VENEREAL DISEASES
AND THEIR CONTROL

A MANUAL FOR NURSES

Venereal Disease Control Section
Epidemiology Service — Public Health Division
ONTARIO DEPARTMENT OF HEALTH
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The venereal diseases constitute a group of communicable infections and include:

1. Syphilis
2. Gonorrhoea
3. Chancroid
4. Lymphogranuloma Venereum
5. Granuloma Inguinale

Only the first two of these diseases, syphilis and gonorrhoea, are common in this country. The last three are reported very rarely.

Each of these diseases is a separate and distinct entity with its own causative organism. They are distinct in symptoms, diagnosis and treatment. Therefore, a person may suffer from more than one of these diseases at any one time. Immunity probably disappears with cure. Therefore, one infection does not insure a person against contracting this infection in the future. Similarly, infection with any one of these diseases does not confer immunity to any of the other diseases in the group.

One common factor with all venereal diseases is the mode of transmission. They are all spread by intimate contact with an infected individual, usually by sexual intercourse.
SYPHILIS

I. HISTORICAL NOTES

In 1493, the year after Columbus returned from America, an epidemic of syphilis swept Europe. At first the disease was known by many names. The Italians called it the Spanish disease. The English called it the French disease. The Russians called it the Polish disease, and so on.

1530 — Fracastorius, Italian physician and poet, published a poem about Syphilis, a shepherd who suffered from the disease as a punishment for his insult to the god Apollo. Since that time the disease has been known by the name of Syphilis, relieving the nations of the responsibility of its origin.

1903 — Laboratory methods were added to clinical studies. Metchnikoff and Roux succeeded in transmitting syphilis to apes and experimental work was started.

1905 — The two German scientists, Schaudinn and Hoffmann, discovered the causative organism of syphilis, treponema pallidum (spirochaeta pallida). The organism is microscopic, and when moving appears to be spiral-shaped like a cork-screw.

1906 — Wassermann, a German scientist, and two of his colleagues, Neisser and Bruch, developed the first practical test to determine the presence of syphilis. This test was called the Wassermann test.

1910 — Ehrlich, a German scientist, in his 606th experiment, found that salvarsan, an arsenical compound, was effective in the treatment of syphilis.

1917 — Wagner Jauregg, a Viennese physician, used malaria to promote fever as a means of treating neurosyphilis.

1921 — Levaditi, a French scientist, introduced bismuth in the treatment of syphilis.

1944 — Mahoney, of the United States Public Health Service, reported on the first patients treated with penicillin.

1948 — Nelson, of the United States Navy, developed the Treponema Pallidum Immobilization Test, a specific test for syphilis.

As well as the above historic milestones, there have been many advances in techniques of diagnosis and treatment during the past two decades. For example:

1. The original serologic test was modified and other serologic tests were devised by various scientists, including Eagle, Hinton, Kahn, Kline and Kolmer. After the introduction of the T.P.I. test, other tests considered to be more specific than the standard serologic tests were introduced using the treponema pallidum as an antigen e.g. immune adherence (T.P.I.A.), agglutination (T.P.A.) and complement fixation (T.P.C.F.).

2. The original treatment with salvarsan was modified and newer preparations of the arsenical drugs became available. Then, with the advent of penicillin, that drug replaced arsenicals and heavy metals. Broad spectrum antibiotics were also found to be effective against the treponema pallidum.

II. AETIOLOGY

The causative organism of syphilis is the treponema pallidum (spirochaeta pallida). The length of this spirochaete is approximately equal to the diameter of a red blood cell.

The organism is actively motile, the movements being three types:

a) Rotation round the longitudinal axis.

b) Backward and forward movements in a horizontal plane.

c) Flexion or hinge-like movements with the organism bending in the middle.

The treponema pallidum is difficult to differentiate from certain other spirochaetes. The method used for seeing it in the living form requires darkfield microscopic equipment.

The treponema pallidum is a very delicate organism, easily destroyed by drying, disinfectants and even soap and water. However, it is strictly a human parasite and very well adapted to life in the human body.

The treponema pallidum arouses but little local reaction in the human tissues. For that reason the changes in the course of the disease, which ultimately have the most disastrous effects, take place slowly, and with few symptoms. The patient may believe himself well through long periods of time during which his infection is undermining his health.
Ill.

