Technique Discussions

1. Statement by the General Chairman - Professor A. Canaperia, former President of the International Union against the Venereal Diseases and the Treponematoses

About 30 years ago a number of research workers and physicians, worried about the recrudescence of the venereal diseases - as they were then called - resulting from the psychosocial upheavals of the Second World War, proposed that special research and specific improvements to control methods should be actively undertaken.

Their anxieties were put down to exaggerated pessimism, to a lack of knowledge, and above all to a lack of confidence in the possibilities of medical technology, especially of the antibiotics that were already known or being developed and were capable of treating many infections, particularly the sexually transmitted diseases.

The public health problem was regarded as having little importance for the future, and the patient was neglected or even somewhat scorned on account of his very special disease; in any case the disease was easy to diagnose and above all easy to treat.

Here, as in many other cases, the effectiveness of curative treatment made people forget about the factors promoting the disease, the preventive approach, and the patient himself.

Moreover, towards the mid-fifties, the rapid drop in the prevalence of sexually transmitted diseases made it seem that such views were justified: indeed, the rates at that time were the lowest ever recorded.

What is the position today?

The decision taken at the fifty-second session of the WHO Executive Board is in itself a reply, partly on account of the choice of the topic that we shall be considering in the technical discussions during this World Health Assembly, but above all on account of the wording of the topic, which stresses not only the public health components but also the psychosocial aspects of sexually transmitted diseases and emphasizes the need for a fresh approach to their control. The anxiety and interest to which I have referred are justified by the extraordinarily high prevalence of sexually transmitted diseases observed almost everywhere in the world - in some countries with fairly complete and accurate statistics, gonorrhoea and syphilis account for over half of all notified cases of communicable diseases - and above all by the constant increase in these diseases over the last two decades, with a few rare exceptions.

The anxiety and interest are also evident in the replies and comments made by governments and nongovernmental organizations in response to the questionnaire sent out by WHO; these replies made it possible to draw up the programme for the technical discussions and to prepare the background documents that will serve as reference material in your deliberations.

With all the diagnostic and therapeutic facilities available to us it is difficult to tolerate that every year, for lack of simple and inexpensive treatments, 1-10% of young men and women and sometimes more suffer from these diseases, which are often serious, sometimes disabling, and frequently sterilizing or congenitally transmitted.
It is equally regrettable to note that, whereas the information and advertising media deal freely with sexuality, and even encourage it and rid it of its taboos, little or nothing is done to inform, educate and warn people about the possible consequences of the sexual act.

The result is widespread ignorance about these diseases on the part of the public, especially the young, which leads to increased risks, failure to recognize the symptoms, late diagnosis, and the likelihood of complications for the patient and transmission within the community. It is even more unfortunate to see that in many cases, in the absence of appropriate training and information, the health authorities, the medical profession and other health personnel do not appreciate the real significance for the individual and community of the prevalence and severity of sexually transmitted diseases and do not direct or use the means at our disposal in a satisfactory manner. However, the cost of the diseases themselves and the incalculable cost of their disabling or sterilizing forms represent annually for each country several times the cost of a preventive education and information campaign or appropriate curative activities directed towards active case-finding and effective treatment by simple and inexpensive methods.

Our current role and responsibilities should be:

- to draw the attention of the administrative and health authorities and physicians to the severity of this public health problem and make them aware of the role they should play in overcoming these diseases;

- to demonstrate those factors promoting the spread and persistence of sexually transmitted diseases which we can influence, together with the obstacles that have prevented effective action;

- to propose preventive and curative activities through improved education of the public, staff training, better use of health facilities and infrastructure, and the guidance of research.

Here I do not wish to repeat the specific topics that have already been presented very clearly in the background document for your discussions, particularly as I am honoured to have beside me two eminent figures who have agreed to collaborate with me: Professor Perdrup, President of the International Union Against the Venereal Diseases and the Treponematoses, and Professor Sowmini, Director of the Madras Institute of Venereology. I have asked them to give you an account of their experiences in two very different environments and I am sure that their papers will be thought-provoking and will encourage participants to consider the best concrete and effective approach for controlling the sexually transmitted diseases.

May I express the hope that, through all our experience, and through the knowledge we pool during these discussions, we may identify courses of action that will ultimately lead to the reduction or even the eradication of these diseases.

Before concluding may I make one final point.

