

# Blitz on Syphilis in Alabama

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**T**HE RESURGENCE of syphilis in the United States in the years 1957-65 demands that every public health agency, and also private medicine, redirect their combined efforts to combating the steadily rising incidence. In Alabama, where the number of reported cases of primary and secondary syphilis has increased each year since 1959, the rate of increase was three times greater than the national rate of increase for the years 1957-65 (fig. 1).

Because the increases in Alabama reflected reported infectious syphilis morbidity for the entire State, the staff of the Alabama Department of Public Health made a detailed analysis of the data to pinpoint the population groups within which increases were most pronounced. Contrary to the urban trends in many other States, increases in Alabama since early 1964 have also occurred in rural areas (fig. 2). As a result, the concept of a blitz on syphilis was created.

## Method

The syphilis blitz is an intensive campaign to effect rapid examination and treatment of named contacts of persons already infected with syphilis or to prevent development of the disease in contacts who have been exposed to infectious persons while these persons were infectious. Because of exposure to the disease, any member of the second group of contacts whose serologic

tests upon his initial examination are found to be negative is advised to accept treatment (2.4 million units of benzathine penicillin G or an alternate antibiotic). Evidence of exposure is subsequently confirmed through confidential epidemiologic interviews with both patients and their contacts.

A blitz is directed to any specific area of the State which evidences one or a combination of the following surveillance factors over a relatively short period:

1. Requests for epidemiologic tracing of several persons with addresses in the area who have been named as contacts of persons with a diagnosis of early syphilis. (The persons with diagnosed cases may reside in the area or in other health jurisdictions.)
2. Laboratory reports showing high titers in serologic tests for a number of persons in the area.
3. Several cases of early syphilis being reported by the health department or by physicians within the area.

Since the Alabama Department of Public Health is the central clearinghouse for all morbidity and epidemiologic data, its staff compare any or all of these three factors, or others, with similar data for the specific area for previous periods. Therefore the department is usually the agency which determines whether a blitz is needed. It also initiates the total operation, from preliminary planning to actual supervision, and to a marked degree carries out the prescribed procedures.

Initially, in the preliminary planning, ap-

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proval is obtained from the local medical society and the individual county board of health. Approval hopefully implies a commitment of cooperation and, within practical limitations, virtually active participation on the part of the sanctioning agencies. Next, detailed clinic arrangements are made with the county health officer. Services of a nurse or nurses are requested.

