# VD Fact Sheet

## 1959

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Public Health Service

# VD FACT SHEET
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## Basic Statistics on the Venereal Disease Problem in the United States . . .

Sixteenth Revision

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service, Bureau of State Services
Communicable Disease Center
Venereal Disease Branch
Atlanta, Georgia

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# INTRODUCTION

The VD Fact Sheet is intended to serve persons interested in public health and venereal disease problems as a handy source of basic statistics on the venereal diseases in the United States. The extent of the problem facing venereal disease control is measured by incidence and prevalence, while the costs of uncontrolled venereal disease and the frequency of psychoses and deaths from syphilis are indicative of the seriousness of the venereal disease problem. The results of case-finding are measured in terms of cases reported while the actual amount of case-finding effort by public facilities is described by the volume of diagnostic examinations and epidemiologic activity. Since there is no agent for immunizing the population, the only feasible means of controlling venereal disease are the finding and treating of cases. Therefore, facts about the efficacy of various types of treatment are very necessary to an understanding of venereal disease control.

Facts on these various measures of the venereal disease problem and program are presented in the text and tables which follow. The information is current as of the date of publication and supersedes any previously published data. Where no source is cited, the data presented are based on statistics collected by the Venereal Disease Program or upon estimates made by the Program. Where data are indicated as being for "fiscal years", the period runs from July 1 of the previous year to June 30 of the year indicated on the table. Rates per 100,000 population shown in this Fact Sheet are based on appropriate population estimates obtained from the Bureau of the Census.

## INCIDENCE AND PREVALENCE

The incidence of a disease is defined as the number of new cases occurring in a given area within a specified period of time, usually a year, and prevalence as the number of cases existing at a point in time. Reported cases understate incidence and prevalence first, because all cases diagnosed are not reported and secondly, because all cases occurring or existing do not come to medical attention. However, the Venereal Disease Program estimates at this time that 60,000 cases of syphilis occur in the United States each year and that there are 1,200,000 persons in the population who need treatment for syphilis. The incidence of gonorrhea is estimated to be one million cases per year.

### TABLE 1

### PREVALENCE RATES OF SYPHILIS DETECTED PER 1,000 MALE SELECTEES AND VOLUNTEERS EXAMINED

November 1940 to August 1941, By Race and Age

From time to time, prevalence data have been obtained on large groups of persons. One of these groups, Selective Service Registrants examined for military service in World War 11, was not only a large group but a fairly random selection of the young male population. The syphilis prevalence rates per 1,000 examined, by age and race, for the first two million registrants examined are shown below:

| Age Groups | White | Nonwhite | Unknown | Total |
|---|---|---|---|---|
| 18-20 | 11.1 | 105.8 | 29.7 | 55.1 |
| 21-25 | 10.2 | 191.7 | 25.3 | 30.1 |
| 26-30 | 21.0 | 294.8 | 46.6 | 54.4 |
| 31-35 | 37.9 | 357.8 | 80.6 | 83.5 |
| 36-40 | 44.4 | 375.6 | 103.2 | 101.9 |
| TOTAL | 17.6 | 245.2 | 41.0 | 46.1 |

In 1946, the prevalence of syphilis among examined sexual contacts of persons known to have primary or secondary syphilis was approximately 50 percent for white males, 51 percent for white females, 55 percent for nonwhite males, and 59 percent for nonwhite females. More recent data available for the total of all contacts to primary or secondary syphilis indicate that 32 percent of contacts examined in fiscal 1959 were infected compared to 54 percent in 1946.

## COSTS OF UNCONTROLLED SYPHILIS

The statistics presented in Table 2 indicate the toll imposed by syphilis upon the manpower and economy of the country.

The estimate of man-years of disability for institutionalization for syphilitic insanity is based on the total number of patients in mental institutions and the proportion of those diagnosed as having syphilitic psychoses. Patients in State, County, Private, and Veterans Administration hospitals for the permanent care of the insane are included.

The cost of maintenance is based upon the number of patients with syphilitic psychoses in tax supported institutions and the average per patient maintenance cost for public prolonged care hospitals. The three percent of patients with syphilitic psychoses maintained in private institutions has not been included. The loss of income, based on the average earnings for fulltime employed workers, reflect the probable earnings of male patients had they been self-supporting in 1957. The loss of tax payments, based on the average income tax payment for adults in 1957, is an estimate of the probable taxes these adults would have paid had they been self-supporting for that year.

Disability attributed to cardiovascular syphilis and to locomotor ataxia is based on conservative estimates of the prevalence of these late manifestations of syphilis.

The loss of life expectancy indicates the loss of future years of life for persons dying of syphilis in 1957 based on the expected years of life remaining to persons of that age, race and sex. The loss of income indicates the probable earnings of these persons for the productive years of life lost to age 65 at the average personal income for adults during 1957.

While disabilities and deaths from syphilis have been diminishing in recent years, costs and losses per case have been rising. As a result of this, total costs and income losses from syphilitic disabilities and deaths remain high compared to previous estimates.

On the basis of findings in a research conducted in Macon county, Alabama, it has been estimated that the life expectancy of a Negro male between the ages of 25 and 60 years, infected with syphilis and receiving no appreciable treatment for his infection, is reduced by about 17 percent. a/

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a/ Shafer, J.K.; Usilton, Lida J.; Gleeson, Geraldine A.: Untreated Syphilis in the Male Negro: A prospective study of the effect on life expectancy. Public Health Reports, 69:684-690, July 1954. Milbank Memorial Fund Quarterly, 32: 262-274, July 1954.

TABLE 2

ESTIMATED ANNUAL COSTS OF UNCONTROLLED SYPHILIS*

| | |
|---|---|
| **MAN-YEARS OF SYPHILIS DISABILITY PER YEAR** | |
| Institutionalization for syphilitic insanity (1957) | 29,000 |
| Disability from cardiovascular syphilis, including aneurysm (1957) | 7,100 |
| Disability from locomotor ataxia | 700 |
| Disability from syphilitic blindness (1951) | 26,000 |
| **ECONOMIC COSTS OF SYPHILITIC PSYCHOSES AND SYPHILITIC BLINDNESS PER YEAR** | |
| Maintenance of patients with syphilitic psychoses (1957) | $48,637,000 |
| Loss of income by males with syphilitic psychoses (1957) | $86,442,000 |
| Loss of State and Federal income tax payments from patients with syphilitic psychoses (1958) | $ 9,171,000 |
| Maintenance of syphilitic blind (1951) | $12,500,000 |
| **LOSS OF LIFE EXPECTANCY DUE TO SYPHILIS IN MAN-YEARS PER YEAR (1957)** | |
| White males | 28,675 |
| White females | 12,556 |
| Non-white males | 16,074 |
| Non-white females | 7,770 |
| Total population | 65,075 |
| **LOSS OF INCOME TO AGE 65 AT 1957 ADULT INCOME RATE** | $ 74,713,000 |

* Estimates based on most recent available data for years indicated.

## REPORTED MORTALITY AND INSANITY DUE TO SYPHILIS

Mortality statistics are compiled by the National Office of Vital Statistics from duplicates of death certificates filed with State or local registrars. Mortality rates for syphilis are calculated by dividing the number of deaths in a given year by the population for that year and multiplying by 100,000 (rate per 100,000 population). The infant mortality rate for syphilis for a given year is obtained by dividing the deaths due to syphilis among children under one year of age by the number of live births in the year multiplied by 10,000 (rate per 10,000 live births).

