



SEMINAR ON THE ROLE OF HEALTH SERVICES
AND TRAINING INSTITUTES IN THE CONTROL
OF VECTORS AND RESERVOIRS OF DISEASES

EM/SEM.ROL.INS.CTR VCT.RSV.DSS/9

Baltchik (Varna), Bulgaria, 4 - 11 October 1982

Agenda items 9 and 10

VECTOR CONTROL MANAGEMENT AND ITS ORGANIZATION AT
DIFFERENT ADMINISTRATIVE LEVELS

by

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One very important link in the programme for vector borne disease control is the successfully carried out vector control. That is why particular attention must be paid to its correct organization and management, as well as to its timely implementation. Vector control can be rationally resolved only through special, well organized units.

In the present report we shall describe the experience of our vector control organization in health services

The present organization of the vector control units in our country possesses some common features with the organization of the same services in the other countries, but each one has its own specificity.

At this Seminar we shall be able to point out and take into consideration many questions on the organization, management and implementation of vector and rodent control, in order to obtain the most suitable and effective form of service according to the local conditions of our countries.

The People's Republic of Bulgaria is a small state with about 9 million population. It covers a surface of about 111,000 square km. The landscape is very heterogeneous (mountains, plains, valleys, rivers, Black Sea coast etc), which determines a varied climate and at the same time diversity of local flora and fauna.

The widespread vector-borne diseases of the past, such as malaria and epidemic typhus have been liquidated in our country, cases of haemorrhagic fever are rare. Cases of intestinal infection (shigelloses, salmonelloses etc.) are considerably diminished. During the past years imported parasitic diseases occupied an important place and special attention had to be paid to them

The great success achieved in vector-borne disease control is a result of our public health organization and correct activities of prevention medicine.

1. VECTOR CONTROL ORGANIZATION

The vector control measures which are carried out through the management of the Ministry of Public Health are directed not only towards specific vectors but to all medically important arthropods e g. mosquitoes, flies, fleas, lice, cockroaches, bed-bugs, ticks, ants etc., as well as rodents. The control work with all these pests is done by special services attached to Hygiene-Epidemiological Inspectorates (HEI). In every district/principal town there is such an inspectorate, its staff comprises the Department of Disinfection, Vector Control (Disinsection) and Rodent Control (Deratization) (See figure 1).

The DDD Departments are supervised by a medical doctor/epidemiologist or by a biologist, both of them with advanced education. In every department there are several working teams with a leader - instructor (doctor's assistant) with special medical education. In every team there are 5 to 6 disinfectors (spraymen). Each one of them is responsible for a definite area of the territory of the district in which he conducts vector and rodent control. In every such area there is a sector of the district principal town, as well as the sector of the province, villages and other towns.

The sectorial principle seems to be a very useful one, because the various jobs entailed are well known, together with their objectives and problems. Another reason is the easier evaluation of work and of the effectiveness of management. In each sector there are about 10,000 to 12,000 population. Besides this, in some bigger towns or in more important resorts, industrial areas and other similar places, there are small teams of disinfectors with an instructor. They are under the local public health service (branch or group of Hygiene Epidemiological Inspectorate) but organizationally, financially and methodically they are attached to the staff of the DDD Departments. The biological laboratories have been built adjacent to the DDD departments. One to three biologists are working in them. Some of them have a specialization (medical entomology or medical zoology) but more often they are polyvalent. There is special instruction approved by the Ministry of Public Health for the tasks and activities of the laboratory.

Liaison for control of disinfections and sterilizations in hospitals is the responsibility of the DDD department also . There is also an administrative link (cashier-manager, drivers etc)

Each department for vector and rodent control has its own vehicles (cars, minibuses, etc.) for daily service of the teams in transporting personnel , spray-machines, materials and so on.

II FINANCING

An extremely important prerequisite for successful vector control is granting of the necessary funds.

DDD Departments are self-supporting. They obtain their funds in several ways:

- From annual agreements with state and economic enterprises, factories, resorts and others.
- By separate requests covering special needs, including those of private persons.
- Upon order of the Manager of the Hygiene-Epidemiological Inspectorate for definite objectives on epidemiological and other special indications.
- From District People's Councils - to carry out vector and rodent control (in accordance with the 82nd Decision of the Ministry Council, 1982).

During the period when we were establishing this organization we met many difficulties. A great number of instructive and efficient documents were drawn up and developed. The relationships between HEI, DDD departments and the clients, as between the Ministry of Public Health and other offices which carry out vector and rodent control - Ministry of Agriculture - veterinarian units, Ministry of Transport, Ministry of Home Affairs, Ministry of Defence etc., have all been carefully determined.

III SUPPLY OF FACILITIES AND PRODUCTS

Planning regarding pesticides is effected by HEI. The experimental and production laboratory (Pernik) collects all requests and presents to the Ministry the required quantity for the next year. The Ministry draws up the final requests according to the available currency and the recommendations of the Research Institute of Infectious and Parasitic Diseases (Laboratory of Disinsection and Deratization) concerning the efficacy of the preparation vis à vis the local populations of insects and rodents and the state of resistance to the insecticides.

