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EDUCATION AND TRAINING REQUIREMENTS FOR PRIMARY HEALTH CARE AND  
COMMUNITY WORKERS IN VECTOR CONTROL

by

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The WHO Global Strategy for Health for All refers to educational activities as the very best way of encouraging people from all walks of life to participate in health care, and of making them the true artisans of health and development. In fact, the WHO Seventh General Programme of Work stipulates that activities in the field of information and education for health should aim to increase "individual and community capabilities for involvement and self-reliance in health and to promote healthy behaviour, particularly regarding family health and nutrition, environmental health, healthy life-styles and disease prevention and control".

In the area of Disease Vector Control, the Medium Term Programming of the Seventh General Programme of Work states that one of its main thrusts is for the establishment and strengthening of institutions and training facilities in all aspects of vector biology and control, in order to constitute a network of centres available to all endemic countries, and the utilization of those institutions to reduce the severe shortage of trained professional and vector control specialists at the country and community level.

Education and training in vector control

Considering that the vector control structure within the primary health care system has not yet been formulated or established in most of the developing countries, it is rather difficult, therefore, to identify the different categories of manpower involved, especially those at the periphery, and their educational and training requirements. However, for the purpose of this paper we may separate them into three main groups:

1. First group - at national or regional level

This group includes the highest level of vector control specialists in the country, responsible for the overall planning, implementation and evaluation of vector control activities at the national or regional level.

For many years the training of members of this group from developing countries for an M.Sc. or Ph.D. degree was carried out exclusively at academic institutions in the developed world. The problem these students faced when they came home was the lack of experience in field activities relevant to vector population and ecology in their own country. In many of these cases research activities were restricted to laboratory work, which was easier to accomplish but of no practical value to the country concerned.

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In view of this situation and because of the high increase in the cost of sending students to study in developed countries, and also because of the present strategy of integrated vector control which requires more knowledge and understanding of the problems associated with local epidemiological, ecological and social conditions, it has been found necessary to train candidates at their national training institutions or institutions in neighbouring countries, having similar epidemiological situations and vector problems.

In line with this trend the WHO Division of Vector Biology and Control and the Tropical Diseases Research Programme supported the establishment of eight regional M.Sc. courses in tropical countries; Kenya, Nigeria, Ivory Coast, Thailand, Indonesia, Brazil, Panama and India. These courses are at different stages of development.

To ensure that these courses provide the necessary educational and training requirements the following main guidelines should be taken into consideration:

- (i) Research projects for an M.Sc. or Ph.D. degree should be directed towards solving technical field problems and testing of combinations of control methods with community involvement. Research projects of purely academic value should be avoided.
- (ii) Considering that these students are the future decision-makers, their training should include appropriate orientation and training activities in primary health care and management of vector control activities within the system.
- (iii) To provide candidates with up-to-date information on the integrated methodology and ways and means of motivating and promoting the community to participate in vector control management of these programmes, national courses should be supplemented by country and inter-country seminars and workshops.

## 2. Second group - at intermediate level

This group, which operates at the district level, includes multipurpose and specialized workers. The former sub-group involves dispensaries, health centres, public health officers, nurses etc., whereas the latter sub-group includes those who will be carrying out activities requiring more sophisticated knowledge and skills, such as in the case of urban vector control programmes, the use of advanced spraying equipment etc.

The training of multipurpose workers in vector control is based on a curriculum developed in coordination with other health activities.

On the other hand the training of specialized workers, who consist mostly of sanitarians or technical officers, is in the form of regular courses in vector control within overall courses on sanitation at national institutions. The curriculum of these courses should emphasize the concept of PHC and the integrated vector control approach. To increase the knowledge of these specialized workers, as in the case of the first group of professionals, they should be given further training in the form of country or inter-country courses or workshops. The Danish Government has been supporting this type of training by the provision of funds for one or two courses per year with WHO as the executive agent.

## 3. Third group - at peripheral level

Training requirements at this level are intimately related to the modifications made in the functions of the various categories of peripheral health personnel in the context of an integrated system.

Training can solve problems that result from a lack of skill and knowledge, but may not alone motivate or change behaviour. Well-designed training programmes can help people to carry out a job with a certain degree of efficiency, but approaches designed to motivate and promote the community to change its life style must be planned more carefully, i.e. sleeping under mosquito nets, retiring early at night time inside their houses, use of screens on windows and doors, clearing of vegetation around houses and villages, use of mosquito coils and repellents, keeping tight lids on water containers, etc.

Vector control activities and their effect on disease transmission and health may not be understood by the community, which should be made aware of such a relationship. Community motivators are needed to advise on educational and communication approaches that can help motivate the interest of the individual and the community in vector control.

