MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Army Acute Respiratory Disease Surveillance Program

1. Updated guidance on the Army Acute Respiratory Disease (ARD) Surveillance Program is forwarded for implementation, replacing previous guidance. While the ARD Surveillance Program is formally implemented only at Basic Combat Training posts, information contained in this document is valuable to preventive medicine, primary care, and laboratory personnel worldwide.

2. ARD is a leading cause of morbidity in the military, and basic trainees have a particularly high risk of illness. The Army ARD Surveillance Program collects and disseminates timely, installation-specific information concerning ARD activity, allowing preventive medicine personnel to rapidly detect and respond to ARD outbreaks. Detailed instructions for implementing the ARD Surveillance Program are provided in the enclosure, including control measures in the event of an ARD outbreak.

3. Points of contact for this program are COL Bruno Petruccelli, Director, Epidemiology and Disease Surveillance, US Army Center for Health Promotion and Preventive Medicine, (410) 429-4655, DSN 584-4655, bruno.petruccelli@us.army.mil; LTC (P) Scott Stanek Preventive Medicine Staff Officer, Office of The Surgeon General, (703) 681-3160, DSN 761-3160, scott.stanek@us.army.mil; and CPT Paul Ciminera, the Reportable Medical Events Project Officer, Army Medical Surveillance Activity, (202) 782-0471, DSN 662-0471, paul.ciminera@us.army.mil.

FOR THE SURGEON GENERAL:

[Signature]

Encl

MICHAEL B. CATES
Brigadier General, VC
Functional Proponent for Preventive Medicine
DASG-PPM
SUBJECT: Army Acute Respiratory Disease Surveillance Program

DISTRIBUTION:
Commander, Europe Regional Medical Command, CMR 442, APO AE 09042
Commander, North Atlantic Regional Medical Command, Walter Reed Army Medical Center, 6900 Georgia Avenue, Washington, DC 20307-5001
Commander, Southeast Regional Medical Command, Eisenhower Army Medical Center, Bldg 300, Fort Gordon, GA 30903-5650
Commander, Great Plains Regional Medical Command, 2410 Stanley Road, Suite 121, Fort Sam Houston, TX 78234-6200
Commander, Western Regional Medical Command, Madigan Army Medical Center, Bldg 9045, Jackson Avenue, Tacoma, WA 93431-1100
Commander, Pacific Regional Medical Command, 1 Jarrett White Road, Tripler Army Medical Center, HI 96859-5000
Commander, U.S. Army Center for Health Promotion and Preventive Medicine, 5158 Blackhawk Road, Aberdeen Proving Ground, MD 21010-5403
Commander, U.S. Army Medical Research and Materiel Command, 504 Scott Road, Fort Detrick, MD 21702-5012
Commander, US Army Test and Evaluation Command, Park Center IV, 4501 Ford Avenue, Alexandria, VA 22301-1458
Surgeon, 18th MEDCOM, Unit 15281, APO AP 96205-0054
Surgeon, National Guard Bureau, 111 South George, Mason, Arlington, VA 22204-1382
Surgeon, U.S. Army Reserve Command, 1401 Deshler Street SW, Fort McPherson, GA 30330-2000
Surgeon, U.S. Army Training and Doctrine Command, 7 Fenwick Road, Fort Monroe, VA 23651-5000
Surgeon, U.S. Army Forces Command, 1777 Hardee Avenue SW, Fort McPherson, GA 30330-6000
Surgeon, U.S. Army Materiel Command, 9301 Chapek Road, Fort Belvoir, VA 22333-0001
Surgeon, U.S. Army Special Operations Command, Fort Bragg, NC 28307-5200
Army Acute Respiratory Disease (ARD) Surveillance Program

1. References.
   a. AR 40-5, Preventive Medicine, 22 Jul 05.
   b. AR 40-582, Immunizations and Chemoprophylaxis, 1 Nov 95.
   c. DA Pam 40-11, Preventive Medicine, 22 Jul 05.
   d. Memorandum, HQDA, SGPS-PSP, 19 Apr 94, Subject: Implementation of New Medical Surveillance System.
   e. Memorandum, HQDA, DASG+HS-PM, 13 Jan 00, Subject: Adenovirus Vaccine and Disease Control.
   f. Memorandum, MEDCOM, MCHO-CL-W, 21 Jan 00, Subject: Adenovirus Disease Control.
   g. Memorandum, MEDCOM, DASG-PPM-HC, 18 Jul 01, Subject: Army Acute Respiratory Disease Surveillance Program.

