THE CONTROL OF VENEREAL DISEASE IN THE UNITED STATES

Note submitted by the Government of the United States of America

Introduction

The following material on certain communicable diseases is submitted in response to a request from the Director-General of the World Health Organization, drawing attention to resolutions of the Fifth World Health Assembly and the Tenth Session of the Executive Board. The appropriate resolutions indicate a desire to compare the costs and efficacy of various types of control procedures according to experience. In those instances where costs and efficacy are available, they are recorded. However, those instances are few because of several factors.

The decrease in incidence of communicable diseases is due to the interplay of many factors, some of which are not control procedures directed against specific diseases but rather due to a variety of social and economic changes which have taken place independently. One is reminded of the statement of the late Dr. Stiles in commenting upon health improvement in southern states:

"In brief summary, I conclude that the public health advancement of the South since 1901 has been absolutely marvellous; far more wonderful than can be well appreciated by persons who are unfamiliar with the conditions at the beginning of this century. As important factors in this change I would mention in particular: Mr. John D. Rockefeller, who financed the hookworm campaign of 1908-1912; Mr. Henry Ford, who made the automobile democratic and thus inspired the improvement of highways; the World War, which resulted in so much anti-malarial work and improved sanitation; the cotton mills, which have improved the living conditions of tens of thousands of inhabitants; the greatly improved hotels, which have made travel safer.

1 See documents: A6/Technical Discussions/Tuberculosis/10
   Typhoid/7

2 Hookworm Disease in Certain Parts of the South
V.24 (2), February 1932
Control campaigns are rarely based upon a single method but generally are a combination of several techniques, the relative value and costs of each cannot be assessed.

The cost of control of a specific disease must consider a number of items not included in the categorical budget; for example, assistance is given by health administrations at all levels of government, private and governmental medical care, and general health education through the press and radio.

The material presented herein is based primarily on the methods of control used in the United States. Undoubtedly these methods of disease control may be inapplicable or would need considerable modification before application to other parts of the world.

One of the most useful guides to the control of communicable diseases is the booklet of the Committee of the American Public Health Association. This publication summarizes the present thinking in the United States about methods of control of communicable diseases.

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3 Control of Communicable Disease in Man Report of a Committee of the American Public Health Association, Reprint No. 1697 of the Public Health Reports, 1950
The national venereal-disease-control programme as we know it today was launched in the United States during fiscal year 1939. Accomplishments of the programme to date include a sharp decline in the incidence and reported morbidity of syphilis, and substantial reductions in disability and mortality due to syphilis. For example, the syphilis mortality rate in the United States in 1939 was 11.1 per 100,000 population. Since then, there has been a steady decline in syphilis deaths and the syphilis death rate reached a new low of 4.6 per 100,000 population for the year 1951. Similarly, first admissions to mental hospitals due to syphilis have been consistently reduced as a result of the control programme. An inkling of the tremendous economic savings attained by our syphilis control programme may be gathered from the following health economics: if the rate of first admissions to mental institutional care because of syphilitic psychoses was still at the level of 6.6 per 100,000 population, where it had been for several years before the national venereal-disease-control programme was established, there would have been admitted to State mental hospitals during 1950, 9,914 patients with psychoses due to syphilis instead of only 3,751 cases which were actually admitted. The difference between these two figures represent the admissions saved that year, namely 6,163. Since the average patient stay in a mental institution is about 10 years, at the current maintenance cost of $790 a year, these 6,163 patients which were saved would have cost the American public more than $49,000,000 in total for maintenance in institutions. This saving from syphilitic mental disability alone far exceeds the total appropriations for venereal-disease-control programmes during that year. (See Exhibit I)

It is anticipated that further savings will be effected by continuation of the national venereal-disease-control programme since a reduction in late syphilis may be anticipated from current decreases in the incidence of syphilis. For example, the reported case rate of primary, secondary, and early latent syphilis in 1947 was 152.0 per 100,000 population, and fell steadily to a new low of 33.1 cases per 100,000 population in 1952.

At first efforts were largely devoted to finding and treating cases in the large syphilis reservoir. Mass blood testing was then a very effective case-finding technique and yielded as many or more patients than the existing clinics could handle.
As time went by and mass blood testing had screened out thousands of cases of syphilis in many areas it became apparent to venereal-disease-control officers that this device naturally became less effective when repeated in the same area. Sharper tools for case-finding had to be devised.

It was also realized that although mass blood testing was still effective in detecting and bringing to treatment syphilis cases in the reservoir, the venereal-disease-control programme had not up to this time been finding enough cases of infectious syphilis. Since each case of infectious syphilis represents a focus of infection from which many new cases are spread, priority was given to case-finding devices which discovered early cases. Subsequently, the flow of new cases into the reservoir was gradually reduced.

The two new case-finding techniques were public education and contact investigation. Public education aimed specifically to teach the public the suspicious signs of primary and secondary syphilis. All channels of communication and public information were utilized to deliver the message concerning the appearance of early infectious syphilis, especially to groups with known high prevalence rates. The advice that syphilis treated in the early stage was easy to cure, and information concerning the availability of clinic diagnosis and treatment were included in the message. This method of pin-pointing venereal-disease education with a specific message was an effective case-finding device, and more than half of the early cases coming to clinics in the United States now report on their own initiative.

