

# Syphilis Reservoir Reduced By Serologic Surveys

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**T**HERE is no lack of evidence that syphilis is being brought under control and is decreasing in importance as a public health problem. Total syphilis cases reported to the Public Health Service dropped from 575,593 in 1943 to 168,734 in 1952; reported cases of primary and secondary syphilis, after rising from 83,204 in 1943 to a peak of 106,539 in 1947, fell to 11,991 in 1952. However, a recent estimate of 2,100,000 persons in the United States who have syphilis requiring treatment should preclude any sense of complacency about the problem.

To the clinician who formerly saw many obvious clinical signs of the disease, syphilis seems to be a disappearing entity. This is especially true of the dermatologist, who previously was quite secure in considering syphilis as a possibility in every differential diagnosis. However, bizarre skin manifestations are increasingly rare, and there is no longer need for specialist care of uncomplicated syphilis.

To the general practitioner, on the other hand, syphilis is becoming more of a problem. He is the one who may expect to see patients with symptoms of early syphilis in areas where special venereal disease clinic facilities are unavailable or scarce. Simplification of therapy has contributed to the shift of patients to him, and he can now give satisfactory treatment to persons with early syphilis. The general practitioner is also the one who may be expected to see the patient with early symptoms of cardiovascular or central nervous system syphilis, as

well as some patients with latent syphilis. Upon his skill depends prevention, in part, of the late, crippling manifestations of the disease.

With so many persons in the general population still in need of treatment for syphilis, alertness to the problem and a high degree of suspicion are essential to continuing reduction in the number of cases. Although in the large majority of patients seen today, syphilis is in a latent stage, many late complications need only to be looked for to be found.

Until recently, case-finding efforts have been directed largely towards finding and bringing to treatment persons with infectious syphilis. However, as the value of current therapy in the prevention and amelioration of disability due to late syphilis has become apparent, the location of cases in later stages has become increasingly important. Concomitantly, the decreasing number of infectious syphilis cases reported has resulted in availability of personnel for case finding of late syphilis.

## The Survey

A useful tool in locating latent and late syphilis cases is the serologic survey. While the productivity of total population surveys in terms of cases found and brought to treatment is decreasing steadily, selective testing of segments of the population known or suspected to have high prevalence rates continues to provide a substantial return for the time, effort, and money expended.

During a 3-month period in 1952, such a survey was made of employees in small industries in southeastern North Carolina, under the sponsorship of the New Hanover County Health Department. A total of 1,244 persons were tested in 26 industrial plants employing from 5 to 168 persons. The majority of these plants were in seasonal operation, using unskilled or semi-skilled labor, largely Negro.

Of the 1,244 persons tested, 192 (15.4 percent) were positive reactors. While this high reactivity rate is indicative only of the selectivity of

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the sample, the value of the survey rests in the number of patients diagnosed and treated among the reactors found.

All of the 192 reactors were examined by private physicians or in the local health department clinic. Ten patients were found to be false-positive reactors by history, physical examination, and repeat serologic testing. One patient was lost to followup. The remaining 181 patients were diagnosed as having syphilis.

A history of previous treatment was given by 139 patients; 40 patients denied previous therapy; for 2 patients, it was impossible to determine whether prior therapy had been given. Treatment status was confirmed by private physicians, rapid treatment centers, local health departments, and prisons where treatment had been administered.

The following rather rigid criteria were used to evaluate the adequacy of therapy received by patients reporting previous treatment.

1. Arsenic and bismuth therapy only: Less than 20 injections of each drug on a fairly regular schedule was classified as inadequate.

2. Penicillin therapy: Less than 3,000,000 units total therapy was classified as inadequate. No patients fell into this category.

3. Evidence of progression of disease by physical examination, history, or spinal fluid activity (increased cell count, elevation of protein, or by a change in serologic test results from negative to positive).

4. A significant rise in blood serologic titer. No patients fell into this category.

Based on these criteria, therapy of 83 (60 percent) of the 139 patients previously treated was adjudged adequate. Treatment of the remaining 56 patients (40 percent) was considered inadequate and they were placed under penicillin therapy. In addition, the 40 patients who gave no history of previous treatment were brought to treatment. Thus, 96 patients were given needed therapy as a direct result of the testing program.

Of the 96 patients treated, 17 presented evidence of active cardiovascular syphilis or symptomatic neurosyphilis; aneurysmal dilatation of the aorta was seen by X-ray in 7 of these. Of the remaining 79 patients, all of whom were

treated for latent syphilis, 32 (41 percent) had active spinal fluids leading to a subsidiary diagnosis of asymptomatic neurosyphilis. This latter group, perhaps, provided the most immediate gain from the survey, as they were all potential candidates for symptomatic neurosyphilis in the near future.

The percentage of patients with late complications of syphilis was essentially the same in the untreated and in the inadequately treated groups. This is significant because in such testing programs locating inadequately treated cases must be considered as of equal importance with finding new cases. To the physician, this finding emphasizes the need for critical evaluation of the patient who gives a history of previous treatment for syphilis.

## Conclusions

From the data presented above, it may be concluded that:

1. A sizable reservoir of syphilis cases in need of treatment is still present in the general population. More effort is required to find them than heretofore.

2. Selective serologic testing of suspected high-prevalence groups will yield considerable numbers of syphilis cases, most of which will fall into the late syphilis category.

3. Serologic testing discovers inadequately treated patients as well as those who have never received treatment. Locating inadequately treated patients must be considered an important gain, as they are as likely as untreated patients to become disabled or a burden to the community.

4. While late complications of syphilis are decreasing in prevalence, there are still substantial numbers of patients who present physical signs and symptoms of progression of the disease.

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