



MMWR
MORBIDITY AND MORTALITY
WEEKLY REPORT

**Recommendations
and
Reports**

**Continuing Education Activity
Sponsored by CDC**

**Use of Anthrax Vaccine in the United States
Recommendations of the Advisory Committee on Immunization Practices (ACIP)**

EXPIRATION — December 15, 2003

You must complete and return the response form electronically or by mail by **December 15, 2003**, to receive continuing education credit. If you answer all of the questions, you will receive an award letter for 1.0 hour Continuing Medical Education (CME) credit, 0.1 hour Continuing Education Units (CEUs), or 1.4 hours Continuing Nursing Education (CNE) credit. If you return the form electronically, you will receive educational credit immediately. If you mail the form, you will receive educational credit in approximately 30 days. No fees are charged for participating in this continuing education activity.

INSTRUCTIONS

By Internet

1. Read this *MMWR* (Vol. 49, RR-15), which contains the correct answers to the questions beginning on the next page.
2. Go to the *MMWR* Continuing Education Internet site at <<http://www2.cdc.gov/mmwr/cme/conted.html>>.
3. Select which exam you want to take and select whether you want to register for CME, CEU, or CNE credit.
4. Fill out and submit the registration form.
5. Select exam questions. To receive continuing education credit, you must answer all of the questions. Questions with more than one correct answer will instruct you to "indicate all that apply."
6. Submit your answers no later than **December 15, 2003**.
7. Immediately print your Certificate of Completion for your records.

By Mail or Fax

1. Read this *MMWR* (Vol. 49, RR-15), which contains the correct answers to the questions beginning on the next page.
2. Complete all registration information on the response form, including your name, mailing address, phone number, and e-mail address, if available.
3. Indicate whether you are registering for CME, CEU, or CNE credit.
4. Select your answers to the questions, and mark the corresponding letters on the response form. To receive continuing education credit, you must answer all of the questions. Questions with more than one correct answer will instruct you to "indicate all that apply."
5. Sign and date the response form or a photocopy of the form and send no later than **December 15, 2003**, to
Fax: 404-639-4198 Mail: MMWR CE Credit
Office of Scientific and Health Communications
Epidemiology Program Office, MS C-08
Centers for Disease Control and Prevention
1600 Clifton Rd, N.E.
Atlanta, GA 30333
6. Your Certificate of Completion will be mailed to you within 30 days.

ACCREDITATION

Continuing Medical Education (CME). CDC is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians. CDC designates this educational activity for a maximum of 1.0 hour in category 1 credit toward the AMA Physician's Recognition Award. Each physician should claim only those hours of credit that he/she actually spent in the educational activity.

Continuing Education Unit (CEU). CDC has been approved as an authorized provider of continuing education and training programs by the International Association for Continuing Education and Training and awards 0.1 hour Continuing Education Units (CEUs).

Continuing Nursing Education (CNE). This activity for 1.4 contact hours is provided by CDC, which is accredited as a provider of continuing education in nursing by the American Nurses Credentialing Center's Commission on Accreditation.

GOAL AND OBJECTIVES

This *MMWR* provides guidance for preventing anthrax in the United States. The recommendations were developed by the Advisory Committee on Immunization Practices (ACIP). The goals of this report are to provide ACIP's recommendations regarding Anthrax Vaccine Adsorbed (AVA). Upon completion of this educational activity, the reader should be able to a) describe the burden of anthrax disease in the United States, b) describe the characteristics of the current licensed anthrax vaccine, c) recognize the most common adverse reactions following administration of anthrax vaccine, and d) identify strategies for postexposure prophylaxis of anthrax.

To receive continuing education credit, please answer all of the following questions.

1. **Which of the following statements is true concerning the burden of anthrax in the United States?**
 - A. Anthrax is exclusively a human disease in the United States.
 - B. Numerous outbreaks of anthrax have occurred among animal handlers since 1990.
 - C. The most common form of anthrax is cutaneous disease.
 - D. Inhalation anthrax has never been reported in the United States.
 - E. Gastrointestinal anthrax has been reported among persons who consume untreated water in wilderness areas.

2. **Why is *Bacillus anthracis* considered to be one of the most likely biological warfare agents?**
 - A. *B. anthracis* spores can cause infection by the respiratory route.
 - B. Inhalation anthrax has a high mortality rate.
 - C. *B. anthracis* spores are relatively stable.
 - D. All the above are reasons why *Bacillus anthracis* is considered to be one of the most likely biological warfare agents.

3. **Which of the following best describes the currently licensed anthrax vaccine?**
 - A. Live attenuated bacteria.
 - B. Inactivated whole bacteria.
 - C. Reassortant.
 - D. Toxoid.
 - E. Cell-free filtrate of *B. anthracis* culture.

4. **What is the recommended schedule for anthrax vaccine?**
 - A. Six doses each separated by 4 weeks from the preceding dose.
 - B. Six doses at 0, 2, and 4 weeks and 6, 12, and 18 months.
 - C. Four doses each separated by 2 months from the preceding dose.
 - D. Three doses at 0 and 4 weeks and 12 months.
 - E. Two doses separated by 6 months.

