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SYPHILIS TODAY . . .

A RESUME OF CURRENT DIAGNOSTIC
AND RAPID TREATMENT METHODS

COMPILED UNDER THE DIRECTION OF THE
MISSISSIPPI STATE BOARD OF HEALTH
JANUARY, 1947

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SYPHILIS TODAY

INTRODUCTION

A Resume of Current Diagnostic and Rapid Treatment Methods

Health for use of the private physician in the State of Mississippi. It is an answer to numerous requests for information on currently acceptable diagnostic and rapid treatment methods in the control of syphilis. I sincerely hope that this pamphlet will be instrumental in eradicating syphilis from our state.

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JACKSON 113, MISSISSIPPI

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INTRODUCTION

This booklet was prepared under the direction of the State Board of Health for use of the private physicians in the State of Mississippi. It is an answer to numerous requests for information on currently acceptable diagnostic and rapid treatment techniques in the control of syphilis. I sincerely hope that it will prove helpful in eradicating syphilis from our state.

Helix J. Underwood M.D.

Executive Officer,
Mississippi State Board of Health.

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FOREWORD

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*Robert Rothermel, M.D.
Supervisor, Venereal Disease Control*

FOREWORD

Within the past four years the treatment of syphilis has been revolutionized by the introduction of penicillin into the physician's armamentarium. This antibiotic, alone or in combination with other drugs, offers the treatment of choice in syphilis. Calcium penicillin suspended in peanut oil and beeswax—Romansky formula—adapts penicillin therapy to office practice.

Penicillin therapy has displaced the older types of treatment in the management of early syphilis. With the traditional types of treatment, unpleasant to the patient and burdensome to the physician, the syphilitic usually lapsed from treatment soon after the disappearance of symptoms. Returning the patient to treatment was difficult, and those who were not returned served as feeders of infection to their families and the community and were themselves subject to the late ravages of the disease.

The Mississippi State Board of Health recognizes the important contribution to the control of syphilis that is made by the private physician. In order that the physician may better serve both the individual patient and the public health, it is felt that the experience and general conclusions gained in the treatment of over 40,000 patients with intensive methods should be placed at his disposal.

The purpose of this booklet is to set forth briefly facts pertinent to the diagnosis and treatment of syphilis, together with a description of the facilities which have been developed and which are available for laboratory and clinical aid.

A. L. Gray, M.D.

Director, Division of Preventable Disease Control

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DIAGNOSIS

The demands on the family physician's time do not permit him to master all the techniques of the specialties; he can, however, diagnose almost all patients with syphilis by applying a few maxims for each of the various stages of the disease.

The few general rules that apply to syphilis as a disease are:

- Suspect syphilis in everyone
- Blood test every patient
- Prove your diagnosis
- Treat when diagnosis is proven

Serologic Tests for Syphilis

The serologic tests for syphilis presently in use, if performed by a competent technician, are 99% specific and 90% sensitive.

Specificity: Of 1,000 non-syphilitic persons, not more than 10 will have a positive or doubtful blood test as a result of other disease, technical error, etc.

Sensitivity: Of 1,000 syphilitics, 900 will have a frank positive blood test. For all practical purposes, two positive blood tests mean that the patient has, or has had syphilis.

Blood tests are made positive by the production of antibody-like substances in response to infection with *Treponema pallidum*. *Remember:* A case of syphilis which has had adequate treatment may retain a positive blood test for life, just as a patient who has had typhoid fever may show for years a positive agglutination test in a high titer.

History

The history of the patient, in syphilis as in other diseases, is of great importance in diagnosis.

Is there a history of lesions—genital, oral, or cutaneous?

Is there a history of bubo?

Is there a history of sexual exposure?

Have there been miscarriages, stillbirths, premature births, puny children, or children with positive blood tests?

What were the results of previous blood tests?

Has there been treatment? How much?

What is the serologic status of the sex partner?

Physical Examination

Evidence of active syphilis may be detected by physical examination; clinical evidence of active syphilis can not be detected without examination.

Examine Carefully

In early syphilis:

- The skin
- The mucous membranes
- The genitalia
- The lymph nodes
- The eyes

In late syphilis:

- The heart
- The eyes
- The skin
- The reflexes

Early Syphilis

Since most of the physicians of Mississippi are already familiar with the lesions of early syphilis, detailed descriptions of them should be unnecessary here. There are, however, a few important diagnostic maxims which should be kept in mind.

Primary

The Diagnostic Maxims of Primary Syphilis:

Regard any genital lesion in the male or female as syphilitic until proven otherwise.

Remember that the diagnosis of primary syphilis is a laboratory procedure; clinical diagnosis is not adequate.

