

# swasth hind

JULY 1987

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- \* Healthy productive life—An industry based occupational health education programme
- \* Occupational hazards—present risk to future generations
- \* Education and acute respiratory infection control
- \* 40th world health assembly
- \* Shelter programmes to be broad-based
- \* Health habits of school going children—A study
- \* Combat misbeliefs to achieve health for all by 2000 A.D.
- \* National AIDS control strategy
- \* New hope for early breast cancer detection

# swasth hind

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## OBJECTIVES

*Swasth Hind* (Healthy India) is a monthly journal published by the Central Health Education Bureau, Directorate General of Health Services, Ministry of Health and Family Welfare, Government of India, New Delhi. Some of its important objectives and aims are to:

**REPORT** and interpret the policies; plans, programmes and achievements of the Union Ministry of Health and Family Welfare.

**ACT** as a medium of exchange of information on health activities of the Central and State Health Organizations.

**FOCUS** attention on the major public health problems in India and to report on the latest trends in public health.

**KEEP** in touch with health and welfare workers and agencies in India and abroad.

**REPORT** on important seminars, conferences, discussions, etc., on health topics.

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Central Health Education Bureau  
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**EDITOR** N. G. Srivastava

**Sr. SUB-EDITORS** M. L. Mehta  
M. S. Dhillon

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# HEALTHY PRODUCTIVE LIFE

## — An Industry Based Occupational Health Education Programme

A. KUMARESAN

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*This paper discusses the experiences in operating an "Occupational Health Education Programme" in a Heavy Engineering Industry, for the workers, supervisors and executives. The inputs of this one day programme are delivered in the form of lectures, films and demonstrations according to the group characteristics. This on-going programme aims to cover the entire working population of 15,000 in a phased way, a target period of five years. The aim is to provide an understanding of the principles of Occupational Health to promote positive attitudes toward work, and to enlist/promote meaningful participation in all constructive programmes connected with health promotion.*

*The various aspects of programme planning, course content, organisational aspects and practical considerations relevant to the success of this approach are discussed in this paper.*

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Educational programmes are designed to influence and reinforce people's behaviour positively towards a desired goal. Health education is a process which effects changes in the health practices of people and in the knowledge and attitudes related to such changes. It is any combination of learning experiences designed to facilitate voluntary adaptation of behaviour conducive to health. Behaviour profoundly influences our health, and

behavioural change, therefore, makes a lot of difference in achieving optimum health. We can bring about this needed positive behavioural change through health education process.

### **Need for health education in occupational health**

In any health care programme—whether it is health promotive or disease preventive, curative or re-

habilitative—health education has come to be increasingly recognised and has become its important and integral component. In a comprehensive health care programme like Occupational Health Services (OHS), the role of health education, therefore, is vital. We need to especially consider the fact that every occupation is associated with some risk or the other. There is no occupation devoid of risks and these risks can, if at all, be only minimi-

sed but cannot be altogether eliminated. The prolonged incubation period for many work related diseases to get clinically manifest makes health education imperative since the workers cannot be expected to be aware of what may happen after years.

Health and productivity and their promotion essentially revolve around educational services. Occupational health services lay emphasis on work, working conditions and workers' health and essentially operate on the principle that occupation and health influence each other either positively or adversely.

Against this background the need, content and practice of occupational health education and training are identified, designed and implemented as per the requirements of different countries or industries or workplaces.

#### **Health education and Training Unit at BHEL, Tiruchi**

The Health Education and Training Unit functions within the framework of Occupational Health Services (OHS) in BHEL, Tiruchi. In 1976, OHS was established in BHEL, Tiruchi, in line with the ILO Recommendation 112 emphasizing the need for such services at the plant level. BHEL is a public sector undertaking engaged in fabrication of boilers, pressure valves and accessories. It has got a total workforce of 15,000 employees. The objective of occupational health services being promotion and maintenance of health at workplace, health education unit plays a pivotal role by giving the

needed inputs and educating the employees towards that direction. To achieve this objective the Health Education Unit functions in collaboration with the multi-disciplinary group of professionals/units constituting the total and comprehensive Occupational Health Services.

The activities of Health Education Unit in Tiruchi under OHS comprise health educational programmes for:

- (a) Specific occupational groups like welders, fitters, machinists, sanitary workers, security personnel, etc.
- (b) Specific groups of patients suffering from diseases like diabetes, hypertension, hypercholesterolemia, peptic ulcer, etc.
- (c) Trade union leaders.
- (d) Act apprentices.
- (e) Housewives—inputs with regard to nutrition.

Educational inputs were given according to the needs of these groups. A cross section of employees and some housewives have been periodically covered under various health educational programmes as listed above.

#### **Programmes on healthy productive life**

This crash programme—a package programme with a number of training modules—was launched in 1985 to create a wide-spread awareness about health and the services available under the OHS though specific programmes listed above were already serving their purpose.

Such awareness is essential at grass-root level and this, in the first place, accelerates our goal oriented approach.

Secondly, it facilitates early detection by the workers themselves of any hazard in the work environment or the effects of any hazardous environment or work operation on the health of the employees. It in turn enables the OHS to plan necessary intervention at an early stage.

Thirdly, greater awareness about occupational health facilitates better voluntary participation of the employees in various programmes carried out by the OHS.

Furthermore, this programme provides an opportunity to employees to shed any doubt, misconception or apprehension that they may have regarding the purpose or activities of the OHS.

#### **Programme strategy**

Keeping in view the above mentioned needs, series of meetings were organised with the faculty of OHS to design this one-day programme. The programme was a three tier approach with three different modules, developed keeping in view the nature of work and types of responsibilities, etc., of three different categories of employees namely workers, supervisors and executives. The target population proposed to be covered was nearly 15,000 skilled, semi-skilled workers, supervisors and various levels of executives working in Tiruchi Unit of BHEL. The entire target population was planned to be covered in a phased manner over a period of five years.



Every occupation is associated with some risk or the other and occupational health services lay emphasis on work, working conditions and workers' health.

### Objectives of the programme

The overall objective of the Healthy Productive Life programme was to create an awareness among the BHEL, Tiruchi Unit employees about the concept of occupational health services in order to promote health through their active participation in various health programmes initiated by the OHS.

In order to attain this overall objective, specific objectives were for-

mulated for each of the three different modules.

The duration for each module was fixed to be of one day consisting of six working hours. The methodology included lecture discussion sessions, group discussions, experimental learning and practical demonstration. The content of the programme and the time distribution were as follows:

Subjects	Module	Time
Concept of Health and Occupational Health	Common for all 3 modules	1 Hr
Introduction to OHS	—do—	1 Hr
Nutrition and Exercise	—do—	1 Hr
Stress and Stress Management	Only for Module - I Executives	3 Hrs
Handling people with problem	Only for Module - II Supervisors	3 Hrs
Evils to be Avoided (alcoholism, drug addiction, smoking)	Only for Module - III Workers	3Hrs

### Planning the target group and the duration

The target group for this programme was decided to be the entire employees of BHEL, Tiruchi. The information about the total number of employees and these category-wise break-up was obtained from Health Information Systems group, a component of OHS. The total number of employees in the unit are about 15,000. Among them 1452 are executives 3001 supervisors and 9922 workers.

The programme is conducted for eight months in a year leaving out the period between January and March when production schedules are tight.

The programme at present is being conducted for four days in a week, one day for executive group, one day for supervisory group and two days for workers' group with a maximum of 25 employees per day. As such it is possible to cover,

in one week	25 × 4 =	100 employees
in one month	100 × 4 =	400 employees
in one year	400 × 8 =	3200 employees
in five years	3200 × 5 =	16000 employees

The plan is to concentrate entirely on the workers' group on all days once we complete the executive and supervisory groups in which we have less number of people.

The members of the faculty for conducting this programme comprise professionals in the areas of:

- (1) Occupational Medicine
- (2) Industrial Hygiene
- (3) Occupational Psychology
- (4) Social Work, and
- (5) Health Education.

#### **Planning with the Training Centre Faculty**

BHEL, Tiruchi, has a Training Centre where many regular and periodic training programmes are conducted. So, it was decided to utilize this resource for organizing the target group so that all the administrative formalities like nomination of the officers/workers through various departments, getting their acceptance, arrangement of classrooms, provision of audio-visuals, hardwares, arrangement of refreshments during breaks and provision of lunch through the canteen of the Training Centre could be taken care of.

Hence, a meeting was organised with the officials of the Training Centre. It was decided that all the above-said administrative arrangements would be taken care of by the Training Centre and the cognitive input by the OHS Faculty. Three training officers from the Training Centre were identified to coordinate this three-tier programme for the workers, supervisors and executives respectively.

