby.

health-care provider recommendation and offer for influenza vaccination, 73.6% received influenza vaccination, which was substantially higher than for women whose health-care provider recommended but did not offer vaccination (47.9%) and for women who did not receive either a provider recommendation or offer (11.1%) (Table 1).

Among the 87.7% of women participants who indicated that they had visited a provider since August 2011, 62.9% received a provider recommendation for influenza vaccination (Table 2). Within each of the categories, the subgroups with lower percentages reporting receipt of a provider recommendation were non-Hispanic black (54.1%), having no medical insurance (46.4%), underweight before pregnancy (55.0%), not vaccinated for the previous season (48.6%), and visited a provider because of pregnancy five times or fewer (52.3%) (Table 2). The subgroups with a higher percentage receiving a provider recommendation were women with more than a college degree (71.9%), women who were vaccinated for the previous season (83.7%), and those with more than 10 pregnancy-related provider visits (76.0%) (Table 2).

Most women who received influenza vaccination received it at their obstetrician's or midwife's office (41.4%), at a non-obstetrician health-care provider's office (20.7%), or a hospital, clinic or health center (17.5%). Other locations for vaccination

included pharmacy/drug or grocery store (8.0%); health department (4.1%); and workplace, school, or others (8.3%).

Among unvaccinated women who received a health-care provider recommendation and offer of vaccination, when the main reason for nonvaccination was asked, the top three most common answers were 1) concern that the vaccination would cause influenza (25.6%); 2) concern about the safety risk to the baby (13.1%); and 3) not believing the vaccination was effective (12.5%) (Table 3). Among women reporting no provider offer for influenza vaccination, the same three answers for not being vaccinated were most frequently cited (Table 3).

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Editorial Note

In previous years, estimates of annual influenza vaccination levels among pregnant women were consistently lower than 30% through the 2007–08 season, according to data from the National Health Interview Survey (4) and Behavioral Risk Factor Surveillance System (BRFSS) (5). During the 2009–10 influenza A (H1N1) pdm09 season, estimates increased to 32% (National 2009 H1N1 Flu Survey) (6) and 47% (Pregnancy Risk Assessment Monitoring System) (5). During the 2010–11 influenza season, estimates were 38%, according to BRFSS data (5) and 49%, based on the previous Internet panel survey (3). The findings in this report indicate that the level of influenza vaccination among pregnant women achieved during the two preceding seasons (3) was sustained during the 2011–12 season.

Women who received a health-care provider recommendation for influenza vaccination continued to be more likely to be vaccinated (5,6); in addition, women who received both a provider recommendation and an offer for influenza vaccination were more likely to be vaccinated than women who only received a provider recommendation. In this study, 81.6% of women with a recommendation to be vaccinated were offered vaccination during a visit with their provider. Among women

TABLE 2. Percentage vaccinated among women pregnant at any time during October 2011–January 2012 who reported at least one visit to a health-care provider since August 2011, by health-care provider recommendation and offer status* and selected characteristics — Internet panel survey, United States, 2011–12 influenza season

Characteristic	Received health-care provider recommendation		% vaccinated					
	No.	%†	Recommended and offered		Recommended with no offer		No recommendation	
			No.	%†	No.	%†	No.	%†
Total	1,356	62.9	693	73.8	167	48.5	380	11.0
Age group (yrs)								
18–24	329	56.6	162	70.5	—§	—	107	6.1
25–49	1,027	65.9	531	75.2	138	52.1	273	14.0
Race/Ethnicity								
Hispanic	186	61.8	96	76.8	—	—	57	11.8
White, non-Hispanic	986	65.1	505	74.1	128	48.2	265	12.0
Black, non-Hispanic	94	54.1	44	66.3	—	—	36	8.1
Other, non-Hispanic	90	69.4	48	77.0	—	—	—	—
Education								
Less than college degree	654	61.0	329	71.7	74	40.1	197	7.8
College degree only	510	62.4	267	74.4	60	50.1	137	14.5
More than college degree	172	71.9	87	79.5	31	68.1	43	16.3
Married								
Yes	982	64.3	509	75.1	124	51.1	262	11.7
No	374	60.0	184	71.1	43	42.5	118	9.7
Medical coverage								
Any public	428	63.2	227	72.9	52	38.1	122	9.9
Private/Military only	858	64.2	440	75.1	108	56.2	230	12.1
None reported	70	46.4	—	—	—	—	—	—
Working status¶								
Working	735	63.0	335	75.8	93	52.6	191	12.4
Not working	721	62.7	358	72.0	74	43.2	189	9.7
Poverty status**								
Below poverty	264	59.9	130	74.2	32	22.5	74	7.3
At or above poverty	1,064	63.5	547	74.0	131	57.5	299	12.4
Pre-pregnancy weight††								
Underweight	76	55.0	36	66.6	—	—	—	—
Normal weight	734	61.5	365	73.4	98	41.7	198	9.8
Overweight	242	67.8	128	70.0	32	63.3	65	5.6
Obese	267	64.0	144	78.1	—	N/A	80	15.5
High-risk conditions§§								
Yes	492	67.6	273	76.8	55	52.9	125	11.6
No	864	60.0	420	71.6	112	46.1	255	10.7
Vaccinated for previous season								
Yes	581	83.7	410	94.7	70	89.5	71	51.2
No	774	48.6	283	45.7	97	20.8	309	2.4
No. of provider visits related to pregnancy								
≤5 visits	487	52.3	205	70.7	52	43.7	180	7.8
6–10 visits	530	64.4	272	72.9	74	48.8	137	13.4
>10 visits	288	76.0	182	79.0	35	49.5	53	18.5

* The women were asked two questions: “Since August 2011, during your visits to the doctor/medical professional, did your doctor or other health professional personally recommend that you get a flu vaccination?” and “Since August 2011, during your visits to the doctor/medical professional, did your doctor or other health professional offer the flu vaccination to you?” A total of 243 women with unknown response regarding provider recommendation and offer were excluded.

† Weighted percentage.

§ Sample size <30.

¶ Those who were employed for wages and the self-employed were grouped as working. Those who were out of work, homemakers, students, retired, or unable to work were grouped as not working.