While there are few communicable diseases that are more widespread than the sexually transmitted diseases, there are even fewer for which we have so many effective control methods. In order to apply these methods we need to strengthen and coordinate our efforts and exploit the means and resources at our disposal under the auspices and with the guidance of WHO and with the collaboration of nongovernmental organizations such as the International Union Against the Venereal Diseases and the Treponematoses and the International Union for Health Education. I am sure that the results could represent one of our finest achievements.
2. Address of Professor A. Perdrup, President of the International Union against the Venereal Diseases and the Treponematoses

The management of sexually transmitted diseases (STD) in developed countries

The venereal diseases comprise in most countries clinically and legally gonorrhoea, syphilis, soft chanker and lymphogranuloma venereum.

In specialized VD clinics an increasing number of patients with sexually acquired infections appear, namely due to virus, trichomonas, fungi, mites and insects. The designation Sexually Transmitted Diseases is by many found to be less loaded and more comprehensive than Venereal Diseases.

Because I am speaking of the situation in developed countries and time is limited I shall mainly confine my talk to the two classical venereal diseases gonorrhoea and syphilis, well aware that the other STD deserve your growing attention.

Statistics are inadequate in most countries even where the diseases are notifiable. Because the USA constitute a large part of that part of the world I am talking about, I shall illustrate my words with a few statistics recently published by the American Social Health Association.

Fig. 1 puts the incidence of or rather the number of notified cases of gonorrhoea and syphilis in relation to the number of reported cases of other notifiable diseases. The statistics are undoubtedly inaccurate with a substantial under-reporting, but the graph clearly shows the dominance of these diseases.

Fig. A shows the incidence of gonorrhoea (reported cases) in the USA since 1950 and its formidable increase. In most countries you will find a similar rate of increase although in Denmark and Sweden we have seen a slight decrease during the last one or two years.

Fig. B shows the numbers of early infectious syphilis reported in the USA from 1950 to 1974. The incidence now seems to have become rather stable. The shape of this graph is rather similar in other developed countries.

Even where the incidence of syphilis seems to be stabilized the level may well be unacceptable. Syphilis continues to be a major health problem which needs continued surveillance by an efficient public health service, a high laboratory standard and good control methods.

But an otherwise acceptable public health system notwithstanding our control with gonorrhoea is a fiasco. This fiasco has a few obvious and several more complicated reasons. The more obvious reasons are for example the short incubation period, the asymptomatic course in the majority of females and in 10-20% of males; the absence of reliable diagnostic serological tests and so screening of larger groups is a troublesome matter.

The more complicated factors most often quoted as responsible for the high and rising incidence of STD are:

New contraceptive practices.
Population movements, tourism, migration etc.
Urbanization and industrialization.
Armed conflicts, social and economic climate.
Behavioural changes, sexual habits.
Prostitution and homosexuals.
Inadequacy of surveillance, public health and epidemiological activities.

Increased susceptibility: reinfection, impaired cross-immunity syphilis/yaws.

Inadequate diagnostic and treatment facilities, training of personnel.

Differing infectiousness and epidemiological characteristics of syphilis and gonorrhoea and their complications.

Demographic characteristics.

A short glimpse of this list shows that our health systems are designed to cope with but very few of these problems mentioned above. It also illustrates why venereology is such a unique and intriguing speciality which necessitates a multidisciplinary cooperation nationally and internationally not only among specialities of medicine but also with teachers, parents, sociologists, public relation people, politicians and the young people themselves.

Through decades the police has been the most important of our collaborating social institutions and remnants of this anachronistic cooperation is still present to a varying extent in several VD legislations. Another glimpse on the list may convince you that legal sanctions are able to improve but very few of the causal relations.

Fig. C: This graph shows the age and sex distribution of gonorrhoea patients in the USA. It is, as expected, an infection of the young ones. Sociological studies have shown that particular risk groups can be localized. These risk groups are characterized by social maladjustment - for several and partially well known reasons - and by an extensive sexual behaviour. You may notice the large number of infections in young women. Because of the long latency in a large proportion of cases until the infection becomes manifest they run a risk of pelvic complications followed by a long life with invalidism and/or sterility.

Fig. D shows the age and sex distribution in early infectious syphilis. Compared to the age-specific case-rates by sex in gonorrhoea you find a clear dominance of males, illustrating the relatively high incidence among homosexual males. Syphilis shows a tendency to diffuse into more age-groups and a wider variety of social groups and furthermore to spread over long distances resulting in a considerable import and export over national borders.