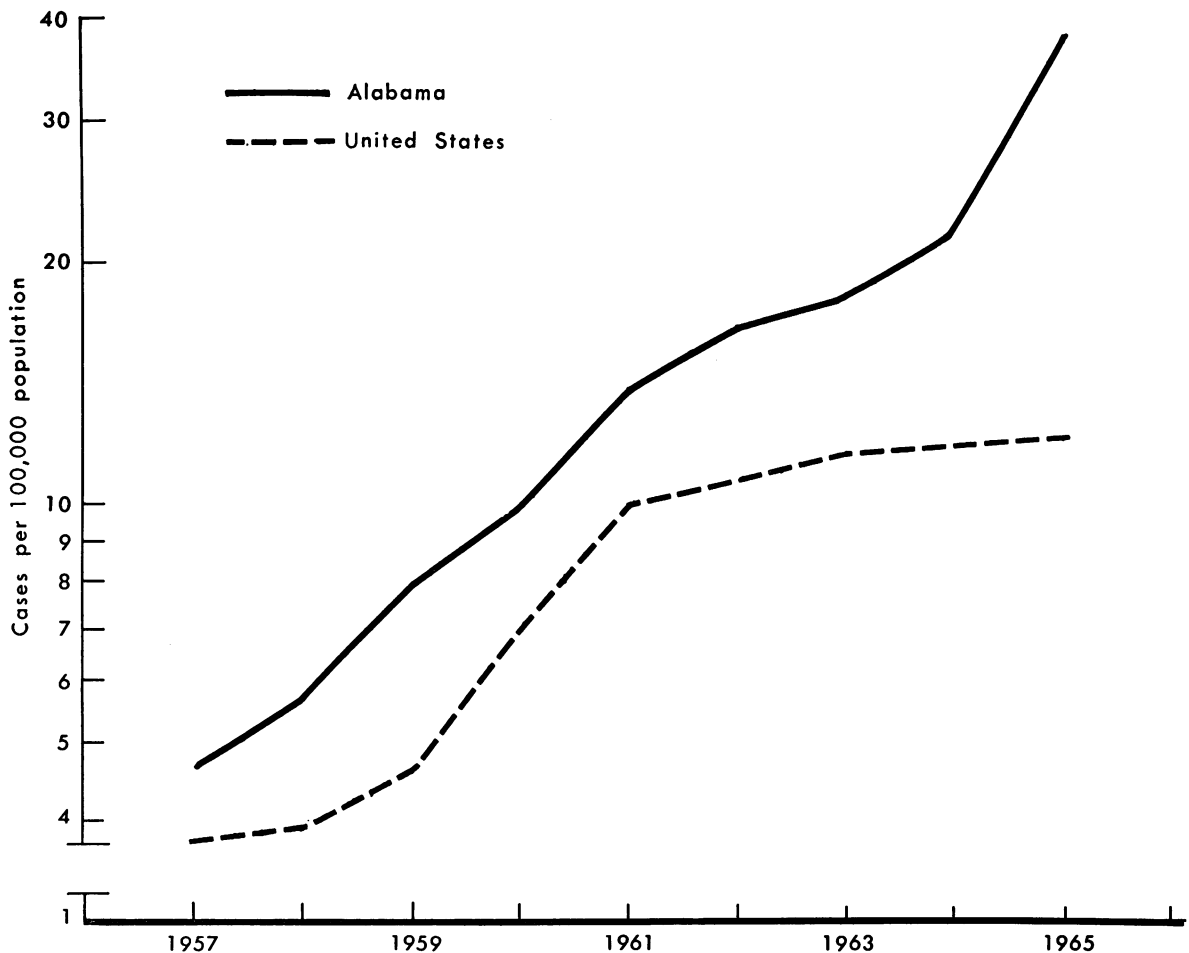
Two waiting rooms are desirable, one for persons awaiting examination and treatment and the other for persons awaiting an epidemiologic interview and post-treatment observation. By separating these two groups, ideas of painful injections are not magnified, false histories by patients of drug sensitivity or allergic reactions are reduced, and expressions of fright and other emotional situations tend to be eliminated.

Also, penicillin-treated patients are kept under constant observation for 30 or more minutes before being dismissed from the clinic. Observations can also be made in both waiting rooms of the persons who apparently have accompanied patients to the clinic. Such observations may be valuable in the ensuing epidemiologic exploration.

Two examining rooms, one for male and one for female patients, reduce the amount of clinic time for each patient since the physician performing the examinations can move from one room to another. Preliminary arrangements must be made so that an ample supply of drugs and other miscellaneous clinic materials, including medical and epidemiologic record forms, are on hand.

Two days before the first scheduled clinic, a

**Figure 1. Primary and secondary cases of syphilis in Alabama and the United States, fiscal years 1957-65**



team, usually comprised of two to six health program representatives who are well trained and experienced in the method of epidemiologic investigation for venereal disease, fans out from the area health department to the assigned sections of the community which are to be blitzed. Their primary functions, which for the most part are determined by the preliminary surveillance factors, usually include:

1. Requesting permission from private physicians to interview all patients with recently reported cases of syphilis.

2. Interviewing all persons with recently reported cases to elicit names of contacts and suspects, whether cases were reported by public agencies or private physicians.

3. Tracing all named contacts and referring them for examination to the physicians of their choice or to the respective health department.

4. Referring all persons in the community with recent reactive serologic tests for syphilis to their physicians or health departments.

5. Visiting private physicians to determine if they have treated persons for syphilis whom they have not reported to the health department.

Visits to private physicians help spread the epidemiologic net to cases which might otherwise be overlooked. More important, such visits provide each physician in the community with information about all aspects of the blitz and serve as a means of enlisting his support.