#### **Planning with trade union leaders**

Leaders are important change agents in any community and more so in an industrial community. The leadership pattern in industry is quite different as compared to the community. Normally, trade union leaders, shop council and works

committee members are the formal leaders in this industry in addition to the formal management hierarchy. The source credibility is often vested with them. As per the health education principle *Work through the leaders and use group influence*, leaders are actively involved in all the programmes even at the planning stage. So, before implementing this "Healthy Productive Life" programme a meeting was arranged with all the leaders of the recognised unions, shop council and works committee members. The objectives and the action plan were explained to them and their cooperation was sought.

### **IMPLEMENTATION**

#### *Nominations*

It was decided that fifteen days in advance the letters for nomination would be sent from the Training Centre through the respective coordinators to different department heads requesting them to nominate one to five persons depending upon the number of staff in their departments. They would in turn respond with a letter nominating the persons against each date of training and also inform the individuals to report at the Training Centre without fail. On the training day attendance is taken and a copy marked to the concerned Head of the Department which in turn will be sent to the Time Office to consider his absence from the work-spot as on duty. Inaugural function takes place with the participation of management, workers, representatives and all concerned professionals.

#### *Programme implementation*

During the implementation of the programme, the educational sessions

are conducted by the health educators, medical officers, industrial hygienists, occupational psychologists and social workers. Necessary audio-visual aids are used in all the sessions to make the sessions interesting and to facilitate learning.

#### *Evaluation*

Usually short term training programmes especially one day programmes are organised to create awareness or refresh or renew the knowledge. A pre and post evaluation, thus, helps to assess the change in the knowledge level of the participants, but may not be an effective tool to assess the changes in their attitude and practice. In this programme evaluation is done at the reaction level. At the end of each programme, ten minutes feed-back time is given for the participants to express their opinion about the usefulness of the programme, course content, effectiveness of each session, appropriateness of the audio-visual aids used, etc. Though it is not a well documented evaluation, we get quite a good positive feed-back. On the basis of the feed-back we introduced films on noise and heat to make the industrial hygiene sessions more interesting.

#### **Conclusion**

In any health care programme, health education forms an important component. In a comprehensive health care programme like Occupational Health Services, the role of health education is vital. This paper gives an account of the successful approach adopted in organising an occupational health education for various categories of employees in a Heavy Engineering Industry. △

# OCCUPATIONAL HAZARDS PRESENT RISK TO FUTURE GENERATIONS

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**The health of future generations cannot be secured by excluding men or women from hazardous jobs but by improving working conditions. Measures such as replacement of the hazardous agents, changes in technology, enclosing of certain processes, improved ventilation and design, personal protective devices are available to achieve this goal.**

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**W**ORLDWIDE industrialization has caused an increase in the number of chemical, physical and biological agents to which humans are exposed. One by-product of industrial development is the mounting concern that exposures to certain toxic substances may harm present or future generations. The large number of agents in use and the lack of knowledge about their effects on reproductive functions is of universal concern.

Up to now, studies carried out on the health hazards of chemical and biological agents existing in the work environment have concentrated mainly on the toxicity of such agents. Recently, however, following studies on animals, alarm bells have been ringing resulting in investigations into the effects on the human reproductive system of exposure to occupational hazards.

The World Health Organization (WHO) had convened a meeting of experts<sup>1</sup> to review present knowledge concerning effects on human reproduction of some of the most important industrial chemicals and to draw up guidelines for practice in the workplace, including tests for the monitoring of changes in the reproductive functions of workers exposed to occupational hazards as well as control measures to limit such exposure. The growing number of women in the workforce has focussed attention particularly on the risks to pregnant women and their offspring. This

concern has progressed to include factors that influence fertility and impaired reproduction in men.

The inability of a couple to conceive is a significant public health problem. Between 10 and 20% of all couples fail to conceive after one year of regular, unprotected intercourse. Few clinical studies, however, have examined the role of environmental or occupational factors in infertility and, until recently, study of the reproductive effects has focussed rather on the outcome of pregnancy. It has been shown that maternal or paternal exposure to a chemical or physical agent prior to conception may act upon either the male or female germ cells, so that fertilization of an ovum does not take place or abnormalities occur causing spontaneous abortion, stillbirth or live birth with defects. There is also evidence that occupational exposure of parents is related to the development of cancer in their offspring before the age of 15. Embryonic tissues of the foetus are more susceptible to certain carcinogens than those of the adult. Therefore, a brief or acute exposure during a critical period of growth may be sufficient to produce an adverse effect.

Studies show that in many cases of death due to childhood cancer, the father was employed in a petrol-related occupation, whilst maternal occupational exposure to chemicals (paint, petroleum products) during pregnancy was associated significantly with leukaemia.

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<sup>1</sup>WHO meeting on Review of Effects of Occupational Health Hazards of Reproductive functions, 4-8 August 1986, under the Chairmanship of Dr K. Hemminki, Institute of Occupational Health, Helsinki, Finland.

## **Ionizing radiation**

The genetic effects of ionising radiation have been known for many years. It has been recommended that occupational exposure to radiation should not exceed 50 millisieverts (mSv)<sup>1</sup> per year, and that the total exposure of women during pregnancy should not exceed one tenth of that. The major groups of workers exposed to radiation are those associated with medicine—physicians, radiologists, nurses and assistants, especially those involved in radiation therapy and nuclear medicine.

## **Infectious agents**

Infection with rubella virus during the first three months of pregnancy may result in congenital malformations in about 20% of the offspring. These babies may excrete large quantities of virus for several months after birth and so provide a potential reservoir of infection for nurses caring for them. Nurses are also exposed to other sources of infection, and the risk of viral hepatitis in dialysis units is well-known. Infective hepatitis virus can cross the placenta resulting in abortion or chronic hepatitis and death of the offspring.

## **Hazards occupations**

*Agricultural workers.* Increased impotence has been found amongst men working with pesticides and herbicides.

*Anaesthetists.* Female anaesthetists and operating-theatre personnel have higher abortion rates than expected. Another study showed a two-fold increase in spontaneous abortions and congenital malformations in exposed females and a 25% increase in congenital malformations in the offspring of exposed males. Some anaesthetics are also structurally related to vinyl chloride, a proven human carcinogen.

*Smelters.* There were significant reductions in birth weight in the offspring of female smelter employees. Smelting materials have a high arsenic content and include other potentially toxic substances such as lead and sulphur dioxide. Genetic damage in otherwise healthy male smelters was found, raising the possibility of mutagenic effects being transmitted to the offspring.

*Laboratory workers* may be exposed to many potentially embryotoxic chemicals, such as solvents, heavy metals, and carcinogens. An increased rate of spontaneous abortions has been found among women em-

ployed in chemical laboratories in the pharmaceutical industry compared with women employed in non-chemical laboratories.

Other occupations where an increased risk of pregnancy complications has been found include chemical workers (particularly those working in plastics, styrene, viscose, rayon) painters and laundry workers (because of their exposure to solvents), metal workers (particularly electronics), forestry and fishing, industrial and construction workers. The WHO working group found that a good deal of research is required to substantiate the findings under review.

## **Guidelines for control measures**

Control measures concerning the reproductive effects of exposure to occupational hazards in the workplace are essential for the protection of both male and female workers. It is important to continually monitor levels of exposure to chemicals, physical and infectious agents in the workplace and, where necessary, adapt or modify the workload. In cases where the reproductive effects are highly hazardous, the operations should be totally enclosed so that there is no exposure to the workers.

Pre-employment health examination should provide basic health data on workers and periodic check-ups should include tests for changes in reproductive functions. Such tests would include blood tests for chromosomal abnormalities, contents of sex hormones, etc.

Workers should be informed of possible reproductive effects of occupational hazards and taught work procedures that would help prevent such effects. Early symptoms of ill-health should be easily recognizable by the worker so that he or she can seek the necessary medical care. The WHO group also recommended development of a register of reproductive abnormalities together with data concerning occupational history and other variables such as drug and tobacco consumption.

## **Future generations**

The health of future generations cannot be secured by excluding men or women from hazardous jobs but by improving working conditions. The ultimate goal has to be a safe workplace for all. Measures such as replacement of the hazardous agents, changes in technology, enclosing of certain processes, improved ventilation and design, personal protective devices, are available to achieve this goal. ●

<sup>1</sup>The sievert (Sv) is a unit of dose which expresses radiation burden of human tissue. An average dose from exposure to background radiation, such as natural radioactivity, cosmic rays, fall-out from past nuclear testing, etc., is about 2 millisieverts (mSv) per year.

