



EPIDEMIOLOGY BULLETIN

C. M. G. Buttery, M.D., M.P.H., Commissioner

Grayson B. Miller, Jr., M.D., Epidemiologist

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Recommended Infection-Control Practices for Dentistry

Dental personnel may be exposed to a wide variety of microorganisms in the blood and saliva of patients they treat in the dental operator. These include *Mycobacterium tuberculosis*, hepatitis B virus, staphylococci, streptococci, cytomegalovirus, herpes simplex virus types I and II, human T-lymphotropic virus type III/lymphadenopathy-associated virus (HTLV-III/LAV), and a number of viruses that infect the upper respiratory tract. Infections may be transmitted in dental practice by blood or saliva through direct contact, droplets, or aerosols. Although not documented, indirect contact transmission of infection by contaminated instruments is possible. Patients and dental health-care workers (DHCWs) have the potential of transmitting infections to each other (1).

A common set of infection-control strategies should be effective for preventing hepatitis B, acquired immunodeficiency syndrome, and other infectious diseases caused by bloodborne viruses (2-4). The ability of hepatitis B virus to survive in the environment (5) and the high titers of virus in blood (6) make this virus a good model for infection-control practices to prevent transmission of a large number of other infectious agents by blood or saliva. Because all infected patients cannot be identified by history, physical examination, or readily available laboratory tests (3), the following recommendations should be used routinely in the care of all patients in dental practices.

Medical History

Always obtain a thorough medical history. Include specific questions about medications, current illnesses,



hepatitis, recurrent illnesses, unintentional weight loss, lymphadenopathy, oral soft tissue lesions, or other infections. Medical consultation may be indicated when a history of active infection or systemic disease is elicited.

Use of Protective Attire and Barrier Techniques

1. For protection of personnel and patients, gloves must always be worn when touching blood, saliva, or mucous membranes (7-10). Gloves must be worn by DHCWs when touching blood-soiled items, body fluids, or secretions, as well as surfaces contaminated with them. Gloves must be worn when examining all oral lesions. All work must be completed on one patient, where possible, and the hands must be washed and regloved before performing procedures on another patient. Repeated use of a single pair of gloves is not recommended, since

such use is likely to produce defects in the glove material, which will diminish its value as an effective barrier.

2. Surgical masks and protective eyewear or chin-length plastic face shields must be worn when splashing or spattering of blood or other body fluids is likely, as is common in dentistry (11,12).

3. Reusable or disposable gowns, laboratory coats, or uniforms must be worn when clothing is likely to be soiled with blood or other body fluids. If reusable gowns are worn, they may be washed, using a normal laundry cycle. Gowns should be changed at least daily or when visibly soiled with blood (13).

4. Impervious-backed paper, aluminum foil, or clear plastic wrap may be used to cover surfaces (e.g., light handles or x-ray unit heads) that may

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be contaminated by blood or saliva and that are difficult or impossible to disinfect. The coverings should be removed (while DHCWs are gloved), discarded, and then replaced (after un gloving) with clean material between patients.

5. All procedures and manipulations of potentially infective materials should be performed carefully to minimize the formation of droplets, splatters, and aerosols, where possible. Use of rubber dams, where appropriate, high-speed evacuation, and proper patient positioning should facilitate this process.

Handwashing and Care of Hands

Hands must always be washed between patient treatment contacts (following removal of gloves), after touching inanimate objects likely to be contaminated by blood or saliva from other patients, and before leaving the operatory. The rationale for handwashing after gloves have been worn is that gloves become perforated, knowingly or unknowingly, during use and allow bacteria to enter beneath the glove material and multiply rapidly. For many routine dental procedures, such as examinations and nonsurgical techniques, handwashing with plain soap appears to be adequate, since soap and water will remove transient microorganisms acquired directly or indirectly from patient contact (13). For surgical procedures, an antimicrobial surgical handscrub should be used (14). Extraordinary care must be used to avoid hand injuries during procedures. However, when gloves are torn, cut, or punctured, they must be removed immediately, hands thoroughly washed, and regloving accomplished before completion of the dental procedure. DHCWs who have exudative lesions or weeping dermatitis should refrain from all direct patient care and from handling dental patient-care equipment until the condition resolves (15).

Use and Care of Sharp Instruments and Needles

1. Sharp items (needles, scalpel blades, and other sharp instruments) should be considered as potentially infective and must be handled with extraordinary care to prevent unintentional injuries.

2. Disposable syringes and needles, scalpel blades, and other sharp items must be placed into puncture-resistant containers located as close



as practical to the area in which they were used. To prevent needlestick injuries, disposable needles should not be recapped; purposefully bent or broken; removed from disposable syringes; or otherwise manipulated by hand after use.