Although the inter-country spread of gonorrhoea also has some significance gonorrhoea is more prone to circulate within particular populations and within particular groups.

COSTS

The total expenditure on STD services or the costs of the diseases has nowhere been calculated. A few figures may be illustrative: complications of gonorrhoea in women are by the American Social Health Association estimated to cost the USA 1.2 mill. hospital-patient days totalling 211 mill.$ annually. Institutional care of patients with late syphilis still costs the USA 50 mill.$ each year.

It is estimated that there were 2.7 mill. new cases of gonorrhoea in the USA, and not as under-reported about 900 000.

A suggestion of what it costs when a patient appears for treatment in a clinic is the following: in a more primitive Danish "Street clinic" with one highly trained VD specialist and two nurses, about 1000 new patients per year (about 40% of them with gonorrhoea, about 1% with syphilis) each person admitted requires one half hour (0.54) physician's + one hour (1.04) accessory's work (all visits included). In a more sophisticated university clinic each application costs more than double the time.
Denmark has 5 mill. inhabitants, about 400 cases of syphilis per year and about 15 000 cases of gonorrhoea. To keep this rather satisfying level of syphilis control and the not very satisfying level of gonorrhoea control our centralized laboratory service (Statens Seruminstitut) undertakes 750 000 lipoid (Wassermann) seroreactions + 10 000 TPI tests and 350 000 gonococcal cultures each year. Add to this the clinical work with each of these laboratory procedures.

I will leave it to your qualified imagination and to the political economists to estimate the very heavy economic tax of STD upon the nations.

In all developed countries you will find specialized clinics of high standard, but the bulk of the work is usually left to the general practitioners. Only in England and in Ireland venereology is a speciality of its own. In some countries it is connected with dermatology, in other gonorrhoea is combined with urology and syphilis with dermatology. Many gonorrhoea patients are referred to gynaecologists. This often results in too little interest and energy devoted to specific STD problems besides therapy.

It is paradoxical that the more sophisticated and the more plentifully manned the health system becomes the more difficult it seems to recruit specialists and to get funds allocated to combat STD.

In almost all developed countries there is an obvious need to upgrade pregraduate and postgraduate teaching in venereology, to improve and to modernize specialized STD clinics with sufficient laboratory service and contact investigators. This is necessary because we know, particularly from British experience that only specialized services are able to manage the complex problems of venereology. Target groups profitable for screening procedures must be located. Methods to influence the human hosts of the microorganisms must be improved and applied.

RESEARCH

Due to clinical and laboratory research all infected patients can have a correct diagnosis and an effective treatment on condition that they seek a qualified doctor or clinic. But the problem in venereology is that a great fraction of infected persons do not appear for examination spontaneously and there is no spontaneous cure. A good deal of behavioural and pedagogical research in the human host is necessary.

Time should now begin to ripen when research in immunology with regard to our specific purposes could be profitable. Investigations into methods to culture treponemes in vitro, to isolate immunogenic components of treponemes and of Neisseria should be given high priority. Development of reliable serologic "early warning tests" and later of vaccines will radically improve our epidemiological situation and the investment in such research can result in an evident economic gain.

Such research is expensive and needs concerted action from several nations. Here the World Health Organization has a role to play in encouraging and coordinating the efforts of already existing research centres which are capable to carry on sophisticated investigation into the immunology of the microorganisms in question. The WHO might act directly by allocating money to specific projects, indirectly as a mediator and politically through pressure on governments to understand the human and economic importance of such research, the result of which will be of equal value for developed and developing countries.
COMMUNICABLE DISEASES - NUMBER OF REPORTED CASES
United States, Calendar Year 1973

- GONORRHEA (842,621)
- CHICKENPOX
- SYPHILIS (87,469)
- MUMPS
- HEPATITIS
- TUBERCULOSIS
- RUBELLA
- MEASLES
- SALMONELLOSIS (excluding typhoid fever)
- SHIGELLOSIS
- ASEPATIC MENINGITIS
- RHEUMATIC (acute)
- WHOOPING COUGH
- MALARIA
- ALL OTHERS

Total Number of Reported Cases of Specified Notifiable Diseases - 1,390,955

Source: Public Health Service-reported cases only.
Published by American Social Health Association
FIGURE A
GONORRHEA
Reported Cases
United States: Fiscal Years 1950-1974