Prove your diagnosis. Do not treat on suspicion. Treat, if darkfield examination or blood test is positive.

Do not treat the lesion or give any anti-syphilitic drug if the blood test is negative and no dark-field examination is available. Wait until the diagnosis is established.

Request an examination from the nearest Rapid Treatment Center if no darkfield is available in your local health department or in a clinical laboratory. Rapid Treatment Centers will be glad to offer facilities for this examination.

Do serologic follow-up for three months on every patient with apparently non-syphilitic genital lesion or with gonorrhoea.

Secondary

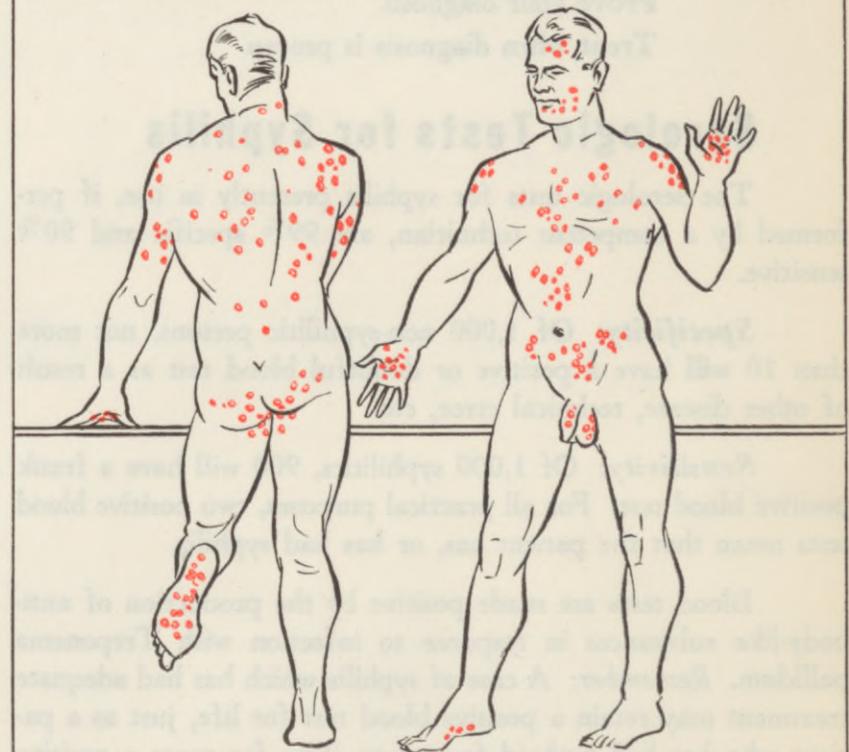
The Diagnostic Maxims of Secondary Syphilis:

Take a blood test for every skin eruption or mucous membrane lesion.

Take a blood test first, then give atropine, for iritis.

Take a blood test for sore throat which does not heal in 10 days.

AREAS OF PREDILECTION FOR SECONDARY SYPHILIS



Lesions involving these areas always suggest syphilis.

Latent Syphilis

The Diagnostic Maxims of Latent Syphilis:

Take a blood test to diagnose latent syphilis.

The definition of *latent syphilis* is *hidden syphilis*.

The diagnosis of latent syphilis by clinical means is impossible.

Remember that:

Syphilis becomes latent when the lesions of early syphilis heal.

All syphilitic infections are latent at some time; most of the time until breakdown.

Every case of paresis, tabes, aneurism, and gumma was *clinically* latent at one time or another. At any given time, at least half of all syphilis cases are in the stage of latency.

A person with untreated syphilis becomes non-infectious within four years except the pregnant woman who can infect the fetus.

As an aid to more precise diagnosis and treatment of latent syphilis, this stage of the disease is arbitrarily divided into two classifications—early latent and late latent.

Early latent: Classify latent syphilis as early latent if the infection is known to be of less than four years' duration, or if the patient is under 25 years of age, and if there is no history of lesion, blood tests, stigmata of congenital syphilis, etc.

Late latent: Classify as late latent if the infection is known to be of more than four years' duration, or if the patient is over 25 years of age, and if there is no history of lesions, blood tests, stigmata of congenital syphilis, etc.

Prenatal Syphilis

The diagnosis of prenatal syphilis does not vary essentially from that of other types, save that the incidence of latency is raised in pregnant women and the health of the infant is at stake.

Remember that:

In untreated syphilitic mothers, 8 out of 10 babies are born dead or syphilitic.

In treated syphilitic mothers, 9 out of 10 babies are born healthy and normal.

The birth of syphilitic children is preventable.

Take a blood test on every pregnant woman.