3. Recapping of a needle increases the risk of unintentional needlestick injury. There is no evidence to suggest that reusable aspirating-type syringes used in dentistry should be handled differently from other syringes. Needles of these devices should not be recapped, bent, or broken before disposal.

4. Because certain dental procedures on an individual patient may require multiple injections of anesthetic or other medications from a single syringe, it would be more prudent to place the unsheathed needle into a "sterile field" between injections rather than to recap the needle between injections. A new (sterile) syringe and a fresh solution should be used for each patient.

Indications for High-Level Disinfection or Sterilization of Instruments

Surgical and other instruments that

normally penetrate soft tissue and/or bone (e.g., forceps, scalpels, bone chisels, scalers, and surgical burs) should be sterilized after each use. Instruments that are not intended to penetrate oral soft tissues or bone (e.g., amalgam condensers, plastic instruments, and burs) but that may come into contact with oral tissues should also be sterilized after each use, if possible; however, if sterilization is not feasible, the latter instruments should receive high-level disinfection (3,13,16).

Methods for High-Level Disinfection or Sterilization

Before high-level disinfection or sterilization, instruments should be cleaned to remove debris. Cleaning may be accomplished by a thorough scrubbing with soap and water or a detergent, or by using a mechanical device (e.g., an ultrasonic cleaner). Persons involved in cleaning and decontaminating instruments should wear heavy-duty rubber gloves to prevent hand injuries. Metal and heat-stable dental instruments should be routinely sterilized between use by steam under pressure (autoclaving),

dry heat, or chemical vapor. The adequacy of sterilization cycles should be verified by the periodic use of spore-testing devices (e.g., weekly for most dental practices) (13). Heat- and steam-sensitive chemical indicators may be used on the outside of each pack to assure it has been exposed to a sterilizing cycle. Heat-sensitive instruments may require up to 10 hours' exposure in a liquid chemical agent registered by the U.S. Environmental Protection Agency (EPA) as a disinfectant/sterilant; this should be followed by rinsing with sterile water. High-level disinfection may be accomplished by immersion in either boiling water for at least 10 minutes or an EPA-registered disinfectant/sterilant chemical for the exposure time recommended by the chemical's manufacturer.

Decontamination of Environmental Surfaces

At the completion of work activities, countertops and surfaces that may have become contaminated with blood or saliva should be wiped with absorbent toweling to remove extraneous organic material, then disinfected with a suitable chemical germicide. A solution of sodium hypochlorite (household bleach) prepared fresh daily is an inexpensive and very effective germicide. Concentrations ranging from 5,000 ppm (a 1:10 dilution of household bleach) to 500 ppm (a 1:100 dilution) sodium hypochlorite are effective, depending on the amount of organic material (e.g., blood, mucus, etc.) present on the surface to be cleaned and disinfected. Caution should be exercised, since sodium hypochlorite is corrosive to metals, especially aluminum.

Decontamination of Laboratory Supplies and Materials

Blood and saliva should be thoroughly and carefully cleaned from laboratory supplies and materials that have been used in the mouth (e.g., impression materials, bite registration), especially before polishing and grinding intra-oral devices. Materials, impressions, and intra-oral appliances should be cleaned and disinfected before being handled, adjusted, or sent to a dental laboratory (17). These items should also be cleaned and disinfected when returned from the dental laboratory and before placement in the patient's mouth. *Because of the ever-increasing variety of dental materials used intra-orally, DHCWs are advised to consult with manufacturers* July, 1986

as to the stability of specific materials relative to disinfection procedures. A chemical germicide that is registered with the EPA as a "hospital disinfectant" and that has a label claim for mycobactericidal (e.g., tuberculocidal) activity is preferred, because mycobacteria represent one of the most resistant groups of microorganisms; therefore, germicides that are effective against mycobacteria are also effective against other bacterial and viral pathogens (15). Communication between a dental office and a dental laboratory with regard to handling and decontamination of supplies and materials is of the utmost importance. **Use and Care of Ultrasonic Scalers, Handpieces, and Dental Units**

1. Routine sterilization of handpieces between patients is desirable; however, not all handpieces can be sterilized. The present physical configurations of most handpieces do not readily lend them to high-level disinfection of both external and internal surfaces (see 2 below); therefore, when using handpieces that cannot be sterilized, the following cleaning and disinfection procedures should be completed between each patient: After use, the handpiece should be flushed (see 2 below), then thoroughly scrubbed with a detergent and water to remove adherent material. It should then be thoroughly wiped with absorbent material saturated with a chemical germicide that is registered with the EPA as a "hospital disinfectant" and is mycobactericidal at use-dilution (15). The disinfecting solution should remain in contact with the handpiece for a time specified by the disinfectant's manufacturer. Ultrasonic scalers and air/water syringes should be treated in a similar manner between patients. Following disinfection, any chemical residue should be removed by rinsing with sterile water.