Since deaths from syphilis represent case-finding and treatment failures, mortality due to syphilis may be considered an inverse measure of the success of the syphilis control program.

The method of classifying deaths is revised decennially by international agreement. These revisions have at times affected the continuity of syphilis mortality statistics. "The Sixth Revision of the International Lists of Causes of Death" which became effective in 1949 reduced reported syphilis deaths by about 26 percent. (Vital Statistics in the U. S., 1949 P. H. S., and Statistical Letter No. 23, August 1949, V. D. Division.) Mortality rates given in this Fact Sheet have been adjusted to the basis of the Sixth Revision for all years previous to 1949, using provisional comparability ratios. No adjustment was made for infant mortality since it was affected very little by changes in the Sixth Revision.

Insanity due to syphilis is measured by the rate of first admissions to mental hospitals because of syphilis. Excluded are admissions to psychopathic hospitals which provide only temporary care and admissions to Veterans Administration facilities. The number of admissions is obtained from "Patients in Mental Institutions" published by the National Institute of Mental Health. Since only first admissions are included in the rate, the figures over a period of years represent a measure of the trend of incidence of syphilitic insanity.

Data on mortality and insanity due to syphilis are presented in Table 3.

TABLE 3

REPORTED MORTALITY AND INSANITY DUE TO SYPHILIS
CONTINENTAL UNITED STATES
1940 - 1959

| Calendar Year | Syphilis Mortality [a] Rates per 100,000 Population | | | Infant Mortality Due to Syphilis, Rates per 10,000 Live Births | | | First Admissions to Mental Hospitals Due to Syphilis Rates per 100,000 Population [b] |
|---|---|---|---|---|---|---|---|
| | Total | White | Nonwhite | Total | White | Nonwhite | Total |
| 1940 | 10.7 | 7.3 | 40.2 | 5.30 | 2.50 | 25.20 | 6.1 |
| 1941 | 9.9 | 6.9 | 35.2 | 4.10 | 1.80 | 21.00 | 6.1 |
| 1942 | 9.0 | 6.4 | 31.4 | 3.00 | 1.50 | 15.00 | 6.1 |
| 1943 | 9.0 | 6.4 | 41.2 | 2.52 | 1.18 | 12.76 | 5.8 |
| 1944 | 8.3 | 5.8 | 29.3 | 2.67 | 1.17 | 13.50 | 5.6 |
| 1945 | 7.9 | 5.6 | 27.3 | 2.50 | 1.07 | 12.59 | 5.5 |
| 1946 | 6.9 | 4.9 | 23.8 | 1.64 | .66 | 9.20 | 4.7 |
| 1947 | 6.5 | 4.7 | 22.1 | 1.40 | .51 | 8.21 | 4.2 |
| 1948 | 5.9 | 4.2 | 19.9 | 1.24 | .49 | 6.31 | 3.7 |
| 1949 | 5.8 | 4.2 | 19.2 | .84 | .29 | 4.41 | 3.2 |
| 1950 | 5.0 | 3.7 | 16.1 | .57 | .24 | 2.59 | 2.6 |
| 1951 | 4.1 | 3.0 | 13.4 | .34 | .12 | 1.73 | 2.1 |
| 1952 | 3.7 | 2.7 | 11.4 | .24 | .10 | 1.14 | 1.8 |
| 1953 | 3.3 | 2.4 | 10.9 | .14 | .04 | .77 | 1.5 |
| 1954 | 3.0 | 2.3 | 9.2 | .11 | .03 | .54 | 1.3 |
| 1955 | 2.4 | 1.7 | 7.9 | .08 | .03 | .41 | 1.0 |
| 1956 | 2.3 | 1.7 | 7.1 | .06 | .02 | .31 | .8 |
| 1957 | 2.2 | 1.7 | 6.9 | .06 | .05 | .16 | .8 |
| 1958 [c] | 2.2 | 1.6 | 7.1 | .08 | - - - | - - - | - - |
| 1959 [c] | 1.8 | - - | - - - | - - - | - - - | - - - | - - |

a/ Sixth Revision, International Lists of Causes of Death; see Mortality, Page 5 for explanation.

b/ Does not include admissions to V.A. and psychopathic hospitals; rate based on population of area reporting.

c/ Estimated

Source: Mortality and Natality Data, National Office of Vital Statistics; First Admissions to Mental Hospitals, National Institute of Mental Health; Rates based on population estimates of the Bureau of the Census

## REPORTED CASES OF VENEREAL DISEASE

All States require that syphilis and gonorrhea cases coming to medical attention be reported to the State or local health officer, and the other venereal diseases are reportable in most States. Quarterly, each State submits to the Public Health Service a summary of the cases reported to it. All cases not previously reported, regardless of duration, are to be included in the report. The reported morbidity, as reported cases are sometimes called, indicates the volume of successful case finding.

The trend of reported cases of early syphilis (or reported case rates) over a period of years may be indicative of incidence trends if no significant changes in case-finding effort have occurred. Reported cases of syphilis in the later stages may be considered as an indication of past case-finding failure as well as present success. Trends in reported cases must be interpreted with caution since changes in case-finding effort are reflected in morbidity data just as much as changes in incidence and prevalence.

Reported cases of venereal diseases are shown in Table 4 through Table 8.

## HEALTH DEPARTMENT CASE-FINDING ACTIVITIES

The correct interpretation of case-finding success depends upon a knowledge of the volume of case-finding effort. Table 9 shows the volume of case-finding effort in public clinics and cases of venereal disease found through these efforts. Total activity is indicated by the number of diagnostic examinations performed and investigations completed. The section of contact investigation indices indicate the volume of contacts named and the success in finding cases of syphilis on a per patient basis. It should be noted that at least one infected contact should be identified for each case of primary or secondary syphilis.

Table 4

## CASES OF SYPHILIS AND GONORRHEA REPORTED TO THE PUBLIC HEALTH SERVICE BY STATE HEALTH DEPARTMENTS, AND RATES PER 100,000 POPULATION

