



DEPARTMENT OF THE NAVY

BUREAU OF MEDICINE AND SURGERY  
WASHINGTON, D.C. 20372-5120

IN REPLY REFER TO  
BUMEDINST 6220.8  
BUMED-24  
16 Mar 91

BUMED INSTRUCTION 6220.8

From: Chief, Bureau of Medicine and Surgery

Subj: STREPTOCOCCAL INFECTION CONTROL PROGRAM

Ref: (a) NAVMEDCOMINST 6230.3  
(b) Armed Forces Epidemiological Board memo DASG-AFEB 83-7  
of 19 Sep 83 (NOTAL)

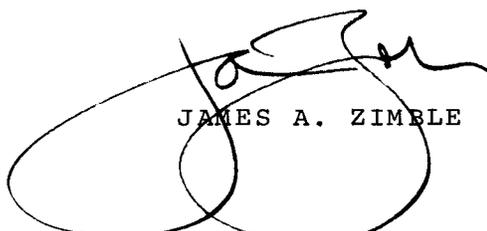
Encl: (1) Streptococcal Infection Control Program Guidelines

1. Purpose. To provide policy and guidelines for streptococcal disease surveillance and the use of antibiotic prophylaxis to control group A streptococcal infections among Navy and Marine Corps recruits at naval training centers (NTCs) and Marine Corps recruit depots (MCRDs) per references (a) and (b).

2. Cancellation. NAVMEDCOMINST 6220.6.

3. Background. Group A streptococcal infections and their sequelae have caused numerous problems among Navy and Marine Corps recruit populations. During the massive mobilization in World War II, a catastrophic rise in streptococcal infection and rheumatic fever rates occurred in recruit training facilities. Although the rates decreased after the war, they remained at unacceptable levels until penicillin prophylaxis was initiated. Since the 1960's, a program of streptococcal disease surveillance and penicillin prophylaxis has contributed to the control of streptococcal infection and its sequelae among recruits at NTCs and MCRDs. There have been recent outbreaks of rheumatic fever at Navy and Army recruit training centers, and cases of unusually severe suppurative streptococcal infections have occurred among Navy and Marine Corps recruits. It is necessary, therefore, to continue to emphasize the prevention of streptococcal infection among recruits.

4. Action. Commanders, commanding officers, and officers in charge of medical treatment facilities providing primary support to NTCs and MCRDs must assure that the guidelines in enclosure (1) are implemented.

  
JAMES A. ZIMBLE

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(See next page)



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STREPTOCOCCAL INFECTION CONTROL PROGRAM GUIDELINES

1. Background

a. Streptococcal pharyngitis continues to be a significant cause of lost man-days among recruits in some NTCs and MCRDs, especially during the winter months. The problem of streptococcal disease is magnified among recruits. They live in an environment with the potential for efficient person-to-person transmission of pathogens. If they become ill and are hospitalized or delayed in training, they are often "dropped" from their unit or are "set back." This additional stress in an already stressful environment of recruit training causes the recruit to be less likely to complete recruit training.

b. Streptococcal sore throat (pharyngitis) and skin infection are the most common conditions caused by group A beta-hemolytic streptococci (GABHS). Streptococcal infections can present, or progress to, severe and life-threatening conditions such as toxic shock-like syndrome, necrotizing myositis, rheumatic fever, and acute glomerulonephritis. From the 1960's through the mid-1980's, the incidence of nonsuppurative sequelae of group A streptococcal infections (rheumatic fever and glomerulonephritis) decreased markedly in the military and civilian populations in the United States. One reason proposed for this decline was a decrease in the relative proportion of rheumatogenic streptococcal M- and T-types among the general population. Recent reports on the resurgence of rheumatic fever may indicate a trend toward higher relative proportions of rheumatogenic streptococcal M- and T-types. There is also evidence that streptococcal strains with an unusual mucoid colony morphology may be associated with more severe suppurative and nonsuppurative morbidity.

c. Since the 1960's, the control of streptococcal infection and disease among recruits has involved various programs of surveillance and penicillin prophylaxis. There has been controversy over whether prophylactic penicillin should be administered to recruits on a year-round basis, seasonally, or only when the incidence of streptococcal infection at a recruit training facility indicates that an epidemic is imminent. In 1983, the Armed Forces Epidemiological Board (AFEB) addressed these issues and made recommendations for the use of penicillin prophylaxis in the control of GABHS disease in Navy and Marine Corps recruits, reference (b).

d. The following guidelines for disease surveillance and the use of antibiotic prophylaxis in the prevention and control of GABHS disease are based on the following:

- (1) The AFEB recommendations.

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(2) The results of a prospective study of GABHS pharyngitis in recruits conducted from January to March 1989.

(3) An efficacy study of erythromycin for GABHS prophylaxis in penicillin-allergic recruits conducted from October 1989 through January 1990.