TRANSMISSION

Every new case of syphilis arises through intimate contact with an infected person who, at the time of contact, has infectious lesions present on the skin or mucous membrane.

These infectious lesions include:

A. Primary Sore or Chancre

A typical chancre appears first as a red papule with relatively little induration. The surface of the papule degenerates and becomes ulcerated, thus increasing in size. As the chancre reaches its full development it presents the following characteristics. It is usually a solitary lesion. The ulcer has a clean, punched-out appearance. Often it is covered with a thin crust from the drying of the serous discharge. Upon the removal of this crust the lesion is found to be quite dry. If palpated with gloved fingers the base of the lesion is found to be hard, frequently of a cartilaginous consistency and has, therefore, been described as giving the sensation of a button in the skin. The primary sore is not painful and will heal with or without treatment.

B. Mucous Patches

Mucous patches occur on the lips and the mucous membrane of the mouth, throat, genital tract or rectum. They may appear first as slightly elevated, round or oval areas with little inflammatory reaction about them. The surface has a grey membrane, but if this has been removed, the lesion appears as an erosion with a clean base. Usually there is little pain or discomfort.

C. Other Cutaneous Lesions

Cutaneous lesions which are dry and not eroded are non-infectious from the standpoint of contact. Macular or papular lesions which become eroded may as a result become infectious.

D. Prenatal Transmission

A pregnant woman with syphilis, even though she does not have infectious lesions and thus cannot spread infection to her sexual partner, can infect her unborn child by the transplacental passage of treponemes.

IV. DIAGNOSIS

In order that syphilis may be correctly diagnosed, the following must be carefully considered in each case:

a) History — with reference to sexual exposure from which the patient may have become infected and signs or symptoms which the patient may have noted in the past, particularly those referable to primary or secondary syphilis.

b) Physical examination — must be complete to detect clinical signs, if present.

c) Laboratory aids — examination of the blood, using one of the serologic tests for syphilis (S.T.S.), cerebrospinal fluid examination (cell count, total protein and serologic tests) and darkfield microscopic examinations of the serum from lesions of the skin or mucous membranes. To rule out a false positive S.T.S., the specific Treponema Pallidum Immobilization Test (T.P.I.) may be indicated.

Cases of syphilis can be classified as follows:

a) Primary
b) Secondary
c) Latent
d) Late
e) Prenatal (congenital)

A. Primary Syphilis

The diagnosis of primary syphilis is essentially a laboratory diagnosis. No matter how characteristic the lesion may be of a chancre, the diagnosis of syphilis should not be made nor treatment initiated until the laboratory has confirmed the clinician's suspicions.

The primary lesion exudes a serum which contains a heavy concentration of living treponemes. If these organisms can be demonstrated under the darkfield microscope in the serum from a primary lesion, then a diagnosis of primary syphilis can be made. The longer the chancre is present, the more difficult it becomes to obtain serum. Therefore, the diagnosis becomes progressively more difficult, or impossible, by darkfield examination.

Under these circumstances, the diagnosis of primary syphilis can only be made after careful consideration of several factors: the history of exposure; the thorough clinical examination; the serologic test reports of blood examinations which are positive, or which change from negative to positive.

Where the diagnosis of primary syphilis can be made and the blood is negative, it is termed sero-negative primary syphilis. Where the diagnosis of primary syphilis can be made and the blood is positive, it is termed sero-positive primary syphilis. Sero-negative primary syphilis is always darkfield positive while on the other hand sero-positive primary syphilis may be either darkfield negative or darkfield positive.
In summary, the diagnosis of primary syphilis should be made early and treatment should be commenced as soon as this diagnosis has been confirmed. All suspicious genital or mouth lesions should be considered potentially primary syphilis until proven otherwise by repeated darkfield examinations and repeated serologic tests for a least four months after the lesion was first noticed. Moreover, at no time should treatment be commenced until a diagnosis has been confirmed either by darkfield examination or by the development of a positive S.T.S.

A note of warning is given here that no topical application should be made to any suspicious lesion since this may kill the surface organisms and thus prevent their possible demonstration by the darkfield microscopic method.