All Reporting Areas in United States
1919–1959

| Fiscal Year | SYPHILIS | | GONORRHEA | |
|---|---|---|---|---|
| | Cases | Rates per 100,000 | Cases | Rates per 100,000 |
| 1919 | 100,466 | 113.2 | 131,193 | 147.8 |
| 1920 | 142,869 | 145.3 | 172,387 | 175.4 |
| 1921 | 184,090 | 172.3 | 189,927 | 177.7 |
| 1922 | 171,824 | 157.7 | 152,959 | 140.4 |
| 1923 | 172,258 | 156.2 | 156,826 | 142.2 |
| 1924 | 194,936 | 174.2 | 161,676 | 144.5 |
| 1925 | 201,692 | 181.2 | 166,208 | 149.3 |
| 1926 | 205,595 | 196.1 | 164,808 | 157.2 |
| 1927 | 196,457 | 171.9 | 160,793 | 140.7 |
| 1928 | 185,437 | 174.2 | 147,219 | 138.3 |
| 1929 | 195,559 | 169.2 | 156,544 | 135.4 |
| 1930 | 213,309 | 185.4 | 155,875 | 135.5 |
| 1931 | 229,720 | 197.4 | 155,895 | 134.0 |
| 1932 | 242,128 | 208.2 | 154,051 | 132.5 |
| 1933 | 238,656 | 193.4 | 149,823 | 121.4 |
| 1934 | 231,129 | 186.7 | 153,542 | 124.1 |
| 1935 | 255,856 | 205.6 | 162,763 | 130.8 |
| 1936 | 267,717 | 212.6 | 163,465 | 129.8 |
| 1937 | 336,258 | 264.3 | 182,460 | 143.4 |
| 1938 | 480,140 | 372.0 | 198,439 | 153.8 |
| 1939 | 478,738 | 367.1 | 182,314 | 139.8 |
| 1940 | 472,900 | 359.7 | 175,841 | 133.8 |
| 1941 | 485,560 | 368.2 | 193,468 | 146.7 |
| 1942 | 479,601 | 363.4 | 212,403 | 160.9 |
| 1943 | 575,593 | 447.0 | 275,070 | 213.6 |
| 1944 | 467,755 | 367.9 | 300,676 | 236.5 |
| 1945 | 359,114 | 282.3 | 287,181 | 225.8 |
| 1946 | 363,647 | 271.7 | 368,020 | 275.0 |
| 1947 | 372,963 | 264.6 | 400,639 | 284.2 |
| 1948 | 338,141 | 234.7 | 363,014 | 252.0 |
| 1949 | 288,736 | 197.3 | 331,661 | 226.7 |
| 1950 | 229,723 | 154.2 | 303,992 | 204.0 |
| 1951 | 198,640 | 131.8 | 270,459 | 179.5 |
| 1952 | 168,734 | 110.8 | 245,633 | 161.3 |
| 1953 | 156,099 | 100.8 | 243,857 | 157.4 |
| 1954 | 137,876 | 87.5 | 239,661 | 152.0 |
| 1955 | 122,075 | 76.0 | 239,787 | 149.2 |
| 1956 | 126,219 | 77.1 | 233,333 | 142.4 |
| 1957 | 130,552 | 78.3 | 216,476 | 129.8 |
| 1958 | 116,630 | 68.5 | 220,191 | 129.3 |
| 1959 | 119,981 | 69.3 | 237,318 | 137.0 |

NOTE: Beginning in 1939, all States are included in the reporting area.
Military cases excluded after 1940.
Rates based on population estimates by the Bureau of the Census.

*TABLE 5*

## CASES OF VENEREAL DISEASE REPORTED TO THE PUBLIC HEALTH SERVICE
## FISCAL YEARS 1950 - 1959
(Known Military Cases Are Excluded)

| Fiscal Year | SYPHILIS | | | | | GONORRHEA | OTHER VENEREAL DISEASES | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total Syphilis a/ | Primary and Secondary | Early Latent | Late and Late Latent | Congenital | | Chancroid | Granuloma Inguinale | Lympho-Granuloma Venereum |
| | | | | United States | | | | | |
| 1950 | 229,723 | 32,148 | 64,786 | 112,424 | 13,446 | 303,992 | 5,796 | 2,017 | 1,635 |
| 1951 | 198,640 | 18,211 | 52,309 | 107,133 | 12,836 | 270,459 | 4,707 | 1,637 | 1,332 |
| 1952 | 168,734 | 11,991 | 38,365 | 101,920 | 9,240 | 245,633 | 3,837 | 1,069 | 1,235 |
| 1953 | 156,099 | 9,551 | 32,287 | 100,195 | 8,021 | 243,857 | 3,490 | 785 | 1,103 |
| 1954 | 137,876 | 7,688 | 24,999 | 93,601 | 7,234 | 239,661 | 3,294 | 607 | 917 |
| 1955 | 122,075 | 6,516 | 21,553 | 84,741 | 5,515 | 239,787 | 2,863 | 584 | 875 |
| 1956 | 126,219 | 6,757 | 20,014 | 89,851 | 5,535 | 233,333 | 2,322 | 419 | 602 |
| 1957 | 130,552 | 6,251 | 19,046 | 96,856 | 5,452 | 216,476 | 1,860 | 348 | 449 |
| 1958 | 116,630 | 6,661 | 16,698 | 85,974 | 4,839 | 220,191 | 1,574 | 332 | 436 |
| 1959 | 119,981 | 8,178 | 17,592 | 86,776 | 5,215 | 237,318 | 1,604 | 282 | 485 |
| | | | | United States and Territories | | | | | |
| 1950 | 238,640 | 32,838 | 68,392 | 115,363 | 15,062 | 313,517 | 5,890 | 2,022 | 1,653 |
| 1951 | 208,137 | 18,709 | 55,734 | 110,864 | 14,638 | 278,898 | 4,769 | 1,645 | 1,341 |
| 1952 | 176,462 | 12,447 | 40,646 | 105,389 | 10,426 | 253,984 | 3,969 | 1,089 | 1,237 |
| 1953 | 162,805 | 9,855 | 33,831 | 103,970 | 8,986 | 251,986 | 3,579 | 791 | 1,111 |
| 1954 | 141,838 | 7,898 | 25,834 | 96,017 | 7,649 | 245,077 | 3,348 | 613 | 925 |
| 1955 | 124,925 | 6,698 | 22,232 | 86,392 | 5,779 | 244,363 | 2,937 | 590 | 883 |
| 1956 | 128,645 | 6,885 | 20,591 | 91,252 | 5,702 | 238,568 | 2,366 | 420 | 611 |
| 1957 | 132,510 | 6,323 | 19,492 | 98,135 | 5,597 | 220,614 | 1,887 | 352 | 463 |
| 1958 | 118,404 | 6,746 | 17,125 | 87,071 | 4,978 | 224,268 | 1,607 | 333 | 458 |
| 1959 | 121,598 | 8,285 | 17,998 | 87,725 | 5,345 | 241,004 | 1,673 | 282 | 504 |

a/ Includes "Stages of Syphilis Not Stated."

## TABLE 6

## REPORTED SYPHILIS CASE RATE PER 100,000 POPULATION
## FISCAL YEARS 1941 - 1959

| Fiscal Year | Total Including Not Stated | Primary and Secondary | Primary, Secondary and Early Latent | Late and Late Latent | Congenital |
|---|---|---|---|---|---|
| | | | United States Civilians | | |
| 1941 | 368.2 | 51.7 | 134.4 | 153.9 | 13.4 |
| 1942 | 363.4 | 57.1 | 145.1 | 153.1 | 12.8 |
| 1943 | 447.0 | 63.8 | 179.8 | 195.7 | 12.6 |
| 1944 | 367.9 | 61.7 | 158.5 | 159.6 | 10.7 |
| 1945 | 282.3 | 60.5 | 140.5 | 111.8 | 9.7 |
| 1946 | 271.7 | 70.9 | 151.6 | 93.6 | 9.0 |
| 1947 | 264.6 | 75.6 | 152.0 | 86.5 | 8.7 |
| 1948 | 234.7 | 55.9 | 123.8 | 86.1 | 9.2 |
| 1949 | 197.3 | 37.1 | 94.7 | 83.3 | 9.8 |
| 1950 | 154.2 | 21.6 | 65.1 | 75.5 | 9.0 |
| 1951 | 131.8 | 12.1 | 46.8 | 71.1 | 8.5 |
| 1952 | 110.8 | 7.9 | 33.1 | 66.9 | 6.1 |
| 1953 | 100.8 | 6.2 | 27.0 | 64.7 | 5.2 |
| 1954 | 87.5 | 4.9 | 20.7 | 59.4 | 4.6 |
| 1955 | 76.0 | 4.1 | 17.5 | 52.7 | 3.4 |
| 1956 | 77.1 | 4.1 | 16.4 | 54.8 | 3.4 |
| 1957 | 78.3 | 3.8 | 15.2 | 58.1 | 3.3 |
| 1958 | 68.5 | 3.9 | 13.7 | 50.5 | 2.8 |
| 1959 | 69.3 | 4.7 | 14.9 | 50.1 | 3.0 |