# EDUCATION AND ACUTE RESPIRATORY INFECTION CONTROL

DR BHAKT PRAKASH MATHUR

DR P. SALIL

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**Recognition of the importance of fast breathing and chest indrawing in Acute Respiratory Infection is essential to reduce deaths from this infection.**

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A CHILD dies from Acute Respiratory Infection (ARI) every seventh second. Many of these deaths could be prevented. The key to their prevention is education of mothers, primary health care workers, health workers at referral centres and doctors in hospitals. All have an important role in a properly integrated health care system. The life saving agents are antibiotics and oxygen. The whole community needs to understand which children must be referred for these life saving agents and which will get better by themselves.

Parents and primary health care workers should know that most children with cough do not need antibiotics. Recognition of the importance of fast breathing and chest indrawing in ARI is essential to reduce deaths from respiratory infections.

## Fast breathing

The health workers' first priority is to decide whether or not a child's breathing is normal. If the breathing is fast, the child should be given an antibiotic as soon as possible (Table). This measure alone could prevent many deaths from ARI (pneumonia), besides avoiding unnecessary antibiotics. Often, mothers are well aware of how their child is

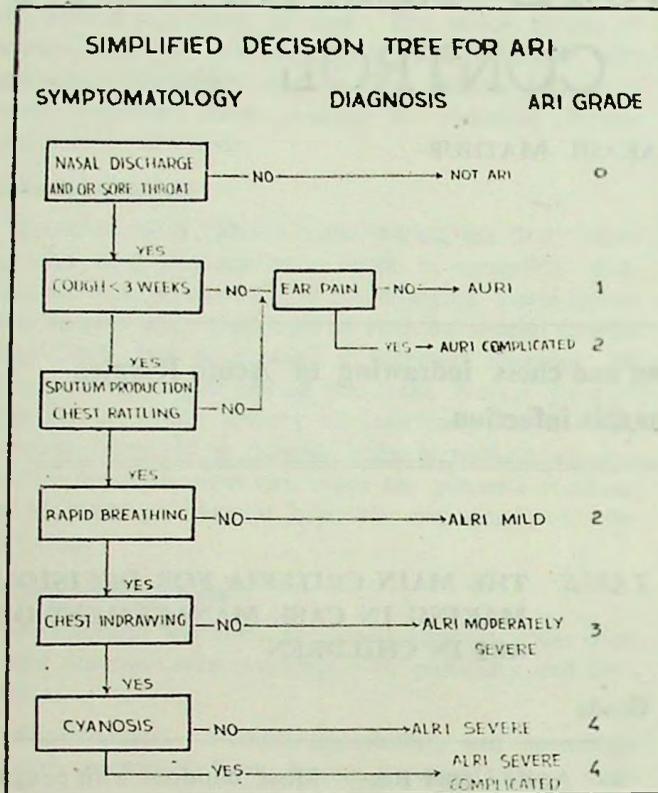
**TABLE: THE MAIN CRITERIA FOR DECISION MAKING IN CASE MANAGEMENT OF ARI IN CHILDREN**

### Grade

- |   |  |
|---|--|
| 1. Acute Upper Respiratory Infection (AURI).  | Most children with cough do not require Penicillin†.                           |
| 2. Acute Upper Respiratory Infection (AURI)<br>Acute Lower Respiratory Infection (ALRI) mild. | Cough and fast breathing—give procaine penicillin intramuscularly once a day†. |
| 3. Acute Lower Respiratory Infection (ALRI) moderately severe.                                | Cough and chest indrawing—admit, give penicillin every 6 hourly.               |
| 4. Acute Lower Respiratory Infection (ALRI) severe complicated.                               | Cough and cyanosis or too sick to feed—admit, give chloramphenicol.            |

†Or Ampicillin, Amoxycillin or Cotrimoxazole orally.

breathing and can make useful and important observation which the health worker should encourage and take into account.



For the examination, the child should be quiet and held by its mother, while the health worker watches the movement of child's clothes as it breathes. If a child is upset, it may be difficult for the health worker to see clearly how fast the child is breathing. If the child breathes more than 50 times in one minute, then the child needs to be given an antibiotic immediately.

### Chest indrawing

The second sign that the health worker should watch for, is chest indrawing. Chest indrawing is a sign that the illness may be severe but is a little more difficult to recognize. A child with asthma who is wheezing may have chest indrawing even, if he is only mildly ill.

Parents, who are in the frontline of clinical management of children with ARI, should understand the difference between a child with a minor self-limiting illness and a more serious one which needs hospitalization.

### The right decision

It is important for health workers to be able to recognize these two basic signs, so that they can make the right decision. Referring a child for more specialised help is an important decision. In some cases, it may be a long journey, expensive fares, loss of earning and problems with the care of other children.

### Where is education needed?

The proper care of a child with severe ARI is relatively straight forward. But even the most sophisticated hospital cannot save a child, if it reaches too late. Parents who are in the frontline of clinical management of children with ARI should understand the difference between a child with a minor self-limiting illness and a more serious one which needs hospitalization.

### Relevant message

Parents need simple, straight forward messages. They should know when to seek outside help. They should be encouraged to continue feeding their child normally during respiratory illness, to give plenty of fluids and to use simple measures to clear the nose, if it is blocked. These simple messages can be put across the community through mass media—T.V., Radio. Health workers and doctors also need clear guidance for dealing with ARI. △

## Health for All must become a Movement

—SHRI P. V. NARASIMHA RAO

UNION Minister for Human Resource Development and Health and Family Welfare, Shri P. V. Narasimha Rao has made an impassioned plea to the World Health Organization to raise its voice emphatically against the funneling of massive resources for purposes of war. The World Health Organization (W.H.O.) must plead in the name of survival of the human race, for greater outlays for the promotion of development, he said.

In the plenary address to the 40th World Health Assembly on 7th May 1987, at Geneva, the Minister said the current widespread international economic crisis was bound to adversely affect the financial and technical resources available for the health sector and impede our march towards the goal of Health for All by 2000 A.D.

The Minister said it was imperative, in poorer countries, that every individual becomes his or her own health worker and every household serves as a primary clinic for common ailments in the first instance. This situation needs to be brought about by massive education by proven methodologies embedded in age-old cultures of nations concerned. The traditional reservoir of wisdom, which prescribes and prohibits certain human actions for individual and common well-being must be revived, amplified and strengthened in view of the skyrocketing and prohibitive cost of medical care.

The Minister expressed the Government's appreciation of the WHO's efforts in chalking out a strategy for control of AIDS. He affirmed the Government's wholehearted support to the WHO efforts in preparing guidelines for prevention and containment of AIDS.

He said India would welcome cooperation from developed countries for evolving more effective and affordable strategies for control and eradication of diseases like Leprosy, Tuberculosis and Blindness.

The major causes of sickness and death in India are infectious diseases, many of which are preventable through immunization. Our Universal Immunization

Programme aims to achieve by 1990, hundred per cent coverage of pregnant women with T.T. and 85 per cent of children against vaccine preventable diseases, the Minister added.

Stressing the importance of the role of HFA leaders, the Minister said a large band of health workers of different requisite categories with a clear concept of primary health care approach were required to achieve success in providing satisfactory health care services to our people. He said that both the National Health Policy and National Policy on Education evolved by us stressed the need for a closer look at the requirements of trained manpower. The Government was proposing to set up a National Council for Higher Education to lay down broad policy guidelines and coordinate all programmes and activities in the field of higher education.

The Minister said Health for All must become a movement. Our ultimate aim must be to start a nation-wide debate on our health systems and create adequate consciousness among people about their health needs, he said.

The Minister said a major focus was to transform the family welfare programme into a genuine people's movement by restructuring organizational and operational aspects of the programme. The appropriate motivation of people was a crucial factor here, he said. We were providing maternal and child health services as a part of total health care of the community through the existing health infrastructure in urban and rural areas. He expressed the hope that a close linkage between health and family welfare and other related sectors would be established, both at the national and grassroots level.

The Minister called for an interaction between the traditional and modern systems of medicine. "India has a vast reservoir of practitioners of traditional systems of medicine, who enjoyed respect in the community and are providing satisfactory services in remote rural areas. Our main concern should be to ensure a method of coordination to enable the community to derive maximum benefit out of them", the Minister added.

## 40TH WORLD HEALTH ASSEMBLY

# DIRECTOR-GENERAL OF W.H.O. PLEADS FOR HUMAN VALUES

THE 40th World Health Assembly was held in Geneva from 4 May 1987 for a period of two weeks. Dr Johan van Londen, Director-General of Public Health (The Netherlands) was elected as President of its 40th Session. He succeeds Dr Zeid Hamzeh (Jordan), Minister of Health, who presided over the Thirty-ninth World Health Assembly in 1986.

Delegates representing most of 166 Member States of the World Health Organization participated.