** Below poverty was defined as a total family income of <\$22,811 for a family of four with two minors as of 2011, as categorized by the U.S. Census Bureau (<http://www.census.gov/hhes/www/poverty/data/threshld/index.html>). For those who only reported a range for income, the mid-point of the range was used for the actual household income.

†† Based on body mass index (weight [kg] / height [m]²). Underweight = <8.5; normal weight = 18.5–24.9; overweight = 25–29.9; obese = ≥30.0.

§§ Conditions associated with increased risk for serious medical complications from influenza, including chronic asthma, a lung condition other than asthma, a heart condition, diabetes, a kidney condition, a liver condition, obesity, or a weakened immune system caused by a chronic illness or by medicines taken for a chronic illness.

TABLE 3. Main reasons offered for not receiving influenza vaccination among nonvaccinated women pregnant at any time during October 2011–January 2012*, by health-care provider recommendation and offer status — Internet panel survey, United States, 2011–12 influenza season

Reason	Total		Recommendation and offer [†]		No offer [†]	
	No.	% [§]	No.	%	No.	%
Total	815	100	179	28	434	72
Concerned vaccination would give me the flu	145	20.0	43	25.6	70	18.3
Concerned about the safety risk to my baby	131	15.8	26	13.1	72	17.1
Don't think the vaccination is effective in preventing flu	93	10.7	21	12.5	53	11.2
Do not need the vaccination	66	8.4	12	7.8	36	8.8
The flu will not make me very sick/can get medication to treat	61	7.6	5	3.0	41	9.0
Concerned about the safety risks to myself	52	5.5	16	6.4	21	4.3
Afraid of needle/shots	38	5.4	13	10.6	14	3.3
Concerned about side effects	39	5.2	2	1.7	22	4.9
Don't trust it	43	4.6	11	5.6	25	4.9
Not covered by medical insurance/costs too much	35	4.3	7	2.5	19	5.4
Don't have time/don't know where to go/who to call	31	3.7	5	3.2	20	4.5
Allergic/contraindication	22	2.4	6	2.5	6	1.6
Other reason	59	6.4	12	5.5	35	6.7

* Main reason data were missing for 43 women.

[†] The women were asked two questions: "Since August 2011, during your visits to the doctor/medical professional, did your doctor or other health professional personally recommend that you get a flu vaccination?" and "Since August 2011, during your visits to the doctor/medical professional, did your doctor or other health professional offer the flu vaccination to you?" Data regarding provider recommendation and offer were missing for 202 women.

[§] Weighted percentage.

in this group, vaccination coverage was 73.6%, nearly reaching the *Healthy People 2020* target of 80% for pregnant women, regardless of provider recommendations or offers.[‡]

Studies of health-care providers have suggested that they are more likely to discuss influenza vaccination with their patients when they understand the vaccination guidelines for pregnant women, are vaccinated themselves, or provide vaccination at their practice (7–8). However, providers also might be more likely to recommend influenza vaccination to women who appear to be in favor of influenza vaccination. A previous study found that providers' who did not recommend vaccination were more likely influenced by patient preference than the providers' continuing education (9).

Even among the 288 women in the sample with more than 10 pregnancy-related provider visits, about one fourth reported they did not receive a provider recommendation for influenza vaccination. Providers might have administrative and financial barriers to routine offering of influenza vaccination, such as working in a solo practice, concern about the up-front cost of ordering vaccines, high costs of storing and maintaining vaccine inventory, and other logistical challenges of vaccine administration (10). In this study, women without medical insurance of any type or with less frequent provider visits related to pregnancy were less likely to receive a provider recommendation. Health-care providers should use every opportunity to recommend and offer vaccination if appropriate, and women

who are pregnant or who might become pregnant should ask about influenza vaccination at their provider visits, and if necessary, make a visit just for influenza vaccination.

Among unvaccinated women, 25.6% who received a provider offer and recommendation indicated that the main reason they chose not to receive an influenza vaccination was concern that the vaccination would give them influenza; another 13.1% said they were concerned about the safety risk to their baby. Tailored education messages on vaccination safety delivered through multiple means including social media and text messaging might help change negative attitudes and false beliefs about vaccination.

The findings in this report are subject to at least four limitations. First, the survey was self-administered and not validated by medical record review. Second, the results were weighted to the distribution of pregnant women in the U.S. population, but the study sample did not include women without Internet access. Therefore, it might not be a representative sample of pregnant women and findings might not be generalizable to all pregnant women in the United States. Third, estimates might be biased if the selection processes for entry into the Internet panel and a woman's decision to participate in this particular survey were related to receipt of vaccination. Comparing estimates, the Internet panel survey estimates for women pregnant at any time during October–January was 9 percentage points higher than the BRFSS estimate for women who were pregnant at interview during December–February for the 2010–11 influenza season (5) and 4 percentage points higher for the

[‡] Additional information available at <http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=23>.

2011–12 season (CDC, unpublished data, 2012). Additional comparisons with BRFSS and other available data sources over multiple seasons are needed to determine whether the more timely Internet panel survey estimates, despite sampling differences, provide valid assessments of trends. Finally, the results from these surveys might be subject to multiple sources of error, including but not limited to sampling error, coverage error, and measurement error.

Health-care provider recommendation and offer of influenza vaccination were associated with higher vaccination levels among pregnant women. Efforts to enhance provider practices are needed. Messages to pregnant women from providers should more strongly emphasize the safety and effectiveness of maternal influenza vaccination and the risk from influenza to mother and infants without maternal vaccination. Increasing knowledge among pregnant women regarding influenza risks and influenza vaccination safety might also increase opportunities for provider recommendations and offers to vaccinate.