2. Because water retraction valves within the dental units may aspirate infective materials back into the handpiece and water line, check valves should be installed to reduce the risk of transfer of infective material (18). While the magnitude of this risk is not known, it is prudent for water-cooled handpieces to be run and to discharge water into a sink or container for 20-30 seconds after completing care on each patient. This is intended to physically flush out patient material that may have been aspirated into the handpiece or water line. Additionally, there is some evidence that overnight

bacterial accumulation can be significantly reduced by allowing water-cooled handpieces to run and to discharge water into a sink or container for several minutes at the beginning of the clinic day (19). Sterile saline or sterile water should be used as a coolant/irrigator when performing surgical procedures involving the cutting of soft tissue or bone.

Handling of Biopsy Specimens

In general, each specimen should be put in a sturdy container with a secure lid to prevent leaking during transport. Care should be taken when collecting specimens to avoid contamination of the outside of the container. If the outside of the container is visibly contaminated, it should be cleaned and disinfected, or placed in an impervious bag (20).

Disposal of Waste Materials

All sharp items (especially needles), tissues, or blood should be considered potentially infective and should be handled and disposed of with special precautions. Disposable needles, scalpels, or other sharp items should be placed intact into puncture-resistant containers before disposal. Blood, suctioned fluids, or other liquid waste may be carefully poured into a drain connected to a sanitary sewer system. Other solid waste contaminated with blood or other body fluids should be placed in sealed, sturdy impervious bags to prevent leakage of the contained items. Such contained solid wastes can then be disposed of according to requirements established by local or state environmental regulatory agencies and published recommendations (13,20).

Editorial Note: All DHCWs must be made aware of sources and methods of transmission of infectious diseases. The above recommendations for infection control in dental practices incorporate procedures that should be effective in preventing the transmission of infectious agents from dental patients to DHCWs and vice versa. Assessment of quantifiable risks to dental personnel and patients for specific diseases requires further research. There is no current documentation of patient-to-patient blood- or saliva-borne disease transmission from procedures performed in dental practice. While few in number, reported outbreaks of dentist-to-patient transmission of hepatitis B have resulted in serious and even fatal conse-

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quences (9). Herpes simplex virus has been transmitted to over 20 patients from the fingers of a DHCW (10). Serologic markers for hepatitis B in dentists have increased dramatically in the United States over the past several years, which suggests current infection-control practices have been insufficient to prevent the transmission of this infectious agent in the dental operatory. While vaccination for hepatitis B is strongly recommended for dental personnel (21), vaccination alone is not cause for relaxation of strict adherence to accepted methods of asepsis, disinfection, and sterilization.

Various infection-control guidelines exist for hospitals and other clinical settings. Dental facilities located in hospitals and other institutional settings have generally utilized existing guidelines for institutional practice. These recommendations are offered as guidance to DHCWs in noninstitutional settings for enhancing infection-control practices in dentistry; they may be useful in institutional settings also.

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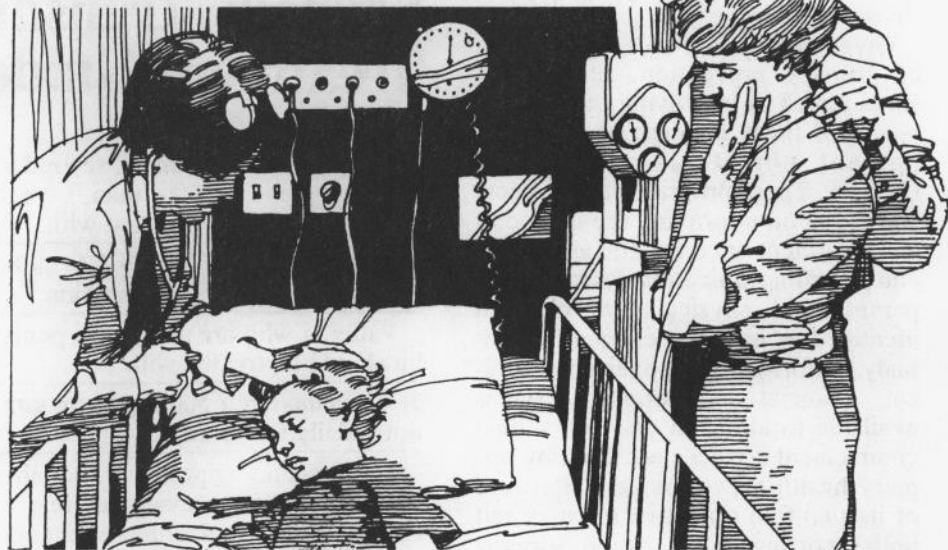
Epidemiology Bulletin