B. Secondary Syphilis

The diagnosis of secondary syphilis is also essentially a laboratory diagnosis and depends on the physical signs or symptoms being confirmed either by darkfield examination or by repeated positive serologic tests. The history should always include questions respecting exposure and symptoms of secondary syphilis such as headache, sore throat, general malaise, etc. The physician should look for signs of secondary manifestations such as skin rashes, mucous patches, other skin lesions, enlarged lymph glands, etc. However, the final confirmation should always be made by darkfield examination on the skin or mucous membrane lesion, or S.T.S.

C. Latent Syphilis

The diagnosis of latent syphilis is purely a laboratory diagnosis, and is confirmed by laboratory tests alone. The history may elicit evidence of exposure. It may elicit evidence of previous signs of symptoms of either primary or secondary manifestations. The physical examination must be completely negative. Therefore, the diagnosis entirely rests upon repeated positive blood serologic tests and a negative cerebrospinal fluid examination. The examination of the cerebrospinal fluid is necessary to exclude the presence of neurosyphilis which may not be causing any signs or symptoms.

Unfortunately, every positive serologic test report is not diagnostic of syphilis. The S.T.S. may be positive for other reasons, commonly termed false positives. Mislabeling of blood specimen is the commonest clerical cause of a false positive. The term “biologic false positive” refers to the presence of abnormal amounts of reagin in the bloodstream due to conditions other than syphilis. Often, the false positive persists only as long as the underlying condition exists. While a biologic false positive may result from a great variety of diseases, the commonest causes are as follows:

1) Acute infectious diseases, especially viral upper respiratory
2) Chronic infectious diseases such as leprosy and malaria
3) Immunization procedures, e.g. T.A.B. and smallpox vaccines
4) Collagen diseases
5) Pregnancy
6) Abnormally high reagin levels in normal, healthy individuals.

The introduction of the T.P.I. test has been invaluable in differentiating between the biologic false positive reaction and the reaction due to syphilis.

In summary:

1) The patient may remember signs and symptoms of primary or secondary infection.
2) A thorough clinical examination, including a cerebrospinal fluid examination, is negative.
3) The diagnosis of latent syphilis is made on the serologic tests remaining positive, and the possibility of false positive tests having been excluded.

D. Late Syphilis

The diagnosis of late syphilis is a clinical diagnosis and depends on the history and physical examination. The symptoms and signs may or may not be confirmed by laboratory tests.

Any or all organs of the body may be damaged by syphilis. Unlike the early inflammatory changes seen in primary and secondary syphilis, the late lesions are due to degenerative, destructive involvement of tissue. The most serious damage usually occurs in the nervous and cardiovascular systems. We will, therefore, consider the diagnosis under the following headings:

1. Neurosyphilis:
   a) Asymptomatic neurosyphilis (no clinical signs);
   b) Symptomatic neurosyphilis (clinical signs).

2. Cardiovascular Syphilis:

3. Other Late Syphilis:
   a) Skeletal;
   b) Integumentary;
   c) Gastro-intestinal, etc.
1. Neurosyphilis

a) Asymptomatic Neurosyphilis. Here the pathology is present in the nervous system but not to such an extent as to produce either symptoms or signs. A complete physical examination is negative. However, the cerebrospinal fluid examination is positive.

b) Symptomatic Neurosyphilis. The cerebrospinal fluid and serologic tests are usually positive but either one or both may be negative. Symptoms of either spinal cord or brain involvement will be present and in some cases both tissues will be involved.

i) General Paresis of the Insane (G.P.I.). If the brain is chiefly affected the symptoms and signs will be those of disturbances of the mental processes.

ii) Tabes Dorsalis. If the spinal cord is involved, the symptoms and signs will be those of cord damage, namely motor paralysis, difficulty in locomotion. An alteration will be noted in the reflexes. The sense of balance will be disturbed. Optic atrophy may occur as the only sign of tabes.

iii) Meningovascular. Syphilis may also affect the smaller blood vessels producing thrombosis followed by signs and symptoms of haemorrhage or lack of blood supply. This most commonly affects the blood vessels of the brain. If the meninges are involved affecting cranial nerves, then cranial palsies, blindness or deafness will result.