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Influenza A (H3N2) Variant Virus-Related Hospitalizations — Ohio, 2012

Since July 2012, 305 cases of infection with influenza A (H3N2) variant (H3N2v) virus containing the influenza A (H1N1)pdm09 M gene have occurred in multiple U.S. states, primarily associated with swine exposure at agricultural fairs (1). In Ohio, from July 28 to September 25, 2012, a total of 106 confirmed H3N2v cases were identified through enhanced surveillance. Whereas most H3N2v patients experienced mild, self-limited influenza-like illness (ILI), 11 of the Ohio patients were hospitalized, representing 69% of all H3N2v hospitalizations in the United States. Of these hospitalized H3N2v patients, six were at increased risk for influenza complications because of age or underlying medical conditions, including the only H3N2v-associated fatality reported in the United States to date. This report summarizes the epidemiology and clinical features of the 11 hospitalized H3N2v patients in Ohio. These findings reinforce the recommendation for persons at high risk for influenza complications to avoid swine exposure at agricultural fairs this fall (2). In addition, persons not at high risk for influenza complications who wish to reduce their risk for infection with influenza viruses circulating among pigs also should avoid swine and swine barns at agricultural fairs this fall.

Case Finding

In Ohio, testing of upper respiratory specimens was encouraged for patients with ILI (fever $\geq 100^{\circ}\text{F}$ [$\geq 37.8^{\circ}\text{C}$] with cough or sore throat), and epidemiologic linkages to a confirmed H3N2v case or attendance at an event where confirmed cases were identified (Ohio Department of Health, Health Alert Network: H3N2v information and recommendations, August 2, 2012) (3). As part of the epidemiologic investigation, direct swine contact was defined as touching pigs; indirect swine contact was defined as visiting a swine barn at a fair without touching pigs. Respiratory specimens were confirmed as positive for H3N2v virus by testing at the Ohio Department of Health (ODH) laboratory using the CDC FLU real-time reverse transcription polymerase chain reaction (rRT-PCR) Dx Panel for influenza A (H3N2)v and at CDC by rRT-PCR and genetic sequencing (1). Information about hospitalized patients was collected using a standard CDC human infection with novel influenza A virus case report form, supplemented by review of medical records.

Case Reports

Patient A. A woman aged 61 years with type 2 diabetes, congestive cardiomyopathy, hypertension, and a past history of B-cell lymphoma, experienced cough and sneezing on

August 10 (Table, patient 11). Beginning 6 days earlier, she spent 4 days at a county fair where she visited a swine barn and had direct swine contact. Over the next 2 weeks, she experienced cough and fever and was treated with antibiotics for a sinus infection. On August 25, she sought care at an emergency department with worsening symptoms. The patient was transferred to a tertiary care center with hemodynamic instability and respiratory distress, and required mechanical ventilation. Her condition deteriorated, and she died on August 26. Blood cultures obtained on August 25 yielded *Pseudomonas aeruginosa*, and a nasopharyngeal swab was positive for H3N2v virus by rRT-PCR at ODH. Genetic sequencing of H3N2v virus from a clinical specimen from this patient at CDC was nearly identical to sequencing from several nonfatal H3N2v cases in Ohio, and from H3N2pM* viruses identified among pigs at fairs in Ohio.

Patient B. On August 2, a girl aged 4 years with cough-variant asthma requiring daily inhaled corticosteroids developed fever, 6 days after attending a county fair where she had direct swine contact (Table, patient 6). No close contacts of the patient were ill. The fever resolved after a few days, but diarrhea and cough developed, and the doses of her asthma control medications were increased. On August 11, the diarrhea continued, fever of 101°F (38.3°C) developed, and she was evaluated at an emergency department. Examination revealed dehydration, bilateral otitis media, and normal respiratory function. Chest radiography displayed hyperinflation of the lungs. The girl was treated with intravenous fluids for dehydration and ceftriaxone for otitis media, admitted overnight for hydration, and discharged the following day on amoxicillin. Before discharge, a nasopharyngeal specimen was tested using a commercial respiratory virus PCR panel; results were positive for influenza A (H3) and parainfluenza type 3 viruses. Further testing of a nasopharyngeal specimen was positive for H3N2v virus at ODH and CDC.

Of the 11 hospitalized H3N2v patients, case report forms for seven and hospital records for nine were available. The median age of the patients was 6 years (range: <1 year–61 years), and eight were female (Table). Patients lived in eight counties and attended six fairs. Direct contact with swine prior to illness onset was reported by six patients (five children and one adult), and of these, one patient might have had direct contact with an ill pig. Indirect contact with swine during fair attendance was reported by four patients, including two children aged ≤ 2

* Infection of swine with H3N2 virus containing the influenza A(H1N1)pdm09 virus M gene is referred to as H3N2pM virus. Infection of humans with this virus is referred to as H3N2v virus.

Morbidity and Mortality Weekly Report

TABLE. Characteristics of hospitalized patients with confirmed H3N2v virus infection — Ohio, 2012