Congenital Syphilis

Every child born of a syphilitic mother, even if she has been treated, is a suspect. Blood tests in such children are not reliable until the age of three months, due to the carry-over of antibody-like substances from the maternal to the fetal circulation. However, if there is clinical evidence and the blood test is positive, treat immediately.

To Find Congenital Syphilis in Babies:

Suspect every child born of a syphilitic mother.

Suspect skin rashes in infants.

Suspect the baby that "won't gain".

Do a darkfield examination on lesions.

Take a routine blood test at three to four months of age.

Late Syphilis

Late syphilis may attack any part of the body. The lesions produced by it can mimic any syndrome in medicine. However, eight out of ten cases of late manifest syphilis involve the following systems:

The **central nervous system**

The **cardiovascular system**

The **skin and mucous membranes**

Central Nervous System Syphilis

Central nervous system syphilis is so complex a process that there can be no list of "land marks." It is one of the killing complications of the disease.

The nervous system is involved in one patient out of five in late untreated syphilis.

A quiescent period of 10 to 25 years often precedes the onset of symptoms (paresis, tabes, etc.) but, during this time, *the spinal fluid is positive.*

The only way in which central nervous system syphilis can be diagnosed with certainty, before or after the appearance of symptoms, is by *examination of the spinal fluid.*

Suspect Neurosyphilis:

In every "Wassermann-fast" patient

In every case of "latent" syphilis

In every facial palsy

In every ocular palsy

In every case of cerebral hemorrhage

In every case of mental disturbance

Neurosyphilis: Present or Absent? Prove It!

Spinal fluid examination will demonstrate the presence or absence of central nervous system syphilis.

A physician at the nearest Rapid Treatment Center will be glad to discuss your problem patients with you and make a diagnostic survey if you desire.

Cardiovascular Syphilis

Cardiovascular syphilis is a killing complication. Rule out cardiovascular syphilis before starting treatment for latent syphilis—a Herxheimer reaction may cause death.

Suspect cardiovascular syphilis and take a blood test when:

There is an aortic murmur

There is unexplained shortness of breath or nocturnal dyspnea

The aortic second sound is loud and ringing

There is precordial pain

The value of adequate treatment of early syphilis in preventing the development of cardiovascular syphilis is illustrated by the well known study of Kemp & Cochems.

Amount of Early Treatment	Number of Patients	Percent Culminating in Cardiovascular Syphilis
None or very little	92	18.5
Inadequate	81	7.4
Adequate	249	0.4

Late Syphilis of the Skin and Mucous Membranes

Late syphilis of the skin can imitate any skin disease from primary syphilis to carcinoma. Ten basic points in the clinical diagnosis of late cutaneous syphilis are outlined below. These are the suspicion-arousers. *Clinch the diagnosis with a blood test.*

The Lesions of Late Syphilis of the Skin:

Are usually few in number

Distribution is not symmetrical

Are indurated

Are indolent

Form **circles, or segments of circles**

Are "punched out"

Are destructive

Tend to heal in the center or on one side and spread at the border

Leave a "cigarette paper" scar

Leave scars with a pigmented border

In any chronic skin eruption, suspect syphilis and take a blood test.

LABORATORY TESTS

And Their Interpretation

The diagnosis of syphilis is largely based on laboratory procedures with supporting evidence from history and physical examination. Generally speaking, laboratory tests for the diagnosis of syphilis rely on two procedures: the demonstration of the causative organism, or of the host's production of antibody-like substances.

The first named is useful clinically only in primary, secondary, and *early* congenital syphilis. In these conditions, *Treponema pallidum* is found in the lesions (chancre, bubo, skin, or mucous membrane) characteristic of the disease.

Darkfield Examination

In primary, secondary, and early congenital syphilis, dark-field examination is an important procedure, since it allows the physician to arrive at a *positive diagnosis* within a relatively short period of time. Treatment, *local or systemic*, often causes the disappearance of organisms from lesions, sometimes for long periods.

Do not treat until the diagnosis is established by dark-field examination or blood tests.

The general practitioner does not often have equipment for darkfield examination in his office. Such tests can be made at the Rapid Treatment Centers, the State Hygienic Laboratory, and some clinical laboratories. Private patients who are referred to Rapid Treatment Centers for such procedures will be shown every consideration.

Serologic Tests

Serologic tests for syphilis, to be reliable, *must* be performed by a recognized laboratory, using a standard procedure with adequate equipment and competent technicians.

Serologic tests for syphilis are essentially examinations to determine the presence or absence of antibody-like substances in response to infection with *Treponema pallidum*. As is the case in any infection, a certain amount of time elapses between the moment of inoculation and the development of a positive test for the disease. Usually, a positive serologic test for syphilis appears soon after the development of the primary sore. In the absence of adequate treatment early in the disease, blood tests will often remain positive for many years.