2. General.
   a. This document provides guidelines and requirements for the Army Acute Respiratory Disease (ARD) Surveillance Program and replaces reference 1g. The objective of this program is to collect and disseminate timely, installation-specific information concerning ARD activity to assist preventive medicine personnel to rapidly detect and respond to ARD outbreaks. While the ARD Surveillance Program is formally implemented only at installations conducting Basic Combat Training (BCT), information contained in this document is valuable for preventive medicine, primary care, and laboratory personnel worldwide.
   b. ARD is a leading cause of morbidity in the military, and basic trainees have a particularly high risk of illness. Trainees are given vaccinations against influenza, measles, mumps, rubella, tetanus, diphtheria, pertussis, hepatitis A & B, varicella, and meningococcal serogroups A, C, Y, and W135. The absence of adenovirus vaccine since 1999 has resulted in increased ARD rates among basic trainees.
   c. Outbreaks of streptococcal disease have been historically important in military training camps, and there is significant concern that such outbreaks will continue to occur. Benzathine penicillin G (Bicillin®) prophylaxis is administered to trainees at some installations to prevent Group A beta-hemolytic streptococcal (GABHS) disease. However, shortages in the supply of Bicillin® have negatively affected prevention and
control of ARD outbreaks. Weekly tracking of indicators of streptococcal disease activity identifies populations at risk and provides a basis for prompt intervention. Indicators include the Strep Recovery Rate and the Strep-ARD Surveillance Index (SASI) (see Appendix A). The Streptococcal Disease Surveillance and Control Plan (Appendix B) describes appropriate responses to a diagnosis of acute rheumatic fever (ARF) or an elevated SASI.

d. Routine surveillance of ARD among basic trainees has been conducted since 1966. Efforts to identify, define, and control these outbreaks must continually be emphasized. The Army ARD program is a vital surveillance system for early detection of potential ARD outbreaks among basic trainees.

3. ARD Surveillance Reporting Procedures at BCT Installations.

a. Weekly ARC reports must be submitted by 1200 hrs (EST) each Wednesday to the ARD Surveillance System maintained by the Army Medical Surveillance Activity (AMSA), United States Army Center for Health Promotion and Preventive Medicine (USACHPPM). This information may be submitted to AMSA via e-mail to dmss@amsa.army.mil or faxed to DSN 662-0612 or commercial (202) 782-0612.

b. ARD reports will include data from the previous week (i.e., Sunday through Saturday). Required data elements are included in a spreadsheet template provided by AMSA. The following data from each unit must be included: unit designators (unit identification code, company, battalion, brigade), week of training, type of training, barracks type, number of Bicillin® doses administered to the unit, number of males/females assigned, number of male/female ARD cases, number of throat cultures (or rapid streptococcal antigen tests) performed on all ARD cases, and number of positive Streptococcus (groups A, C, or G) throat cultures or positive rapid streptococcal antigen test results. From these count data, ARD rates, Strep Recovery Rates, and Strep-ARD Surveillance Index (SASI) will be automatically calculated in the aforementioned spreadsheet template. An example of the first page of a properly completed weekly ARD Surveillance Report is included in Appendix C.

c. Prior to submission of the weekly report, the Chief of Preventive Medicine at each BCT installation must review the report for accuracy and identify potential outbreaks that require prompt investigation.

d. AMSA will consolidate weekly reports from each BCT installation into one summary report. Copies of the weekly summary report will be distributed each Wednesday by close of business to the Propenency Office for Preventive Medicine (POPM), the preventive medicine officer at each Regional Medical Command (RMC), the United States Army Training and Doctrine Command (TRADCC) Surgeon, and the Chief of Preventive Medicine at each ARD reporting site.
4. ARD Case Definition.

   a. This definition is intended for ARD case identification and reporting purposes only and should not be construed as strict criteria for admission to a military treatment facility. Cases must be counted similarly at all BCT installations to ensure comparability of data among installations. Thus, for surveillance purposes, only count trainees with **ALL** of the following criteria:

      (1) Oral temperature $\geq 100.5^\circ F$.

      (2) Recent onset of at least one sign or symptom of acute respiratory tract inflammation (e.g., sore throat, cough, runny nose, chest pain, shortness of breath, headache, tonsillar exudates, or tender cervical lymphadenopathy).