Patient no.	Age (yrs)	Date(s) of exposure	Date of onset	Type and description of swine exposure	Underlying medical problem	Admission dates and reason	Complications	Imaging or abnormal laboratory findings	Treatment	Day of illness antiviral treatment was started
1* [†]	<1	July 30–Aug 5	Aug 5	Indirect contact. Attended a county fair for 6 days while sibling showed pigs, but spent much of time in a stroller in the swine barn. Sibling's pigs normally boarded at family member's house.	None	Aug 7–8; dehydration, influenza A	Dehydration	None	Oseltamivir; IV fluids	2
2*	7	Unknown	Aug 4	Indirect contact. Visited a county fair sometime during the week preceding illness.	Acute lymphocytic leukemia	Aug 6–7; fever, observation	Dehydration	Chest radiograph: normal	Oseltamivir; ceftriaxone	2
3*	12	July 30–Aug 4	Aug 2	Direct contact. Attended county fair for 3 days, involved in transport of swine.	None	Aug 3–4; dehydration, influenza A, bronchitis	Dehydration	Chest radiograph: no infiltrates; serum bicarbonate: 18 mmol/L	Oseltamivir; IV fluids	2
4* [†]	1	July 28–Aug 4	Aug 5	Indirect contact. Attended state fair and county fair. Was in stroller in swine barn at state fair. Did not enter swine barn at county fair, but was in stroller and walked in sheep barn which housed several pigs. Was in barn with an ill pig that later died, but without direct swine contact.	None	Aug 7–8; croup	Croup	None	Oseltamivir; croup tent; methylprednisolone; IV fluids	3
5* [†]	6	Aug 5–11	Aug 12	Direct contact. Attended county fair for 6 days, stayed in camper on fairgrounds; reported petting pigs on Aug 6 and 7.	History of asthma	Aug 13–14; influenza-like illness	Nonpurulent bilateral conjunctivitis	Chest radiograph: no acute process Throat culture: group A beta <i>Streptococcus</i>	IV fluids	Not given
6* [†]	4	July 26	Aug 2	Direct contact. Attended a county fair for 1 day.	Asthma	Aug 12–13; dehydration	Asthma exacerbation; otitis media	Chest radiograph: hyperinflation, no consolidation or effusion PCR [§] : parainfluenza virus type 3	IV fluids; inhaled corticosteroids; albuterol; amoxicillin	Not given
7* [†]	5	Aug 3–11	Aug 10	Direct contact. Attended a county fair for 7 days. Siblings were showing swine, which normally stay with another family member. Also had contact with an ill pig, unclear whether this contact was direct or indirect.	None	Aug 11–13; fever with petechiae	Thrombocytopenia	No imaging Platelets: 113,000/mm ³	Ceftriaxone; oseltamivir [¶]	2
8*	5	Aug 4–5	Aug 9	Indirect contact. Visited county fair for 2 days, mother reported child was "playing near pigs."	Genetic syndrome; developmental delay; asthma	Aug 10–12; severe constipation; pneumonia	Pneumonia	Chest radiograph: bronchial airway disease CT pelvis: stool filling colon, large fecal mass in rectal vault	Ceftriaxone; IV fluids; oxygen by nasal cannula; polyethylene glycol electrolyte solution by nasogastric tube	Not given
9 [†]	6	Aug 10–12	Aug 14	Direct contact. Attended county fair for 2 days.	None	Aug 15–16; dehydration	Dehydration	None	Oseltamivir [¶]	3
10 [†]	6	Unknown	Aug 25	No contact. No attendance at fairs. Saw grandmother on Aug 23, who works with horses on a farm where pigs are also kept. Grandmother had no recent illness. No known illness in pigs.	None	Aug 25–28; urinary tract infection; failed outpatient therapy (Aug 25–28)	None	Unavailable	IV antibiotics**	Not given
11* [†]	61	Aug 4–9	Aug 10	Direct contact. Attended county fair for 4 days, spent time in swine barn, at arena, and stayed on fairgrounds in camper. Reported direct pig contact during fair.	Diabetes; cardiomyopathy; hypertension; history of lymphoma	Aug 25–26; atrial fibrillation; respiratory distress; hypoxia	Pneumonia; sepsis; death	Chest CT: bilateral infiltrates; blood culture: <i>Pseudomonas aeruginosa</i>	Supportive care in intensive care unit; IV antibiotics**	Not given

Abbreviations: IV = intravenous; PCR = polymerase chain reaction; CT = computed tomography.

* Data gathered from medical chart review.

[†] Data gathered using novel influenza A case report form.

[§] Commercial respiratory virus PCR panel.

[¶] Oseltamivir therapy discontinued after 1 day because of vomiting.

** Antibiotic unknown.

years who were in strollers in swine areas, and two children with serious underlying medical conditions. Of the four children who reported indirect exposure to swine, exposure was reported to be ≥ 2 days for three. One child did not attend a fair, but had contact with a person who was exposed to pigs.

Among the 11 hospitalized H3N2v patients, six were considered at high risk for complications from influenza, because of age < 5 years (three) or underlying medical conditions (two children, one adult). All 11 experienced fever, nine had cough, and seven had vomiting or diarrhea. One patient was admitted for an unrelated medical problem and tested for respiratory viruses because of prolonged fever and a new cough. Dehydration was the most common reason for admission. Two children were admitted for observation because of fever: one with acute lymphocytic leukemia and one with a petechial rash. Only one patient had received antiviral treatment before admission, four patients received oseltamivir treatment within 48 hours of illness onset, and six were treated with oseltamivir during hospitalization, but two were treated only for 1 day. Only one child required supplemental oxygen, and another was treated with humidified air. Patient A, who subsequently died, was the only patient requiring mechanical ventilation. Median length of hospital stay was 1 day (range: 1–3 days).

Reported by

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Editorial Note

Of the hospitalized H3N2v patients described in this report, 10 of 11 were children, and six of 11 were considered at high risk for influenza complications because they were aged < 5 years or had underlying medical conditions. All hospitalizations were brief and severe illness was observed only in the patient who died. Six patients reported direct contact with pigs at agricultural fairs. Among four patients with indirect swine exposure at fairs, three reported ≥ 2 days of fair attendance. One patient had no reported swine exposure. These findings support current recommendations that persons at high risk for influenza complications, including children aged < 5 years and persons with chronic underlying medical conditions that confer high

What is already known on this topic?

Beginning in the summer of 2012, CDC reported increases in numbers of cases of human infections with influenza A (H3N2) variant (H3N2v) viruses associated with swine exposure at agricultural fairs. Nationwide, 305 cases, 16 hospitalizations, and one death across 10 states have been reported since July 2012.

What is added by this report?

Of 16 patients hospitalized with confirmed H3N2v virus infection, 11 were Ohio residents, including the only H3N2v-associated fatality to date. All but one of the Ohio patients were children, and six were considered high-risk for complications of influenza because they were aged < 5 years or had underlying medical conditions; four high-risk persons became ill after indirect contact with pigs. These findings support current CDC recommendations that persons at high risk for complications of influenza should avoid exposure to swine at agricultural fairs this fall.

What are the implications for public health practice?

County and state fairs in the United States continue to occur through the month of October, highlighting the potential for continued cases of H3N2v virus infection. Persons at high risk for complications of influenza should avoid exposure to swine at agricultural fairs. Patients with suspected influenza, including H3N2v, who are hospitalized or at increased risk for influenza complications, should receive antiviral treatment with oral oseltamivir or inhaled zanamivir as soon as possible. Antiviral treatment also is encouraged for outpatients with suspected H3N2v who are not at increased risk for influenza complications.

risk for severe complications from influenza, should avoid the swine barn and pens when attending agricultural fairs. (2).