The serologic test for syphilis now in use in the Hygienic Laboratory of the Mississippi State Board of Health is known as the Mazzini flocculation test. This test employs the same principle as other flocculation tests (Kahn, Kline, etc.) and has been chosen because of:

Sensitivity: Its ability to detect positivity at low levels.

Specificity: Its ability to give negative results in the absence of syphilis.

Utility: It can be performed more rapidly and with less chance of laboratory error than the Wassermann reaction formerly used.

Blood tests for syphilis in modern laboratory practice usually are of two types:

Qualitative: A standard test performed on *whole serum only* which will determine the presence of positivity, but not its degree.

Quantitative: A standard test performed on series of *dilutions* of a sample of serum, for the purpose of showing the greatest dilution which will give a positive test.

As a patient infected with syphilis gradually develops manifestations, a series of quantitative tests shows that his serologic response tends to keep pace with the disease process. Thus, in a hypothetical case, when the chancre first appears, the blood test is negative. With the passage of time, the blood test becomes positive in whole serum but not in dilution. Later the test is found to be positive when the serum is diluted to five parts with water, but negative beyond this point; still later, a test is found positive when diluted to 20 parts with water, but negative when diluted to 40 parts, and so on, until, when there are generalized secondaries present, positive results are given with a sample diluted as high as 1:320. As the florid manifestations of syphilis recede without treatment, the serologic titer falls also, but with a certain time lag.

Thus, after one year of infection, the patient is found to have no *clinical* evidence of syphilis but a quantitative serologic test positive in such titer as 1:20, 1:40 or 1:80. Should late manifestations of syphilis appear, the serologic titer might

again rise. Or, if the reactive processes of the body be exhausted, the serologic titer might remain unchanged or even reach negativity.

With the institution of treatment in syphilis, organisms are killed in large numbers, and the degree of the positivity of the blood test gradually declines. In seronegative primary syphilis, if adequate therapy is instituted, the serologic test for syphilis may *never* become positive. On the other hand, if treatment is not begun until the disease process is flourishing, and the serologic test is positive in a high dilution, there will be a lapse of time before the serologic test shows a notable fall in titer. Usually, the titer will not become negative for 4 to 6 months or even longer. The brakes have been applied, but the car is still in motion.

If the disease is of long duration before treatment, the serologic tests for syphilis may *never* become negative.

Spinal Fluid Examination

Central nervous system syphilis is one of the killing complications of the disease. No syphilitic patient is exempt from the danger of it. Clinical neurosyphilis is preceded by a period of clinical quiescence. During this time, *spinal fluid examination* will reveal neurosyphilis *before* the occurrence of irreparable clinical damage.

To be accurate, spinal fluid examinations must include cell count, protein content, and serologic test.

Cell Count

In central nervous system syphilis the cell count is a sensitive indication of the activity of the process. Cell counts must be done within an hour after the fluid is withdrawn. A cell count of over four lymphocytes/cmm. is *abnormal*. A high cell count in a syphilitic patient means neurosyphilis until proved otherwise.

Total Protein

The total protein content of the cerebrospinal fluid tends to run parallel to the cell count in active neurosyphilitic processes. Total protein determinations must be performed soon after the fluid is withdrawn to prevent erroneous results as a consequence of bacterial contamination. For accurate determinations, a photo-electric colorimeter (as used at present in the Rapid Treatment Centers) is essential. The method whereby protein content is determined by gauging turbidity of precipitated specimens in comparison with prepared standards is inaccurate, but may be considered a procedure of crude determination of abnormal protein content. Normal total protein content of specimens obtained from lumbar puncture should not exceed 40 milligrams/100 cc.

Serologic Tests

Properly performed spinal fluid serologic tests are of great value in the diagnosis of neurosyphilis. A modification

of the Wassermann reaction is used in spinal fluid testing. In the performance of this test, six serial dilutions of a spinal fluid sample are used, so that the completed test gives a *quantitative result*.

The usual spinal fluid report shows the following serial dilutions:

1.0	0.8	0.6	0.4	0.2	0.1
1.0 cc. spinal fluid	0.8 cc. spinal fluid	0.6 cc. spinal fluid	0.4 cc. spinal fluid	0.2 cc. spinal fluid	0.1 cc. spinal fluid
	0.2 cc. water	0.4 cc. water	0.6 cc. water	0.8 cc. water	0.9 cc. water

Thus, a test which is positive in 1.0, and negative in the rest, is not nearly so strongly positive as a test which is positive in 1.0, 0.8, 0.6, 0.4, doubtful in 0.2, and negative in 0.1.

