..NEWSLETTER...NEWSLETTER...NEWSLETTER...

TOWARDS HEALTH FOR ALL BY THE YEAR 2000 IN THE EASTERN MEDITERRANEAN REGION OF THE WORLD HEALTH ORGANIZATION

نحو تحقيق الصحة للجميع بحلول عام ٢٠٠٠ في اقليم منظمة الصحة العالمية لشرق البحر الابيض المتوسط

VERS LA SANTE POUR TOUS EN L'AN 2000 DANS LA REGION DE LA MEDITERRANEE ORIENTALE DE L'ORGANISATION MONDIALE DE LA SANTE

EMR Newsletter No 8
May 1981

Through the generous support of various governments and organizations, and the enthusiastic participation of scientists and institutions in many countries...

the UNDP/WORLD BANK/WHO SPECIAL PROGRAMME FOR RESEARCH AND TRAINING IN TROPICAL DISEASES (TDR for short)

is making steady progress towards improvement in the control of selected diseases in tropical countries through the pursuit of two interdependent objectives,

--- Research and development towards new and improved tools to control six tropical diseases,

and

--- Strengthening of national institutions, including training, to increase the research capabilities of the developing countries affected by the diseases.

The six target diseases are: malaria, schistosomiasis, filariasis (including onchocerciasis), trypanosomiasis (both African sleeping sickness and Latin American Chagas' disease), leishmaniasis and leprosy. Research programmes are in operation for all of them. Since some important aspects of research are common to several or all of the diseases, the Special Programme also supports research in the areas of biomedical sciences, vector control, epidemiology, and social and economic studies.

IN THIS ISSUE...

you will find some aspects of the TDR Special Programme in the Eastern Mediterranean Region.

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Started in 1976, the TDR Programme's scientific and technical operations and other activities now involve well over 1000 scientists from 78 countries throughout the world. Over 60 per cent of projects receiving support are situated in developing countries where the diseases are endemic.

Progress towards objectives has already been reported and a few early results have been obtained in the following fields:

Malaria

Present antimalaria drugs are far from ideal. Safe, effective, low-cost drugs are urgently needed to attack the malaria parasites at various stages of their life-cycle inside the human body. Clinical trials are in progress, chiefly with the new antimalaria drug mefloquine.

Research on malaria vaccines has made substantial progress because of the recent development of important immunological techniques applicable in this field. It is as yet impossible to say how soon an antimalaria vaccine can be ready for trial use in man, but efforts to develop such a vaccine have been given very high priority.

Filariasis

The diseases covered include both filariasis, elephantiasis and onchocerciasis or river blindness. The aims of research are to obtain better filaricides, to reduce the inflammatory reactions to dead worms during treatment, to develop better diagnostic tests, and to improve control of the vectors (mosquitoes and black flies).

Trypanosomiasis (sleeping sickness)

The Programme's research aims at improving disease control through increased knowledge of epidemiology and more efficient methods of vector control, diagnostic tests, drugs and clinical management.

Leprosy

Steady progress has been made in immunology during the past two years. A killed leprosy vaccine is ready for pre-clinical trials. However, because of the very long incubation period of the disease - up to ten years - it will not be possible to assess the real effectiveness of such a vaccine before the end of the present decade.

Vector biology and control

Specific research towards control of the vectors is disease-oriented, i.e. not necessarily aiming at the complete destruction of the vector species involved. Some 26 agents are now identified as of interest for biological control, i.e. other than chemical.

One word about finances

When compared with the needs, the word is inadequate. The financial resources of the Programme are growing very slowly for a variety of economic reasons. Inadequate financial support limits the scope of the Programme and therefore reduces its credibility with affected countries and the worldwide scientific community which supports it. The budget needed for 1981 is estimated at US $ 30 million.

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SOME EXAMPLES OF TDR IN ACTION IN THE EASTERN MEDITERRANEAN REGION

MALARIA

Fundamental and applied field research on malaria is being carried out in several countries of the Region, namely Egypt, Iraq, Israel and Somalia, in collaboration with WHO.

In Iraq, the National Malaria Eradication Programme has conducted a survey to assess malaria eradication activities in villages in an area which was a known focus of the disease. The study aims at identifying the immunological status of the population against the disease and discovering any hidden or new infection, using a specific (immunofluorescent) test. This is part of a large development programme launched by the Iraqi Government.

The fish that feeds on larvae

Since 1972, the WHO malaria advisory team in Somalia observed that no mosquito larvae were collected on the surface of waters in which small local larvivorous (larvae-eating) fishes - such as the tilapia species - lived. The potential use of these fishes for malaria control was then realized, and preliminary trials of their effectiveness were quite impressive. The fishes were then introduced in the northern part of Somalia where many reservoirs, known as barkits (cement water tanks) and wars (large dug pools or natural depressions), exist, filled with rainwater in expectation of the recurrent droughts. These man-made reservoirs constitute the only mosquito breeding places for the malaria vector Anopheles gambiae. The purpose of the trials at present underway is to evaluate the effectiveness of this biological method of mosquito larvae control on the frequency of malaria transmission in an area where insecticides are not utilized. The results of the trials will be of interest not only for Somalia, but also for other countries with similar ecological conditions. The research is conducted by the National Anti-Malaria Service in Mogadishu.