The success of an intensive campaign on syphilis depends upon the persuasiveness of the personnel. Some effective approaches used in discussing the Alabama campaigns or in referring persons for examination include comments on these subjects:

1. The current extent of syphilis in the community.

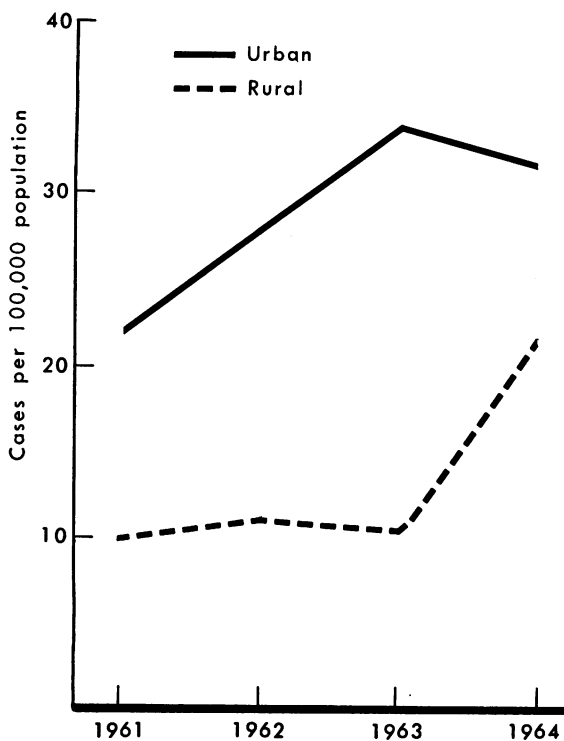
2. The procedures in force to safeguard confidential information and preserve the patient's status in his family, socially, at work, and in the community.

3. The fact that a medical specialist in syphilology conducts the clinic and is available to local physicians for consultation.

4. The seriousness of syphilis, its possible debilitating effects, and the urgency for curative or preventive therapy.

5. The arrangement of special clinic hours

**Figure 2. Primary and secondary cases of syphilis in urban and rural areas of Alabama, fiscal years 1961-64**



NOTE: Date of onset of 10 cases in the primary stage and of 1 early latent case was unknown.

for persons who cannot attend during regular hours. (Clinics are held in the evenings and on Saturdays and Sundays.)

Within the clinic, the identity of each person to be examined is confirmed, a medical record is prepared, blood is drawn for an immediate RPR (rapid plasma reagin) card test and for a VDRL (Venereal Disease Research Laboratories) serologic test for syphilis. For the clinician's benefit, the following information is recorded on the clinic records: the RPR card test results, the person's date of exposure to syphilis, and the diagnosis of the person to whom the contact was allegedly exposed.

Each person to be examined undresses completely; nurses are continually in attendance for female patients. Physical checking is always done in this order: hair (any wig is removed to determine whether patient evidences alopecia areata), gums, mouth, throat, all lymph areas, skin (including palms of the hands and soles of the feet), genitalia, and rectum.

**Table 1. Initial cases of syphilis reported in five blitzes in Alabama, by area and length of blitz, April–August 1965**

Geographic area (county and principal city)	Population	Length of blitz (days)	Cases				Per 100,000 population
			Total	Primary	Secondary	Early latent	
Montgomery (Montgomery)-----	155,700	8	66	41	13	12	42.4
Etowah (Gadsden)-----	76,800	4	44	27	15	2	57.3
Escambia (Atmore)-----	17,500	3	18	11	6	1	102.9
Morgan (Decatur) and Limestone (Athens)-----	53,100	9	56	20	25	11	105.5
Covington (Andalusia)-----	18,400	2	12	8	4	0	65.2
All areas-----	321,500	26	196	107	63	26	61.0

Any suspicious lesions are examined by dark-field microscopy. When new infections are discovered upon examination, the infected persons are interviewed to elicit names of contacts and suspects. The clinician urges the patients to name all their contacts, reemphasizing that such information is treated confidentially. Most of the infected are treated with 2.4 million units of benzathine penicillin G. Contacts whose clinical and serologic test results are negative but who have been exposed to an infectious person within that person's period of infectivity are advised to accept 2.4 million units of penicillin G as preventive treatment. An alternate antibiotic is available for persons for whom penicillin is contraindicated.

All contacts named are interviewed to take advantage of their knowledge about persons in their social group who may have suspicious lesions or who may be having sexual contact with other persons in the community known to have syphilis. (This tracing of infectious syphilis

through a patient's or his contacts' associates is the well-known cluster procedure.) Persons with a new infection are given an appointment to meet with the public health representative in 5 days for a reinterview.