Speaking on behalf of the Secretary-General of the United Nations, Mr Perez de Cuellar, Mr Essaafi, Co-ordinator of the UN Disaster Relief Office, emphasized the excellent reputation WHO has acquired over the years and outlined the long list of diseases WHO has successfully combated, while underscoring the new challenges to the Organization of diseases such as AIDS, which further contributes to its workload. The message expressed the solidarity of the entire United Nations system with WHO in its struggle against this new disease.

Dr Halfdan T. Mahler, Director-General of the World Health Organization (WHO) stressed the need for a system of human values in the world. Dr Mahler was speaking before the 40th World Health Assembly at the conclusion of the debate on his Report on the Work of WHO in 1986, and the Progress Report on the global strategy for Health for All by the Year 2000, on 8 May 1987.

Referring to the Technical Discussions on the economic aspects of the strategy of Health for All, Dr Mahler said, "If you judge success on the basis of hard economics alone, well—kill off the elderly, kill off the weak, kill off the disabled! Get rid of social pathology by eliminating its victims! Do you think that is idle rhetoric? Has it not happened in the course of this century? Surely recent history should drive home to

us the need to temper economic values with social values, with human values, with compassion for the plight of the health have nots".

The Director-General of WHO said he had been deeply affected by the statements of the delegates of a number of developing countries concerning the adverse health effects of the economic recession on the health of their people, but he noted that there was much abundance in some of the very countries that felt themselves to be in the thick of the depression.

Dr Mahler asked: "Should chaotic economic indicators be allowed to dictate human affairs, or should human goals and challenges dictate them?" He underlined the fact that the world community had a very human value system within WHO—the goal of Health for All by the Year 2000 and the strategy for obtaining it. He described this strategy as "a tremendous challenge", and said, "We are making steady progress, I would say dramatic progress, in many countries".

He added that it is precisely in times of economic recession that the least privileged are likely to suffer most the adverse health consequences and indicated that WHO's programme budget, if properly used, can "be a most powerful lever for mobilizing people's energy as well as national and other international resources".

While the financial position of WHO is still under debate, the Director-General challenged delegates by saying, "you can display your solidarity with WHO's value system and your determination to provide yourselves with the wherewithal to maintain it alive and vigorous or, alternatively, you can reveal your lack of confidence in what you yourselves have created. In other words, do you want world health for all to be? Or are you going to paralyse the action that will make it to be, like a scorpion stinging its own body with its tail?"

## 40th Anniversary

Dr Mahler confirmed the intention of celebrating in 1988 the double 40th Anniversary of WHO and 10th Anniversary of the Alma-Ata Declaration by advocating worldwide the collective health policy of all Member States. He told delegates, "I hope you will reflect, and act, on those messages deriving from your collective policy and that you would like to deliver to your people throughout the whole of 1988. I hope you will do that in such a way that these messages become permanent features of your health systems so that you and the peoples you represent support one another in maintaining close associations with this great health and development adventure".

The Director-General of WHO concluded his remarks by saying, "let us celebrate and not with superficial wishes but rather to reconfirm and intensify our faith in the path we have taken. Let us do so in such a way as to maintain and increase confidence in *your* organization, *the* organization that is leading the people of the world along that path. Let us do so by demonstrating through action that our concepts are viable and that our ways of realizing them are practical and effective".

### Concentrate on action to prevent AIDS

Dr Jonathan Mann, Director of the WHO Special Programme on AIDS, said in Geneva on 11 May 1987 that the World Health Organization (WHO) is not aware of any scientific data which would support the idea that the global Smallpox Eradication Programme might be linked to AIDS. Allegations linking AIDS with smallpox join many other unproven and speculative ideas about the origin of the disease.

Smallpox was an ancient scourge and smallpox vaccine was used widely in many areas of the world during the last two centuries. During all this time, neither the smallpox disease virus nor the smallpox vaccine virus was ever linked to upsurges in any other disease. The only result we know of from the Smallpox Eradication Programme was the eradication of smallpox itself.

As the Fortieth World Health Assembly in Geneva has emphasized, the world community must concentrate on action to prevent the spread of AIDS rather than on speculation about its origins.

Given the confusion which may be generated by unproven and speculative statements as well as the many inaccuracies they contain, it is imperative that any scientific information that may be available to support the hypotheses presented be brought to light rapidly and submitted to open, international and scientific scrutiny, said Dr Mann.

July 1987

## FIVE PRIZES AWARDED AT WORLD HEALTH ASSEMBLY

### *Leon Bernard foundation Prize*

The prestigious Léon Bernard Foundation Prize for 1987 was awarded by Dr Johan van Londen, President of the 40th World Health Assembly, to Sir John Reid of the United Kingdom for his outstanding service in the field of social medicine.

His active involvement in the work of WHO, as a member of the British delegation, dates back to 1972. Since those days, he contributed greatly to the work of WHO as well as to the development of international health in general.

### *A.T. Shousha Foundation Prize*

The Shousha Foundation Prize is given at the World Health Assembly each year to a person who has rendered significant health services "in the geographical area in which Dr. A.T. Shousha served the World Health Organization".

The Executive Board, at its Seventy-ninth Session, awarded this year's prize to Professor Ahmed Mohamed El-Hassan of the Sudan. Professor El-Hassan served as Director of Research, Translations and Publications at the College of Medicine and Medical Sciences, King Faisal University in Saudi Arabia. In 1984, he was appointed Chairman of the Department of Pathology at the same college.

### *Jacques Parisot Foundation Fellowship*

The Jacques Parisot Fellowship is awarded every two years for research in social medicine and public health for WHO regions on a rotating basis. This time, it is the turn of the European Region and the Executive Board which met in January 1986 proposed that the award be given to Dr Pamela Mary Enderby of the Speech Therapy Department, Frenchay Hospital, Bristol, United Kingdom.

### *Child Health Foundation Prize*

The Child Health Foundation Prize, which is awarded for the third time, goes this year to Professor José R. Jordán of Cuba in accordance with the decision of the Executive Board at its Seventy-ninth Session in January 1987.

### *Sasakawa Health Prize*

The Sasakawa Health Prize, which was established in 1985, rewards outstanding innovative work in health development and is intended to encourage the further development of such work. This year the prize goes to Sister Marie Joan Winch of Australia.

Sister Marie Joan Winch is a qualified nurse-midwife who has worked continually over the past 10 years for improvement of Aboriginal health standards and to promote better understanding between the Aboriginal and white communities in Australia. ●

# SHELTER PROGRAMMES TO BE BROAD-BASED

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Points 14 and 15 of the revised 20-Point Programme have been designated as demonstration projects of the International year of Shelter for the Homeless. These relate to provision of house-sites to rural landless with construction assistance and environmental improvement of urban slums.

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THE 20-Point Programme, 1986, is a package for the welfare of the poor and vulnerable sections of the society. The items of this noble charter aim at ensuring social justice with economic growth for these less privileged of our citizens. The programme for provision of house-sites is, therefore, of great significance next only to the efforts for ensuring minimum level of food and nutrition.

A definite State-wise programme of action to provide shelter to the shelterless within a time-bound period is being worked out. Attention will be on implementing schemes of the International year for Shelter for the Homeless (IYSH) to give houses of reasonable specifications to all by the year 2000.

A number of projects for providing shelter, improving neighbourhoods and basic facilities have been identified and taken up by the State Governments and the Union Territories and other agencies. Housing and Urban Development Corporation has designated some projects as the IYSH projects. In 1985 and 1986, HUDCO had sanctioned 136 schemes of Rs. 100 crores out of which a loan assistance of nearly Rs. 80 crores have been provided for urban shelter and slum upgradation, rural housing schemes, basic sanitation schemes and provision of smokeless *chullas*.

These schemes are scattered over 16 States and Union Territories which will ultimately help construction of 1,80,766 units for the benefits of the people belonging to the economically weaker sections and low income categories. The brief details of different types of schemes are as under.

### Multiple Aims

Some 83 urban shelter schemes have been sanctioned for the States of Andhra Pradesh, Kerala, Bihar, Uttar Pradesh, West Bengal, Orissa, Tamil Nadu, Gujarat, Haryana, Karnataka, Maharashtra, Madhya Pradesh, Rajasthan and Union Territory of Delhi. These schemes, after completion, will help construction of 49,161 houses in the urban areas.

The urban schemes include reconstruction of 52 units at Baleswar in Bombay district as well as skeletal housing schemes at Bhubaneswar in Orissa for 526 existing units by improving the roofing of the same to help prolong the life of the structures.

Slum upgradation schemes provide for improving the environment in eight slums of Alwar Town (Rajasthan) for a total loan assistance of Rs. 0.661 million which will help improve the life of 688 families living

in these slums. It is proposed to provide/improve the basic amenities like approach roads/path ways, street lighting and drinking water supply in these slums.