Congenital Anomalies Reporting in Virginia

Congenital anomalies or birth defects are a heterogeneous group of disorders including structural defects, metabolic disorders and other conditions of prenatal origin. Roughly three percent of newborns will have an identifiable major congenital anomaly. This percentage doubles when infants are followed out to one year of age.¹ Congenital anomalies contribute disproportionately to deaths during infancy; current statistics reveal that over 20% of infant deaths are due to congenital anomalies.² Indeed, as other severe childhood diseases have diminished with improvements in social conditions and medical care, the proportion of infants dying due to congenital anomalies has steadily risen. In addition, these disorders contribute significantly to childhood morbidity and the need for special services. In regard to the general population, congenital anomalies in 1984 were the fifth leading cause of years of potential life lost before age 65 (after unintentional injuries, malignant neoplasms, diseases of the heart, and suicide/homicide).³

The etiology of most congenital anomalies is unknown and thus the ultimate goal of primary prevention of these disorders remains elusive. Congenital anomaly registries are directed at advancing the understanding of birth defects etiology. The development of such registries dates back nearly 25 years to the early 1960's and the epidemic of limb reduction and other defects associated with maternal ingestion of thalidomide. Of particular concern was the fact that the



epidemic continued for several years before the association with thalidomide was uncovered.⁴ This outbreak served to heighten awareness of the vulnerability of the developing fetus to environmental and therapeutic agents. Efforts soon followed throughout Europe to monitor the incidence of birth defects with the hope of discovering other etiologic relationships. Efforts to monitor the incidence of birth defects in the United State were initiated in 1967 by the Centers for Disease Control (CDC).⁵ The CDC currently conducts population-based surveillance in the metropolitan Atlanta area and monitors the incidence of birth defects in a nationwide sample of U.S. hospitals. Some type of monitoring effort is now also present in approximately 20 states. The scope and design of these programs varies. Case finding methods

include vital records, administrative data, hospital reporting and active case finding. Programmatic objectives include epidemiologic studies, service planning, delivery and evaluation, as well as education.

Mandated by legislation passed in 1985 and amended in 1986, the Commonwealth is initiating a program called Virginia CARES (Congenital Anomalies Reporting and Education System). The Bureau of Maternal and Child Health, Virginia Department of Health, is responsible for the program and is being assisted by a subcommittee of its Genetics Advisory Board. The statute mandating the program requires hospital reporting of any congenital anomaly in a child less than age two. This mandate is expected to improve the completeness of birth defects reporting, as studies have shown that underreporting of congenital malformations on birth certificates varies from 0-75%.⁶ Utilizing the CDC's Birth Defects Monitoring Program data, expected rates for Virginia for certain congenital anomalies are higher than those reported by birth certificates (see inset). Clearly, important malformations may be missed using birth certificates alone.

As Virginia CARES proceeds with data collection, baseline rates for Virginia will be developed and periodic analyses will allow for the identification of clusters or significant changes in the incidence of specific defects. Epidemiologic investigation of such events is one approach to furthering the understanding of the etiology of congenital anomalies, leading ulti-

**Selected Congenital Anomalies in Virginia:
Number Expected Versus Number Reported
1982-1983**

	Number Reported ¹	(rate) ²	Number Expected	(rate) ³
Congenital hip dislocation	13	(0.80)	144	(8.92)
Autosomal Anomaly excluding Down Syndrome	11	(0.68)	33	(2.03)
Anencephaly	23	(1.42)	51	(3.14)
Spina Bifida	57	(3.52)	77	(4.78)
Down Syndrome	77	(4.76)	131	(8.08)

¹Source: Center for Health Statistics, VDH

²cases per 10,000 total births

³Source: MMWR Vol. 34 No. 2SS (see text)

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mately to the primary prevention of these disorders.

Given the limited role, at present, of primary prevention, other measures aimed at improving the life and health of these children are also important objectives of Virginia CARES. These programmatic aspects will focus on improving the diagnosis and treatment of congenital anomalies and providing educational materials to parents and physicians of children identified as having a congenital anomaly. Information concerning medical, financial and support services available to aid such children should complement services provided by primary health care providers. Because of its two-fold objective to carry out both reporting and education, Virginia CARES will be one of the most comprehensive state birth defects registries when it is expected to go fully into operation January 1, 1987. The success of the program rests in great part on the willingness of physicians and hospitals to provide complete, accurate, and timely diagnoses of congenital anomalies on the birth certificates and hospital discharge records. This effort may ultimately be rewarded by primary prevention of birth defects, and should immediately result in better services to affected families. Individuals desiring additional information on Virginia CARES should contact the Bureau of Maternal and Child Health, Virginia Department of Health.