At the end of each examination, the clinician completes a medical record and morbidity report. The public health representative completes all epidemiologic records at the end of each interview with an infected person or a named contact. Every attempt is made to trace and refer for examination within 24 hours all the named contacts and all the suspects residing in the blitz area. The idea is to uncover every case of syphilis in the given community within a very short period by mounting a concerted, organized epidemiologic attack.

### Results

By the end of August 1965, the Department of Public Health of Alabama had conducted blitzes on syphilis in five different areas of the State. In these blitzes, 739 contacts of 196 initial patients with primary, secondary, or early latent syphilis were examined (table 1). These contacts yielded 68 primary, 33 secondary, and 12 early latent cases. Approximately two-thirds of the contacts were examined within 24 hours.

Syphilis was diagnosed in the primary stage in 60 percent of the 93 women with clinical evidence of the disease (table 2). In the Alabama statewide program in fiscal 1965, syphilis in the primary stage was diagnosed in 37 percent of the women with clinical manifestations. For men,

**Table 2. Initial cases of syphilis reported during five blitzes in Alabama, by stage of disease and sex of patients, April–August 1965**

Stage of disease	Men	Women	Both sexes
Primary-----	51	56	107
Secondary-----	26	37	63
Early latent-----	12	14	26
Total-----	89	107	196

**Table 3. Spread of syphilis according to stage of the infector's disease, Alabama, fiscal year 1965**

Stage of syphilis	Cases diagnosed among—		Cases spread per 100 interviewed patients	Cases with no known source or spread
	Interviewed patients (infectors)	Contacts of interviewed patients		
Primary-----	456	231	51	43
Secondary-----	466	351	75	50
Early latent (under 1 year)-----	317	276	87	43

the difference in the proportion of clinical cases diagnosed in the primary stage in these two efforts was not statistically significant. During the five blitzes, syphilis in the primary stage was diagnosed in 66 percent of the 77 men with clinical evidence of the disease, while during fiscal 1965 in the Alabama statewide program primary syphilis was diagnosed in 59 percent of the men with clinical manifestations.

The significant relationship between the rapid examination of female contacts and the unusually high proportion of cases diagnosed in the primary stage in women demands further investigation. In Alabama, there is markedly less spread of syphilis by persons in the primary stage of the disease than by those in the secondary stage (table 3).

During the five blitzes, a total of 242 male and female contacts, or 81 percent of the contacts who had been exposed within the 4 months preceding their examinations, were epidemiologically treated (table 4).

Of 58 additional contacts who were exposed during the last 4 months of the blitzes but had not been treated by the end of these campaigns, 40 were located and subsequently examined. The health officer or private physician elected to follow these 40 contacts serologically for 90 days. Also, 112 contacts who had been exposed more than 4 months earlier were examined, but no therapy was given if the results of the clinic examination and serologic tests were negative.

Only 19 persons, or 7.8 percent of 242 contacts, had a history of sensitivity to penicillin and were treated with an alternate antibiotic—erythromycin estolate orally for 20 days.

Ninety-one percent of the contacts of persons with primary or secondary syphilis were brought to examination. Of the 647 contacts examined, 14.7 percent were brought to treatment. The number of contacts brought to treatment for syphilis per 100 interviewed patients with primary or secondary cases was 56 in the primary or secondary stage and 6 in the early latent stage. In addition, five cluster suspects were brought to treatment in the primary or secondary stage. Of 170 persons with primary and secondary cases, no source or contact to whom the interviewed patient had spread the disease was identified.

Of the 26 patients with early latent cases who were interviewed, 6 contacts with primary or secondary syphilis and 1 contact with syphilis in the early latent stage were brought

**Table 4. Epidemiologic results achieved with contacts named by 196 patients with syphilis during five blitzes in Alabama, by diagnosis of the interviewed patient, April–August 1965**