## 2. Streptococcal Disease Monitoring Program

a. Each medical treatment facility (MTF) which provides primary support to a Navy or Marine Corps recruit training activity must monitor streptococcal pharyngitis incidence among recruits throughout the year. The number of culture-confirmed acute GABHS pharyngitis cases must be tabulated weekly. The surveillance program must be based on monitoring for and identifying clinical cases of pharyngitis, rather than on screening and identifying asymptomatic carriers of GABHS. The routine and liberal use of pharyngeal cultures of recruits who present with sore throat must be encouraged. Nonpharyngeal streptococcal infections, e.g., cellulitis, may be monitored, but such infections are not part of the surveillance program. If these nonpharyngeal cases are tabulated, they must be reported separately from the pharyngeal cases.

b. The streptococcal pharyngitis surveillance program must be based on the results of microbiological cultures of the pharynx. The "rapid" streptococcal tests, as produced by various manufacturers, must not be used for surveillance purposes. It is permissible for an MTF simultaneously to obtain both a pharyngeal culture and a rapid test to expedite management decisions. Only the culture results, however, are considered valid for surveillance purposes.

c. The MTFs must record the GABHS pharyngitis rates each week. Preparation of a weekly surveillance report is strongly recommended so that clinical medicine and preventive medicine personnel who are responsible for oversight of the program can monitor disease trends and the effect of antibiotic prophylaxis.

(1) Rates must be recorded for at least two groups: all recruits, and only those recruits in training after their 44th calendar day at the recruit center ("second half" recruits). Surveillance for cases of GABHS pharyngitis among training facility staff and other students may be conducted and recorded, but these cases must not be combined with recruit cases or the recruit rate calculations.

(2) The report must include information on the current status of antibiotic prophylaxis at the recruit training facility, e.g., "Antibiotic prophylaxis has been routinely

administered since (date)." Similarly, the date of starting or stopping antibiotic prophylaxis for "second half" recruits must be recorded.

(3) Table A provides an example of an effective surveillance report. Recording pharyngitis rates in this or a similar format enables preventive medicine personnel to easily identify disease trends.

(4) Routine weekly surveillance reports are internal documents of the MTF. However, the MTF must maintain the surveillance and prophylaxis data on file for at least 3 years.

d. A rate of GABHS pharyngitis equal to or greater than 10 cases per 1,000 recruits per week among the entire recruit population or among the "second half" recruits is the action point for decisions on antibiotic prophylaxis based on surveillance.

e. The MTF must also monitor the GABHS colony morphology. If greater than 10 percent of total recruit pharyngeal isolates demonstrate a mucoid morphology, the MTF will contact their cognizant Navy environmental and preventive medicine unit for advice.

### 3. Antibiotic Prophylaxis Against Streptococcal Infection

a. Medical facilities supporting those NTCs and MCRDs which historically have experienced major problems with streptococcal disease (NTC Great Lakes, NTC San Diego, MCRD San Diego, and MCRD Parris Island) must routinely administer antibiotic prophylaxis to male recruits. Routine antibiotic prophylaxis is not required for male or female recruits at NTC Orlando or for the women's recruit training division at MCRD Parris Island, but disease monitoring is required.

b. Routine antibiotic prophylaxis must be administered from 1 October through 30 April of each year.

(1) All male recruits not allergic to penicillin must receive benzathine penicillin G. For the prophylaxis of streptococcal infections, the long-acting formulation of benzathine penicillin G (Bicillin-LA<sup>R</sup>, sterile penicillin G benzathine suspension, NSN 6505-00-133-4447) is the only acceptable formulation. Other types of Bicillin or benzathine penicillin G formulated for other clinical uses must not be used for streptococcal infection prophylaxis.

(2) Bicillin-LA<sup>R</sup> must be administered on or about the recruit's 14th calendar day at the recruit center to maximize the clinical benefits of streptococcal infection prophylaxis.

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TABLE A  
EXAMPLE  
GROUP A BETA-HEMOLYTIC STREPTOCOCCAL (GABHS) PHARYNGITIS RATES REPORT

		Naval Training Center					
Week beginning	No. total recruits	No. of cases in total recruits	Total recruit case rate <sup>1</sup> (per 1,000)	GABHS isolates mucoid morphology	No. of "second half" recruits	No. of cases in "second half" recruits	"Second half" recruit case rate (per 1,000)
13 May 89	4,995	18	3.6	0/18 (0%)	2,002	6	3.0
20 May 89	5,023	33	6.6	1/33 (3%)	1,996	21	10.5
27 May 89	4,889	25	5.1	1/25 (4%)	2,020	2	1.0
3 June 89	4,992	19	3.8	0/19 (0%)	1,999	5	2.5

The first Bicillin injection has been employed since 1 October 1988.  
The second Bicillin injection has been employed since 28 May 1989.

<sup>1</sup> The total recruit GABHS pharyngitis rate indicates all culture proven GABHS pharyngitis infections in all recruits in all phases of recruit training subject to care at the recruit medical treatment facility (per 1,000 recruits per week).

<sup>2</sup> "Second half" is defined as recruits who are beyond their 44th calendar day of training.

<sup>3</sup> The "second half" recruit GABHS pharyngitis rate indicates all culture proven GABHS pharyngitis infections reported in recruits who are at least in their 44th calendar day at the recruit center and subject to care at the recruit medical treatment facility (per 1,000 recruits per week).