Clinicians should be aware that rapid influenza diagnostic tests might not detect H3N2v virus (4). Specific H3N2v virus testing is available only at state public health laboratories and CDC. In two instances, rRT-PCR testing for H3N2v was positive after ≥ 10 days of illness in patients who were not immunosuppressed and did not receive antiviral treatment. Both patients had documented infection with other pathogens (*P. aeruginosa* in patient A and parainfluenza virus type 3 in patient B). Although *P. aeruginosa* bacteremia undoubtedly contributed to patient A's death, the role of parainfluenza virus infection in patient B's illness is unknown.

Of the six patients at high risk for influenza complications, two received antiviral treatment within 2 days after illness onset, while five of 11 patients were not treated at any time during their hospitalization. Clinicians should be aware that starting empiric antiviral treatment for 5 days with oral oseltamivir or inhaled zanamivir as soon as possible after onset of symptoms is recommended for any hospitalized patient with suspected influenza, including H3N2v, without waiting for

testing results (2,5). Beginning antiviral treatment as soon as possible also is recommended for outpatients with suspected influenza who are at high risk for influenza complications (2,5). Five H3N2v patients reported here were not in a high risk group, highlighting the fact that H3N2v virus infection can cause illness resulting in hospitalization, even in otherwise healthy persons. The current interim recommendations from CDC also encourage early antiviral treatment of non-high-risk outpatients with suspected H3N2v virus infection (2).

Public health professionals should be aware of the possibility of continued outbreaks of H3N2v virus related to agricultural fairs where swine are present. Pigs with influenza virus infection might be present at agricultural fairs, and swine might be asymptotically infected with H3N2 or other influenza A viruses (6,7). Limited serologic studies indicate that children aged <10 years lack cross-protective antibodies to H3N2v virus (8). Persons, especially young children, might be infected with influenza viruses through direct or indirect swine exposure (9). Recommendations for preventing swine-to-human transmission of influenza viruses among the general population include staying away from pigs that appear ill (e.g., are coughing or sneezing, off feed, or lethargic) and washing hands with soap and water after contact with swine. Persons at high risk for influenza complications because of age (<5 years or ≥65 years) or underlying medical conditions should avoid swine and swine barns at agricultural fairs this fall. Persons not at high risk for influenza complications who wish to reduce their risk for infection with influenza viruses circulating among pigs also should avoid swine and swine barns at fairs this fall. Continued close communication and collaboration between human and animal health agencies for ongoing surveillance and investigation of influenza viruses among pigs and humans is needed to help guide and potentially expand measures to reduce the public health risk of H3N2v and related viruses.

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Local health districts in Ohio; Sherry Sexton, Jeremy Budd, Ohio Dept of Health; Adena Greenbaum, MD, Fiona Havers, MD, Lizette Durand, DVM, EIS officers; Victoria Jiang, Su Su, Bo Shu, LaShondra Berman, Shannon Emery, Julie Villanueva, Alexander Klimov, Scott Epperson, Lyn Finelli, Susan Trock, Erin Burns, Emily Eisenberg, Joseph Bresee, Daniel Jernigan, Influenza Div, National Centers for Immunization and Respiratory Diseases, CDC.

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Postvaccination Serologic Testing Results for Infants Aged ≤ 24 Months Exposed to Hepatitis B Virus at Birth — United States, 2008–2011

An estimated 25,000 infants are born to hepatitis B surface antigen (HBsAg)-positive women annually in the United States (1). With no intervention, 40%–90% of these infants will acquire hepatitis B virus (HBV) infection (2,3). Approximately 90% of infected infants develop chronic HBV infection, with a 15%–25% risk for premature death from cirrhosis or cancer of the liver (4). To prevent perinatal HBV transmission, the Advisory Committee on Immunization Practices (ACIP) recommends that infants born to HBsAg-positive women receive postexposure prophylaxis with hepatitis B vaccine (HepB) and hepatitis B immune globulin (HBIG) within 12 hours of birth, and complete the 3-dose HepB series. To determine infant outcomes after postexposure prophylaxis, ACIP recommends postvaccination serologic testing (PVST) at age 9–18 months (4). To evaluate the implementation of these recommendations, CDC assessed outcomes at age 24 months (through 2011) among infants born to HBsAg-positive women enrolled during 2008–2009 in Enhanced Perinatal Hepatitis B Case Management Projects (EPHBP). Of 4,214 EPHBP-managed infants who completed ≥ 3 HepB doses, 63.7% had reported PVST results, 13.3% had reported PVST results but infant age was unknown, and 23.0% had no reported PVST results. Of 2,683 infants with PVST results by age 24 months, 93.3% were protected, 1.2% were infected, 3.2% remained susceptible, and 2.3% had indeterminate results. ACIP-recommended post-exposure prophylaxis was highly effective among infants who completed vaccination and received PVST. PVST is critical for guiding medical management of infants born to HBsAg-positive women, identifying infants with HBV infection and in need of further care, and monitoring progress toward the elimination of perinatal HBV transmission.

In 2007, CDC funded EPHBP to characterize HBsAg-positive pregnant women and assess outcomes among their infants. Five project sites, in Florida, Michigan, Minnesota, New York City, and Texas (excluding cities of Houston and San Antonio), collected and reported data to CDC. Data of women enrolled in EPHBP during 2008–2009 were reviewed; maternal characteristics from the first pregnancy on record were used. Records of all infants born to these women were reviewed to age 24 months; PVST records were examined for infants who completed ≥ 3 HepB doses (with and without HBIG). Of infants with reported PVST results and date, HBV serology status was categorized as “protected” (anti-HBs-positive, HBsAg-negative), “HBV-infected” (anti-HBs-negative, HBsAg-positive; anti-HBs-positive, HBsAg-positive;

or anti-HBs unreported, HBsAg-positive), “susceptible” (anti-HBs-negative, HBsAg-negative), or “indeterminate” (all other result combinations). A protective anti-HBs result was defined as ≥ 10 mIU/mL. Records of susceptible infants were reviewed for revaccination and repeat PVST. Bivariate analysis of mother/infant pairs was used to examine associations between maternal characteristics (age, race/ethnicity, place of birth, primary language) and infant outcomes (≥ 3 HepB doses, PVST receipt); significant variables were evaluated further in a multivariable logistic regression model.