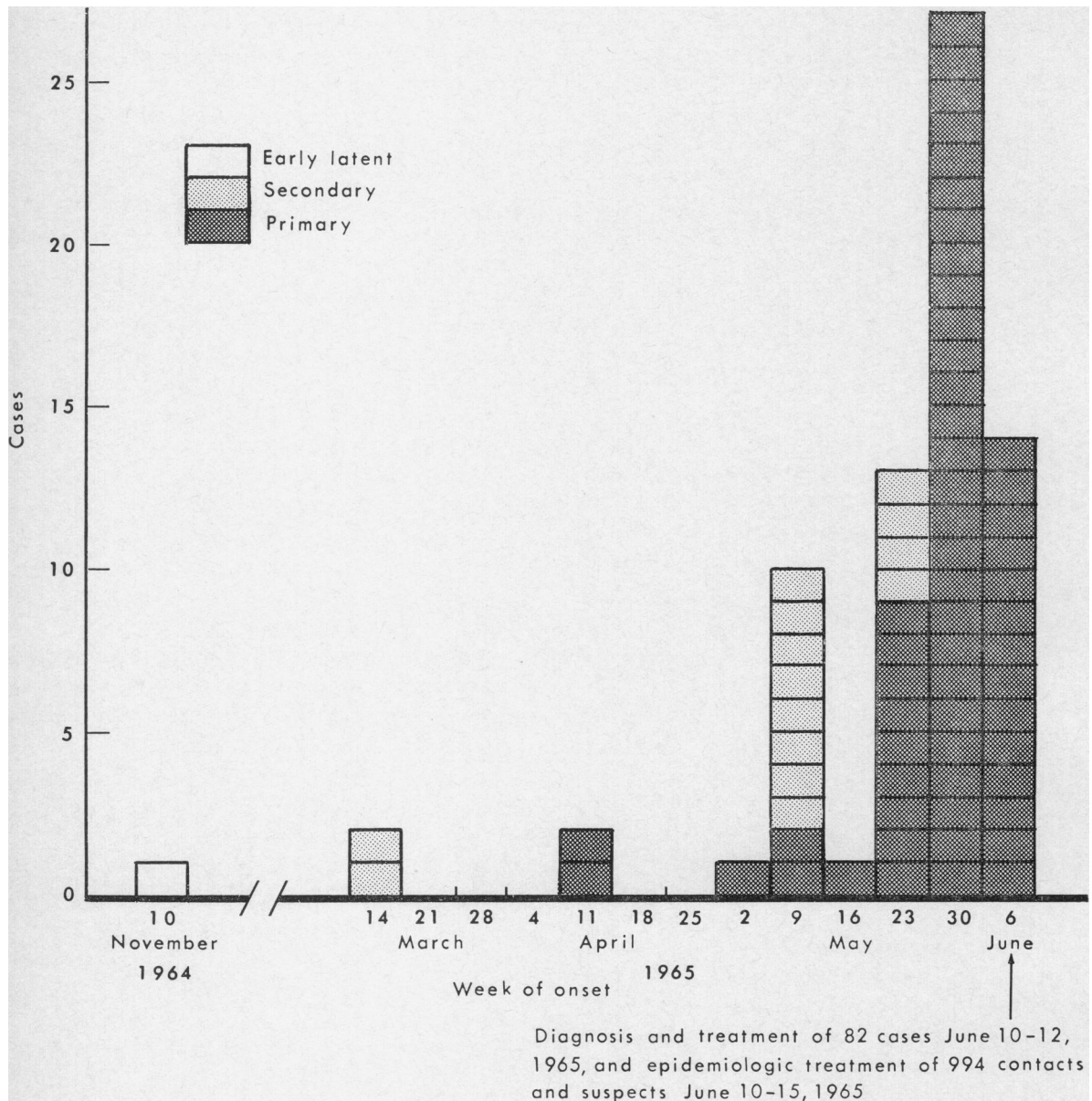
Epidemiologic status of contacts	Number infected by patients with diagnosis of—			
	Primary or secondary syphilis	Early latent syphilis (under 1 year)	All diagnoses	
			Total number	Percent <sup>1</sup>
Examined-----	647	92	739	100.0
Brought to treatment--	95	7	102	13.8
Syphilis diagnosis—				
Primary-----	64	4	68	<sup>2</sup> 66.7
Secondary-----	31	2	33	<sup>2</sup> 32.3
Early latent-----	0	1	1	<sup>2</sup> 1.0
Previously treated----	183	30	213	28.8
Exposed within the 4 months preceding examination-----	266	33	299	40.5
Treated epidemiologically-----	213	29	242	<sup>3</sup> 80.9

<sup>1</sup> Percent of the 739 examined contacts unless otherwise noted.