2. Cardiovascular Syphilis

In syphilitic aortitis the aorta is invaded and pathologic changes take place. If the process develops sufficiently, an aneurysm is produced and if retrograde involvement takes place, aortic incompetence develops. The patient will then be suffering from signs and symptoms of cardiac disease in the form of failure or he may have symptoms of coronary occlusion if the pathological process has involved the coronary ostia. The signs of syphilitic aortitis will be demonstrated by the use of a fluoroscope which visualizes the dilatation of the proximal portion of the aorta, and by the use of the stethoscope.

3. Other Late Syphilis

Involvement of the other systems such as skeletal, integumentary, gastro-intestinal, etc., will produce signs and symptoms relative to the organs involved by the gummatous process.

In summary, the diagnosis of late syphilis is chiefly a clinical diagnosis, depending on the history and signs and symptoms revealed by physical examination, which may or may not be confirmed by laboratory tests. The T.P.I. test is positive in late syphilis even though the standard serologic tests may have reverted to negative.

E. Prenatal Syphilis

Infection of the foetus from the mother is termed prenatal, antenatal or congenital syphilis.

Infection occurs about or after the fifth month of gestation and in untreated cases, frequently results in foetal death or spontaneous abortion. The children of a syphilitic mother may be expected to be infected with syphilis unless the diagnosis in the mother was established early in pregnancy and treatment was adequate and effective. The child may, on examination of a cord blood specimen show:

1) A positive S.T.S. due to infection with syphilis.

2) A positive S.T.S. due to passive transfer of reagin, which is the substance present in the blood causing positive test reactions. In this case infection is not transmitted to the foetus even though the reagin in the mother's blood has been transferred to the foetal circulation.

3) A negative serologic test which may, however, subsequently become positive due to syphilitic infection.

In the absence of clinical manifestations in the newborn child and where a diagnosis of syphilis has been made or is suspected in the mother, serologic tests of the infant repeated up to at least the 12th week will enable the physician to establish whether a transfer of reagin has occurred or infection with syphilis exists. It is, of course, essential that quantitative tests be performed on blood specimens in order that changes in reagin titre be revealed.

Thus, a positive cord blood specimen does not, in itself, mean that the infant is infected with syphilis. If no signs of syphilis are present at birth, the infant with a positive cord blood should not receive treatment until the above routine has been carried out to the point where the diagnosis is confirmed.

The infant with prenatal syphilis will only be infectious if it has present lesions of the skin or mucous membrane such as the infectious lesions of secondary syphilis.
The diagnosis of prenatal syphilis in the early stages is based on the presence of acute manifestations such as rash, snuffles, moist papules, malnutrition, fretfulness, anaemia, etc. and/or persistent positive blood serology beyond the period of about three months.

In the later stages, diagnosis is dependant upon the findings of syphilitic stigmata such as Hutchinson's teeth, interstitial keratitis, paresis, etc. The S.T.S. in the great majority of these cases is positive.

**V. TREATMENT**

Penicillin is now considered to be the drug of choice in the treatment of all forms of syphilis, and the recommended schedule of therapy will vary with the stage and activity of the disease process. Experience to date indicates that one adequate course will give the great majority of patients the maximum benefit of penicillin therapy. In the uncommon case showing definite evidence of clinical or serologic relapse after initial treatment, a repeat course of penicillin may be indicated.

Most authorities now feel that treatment during pregnancy is unnecessary, providing it is known that an adequate course of penicillin has been given previously, and providing there is no evidence of relapse or reinfection.

Current treatment schedules may be obtained by writing to the Venereal Disease Control Section, Epidemiology Service, Ontario Department of Health, Parliament Buildings, Toronto 5, Ontario.

A number of patients requiring specific therapy give a history of penicillin sensitivity. Fortunately, many of these reactions can be controlled by the concurrent use of an antihistamine, thereby allowing the completion of the necessary course of penicillin. An alternative method of treatment is the use of a broad-spectrum antibiotic, which will give results comparable to penicillin.

Many patients will continue to exhibit positive serology following adequate therapy. Unfortunately for these persons, nothing can be done to hasten the revision to negative serology, and many will continue to exhibit a positive S.T.S. for life. This is particularly true since the introduction of blood tests of increased sensitivity such as the V.D.R.L.

**VI. FOLLOW-UP EXAMINATION**

Despite the fact that excellent results are obtained in the treatment of syphilis with penicillin, it must be kept in mind that, to date, we have no practical test of cure. Following an adequate course of treatment, a patient should be followed by regular serologic tests and physical examinations. A satisfactory routine could consist of a S.T.S. every three months for the first year after treatment, every six months for the next two years and annually thereafter.