      (3) Given a limited duty profile by the examining physician (to include limitations on physical fitness training) or removed from duty for at least 8 hours. Trainees removed from duty may be the sent to the hospital, infirmary, or a medical hold barracks.

   b. Clinical providers should order a throat culture (or rapid streptococcal antigen test) for all trainees who meet the ARD case definition.

   c. Preventive medicine personnel at installations that conduct initial entry training must assess the effect of local admission policies and procedures on disease control efforts. In general, year-round use of the above definition of ARD as an admission standard is adequate for disease control practices. More liberal admission criteria may be appropriate during periods of increased ARD activity.

5. ARD Case Identification.

   a. Outpatients. The majority of ARD cases (defined in paragraph 4a) will be identified among non-hospitalized trainees. These cases would typically be identified from Troop Medical Clinic (TMC) or Emergency Department (ED) visits. ARD surveillance staff should be aware of local TMC hours as cases are more likely to present to the ED during periods of TMC closure.

   b. Inpatients. Since the majority of ARD cases will present in outpatient settings, available resources for case identification should be focused on outpatient case identification. However, in circumstances where ARD rates are increasing or surveillance for severe streptococcal disease is warranted, capture of hospitalized cases becomes extremely important. ARD surveillance staff should identify additional cases of ARD among hospitalized trainees by reviewing daily hospital admission logs. Attempts to identify inpatient ARD cases should not be limited to the case definition in paragraph 4a; it is important to search for a range of diagnoses in order to capture all inpatient cases that may be attributable to ARD. Most uncomplicated cases of ARD are
easily recognized on the daily admission log. Many other diagnoses, some of which are listed below, are closely related to ARD and should be included when calculating the true burden of disease. A list of complications of streptococcal infections is also provided in Appendix A (Suppurative Complications of Streptococcal Infections).

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>ICD-9 Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute nasopharyngitis</td>
<td>460</td>
</tr>
<tr>
<td>Acute pharyngitis</td>
<td>462</td>
</tr>
<tr>
<td>Acute respiratory disease</td>
<td>460-465</td>
</tr>
<tr>
<td>Acute bronchitis</td>
<td>486</td>
</tr>
<tr>
<td>Varicella (chickenpox)</td>
<td>052</td>
</tr>
<tr>
<td>Influenza</td>
<td>487</td>
</tr>
<tr>
<td>Infectious mononucleosis</td>
<td>075</td>
</tr>
<tr>
<td>Mycoplasma</td>
<td>441.81</td>
</tr>
<tr>
<td>Otitis media</td>
<td>381-382</td>
</tr>
<tr>
<td>Peritonsillar abscess</td>
<td>475</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>480-486</td>
</tr>
<tr>
<td>Sinusitis</td>
<td>461</td>
</tr>
<tr>
<td>Streptococcal sore throat</td>
<td>034</td>
</tr>
<tr>
<td>Acute tonsillitis</td>
<td>463</td>
</tr>
<tr>
<td>Acute upper respiratory infection</td>
<td>465</td>
</tr>
</tbody>
</table>

6. Calculation of ARD indices (Note: these are automatically calculated when using the spreadsheet template provided by AMSA).

   a. The ARD rate is calculated as the number of trainees with ARD multiplied by 100, then divided by the total number of trainees at risk.

   b. The Strep Recovery Rate is calculated as the number of positive streptococcal throat cultures among ARD cases (or positive rapid strep tests) multiplied by 100, then divided by the total number of throat cultures (or rapid strep tests) among ARD cases (see Appendix A). Diagnosis of respiratory disease secondary to streptococcal infections is based upon isolation of Streptococcus groups A, C, or G from throat cultures (or positive rapid strep tests). It is important to note that Streptococcus groups C and G can also be significant respiratory pathogens, along with Group A, and should be included when calculating the Strep Recovery Rate. The laboratory may characterize these other isolates as non-group A Streptococci.

   c. The Strep-ARD Surveillance Index (SASI) is calculated by multiplying the Strep Recovery Rate by the number of ARD cases (x 100), then dividing by the total number of trainees at risk.

7. Outbreak identification. An outbreak investigation should be initiated when the ARD rate exceeds 1.5% for two consecutive weeks. The SASI should also be closely
monitored. A SASI exceeding 25 for two consecutive weeks is an indicator of significant streptococcal morbidity and should be promptly investigated.