FIGURE B
PRIMARY AND SECONDARY SYPHILIS
Reported Cases
United States: Fiscal Years 1950-1974
FIGURE C
GONORRHEA
Age-Specific Case Rates* by Sex
United States—Calendar Year 1973

Source: Public Health Service
Published by American Social Health Association

FIGURE D
PRIMARY AND SECONDARY SYPHILIS
Age-Specific Case Rates* by Sex
U.S.—Calendar Year 1973

Source: Public Health Service
Published by American Social Health Association

*Cases per 100,000 Population
3. Address of Professor C. N. Sowmini, Director, Institute of Venereology, Madras Medical College

Social and medical aspects of STD in developing countries - need for a better approach

I. INTRODUCTION

There is no doubt that sexually transmitted diseases (STD) constitute a serious health problem in affluent countries like the United States of America and many European countries. The problem is even greater and more complex in the developing countries. In these regions the concomitant prevalence of many STDs, the complex social and economic factors involved and the lack of adequate medical facilities especially in the rural areas, all add to the gravity of the problem.

My own experience is primarily from the State of Tamil Nadu in the Indian Union where for the past three decades the Institute of Venereology has been actively engaged in the difficult and often frustrating task of combating STDs.

In the past, traditions and taboos in developing areas contained STDs within specific areas such as cities and slums, particularly in certain age-groups. But today, a new picture has emerged. These diseases show a rising trend and changing pattern and they are spreading beyond the bounds of these specific areas. This is apparent, partly due to improved diagnosis and reporting facilities with better medical and health services. In certain regions of South-East Asia antibiotic resistance is an important contributing factor. But more important are social, economic, cultural and demographic changes which are taking place. However, the point to stress is that these changes are continuous, producing multiple and interdependent factors which not only increase the reservoir of asymptomatic infections but also break the barriers allowing the infection to find its way into newer and newer sections of the population.

Most of the societies in developing countries are in economic and cultural transition. The urge for greater mobility and travel which attend a developing economy, coupled with the rapidly changing status of women, have created conditions for the free mingling of sexes. There is a breakdown of value system under the pressure of changes that take place not only within national boundaries but also from beyond, leading to more and more permissive attitudes towards extra and premarital sex. These conditions create favourable and fertile fields for the spread of STDs.

At the same time, health and medical facilities are not adequately developed in most of the countries. Needless to say, STD services to cope with the growing problem are much less developed and even absent in many areas, with the result that many cases go undetected, untreated and unreported. Hence there is a lack of awareness of the magnitude of the problem at different levels of the community, resulting in the failure to provide adequate budgets to improve facilities and train personnel. The foregoing factors unquestionably contribute to the continuing vicious spiralling problem of STDs. The spiral, instead of tapering, becomes broader and broader (Fig. 1).

VICIOUS SPIRALLING OF STD This shows the spiralling of STD and the various factors contributing to this expanding phenomenon.

II. APPROACH TO THE PROBLEM

Our aim should be to break the expanding spiral progressively until it reaches the lowest possible level, and that is by getting:

(1) epidemiological data on the incidence, spread, target groups involved, etc.;
(2) available resources, in facilities, trained manpower and funds;
(3) cultural and behavioural patterns having a bearing on spread and control of STD;
(4) the scope and limitations of currently available diagnosis, therapeutic and epidemiological methods under local conditions.
In developing countries where there is competing demand on the limited financial resources of the governments the political decision-making levels of the Government have to be made aware of the magnitude of the problem of STD. Plans for the control of STD wherever possible have also to be based on considerations of cost-benefit and cost-effectiveness.

II.1 Surveys

Epidemiological information can be obtained by conducting surveys and with the help of model clinics. The personnel for conducting epidemiological surveys should be specifically trained for the purpose. One has to be cautious in utilizing resources for extensive surveys when the funds are limited.

II.2 Model clinics

Alongside with data collection, model clinics are to be set up at focal points where already an infrastructure exists and where the need for such clinics is obvious.

II.2.1 General health services

All further plans have to be based on a realistic appreciation of the health services. There is no uniform pattern of health services that can be applied to all countries. Generally health services are an integrated service of medical care and public health services at three different levels - central or apical, intermediate, which may consist of one or more sub-levels, and peripheral level.

II.2.2 Integration of STD services into the general health services

Into this set-up STD services have to be integrated. For the most effective and economical method of controlling STD under local conditions it will be necessary to carry out operational research programmes on a multidisciplinary basis.