A "Cycle Net Work" project has been sanctioned to Pune Municipal Corporation. This is the first scheme of its nature in the country which is planned to be completed in nine years in two phases. HUDCO-financed first stage of the first phase will help in construction of sub-ways, improving the national highways, subways under-roads and rail track, cycle tracks as well as traffic signals, etc., at inter-sections to ensure more safety for the cyclists from the fast moving vehicles, as the cyclists are the most vulnerable component of the total traffic.

#### **Basic Sanitation Schemes**

HUDCO has financed 26 basic sanitation schemes for conversion/construction of 1,04,678 individual and community latrines in the towns/cities scattered over seven States of Andhra Pradesh, Maharashtra, Madhya Pradesh, Orissa, Meghalaya, Rajasthan and West Bengal. This will help in improving the environment as well as reducing the pollution in the surface water sources like rivers.

In Calcutta above 60,000 people will benefit through sanitation schemes undertaken by the Calcutta Municipal Corporation.

#### **20-Point Programme**

Points 14 and 15 of the revised 20-Point Programme have been designated as demonstration projects of the

International Year of Shelter for the Homeless. These relate to provision of house-sites to rural landless with construction assistance and environmental improvement of urban slums.

During 1985-86, 9.11 lakh rural landless families were provided with house-sites and 4.15 lakh families given construction assistance and 20.57 lakh persons benefited through provision of basic amenities in slum areas.

An Apex Committee has been constituted at the national level to ensure coordinated approach for formulation and implementation of the IYSH programme and measures to mitigate hardships caused in human settlements by disasters like floods and cyclone, are also to be worked out.

Efforts for providing shelter to the shelterless would continue in 1987 with proposed shelter projects to be inaugurated on 15 August and 19, November 1987. The low cost sanitation project under IYSH will be launched on October 2, 1987.

Use of non-conventional sources would be widely promoted with particular emphasis on use of bio-gas, promotion of smokeless *chullas* and desalination. Housing will be taken up as an integrated activity to promote employment productivity and welfare.

Emphasis is to be given on science and technology to improve the quality and longevity of house building materials. New areas of research will also be undertaken. △

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## **A WORLD OF FIVE BILLION**

**T**HE birth of a baby round the middle of 1987 will take world population over five billion—according to the 1987 'State of World Population' Report from the United Nations Fund for Population Activities (UNFPA), which was released worldwide in May, 1987.

The total number of human beings is now growing at a rate of 150 every minute 220,000 a day; 80 million a year. At this rate, says the report, we will reach six billion by the end of the century, seven billion by 2010, and eight billion by 2022—with most of the growth taking place in the developing countries. World population will, it is estimated, finally become stationary at around ten billion a century or so from now.

# HEALTH HABITS OF SCHOOL GOING CHILDREN —A Study

A.C. MOUDGIL, S.K. VERMA, PARMJIT KAUR,  
AMITA UMMAT AND RAMAN MEHTA

*The functions of education should include health knowledge and values so as to make the child self-reliant and socially responsible for a better quality of life. The educational set up of the school provides numerous opportunities for health education. A child's knowledge, thoughts and behaviour on health stems from habits formed in the impressionable years. School children offer an opening for educating people at home and in the community. Desirable behaviour patterns in the child concerning health include thinking, feeling and practice domains. The conceptual approach to health education emphasizes (a) growing and developing, (b) interacting, and (c) decision making—the three key concepts underlying processes affecting health behaviour and serving as the unifying threads of the curriculum.*

EDUCATORS over the years have expressed the view that the purpose of education is much more extensive than just the mastery of academic subject matter. According to Aristotle, "Education is the creation of a sound mind in a sound body". The child, rather than the subject matter, is considered to be the focal point of education. Education is concerned with the whole child and not merely with his mental processes or intellectual growth. "By education," says Mahatma Gandhi, "I mean an all round drawing of the best in the child and man—body mind and spirit". There are many functions and purposes of education. The most commonly cited by a majority of educators are related to the development of the child's total fitness or to the health of the student. A common philosophy of education encompasses health knowledge and values as important outcomes of education.

According to International consultation on Health Education for school-age children, organized by WHO and UNICEF in 1985, the health learning of the school-age child should be enhanced in every possible way to promote the exercise of self-reliance and social responsibility and a better quality of life for today's children and tomorrow's adults.

The following were considered as the central ingredients for achieving this goal:

- Value systems rooted in social justice and committed to health for all;
- The need to translate these values into normative behaviour;
- the child's overall development and optimal quality of life as the primary concern;
- the need to foster in young people a recognition that health is an essential life asset and an attitude that they, themselves, can affect their own health and that of their family and their community as well; and
- the need to work through every possible channel to equip them not only with these values but with the knowledge and skills that empower them to act self-reliantly for their own benefit and that of their families and their communities (Mahler, 1985).

According to Grundy (1960), the advantages of regular instruction in schools are obvious. The pupil is willing, learning is accepted as the natural order of the day; that much of what an individual knows, thinks, and does about health in his adult life stems from habits formed in the early and impressionable years. The educational setting of the school provides an environment in which certain skills and practices can be learned most efficiently and effectively. In the school, nation-wide groups of the same age and attainments are brought together. School children are of an age when receptivity is high; and school children offering an opening to the home and the community can be reached through them. And finally, the

promising material is handled by teachers skilled in approaches and methods appropriate to their task.

### Behavioural practices

The school child in order to follow healthy practices must learn or develop desirable behaviour patterns. We refer to behaviour to mean not only actions or practices but thinking and feeling as well. According to Thomson, "Education is the influence of the environment on the individual with a view to producing a permanent change in his habits of behaviour, of thoughts, of attitude". Therefore health behaviour according to Lois (1975) may be deemed to have cognitive, affective, and action domains. The cognitive or thinking domain comprises the knowledge about health and the intellectual abilities and skills required to select and make decisions about health. The affective or feeling domain refers to the interests, attitudes, values and appreciations related to health. Health attitudes refer to affective behaviour. They emphasize a feeling tone, an emotion, or a degree of acceptance or rejection. These affective behaviours include: attending or being receptive, responding or being impressed, valuing or rating highly. The action or practice domain refers to the application of the knowledge, ability and skills as well as one's thinking to a life situation selected to health.

### Health practices

Health practices refer to all these behaviours that are externally demonstrated by the individual and which in some way influence his health (Fodor & Dalis, 1970). Such behaviours include: (1) those that are externally observable in the classroom and can be evaluated, to some degree, in the classroom setting (i.e. getting along with classmates, cleanliness and grooming, the extent to which an individual participates in physical activities during the physical education period);

(2) those that are observable but are not conducive to systematic assessment in the classroom setting (i.e. nutritional practices at home smoking and drinking habits, dental health practices);

(3) those that are externally observable but which often do not become a part of the individual's behaviour pattern until some time in the future (i.e. securing medical and dental services, preparing a wholesome diet, obeying health laws, and supporting health legislation).

Therefore, schools and colleges, through the virtue of a conducive environment and climate for learning can build a solid foundation for continuing education for health in the community setting. Health needs, interests, and responsibilities change throughout one's life time old and emerging health problems and radical changes in our way of life await all of us. The rapidity and acceleration of medical advances and new knowledge will require continuing efforts to bridge the gap between knowledge and application.

### Conceptual approach

The conceptual approach to health education offers potential for imposing order on an endlessly variable environment; it holds promise for patterning of facts into a statement of relationships to which new truths can be added and by which those no longer valid can be discarded. It provides for the development of cognitive, affective, and action-oriented skills through its focus on behaviour and it offers a theoretical curriculum framework that is translated into an operational and functional plan for the facilitation of teaching and learning (Sliepevich, 1968).

Three key concepts are:

*Growing and Developing* : A dynamic life process by which the individual is in some way like all other individuals, in some ways like some other individuals, and in some ways like no other individual.

*Interaction* : An ongoing process in which the individual is affected by and in turn affects certain biological, social, psychological, economic, cultural, and physical forces in the environment.

*Decision making* : A process unique to man of consciously deciding to take or not take an action, or of choosing one alternative rather than another.

Health education need not, however, be a school subject. It is rather an attitude of mind which can permeate many subjects in the school curriculum, and above all perhaps provide an example of sound hygiene and the principles of healthy living. Particularly, the right kind of school education can help the child to regulate his life in the right way, to enable him to avoid risks to health, and to avoid conduct which might endanger the health of others.

*(This paper is based upon the research project financed by Govt. of India, Ministry of Health and Family Welfare, New Delhi.)*

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# COMBAT MISBELIEFS TO ACHIEVE HEALTH FOR ALL BY 2000 A.D.