8. Outbreak Investigation.

a. The Chief of Preventive Medicine at each BCT installation will determine the nature and scope of the investigation. The investigation team will include at least one physician. Following completion of the investigation, a report will be submitted through the respective RMC to POPM, with copies to AMSA and USACHPPM.

b. The investigation team leader will inform commanders of affected units about the outbreak, need for investigation, findings, implications, and recommendations for mitigation or prevention.

c. In the event that local capabilities are insufficient to conduct an appropriate investigation, the Chief of Preventive Medicine will contact the Regional Preventive Medicine Service for additional assistance. If necessary, an Epidemiological Consultation can be requested from the Office of The Surgeon General through the Directorate of Epidemiology and Disease Surveillance, USACHPPM.

d. All occurrences of ARF disease will be immediately reported to AMSA through the Reportable Medical Events System. Additionally, any outbreaks of ARD (as defined in paragraph 7) must be telephonically reported to the Reportable Medical Events Project Officer at DSN 682-0471 or commercial (202) 782-0471.

9. ARD Control Plan. In the event of an ARD outbreak, specific actions must be taken to reduce pathogen transmission. Preventive medicine officers should educate commanders to emphasize hygiene measures, reinforce hand washing and use of hand sanitizers, ensure sleeping space/positioning requirements are followed, and take other appropriate measures to reduce troops' personal contact with potentially infectious secretions. The Streptococcal Disease Surveillance and Control Plan (Appendix B) describes appropriate responses to an elevated SASI.

10. Responsibilities of the Chief of Preventive Medicine. The Chief of Preventive Medicine at each BCT installation should closely supervise the process of collecting ARD data, incorporating the following elements to ensure data quality and completeness:

a. Strict adherence to ARD case definition (paragraph 4a).

b. Education of epidemiology and disease control personnel on the importance of the ARD surveillance program and required procedures.

c. Coordination with clinical providers and laboratory personnel to ensure successful program implementation (note paragraph 4b).
d. Complete capture of outpatients at TMCs and ED locations (and surveillance of inpatients, as indicated; see paragraph 5b).

e. Complete capture of lab data (throat cultures or rapid streptococcal antigen test results).

f. Review of weekly report prior to submission to AMSA. Promptly investigate any upward trends to determine the extent and nature of respiratory morbidity. Notify AMSA when an ARD outbreak investigation is initiated or of any occurrence of ARF.

11. Points of contact for this program are: Preventive Medicine Staff Officer, OTSO (DSN 761-3160); Director, Epidemiology and Disease Surveillance, USACHPPM (DSN 584-4655); and Reportable Medical Events Project Officer, Army Medical Surveillance Activity, (DSN 662-0471).

Appendices
A. Indicators of Streptococcal Disease Activity
B. Streptococcal Disease Surveillance and Control Plan
C. ARD Surveillance Report
APPENDIX A

INDICATORS OF STREPTOCOCCAL DISEASE ACTIVITY

### Throat Culture-Based Indices

<table>
<thead>
<tr>
<th>Name of Index</th>
<th>Formula</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strep Recovery Rate</td>
<td>Positive Strep cultures* among ARD cases x 100 / Total cultures* among ARD cases</td>
<td>Calculate weekly. Observe over time for trends. (Only positive cultures* from trainees meeting the case definition are included in the numerator.)</td>
</tr>
<tr>
<td>Strep-ARD Surveillance Index (SASI)</td>
<td>Strep Recovery Rate x # ARD Cases x 100 / Total # Trainees</td>
<td>Calculate weekly. Indicates significant streptococcal disease activity if &gt; 25 for two consecutive weeks.</td>
</tr>
</tbody>
</table>

*Include throat cultures positive for Streptococcus (groups A, C, or G) or positive rapid streptococcal antigen test results.

### Suppurative Complications of Streptococcal Infections

<table>
<thead>
<tr>
<th>Complications</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peritonsillar abscess</td>
<td>Monitor these events through admission/discharge diagnoses, ED logs, or through regular correspondence with appropriate clinical services.</td>
</tr>
<tr>
<td>Paranasal sinusitis</td>
<td>A marked increase in any of these events may be a sensitive, early indicator of an incipient acute rheumatic fever outbreak.</td>
</tr>
<tr>
<td>Otitis media</td>
<td></td>
</tr>
<tr>
<td>Mastoiditis</td>
<td></td>
</tr>
<tr>
<td>Suppurative adenitis</td>
<td></td>
</tr>
<tr>
<td>Suppurative thrombophlebitis</td>
<td></td>
</tr>
<tr>
<td>Metastases to joints or bones</td>
<td></td>
</tr>
<tr>
<td>Meningitis</td>
<td></td>
</tr>
<tr>
<td>Pneumonia</td>
<td></td>
</tr>
</tbody>
</table>
# Streptococcal Disease Surveillance and Control Plan