*TABLE 7*

REPORTED VENEREAL DISEASE CASE RATES PER 100,000 POPULATION BY COLOR AND SEX
UNITED STATES CIVILIANS
Fiscal Years 1955 - 1959

| Disease, Stage and Year | | TOTAL | | | WHITE | | | NONWHITE | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Total | Male | Female | Total | Male | Female | Total | Male | Female |
| Total Syphilis (Includes Not Stated) | 1955 | 76.0 | 79.2 | 72.9 | 33.9 | 39.1 | 29.0 | 424.3 | 415.6 | 432.4 |
| | 1956 | 77.1 | 81.1 | 73.2 | 33.2 | 38.3 | 28.3 | 437.9 | 437.2 | 438.6 |
| | 1957 | 78.3 | 86.2 | 70.7 | 34.6 | 43.1 | 26.5 | 437.6 | 444.9 | 430.8 |
| | 1958 | 68.5 | 74.3 | 63.0 | 29.5 | 35.3 | 24.1 | 383.0 | 392.9 | 373.8 |
| | 1959 | 69.3 | 75.7 | 63.2 | 30.7 | 36.7 | 24.9 | 377.3 | 390.1 | 365.3 |
| Primary and Secondary Syphilis | 1955 | 4.1 | 5.1 | 3.0 | 1.8 | 2.6 | 1.1 | 22.5 | 26.4 | 19.0 |
| | 1956 | 4.1 | 5.2 | 3.1 | 1.6 | 2.4 | 0.9 | 25.0 | 29.1 | 21.2 |
| | 1957 | 3.8 | 4.9 | 2.6 | 1.6 | 2.4 | 0.8 | 21.8 | 26.3 | 17.6 |
| | 1958 | 3.9 | 5.2 | 2.7 | 1.6 | 2.5 | 0.7 | 22.6 | 27.0 | 18.6 |
| | 1959 | 4.7 | 6.6 | 2.9 | 2.0 | 3.3 | 0.7 | 26.6 | 33.4 | 20.2 |
| Early Latent Syphilis | 1955 | 13.4 | 11.6 | 15.1 | 4.7 | 5.0 | 4.5 | 85.4 | 66.8 | 102.7 |
| | 1956 | 12.2 | 10.6 | 13.7 | 4.1 | 4.2 | 4.1 | 78.6 | 64.3 | 92.0 |
| | 1957 | 11.4 | 11.3 | 11.5 | 4.4 | 5.4 | 3.5 | 68.9 | 60.1 | 77.2 |
| | 1958 | 9.8 | 9.4 | 10.2 | 3.4 | 3.8 | 3.0 | 61.9 | 55.6 | 67.8 |
| | 1959 | 10.2 | 10.1 | 10.2 | 3.5 | 4.1 | 3.1 | 62.9 | 58.7 | 66.9 |
| Late and Late Latent Syphilis | 1955 | 52.7 | 57.3 | 48.4 | 24.7 | 29.2 | 20.4 | 285.5 | 293.8 | 277.7 |
| | 1956 | 54.8 | 59.9 | 50.0 | 24.8 | 29.5 | 20.4 | 302.1 | 313.9 | 291.2 |
| | 1957 | 58.1 | 65.6 | 50.9 | 26.2 | 33.3 | 19.5 | 320.0 | 334.9 | 306.2 |
| | 1958 | 50.5 | 56.0 | 45.2 | 22.6 | 27.4 | 18.1 | 275.3 | 289.7 | 261.9 |
| | 1959 | 50.1 | 55.2 | 45.2 | 23.0 | 27.4 | 18.7 | 266.4 | 279.1 | 254.6 |
| Congenital Syphilis | 1955 | 3.4 | 2.6 | 4.2 | 1.6 | 1.1 | 2.1 | 18.5 | 15.2 | 21.6 |
| | 1956 | 3.4 | 2.6 | 4.1 | 1.5 | 1.0 | 2.0 | 18.9 | 15.8 | 21.7 |
| | 1957 | 3.3 | 2.5 | 4.0 | 1.4 | 1.0 | 1.8 | 18.6 | 15.3 | 21.6 |
| | 1958 | 2.8 | 2.1 | 3.6 | 1.2 | 0.8 | 1.6 | 16.1 | 12.9 | 19.1 |
| | 1959 | 3.0 | 2.3 | 3.7 | 1.4 | 1.0 | 1.8 | 15.8 | 12.4 | 19.1 |
| Gonorrhea | 1955 | 149.2 | 209.9 | 91.7 | 34.3 | 49.3 | 20.0 | 1101.8 | 1557.9 | 678.8 |
| | 1956 | 142.4 | 201.0 | 86.8 | 32.4 | 47.3 | 18.1 | 1048.5 | 1481.6 | 645.4 |
| | 1957 | 129.8 | 185.3 | 76.9 | 29.3 | 42.7 | 16.6 | 956.8 | 1374.4 | 568.3 |
| | 1958 | 129.3 | 183.7 | 77.5 | 29.3 | 42.4 | 16.8 | 937.4 | 1338.1 | 563.7 |
| | 1959 | 137.1 | 194.6 | 82.3 | 33.3 | 48.1 | 19.1 | 964.2 | 1373.7 | 580.8 |

Population used to calculate rates is based on estimates by the Bureau of the Census.

TABLE 8

REPORTED VENEREAL DISEASE CASE RATES PER 100,000 POPULATION
United States Civilians
Fiscal Year 1959

