WORLD HEALTH ORGANIZATION

ORGANISATION MONDIALE DE LA SANTE

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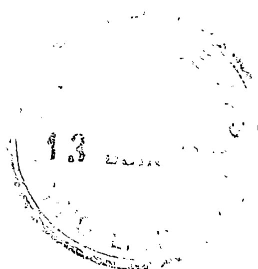

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CONTENTS

		Page
1.	Health Education in Turkey	2
2.	The Mosquito Net	8
3.	A Telescopic Lance for House Spraying	9
4.	Acute Toxic Effects of Overdoses of Oral Chloroquine	10

1. HEALTH EDUCATION IN TURKEY

Dr Dorothy B. Nyswander, Emeritus Professor of Public Health Education in the School of Public Health of the University of California and WHO Consultant in Health Education, has recently made a report on her three-month visit to Turkey where she was able to analyse the health education aspects of the malaria eradication programme there.

It is considered that this report contains many observations and suggestions which have application in other countries and relevant portions have been extracted.

As was to be expected, many of the same problems are being encountered in Turkey as in other countries. Women do not want their walls stained with the wettable powder solution and clean them after the sprayman has left; they lock their houses and go to stay with relatives. Men and women fear that if their blood samples reveal the presence of malaria, they will be deprived of work in the rice fields and women do not like to see their children cry owing to what seems to them an unnecessary procedure. Some malaria cases, too, do not understand the "radical treatment" and as a consequence do not come to the clinic, or absent themselves from their homes.

It is felt, however, that, in general, there is less negative reaction to the operations of the malaria programme than in many other countries. There do not seem to be groups where religion makes for antagonism. Nor were widespread superstitions encountered or rumours spreading about the intentions of the Government in its house-to-house work.

It is considered that problems of high priority are the following:

(1) A widespread belief that malaria is eradicated in Turkey. This belief is held by highly educated people as well as by villagers. Why this is a natural belief today was explained clearly. Whereas only a few years ago malaria cases were counted by the thousand and everyone had personal knowledge of its incidence, today in many zones and sectors, thanks to the malaria control and malaria eradication programmes, this first-hand knowledge is lacking. If a case of malaria is found, it always seems to be "imported". And "imported" gives the confident feeling that the disease is not here, but far away. This leads to the belief that malaria is eradicated.

(2) In general, the criteria which determine when malaria can be said to be eradicated are not known to people outside the malaria eradication staff. Thus, although there is compliance by the people with the requests of the malaria staff to

spray their houses again, to take drugs and to give a blood sample, the workers are continually being asked - why? Ignorance of the question of the criteria by the medical profession and other leaders is reflected in their remarks, which are not always free from a touch of cynicism.

(3) The medical profession needs information about the malaria programme, the criteria for "eradication", and the new drugs. Physicians interviewed were frank in stating that they did not believe their colleagues were informed in these matters. One does not need to labour the point of the importance to public health of helping private practitioners to keep abreast of current programmes. Their influence on patients and their communities cannot be underestimated.

(4) The use of collaborators in passive surveillance is not achieving the desired results. The concept of collaborators to supplement the work of the active surveillance agents is of increasing importance as effort is intensified to discover the last cases of malaria. The writer's attention was directed again and again to the difficulties encountered by the active surveillance agents in the mountainous regions of south-eastern Turkey, and to the problems offered by the thousands of people who, with their sheep and goats, or as part-time labourers in rice or cotton fields, move back and forth as the seasons demand.

At present, collaborators are usually the personnel of health centres, dispensaries and hospitals, and pharmacists. Only in a few zones were teachers, "muhtars", private physicians or other non-government health personnel included.

It is important to enrol all personnel of the health services as collaborators; there is an overriding benefit of their participation, namely that eventually when malaria is eradicated in Turkey, vigilance against its reintroduction will become a regular function of the organized public health services. This participation as collaborators is thus a period of training for and of transition to the ultimate stage.

But this objective is not enough. One is led to the conclusion that certain questions must be answered before the use of collaborators in case-finding can be improved or discarded. For example:

(a) What kind of training did the collaborators receive?

(b) Who makes contact with them and how often?

(c) What psychological rewards in terms of recognition and approval are given to them? In other words, what kinds of personal motivation will keep their interest in case-finding at a high level?