One would expect a relatively rapid decrease in serologic titre following treatment in early syphilis, but a much slower fall in latent and late syphilis. In many cases of long-standing disease, no decrease in
titre will be noted following treatment. Repeat therapy in such a case would be indicated only if a sustained, marked rise in serologic titre is noted with or without accompanying clinical signs.

The T.P.I. test is of no value in following a patient after treatment. It remains positive for life, even after adequate treatment in cases of latent and late syphilis.

A C.S.F. examination is indicated in all patients suspected of exhibiting a serologic or clinical relapse following treatment.

GONORRHOEA

The second of the two common venereal diseases prevalent in this country is gonorrhea. This infection is caused by a gram negative diplococcus called the gonococcus. Invasion by these bacteria causes an acute inflammation of the mucous membranes with production of purulent discharge. The gonococcus is, like the spirochaete, a delicate organism which dies quickly upon drying or exposure to mild antibiotics, but can continue to survive with obstinate resistance when hidden in the glands and glandular passages of the mucous membranes of the genitalia.

I. HISTORICAL NOTES

Gonorrhea has been referred to since the beginning of recorded history and is widespread throughout the world. It received its name from Galen in 200 A.D. Gonorrhea was distinguished as a separate disease from syphilis before the time of Paracelsus, but since his teaching was otherwise, and since he influenced medical thought for so many centuries, it was not until Ricard performed his series of 2,500 inoculation experiments that it was proven to be a separate entity. These experiments occupied many years of research during the latter half of the nineteenth century. In 1879 Neisser identified the organism and Bann, in 1884, isolated it in pure culture.

II. MODE OF TRANSMISSION

Gonorrhea, like syphilis, is most frequently spread by sexual intercourse. The infection, however, can be spread to the eyes, as occurs on occasion during childbirth. The possibility of this transmission of infection is, however, only one reason why a suitable antiseptic is instilled into the eyes of the newborn. The occurrence of gonococcal vaginitis in children can usually be shown to be due to casual contact with infected parents, attendants, or playmates.

III. DIAGNOSIS

Gonorrhea is an acute inflammation of the mucous membranes, usually of the genito-urinary tract. Symptoms of pain, discomfort and a purulent discharge should initiate definite suspicion, particularly when sexual exposure has occurred. The incubation period which follows infection is short, usually one to three days. Diagnosis is established by a history of exposure, and clinical examination supported by the laboratory examination of discharges by smear and culture. It must be kept in mind that a significant number of female patients who harbour the gonococci may have no symptoms at all, and yet continue
to be infectious asymptomatic carriers of the disease. Hence, a single negative smear does not rule out a diagnosis of gonorrhoea, especially in the female patient.

If untreated in the early, acute stages the infection may develop a stubborn chronicity, the organisms continuing to survive in the deeper glands. The infection may spread to cause inflammation of the seminal vesicles, vas deferens and testes of the male and the fallopian tubes and ovaries of the female. These complications often result in sterility. Occasionally bloodstream invasion results in inflammation of the joints, and rarely, the heart.

IV. TREATMENT

Some strains of gonococci showing decreased sensitivity to penicillin have been reported and this finding has been verified by the Public Health Laboratory Service of the Ontario Department of Health. Penicillin has continued to be the drug of choice but higher dosage levels are required to treat cases involving the less sensitive strains. Before considering a case to be one involving a less sensitive strain of gonococcus on the basis of an apparently inadequate response to routine penicillin therapy, re-infection or superimposed non-gonococcal urethritis should be ruled out.

With some frequency syphilis and gonorrhoea are acquired at the same time and therefore when gonorrhoea is proven to exist, the presence of syphilis must be definitely ruled out by repeated examinations. Many persons advocate over-treatment of all cases of gonorrhoea to prevent the development of syphilis which may have been acquired at the same exposure but even if this procedure is carried out, repeated S.T.S. should be obtained for at least six months following initial treatment.

CHANCROID

This disease is infrequently reported although it is believed to be more prevalent in this country than would appear from statistical records.

The causative organism in the H. ducreyi which may be found by the examination of smears of material from the lesions. The incubation period of this infection varies from several days to a week.