The second case-finding technique developed is the process known as contact investigation. This procedure in its simplest terms consists of interviewing all cases of infectious syphilis to secure the names of all sex contacts from whom the infection may have been contracted and to whom the infection may have been spread. After the names are obtained, each contact is investigated as soon as possible by telephone, telegraph and field workers whose responsibility it is to locate and bring each contact named to examination. The contact investigation process has been refined and crystallized in the United States through the years until at present it is accepted as the most efficient single method of finding and preventing early syphilis. The average early syphilis patient throughout
the United States in public facilities names three sex contacts, of whom two are located and brought to examination. This process is undoubtedly the greatest contributor to the sharply declining incidence of syphilis in the United States.

Now that early syphilis in the United States has been brought under a fair degree of control by the above methods and thus reduced the inlet flow to the reservoir, we are again giving high priority to the reservoir of syphilis which is estimated at present to be 2,100,000 persons requiring treatment for syphilis. Instead of the old method of general mass blood testing, the venereal-disease control is now aimed at the reservoir of syphilis with a procedure known as selective mass blood testing. Selective mass blood testing, as the name suggests, is directed at selected high prevalence areas within a city and at specific socio-economic groups of persons who are most likely to have syphilis. Although this method does not get the volume or number of blood tests which we formerly collected under general mass blood testing, it attains a higher percentage of reactors among those tested. Proper planning and pin-pointing methods automatically screen out many potential volunteers who would have been negative. Selective mass testing will continue in the United States until such time as the syphilis reservoir has been reduced to a minimum.

Concurrently, certain routine blood tests are done on candidates for marriage, motherhood, and military service. These devices, while not directed at high prevalence groups, give an overall review of the syphilis problem and serve as an educational stimulus to all groups making them aware of the importance of freedom from venereal disease.

In conclusion it may be well to present three considerations to support our hope that United States methods of control may be practical in other countries and that these accomplishments may be reproducible elsewhere.

First, pioneering work in methodology is no longer necessary, programmes in other areas may be able to operate at a much lower level of expenditure.

Secondly, although it has been pointed out that savings achieved due to the prevention of disability caused by late syphilis in the United States are related to the relatively long life span we enjoy and are therefore not applicable to certain
other areas, it must be noted that syphilis is a disease of adult life and that the deviations between the United States and other areas in life expectancy for youthful adults are quite small.

Finally, although contact investigation as conducted in the United States would have to be adapted for use in other countries, it should be noted that the war-time experience of our Armed Forces Venereal-Disease-Control Officers in many countries indicated that patients there were often less inhibited concerning venereal disease and more willing to accept medical care for it. Thus we believe an adapted process of contact investigation may be effective elsewhere and in fact, might be even more productive in other areas than in the United States.
EXHIBIT I

Estimated Economic Losses if Reservoir of Syphilis is not treated

The present Reservoir is estimated at 2,100,000 cases of syphilis. If these are not found, late manifestations could be expected to develop as follows:

<table>
<thead>
<tr>
<th>Disability</th>
<th>Per cent of Total Cases</th>
<th>Number of Cases</th>
<th>Years Lost Per Case</th>
<th>Total Man Years Lost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paresis</td>
<td>2.0</td>
<td>42,000</td>
<td>23</td>
<td>966,000</td>
</tr>
<tr>
<td>Tabes Dorsalis</td>
<td>1.0</td>
<td>21,000</td>
<td>14</td>
<td>294,000</td>
</tr>
<tr>
<td>Meningovascular Syphilis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>with Psychoses</td>
<td>0.5</td>
<td>10,500</td>
<td>23</td>
<td>241,500</td>
</tr>
<tr>
<td>Optic Atrophy</td>
<td>0.5</td>
<td>10,500</td>
<td>14</td>
<td>157,500</td>
</tr>
<tr>
<td>Cardiovascular Syphilis</td>
<td>7.9</td>
<td>165,900</td>
<td>12</td>
<td>1,990,800</td>
</tr>
<tr>
<td></td>
<td></td>
<td>249,900</td>
<td></td>
<td>3,649,800</td>
</tr>
</tbody>
</table>

At $2,246 per capita per year (based on 1951 per capita income for the adult population) and 3,649,800 man years lost, it is estimated that an income loss of $8,197,450,800 would result.

On the basis of 1951 tax rates, the estimated tax payment per adult in 1951 amounted to $223 and the tax loss for 3,649,800 man years at 1951 rates would total $813,905,400.

Maintenance of persons in tax supported mental institutions with psychosis due to syphilis is estimated to cost $790 per person per year. Paretics and those with meningovascular syphilis with psychosis can be expected to number 25 cases per thousand cases of syphilis not found and have an average stay of ten years in these mental institutions. This would result in 525,000 years spent in these institutions at a maintenance cost of $414,750,000.

Maintenance Data: Maintenance Expenditures in Public Mental Hospitals, Public Health Reports, July 1952.

*These percentages adapted from findings of the Bruusgaard Study.