<sup>2</sup> Percent of the 102 contacts brought to treatment.

<sup>3</sup> Percent of the 299 contacts exposed within the 4 months preceding examination.

**Figure 3. Infectious syphilis epidemic in an Alabama prison population during fiscal year 1965**



to treatment. One cluster suspect whose name was elicited from a patient with an early latent case was also brought to treatment for primary syphilis.

Each of the five blitzes required one clinician, one nurse, one clinic supervisor, and a team of two to six interviewer-investigators. The five blitzes took 26 days, ranging from 2 to 9 days each.

### Blitzing a Prison

The disease eradication procedure described was used also in 1965 with a captive population—1,076 inmates of a prison. Syphilis had occurred sporadically among the prisoners for several years, but epidemiologic procedures had not been productive because the infected tended to name contacts in the prison whose cases had been previously diagnosed and treated. Yet

syphilis cases were occasionally diagnosed at the prison clinic. All inmates are serologically tested upon admission to this maximum-security facility, and treatment is provided when indicated. Therefore any single or sporadic occurrence of cases almost certainly results from persons incubating syphilis and subsequently developing and spreading the disease after admission.

In early 1965, the blood specimens of a number of prisoners reacted positively in tests for syphilis and showed high dilutions. When subsequently six primary cases and one secondary case were diagnosed at the prison clinic, the staff of the Alabama Department of Health decided on June 9, 1965, to blitz on the following day. On June 10, 1965, the department therefore dispatched a team consisting of one physician and six investigators to the prison.

During the next 2½ days, 82 cases of infectious syphilis were diagnosed and the patients treated; 209 contacts were epidemiologically treated. The 82 cases represented an alarming epidemic attack rate of 7.6 percent (fig. 3). During the succeeding 1½ days, the remaining 785 prisoners were prophylactically treated, and each was given either the penicillin treatment or treated with the alternate antibiotic.

Since 3 percent of the 1,076 prisoners treated had a history of sensitivity to penicillin, they were given erythromycin estolate. Of the 1,040 prisoners treated with benzathine penicillin G, 3 of them, or 0.3 percent, experienced minor reactions.

The prison authorities plan to continue examining each newly admitted prisoner for syphilis and have agreed to administer 2.4 million units of benzathine penicillin G or an alternate antibiotic even if the serologic test for syphilis is nonreactive. These procedures will be applied to any prisoners coming in for the first time as well as to prisoners who have used a temporary pass to leave the prison. If the prisoner cannot be treated at the moment of entry, he will be placed in isolation until treatment can be given.

During the year following the blitz, not one case of syphilis was diagnosed in the prison.

Intensive attacks on syphilis, such as the

blitzes in Alabama, provide an opportunity to reduce the spread of the disease within a community and ultimately to control and eradicate it.

### Summary

In five blitzes on syphilis, the Alabama Department of Public Health brought a significant number of persons, particularly women, to treatment in the primary stage of the disease. In these campaigns, conducted from April through August 1965, syphilis was diagnosed in the primary stage in 60 percent of the women with clinical evidence of the disease. In the Alabama statewide program during fiscal 1965, cases were diagnosed in the primary stage in only 37 percent of the women with clinical manifestations. Alabama data for fiscal 1965 indicate that in the primary stage spread of the disease to others is markedly less than in the secondary stage.

The blitz procedure in syphilis control is an intensive attack on the disease in which efforts are directed at rapid examination and treatment of all named contacts of interviewed patients with syphilis. During the Alabama blitzes, approximately two-thirds of the contacts were examined within 24 hours, and 91 percent of the contacts of persons with primary or secondary syphilis were brought to treatment.

Epidemiologic treatment (2.4 million units of benzathine penicillin G or an alternate antibiotic) was urged upon all contacts whose initial clinical examination and serologic test results were negative but who had been exposed to a person with infectious syphilis within the previous 4 months.

When six cases of syphilis were diagnosed in 1965 among inmates at a maximum-security prison, the health department staff also conducted a blitz there. Within 2½ days, 82 cases were diagnosed (an attack rate of 7.6 percent) and the patients treated; 209 contacts were epidemiologically treated. The remaining 785 prisoners were also given penicillin or an alternate antibiotic. Not one case of syphilis was diagnosed in the prison during the year after the blitz.