Submitted by: W. Hugh Craft, M.D. and Laura S. Funkhouser, M.D.

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Syphilis

Sexually Transmitted Diseases Treatment Guidelines, 1985

Early Syphilis

Early syphilis (primary, secondary, latent syphilis of less than 1 year's duration) should be treated with:

Benzathine penicillin G 2.4 million units total IM at a single session.

Patients who are allergic to penicillin should be treated with:

Tetracycline HCl 500 mg by mouth 4 times daily for 15 days.

Tetracycline appears to be effective, but has been evaluated less extensively than penicillin. Patient compliance with this regimen may be difficult so special care should be taken to encourage optimal compliance.

Penicillin-allergic patients who cannot tolerate tetracycline should have their allergy confirmed. For these patients there are two options:

- (1) If compliance and serologic follow-up can be assured, administer *erythromycin* 500 mg by mouth 4 times a day for 15 days.
- (2) If compliance and serologic follow-up cannot be assured, the patient should be managed in consultation with an expert.

Syphilis of More Than 1 Year's Duration

Recommended Regimen

Syphilis of more than 1 year's duration, except neurosyphilis (latent syphilis of indeterminate or more than 1 year's duration, cardiovascular, or late benign syphilis) should be treated with:

Benzathine penicillin G 2.4 million units IM once a week for 3 successive weeks (7.2 million units total).

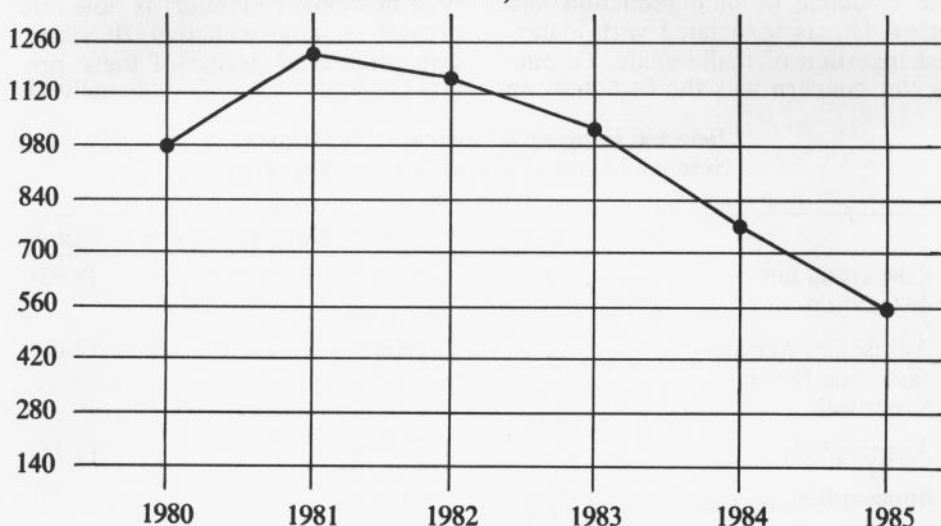
The optimal treatment schedules for syphilis of greater than 1 year's duration have been less well established than schedules for early syphilis. In general, syphilis of longer duration requires more prolonged therapy.

Therapy is recommended for established cardiovascular syphilis although antibiotics may not reverse the pathology associated with this disease.

Penicillin-Allergic Patients

There are no published clinical data which adequately document the efficacy of drugs other than penicillin for syphilis of more than 1 year's duration. Cerebrospinal fluid examinations

REPORTED CASES OF EARLY SYPHILIS* IN VIRGINIA, 1980-1985



The 300 primary and secondary syphilis cases reported during 1985 represented a 28.8% decrease compared to the 420 cases reported for 1984. Early latent syphilis under one year's duration numbered 260 cases in 1985, down 25.6% compared to the 351 cases reported for 1984.

*primary, secondary, and early latent syphilis.

should be performed before therapy with these regimens.

Patients who are allergic to penicillin should be treated with:

Tetracycline HCl 500 mg by mouth 4 times daily for 30 days. Patient compliance with this regime may be difficult, so care should be taken to encourage optimal compliance.

Penicillin-allergic patients who cannot tolerate tetracycline should have their allergy confirmed. For these patients there are two options:

- (1) If compliance and serologic follow-up can be assured, administer *erythromycin* 500 mg by mouth 4 times daily for 30 days.
- (2) If compliance and serologic follow-up cannot be assured, the patient should be hospitalized and managed in consultation with an expert.