Examination of the spinal fluid is the only reliable method of confirming the diagnosis of neurosyphilis. A series of spinal fluid examinations gives the only satisfactory indication of regression or progression of a syphilitic process in the nervous system. *Clinical findings and central nervous system damage do not always run parallel. Complete spinal fluid examination is the only reliable method of assessing the status of a patient.*

LATEST ACCEPTABLE RAPID TREATMENT SCHEDULES

JANUARY, 1947

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Early Acquired Syphilis

Stage	Diagnostic Criteria	
	Clinical Findings	Laboratory Findings
Primary	Chancere Satellite bubo	Darkfield—usually positive Blood test—positive after 1 to 2 weeks
Secondary	Rash on skin or mucous membranes, condyloma, sore throat, etc.	Darkfield of rash—usually positive Blood test—positive
Early Latent	No lesions or symptoms Syphilis is of less than 4 years' duration or in the absence of history of disease the patient is under 25 years of age	Blood test—positive Spinal fluid examination—negative

RAPID TREATMENT SCHEDULES FOR PATIENTS OVER 10 YEARS OF AGE

Drug	Dosage per Injection	Number of Injections									Total Injections		
		1st day	2nd day	3rd day	4th day	5th day	6th day	7th day	8th day	9th day			
1	Arsenoxide* (mapharsen, clorarsen, or phenarsine HCl)	.06 gm.—125 lbs. body weight or over .04 gm.—under 125 lbs. body weight (Intravenously)	1		1		1		1		1	5 (.200- .300 gm.)	
	Penicillin in oil and beeswax— <i>Romansky formula</i> (calcium penicillin)	300,000 units every 24 hours (Intramuscularly)	1	1	1	1	1	1	1	1	1	9 (2,700,000 units)	
	Bismuth in oil	1½ c.c. (0.2 gm.) (Intramuscularly)	1				1				1	3 (.6 gm.)	
2	or	Arsenoxide* (mapharsen, clorarsen, or phenarsine HCl)	.06 gm.—125 lbs. body weight or over .04 gm.—under 125 lbs. body weight (Intravenously)	1		1		1		1		1	5 (.200- .300 gm.)
		Sodium penicillin	40,000 units every 3 hours day and night (Intramuscularly)	8	8	8	8	8	8	8	8	4	68 (2,700,000 units)
		Bismuth in oil	1½ c.c. (0.2 gm.) (Intramuscularly)	1				1				1	3 (.6 gm.)

*Contraindications to arsenicals: Toxic goiter, pulmonary tuberculosis, nephritis, congestive heart failure or past history of it.

Late Latent Syphilis

Stage	Diagnostic Criteria	
	Clinical Findings	Laboratory Findings
Late latent	No lesions or symptoms Syphilis of more than 4 years' duration or patient is over 25 years of age with no history of syphilis	Blood test—positive Spinal fluid examination—negative

RAPID TREATMENT SCHEDULES FOR ALL AGES

Drug	Dosage per Injection	Number of Injections								Total Injections	
		1st day	2nd day	3rd day	4th day	5th day	6th day	7th day	8th day		9th day
1 Penicillin in oil and beeswax— <i>Romansky formula</i> (calcium penicillin)	300,000 units daily (Intramuscularly)	1	1	1	1	1	1	1	1	1	9 (2,700,000 units)
Drug	Dosage per Injection	Number of Injections								Total Injections	
2 Sodium Penicillin	40,000 units every 3 hours (Intramuscularly)	8	8	8	8	8	8	8	8	4	68 (2,700,000 units)

Congenital Syphilis

(Except Interstitial Keratitis)

Stage	Diagnostic Criteria	
	Clinical Findings	Laboratory Findings
Early congenital	Snuffles, skin rash, failure to gain weight May be no lesions	Darkfield usually positive if lesions are present Blood test—positive after third month Blood test may not be reliable under three months
Late congenital	May be: Hutchinson's teeth Deafness Interstitial keratitis (See Interstitial Keratitis treatment)	Blood test—positive

Same Treatment Schedules As For Late Latent Syphilis

Neurosyphilis

(Symptomatic and Asymptomatic)

Stage	Diagnostic Criteria	
	Clinical Findings	Laboratory Findings
Neurosyphilis	May be clinically negative Neurologic and mental abnormalities may be present	Spinal fluid—positive

RAPID TREATMENT SCHEDULE

Drug	Dosage per Injection	Number of Injections	Total Injections
Penicillin in oil and beeswax— <i>Romansky formula</i> (calcium penicillin)	300,000 units daily (Intramuscularly)	One injection per day for 20 days	20 (6,000,000 units)
Exceptions: Optic atrophy with remaining useful vision Tabes with severe crises Treatment failures after the above neurosyphilis schedule		{ Refer patients in these three categories to Rapid Treatment Centers to be evaluated for possible fever-chemotherapy	

Interstitial Keratitis

Refer to a Rapid Treatment Center or confer with consultant for treatment of choice.