| STATE | SYPHILIS | | GONORRHEA | OTHER VENEREAL DISEASES |
|---|---|---|---|---|
| | Total | All Early a/ | | |
| Alaska | 16.8 | 6.0 | 143.7 | .0 |
| Alabama | 44.1 | 26.6 | 112.8 | 2.3 |
| Arizona | 161.1 | 44.8 | 247.7 | 3.2 |
| Arkansas | 166.0 | 30.0 | 318.4 | .8 |
| California | 43.3 | 14.8 | 113.3 | .4 |
| Colorado | 20.2 | 4.4 | 53.1 | .7 |
| Connecticut | 28.3 | 10.2 | 63.2 | .2 |
| Delaware | 258.5 | 55.4 | 233.6 | 1.8 |
| District of Columbia | 240.3 | 68.3 | 1324.8 | 17.3 |
| Florida | 90.5 | 25.7 | 244.5 | 6.8 |
| Georgia | 87.2 | 41.0 | 351.6 | 7.0 |
| Idaho | 7.1 | 1.7 | 44.7 | .3 |
| Illinois | 79.5 | 18.0 | 193.8 | .7 |
| Indiana | 30.0 | 5.1 | 43.9 | .2 |
| Iowa | 40.3 | 1.1 | 32.6 | .1 |
| Kansas | 65.9 | 9.3 | 69.9 | .6 |
| Kentucky | 71.3 | 4.3 | 100.7 | .2 |
| Louisiana | 235.6 | 45.0 | 192.6 | 4.1 |
| Maine | 3.4 | .4 | 7.3 | .0 |
| Maryland | 114.5 | 20.9 | 252.9 | 1.2 |
| Massachusetts | 46.4 | 10.5 | 34.4 | .2 |
| Michigan | 49.6 | 8.3 | 104.3 | 2.3 |
| Minnesota | 3.7 | 1.2 | 28.9 | .1 |
| Mississippi | 32.6 | 8.3 | 325.9 | 5.1 |
| Missouri | 77.7 | 10.7 | 153.9 | 2.1 |
| Montana | 26.8 | 5.1 | 40.0 | .0 |
| Nebraska | 17.7 | .8 | 63.0 | .1 |
| Nevada | 53.5 | 17.8 | 129.5 | 6.2 |
| New Hampshire | 16.8 | .9 | 10.4 | .2 |
| New Jersey | 103.0 | 15.5 | 85.9 | .3 |
| New Mexico | 113.2 | 33.8 | 181.6 | .9 |
| New York | 92.3 | 18.0 | 111.6 | 1.1 |
| North Carolina | 95.8 | 20.7 | 237.8 | 3.9 |
| North Dakota | 5.9 | .9 | 64.3 | .2 |
| Ohio | 48.9 | 9.2 | 88.9 | .4 |
| Oklahoma | 80.6 | 10.9 | 181.7 | 1.0 |
| Oregon | 38.2 | 4.3 | 56.2 | .2 |
| Pennsylvania | 97.4 | 14.2 | 58.2 | .3 |
| Rhode Island | 38.6 | 4.9 | 16.5 | .0 |
| South Carolina | 195.5 | 43.3 | 334.9 | 2.5 |
| South Dakota | 19.1 | 3.8 | 76.9 | .0 |
| Tennessee | 45.0 | 14.6 | 362.6 | 1.4 |
| Texas | 37.8 | 13.7 | 185.9 | 1.7 |
| Utah | 15.6 | 2.9 | 26.8 | .0 |
| Vermont | 6.2 | 1.6 | 24.9 | .0 |
| Virginia | 116.7 | 19.4 | 193.3 | 1.1 |
| Washington | 14.6 | 3.4 | 60.8 | .3 |
| West Virginia | 61.2 | 8.2 | 69.6 | .2 |
| Wisconsin | 22.9 | 3.8 | 28.6 | .0 |
| Wyoming | 12.0 | 2.9 | 17.4 | .0 |
| UNITED STATES TOTAL | 69.3 | 14.9 | 137.0 | 1.4 |

a/ Includes Primary, Secondary, and Early Latent Syphilis.

Source: Cases - Morbidity reports submitted to PHS.
Population - estimates prepared by Bureau of the Census.

*TABLE 9*

## HEALTH DEPARTMENT CASE-FINDING ACTIVITIES, UNITED STATES
Fiscal Years 1954 - 1959

| Clinic and Epidemiologic Data | 1954 | 1955 | 1956 | 1957 | 1958 | 1959 |
|---|---|---|---|---|---|---|
| Diagnostic examinations in public clinics | 2,014,290 | 1,707,475 | 1,571,750 | 1,777,498 | 1,925,552 | 1,911,557 |
| Percent of examinations in which one or more venereal diseases were found | 15.1 | 17.1 | 16.7 | 15.2 | 13.4 | 13.1 |
| Number of contact investigations completed | 245,762 | 227,372 | 219,547 | 207,757 | 212,896 | 223,755 |
| Number of other suspect investigations completed | 154,324 | 148,279 | 147,430 | 175,612 | 186,304 | 208,068 |
| Contact investigation indices a/: | | | | | | |
| Approximate number of contacts obtained from each primary and secondary syphilis patient (contact index) | 3.26 | 3.00 | 3.60 | 3.45 | 3.66 | 3.95 |
| Approximate number of syphilis infections identified in the contacts of each primary and secondary patient (epidemiologic index) | .73 | .76 | .91 | .86 | .91 | 1.07 |
| Approximate number of syphilis infections brought to treatment in the contacts of each primary and secondary patient (brought-to-treatment index) | .45 | .41 | .50 | .48 | .49 | .54 |
| Approximate number of primary and secondary syphilis infections brought to treatment in the contacts of each primary and secondary patient (lesion-to-lesion index) | .25 | .22 | .27 | .27 | .29 | .30 |

a/ Indices for 1954 - 1958 computed on a slightly different basis.

TABLE 10

PRIMARY AND SECONDARY SYPHILIS
AGE-SPECIFIC CASE RATES PER 100,000 POPULATION by AGE GROUPS, RACE and SEX
UNITED STATES*, CALENDAR YEARS 1956, 1957, 1958

| | | WHITE | | | NONWHITE | | | TOTAL | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Age | Year | Male | Female | Total | Male | Female | Total | Male | Female | Total** |
| 0-9 | 1956 | | | | | .3 | .2 | | | |
| | 1957 | .1 | | .1 | .2 | .3 | .2 | .1 | .1 | .1 |
| | 1958 | | | | .2 | .5 | .4 | | .1 | .1 |
| 10-14 | 1956 | | .1 | .1 | 1.6 | 6.2 | 3.9 | .2 | .9 | .5 |
| | 1957 | | .1 | | 1.6 | 6.7 | 4.1 | .2 | .9 | .5 |
| | 1958 | | .1 | | 1.4 | 7.7 | 4.5 | .2 | 1.0 | .6 |
| 15-19 | 1956 | 2.4 | 2.7 | 2.6 | 56.9 | 64.6 | 60.9 | 9.4 | 10.7 | 10.1 |
| | 1957 | 2.4 | 2.8 | 2.6 | 54.8 | 73.8 | 64.5 | 9.1 | 11.9 | 10.5 |
| | 1958 | 3.0 | 2.3 | 2.6 | 59.6 | 68.0 | 64.0 | 10.0 | 10.5 | 10.2 |
| 20-24 | 1956 | 10.8 | 2.9 | 6.4 | 136.6 | 75.4 | 103.0 | 27.0 | 12.0 | 18.6 |
| | 1957 | 11.7 | 3.1 | 6.9 | 133.7 | 81.9 | 105.3 | 27.8 | 13.0 | 19.5 |
| | 1958 | 11.6 | 2.7 | 6.7 | 152.8 | 80.5 | 113.7 | 30.1 | 12.5 | 20.4 |
| 25-29 | 1956 | 8.6 | 2.0 | 5.2 | 83.6 | 42.8 | 61.2 | 16.6 | 6.8 | 11.5 |
| | 1957 | 8.7 | 2.0 | 5.2 | 91.9 | 38.4 | 62.9 | 17.8 | 6.3 | 11.8 |
| | 1958 | 9.9 | 1.5 | 5.5 | 101.4 | 47.8 | 72.6 | 20.1 | 7.0 | 13.3 |
| 30-34 | 1956 | 5.6 | 1.4 | 3.4 | 52.1 | 28.7 | 39.5 | 10.5 | 4.4 | 7.3 |
| | 1957 | 5.4 | 1.3 | 3.3 | 54.6 | 21.9 | 36.9 | 10.5 | 3.6 | 6.9 |
| | 1958 | 7.8 | 1.1 | 4.3 | 64.2 | 25.5 | 43.2 | 13.7 | 3.8 | 8.6 |
| 35-39 | 1956 | 3.4 | .9 | 2.1 | 28.4 | 15.4 | 21.5 | 5.8 | 2.4 | 4.0 |
| | 1957 | 4.1 | .6 | 2.3 | 31.9 | 12.6 | 21.6 | 6.8 | 1.9 | 4.3 |
| | 1958 | 4.4 | .8 | 2.6 | 28.5 | 14.6 | 21.1 | 6.8 | 2.3 | 4.5 |
| 40-44 | 1956 | 2.4 | .7 | 1.6 | 18.9 | 7.6 | 12.9 | 4.1 | 1.4 | 2.7 |
| | 1957 | 2.5 | .6 | 1.5 | 20.8 | 6.3 | 13.0 | 4.3 | 1.2 | 2.7 |
| | 1958 | 2.8 | .9 | 1.8 | 22.1 | 8.1 | 14.6 | 4.6 | 1.6 | 3.1 |
| 45-49 | 1956 | 1.9 | .6 | 1.2 | 13.7 | 7.2 | 10.3 | 3.0 | 1.2 | 2.1 |
| | 1957 | 1.8 | .5 | 1.2 | 12.3 | 6.1 | 9.1 | 2.8 | 1.1 | 1.9 |
| | 1958 | 1.7 | .7 | 1.2 | 12.3 | 5.5 | 8.7 | 2.7 | 1.2 | 1.9 |
| 50+ | 1956 | .8 | .2 | .5 | 5.6 | 2.5 | 4.0 | 1.2 | .4 | .7 |
| | 1957 | .7 | .2 | .5 | 4.9 | 2.0 | 3.4 | 1.1 | .4 | .7 |
| | 1958 | .9 | .2 | .5 | 4.8 | 1.2 | 2.9 | 1.2 | .3 | .7 |
| Total | 1956 | 2.4 | .8 | 1.6 | 26.7 | 18.6 | 22.5 | 5.0 | 2.0 | 3.9 |
| | 1957 | 2.4 | .8 | 1.6 | 27.0 | 18.4 | 22.5 | 5.1 | 2.7 | 3.9 |
| | 1958 | 2.8 | .7 | 1.7 | 29.5 | 18.8 | 24.0 | 5.7 | 2.7 | 4.2 |