Clinically the lesions appear as small superficial ulcers with considerable local inflammation, but without underlying induration. They are usually covered with a dirty exudate or slough. Extreme tenderness to touch is characteristic. Spread to local lymph nodes occurs in many cases.

This infection responds well to treatment with sulphonamides and/or antibiotics such as streptomycin and erythromycin.

LYMPHOGRANULOMA VENEREUM

This disease occurs rarely in this country but is frequently seen in the tropics. The causative organism is a filterable virus.

About 5 to 20 days after exposure a small sore appears on the genitalia. This lesion heals spontaneously. There occurs, however, a progressive enlargement of the lymph glands, especially those of the inguinal chain. The enlarged inflamed gland is commonly termed a bubo which may soften and discharge with the establishment of a chronic sinus. The genitalia may become intensely swollen and other symptoms such as fever, chills, abdominal pain or pains in the joints may be expected. Ano-recto-colonic involvement occurs in many cases as a late complication.

The lymphogranuloma venereum complement fixation test is highly specific and becomes positive early in the course of an infection. It has replaced, to a large extent, the previously-used intracutaneous test using Frei antigen.

The disease is considered communicable as long as the discharge remains. Sulphonamides and/or antibiotics are used with varying results depending on the stage of the disease. Surgery may be required if a bubo or rectal involvement develops.
GRANULOMA INGUINALE

This disease is also uncommon in this country. The causative organism is the Donovan body. These bodies are strictly tissue parasites of man and can be found in the lesions by examination of a minute section of the surface tissue or often by direct smears.

The incubation period of this infection is not actually known but likely varies from 8 days to 12 weeks. The infection is characterized by small ulcers initially which later progress to large proliferative types of lesions appearing as heaped-up fleshy growths.

The treatment of choice is the prompt use of a broad-spectrum antibiotic.

LABORATORY AIDS

Throughout this manual, reference has been made to laboratory procedures. These procedures or tests are of great value in helping the physician to establish a diagnosis. They must, however, be considered in association with the history and results of clinical examination.

In syphilis, four procedures are commonly used:
- Darkfield examination
- Blood serologic test (S.T.S.)
- Treponema pallidum immobilization test (T.P.I.)
- Spinal fluid examination

In gonorrhoea, two procedures are commonly used:
- Direct smear
- Culture.

I. DARKFIELD EXAMINATION

By the use of darkfield illumination, the causative organism, treponema pallidum, may be identified under the microscope. It is the only specific diagnostic test for syphilis during the primary stage, and depends upon the examination of serum from a syphilitic lesion to see whether or not it contains the living treponema.

Direct examination is possible where darkfield microscopic equipment is available. Indirect examination applies where a specimen is to be forwarded to a laboratory. Special kits for this purpose are available from all Public Health Laboratories in Ontario.

II. BLOOD SEROLOGIC TEST (S.T.S.)

The serologic test for syphilis (S.T.S.) is commonly referred to as the Wassermann test but this is only one of many tests used in the serologic examination of blood specimens for syphilis. The tests are not specific due to the fact that the substance tested for, known as reagin, is present in the blood in many other conditions and sometimes even in the blood of normal healthy individuals.

The tests commonly performed in laboratories include complement fixation tests such as the Kolmer Wassermann and precipitation tests such as the V.D.R.L. (Venereal Disease Research Laboratory).
III. TREPONEMA PALLIDUM IMMOBILIZATION TEST

The introduction of the Treponema Pallidum Immobilization (T.P.I.) Test offers an additional laboratory aid in the diagnosis of syphilis. This test is very useful in differentiating between a person with syphilis and a person exhibiting a false positive reaction. It identifies an immobilizing antibody which is specific for syphilis and the other treponemal infections (pinta, bejel and yaws). As these other infections are virtually unknown in Canada, a positive test signifies that a patient has or has had syphilis. This antibody appears in the blood shortly after the appearance of reagin and remains for a longer period of time than reagin following adequate treatment. Other treponemal antigen tests have been introduced using killed treponemas, but, to date, do not appear to be as reliable as the T.P.I. test.