Other malaria control studies are planned in Sudan with the use of larvivorous fish.

Other biological agents for mosquito larvae control, such as Bacillus thuringiensis (see vector biology and control), are being studied in Egypt and Israel; results so far are most encouraging.

FILIARIASIS, including onchocerciasis

Human filariasis is endemic in some parts of Egypt and there is no drug so far in common use which is entirely satisfactory to combat the infection, particularly those parasites which dwell in the human lymph and may cause the disease called elephantiasis (or swelling) which can affect several parts of the body. The TDR Programme therefore is funding extensive screening of chemical compounds in an effort to find a suitable drug for the treatment of the disease.

The Faculty of Medicine of the Tanta University is conducting clinical trials of potential filaricide drugs, particularly DEC (diethylcarbamazine) in infected patients in hospital, and also in the field in several villages near Tanta, in the El-Gharbia area.

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The research project is thus studying the effect of standard dosages and schedules of DEC in selected patients, positive for microfilariae (the tiny threadlike worms which cause filariasis). It will also serve as a preliminary study of the level of DEC required to clear the human blood of microfilariae.

ONCHOCERCIASIS

Also called river blindness, onchocerciasis is a crippling insidious disease which cannot at present be effectively or safely controlled by the use of drugs or other medical techniques. Control can only be achieved by killing the Simulium vector in its various developing stages, from larva to adult.

Four TDR projects have been initiated in Sudan.

Killing worms is not enough, dead worms are just as noxious

One of the major barriers to the safe application of existing drugs against onchocerciasis is the acute inflammatory reaction lesions that they sometimes cause. Consequently, elucidation of the causes of these lesions, and the development of effective methods to avoid or control them are of the highest priority in the strategic plan of filariasis research.

One of the projects in Sudan is aimed precisely at characterizing the reactions, and other possible adverse effects, to the killing of the parasites in the skin and the eyes by use of the drug DEC. This is done through safe, ethically acceptable and practicable tests with low dosages of DEC.

Another is the research into the effectiveness of localized onchocerciasis vector control in Bahr El Gazal and Darfur provinces. The main objective is to study to what extent localized control of the Simulium larvae, through simple methods of larvicides application, is effective against the transmission of this water-borne disease in South-West Sudan. This implies, among other things, a survey of vector breeding sites and their relationship with centres of human population, as well as identification of the vectors involved in transmission.

The bank of frozen worms

A third project consists of collecting living forms of the parasite (Onchocerca volvulus) in the skin of patients, of freezing them alive and shipping them to the "worms bank" of the London School of Hygiene and Tropical Medicine. Workers in the field in Sudan are thus taught the cooling techniques involved, using a cheap portable device with liquid nitrogen. The continual collection, freezing (cryopreservation) and storage of consho skin microfilariae, and their shipping to the United Kingdom, will provide material for longer-term research on the parasite. Research workers in the UK need living parasites in order to devise possible immunization techniques against the disease. This project is typical of the close collaboration between research institutions in developed and developing countries, which is one of the main features of the TDR Programme.

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SCHISTOSOMIASIS

Schistosomiasis is considered as one of the most serious national problems in Egypt and in several other countries of the Middle East. Apart from the new drug praziquantel, tested in several countries of the Region, the best ways and means of combating the disease are still considered to be control of the snail vector through molluscicides, and health education of people in contact with infested water.

In the field of applied sciences, the Research Centre of the University of Alexandria is carrying out a study of the focal transmission of schistosomiasis in the El Wastani area of the Nile Delta, with a view to devising a control strategy applicable in other parts of Egypt where the disease is also rampant.

The relationship between man and water

The objectives of the project are multifold. They first consist of classifying, statistically speaking, all biological and ecological observations (bionomics and biometrics) relating to the schisto snail vectors which transmit the disease to man; then, studying the behaviour of people in their use of water (bathing, washing, working, paddling, etc.), and, finally, determining the frequency and intensity of schistosomiasis among the inhabitants of the area. The results of these studies will provide basic data upon which to build the strategy for schisto control in Egypt.

Research projects are also underway in Sudan. Schistosomiasis, with over half the population in the Gezira irrigated area infested was still, in 1979, the most important uncontrolled public health problem. Thus one of the projects consists of investigations to determine how schistosomiasis is transmitted in three villages covered by the Gezira Irrigation Scheme, with particular studies on the ecology of the snail vector and on the way in which people are in contact with snail-infested waters. The results obtained will permit the establishment of a snail control method, probably by the use of a low-cost molluscicide to kill the snail foci. This method will be combined with other interventions, principally using drugs, in order to assess the impact on the population of all possible methods.

LEISHMANIASIS, also known as Aleppo or Baghdad boil or oriental sore in its cutaneous form; and kala-azar in its visceral form.