(d) How are the currently selected collaborators geographically distributed in each zone? Are collaborators found in those areas where they will be of greatest help to surveillance agents? Are they found where the possibilities are greatest of finding malaria cases?

(e) Is there now the need, in selected areas of Turkey, to consider whether the use of non-health trained collaborators (included in the Plan of Operations) is practical and productive?

(5) In every zone there were many channels for imparting information about the malaria eradication programme that were not being used. Departments of education are extending primary education to every village as fast as they can. In addition to teachers coming from the 52 teacher-training colleges of Turkey, each zone visited is introducing between 75 and 200 emergency teachers chosen from the army and given a short course in pedagogy.

Agriculture is extending adult education in its field to the villages with ever-increasing trained staff and ventures such as "agricultural planning committees" and 4K clubs in the villages.

Army garrisons and the police provide authoritative channels of communications in many localities.

The influence of the religious leader in community life appears to have been insufficiently emphasized as a channel.

Is there need to use these channels, since information on the malaria programme, its present status in the zone and the eradication criteria can be widely spread among professional workers, government employees and the thousands of people with whom they are in daily contact?

(6) The last, but perhaps the most basic problem, and one related to all the others enumerated, is this: at no level are there any persons trained in health education techniques who can assist the zone directors and sector chiefs to improve their present educational work or to introduce new techniques of education for developing individual and community responsibility for both spraying and case-finding.

At the present time there is only one person with professional training in health education in the Ministry of Health in Ankara. He bears heavy responsibilities for the projects of the National Committee for Health Education, a voluntary association with branches in Istanbul, Izmir and Ankara. Thus at the national level there is no person with the necessary knowledge and experience in public health education who can be assigned full-time or even half-time to aid the office of the Director-General of the malaria eradication programme. There are services to be rendered to the programme at the national level which may be impossible to achieve without skilled assistance. For example:

(a) The development of a co-ordinating committee.

(b) The development of well-timed and appropriate press releases and radio announcements for the Director-General's use.

(c) Assistance to chiefs of regions and zones and to the Institute of Malariology in developing refresher courses for staff or initiating new courses.

(d) Assistance to survey staffs in obtaining additional data on present knowledge about malaria, attitudes toward medical care, habits of living, channels for receiving information, etc., which will permit the development of a programme of malaria education and the employment of collaborators based on the findings.

(e) The provision of practical visual aids for sector chiefs, squad leaders, spraymen and surveillance agents.

The subject matter of these visual aids may be of many kinds, for example:

(i) the basic facts the sector chief or squad leader wishes to impress on the mind of the "muhtars" or village teacher or other leader;

(ii) the facts a sprayman can communicate in a few minutes to a family;

(iii) the facts a surveillance agent can make vivid to a family, when (a) he takes a blood sample, (b) he gives drugs.

The kind of visual aids which are most useful in person-to-person teaching are the following:

Pocket-sized flipcharts

Pocket-sized flash cards

Pocket-sized flannel-books

In each of these devices, the story is told with pictures, drawings or diagrams. The short story explaining the illustrations is given by the staff member. This method of teaching is of interest to literate and illiterate alike.

These are only a few of the educational services a technically trained health educator could give to the office of the Director-General.

The following suggestions are made, focused on some of the problems presented above:

A. The belief that "malaria is eradicated"

1. Among the general public

It may be possible for the Director-General of the SNEP to broadcast over the national radio service short reports (not longer than ten minutes) at three-monthly intervals. These should be in the nature of progress reports to the country. The Department of Press, Broadcasting and Tourism will be willing to help with this on a request from the Minister of Health.

2. Among the people now included in spraying and surveillance operations

Zone directors may be urged to instruct sector chiefs and, through them, the squad leaders and surveillance agents, to make known the replies to the following questions as applicable to the operations taking place:

(a) How long and under what conditions will the spraying programme be continued?

(b) How long and under what conditions will the blood-sampling programme be continued?

(c) What are the criteria for determining when malaria is eradicated in Turkey?

(d) Why are drugs given? Why must a person complete the "radical treatment"?

3. Among the medical profession

The Minister of Health may wish to send a letter to every medical practitioner giving a report on the progress that has been made in the malaria eradication programme. This letter might include:

(a) statistics showing the decrease in malaria cases;

(b) the present distribution of cases;

(c) a clear statement of the criteria which are used to determine the completion of malaria eradication in Turkey;

(d) a statement concerning the new drugs now being used;

(e) a statement of some of the problems in case-finding and the need for continuing vigilance by the physicians of Turkey.