The Specialized Council of DDR attached to the Ministry approves the list of pesticides for the next year.

Part of the pesticides e.g. technical products are being imported. However, their formulation is done subsequently in Bulgaria - mainly in the Experimental and Production Laboratory or in Pharmachim.

Supply of transport and facilities is also centralized by the Ministry of Public Health and is in conformity with the needs of the district units.

IV ESTABLISHMENT OF APPROPRIATE COORDINATING MECHANISMS AT ALL LEVELS

Appropriate coordination must be established at vertical as at horizontal levels. For instance, in accordance with government documents, there exists a special Coordinating Committee on DDD problems. The members of this Committee are drawn from the Ministry of Agriculture, Ministry of Public Health, Ministry of Transport and so on. The main problems of vector and rodent control are discussed.

At district level every year special joint programmes are built up in the field of vector and rodent control with all services which conduct these activities. HEI has a responsibility regarding the fulfilment of the programme. The District Council evaluates the results of the joint work. The services from different authorities not only coordinate their actions but very often help each other with preparations, machines and labour.

Very effective collaboration must be established between the DDD department and other departments attached to the Hygiene-Epidemiological Inspectorate. Such are the Departments of Epidemiology, Parasitology and Hygiene. For instance, with the Parasitological Department, collaboration on the anophelene mosquito control; with the Epidemiological Department - on flies, cockroaches, lice and other control, with the Hygiene Department - on flies etc.

In fact, excellent coordination exists between the Ministry, our Institute and HEI.

V SYSTEMS OF SUPERVISION

Qualitative and timely supervision has a great importance for the correct performance of vector control activities and for the sharp reduction of arthropod density. With regard to this, a special Instruction was issued by the Ministry of Public Health on "Supervision on the quality of disinfection, disinsection and deratization accomplished by the Department of DDD for the Hygiene-epidemiological Inspectorate".

The supervision which must be exercised is both internal and external. Internal control comprises the everyday supervision of vector control activity. On one side the clients, (the people who are working in the enterprises which have agreements) are examining and reporting if the density of insects has increased, or if there is appearance of rodents. Instructors also control the work of disinfectors. The main functions of supervision belong to the biological laboratory. They perform this with a special method for periodically assessing the density of insects and rodents. (There is a special instruction for this purpose drawn up by the central laboratory of disinsection and deratization.) When they establish increase of the norm of number of insects on a fixed surface "bad quality" is recorded. They then investigate the reasons and take immediate measures including administrative ones, if necessary.

Other departments of HEI, e.g. Epidemiological, Parasitological, etc. have the right of supervision of vector and rodent control activities, particularly in work undertaken on epidemiological indications.

The Ministry of Public Health through its own specialists or those from the Research Institute of Infectious and Parasitic Diseases carries out a yearly check-up of the districts for their entire work in the field of preventive medicine. If there are some failures the Ministry sends a special team to check up and to help correct matters. Such teams undertake supervision and evaluation of the work and give a concrete recommendation for liquidation of the failures. They have to visit the most difficult locations to search for the reasons for the failures, etc.

Every three months the Chief of the DDT department sends the Ministry short reports and at the end of the year an annual report. The biologists also send the Institute annual reports. They have a special reporting form.

VI TRAINING OF STAFF

As mentioned above, doctor-epidemiologists are working in departments of disinfections, vector and rodent control (DDT). They obtain their education in the Medical Faculty. Biologists have high University education in biology. Instructors have secondary medical education and the greater part of disinfectors have completed a "gymnasium".

Irrespective of education, every disinfectant at the beginning of his training has to pass a short course on vector control. Lectures and practical exercises on this subject are read by biologists or instructors. After that he is obliged to accompany for some period one of the most experienced disinfectors and only then he is allotted his sector. Every year 3 to 5 day courses have been organized for the whole staff. After that in some districts they carry out the examination of the material which they have studied : type of insecticides and methods of action and application, some data on biology and ecology of insects and rodents, toxicological data, preventive measures and labour protection, type of spray-machines etc. This is done mainly in winter.

In some cases it is necessary to have more precise and concrete specialization. For instance, in the summer season in some areas, it is necessary to organize a team for mosquito control. Such people, however, work on other insects and rodents during the next part of the year.

The highly educated specialists underwent post-graduated courses at our Institute. Some years ago, the specialty of "Medical Zoology" was recognized. Vector control and Rodent control are included in it. The specialization is performed at the working places in the Institute, by visiting foreign countries or by exchange of experience with colleagues from abroad or from other districts.

The specialized units, well organized more than 25 years ago, for disinfection, vector and rodent control have proved their right to exist. We do not consider that this form of organization is absolutely obligatory for everyone, but in our country there have been great achievements in this field. Each country has its own climatic, organizational and other specific conditions.

When the specialized units have to be organized, it is necessary to approach the matter in a concrete way. However, the need for such units into the health services is undoubted, especially in the tropical and subtropical countries where vector control has to play a decisive role in the programmes against vector-borne diseases.

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WORKING
TEAMS

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DESINFECTION AND
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