

A study was made to determine whether an approach designated as selective gonorrhea epidemiology uncovered enough new cases to warrant the effort. The method is described and the approach constituted 41.4% of those treated for gonorrhea in 1970 at the Norfolk Venereal Disease Clinic.

# Gonorrhea Epidemiology — Is It Worthwhile?

## Introduction

Gonorrhea is the most prevalent reportable communicable disease in the United States and in many other countries throughout the world. It is estimated that more than 2,000,000 cases were treated in this country during the year 1970. The yearly increase in incidence of 14 to 16 per cent over the past 10 years has continued into 1971.<sup>1</sup>

A significant number of infected individuals escape detection because they are asymptomatic.<sup>8</sup> Eighty per cent of females found to have gonorrhea were asymptomatic when diagnosed by routine screening procedures in family planning, cancer detection, obstetrical and gynecological clinics.<sup>2</sup> Also, while it is not generally recognized, *N. gonorrhoeae* was identified in the urethra of 10-20 per cent of male contacts, even though these men were asymptomatic.<sup>3,4</sup> Thus, asymptomatic gonorrhea should be regarded as an important phenomenon of the present pandemic of gonorrhea.

Despite the steady increase in the incidence of gonorrhea, there has been a tendency on the part of public health authorities to minimize and, indeed, to discount the value of the epidemiologic process in the gonorrhea control effort. In the latest issue of the American Social Health Association's publication, *Today's V. D. Control Problem*, only 27.8 per cent of the states and 53.7 per cent of the 45 cities reported data on interviewing of male gonorrhea patients for their contacts. Even so, a high percentage of examined contacts required treatment for a previously unknown gonorrhea infection (42.7% in states and 46.5% in cities).<sup>1</sup> Unfortunately nothing was available in this report concerning interview of females for male contacts. Female gonorrhea patients are seldom interviewed for their contacts since most physicians believe that all infected males become symptomatic and will seek treatment because of their discomfort.

Many reasons have been given for this lack of emphasis on gonorrhea epidemiology: "not enough money and personnel to maintain both a high degree of syphilis epidemiology and at the same time attempt any degree of gonorrhea control"; "control is impossible without better diagnostic tools such as a blood test or an immunizing agent"; "gonorrhea is such a minor venereal disease and treatment is so simple that effort spent on epidemiology is not justified"; "gonorrhea epidemiology doesn't work", etc.

Thus it was felt that a study was in order to determine whether the epidemiologic process uncovered enough new cases to warrant the effort.

## The Study

### Materials and Methods

Because of the enormity of the problem and the short incubation period, the in-depth epidemiologic tech-

niques as applied to syphilis cannot realistically be applied to gonorrhea. An approach designated as selective gonorrhea epidemiology, employing techniques requiring very little extra time and effort on the part of the staff was utilized. It consisted of a short 5-to-8-minute interview of patients 1) to encourage them to bring or send in their contacts or 2) to allow the named contacts to be solicited by phone or letter or 3) if this failed, to initiate one field visit.

For those patients with repeated infections, the interview can be considerably shortened to as little as 3 to 5 minutes to obtain the necessary information.

### *Interview of Females for Male Contacts with Symptomatic Gonorrhea*

The status of male contacts exposed to females infected with gonorrhea was analyzed. Seven hundred and ninety-nine females with laboratory evidence of infection were interviewed and 945 male contacts were obtained. Of these male contacts 112 (11.8%) were not located and were eliminated from the study since their status could not be determined. Of the remaining 833 male contacts discovered by employment of the selective epidemiologic approach, 198 (23.8%) were symptomatic and had not sought medical aid until contacted by the Health Department. One hundred and sixty (80.8%) of the 198 patients who were symptomatic when examined were asymptomatic for periods of 7 to 30 days following exposure. It would thus appear that the upper limits of the incubation need revision upwards.<sup>5-7</sup> One hundred and thirteen (57.4%) of these contacts had their symptoms from 7 to 30 days. Eighty-three (38.5%) required a field visit and 115 (61.5%) were referred by their sex partners as a result of interview. It is important to note that most of these contacts continued their sexual activity even when symptomatic, indicating that whatever discomfort they experienced was not sufficient to cause discontinuance of their sexual activity. It is a matter of conjecture when, or if, these contacts would eventually have reported for examination and treatment.