P. MANOHAR REDDY

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Health education is the most powerful weapon to combat misbeliefs in our country. People need be provided scientific knowledge to motivate them to adopt new practices in respect of healthful living including good nutrition, prevention of communicable diseases, immunization, care of pregnant women and the new borns, sanitary latrines, etc.

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**I**N the rural areas of our country the literacy rate is very low as compared to the advanced countries. Due to illiteracy the people have many misbeliefs in their community structure, culture and caste system, superstitions, traditions and are practising unhealthy food habits in their daily life. This culture is passed from grandfather to father, father to children, as their ancestral property, due to illiteracy. To bring about a rapid change in the literacy rate, the Government of India started Adult Education Programme at the National level.

#### Misbeliefs during antenatal period

In rural areas the Ante-natal mothers are fully engaged in agricultural and domestic work and never think of attending a hospital or health centre for medical checkup with a belief that many of their grand-mothers and mothers had given birth to eight or more children without attending any hospital. So, why should they unnecessarily attend the hospital and waste time and have an injection which gives pain for two days and becomes a hurdle in their day to day work. Even

when the sub-centre Auxillary Nurse Midwife (A.N.M.) visits the village, the ante-natal mothers avoid to meet her and escape from getting T.T. Injection. Regarding nutrition the pregnant mother has to take extra food to nourish herself and the growing foetus in the body. But in rural community, while sitting for taking food, the male members in the family have to finish their food first, and only then the female members start taking their food. The remaining food may be insufficient to their normal requirement. During antenatal period, the pregnant

women have misbeliefs that they should not eat black fruit like black grapes, eggs, papaya, oranges, tomatoes, etc. They believe that eating black fruit may result in black child; taking eggs reflects on the foetus and may result in balled head child; taking locally available cheap fruits like papaya leads to abortion, eating oranges and tomatoes creates cold. As such most of the pregnant women are falling a prey to deficiency diseases and malnutrition which has an impact on the health of the new born child.

For delivery also the pregnant mother prefers domiciliary delivery and wants that her relatives should sit around her which gives her psychological security. They prefer to get delivered by their own community's untrained old ladies because of having intimacy with them. If a trained *Dai* is available in the same village and unfortunately belongs to schedule caste or backward caste, the family members refuse to allow her into their house to conduct delivery. After delivery, the untrained *Dai* usually cuts the umbilical cord with available unsterilised iron 'chaku' which exposes the mother and the new-born to tetanus. The risk increases if the mother has not been immunized against the disease.

#### During postnatal period

The postnatal mother need be given nutritious diet to help her to recoup from delivery as well as to get sufficient milk for the infant. But the lactating mothers are usually allowed to eat only boiled rice with *rasam* at least for one month with a misbelief that if rich nutrients like pulses, eggs, etc., are given to the mother, the infant will have to



In rural areas pregnant mothers prefer domiciliary delivery. They need be motivated to utilize the services of trained *DAIS*. Photo shows a trained *DAI* examining a pregnant woman.

face digestion problem. So the post-natal mothers are isolated from other family members while taking the normal foods. This continues for 6—7 months with the result that the mother becomes very weak which affects the child's health due to the availability of insufficient milk from the mother. Being hungry the child cries for milk and the mother shifts to supplementary milk of a cow or buffalo and dilutes

it with water in 1:1 ratio. The malnourished child becomes the victim of many infectious diseases.

The child has to be given supplementary nutrition from 4th month onwards and the child has to share normal family meal by the age of one year. But the mothers are not aware of the fact and starts semi-solid foods when the child is in the

9th or 10th month of age. So the child suffers from low degree of malnutrition affecting his growth rate. The child will not be given protein rich nutrients like egg, meat, pulses, beans, seeds, etc., upto the age of one year with the misbelief that the child will get indigestion and other problems. On the other hand, the mothers had a practice of giving castor-oil twice a week to the infant for regular bowel movement and misbelieve that without this the child will suffer from constipation. While bathing the child, the mother pours oil into nostrils and ears of the infant regularly which may also create some health problems.

#### **Breastfeeding**

Within six hours of the delivery, the mother is usually in a position to give milk to the new born infant. But the first milk is yellowish fluid which is called "Colostrum". It is rich in nutrients and develops resistance in the body of the child against infections. Some sections of our rural people misbelieve that the first yellowish fluid is not actually the milk and hesitate to allow the infant to suckle that milk and the infant is given sugar water for 2 to 3 days instead of milk containing colostrum.

#### **Immunization**

It is a well known fact that immunization develops immunity against specific diseases in the body. So the body gets resistance against specific diseases. But in rural areas, when the A.N.M. visits each house to immunize the infant with Polio, triple antigen, etc., the mothers always feel that the child will get temperature and will cry for some time and so hide the child. But she is not aware of the fact that her

child would get immunity against six communicable diseases namely diphtheria, whooping cough, tetanus, polio, measles and tuberculosis. If by any influence or by force, a mother gets her child the first dose of the vaccines she would send away the child to her neighbours' house for the subsequent doses thinking that her child will again get fever. So the child remains exposed to these diseases. Once the child is infected with polio, the child becomes physically handicapped and has to suffer life long with disability. He becomes dependent on others for the rest of his life. Though it was scientifically proved that measles, chicken-pox and mumps are all communicable diseases and are transmitted through air, yet some sections of the society in rural areas still believe that these are caused due to curse of Goddess. They believe that semisolid cooked rice with curd brought from their uncle's house will cure measles and chicken-pox. Others bring 'Jalakaalu' (water) from goddess with a belief that the child will recover from illness by taking it. Regarding mumps the people have a misconception that if gold ornament is kept around the neck of the infected child for five days, the child will recover from the disease.

#### **Family Welfare Programme**

Old people in the rural areas always believe and preach 'karma' philosophy. They hold the belief and also tell others that family limitation is not in our hands but it is the blessing of God. Adoption of Medical Termination of Pregnancy will be a sin and God will punish these persons indulging in such practices.

Rural people also believe that large families are important for agri-

cultural work and also from security and leadership points of view. People also think that adoption of tubectomy either weakens the body or some women become fatty and face other complications. Male members of the family are of the opinion that by adoption of vasectomy, they may lose sexual desire. Some of the illiterate people of community fear that by vasectomy they may become weak and may not be able to give sexual satisfaction to their life partner.

#### **Sanitary latrines**

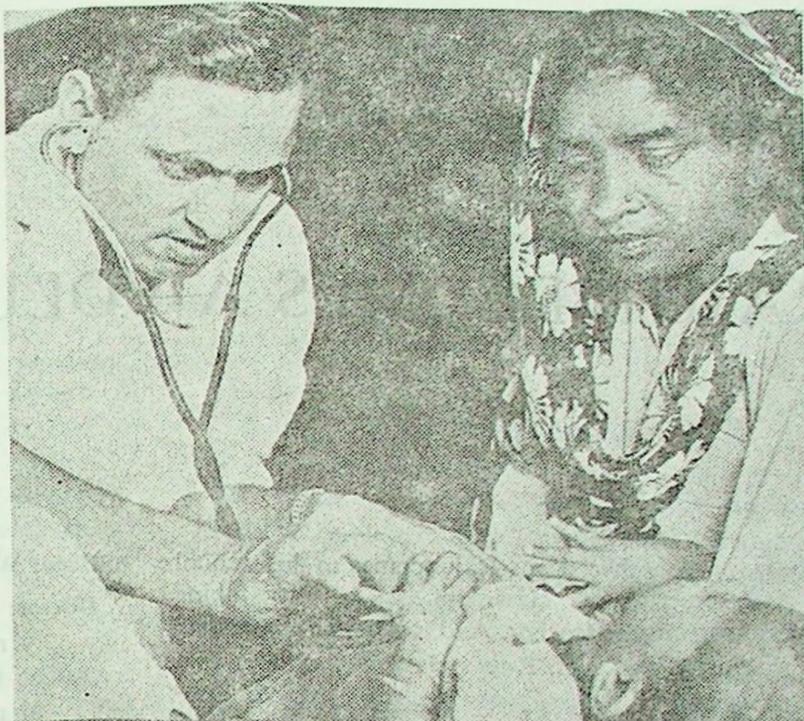
Latrines are most powerful instruments to prevent faecal borne diseases like cholera, dysentery, diarrhoea, polio, jaundice, and worm infections. In the rural areas, the people are accustomed to go for open air defecation. They are not aware of the fact that worm infections and faecal borne diseases can be prevented by using sanitary latrines. They also think that construction of a latrine inside the compound of the house will give foul smell. Majority of rural people never wear shoes while going to fields or at the time of open air defecation. Such practices expose these people to worm infestation.