The training of community health workers or any other category that may be responsible for vector control at the village level should be carried out by someone from the specialized or multipurpose teams at a selected village centre or any other appropriate location. Those trainees should in turn train family members, preferably by domiciliary visits.

#### Training modules

The need to change present educational and training programmes to meet the objectives of the national strategy for health for all and the integrated approach has been discussed in a number of documents.

Unfortunately the curriculum of most M.Sc. and Ph.D. courses in medical entomology and vector control are still overburdened with the pursuit of knowledge required for enhancing careers but irrelevant to the priority tasks that must be performed in order to meet the vector problems of communities. Little attention is paid to learning-problem-solving skills. Many instructors give insufficient priority to field activities and tend to develop curricula based on what they themselves think the community needs rather than attempting to understand the need of the individual and community. Training modules in vector control based on local epidemiological situation, human ecology and community participation need to be skillfully developed at all levels and in collaboration with other related disciplines within primary health care.

#### Educational and training material

The development of appropriate training materials in vector control is essential. It involves materials which are broadly designed for this purpose and materials which are developed locally or adapted from the broader ones. The new trend in health science education calls for the widespread adoption of audiovisual, self-instructional and simulation techniques which have proved to be of considerable value in facilitating learning.

Educational and training materials such as leaflets, posters, slide/tape shows for the population at the periphery require greater attention. At that level, most of the population in developing countries has low literacy rate, little knowledge on vector-borne diseases and dynamics of their transmission, and vector bionomics and control, including personal protection and source reduction. In order to develop appropriate educational material for the target population it is important to understand their beliefs about relevant vectors, their attitudes towards illness in general and their life style. The material developed should not be based only upon these behavioural patterns but also upon the experience of visual perception. Visual aids will make it easier for people to learn and remember, help them to see things which normally they do not notice, show steps to be carried out clearly, illustrate action and consequence, review information, attract attention, develop interest, provide entertainment, demonstrate expected gains and furnish the basis for discussions.

To assist Member States in their training programmes the WHO Division of Vector Biology and Control has embarked upon the development and distribution of some educational material, including;

##### 1. Brochures

These documents, which provide general reviews of the ecology and control of individual vector groups, are used as training and information guides by different categories of personnel, particularly in the developing vector-borne disease endemic countries. The documents are divided into two series; an advanced series for students in medical entomology as well as for reference use by professional staff; and a middle-level series for vector control personnel at the intermediate level. The two series of documents are revised and up-dated periodically.

Each document includes two questionnaires, one for self-evaluation and the other for return to VBC for consideration at the time of the revision of the document.

These documents could be used either directly or after adaptation, including translation into national languages to suit local requirements.

2. Slide sets

Slide sets with accompanying notes are developed as visual aids, supplementary to the brochures. These sets are neither comprehensive nor exhaustive, and it is left up to the user to supplement or replace some of the slides by others of his own representing the situation in his own country or environment.

3. Others

Other training material such as films and video-cassettes, although being considered, have not yet been developed.

In developing educational and training material of practical value suitable for use worldwide, but especially in developing countries, there are a number of constraints which are being faced including:

1. Most of the collaborators available for writing the brochures or producing slide sets are university staff in developed countries, who may have limited experience in field activities in developing countries. It is even more difficult to find suitable collaborators with experience in the application of vector control methodology at the community level.
2. Collaborators who have the ability to write simple vector control documents suitable for middle-level health workers are very hard to find.
3. The only method used, so far, to evaluate the VBC brochures has been through the questionnaire which is attached to each document. Some readers respond by sending their own personal views about the document. Although a number of national institutions in developing countries have been requested to test this material in their training programmes, especially the middle-level series, and inform WHO of the results in order that the documents can be revised accordingly, no response has been received.
4. Due to budgetary constraints, WHO has not been able to support the evaluation of its educational material in field training programmes.
5. It is difficult for one collaborator to develop a complete series of slide sets. A number of people are required, therefore, to produce one single slide set, making the job very difficult to accomplish, expensive and time-consuming.
6. The total cost of a slide set, including reproduction of individual slides, accompanying text, cover and postage, is rather high, resulting in the limited distribution of this material. The cost could be reduced by the production of a great number of sets at one time, but this is not feasible because of limited storage facilities.

Concluding comments

In order to proceed with the development of a national vector control strategy, decision-makers must be convinced that the PHC system is an appropriate approach for this purpose. Furthermore, all categories of vector control personnel at the national, intermediate and peripheral levels should be sufficiently familiar with their role in vector control and well-enough trained to perform their duties.