GLOBAL SURVEILLANCE NETWORK
FOR GONOCOCCAL ANTIMICROBIAL
SUSCEPTIBILITY

Programme of Sexually
Transmitted Diseases
<table>
<thead>
<tr>
<th>CONTENTS</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBJECTIVES</td>
<td>3</td>
</tr>
<tr>
<td>NEED FOR A SURVEILLANCE SYSTEM</td>
<td>3</td>
</tr>
<tr>
<td>STRUCTURE AND OPERATION OF SURVEILLANCE NETWORK</td>
<td>4</td>
</tr>
<tr>
<td>Global Initiative - WHO/STD Programme</td>
<td>4</td>
</tr>
<tr>
<td>Central Coordination</td>
<td>4</td>
</tr>
<tr>
<td>(Inter)Regional Coordinating Centres</td>
<td>4</td>
</tr>
<tr>
<td>Technical support, quality control and data analysis</td>
<td>5</td>
</tr>
<tr>
<td>Establishment of network</td>
<td>5</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>6</td>
</tr>
<tr>
<td>BUDGET</td>
<td>7</td>
</tr>
<tr>
<td>TABLE 1</td>
<td>8</td>
</tr>
<tr>
<td>FIGURE 1</td>
<td>9</td>
</tr>
</tbody>
</table>
1. OBJECTIVES

1. Establishment of a worldwide laboratory network through which reliable data on current gonococcal antimicrobial susceptibility patterns in different countries and regions can be obtained.

2. Collection and analysis of this data annually to provide a global picture of gonococcal antimicrobial susceptibility in relation to the efficacy of recommended treatment regimens. This will provide national health administrations with information on which to base or amend their own gonococcal treatment policies.

3. The dissemination of gonococcal laboratory expertise by training schemes operating through the surveillance system particularly directed at staff from developing countries where such expertise is currently limited.

4. Early identification of new forms of gonococcal resistance so that their spread can be followed and control measures recommended and implemented.

II. NEED FOR A GLOBAL SURVEILLANCE SYSTEM

Gonorrhoea is a major worldwide problem with serious health, social and economic consequences. Inadequate control and therapy can result in complications such as pelvic inflammatory disease resulting in infertility or ectopic pregnancy, and neonatal infection causing blindness. The problem is most serious in those countries least well equipped to deal with it. In many developing countries, 5-10% of the entire budget for drugs is used to treat gonorrhoea.

The problem is compounded by the ability of the gonococcus to become resistant to those antibiotics used for therapy. Both plasmid and chromosomally - mediated resistance occur. Although comprehensive up to date regional data are not available, it is clear that in many countries traditional relatively cheap therapies such as penicillin and tetracyclines, are largely ineffective because of the high rates of gonococcal resistance. These antibiotics are now only recommended where resistance rates are known to be low (1). There are local variations in resistance to other agents such as tiamphenicol and cotrimoxazole.

None of the current recommended main treatment regimens (ceftriaxone, ciprofloxacin and spectinomycin) is cheap. However, their high initial cost needs to be set against the overall cost to a country using cheaper but inadequate initial therapy which results in the further spread of infection and of resistant strains, with the clinical sequelae mentioned above. To decide on appropriate cost-effective antigonococcal therapy, health administrations need to know about current gonococcal antimicrobial susceptibility patterns in their areas.
Patterns of gonococcal resistance vary in different areas and for most antibiotics clinical efficacy against gonorrhoea can be correlated with the in vitro sensitivity of the gonococcus. Within a country or region, gonococcal resistance to a particular antibiotic or antibiotic group can develop rapidly (eg. Penicillinase producing N. gonorrhoeae - PPNG). The emergence of new forms of resistance may be unpredictable (eg plasmid-mediated high level tetracycline resistance). The ease and extent of international travel means that such problem strains can spread rapidly.

The scale of this problem necessitates an international approach to the monitoring of gonococcal susceptibility to antimicrobial agents in current clinical use so that this can be related to likely clinical efficacy. This need was identified in the sixth report of the WHO Expert Committee on Venereal Diseases and Treponematoses (2) and in the Consultations on STD treatment strategies (1,3).

A global surveillance network for this purpose is now being set up under WHO auspices, the outline of which is set out below.

III. STRUCTURE AND OPERATION OF SURVEILLANCE NETWORK

The core structure of the network is shown in Figure 1. Members of the core group have already met once to establish the principles of operation, and will meet as necessary to finalize practical details. Thereafter the group will aim to meet on an annual basis to review progress, resolve major problems, identify priorities for extending the network, for providing training and for support and the further investigation of specific gonococcal resistance problems.