IV. SPINAL FLUID EXAMINATION

This examination is of great importance to the physician in determining the presence or absence of neurosyphilis. A complete examination actually includes four separate tests, namely, cell count, total protein determination, colloidal gold curve, and a quantitative complement fixation test. The cell count and the total protein estimation are the most sensitive indicators of activity. To obtain accurate results, the cells must be counted within 15 minutes of the time the specimen is taken.

V. SLIDE SMEAR EXAMINATION FOR GONORRHOEA

This examination may be assumed to be a laboratory test for confirmation of clinical findings by identification of the organism causing the inflammatory changes. Although this test is rapid and relatively simple from the technical standpoint, it frequently fails to be useful due to the fragility of the organism or the difficulties in identification of the gonococcus.

VI. CULTURE FOR GONOCOCUS

This examination is considered of greater value as a diagnostic aid and its use and effectiveness is only limited by facilities for taking and handling cultures for bacterial growth and the limitations arising from distance to the nearest laboratory. The gonococcus is fragile and difficult to culture and, therefore, the limitations of the use of this method must always be considered. The introduction of Stuart’s Transport Medium has been of great assistance as it overcomes, to some extent, these difficulties.

It should be appreciated that the laboratory examines the specimen submitted and does not see or examine the patient. The report made on the specimen will be an accurate report of the actual findings. If this report does not confirm or substantiate the tentative diagnosis made by the physician, the conclusion should not be made that the laboratory is in error. Under these circumstances a careful appraisal should be made of the technique of obtaining the specimen and the method of identification and forwarding. The tendency to forward further specimens to other laboratories is usually an error in that there are distinct advantages in using the same laboratory in order to assure uniform standardization. The efficient laboratory will constantly maintain the standardization of the procedures it uses and will only depend upon trained and highly skilled staff who work under capable supervision.
THE NURSE
AND
VENEREAL DISEASE CONTROL
A. REPORTING OF CASES

Although the venereal diseases are communicable diseases, they are not required to be isolated or quarantined. This distinction is due to the fact that these diseases are not spread by the ordinary contacts of everyday life and infectivity can be controlled by the administration of adequate treatment. Such treatment will prevent any further spread of the infection by the new case, but from the standpoint of effective venereal disease control, treatment of the new case is not enough. Effective prevention and control must include both the adequate treatment of known cases and a thorough case-to-contact investigation to discover unknown cases that must exist.

Venereal disease infections are reported in the Province of Ontario to the Provincial Department of Health, and not to the local medical officer of health. The report is made by the physician responsible for diagnosis or treatment on a special form known as the “Government of Canada Notification of Venereal Infection.” This is a confidential report giving the patient's full name, address, municipality of residence, age, sex, and marital status. It states the diagnosis and stage of infection at the time the report is made. A report is to be made whenever a case of venereal disease infection comes under diagnosis, treatment or other medical care, regardless of whether it is a new case which has been previously diagnosed or treated by another physician.

B. IDENTIFICATION OF CONTACTS

Even though adequate treatment of a new case of venereal disease will stop the further spread of that particular infection, it is obvious that some pre-existing infectious case was the source of this infection. This pre-existing case may not only be unknown and untreated but it also may have been the source of still other cases yet undiscovered. To these facts we must also add the possibility and probability that the new infection just discovered, has already been spread to more recent contacts before the diagnosis was made and before treatment was instituted. The physician is urged to interview patients for an identifying description of contacts. These descriptions are noted on the back of the case notification form and are thus made available for investigation.

C. CONTACT INVESTIGATION

Contacts are discreetly investigated by the health department and if they are found to be infected they are placed under treatment. They will then, in turn, be interviewed for contact information which it is hoped will lead to the discovery of further unknown, untreated and perhaps communicable cases. Among the contacts of any given case there must be at least one infected person who was the source of infection in the case just discovered. Among these contacts there may also be persons who have been in turn infected by the new case. These persons will require sufficient examinations and adequate observation to assure that any infection which is developing is found.
D. COMMUNICABILITY OF VENEREAL DISEASES

I. Syphilis

When a syphilis infection is transmitted from an infected to a healthy person it means that living treponema pallida have been able to gain entrance into the tissues of the new host. This transfer is most commonly accomplished by sex-contact exposure to the open, infected, surface lesions of early syphilis in the infected individual. Such lesions as the chancre of primary syphilis or the mucous patches of secondary syphilis are highly infectious. The surface lesions that may be present in late syphilis are generally not infectious since they do not carry treponema pallida. In addition to this common mode of transmission, syphilis can be transmitted directly by accidental puncture wounds, by direct transfusion of infected blood or by transmission of treponema pallida through the placental circulation to the foetus.