*Excludes Alaska and Hawaii.
**Includes race and sex not stated.

TABLE 11

GONORRHEA
AGE-SPECIFIC CASE RATES PER 100,000 POPULATION by AGE GROUPS, RACE AND SEX
UNITED STATES*, CALENDAR YEARS 1956, 1957, 1958

| | | WHITE | | | NONWHITE | | | TOTAL | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Age | Year | Male | Female | Total | Male | Female | Total | Male | Female | Total** |
| 0-9 | 1956 | .4 | 2.1 | 1.2 | 8.6 | 25.6 | 17.0 | 1.4 | 5.3 | 3.3 |
| | 1957 | 1.1 | 1.8 | 1.4 | 18.1 | 27.3 | 22.7 | 3.4 | 5.4 | 4.4 |
| | 1958 | .2 | 1.6 | .9 | 7.4 | 25.7 | 16.5 | 1.2 | 5.0 | 3.1 |
| 10-14 | 1956 | 1.1 | 6.0 | 3.5 | 51.3 | 188.9 | 120.1 | 7.0 | 28.7 | 17.7 |
| | 1957 | 1.2 | 4.9 | 3.0 | 54.5 | 165.3 | 109.8 | 7.4 | 24.5 | 15.8 |
| | 1958 | 1.0 | 6.0 | 3.5 | 54.7 | 178.8 | 116.7 | 7.5 | 27.5 | 17.3 |
| 15-19 | 1956 | 83.2 | 68.7 | 75.7 | 2965.5 | 2359.6 | 2652.1 | 455.1 | 363.2 | 407.5 |
| | 1957 | 75.2 | 65.8 | 70.4 | 2903.7 | 2183.2 | 2533.7 | 436.6 | 336.7 | 385.3 |
| | 1958 | 83.3 | 74.2 | 78.6 | 2992.3 | 2432.9 | 2707.3 | 444.8 | 368.3 | 405.6 |
| 20-24 | 1956 | 266.1 | 76.4 | 159.9 | 7930.9 | 2743.5 | 5077.6 | 1253.7 | 409.6 | 782.4 |
| | 1957 | 262.4 | 74.8 | 156.8 | 7382.1 | 2524.9 | 4719.0 | 1202.4 | 382.4 | 742.6 |
| | 1958 | 267.8 | 85.1 | 166.8 | 7654.2 | 2674.4 | 4959.1 | 1238.2 | 411.8 | 782.6 |
| 25-29 | 1956 | 160.2 | 40.9 | 98.1 | 5166.3 | 1393.1 | 3100.6 | 697.3 | 200.8 | 437.5 |
| | 1957 | 152.2 | 38.2 | 93.0 | 4704.2 | 1248.0 | 2829.7 | 651.7 | 182.3 | 406.7 |
| | 1958 | 156.9 | 39.6 | 96.2 | 4876.9 | 1435.8 | 3026.3 | 684.0 | 207.3 | 436.3 |
| 30-34 | 1956 | 90.8 | 23.6 | 55.9 | 2769.3 | 690.5 | 1654.0 | 368.7 | 97.3 | 227.3 |
| | 1957 | 88.8 | 22.1 | 54.2 | 2659.8 | 648.4 | 1573.7 | 355.6 | 92.3 | 218.5 |
| | 1958 | 99.7 | 25.7 | 61.4 | 2819.6 | 711.2 | 1675.1 | 381.1 | 103.5 | 236.8 |
| 35-39 | 1956 | 52.0 | 16.9 | 33.8 | 1383.2 | 356.7 | 833.8 | 180.2 | 51.8 | 113.5 |
| | 1957 | 53.4 | 15.7 | 33.8 | 1365.0 | 340.6 | 817.8 | 181.8 | 49.3 | 112.9 |
| | 1958 | 55.4 | 17.3 | 35.7 | 1420.3 | 363.3 | 857.3 | 191.2 | 53.6 | 119.6 |
| 40-44 | 1956 | 30.2 | 9.6 | 19.6 | 596.4 | 169.3 | 368.9 | 85.8 | 26.4 | 55.3 |
| | 1957 | 29.1 | 8.6 | 18.6 | 589.5 | 151.3 | 355.5 | 83.2 | 23.4 | 52.4 |
| | 1958 | 30.6 | 11.2 | 20.6 | 680.8 | 178.2 | 411.6 | 92.0 | 28.2 | 59.1 |
| 45-49 | 1956 | 18.8 | 7.1 | 12.8 | 296.1 | 95.2 | 192.2 | 45.2 | 15.8 | 30.3 |
| | 1957 | 18.4 | 6.3 | 12.2 | 290.7 | 80.5 | 181.0 | 44.6 | 13.8 | 28.8 |
| | 1958 | 19.7 | 7.2 | 13.3 | 330.8 | 92.7 | 205.7 | 49.9 | 16.0 | 32.5 |
| 50+ | 1956 | 5.8 | 1.7 | 3.7 | 77.2 | 30.4 | 53.3 | 11.6 | 3.9 | 7.6 |
| | 1957 | 6.4 | 1.6 | 3.9 | 73.5 | 23.0 | 47.5 | 11.8 | 3.3 | 7.4 |
| | 1958 | 6.3 | 1.6 | 3.8 | 82.7 | 23.9 | 52.4 | 12.6 | 3.4 | 7.7 |
| Total | 1956 | 44.5 | 17.4 | 30.6 | 1409.4 | 600.2 | 990.8 | 192.4 | 81.7 | 135.7 |
| | 1957 | 42.7 | 16.3 | 29.2 | 1319.1 | 544.2 | 918.6 | 182.4 | 75.1 | 127.4 |
| | 1958 | 44.9 | 18.3 | 31.3 | 1371.5 | 592.1 | 968.8 | 191.2 | 82.6 | 135.6 |

*Excludes Alaska and Hawaii.
**Includes race and sex not stated.