Cerebrospinal Fluid Examination

Cerebrospinal fluid (CSF) examination should be performed in patients with clinical symptoms or signs consistent with neurosyphilis. This examination is also desirable for patients with syphilis or greater than 1 year's duration to exclude asymptomatic neurosyphilis.

Neurosyphilis

Published studies show that a total dose of 6.0-9.0 million units of penicillin G over a 3- to 4-week period results in a satisfactory clinical response in approximately 90 percent of patients with neurosyphilis. Regimens employing benzathine penicillin in standard doses or procaine penicillin in doses under 2.4 million units daily do not consistently provide treponemidal levels of penicillin in CSF, and several case reports document the failure of such regimens to cure neurosyphilis.

Drug Regimens

Potentially effective regimens, none of which has been adequately studied, include:

Aqueous crystalline penicillin G 12-24 million units IV/day (2-4 million units every 4 hours) for 10 days, followed by *benzathine penicillin G* 2.4 million units IM weekly for 3 doses

OR

Aqueous procaine penicillin G 2.4 million units IM daily plus *procaine penicillin G* 600 mg by mouth 4 times daily, both for 10 days, followed by *benzathine penicillin G* 2.4 million units IM weekly for 3 doses

OR

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Benzathine penicillin G 2.4 million units IM weekly for 3 doses.

Penicillin-Allergic Patients

Patients with histories of allergy to penicillin should have their allergy confirmed and should be managed in consultation with an expert.

Syphilis in Pregnancy

Evaluation of Pregnant Women

All pregnant women should have a nontreponemal serologic test for syphilis, such as the VDRL or RPR test, at the time of the first prenatal visit. If a woman is suspected of being at high risk for syphilis, a second nontreponemal test should be performed during the third trimester. Cord blood should be tested for syphilis antibody and the results used as a baseline for follow-up.

Seroreactive patients should be evaluated promptly. This evaluation should include a history and physical examination, as well as a quantitative nontreponemal test and a confirmatory treponemal test.

If the treponemal test is nonreactive and there is no clinical or epidemiologic evidence of syphilis, treatment is unnecessary. Both the quantitative nontreponemal test and the confirmatory test should be repeated within 4 weeks. If there is clinical or serologic evidence of syphilis or if the diagnosis of syphilis cannot be excluded with reasonable certainty, the patient should be treated as outlined below.

Patients for whom adequate treat-

ment for syphilis in the past is documented need not be retreated unless there is clinical, serologic, or epidemiologic evidence of reinfection such as darkfield-positive lesions, a fourfold titer rise of a quantitative nontreponemal test, or history of recent sexual exposure to a person with syphilis.

Recommended Regimens

For patients at all stages of pregnancy who are not allergic to penicillin, penicillin should be used in dosage schedules appropriate for the stage of syphilis as recommended for the treatment of nonpregnant patients.

Penicillin-Allergic Patients

Patients at all stages of pregnancy who have documented allergy to penicillin:

- (1) If compliance and serologic follow-up can be assured, administer erythromycin in dosage schedules appropriate for the stage of syphilis as recommended for the treatment of nonpregnant patients. Infants born to mothers treated during pregnancy with erythromycin for early syphilis should be treated with penicillin.
- (2) If compliance and serologic follow-up cannot be assured, the patient should be hospitalized and managed in consultation with an expert.

Tetracycline is not recommended in pregnant women because of potential adverse effects on the fetus.

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Follow-Up

Pregnant women who have been treated for early syphilis should have monthly quantitative nontreponemal serologic tests for the remainder of the current pregnancy. Women who show a four-fold rise in titer should be retreated. Treated women who do not show a four-fold decrease in titer in a 3-month period should be retreated. After delivery, follow-up is as outlined for nonpregnant patients.

Congenital Syphilis

Congenital syphilis may occur if the mother has syphilis during pregnancy. If the mother has received adequate penicillin treatment during pregnancy, the risk to the infant is small. However, all infants should be examined carefully at birth, at 1 month, and every 3 months for the first 15 months, and then every 6 months until nontreponemal serologic tests are negative or stable at low titer. If a serologic test is positive at 3 months, the infant should be treated for congenital syphilis.

Infected infants are frequently asymptomatic at birth and may be seronegative if the maternal infection occurred late in gestation. Infants should be treated at birth if maternal treatment was inadequate or unknown, did not include penicillin, or if adequate follow-up of the infant cannot be ensured.

Infants with congenital syphilis should have a CSF examination before treatment to provide a baseline for follow-up. Regardless of CSF results, children should be treated with a regimen effective for neurosyphilis.