EPHBP managed 5,075 infants born to 4,938 HBsAg-positive women in 2008–2009. Most of the women were aged 20–39 years, self-identified as Asian/Pacific Islander (API) or non-Hispanic black, were foreign-born, and almost half indicated a primary language other than English (Table 1). Maternal characteristics were not significantly associated with infant receipt of ≥ 3 HepB doses. Infants born to women who were Hispanic (odds ratio [OR] = 0.43; 95% confidence interval [CI] = 0.31–0.61), U.S.-born (OR = 0.60; CI = 0.47–0.75), or whose primary language was English (OR = 0.66; CI = 0.56–0.78) were significantly less likely to receive PVST compared to infants born to women who were non-Hispanic, foreign-born, and whose primary language was non-English, respectively. Infants born to API women (OR = 1.50; CI = 1.29–1.74) were significantly more likely to receive PVST compared to infants born to non-API women. After controlling for maternal place of birth (U.S.-born versus foreign-born) and primary language (English versus non-English), infants born to API women were slightly more likely to receive PVST than infants of non-API women (OR = 1.09, $p < 0.001$).

By age 24 months, 4,214 EPHBP-managed infants received ≥ 3 HepB doses (Table 2). Although 3,244 (77.0%) of these infants received PVST, 412 (9.8%) received incomplete PVST, either anti-HBs only (41) or HBsAg only (371). Among the 4,214 EPHBP-managed infants, 2,073 (49.1%) were tested at age 9–18 months; 259 (6.2%) were tested before age 9 months and 351 (8.4%) were tested after age 18 months. Age at testing was unknown (not reported) for 561 (13.3%) infants. Most (355) incomplete results were from one site where infants were tested only for HBsAg and test dates were not reported (Table 3).

Of the 2,683 infants with reported PVST dates and results, 114 remained susceptible after initial vaccination and PVST. Of these infants, 29 received three additional HepB doses and

TABLE 1. Characteristics of hepatitis B surface antigen-positive pregnant women (N = 4,938) — Enhanced Perinatal Case Management Project, Florida, Michigan, Minnesota, New York City, and Texas, 2008–2011

Characteristic	No.	(%)
Age		
≤19 yrs	146	(3.0)
20–29 yrs	2,464	(49.9)
30–39 yrs	2,153	(43.6)
≥40 yrs	175	(3.5)
Race/Ethnicity		
Asian/Pacific Islander	2,961	(60.0)
Black, non-Hispanic	1,195	(24.2)
White, non-Hispanic	367	(7.4)
Hispanic	168	(3.4)
Other*	53	(1.1)
Not reported	194	(3.9)
Place of birth		
U.S.-born	453	(9.2)
Foreign-born	3,855	(78.1)
Not reported	630	(12.7)
Primary language		
English	1,539	(31.2)
Non-English	2,280	(46.2)
Not reported	1,119	(22.6)

* Defined as Alaska Native/Native American or multiracial.

TABLE 2. Vaccination status of infants born to HBsAg-positive pregnant women, at age 24 months (N = 5,075) — Enhanced Perinatal Case Management Project, Florida, Michigan, Minnesota, New York City, and Texas, 2008–2011

Vaccination status	No.	(%)
Completed ≥3 HepB doses	4,214	(83.0)
HBIG, ≥3 HepB doses	4,173	(82.2)
No HBIG, ≥3 HepB doses	41	(0.8)
Incomplete vaccination (lost to follow-up)	861	(17.0)
HBIG, 2 HepB doses	728	(14.3)
No HBIG, 2 HepB doses	5	(0.1)
HBIG, 1 HepB dose	111	(2.2)
No HBIG, 1 HepB dose	15	(0.3)
HBIG, no HepB doses	2	(<0.1)

Abbreviations: HBsAg = hepatitis B surface antigen; HBIG = hepatitis B immune globulin; HepB = hepatitis B vaccine.

repeat PVST, as recommended by ACIP; 27 were protected and two remained susceptible. Overall, 93.3% of tested infants were protected, 1.2% were infected, 3.2% remained susceptible, and 2.3% had indeterminate results (Table 4).

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TABLE 3. Postvaccination serologic testing (PVST) among infants who received ≥3 doses of HepB by age 24 months (N = 4,214) — Enhanced Perinatal Case Management Project, Florida, Michigan, Minnesota, New York City, and Texas, 2008–2011

PVST status	No.	(%)
Reported serologic markers tested	3,244	(77.0)
Anti-HBs and HBsAg*	2,832	(67.2)
Anti-HBs only	41	(1.0)
HBsAg only	371	(8.8)
Reported serologic testing (by age)	2,683	(63.7)
<9 mos	259	(6.2)
9–12 mos	1,204	(28.5)
13–18 mos	869	(20.6)
≥19 mos	351	(8.4)
Unknown†	561	(13.3)
No reported PVST	970	(23.0)

Abbreviations: HepB = hepatitis B vaccine; anti-HBs = hepatitis B surface antigen antibody; HBsAg = hepatitis B surface antigen.

* If infant received testing for HBsAg and anti-HBs on different dates, the later test date was used.

† Age at testing could not be calculated because test dates were not reported.

TABLE 4. Serologic outcomes of infants with reported PVST results, by age 24 months (N = 2,683)* — Enhanced Perinatal Case Management Project, Florida, Michigan, Minnesota, New York City, and Texas, 2008–2011

Serologic outcome	No.	(%)
Protected	2,504	(93.3)
Anti-HBs-positive,† HBsAg-negative	2,504	(93.3)
HBV-infected	32	(1.2)
Anti-HBs-negative, HBsAg-positive	28	(1.0)
Anti-HBs-positive, HBsAg-positive	2	(<0.1)
Anti-HBs,‡ HBsAg-positive	2	(<0.1)
Susceptible	87	(3.2)
Anti-HBs-negative, HBsAg-negative	87	(3.2)
Indeterminate	60	(2.3)
Anti-HBs-positive, HBsAg§	36	(1.3)
Anti-HBs-negative, HBsAg§	1	(<0.1)
Anti-HBs,‡ HBsAg-negative	18	(0.7)
Anti-HBs,‡ HBsAg§	5	(0.2)

Abbreviations: PVST = postvaccination serologic testing; anti-HBs = hepatitis B surface antigen antibody; HBsAg = hepatitis B surface antigen.