With the exception of the darkfield examination for treponema pallida, none of the laboratory tests used in the diagnosis of syphilis are intended to prove or measure the degree of infectivity of the case. It is an error to assume that a positive blood test means that communicable syphilis exists, or for that matter that syphilis exists at all. This test is not a diagnostic test but is merely a laboratory aid to diagnosis.

If the early infectious lesions of syphilis exist, such lesions can be rendered non-infectious by the administration of treatment. A single intramuscular injection of penicillin or another suitable antibiotic may render a surface lesion non-infectious within about twelve hours. These injections may furthermore render the case non-infectious for a period as long as two to three months. Continued regular, adequate therapy is of course necessary to maintain and establish permanent non-communicability and this procedure rarely fails. Infectious relapses can occur, however, but are usually the result of insufficient treatment.

II. Gonorrhoea

It is generally accepted that gonorrhoea is communicable so long as the infection is present, with the degree of communicability varying with the acuteness of the inflammatory reaction.

Microscopic examination of stained smears of secretions or discharges is the commonest procedure used but it should be remembered that the laboratory report only implies the presence of gram negative diplococci which could be gonococci. Identification of the organism by culture provides a greater degree of specificity, but only the more extensive investigation of the fermentation characteristics is of ultimate value in identification.

For these reasons the usual laboratory examination would be considered only as additional evidence to support a diagnosis indicated by history and clinical findings.

Reference is also made to the ever-present possibility of transmission of this infection to the eyes of the new born at the time of birth. The instillation of an effective antiseptic preparation into the eyes of the new born should be an established routine, never to be omitted from obstetrical procedures. Although this instillation is intended to protect the child from all forms of infectious ophthalmia it will at the same time assure protection from ophthalmia of the gonococcal type.

In the light of these facts regarding the communicability of syphilis and gonorrhoea and in the light of the known facts regarding the fragility of causative organisms, isolation, quarantine and the special techniques of nursing care associated with these restrictions are not required in the nursing care of venereal diseases. When surface lesions, discharges or secretions exist, the same techniques are applied as would be applied to non-venereal infections with similar manifestations. Furthermore venereal diseases are not spread through a medium like food, dishes, linen or toilet facilities.
E. Administration of Venereal Disease Control

I. Municipal Responsibility

The administration of venereal disease control in the Province of Ontario is a local, municipal responsibility. The local board of health and local medical officer of health are responsible for carrying out the measures required by the Venereal Diseases Prevention Act. Certain assistance is provided by Provincial and Federal authorities.

The responsible municipal authorities must see that every person suffering from venereal disease infection takes treatment as required by the Act and, if necessary, must make provision for free treatment. Free treatment may be provided through municipal payment to private physicians or in some larger municipalities by the establishment of an approved free clinic.

II. Provincial Responsibility

To assist municipalities in the carrying out of their obligations the Ontario Department of Health provides certain financial and advisory aid and gives certain services.

The Department of Health coordinates the activities of the municipalities into a province-wide programme of prevention and control. Consultative and advisory assistance is offered to local health departments. Financial assistance in the form of reimbursements on expenditures and grants-in-aid, is provided to the municipalities. Laboratory services, consultative services and drugs are offered without charge to all physicians. The Province also provides approved educational materials for public education.

III. Federal Responsibility

The Department of National Health and Welfare provides grants-in-aid to the provinces for the development of provincial control services. It also promotes coordination between provincial programmes and develops educational materials for Dominion-wide use. The Dominion Bureau of Statistics compiles a weekly statistical report from statistical data forwarded by all provinces, and prepares a quarterly summary.

F. Education

Every nurse, irrespective of her field of activity, will be expected to be adequately informed about the venereal diseases. Because of her training and knowledge she will be expected to be able to provide information which may be requested and provide this information in language which can be readily understood.

The Venereal Disease Control Section of the Epidemiology Service, Ontario Department of Health, provides, directly or through the local department of health, a variety of educational aids. Literature and sound motion picture films are supplied free of charge to assist in projects of public education whenever it is evident that such education is being presented under suitable direction and control.