#### **Health education**

Health Education is the most powerful weapon to combat misbeliefs in our country.

Preaching Health Education without educational aids will have no impact on the individual, group or community. For intensified health education and for better impact on implementation of health programmes in rural areas, filmshows and other aids are very essential to combat misbeliefs, superstitions in the society. Health Educators when provided with a filmshow units and

other aids can plan and visit every village in a phased manner and carry out mass communication activities on war footing to combat misbeliefs. People need to be provided with scientific knowledge to motivate them to adopt new practices in respect of healthful living including good nutrition, prevention of communicable diseases, immunization, care of pregnant women and new borns, sanitary latrines, etc. This becomes much more important in view of the goal of Health for All by the Year 2000. Provision of health services coupled with mass communication activities would go a long way in achieving the goal of health for all to which we are fully committed.



Provision of health services coupled with mass communication activities would go a long way in achieving the goal of health for all.

### XIII WORLD CONFERENCE ON HEALTH EDUCATION

The triennial meeting of the International Union for Health Education, the *XIII World Conference on Health Education* will be held from August 28—September 2, 1988 in Houston, Texas, USA. This World Conference welcomes all health-related practitioners interested in health education.

The Conference theme, "Participation for All in Health," reflects program organization and content. The meeting will integrate government and the private sector; research and practice; and varied disciplines, sectors, and delivery sites of health education. Program content further develops four sub-themes:

- Involving people and communities
- Supporting community access
- Involving all relevant practitioners
- Gaining intersectoral support

Papers will be presented by international authorities on timely health education topics including family planning, nutrition, lifestyle, and infectious diseases. Active participation of conference attendees will be encouraged through workshop, special interest groups, and networking sessions. Simultaneous translation will

be provided for plenary sessions in official conference languages: English, French, and Spanish.

In addition, a major exhibition will feature state-of-the-art health education products, materials, and scientific exhibits from around the world.

Additional learning opportunities will be available through approximately 30 "Gateway Cities." These selected host areas will offer a variety of educational activities, such as workshops, short-term field placements, and study tours.

These educational experiences will be available to all conference attendees. For example, international visitors may participate in an exchange with local health educators in "Gateway Cities" such as New York, Honolulu, or Toronto on their way to or from the Houston conference. This exciting opportunity for interchange extends the theme of "Participation" across North America.

For further information about the Conference please write to:

**Dr Judith Ottoson,  
Executive Director, at  
(713) 792-8540  
United States Host Committee, Inc.,  
P.O. Box 20186, Suite 902  
Houston, Texas 77225, U.S.A.**

# RAJU BECOMES A VOLUNTEER

M. L. MEHTA

**T**ODAY, like other days, Raju comes to his school. After entering his classroom, he is busy taking his lessons from the teacher. And, suddenly, Raju starts shivering and feels cold. Raju's classmate wonder what has happened?

The teacher immediately intervenes and decides to take him to the nearest primary health centre (PHC). At the PHC, the doctor examines him and refers him to a malaria worker. He then takes a drop of blood from his finger-tip on a glass-slide for test. Because, any fever may be malaria and blood test can say whether it is malaria or not.

Raju is given four chloroquine tablets in the evening. Raju is told that the result of blood slide is positive. That means Raju has malaria. He is given medical treatment. This consists of primaquine tablets. He takes one tablet daily for five days. This cures him of malaria. When Raju returns to his school after a week, his classmates enquire from him about his health. They become inquisitive about details of malaria. Raju, then, narrates to his classmates the conversation that took place between him and the doctor.

**Raju : What is malaria?**

**Doctor:** Malaria is a serious disease. The major symptoms are high fever either daily or on alternate days with shivering. Malaria has three stages. These are : cold stage, hot stage and sweating stage.

**Raju: What are these stages?**

**Doctor:** During the Cold stage, fever comes suddenly riger and a feeling of extreme cold. The teeth of the patient chatter and he shivers. He wants to put on himself more and more clothings. This cold stage remains for about an hour.

In the *Hot stage*, the patient feels burning hot. He removes all the extra clothes. He gets severe headache. During the *Sweatening stage*, fever comes down with ample sweating and the patient feels very weak.

**Raju : How does one get malaria?**

**Doctor:** Malaria is caused by a small parasite (germ). It can be seen under a microscope only. The malaria parasite spends a part of its life in the mosquito and a part in the man. Malaria spreads by female Anopheles mosquito. All mosquitoes do not spread malaria. When this mosquito bites the malaria patient, it picks up malaria parasites present in the blood. These malaria germs enter the mosquito's stomach and the mosquito becomes infective in 10 to 14 days. When this infected mosquito bites a health person, it injects the malaria germs into his blood. The healthy person then gets fever within 14 to 21 days. The malaria patient can give malaria to many people.

**Raju : Does everybody get malaria?**

**Doctor:** Yes, Everybody, children, young and old, men and women, can get malaria. The risk of getting malaria will continue till the disease is removed from India.

**Raju :** What is being done to control malaria?

**Doctor :** You must have seen that malaria workers come to your house to spray DDT. If we allow them to spray entire houses with DDT we can control malaria.

**Raju :** Why is DDT sprayed?

**Doctor :** DDT is an insecticide (A chemical). DDT spray kills mosquitoes. It is in the form of a powder. DDT is mixed with water and sprayed on walls and ceilings of all houses, twice a year. Spraying leaves a uniform layer of DDT on the surface of walls and ceilings. Malaria carrying mosquitoes generally rest on the walls before and after taking blood meal from the patient. In this way, they pick up DDT which kills them within 10 days.

**Raju :** What should be done before and after spraying?

**Doctor :** All movable articles like cots, chairs, etc. should be placed in the middle of the room or outside it. All pictures and other wall decorations should be removed from the walls. All food and eatable should be removed outside the room and kept covered.

You know, DDT spraying can be effective only when it remains on the surface for a few months. Therefore, after DDT spray, we should not dust-off or whitewash or mud-plaster the walls and the ceilings of the house for about 10 to 12 weeks.

**Raju :** Now, what should be done during fever?

**Doctor :** Here is the medicine. It is called chloroquine tablet. You have to take these tablets with

water and your fever will come down. But, your stomach should not be empty. If your stomach is empty, you should eat some food before you take this tablet. *Remember, this medicine should not be taken on an empty stomach.*

**Raju :** What should be done thereafter?

**Doctor :** You should visit the PHC in the evening to know the result of your blood test.

If the result of your blood test is positive, it means that you have malaria. Now, you will have to take radical treatment. Here are Primaquine tablets. These should be taken daily—one tablet daily for five days. It will completely cure you of malaria.

**Raju :** Is there any diet restriction?

**Doctor :** No, there is no diet restriction. But you should take lot of liquids. You can take your normal food during treatment.

**Raju :** Thank you, doctor.

**Doctor :** But, when, you find any one of your friends, brothers, sisters, parents or neighbours with fever you should, then tell them to visit PHC/malaria clinic for prompt blood test and treatment.

(And.....Raju gets cured of malaria. He becomes a motivated volunteer. He enthusiastically starts enquiring about the fever cases in his neighbourhood and school and reports about them to PHC Malaria Clinic).

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The Director,  
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# NATIONAL A.I.D.S. CONTROL STRATEGY

DR K. K. DATTA

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AIDS has emerged as a devastating fatal disease which has assumed a form of large scale pandemic, sparing no regions of the world. It has caused a widespread concern amongst the medical profession and also has brought in unprecedented alarm amongst the public in general.

This is reminding the humanity of the great killer pandemics of influenza, cholera and plague which have taken away lives of millions in the last two centuries. It is estimated that 100 millions may die of AIDS by 2000 A. D. On finding the first confirmed evidence of AIDS infection, the Government of India formulated the National AIDS Control Strategy.

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FRENCH scientists led by Dr. Lue Montagnier of Pasteur Institute and American scientists led by Robert Gallo of Cancer Institute independently claim to have identified the cause of AIDS, which is now presently known as Human Immune Deficiency Virus.

Being concerned about the rapid march of this new disease engulfing the entire humanity the Government of India constituted a task force through I.C.M.R. in 1985 to examine the situation and suggest specific measures to prevent the spread of the disease in India. The task force, amongst others, recommended surveillance of the disease and accordingly 2 surveillance centres were established one at N.I.V., Pune, and the other at C.M.C., Vellore. On finding the first confirmed evidence of AIDS infection in 6 Indian women prostitutes in Tamil Nadu, the Government of India consulted the States to formulate National AIDS Control strategy. While formulating

the national AIDS control strategy the recommendations of W.H.O. were also kept in view. The W.H.O. has suggested the following course of actions :

1. Inform people about AIDS infection and its mode of transmission to allay inappropriate public concern.
2. Inform health care workers of methods of prevention and control.
3. Assessment of risk that AIDS poses to its population and establish methods of diagnosis.
4. Undertake regular and periodic serological studies to identify the existence of AIDS infection in high risk group.