Symptomatic or Asymptomatic Infants Recommended Regimens

Aqueous crystalline penicillin G 50,000 units/kg IM or IV daily in two divided doses for a minimum of 10 days

OR

Aqueous procaine penicillin G 50,000 units/kg IM daily for a minimum of 10 days.

In asymptomatic infants whose mothers were treated adequately with a penicillin regimen during pregnancy, treatment is not necessary if follow-up can be ensured. In asymptomatic infants whose follow-up cannot be ensured many consultants choose to treat the infant with benzathine penicillin 50,000 units/kg IM in a single dose. It is recognized that data on the



efficacy of this regimen in congenital neurosyphilis are lacking; therefore if neurosyphilis cannot be excluded, the aqueous crystalline penicillin or procaine penicillin regimens are recommended. Only penicillin regimens are recommended for neonatal congenital syphilis.

After the neonatal period, penicillin therapy for congenital syphilis should be with the same dosages used for neonatal congenital syphilis. For larger children, the total dose of penicillin need not exceed the dosage used in adult syphilis of more than 1 year's duration. After the neonatal period, the dosage of tetracycline for congenital syphilis in patients who are allergic to penicillin should be individualized but need not exceed dosages used in adult syphilis of more than 1 year's duration. Tetracycline should not be given to children less than 8 years of age.

Follow-Up and Re-Treatment

All patients with early syphilis and congenital syphilis should be encouraged to return for repeat quantitative nontreponemal tests at least 3, 6, and 12 months after treatment. In these patients, quantitative nontreponemal test titers will decline to nonreactive or low titer reactive within a year following successful treatment with penicillin. Serologic test results decline more slowly in patients treated for disease of longer duration. Patients with syphilis of more than 1 year's duration should also have a repeat serologic test 24 months after treatment. Careful follow-up serologic testing is particularly important in patients treated with antibiotics other

than penicillin. Examination of CSF should be planned as part of the last follow-up visit after treatment with alternative antibiotics.

All patients with neurosyphilis must be carefully followed with periodic serologic testing, clinical evaluation at 6-month intervals, and repeat CSF examinations for at least 3 years.

The possibility of reinfection should always be considered when retreating patients with early syphilis. A CSF examination should be performed before retreatment unless reinfection and a diagnosis of early syphilis can be established.

Re-treatment should be considered when:

- (1) Clinical signs or symptoms of syphilis persist or recur;
- (2) There is a four-fold increase in the titer of a nontreponemal test; or
- (3) An initially high-titer nontreponemal test fails to decrease four-fold within a year.

Patients should be retreated with the schedules recommended for syphilis of more than 1 year's duration. In general, only one retreatment course is indicated because patients may maintain stable, low titers in nontreponemal tests or may have irreversible anatomical damage.

Management of Sex Partners

Patients who have been exposed to infectious syphilis within the preceding 3 months and other patients who, on epidemiologic grounds, are at high risk for early syphilis should be treated as for early syphilis. Every effort should be made to establish a diagnosis in these cases.

*Reprinted from *MMWR* 1985; 34(4S)

Epidemiology Bulletin

Public Health Follow Through to Eliminate Tuberculosis

Tuberculosis continues to be both a medical and public health problem in Virginia. While the 1985 incidence rate for Virginia is less than that for the United States (8.4/100,000 vs. 9.1), there were 488 new cases reported. It is encouraging that private physicians are playing a key role in the treatment of tuberculosis. Public Health offers support for the diagnosis, treatment, prevention and follow up of cases through local health departments at no or little cost to patients.

Chest x-rays are available at most city and county health departments. Bacteriologic studies including smears, cultures and sensitivity studies are available through the State Laboratory in Richmond without charge. Sensitivity studies on positive smear cases may be completed in two (2) weeks using a new technique (*Bactec*[®]). Containers are available through your local health department. Drugs are available through the State Health Department and local health department pharmacies. No patient will be denied appropriate therapy. Limited liver function studies (bilirubin-SGOT) are available at health departments by arrangement with the Division of Consolidated Laboratory Services. If there is difficulty obtaining any of these services, please call the Tuberculosis Control Program at (804) 786-6251 for assistance.