TABLE 12

REPORTED CASES OF CONGENITAL SYPHILIS, BY AGE
UNITED STATES

| Age | 1956 | | 1957 | | 1958 | | 1959 | |
|---|---|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 0 - 1 Year | 127 | 4.1 | 108 | 3.3 | 117 | 4.0 | 98 | 3.8 |
| 1 - 4 Years | 39 | 1.3 | 47 | 1.4 | 44 | 1.5 | 26 | 1.0 |
| 5 - 9 Years | 137 | 4.4 | 114 | 3.5 | 66 | 2.3 | 33 | 1.3 |
| 10 Years & Over | 2,795 | 90.2 | 2,998 | 91.8 | 2,694 | 92.2 | 2,417 | 93.9 |
| Total, Known Age | 3,098 | 100.0 | 3,267 | 100.0 | 2,921 | 100.0 | 2,574 | 100.0 |
| Unknown Age | 2,437 | | 2,185 | | 1,918 | | 2,641 | |
| GRAND TOTAL | 5,535 | | 5,452 | | 4,839 | | 5,215 | |

CASES UNDER 1 YEAR OF AGE

Case rates of congenital syphilis under 1 year of age per 10,000 live births was estimated in fiscal year 1956 to be 0.6, in 1957 to be 0.4, in 1958 to be 0.5 and in 1959 to be 0.5.

INFANT MORTALITY DUE TO SYPHILIS - See Table 3

# PENICILLIN IN THE TREATMENT OF SYPHILIS

## CONGENITAL SYPHILIS

Procaine penicillin G in oil with 2-percent aluminum monostearate (PAM) or aqueous procaine penicillin G in a total dosage of 100,000 u/kg. of body weight, given in divided doses at 2 or 3 day intervals, or benzathine penicillin G in a single injection of 50,000 u/kg. of body weight are the recommended schedules of treatment for early congenital syphilis (less than 2 years). Late congenital syphilis is treated with the same schedules as for comparable manifestations of acquired syphilis.

The earlier penicillin therapy is instituted for congenital syphilis, the more satisfactory the results. This is apparent from Table 13, which shows results 18-21 months after treatment by child's age at time of treatment. All types and amounts of penicillin are included.

TABLE 13

RESULTS OF PENICILLIN THERAPY FOR EARLY CONGENITAL SYPHILIS, 18-21 MONTHS POSTTREATMENT, BY AGE OF CHILD AT TIME OF TREATMENT

| Age at Time of Treatment | Number | | Percent | | Failure | |
|---|---|---|---|---|---|---|
| | Treated | Observed | Seronegative | Seropositive | Serologic | Clinical |
| Under 3 Months | 107 | 38 | 92.1 | - | 1.7 | 6.2 |
| 3-5 Months | 139 | 52 | 95.1 | 3.8 | 1.1 | - |
| 6-11 Months | 96 | 44 | 80.7 | 17.9 | - | 1.4 |
| 12-24 Months | 130 | 47 | 42.4 | 52.6 | 5.0 | - |

## EARLY SYPHILIS

Benzathine penicillin G and PAM are the most widely used penicillin preparations for the treatment of early syphilis. Since benzathine penicillin G maintains a detectable blood level for a much longer period of time than PAM, a smaller total dosage is required for satisfactory results. The recommended schedules are 2,400,000 units of benzathine penicillin G administered in a single session (1,200,000 units in each buttock) of 4,800,000 units of PAM,

2,400,000 units at first session, and subsequent injections of 1,200,000 units given at 2 or 3 day intervals. If aqueous procaine penicillin G is used, the total dosage is 4,800,000 units administered in daily injections of 600,000 units.

Results of treatment for secondary syphilis with benzathine penicillin G and PAM are shown in Table 14.

TABLE 14

PENICILLIN IN THE TREATMENT OF SECONDARY SYPHILIS

Results 2 years following Treatment

| Schedule of Treatment | Total Cases | Cumulative Percent Retreated | | | Percent Seronegative* |
|---|---|---|---|---|---|
| | | Total | Clinical or Serologic Failure | Reinfection | |
| Benzathine penicillin G 2,500,000 units 1 injection | 155 | 5.5 | 0.9 | 4.6 | 94.5 ± 2.4 |
| Procaine Penicillin G and Aluminum Monostearate 4,800,000 units | | | | | |
| Single session | 166 | 7.7 | 3.8 | 3.9 | 91.0 ± 2.6 |
| 2-4 sessions | 415 | 11.7 | 7.8 | 3.9 | 88.3 ± 2.1 |

*Or less than 4 Kahn units

## NEUROSYPHILIS

A cooperative study conducted by the Public Health Service and leading neurosyphilologists in the United States has demonstrated that penicillin is the most effective treatment yet known for neurosyphilis.

Asymptomatic neurosyphilis - Among 765 patients with asymptomatic neurosyphilis, approximately 75 percent of whom were treated with a minimum of 4,800,000 units of penicillin, only one bona fide progression to symptomatic neurosyphilis was observed; eleven other patients exhibited minor neurologic changes. In contrast, among 467 patients treated with metal chemotherapy, 29 progressed to symptomatic neurosyphilis and an additional 15 showed minor neurologic changes.

Paresis - Six hundred and twenty-nine patients were treated for paresis with penicillin only, 60 percent of whom received a minimum of 6,000,000 units. Paresis was diagnosed as severe in 330, as moderately severe in 141, and as mild in 158. Five years after treatment, forty-two percent of those with severe psychosis were in remission or showed significant improvement, forty-five percent remained unchanged, and only 13 percent had progressed or died from paresis. Progression or death from paresis occurred in 7.0 percent of those with moderately severe psychosis and in less than one percent of those with mild psychosis. Further proof of the effectiveness of penicillin is the fact that among those who survived, one-third who had been institutionalized and two-thirds of those who had been unable to work at time of treatment, were gainfully employed five years later.

The total recommended dosage of penicillin for both symptomatic and asymptomatic neurosyphilis is 6,000,000 to 9,000,000 units. Any benefit from more than 10,000,000 units is doubtful and has not been demonstrated. Treatment schedules are as follows:

Benzathine penicillin G - 3,000,000-unit sessions at 7-day intervals.

PAM - 1,200,000 units at 3-day intervals.

Aqueous procaine penicillin G - 600,000 units daily.

## SYPHILIS IN PREGANANCY

Congenital syphilis is completely preventable. Adequate treatment of the mother during the first 18 weeks of gestation prevents infection of the baby; adequate treatment after the 18th week cures the baby in utero.

In two studies, comprising 528 infants born to treated syphilitic mothers, approximately 98 percent of the children were nonsyphilitic (Table 15). The percentage varied slightly by stage of mother's syphilis during pregnancy.

In the absence of relapse or reinfection a woman treated with penicillin for syphilis will not require further treatment in the event of pregnancy. The two syphilitic children reported in Table 16 were born to mothers with an unsatisfactory course following treatment for secondary syphilis - one was reinfected, the other experienced a serologic relapse.