Sandfly collectors

Because they are in general incapacitating rather than killing diseases, the leishmaniases have often not been accorded the attention they merit in terms of economic impact and as a cause of human suffering. Although reliable data are still lacking, it is recognized that infection rates are high in many developing countries and that the number of people affected is growing.

Epidemiological studies are being carried out in Iraq and Pakistan.

In Pakistan, an epidemiological evaluation of the disease, both in its cutaneous and visceral forms has been undertaken. Investigators have collected sandflies (which transmit the disease) and blood samples from the population to determine the level of infection in different parts of the country. Research work is very arduous, due to difficult terrain and poor communication.

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LEPROSY

A few research activities on leprosy are taking place in Israel, mainly on the chemotherapy of the disease.

Other studies are being planned on the use of combined treatments under difficult operational conditions, for instance where nomadic populations are involved, particularly in Somalia.

Studies on the disease among children and in the general population, based on early detection of cases, are being undertaken in Egypt with a view to defining the methodology and control strategy applicable to local conditions.

VECTOR BIOLOGY AND CONTROL

In the field of biological, rather than chemical, control of disease vectors, the Faculty of Science of the Ain Shams University in Cairo is undertaking an evaluation of entomological operations using Bacillus thuringiensis as biological larvicide against mosquito vectors in Egypt.

A bacillus which kills larvae

The biological agent called Bacillus thuringiensis has the property of killing the larvae of mosquito vectors of malaria and the black fly vectors of onchocerciasis, two diseases which afflict millions of people in the Region. The new product has the advantage of being specifically active against disease vectors and harmless for the environment. It is hoped that it will be a useful complement and possibly a replacement for currently used chemical insecticides which too often pollute water and soil. It can also be employed in combination with other control measures, such as larvivorous fishes.

The fish that cleans the place

Other studies on the use of larvivorous and herbivorous fishes in irrigated areas are in the planning stage with the twin objectives of controlling larvae of malaria-carrying mosquitoes and schistosomiasis-carrying snails. The herbivorous fishes would deprive the larvae and snails of shelter and thus contribute to their control.

SOCIAL AND ECONOMIC RESEARCH

As the effectiveness of many control measures is greatly dependent upon social customs and economic constraints, research into the social and economic aspects of controlling the six diseases are also taking place.

Community participation and self-help

In Pakistan, research workers are trying to devise community-oriented methods and strategies to help reduce the very heavy expenditures incurred by malaria control. This is being done in several different areas of the country where conventional methods of malaria control, such as spraying of houses and distribution of drugs, are already applied. The operation consists of identifying the behaviour, attitudes and practices of the community in response to health education, and of collecting facts and figures about the actual socio-economic status of the community in relation with the control of malaria and other tropical diseases.

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Community-oriented strategies are aiming at setting up socio-economic centres, supplying the population with anti-malaria drugs either at local MCH centres or through local leaders, improving drainage systems and disposal of wastes, and building biogas plants, on a self-help basis, in order to reduce the proliferation of mosquitoes and flies. This is a typical example of community participation in the context of primary health care (PHC).

Various social and economic studies are in preparation in Egypt, in particular on water utilization and its relationship with schistosomiasis, and on the effectiveness of primary health care workers in controlling the disease.

In Pakistan, studies are being proposed on the social and cultural factors possibly related to the occurence of leprosy among children.

STRENGTHENING OF RESEARCH INSTITUTIONS

Towards self-reliance in research

Closely interrelated to the discovery of new tools against the six diseases is the strengthening of research institutions. The aim is to help institutions in developing countries become self-reliant in research in order to cope with their own disease problems.

For instance, thanks to a long-term support award granted by the TDR Special Programme, the National Health Institute of Pakistan has drafted a working plan for research and training covering the three main diseases of public health importance in the country: malaria, leprosy and leishmaniasis.

Another example is that of Sudan, where a grant from the TDR Special Programme will enable the Tropical Medicine Research Institute in Khartoum to purchase equipment for the clinical research laboratories at the Tropical Diseases Hospital in Omdurman.

Again, the Institute of Ophthalmology of the Khartoum University, which is promoting valuable studies on onchocerciasis and has responsibility for training national staff, is cooperating with the TDR Special Programme to strengthen its research and training capabilities.

A CALL FOR COOPERATION

The initial success of the TDR Special Programme throughout the world, the response of the scientific community to its challenge, and the generous financial contribution of many governments and agencies, make it most appropriate that more advantage is taken of the opportunities offered by the Programme in the Eastern Mediterranean Region. Funding agencies should realize that it will require many years and large amounts of money to achieve the Programme's objectives, which are also in line with WHO's goal of "Health for All by the Year 2000". The task ahead is very difficult and calls for a coordinated effort among research workers and potential donors. Neither the know-how nor the funds are lacking in this Region; all that is needed is more active support of those who are able to contribute both financially and technically so that the high expectations of the Eastern Mediterranean countries affected by tropical diseases are met.

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The next issue, June 1981, of the EMR Newsletter will be devoted to the work of the Thirty-Fourth World Health Assembly, meeting in Geneva from 4 to 22 May 1981.

NOTE TO READERS AND EDITORS

For further information on these items please write to:

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