The regional or zone director (whichever person is most appropriate because of the lack of uniformity in the medical association districts) may wish to work directly with the president of the district medical association on ways of informing physicians of the status of the malaria eradication programme in their own district. If this is done it may require a small allotment of funds for stationery and postage as the district medical associations have no working budget.

B. Improving the work in passive surveillance

It was suggested that a pilot area (perhaps Izmir) be chosen to evaluate the present system of collaborators. A small study could be devised to assess the selection, training, supervision, geographical distribution, relation of distribution to places of malaria incidence, motivating devices needed to keep the collaborators interested in serving, and degree to which collaborators understand the programme of eradication.

Based on these findings, the staff could then undertake to try out methods of strengthening the weak links.

If it is found that the currently chosen collaborators are not geographically distributed to meet all the demands of the case-finding programme, it was suggested that village leaders be sought, carefully trained, carefully supervised and ways

found to give them recognition. Again, after development, this programme should be evaluated before being extended to other zones.

C. Strengthening channels for communications

Again, it was suggested that a pilot area (perhaps Izmir) be used to determine, (i) the steps by which other agencies (health, education, agriculture, the army) could be brought into a close relationship with the purposes, methods and accomplishments of the malaria eradication programme; (ii) the degree to which each agency could participate in informing its staff; (iii) the degree to which staff working in villages might co-operate with malaria workers.

From this experience it will be possible to learn if such co-ordination is feasible in other zones.

Recommendation

From what has been said above it is now plain that the educational activities associated with the various phases of the operational programme in malaria eradication would be increased and improved through the services of a public health education specialist.

2. THE MOSQUITO NET

The following note has been taken from a translation of an article in the "Boletin" of the SNEP, Peru, of July 1961, and has previously been issued in "Malaria Eradication" No. 20, March/April 1961, published by the Pan American Sanitary Bureau. Impregnation of mosquito nets with insecticides has been used on a number of occasions, but the figures of reduced malaria infections following the use of this technique do not appear to have been reported in such a striking manner previously.

> "To talk of mosquito nets in the midst of the world campaign for the eradication of malaria might seem to be an anachronism. Many will consider the mosquito net as a relic of the past, not worthy to be even mentioned in the report prepared by WHO in 1953 on 'Malaria Terminology'.
>
> However, this 'bed canopy or drapery made of gauze to prevent the entry of mosquitos', as it is defined in the dictionary, still continues to be very useful in many countries and - what is more important - it could take a prominent place as a modern technical device.

Why this rehabilitation of the mosquito net? Because it has been proved that it can be a lethal weapon against the mosquito. It only needs to be loaded with the necessary ammunition: an adequate dose of insecticide.

The experiment in question was made in a relatively isolated part of Peru, Quebrada de Tamischiyacu, in the Amazon region. The inhabitants number 1518 and they suffer from malaria. As a rule, the houses have high roofs and no walls, or only incomplete walls.

As in the whole of the Amazon region, it is the mosquito net that really provides shelter and protection during sleep, and this led to the idea of impregnating the net with insecticide. For the first impregnation, a 50 per cent. suspension of dieldrin was used: the mosquito nets were soaked in the suspension and then, without wringing, left to dry.

Later, a 35 per cent. DDT emulsion was used, and in this instance the nets were put through a mechanical wringer with rollers, of the washing-machine type.

With the dieldrin treatment, the mosquito nets retained the insecticide at the rate of 1 g per square metre; with the DDT, the rate was 2 g per square metre.

This experiment in Quebrada de Tamischiyacu is not yet completed but it is nevertheless interesting to note that in the year before the experiment, 30.4 per cent. of 539 blood slides were found to be positive, whereas from March 1960 to February 1961, only 2 per cent. positive results were obtained with 1696 slides.

The fact that transmission has been so reduced without spraying houses is encouraging for this new method, as in addition to its other advantages, it is economical and simple since it requires no specialized personnel.

Although the duration of treatment has not yet been determined, it is hoped that the observations which are now in progress will provide satisfactory answers in this and other aspects."