* Infant PVST outcome was excluded if test date was not reported (n = 561).

† Defined as titer result ≥10 mIU/mL.

‡ Serologic test result not reported.

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Editorial Note

ACIP-recommended postexposure prophylaxis for infants born to HBsAg-positive mothers protects 85%–95% of infants from perinatally acquired HBV infection (4). Since 1990, CDC has funded perinatal hepatitis B prevention programs to identify HBsAg-positive pregnant women and ensure that their infants receive postexposure prophylaxis, including PVST. PVST identifies infants who are protected, remain susceptible

after a primary HepB series, or develop HBV infection and should be referred for continuing medical care (4–6).

Among infants born to HBsAg-positive mothers and managed by perinatal hepatitis B prevention programs in the United States, and who received ≥ 3 HepB doses, PVST rates by age 15–27 months increased from 25% in 1994 to 56% in 2008 (1). In another study, 57% of infants born to HBsAg-positive mothers during 2003–2005 received HBsAg testing (7). In comparison, 77.0% of EPHBP-managed infants received PVST, and 63.7% had known serologic outcomes (Table 3). Although rates of PVST have increased, this analysis highlights areas in need of improvement. Strategies are needed to increase the rates for overall testing and testing for both anti-HBs and HBsAg, which are required to confirm outcomes. Of infants in EPHBP, 9.8% received only one of the two recommended serologic tests. An anti-HBs result < 10 mIU/mL is insufficient to determine whether the infant is susceptible or is HBV-infected. Alone, an anti-HBs result ≥ 10 mIU/mL does not confirm that the infant is protected; the HBsAg result also must be negative. A negative HBsAg test result by itself does not indicate whether the infant is protected by vaccination or remains susceptible.

ACIP recommends PVST at age 9–18 months (4). Infants should be tested starting at age 9 months, if at least 1 month has passed since the last HepB dose, to ensure that all HBV-infected infants are identified* (4,8). Of EPHBP-managed infants, 14.6% received PVST outside of the recommended time frame, and 13.3% had an unknown age at testing. Infants who remain susceptible after an initial HepB series without timely PVST to prompt revaccination have continuing risk for transmission from household contacts with chronic HBV infection. Intervals ≥ 4 months between the final HepB dose and PVST have been associated with waning of anti-HBs titers, which might fail to confirm protection and result in unnecessary revaccination (6,9).

In this analysis, infants born to API women were significantly more likely to receive PVST. Previous studies have yielded mixed results (5,6,10). A study examining data from 1992–2000 found that infants whose mothers were non-Hispanic white, were aged < 20 years, were U.S.-born, or had a household income $< \$15,000$ were less likely to receive PVST (6,10). In another study, however, PVST did not differ significantly by maternal age or race among infants managed by the Louisiana Office of Public Health (5).

The results of this study are subject to at least two limitations. First, results from the EPHBP sites might not be representative of all births to HBsAg-positive women in the United

What is already known on this topic?

Infants born to hepatitis B surface antigen-positive women have a 40%–90% chance of acquiring hepatitis B virus (HBV) infection. Infected infants have a 90% risk of chronic HBV infection, which can result in premature death from liver failure or cancer. Postexposure immunoprophylaxis in infancy prevents 85% to 95% of perinatal infections. To determine infant outcomes, including whether infants require additional vaccination for protection, postvaccination serologic testing is recommended 1 month after completing the hepatitis B vaccine series (age 9–18 months).

What is added by this report?

Among infants with reported outcomes, postvaccination serologic testing data from Enhanced Perinatal Hepatitis B Case Management Projects indicated that timely postexposure prophylaxis might be 93% effective in protecting infants from perinatal hepatitis B infection. However, 23.0% of infants had no reported postvaccination serologic testing.

What are the implications for public health practice?

Postvaccination serologic testing (hepatitis B surface antigen [HBsAg] and hepatitis B surface antigen antibody) for infants born to HBsAg-positive women is important to determine appropriate infant medical follow-up. Test results should be reported to perinatal hepatitis B program coordinators who can assist families in assuring infant protection and who monitor progress toward elimination of perinatal hepatitis B virus transmission.

States; EPHBP-managed women and infants comprise about 25% of CDC's estimated births to HBsAg-positive women. Second, the completeness of reporting PVST results to CDC was not examined. However, overall PVST rates of EPHBP-managed infants were high compared with rates reported in other studies (1,7).

To achieve optimal prevention of perinatal HBV infection, HBsAg-positive pregnant women must be identified before delivery, and their infants must complete appropriate and timely postexposure prophylaxis. PVST (anti-HBs and HBsAg) as soon as age 9 months and at least 1 month after the last HepB dose has been given determines if infants are susceptible and should be revaccinated and retested, or are infected and require additional medical care. Although universal recommendations for HepB vaccination have been published (4), no universal recommendations for HBV screening of infants or children have been issued. HBV infection usually is asymptomatic, and therefore is unlikely to be detected without testing, until complications arise. Conducting timely PVST and reporting results to public health officials ensures that infants born to HBsAg-positive women receive appropriate follow-up, and is a key element of surveillance to monitor progress toward the elimination of perinatal HBV transmission.

* Infants who complete the HepB series with the *Haemophilus influenzae* type b combination product (COMVAX, Merck & Co.) at age 12–15 months are eligible for PVST 1 month after the last dose (2).