### *Interview of Females for Male Contacts with Asymptomatic Gonorrhea*

Eighty-two (9.8%) of the 833 male contacts were infected but asymptomatic when examined and remained so until they were treated. Of these twenty-five (30.4%) were

**Table 1—Male Contacts Brought to Treatment by Interview of Female Patients**

Days	0-6	7-13	14-20	21-29	30+	Total
Exposure to exam.	115	54	50	28	33	280
No symptoms	56	18	5	2	1	82
With symptoms	85	43	34	14	22	198

examined from 0 to 7 days after exposure and 40 (48%) were examined 14 to 30+ days following exposure. These asymptomatic males may be regarded as having a prolonged incubation period or as asymptotically infected carriers. Twenty-nine (35%) of these 82 asymptomatic patients were marital contacts with undoubtedly repeated exposures to the gonococcal organism. Examination of these asymptomatic males were performed by inserting a platinum loop about one inch into the urethra and immediately planting on Thayer-Martin culture medium the specimen obtained by scraping the loop against the mucosa. All asymptomatic males were instructed to contact the Clinic in 2 days after the culture specimen was taken. Thirty-five (42.6%) failed to return as instructed and field visiting was initiated. Twenty-seven (32.9%) continued to be asymptomatic from 7 to 30 days between examination and treatment and from 8 to 56 days after exposure. Of the 82 asymptotically infected males 44.0 per cent required no field visits, and due to a lack of interest and skepticism concerning asymptomatic gonorrheal infections, 56.1 per cent required one or more field visits. In every instance the infected patient remained asymptomatic from date of examination to date of treatment. These asymptomatic patients were brought to treatment almost exclusively as the result of the epidemiologic process. They constitute a greater focus of spread than their symptomatic counterparts who traditionally respond more readily and are brought to treatment sooner. Moreover, they are likely candidates for systemic complications since their infection usually is not diagnosed in the early stages.

#### *Interview of Males for Female Contacts*

One thousand, five hundred and fifty-five infected males were interviewed and 2,322 female contacts were obtained. Four hundred and fifty-seven (19.6%) were not located and their status could not be determined. One thousand and forty-five (56%) had laboratory evidence of infection and 820 (44%) received epidemiologic treatment after laboratory tests failed to reveal evidence of infection.

#### *Contacts Not Requiring Treatment*

Two hundred and sixty-six (31.9%) of the 833 male contacts, whose status was analyzed, were treated for gonorrhea prior to being named as a contact. Two hundred and forty-one required no epidemiologic investigation since clinic records revealed recent treatment. Only 25 required field visits which revealed prior treatment from other sources which failed to report the infection to the Health Department.

Two hundred and eighty-seven (34.4%) of the 833 male contacts were examined by urethral loop culture tech-

nique and were found to be not infected. Careful interviewing revealed no history of recent previous treatment. Sixty-nine (24%) were examined under 7 days. Seventy-two (25%) 7 to 14 days and 146 (51%) from 14 to 30 days following exposure. Sixty-one (21%) were marital contacts of which 16 (27%) required field visits.

#### **Summary**

"Selective epidemiology" is an effective technique in gonorrhea control efforts. This technique consists of a short 5-to-8-minute interview of male or female patients encouraging them to bring or send in their contacts for examination and/or treatment. If this fails the named individuals are contacted by phone or letter and only occasionally by field visit. One thousand, five hundred and fifty-five males were interviewed and 2,322 contacts obtained. One thousand, eight hundred and sixty-five (80%) were brought to examination and/or treatment. One thousand and forty-five (56%) had laboratory evidence of infection and 820 (44%) received epidemiologic treatment. Seven hundred and ninety-nine females were interviewed and 945 male contacts were obtained. Eight hundred and thirty-three (88.2%) were located and their status analyzed. Two hundred and eighty (33.6%) were brought to treatment. One hundred and ninety-eight (23.7%) had symptoms and 82 (9.8%) were asymptotically infected. Two hundred and eighty-seven (34.4%) with no previous treatment, were not infected and 266 (31.9%) were previously treated. Of the 833 male contacts only 24.9 per cent required field visits. Patients brought to treatment as a result of the selective epidemiologic process constituted 41.4 per cent of the total gonorrhea patients treated in the Norfolk Venereal Disease Clinic in 1970.

#### **References**

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