Cardiovascular Syphilis

Rapid treatment is not recommended. Three to four months of weekly bismuth injections followed by small doses of arsenoxide (mapharsen, clorarsen, or phenarsen) administered weekly. Thereafter, courses of arsenoxide should be alternated with bismuth. Special care should be taken to avoid arsenical reaction*.

Other Late Manifest Syphilis

- 1 Penicillin in oil and beeswax—*Romansky formula* (calcium penicillin) 300,000 units daily for nine days or a total of 2,700,000 units. No arsenic or bismuth.
- 2 Sodium penicillin—40,000 units every three hours—day and night for 9 days or a total of 2,700,000 units. No arsenic or bismuth.

Children With Acquired Syphilis

(Under 10 Years of Age) Same treatment schedule as for Late Latent Syphilis

*Contraindications to arsenicals: Toxic goiter, pulmonary tuberculosis, nephritis, congestive heart failure or past history of it.

TREATMENT REACTIONS

The relative safety of schedules using penicillin alone or in combination with small amounts of an arsenical, as suggested in earlier pages, is illustrated by Heller's report on a large series of cases treated in Rapid Treatment Centers throughout the country. Among 3569 early syphilis cases receiving penicillin alone, nine (2.5 per thousand) experienced severe reactions, with no deaths occurring. Among 17,249 cases receiving penicillin plus small amounts of mapharsen and bismuth, 153 severe reactions occurred (8.9 per thousand), with 4 deaths.

By contrast, among 1873 cases treated by "multiple injection" intensive arsenotherapy schedules (11-20 days) there were 77 severe reactions (41.1 per thousand) and one death. Under a schedule administering arsenic by intravenous drip over five days, there were 78 severe reactions in 1,041 cases (74.9 per thousand), and seven deaths.

Penicillin Reactions

Allergy: Penicillin-oil-beeswax (P.O.B.) and sodium penicillin occasionally produce allergic reactions, e.g., hives, angioneurotic edema. Benadryl is useful in treatment and should be kept on hand when using P.O.B. Adrenalin is useful as an emergency measure.

Herxheimer reaction: Danger is chiefly in cardiovascular syphilis and in early congenital syphilis. In the former, it may result in coronary occlusion or rupture of aortic aneurysm; in the latter, in high fever.

Care should be exercised that P.O.B. never be injected into a vein or artery.

Arsenical Reactions

Although total dosage of arsenic in any penicillin schedule is small, the physician should nevertheless be aware of the following danger signs:

High fever

Bleeding, especially from mouth or kidneys

Purpura

Skin rash or erythema and itching

Jaundice

Casts or albuminuria

Mental stupor or convulsions

Complications: Exfoliative dermatitis, hemorrhagic encephalitis, cardiovascular Herxheimer reaction, hepatitis, and blood dyscrasias, although rare with these recommended treatment schedules, are dangerous conditions which may develop.

Antidote: A new drug, known as BAL (British Anti-Lewisite) is an effective arsenical detoxicant. When a physician has a patient with a serious arsenical reaction, he may obtain BAL and instructions for its use from the State Board of Health or Rapid Treatment Center. However, the limited supply of the drug does not make it possible for a general distribution in anticipation of possible reactions.

POSTTREATMENT OBSERVATION

Indications for Re-Treatment

The purpose of posttreatment observation is to discover treatment failures—clinical or serologic. Patients with treatment failure of either type need re-treatment. Posttreatment observation is best considered in three categories: early syphilis, late syphilis, and syphilis in pregnancy.

Early Syphilis Acquired or Congenital

Take blood tests monthly for the first year, every three months for the second year, and if possible, annually thereafter until five years have elapsed following treatment. In most cases, four to six months or longer will be required to attain seronegativity. Seldom will blood tests become negative at the completion of treatment or shortly afterward.

Quantitative blood tests always should be used rather than qualitative. This type of test will measure the response of the patient from month to month. If the quantitative titer continues to fall, progress is satisfactory.

Serologic relapse means that the quantitative titer has shown a sustained rise in two or more tests after a preliminary

fall, or after negativity has been attained. Always re-treat in cases of serologic relapse, using the same treatment schedule. Do not be misled, however, by minor fluctuations in titer which may be caused by day-to-day laboratory performance.

If, one year after treatment, the quantitative serologic tests remain positive, the case can be considered sero-resistant and re-treatment may be indicated.