5. Which of the following groups are recommended for routine vaccination with anthrax vaccine?
- A. Veterinarians with large animal practices.
 - B. Emergency first responders.
 - C. Persons who work in domestic animal hide processing facilities.
 - D. Persons engaged in work involving production quantities of *B. anthracis* cultures.
 - E. All the above groups are recommended to receive routine anthrax vaccination.
6. What is the currently recommended route of administration of anthrax vaccine?
- A. Intradermal injection.
 - B. Subcutaneous injection.
 - C. Intramuscular injection.
 - D. Intranasal aerosol.
 - E. All the above routes of administration are recommended for anthrax vaccine.
7. Which of the following conditions is a valid contraindication or precaution for the use of anthrax vaccine?
- A. Recent administration of antibody-containing blood product (e.g., whole blood or immune globulin).
 - B. Current administration of antibiotics.
 - C. Severe allergic reaction to a previous dose of the vaccine.
 - D. Breast-feeding an infant.
 - E. All of the above are valid contraindications or precautions to the use of anthrax vaccine.
8. What is the most frequently reported adverse reaction following anthrax vaccination?
- A. Local reaction at the injection site.
 - B. Fever.
 - C. Joint pain.
 - D. Allergic reactions, such as angioedema.
 - E. Guillain-Barré syndrome.
9. Which of the following is true concerning postexposure prophylaxis of anthrax?
- A. Vaccination alone after exposure does not appear to be protective.
 - B. Doxycycline or ciprofloxacin can be used initially for postexposure prophylaxis until antibiotic susceptibility is determined.
 - C. Postexposure antibiotic therapy should be continued for at least 30 days.
 - D. At least three doses of vaccine should be administered for postexposure prophylaxis.
 - E. All the above are true concerning postexposure prophylaxis of anthrax.

- 10. Indicate your work setting.**
- A. State/local health department.
 - B. Other public health setting.
 - C. Hospital clinic/private practice.
 - D. Military.
 - E. Academic institution.
 - F. Other.
- 11. Which best describes your professional activities?**
- A. Patient care – emergency/urgent care department.
 - B. Patient care – inpatient.
 - C. Patient care – primary-care clinic or office.
 - D. Laboratory/pharmacy.
 - E. Public health.
 - F. Other.
- 12. I plan to use these recommendations as the basis for ... (Indicate all that apply)**
- A. health education materials.
 - B. emergency preparedness.
 - C. local practice guidelines.
 - D. public policy.
 - E. other.
- 13. Each month, to approximately how many persons do you administer anthrax vaccine?**
- None.
- A. None.
 - B. 1–5.
 - C. 6–20.
 - D. 21–50.
 - E. >50.
- 14. How much time did you spend reading this report and completing the exam?**
- A. Less than 1 hour.
 - B. 1–1.5 hours.
 - C. 1.6–2 hours.
 - D. More than 2 hours.

15. **After reading this report, I am confident I can describe the burden of anthrax disease in the United States.**
- A. Strongly agree.
 - B. Agree.
 - C. Neither agree nor disagree.
 - D. Disagree.
 - E. Strongly disagree.
16. **After reading this report, I am confident I can describe the characteristics of the currently licensed anthrax vaccine.**
- A. Strongly agree.
 - B. Agree.
 - C. Neither agree nor disagree.
 - D. Disagree.
 - E. Strongly disagree.
17. **After reading this report, I am confident I can recognize the most common adverse reactions following administration of anthrax vaccine.**
- A. Strongly agree.
 - B. Agree.
 - C. Neither agree nor disagree.
 - D. Disagree.
 - E. Strongly disagree.
18. **After reading this report, I am confident I can identify strategies for postexposure prophylaxis of anthrax.**
- A. Strongly agree.
 - B. Agree.
 - C. Neither agree nor disagree.
 - D. Disagree.
 - E. Strongly disagree.
19. **The objectives are relevant to the goal of this report.**
- A. Strongly agree.
 - B. Agree.
 - C. Neither agree nor disagree.
 - D. Disagree.
 - E. Strongly disagree.

20. The tables are useful.
- A. Strongly agree.
 - B. Agree.
 - C. Neither agree nor disagree.
 - D. Disagree.
 - E. Strongly disagree.
21. Overall, the presentation of the report enhanced my ability to understand the material.
- A. Strongly agree.
 - B. Agree.
 - C. Neither agree nor disagree.
 - D. Disagree.
 - E. Strongly disagree.
22. These recommendations will affect my practice.
- A. Strongly agree.
 - B. Agree.
 - C. Neither agree nor disagree.
 - D. Disagree.
 - E. Strongly disagree.
23. How did you learn about this continuing education activity?
- A. Internet.
 - B. Advertisement (e.g., fact sheet, *MMWR* cover, newsletter, or journal)
 - C. Coworker/supervisor.
 - D. Conference presentation.
 - E. *MMWR* subscription.
 - F. Other.
24. The availability of continuing education credit was important to my decision to read this report.
- A. Strongly agree.
 - B. Agree.
 - C. Neither agree nor disagree.
 - D. Disagree.
 - E. Strongly disagree.

Correct answers for questions 1-9
1.c, 2.d, 3.e, 4.b, 5.d, 6.b, 7.c, 8.a, 9.e

**MMWR Response Form for Continuing Education Credit
December 15, 2000/Vol. 49/No. RR-15**

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3. answer all of the test questions;
4. sign and date this form or a photocopy;
5. submit your answer form by December 15, 2003.
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Fill in the appropriate blocks to indicate your answers. Remember, you must answer all of the questions to receive continuing education credit!

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Signature

Date I Completed Exam

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