## Phase I
- No cases of ARF
- AND
  - SASI not > 25 for two or more consecutive weeks

## Phase II
- One case of ARF
- OR
  - SASI is > 25 for two or more consecutive weeks

## Phase III
- At least two cases of ARF

## Phase IV
- Occurrence of ARF cases despite antibiotic prophylaxis

### Control Measures (see below)

<table>
<thead>
<tr>
<th></th>
<th>Phase I</th>
<th>Phase II</th>
<th>Phase III</th>
<th>Phase IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>A</td>
<td>A and B</td>
<td>A and B</td>
<td>A, B, and C</td>
</tr>
</tbody>
</table>

### A. Perform throat cultures (or rapid streptococcal antigen tests) on all symptomatic patients and administer a single dose of 1.2 million units IM benzathine penicillin G* (Bicillin®) to those with cultures positive for GABHS or positive rapid antigen tests.

### B. Administer benzathine penicillin G* (Bicillin®) to cadre, current trainees and all new trainees as they enter the Reception Station.

### C. Administer a second dose of benzathine penicillin G* (Bicillin®) to all trainees four weeks after the first.

*Unless contraindicated by allergy; consider 10-day course of erythromycin or 5-day course of azithromycin (Note: GABHS resistance to macrolides has been reported to be as high as 14%; treatment failures require re-treatment based on results of culture and antibiotic sensitivity testing of isolates).*

---

B-1
### APPENDIX C

#### ACUTE RESPIRATORY DISEASE SURVEILLANCE REPORT

**Page 1 of 1**

**To:** Army Medical Surveillance Activity  
**BLDG T-20 Room 213 (MICBIL-TS-ECM)**  
**6900 Georgia Ave, N.W.**  
**Washington, DC 20307-6001**

**FROM:** Preventive Medicine  
**Fi Benning, GA 31905**  
**GEO Health SOC XVII-XXXX-X**

**Week ending date:**  
4-Mar-07  
**Date submitted:**  
9-Mar-07

#### MALE TRAINEES  
#### FEMALE TRAINEES

<table>
<thead>
<tr>
<th>UC</th>
<th>CO</th>
<th>SH</th>
<th>BDE</th>
<th>WEEK OF TRAINING</th>
<th>TYPE OF TRAINING</th>
<th>TYPE OF BARRACKS</th>
<th>BOCUN DOnes</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>WBL1</td>
<td>A</td>
<td>1-19</td>
<td>ITB</td>
<td>3</td>
<td>OGERIT</td>
<td>854</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>WBL2</td>
<td>B</td>
<td>1-19</td>
<td>ITB</td>
<td>7</td>
<td>OGERIT</td>
<td>854</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>WBL3</td>
<td>C</td>
<td>1-19</td>
<td>ITB</td>
<td>3</td>
<td>OGERIT</td>
<td>854</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>WBL4</td>
<td>D</td>
<td>1-19</td>
<td>ITB</td>
<td>4</td>
<td>OGERIT</td>
<td>854</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>WBL5</td>
<td>E</td>
<td>1-19</td>
<td>ITB</td>
<td>4</td>
<td>OGERIT</td>
<td>854</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>WBL6</td>
<td>F</td>
<td>1-19</td>
<td>ITB</td>
<td>3</td>
<td>OGERIT</td>
<td>854</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>WBL7</td>
<td>G</td>
<td>1-19</td>
<td>ITB</td>
<td>3</td>
<td>OGERIT</td>
<td>854</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>WBL8</td>
<td>H</td>
<td>1-19</td>
<td>ITB</td>
<td>4</td>
<td>OGERIT</td>
<td>854</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

#### UNIT DESIGNATION

<table>
<thead>
<tr>
<th>BDE</th>
<th>WOE</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ITB</td>
<td>3</td>
<td>OGERIT</td>
</tr>
</tbody>
</table>

### ARD Case Definition:

ALL three of the following conditions are present:  
1. Oral temperature >100.5°F  
2. Recent onset of at least one sign or symptoms of acute respiratory tract inflammation (e.g., sore throat, cough, runny nose, chest pain, shortness of breath, headache, tonsillar edema, tenderness of cervical lymphadenopathy); and  
3. Trainee is issued a limited duty profile by examining physician (to include limitations on physical fitness training) or trainee is removed from duty (e.g., sent to the hospital, intinary, or a medical holding barracks) for at least 8 hours.

Notes:  
1. Number of doses (6, 1, or 2) at Bicillin® received by each unit.  
2. Each trainee who is identified as an ARD case should have a throat culture (or rapid streptococcal antigen test) performed.  
3. Based upon isolation of Streptococcus (groups A, C, or G) from throatculture or positive rapid streptococcal antigen test results.