TABLE 15

OUTCOME OF PREGNANCY BY STAGE OF SYPHILIS
AT TIME OF MOTHER'S TREATMENT DURING PREGNANCY

| Stage of Disease at Time of Mother's Treatment with Penicillin | Total Live Births | | Nonsyphilitic | | Syphilitic | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| **A. Aqueous Penicillin - 2,400,000 units or more** | | | | | | |
| Primary or Secondary | 160 | 100.0 | 156 | 97.5 | 4 | 2.5 |
| Early Latent | 90 | 100.0 | 89 | 98.8 | 1 | 1.1 |
| TOTAL | 250 | 100.0 | 245 | 98.0 | 5 | 2.0 |
| **B. PAM - One Session - 30,000 - 80,000 units per kilogram** | | | | | | |
| Primary or Secondary | 48 | 100.0 | 45 | 93.8 | 3 | 6.2 |
| Early Latent | 174 | 100.0 | 172 | 98.9 | 2 | 1.1 |
| Late (Latent, CNS, Congenital) | 56 | 100.0 | 56 | 100.0 | 0 | 0.0 |
| TOTAL | 278 | 100.0 | 273 | 98.2 | 5 | 1.8 |
| **Total A and B** | | | | | | |
| Primary or Secondary | 208 | 100.0 | 201 | 96.6 | 7 | 3.4 |
| Early Latent | 264 | 100.0 | 261 | 98.9 | 3 | 1.1 |
| Late (Latent, CNS, Congenital) | 56 | 100.0 | 56 | 100.0 | 0 | 0.0 |
| TOTAL | 528 | 100.0 | 518 | 98.1 | 10 | 1.9 |

TABLE 16

OUTCOME OF PREGNANCY IN WOMEN TREATED FOR SYPHILIS
PRIOR TO, BUT NOT DURING, PREGNANCY

| | Total Live Births | | Nonsyphilitic | | Syphilitic | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Series A | 154 | 100.0 | 153 | 99.4 | 1 | 0.6 |
| Series B | 229 | 100.0 | 228 | 99.6 | 1 | 0.4 |
| TOTAL | 383 | 100.0 | 381 | 99.5 | 2 | 0.5 |

## PENICILLIN IN THE TREATMENT OF GONORRHEA

The presently recommended schedule of treatment for uncomplicated gonorrhea in males is a single intramuscular injection of 600,000 units of PAM; in females, 1,800,000 units of PAM, or 600,000 units of PAM plus 1,200,000 units of benzathine penicillin G (or 1,800,000 units of a new preparation combining procaine G and benzathine penicillin G). The failure to control this disease has resulted, however, in less standardization of treatment for gonorrhea than for syphilis. Reports from 65 clinics representing 19 States, the D. C. and Puerto Rico indicate that schedules routinely employed for uncomplicated gonorrhea in males vary in dosage from 600,000 to 2,400,000 units; and for uncomplicated gonorrhea in females from 600,000 to 3,600,000 units. The schedule most frequently used (for both males and females) is 1,200,000 units of PAM.

The results of a study conducted at Columbia, S. C., where alternate female patients were treated with 600,000 and 1,800,000 units of PAM are shown in Table 17.

TABLE 17

COMPARISON OF 600,000 AND 1,800,000 UNITS OF PAM IN THE TREATMENT OF GONORRHEA IN THE FEMALE

| Results of cultures following treatment | 600,000 units | | 1,800,000 units | |
|---|---|---|---|---|
| | Number | Percent | Number | Percent |
| Positive | 13 | 16.8 | 4 | 3.8 |
| Two consecutive negatives | 58 | 75.3 | 94 | 88.7 |
| Single negative | 6 | 7.8 | 8 | 7.5 |
| TOTAL | 77 | 100.0 | 106 | 100.0 |

## PENICILLIN REACTIONS

Since penicillin is the drug of choice for the treatment of both syphilis and gonorrhea, the Venereal Disease Branch is concerned with the incidence and severity of reactions to penicillin therapy. Through the cooperation of venereal disease clinics two studies have been conducted to determine their frequency -- one in 1954, the other in 1959. The 1959 study was patterned after the 1954 study, the single departure being a request that, if possible, patients be detained in the clinic for a 30-minute period following treatment.

Results of these two studies are shown in Table 18. The 1959 data are based on preliminary tabulations of the first 14,000 reports received. Reactions to penicillin were reported in 9.8/1,000 patients treated in 1959 and in 5.9/1,000 patients treated in 1954. This increase, amounting to 66 percent in the frequency of reactions reported, is attributable, at least in part, to the delay in dismissing patients after treatment. This is evidenced by the fact that the increase is noted only among patients treated on single session schedules. In general, such patients are not seen following treatment but by detaining them in the clinic for a half-hour the clinicians were afforded an opportunity to observe reactions which otherwise would not have come to their attention.

In both studies, urticaria was the most frequent type of reaction, occurring in approximately 5/1,000 patients treated. Moderate to severe anaphylaxis also occurred with approximately the same frequency in 1959 as in 1954, 0.3/1,000 and 0.2/1,000 respectively. However, mild anaphylactoid reactions, generalized pruritis, vertigo or syncope, gastrointestinal disturbances, and chills, fever or headache were reported more frequently in 1959. No fatal reactions occurred during either study period.

TABLE 18

# COMPARATIVE FREQUENCY OF REACTIONS TO PENICILLIN IN 1959 and 1954, BY VARIOUS FACTORS KNOWN TO INFLUENCE THE RATE

Preliminary Tabulation

| | 1959 STUDY | | | 1954 STUDY | | |
|---|---|---|---|---|---|---|
| | Total Cases | Cases Reacting Number | Rate/1,000 | Total Cases | Cases Reacting Number | Rate/1,000 |
| Grand Total | 14,065 | 138 | 9.8 | 19,510 | 116 | 5.9 |
| Epidemiologic treatment | 3,637 | 22 | 6.0 | 3,757 | 10 | 2.7 |
| Gonorrhea | 8,726 | 46 | 5.3 | 12,026 | 29 | 2.4 |
| Syphilis | 1,624 | 67 | 41.3 | 3,442 | 77 | 22.4 |
| Procaine penicillin G in oil | 5,707 | 67 | 11.7 | 12,179 | 97 | 8.0 |
| Benzathine penicillin G | 3,347 | 42 | 12.5 | 7,109 | 17 | 2.4 |
| Single session schedule | 11,983 | 75 | 6.3 | 17,710 | 51 | 2.9 |
| 2-7 day schedule | 1,162 | 23 | 19.8 | 694 | 14 | 20.2 |
| Schedules of 8 or more days | 920 | 40 | 43.5 | 1,106 | 51 | 46.1 |
| Previous penicillin | | | | | | |
| Reacted | 104 | 11 | 105.8 | 121 | 12 | 99.2 |
| Did not react | 12,008 | 109 | 9.1 | 14,214 | 56 | 3.9 |
| No previous penicillin | 1,511 | 10 | 6.6 | 3,750 | 34 | 9.1 |
| White - Male | 1,096 | 14 | 12.8 | 965 | 7 | 7.3 |
| Female | 1,088 | 17 | 15.6 | 670 | 7 | 10.4 |
| Negro - Male | 6,770 | 48 | 7.1 | 9,548 | 32 | 3.4 |
| Female | 5,057 | 59 | 11.7 | 7,738 | 51 | 6.6 |
| 10-19 years of age | 3,031 | 12 | 4.0 | 3,908 | 12 | 3.1 |
| 20-29 | 6,741 | 53 | 7.9 | 9,512 | 37 | 3.9 |
| 30-39 | 2,586 | 29 | 11.2 | 3,674 | 34 | 9.3 |
| 40-49 | 857 | 22 | 25.7 | 1,252 | 21 | 16.8 |
| 50 years and over | 597 | 22 | 36.9 | 1,012 | 11 | 10.9 |

* U.S. GOVERNMENT PRINTING OFFICE : 1960 O—535058