Prompt reporting of tuberculosis cases and suspected cases, as required by the Code of Virginia (§§32.1-35-32.1-38), will expedite evaluation of contacts and institution of preventive therapy. *It is requested that patients with tuberculosis under private care who are noncompliant with respect to drug treatment, drug toxicity monitoring and follow up evaluations be referred to the local*

health department. Supervised drug therapy through the local health department may be necessary. This will prevent relapse and further dissemination of infection with organisms which may have become drug resistant. Cooperation will be necessary to further reduce the incidence of disease and infection. *Submitted by: C. F. Wingo, M.D., Director, Tuberculosis Control Program*

Sexually Transmitted Diseases Treatment Guidelines, 1985:

Prevention of Ophthalmia Neonatorum

Instillation of a prophylactic agent into the eyes of all newborn infants is recommended as required by laws in most states. None of the presently recommended approaches for prophylaxis against gonococcal and chlamydial ophthalmia neonatorum is completely effective. Silver nitrate is effective in preventing gonococcal infections but does not prevent chlamydial disease and frequently causes chemical conjunctivitis. Erythromycin is effective in preventing both gonococcal and chlamydial ophthalmia and does not cause chemical conjunctivitis, but the topical use of this drug does not prevent nasopharyngeal chlamydial infection or pneumonia. Furthermore, erythromycin prophylaxis is considerably more expensive than silver nitrate prophylaxis. Tetracycline ointment has not been as extensively evaluated as has erythromycin but appears to be as effective. Whichever type of prophylaxis is used it should be implemented no later than 1 hour after birth—preferably immediately after delivery since delayed

application may reduce efficacy.

application may reduce efficacy.

Recommended Regimens

Erythromycin (0.5%) ophthalmic ointment, tetracycline (1%) ointment, OR silver nitrate should be instilled into the eyes of all neonates as soon as possible after delivery and never later than 1 hour after birth. Single-use tubes or ampules are preferable to multiple-use tubes.

The efficacy of tetracycline and erythromycin in the prevention of PPNG ophthalmia is unknown. Bacitracin is NOT recommended.

Cases of selected notifiable diseases, Virginia, for the period June 1 through June 30, 1986

Disease	State					Regions				
	This Month	Last Month	Total to Date		Mean 5 Year To Date	This Month				
			1986	1985		N.W.	N.	S.W.	C.	E.
Measles	15	30	49	19	12	0	0	15	0	0
Mumps	7	3	25	28	35	1	1	2	0	3
Pertussis	1	6	16	5	13	0	0	0	0	1
Rubella	0	0	0	1	3	0	0	0	0	0
Meningitis—Aseptic <i>ASEP MEN</i>	14	18	82	89	59	0	3	2	8	1
*Bacterial <i>BACTA MEN</i>	25	17	135	136	126	3	5	5	1	11
Hepatitis A (Infectious) <i>HEPA A</i>	15	7	64	101	82	0	6	5	0	5
B (Serum) <i>HEPA B</i>	43	42	224	289	255	4	5	6	11	17
Non-A, Non-B <i>HEPA NONANONB</i>	9	6	37	50	41	0	2	3	0	4
Salmonellosis <i>SALM</i>	105	92	487	751	587	8	21	25	29	22
Shigellosis <i>SHIG</i>	8	6	32	37	242	0	4	1	0	3
Campylobacter Infections <i>CAMP</i>	75	53	232	297	180	5	23	23	12	12
Tuberculosis	26	42	175	187	221	3	1	3	7	10
Syphilis (Primary & Secondary)	22	34	203	155	265	0	0	8	4	10
Gonorrhea	1422	1556	8742	9056	9694	—	—	—	—	—
Rocky Mountain Spotted Fever <i>RMSF</i>	12	6	19	8	18	4	3	3	1	1
Rabies in Animals	11	14	98	87	181	3	4	1	2	1
Meningococcal Infections <i>MENING</i>	2	8	50	35	42	0	0	0	1	1
Influenza <i>FLU</i>	11	22	3898	922	1604	0	0	11	0	0
Toxic Shock Syndrome <i>TSS</i>	1	0	8	2	4	0	0	1	0	0
Reyes Syndrome <i>REYES</i>	0	2	2	2	4	0	0	0	0	0
Legionellosis <i>LEGION</i>	2	1	6	10	10	0	0	1	0	1
Kawasaki's Disease <i>KAWA</i>	1	3	15	24	15	0	0	1	0	0
Other: Acquired Immunodeficiency Syndrome	8	15	90	32	—	1	1	1	3	2

Counties Reporting Animal Rabies: Caroline 1 raccoon; Shenandoah 1 raccoon; Stafford 1 raccoon; Fairfax 1 raccoon; Loudoun 1 bat, 2 raccoons; Smyth 1 gray fox; Goochland 1 raccoon; Henrico 1 raccoon; King & Queen 1 raccoon.

Occupational Illnesses: Pneumoconioses 23; Carpal tunnel syndrome 13; Asbestosis 11; Silicosis 11; Asthma 1; Hearing loss 1; Poisoning-Chemical 1.

*other than meningococcal

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