II.2.3 Operational research

The model clinics in each region will form the central or apical institution. They should take the leadership role to integrate the STD services progressively into the existing health services within a period of five to 10 years. During the first five years it is desirable to try out, on a research basis, a viable STD service in selected institutions to establish norms for personnel, their skills, training, equipment, pattern of service, physical accommodation, supervision, referral practice, population coverage, organizational control, referrals, sharing of laboratory facilities, etc.

For such an operational research programme, the area selected should correspond to the jurisdiction of the existing health services organization. This will facilitate administrative and technical supervisions. The programme to be built up from periphery to the higher levels. As research starts yielding useful information and experience these should be used to expand STD services in a phased manner within 10 years. Some of these centres can be selected in and be further developed as demonstration centres.

II.2.4 Organization pattern of STD services in the general health services

FIG. 2 This shows how STD services can be integrated into general health services and the functions of the set-up at each level.

The model clinic at the apex level should offer consultative services, act as a reference laboratory, have a programme for training undergraduates and postgraduates, collect and compile statistical data and undertake research in addition to the usual patient care.
At the first intermediate level there should be a STD referral clinic for inpatients for advanced diagnostic measures. For this there should be a fully fledged laboratory which will offer its services to the second intermediate and peripheral institutions for serological and culture facilities. There is an urgent need for simpler diagnostic tests to be made available for gonococcal infection. Research is being developed along these lines. Some of the first intermediate clinics can be developed to train undergraduates and also conduct short courses and in-service training.

The second intermediary level has an integrated clinic with limited laboratory facilities (DF microscope and smear staining facilities). This clinic can also be a referral clinic for outpatients from the peripheral institution.

The peripheral level: Unlike the apex and intermediate levels, the peripheral level caters to a defined community and offers all types of health services. This is a good area where community-oriented STD services can be well organized. At the peripheral level, STD services should be integrated mainly in the MCH and family planning services. They should have a DF microscope, and smear-staining facilities. For other laboratory services (STS), peripheral level should depend on first intermediate level.

Transport arrangements should be available at all levels for the speedy dispatch of specimens.

In a large country like India, which is divided into different States it is desirable that each State should have the pattern recommended above.

Routine functions and responsibility at all levels:

(i) diagnosis and treatment;
(ii) minimum screening procedures like antenatal serologic testing for syphilis and smear examination for FP group for gonococcal infection;
(iii) contact tracing;
(iv) contact investigations;
(v) health education;
(vi) record keeping and collection of statistical data for submission to apex level.

II.2.5 Supervision

Supervision will be given by the immediate higher level to the lower level and will run from central to peripheral.

II.2.6 Qualifications for management personnel (physicians) at each level after basic medical qualification:

<table>
<thead>
<tr>
<th>Levels</th>
<th>Qualifications</th>
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<tbody>
<tr>
<td>Apex or central level</td>
<td>He should have had an intensive course in STD for a period of three years</td>
</tr>
<tr>
<td>First intermediate level</td>
<td>Qualification preferably same as above</td>
</tr>
<tr>
<td>Second intermediate level</td>
<td>Three months training in STD (in-service training)</td>
</tr>
<tr>
<td>Peripheral level</td>
<td>Two weeks training, condensed, comprehensive in-service training preferably along with public health training</td>
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Training at all levels should have a public health and social slant.
II.2.7   Coordination

At national level

For all these services to run effectively and smoothly, it is critical that an STD adviser and coordinator be situated at the national level. This person should be highly qualified and technically and administratively experienced. His major functions will be to plan and evaluate the STD services in all regions of the country; create awareness among administrators, politicians and legislators; to seek necessary funds and help to pass suitable laws and ensure their enforcement. He or she should play a dynamic role in maintaining uniform standards in services in all States and progressively upgrade the standards according to the changing requirements.

For the national adviser to function efficiently, it is desirable to have an advisory committee drawn from various disciplines. The adviser will work in close collaboration with international agencies and other countries. For coordinating all these activities it is imperative that there be a WHO regional adviser in developing countries at the international level who will devote all his time to STD control.

II.2.8   STD - a specialty

The vastness and the complexity of the problem of STD in a changing society require special attention and a combination of specialized and varied skills for control and prevention. This necessitates the undivided attention of the specialist and should not therefore be combined with other specialties, at least in the foreseeable future. It is important therefore to establish the identity of STD as a specialty.