At the time the blood tests are taken, at least for the first six months, it is wise to inspect the skin, mucous membranes, and genitalia for the lesions of recurrent early syphilis. This condition is known as mucocutaneous or infectious relapse. Many times it cannot be differentiated from reinfection. In either instance, such patients always should be re-treated.

In primary and secondary syphilis, spinal fluid examination should be done six months after treatment; in early latent syphilis, it should be done before, during, or as soon as possible after treatment. Spinal fluid examinations should always include cell count, total protein, and quantitative complement fixation tests. Other types of tests (Pandy, colloidal gold, etc.) may be performed if desired by the physician. Rapid Treatment

Center facilities are available for lumbar puncture and the performance of complete spinal fluid examinations (other than colloidal gold tests).

When abnormal spinal fluid findings are obtained, the patient deserves a neurologic examination before neurosyphilis treatment is started. This provides a "base line" against which to measure later the posttreatment status of the patient. (See below under Late Syphilis.)

Late Syphilis

Acquired or Congenital

Perform spinal fluid examination before treatment or as soon thereafter as practicable. If negative at this time, the examination need not be repeated subsequently.

Follow-up in late syphilis relates *only* to the detection of *clinical or spinal fluid* relapse or progression. *Posttreatment blood tests in late cases have no value whatever in determining whether re-treatment is needed.* Re-treatment, of course, should be given if there is clinical or spinal fluid serologic relapse, or if any lesions of late syphilis appear.

In symptomatic or asymptomatic neurosyphilis of any type, the determination of the need for re-treatment is a complex matter, and it is recommended that the general practitioner seek consultation (available at the Rapid Treatment Centers). Spinal fluid examination should be repeated every six months.

In general, it may be stated that the schedules recommended for neurosyphilis in the section on "Latest Acceptable Rapid Treatment Schedule" (pages 18, 19, 20), if successful, should result in reversal of spinal fluid findings to negative in approximately the following order:

Cell count: Within four to six months.

Protein: Within six months to two years.

Complement fixation: Variable, usually two to five years.

Prenatal and Congenital Syphilis

Mothers: The posttreatment observation of the expectant mother does not differ from that of other patients with syphilis.

Infants: In infants of syphilitic mothers, regardless of whether the mother has been treated, be alert for snuffles, loss of weight, or skin lesions during the first three months following birth. After a congenital syphilitic infant has been treated, the posttreatment observation is the same as that of any other patient with syphilis.

Take blood tests on the infant at three to four months of age.

Infants may be referred to Rapid Treatment Centers for blood testing.

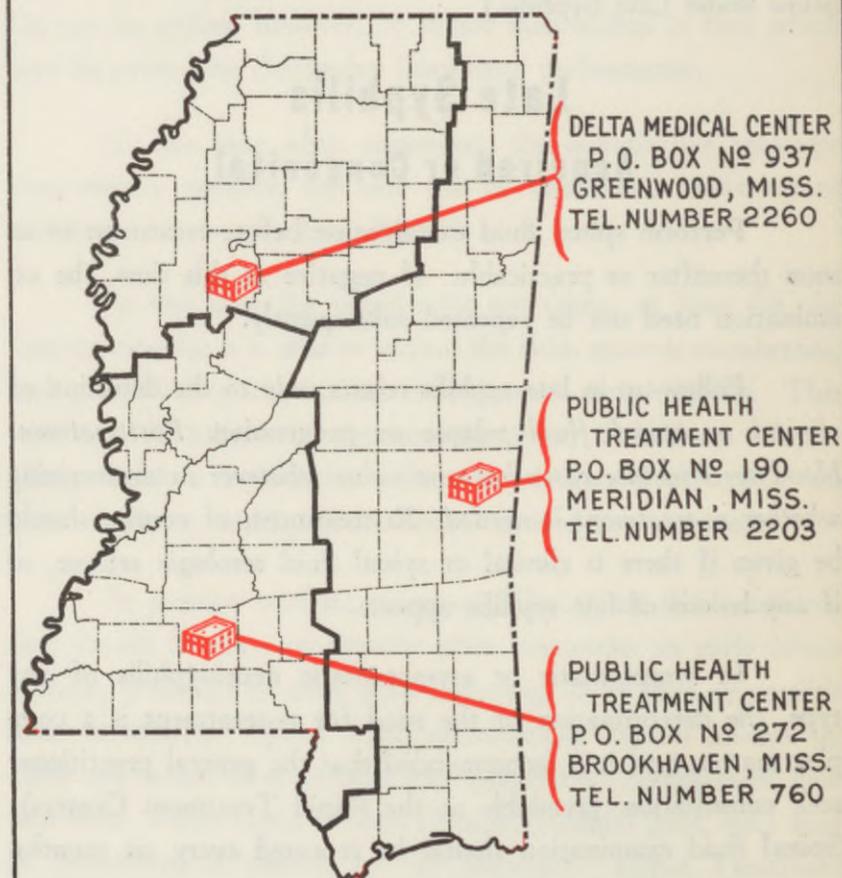
REFERRAL AND CONSULTATION

The State Board of Health operates three centers for the treatment of syphilis. These centers are located at Brookhaven, Greenwood, and Meridian. Thousands of cases have been treated in these facilities by rapid treatment schedules and considerable experience has been acquired in the diagnosis and treatment of syphilis. Physicians in these centers will be glad to give you any assistance which you may request.