When routine antibiotic prophylaxis begins in October, it is not necessary to give prophylaxis to recruits who are beyond their 14th calendar day of training. (Note: The exception would be if GABHS pharyngitis rates equaled or exceeded 10 cases per 1,000 recruits per week during the last week of September; see paragraph 3d for guidance.)

(3) Bicillin-LA<sup>R</sup> is given in a dosage of 1.2 million units intramuscularly in the upper outer quadrant of one buttock. Bicillin-LA<sup>R</sup> is an irritating material; therefore deep intramuscular injection is required. When administered as stipulated, Bicillin-LA<sup>R</sup> produces blood levels sufficient for streptococcal disease prophylaxis for approximately 3 to 4 weeks.

(4) Before administration of Bicillin-LA<sup>R</sup>, recruits must be questioned for any history of penicillin hypersensitivity, including breathing difficulty, tightness in the chest, drop in blood pressure, or urticarial rash following penicillin administration in the past. Persons giving a history compatible with immediate or delayed reactions to penicillin must not be given Bicillin-LA<sup>R</sup> under the auspices of the streptococcal infection control program.

(5) Penicillin-allergic recruits must be given an alternate antibiotic. Oral erythromycin 250 mg two times a day for 30 days is recommended (from "Rheumatic Fever and Rheumatic Heart Disease," World Health Organization Technical Report 764, 1988). This regimen, even with incomplete compliance, was as effective as the standard prophylaxis with Bicillin-LA<sup>R</sup> in preventing streptococcal infection in recruits. Recruits should be encouraged to take the erythromycin regularly; taking it with meals will reduce gastrointestinal irritation. (Note: For the streptococcal antibiotic prophylaxis program, oral erythromycin is not an approved alternative to Bicillin-LA<sup>R</sup> for the recruit who is not penicillin-allergic.)

c. A second Bicillin-LA<sup>R</sup> injection is required if the streptococcal pharyngitis surveillance procedures detailed in paragraph 2 show a rate of GABHS pharyngitis equal to or greater than 10 cases per 1,000 recruits per week among recruits past their 44th calendar day at the recruit center ("second half" recruits). Prophylactic blood levels of penicillin from the first injection are not present at this time.

(1) The second Bicillin-LA<sup>R</sup> dose must first be given en masse to all "second half" recruits, i.e., all recruits who are beyond their 44th calendar day of training. As the other recruits reach their 44th calendar day of training, they must receive a second dose of Bicillin-LA<sup>R</sup>. A second dose of Bicillin-LA<sup>R</sup> must be administered to recruits as they reach their

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44th day of training for a minimum of 6 weeks after the weekly rate falls below 10 cases per 1,000 "second half" recruits. The second dose may then be discontinued.

(2) If a second Bicillin-LA<sup>R</sup> dose is required, all penicillin-allergic recruits must receive oral erythromycin 250 mg twice a day for an additional 30 days. It is prescribed at the same time that Bicillin-LA<sup>R</sup> is given to members of their training unit.

d. Antibiotic prophylaxis need not be given from 1 May through 30 September unless the overall incidence of streptococcal pharyngitis equals or exceeds 10 cases per 1,000 recruits per week. If this occurs, a prophylaxis program must be implemented or continued, using the same guidelines indicated above. If prophylaxis is implemented between 1 May and 30 September, it must first be administered en masse to all recruits beyond their 14th calendar day of training. Thereafter, all subsequent recruits receive prophylaxis on or about their 14th calendar day of training. The prophylaxis program must be continued for a minimum of 6 weeks after the weekly GABHS pharyngitis rate falls below 10 cases per 1,000 recruits per week. The program must be reinstated for periods of at least 6 weeks when the incidence of streptococcal pharyngitis equals or exceeds 10 cases per 1,000 recruits per week.

e. Antibiotic prophylaxis must also be instituted at NTC Orlando and for female recruits at MCRD Parris Island anytime the incidence of GABHS pharyngitis among those recruits equals or exceeds 10 cases per 1,000 recruits per week. The prophylaxis program must be administered en masse to all recruits who are beyond their 14th calendar day of training and who have not received a first Bicillin-LA<sup>R</sup> injection. Thereafter, all subsequent recruits receive prophylaxis on or about their 14th calendar day of training. Once begun, the first Bicillin-LA<sup>R</sup> injection must be implemented for at least a 6-week period as described above and reinstated as needed. Penicillin-allergic recruits receive erythromycin following the guidelines of paragraph 3b(5). If antibiotic prophylaxis is started, the guidelines of paragraph 3c apply for decisions on antibiotic prophylaxis for "second half" recruits.

f. There is a possibility of immediate and severe anaphylactic reactions to parenteral penicillin. A physician or other health care provider who is qualified in current emergency resuscitative procedures should be immediately available during administration of Bicillin-LA<sup>R</sup> prophylaxis. The requirements of reference (a) for vaccine administration procedures and emergency medical treatment also apply to the administration of Bicillin-LA<sup>R</sup>.