Acknowledgments

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Announcements

Final State-Level 2011–12 Influenza Vaccination Coverage Estimates Available Online

Final state-specific influenza vaccination coverage estimates for the 2011–12 influenza season are now available online at FluVaxView (<http://www.cdc.gov/flu/fluview>). Included are estimates of the cumulative percentage of persons vaccinated by the end of each month, during August 2011–May 2012, for each state and U.S. Department of Health and Human Services region, and the United States overall.

Analyses were conducted using National Immunization Survey data for children aged 6 months–17 years and Behavioral Risk Factor Surveillance System data for adults aged ≥ 18 years. Estimates are provided by age group and race/ethnicity. These estimates are presented using an interactive feature at <http://www.cdc.gov/flu/professionals/vaccination/report1112/report1/index.htm> and complemented by an online summary report at http://www.cdc.gov/flu/professionals/vaccination/coverage_1112estimates.htm.

The data update the national preliminary estimates from the March 2012 National Immunization Survey and National Flu Survey at <http://www.cdc.gov/flu/professionals/vaccination/nfs-survey-march2012.htm>.

Environmental Microbiology: Control of Foodborne and Waterborne Diseases Course — January 7–12, 2013

CDC and Emory University's Rollins School of Public Health will cosponsor, Environmental Microbiology: Control of Foodborne and Waterborne Diseases, on January 7–12, 2013, at Emory University, Rollins School of Public Health. This 6-day course on the surveillance of foodborne and waterborne diseases is designed for public health practitioners and other students interested in the safety of food and water.

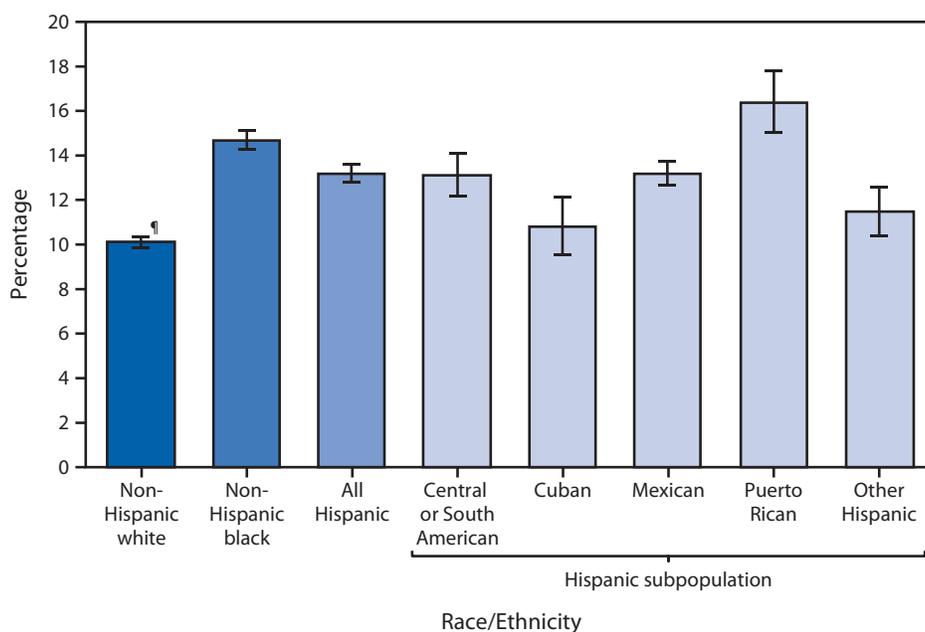
This course will provide a broad overview of the major foodborne and waterborne diseases. The course describes how information from surveillance is used to improve public health policy and practice in ways that contribute to the safety of food and water supplies. Participants will learn about microorganisms and chemical agents responsible for food and water-transmitted diseases, the diseases they cause, the pathogenesis, clinical manifestations, reservoirs, modes of transmission, and surveillance systems. The course also will cover the transport, survival, and fate of pathogens in the environment, the concept of indicator organisms as surrogates for pathogens, and the removal and inactivation of pathogens and indicators by water and wastewater treatment processes. Examples of the public health impact of quality assurance programs, such as Hazard Analysis and Critical Control Points, to control foodborne and waterborne diseases in both industrialized and developing countries will be discussed.

This course is offered to public health professionals and Emory University students. Continuing Education credit is available. Tuition will be charged. The application deadline is December 15, 2012, or until all slots have been filled. Additional information and applications are available from by mail (Emory University, Hubert Department of Global Health [Attn: Pia Valeriano], 1518 Clifton Rd. NE, CNR Bldg., Room 7038, Atlanta, GA 30322); telephone (404-727-3485); fax (404-727-4590); online (<http://www.sph.emory.edu/epi-courses>), or e-mail (pvaleri@emory.edu).

QuickStats

FROM THE NATIONAL CENTER FOR HEALTH STATISTICS

Percentage of Adults Aged 18–64 years Who Needed Prescription Medicine But Did Not Get it Because of Cost During the Preceding 12 months,* by Black or White Race and Hispanic Subpopulation[†] — National Health Interview Survey, United States, 2009–2011[§]



* Based on a survey question that asked respondents, "During the past 12 months, was there any time when you needed (prescription medicine) but didn't get it because you couldn't afford it?" Unknowns were not included in the denominators when calculating percentages.

[†] Persons of Hispanic ethnicity might be of any race or combination of races. Non-Hispanic persons are those who are not of Hispanic ethnicity, regardless of race.

[§] Estimates were based on household interviews of a sample of the U.S. civilian, noninstitutionalized population.

[¶] 95% confidence interval.

During 2009–2011, Hispanic adults aged 18–64 years were less likely (13.2%) than non-Hispanic blacks (14.7%) but more likely than non-Hispanic whites (10.1%) to have needed prescription medicine but not gotten it because of cost during the preceding 12 months. Among Hispanic subpopulations, the percentage of Puerto Rican adults needing prescription medicine but not getting it because of cost was higher (16.4%) than for Mexican adults (13.2%), other Hispanic adults (11.5%), and Cuban adults (10.8%), but not significantly different from Central or South American adults (13.1%).

Source: National Health Interview Survey, 2009–2011 Sample Adult Core component. Available at <http://www.cdc.gov/nchs/nhis.htm>.

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Morbidity and Mortality Weekly Report

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