Global Initiative - WHO/STD Programme

The development and implementation of a global network for the surveillance of antimicrobial sensitivity patterns of STD micro-organisms, in particular of the gonococcus, figures in the global medium-term programme of the 8th General Programme of Work, covering the period 1990-1995, of the WHO/STD Programme (4).

Central Coordination

The central coordinators, initially Professor Easmon and Dr Ison (London), will provide the link between the STD Programme Manager and the rest of the network. Their responsibilities are set out in Table 1.

(Inter)Regional Coordinating Centres

The network will start with three coordinating centres. Dr I. Lind, WHO Collaborating Centre for Reference and Research in Gonococci, Statens Seruminstitut, Copenhagen, Denmark, will be responsible for covering Europe, Africa and the Eastern Mediterranean Region. Dr J. Tapsall, Department of Microbiology, Eastern Sydney Area Health Service, Randwick, Australia, will cover South East Asia and the Western Pacific Region and Dr J. Dillon, National Laboratory for Sexually Transmitted Diseases, Ottawa, Canada, the Americas. The plan is to have one coordinating centre for each WHO Region, which centre would be accorded WHO Collaborating Centre status.
Technical support, Quality Control and Data Analysis

Guidelines for laboratory work and data analysis are now being drafted to help participating laboratories generate reliable susceptibility data, which can be readily analysed and which is appropriate for the objectives of the network.

Each coordinating centre will be responsible for recruiting network participants from within their own regions. Quality control and technical support and training will be organized through them. They will be free to call upon other centres of expertise in the region to assist with these tasks.

The network will aim to encourage the participation of laboratories in developing countries where expertise and facilities may be limited. This will mean the entry into the network of laboratories with widely differing levels of technical expertise. The training of staff from developing countries is one of the objectives of the programme. The technical guidelines are being drafted with this in mind and quality control will be particularly important in ensuring that data collected is reliable and comparable.

Establishment of Network

It is impossible to achieve the structure and operation outlined above in a single step. It will have to be built up gradually. The first stage will be for the three (inter)regional coordinating centres to determine what recent gonococcal susceptibility data is currently available from countries in their area and how it has been collected. Also for them to identify those laboratories that are willing/able to participate in the network and their level of technical expertise and available facilities.

We aim to collect any such data by the end of 1990 so that an initial report can be prepared covering the period 1988-90. This first stage would also allow us to see those parts of the world where no data is available and to recruit an initial group of network participants for establishing the main phase of the surveillance network. This period will also allow completion of technical guidelines and some initial fund raising, both of which will be needed for operating the main surveillance programme. This should start at the beginning of 1991.
IV. REFERENCES


V. BUDGET

Over the next 2 years funds will be required for the following:

<table>
<thead>
<tr>
<th>Estimated budget</th>
<th>US$ / annum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year 1</td>
</tr>
<tr>
<td>Training - particularly for staff from developing countries</td>
<td>10,000</td>
</tr>
<tr>
<td>Technical/logistical support for coordinating centres including quality control</td>
<td>40,000</td>
</tr>
<tr>
<td>Meetings central coordination Data analysis</td>
<td>50,000</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100,000</td>
</tr>
</tbody>
</table>

Programme Support Costs of 13% incorporated in estimated budget (Refer WHO Resolution WHA 34.17, attached)
TABLE 1

Responsibilities of Central Coordinator(s)

1. In close collaboration with STD Programme Manager, provide overall direction to ensure the surveillance programme achieves its objectives.

2. Convene and chair meetings to:
   a) Agree practical details of network operation
   b) Review operation and make necessary changes
   c) Propose priorities for extending network and for training and research
   d) Discuss funding needs and priorities.

3. In consultation with coordinating centre directors
   a) Draft background papers and technical guidelines for surveillance network
   b) Define resources needed for the various aspects of the surveillance network and advise STD Programme Manager accordingly.

4. Analyse gonococcal susceptibility data collated by coordinating centres and prepare annual report

5. Coordinate that area of fund raising not undertaken by WHO directly. Provide STD Programme Manager with supporting material for WHO fund-raising. Ensure no conflict between the two.

5. Provide overall direction to ensure the surveillance programme achieves its objectives and primary liaison with STD Programme Manager.
FIGURE 1

Structure of Gonococcal Susceptibility Surveillance Network

Technical support, training and funding

WHO STD Programme Manager

Central Coordinator(s) for Gonococcal Surveillance Programme

(Inter)Regional Coordinating Centres

Individual participating laboratories in different WHO Regions

Susceptibility data