However, the STD specialist must always bear in mind the dictum of Stokes "The syphilologist, if he were to be a good one, had to make a compromise between the frivolous definitions of the specialist versus the general practitioner; the former, one who knows more and more about less and less until finally he knows everything about nothing; the latter one who knows less and less about more and more until finally he knows nothing about everything".

II.2.9   Training

Training of all categories of personnel for the management of STD requires to be undertaken as a priority if the control programme has to function and succeed. The very core of the overall undergraduate medical training system is out of date in most of the developing countries. The system is not oriented to the local needs; instead of being community oriented and coordinated, the focus today is on the patient and laboratory. Obviously reorganization of the curriculum is vital.

II.2.10   Technical literature

In order to keep the health workers abreast of modern developments in the field of STD it is necessary to have adequate library facilities. Arrangements should be made for the procurement, circulation and translation of latest publications and information concerning STD to reach all levels.

II.2.11   Equipment

In developing countries lack of equipment constitutes a serious problem. Even when international agencies provide the equipment, complicated bureaucratic procedures can create bottle-necks. Efforts should be made to overcome this practical difficulty.

II.3   Health education (Fig. 3)

Health education is well recognized in the control of STD. Health education should not be limited to the masses - it should reach the highest political decision makers. Health education should be the function of every health worker. It should be based on adequate
knowledge, attitude and practice studies. To avoid wastage of time, energy and resources, health education should be selectively planned to meet the needs of the different groups. It should be comprehensive and built-in as an integral part of the total STD programme at different levels, keeping in view the immediate and distant goals.

The immediate goal is to reduce the pool of asymptomatic and milder infections. Therefore the emphasis should be on delineation of the high risk group, adoption of preventive measures and imparting information on selection of sex partners, on taking proper treatment and follow up.

Health education should have a long-term objective of developing responsible and healthy sex attitudes in the community. It is a difficult target to achieve when several factors in society are working against it and when parents and teachers and religious leaders are unprepared and ill-equipped to handle skillfully and with understanding the emotional problems of the growing young and to give them warmth, affection and security. This constitutes a major problem in our programme.

II.4 Research

Research should be continuous and should go hand in hand with developing STD services. There are large gaps in our knowledge regarding the diagnosis and treatment procedures and the social factors responsible for the spread of STD.

In many of the developing countries there are basic facilities and trained personnel available for undertaking research. However, with additional equipment it may be possible to further enlarge the research possibilities which will have a bearing on the control of STD. The tendency to leave such research to developed countries will further delay progress towards the effective control of STD.

II.5 Role of international agencies in the control of STD

In developing countries international agencies can play an important role in providing financial and technical assistance for initiating action and at every stage of the development of the control programme for STD. These include: surveys, setting up of model clinics, teaching, training and research. Coordination at international level, dissemination of technical information and the standardization of techniques and procedures are recognized statutory functions of the World Health Organization.

II.6 Summary

An attempt is made to project the causes for the spiralling of STD in developing countries. Approach to the problem should take into account:

(1) epidemiological information on the incidence, spread, target groups involved through surveys and setting up of model clinics;

(2) available resources in facilities, trained manpower and funds for integrating of STD services into health services and for training of personnel and education of the public;

(3) cultural and behavioural patterns of the people having a bearing on spread and control of STD - so K.A.P. studies and health education have to be carried out;

(4) the scope and limitations of the diagnostic, therapeutic and epidemiological methods currently available - so research has to be done.
II,7  In conclusion I would like to say that STD control should not be viewed solely as a health problem but as a part of general human welfare activities. Hence other social, cultural and developmental changes taking place in the society will have to be taken into account while planning STD control. There is no magic formula which can be immediately introduced. The best approach for the control of STDs is to make maximum use of the existing methods which so far have not been adequately implemented.

I realize that whatever I have said may be more applicable to my country. However, I hope some of my experience may have a practical bearing on conditions in other developing countries.
Figure 2: Suggested organisational pattern for STD services at different levels and their functions
Figure 3

HEALTH EDUCATION

- Physician
- Health personnel
- Undergraduates
- Parents & teachers
- Community workers

- Administrators
- Legislators
- Politicians

- Greatest risk group
- General public
- Official and voluntary organizations

Awareness

- Better budget
- Better services
- Better awareness
- Better control