The busy general practitioner may not have time for many of the specialized laboratory procedures indicated. Demands on his time may even preclude his treating certain cases. Therefore, the Rapid Treatment Centers are prepared to accept patients from any private physician in the state for confirmatory diagnosis and/or treatment of syphilis. *On the basis of your decision, your patient may be referred for confirmatory diagnosis alone and returned to you for rapid treatment; or he may be referred for confirmatory diagnosis and rapid treatment in the center.* In the latter instance, the patient will be returned to you for posttreatment observation unless you prefer other arrangements.

Patients may be referred directly to the center or you may request the assistance of your County Health Officer in arranging referral and transportation. The Rapid Treatment Centers have found it necessary to limit their admissions to those patients who are not bed-ridden and who are not mentally or physically incompetent.

RAPID TREATMENT CENTER DISTRICTS SHOWING LOCATION OF CENTERS AND COUNTIES IN EACH DISTRICT



Services Available to Private Physicians

At The Rapid Treatment Centers

Type of Service	Usual Time Required
Darkfield examination	One day
Lumbar puncture and spinal fluid examination	One day
Neurological examination	Two days
Complete evaluation of syphilis patients before, during, or after treatment	Two days
Serologic blood tests of infants	One day
Confirmatory diagnosis of patients to be returned to physician for treatment	Two days
Treatment of <i>early and latent syphilis</i> patients to be returned to physician for post-treatment observation	Twelve to Fourteen days
Treatment of <i>neurosyphilis</i> patients to be returned to physician for post-treatment observation	Three to four weeks
Consultations on treatment reactions	Immediately upon request
Furnishing of BAL for treatment of arsenical reactions	Immediately upon request

CASE FINDING

People expect the ultimate control of syphilis. To achieve this control, they depend upon two professional groups—the private physicians and the public health workers.

These groups must:

- Find the source of infection of each new case.
- Find the people who have been infected by each new case.
- Treat all known cases adequately.

For each 100 cases of primary and secondary syphilis coming under the care of public health clinics and treatment centers in Mississippi, at least 153 contacts (presumably exposed persons) are examined, leading to the discovery of at least 69 new cases of syphilis.

Obtaining contact information from the syphilis patients of private physicians is one of the major unsolved problems in the ultimate control of syphilis. The failure to discover and treat infection among these contacts leaves an unchecked source of infection in the general population.

Self-Interview Form

In order to help solve this problem, the Council of the State Medical Association approved the "Self-Interview Form" for obtaining contact information from patients of private physicians. This form has been used with good results. If all physicians were to adopt its use, it is estimated that there would be 38,000 new patient office visits for examination per year, of which 50% would be found infected with a venereal disease.

The "Self-Interview Form" is to be handed to each new patient with syphilis under care of a private physician with a word by the physician as to the importance of filling out and

mailing the form. This form does not require the name of either the patient or the private physician.

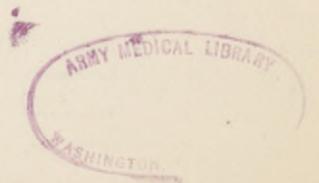
The State Board of Health mails a "Cooperation Notice" to each contact listed on the "Self-Interview Form." If the contact fails to report to a physician within two weeks, he or she is followed up by a representative of the Health Department.

Other Important Methods of Case Finding:

- Examine *all* sex partners of known cases.
- Do blood tests on *all* expectant mothers.
- Do routine blood tests on *all* patients under your care. The importance of this procedure is illustrated by the fact that routine blood tests performed on all patients admitted to the John Gaston Hospital, Memphis, in 1945, resulted in 13.8 percent positive or doubtful results.
- Collaborate with your colleagues in developing procedures whereby routine blood tests will be performed on all patients admitted to the hospitals in your community.
- Look for genital, mucous membrane, and skin lesions.
- Do blood tests and physical examinations on *all* children of infected mothers.
- Do blood tests monthly for at least three months on *all* patients with apparently nonsyphilitic genital lesions or with gonorrhea.
- Call upon County Health Departments regarding patient interview and contact follow-up in private practice.

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