3. A TELESCOPIC LANCE FOR HOUSE SPRAYING

In an annex to a report from the WHO malaria pilot project in Liberia by Dr Guttuso, Mr E. G. Wren, WHO Sanitarian, describes the use experimentally of a telescopic lance, used with a Hudson compression sprayer.

The lance[1] consists of five aluminium telescoping sections, each section being three feet long, giving a total reach of fifteen feet and a packed length of just over three feet. There is a two-way locking sleeve at each of the four junctions

[1] Supplied by Kestrel Engineering Company Ltd., Birmingham, England

and the top of the lance terminates in a conventional housing and nozzle tip (SS8002). From the nozzle tip a long length of plastic hose, with an external diameter of 1/4 inch (0.6 cm), passes freely through the whole length of the lance, which has an external diameter at the base of 1 inch (2.54 cm). This hose passes through a hole at the base of the handle to connect by a female fitting to the outlet from the manual lever which is bracketed to the base of the lance.

A second short length of plastic hose of external diameter 7/16 inch (1.1 cm), with a male connector at each end, connects the outlet in the manual lever with the spray pump.

The telescopic lance was tested under working conditions in two villages in Liberia. In these villages approximately one-sixth of the structures had high roofs, which were extremely difficult to spray using the conventional single-length extension lance, and in these structures the telescopic lance was found to be of considerable assistance.

In the opinion of the staff using this lance, it appeared to have the following advantages over the conventional screwed-on extension lance:

(a) it weighed less and was easier to carry;

(b) it could be rapidly extended or shortened as required.

For general use with the normal issue of sprayers the following modifications would be recommended:

(a) the short hose connecting the manual lever with the sprayer should be provided with female connectors at both ends (sizes 7/16 inch and 3/4 inch - 1.1 and 1.9 cm);

(b) in order to avoid having two flow control points - one on the sprayer and one on the base of the lance - the bracket at the base of the lance might be adapted so as to clasp the conventional trigger in order to provide a positive control over the flow.

4. ACUTE TOXIC EFFECTS OF OVERDOSES OF ORAL CHLOROQUINE

While acute toxic effects of overdoses of parenteral chloroquine in infants and children have been frequently reported, there have been fewer observations made on toxic effects of large oral doses of chloroquine in adults. J. Larribaud,

P. Colonna, M. Chevrel, B. Romani, J. Roux, A. Pidoux, P. Renouf & R.-Y. Lefebvre, in La Presse Medicale, 1961, 69, 2193, report two cases of oral chloroquine poisoning in Algeria.

The first was in a man of 21 years who, after consuming a large quantity of alcohol, took between 50 and 80 tablets of 100 mg chloroquine (i.e. 5-8 g). He was admitted into hospital within half an hour of taking the chloroquine in a comatose state with a hypopyrexia of under 34.5°C. An attempt was made to give him a stomach wash-out but this was unsuccessful and he was given an injection of 5 mg of apomorphine, which provoked vomiting; the vomit contained no tablets but consisted mainly of alcohol. He was treated symptomatically with stimulants and antibiotics. Three hours later his temperature had risen, his blood pressure improved and his pulse rate had come down from 90 to 76. He became conscious at times and tried to drink water but could not swallow it. About 12 hours after he had ingested the chloroquine he suddenly developed convulsions of epileptic form type, but these ceased quickly and he was evacuated to a larger hospital where a full examination proved negative and the patient recovered without further trouble.

The second case reported, a male aged 20, was found dead following a dose of chloroquine which was thought to amount to about 20 tablets of 300 mg (altogether 6 g). On examination the body showed traces of vomiting and haemorrhages. Post-mortem findings macroscopically showed little apart from congestion; the cranial cavity was unfortunately not opened. Histologically it was difficult to find any definite pathological indications of toxic effects apart from general congestion and oedema of the various organs, particularly the kidneys where there was a certain amount of infarction of the glomeruli and tubules.

The authors of the article go on to review several other cases of acute poisonings in adults that have been reported in the literature and from these it would appear that the lowest fatal dose reported is 1.75 g.

These two cases are of interest in that they serve as a warning of the potential toxicity of chloroquine and remind us of the care that should be taken in emphasizing the risks of overdosage in view of the large quantities of this drug which are now being used in antimalarial treatment, much of it being dispensed by relatively untrained personnel.