- 5 Discourage high risk group from donating blood, organs, sperm and other human material.
6. Follow up of cases detected and its proper methods of assessment.
7. Develop guidelines for care of the patient and handling of materials in hospitals/laboratories.

The salient features of the strategy evolved are as under :

1. Establishment of monitoring and surveillance mechanism to cover the entire country.
2. Identification of high risk group and high risk areas in consultation with State Health Authorities.
3. Development of suitable mechanism for periodical survey among high risk groups through STD clinics/identified surveillance centres and other means.
4. Working out specific guidelines for management of detected cases and their follow up.
5. Specific guidelines for blood banks, blood products manufacturers, professional blood donors, import of blood products, drug de-addiction clinics, Dialysis Units, etc.
6. Training of professionals/para-professionals in case detection, management and follow up and building of expertise in AIDS detection and control in the country.
7. Information, Education and Communication by involving all media and other health education channels.
8. Precautionary guidelines for laboratory staff and health workers and allied professionals.
9. Supporting research studies in the field to generate relevant information in control, prevention and management of AIDS cases.

#### ESTABLISHMENT OF MONITORING AND SURVEILLANCE MECHANISM TO COVER THE ENTIRE COUNTRY

- (A) Creation/establishment at the national level, of a cell to act as nodal point for planning, monitoring, implementing, reviewing and co-ordinating AIDS control activity in the country. As the situation is of very urgent in nature, and demanding, if formal creation of the posts takes some time, the cell should immediately be established both at the national and State levels by drawing personnel from other areas and the cell be made functional at the earliest.
- (B) Once established the concerned officials shall be trained at the referral centres with the assistance of I.C.M.R.
- (C) Four referral centres shall be established where higher level diagnostic facilities will be available including western blot tests, virus isolation and their characterisation.
- (D) The entire country will be covered by a network of surveillance centres. I.C.M.R. will assist in identifying the surveillance centres and it is expected that by the end of the Seventh Plan, 150 such surveillance centres will be established.
- (E) While establishing the surveillance centres, virological laboratory under ICMR, national institutes, medical colleges and district hospitals in high risk areas should be given priorities.
- (F) All the surveillance centres thus identified shall be supplied equipments, package and diagnostic test materials for undertaking the tests. The materials shall be supplied by Government of India through D.G.H.S. or I.C.M.R.
- (G) Serological (Diagnostic) materials obtained from the high risk group by the surveillance centres and district health authorities or through special survey should be tested regularly by the surveillance centres. Once cases are identified specific actions should be initiated as per the guidelines evolved.

(H) The State may come forward to open up peripheral sentinel surveillance centres to undertake periodical survey among high risk groups, provide facilities for management and follow up of the detected cases as per the guidelines.

(I) Any case detected by the surveillance centres should be reconfirmed by at least 2 other surveillance centres/referral centres by western blot before the case is declared positive.

(J) Strict confidentiality needs to be maintained in respect of detected cases.

(K) All the S.T.D. Clinics may do AIDS counselling work once or twice a week.

(L) Screening of foreign students, as per the guidelines.

#### **Identification of Risk group and risk Areas**

The epidemiology of the disease is rather inadequately known and it varies widely from place to place. In America, Europe and Australia 70% of AIDS cases are amongst homosexuals. The disease has also been found amongst I/V or I/M drug abusers, homophiliacs and other patients requiring blood transmissions, heterosexual partners, infants of infected mothers, etc. The majority of cases detected in India are among prostitutes.

The virus has been isolated from blood, sperm, tear, breast milk and urine and saliva. Epidemiological evidence has so far implicated only blood/semen in transmission.

Recent information indicate that AIDS is a serious public health problem in tropical Africa. There is an equal incidence of male and female among African AIDS and heterosexual contact is most frequent mode of transmission in Central Africa.

Non-Sexual household contacts, and infants of non-infected mothers have been found free from acquiring infection from AIDS patients. It is normally

transmitted through sexual intercourse, parenteral exposure to blood/blood products and through infected mothers to child in uterus or during post-natal period. At present there is no epidemiological evidence that the virus can be transmitted through casual contact with an infected individual such as contact in a family sitting, school or other groups living or working together, through blood sucking insects, food, water or air or through oral route. In the above context it is, therefore, the high risk groups who should be put immediately under surveillance are :

1. Patient attending STD clinics and their contacts.
2. I/V or I/M drug abusers.
3. Professional blood donors.
4. Homosexual inmates of jail.
5. Vigilance homes, remand homes, etc.
6. Prostitutes.
7. Call girls.
8. Hoemophiliacs or other patients requiring repeated blood transmission.
9. Patient attending medical college hospitals with typical syndrome.

The high risk areas are :

1. Tourist spots where foreign visitors frequent, viz., Goa, Bombay, Delhi, Varnasi, Trivandrum and J & K.
2. Vigilance homes, Remand homes, Red light areas, Jail, etc.

#### **Development of suitable Mechanism for periodical Survey amongst high risk groups**

The Surveillance Centres shall carry out periodic survey as per the calendar of activities drawn for the purpose and the cases so detected should be handed over to the concerned health authorities for proper

management and follow up. Periodical meeting of all the surveillance centres should be held to review the latest situation and suggest appropriate measures.

#### **Establishment of Mechanism of Management of Detected cases and their follow up etc.**

The State Health authorities should identify 1 or 2 physicians in each district, train them for proper management of cases and their follow up.

#### **Guidelines for Blood Banks/Blood product Manufacturers**

Infection due to AIDS can be transmitted by transfusion of whole blood, blood cells, platelets and factor VIII and IX from human plasma. There is no evidence to date that transmission can occur through other blood products such as albumin, immunoglobulin prepared by conventional colin fractionation for I/M use. Therefore, the following measures are suggested :

1. Donors having high titres of antibodies to hepatitis B virus or cytomegalo virus may be more likely to be members of AIDS risk group.
2. Popularising voluntary blood donation.
3. Maintenance of confidential records in blood and plasma donation centres.
4. Proper processing of the products.
5. More use of products of small pool donors.
6. Sera from donors of sperm, organs or tissue used for transplantations should be tested for AIDS virus antibody.
7. Drug abuse should be condemned and all drug abusers should be informed about the risk of using non-sterile needle.
8. Avoidence of unnecessary use of injectables medicines, skin piercing for cosmetic or ritualistic purpose.

#### **Training of Professionals/Para-professionals**

This is an important area which needs immediate attention. ICMR may arrange for training several personnel in the country and now the training could be given at all referral centres and at the earliest at least one team of trained personnel would be available for each State through the efforts of ICMR/DGHS. Once surveillance centres are established the same will take up on a larger scale this training load of para-medical workers.

#### **Information, Education and Communication**

Education about the modes of transmission of the virus and the various outcome of infection is considered the single most important element in control of the disease. Studies in USA have shown that high risk group have been prepared to change their life styles and behaviour pattern voluntarily to avoid the more obvious risks of infection. However, the job is tough and challenging. The mysteries surrounding AIDS have bred a great deal of fear and strong prejudice and people frequently behave unreasonably and strangely towards those who are AIDS infected.

Misunderstandings are, therefore, common over the issue of household contacts, casual contacts, etc. The virus has been isolated from many body fluids but till now there is no evidence that any one has been infected through any other medium than that of blood or semen (apart from infants of infected mothers). Furthermore contact between people like shaking hands, sharing meals, coughing or sneezing, visiting a hair dresser, manicurist, optician, dentist are not involved in AIDS transmission.

Though the casual contact is unimportant in AIDS transmission, its remote possibility cannot be ruled out. People should, therefore, take steps to protect themselves from possible contamination with infected AIDS materials. This means observing high standard of hygiene including washing dishes/hands in hot soapy water.

Therefore, there is an urgent need to tap all avenues of mass media education and communication channel to reach all segments of people with correct information about the disease.

### Precautionary Guidelines for Laboratory staff, Health workers, etc.

1. Handle sharp instruments contaminated with AIDS materials carefully to avoid accidental wound.
2. Wearing of gloves, gowns while handling infectious materials like blood, body secretions, etc.
3. Thorough washing of hands after handling infectious materials.
4. Disinfection of specimen container or any surface contaminated with blood with powerful disinfectant.
5. Incineration of disposable items and articles soiled with infected material.
6. Compulsory use of disposable needles and their proper disposal.
7. Labelling of blood and other specimens with special warnings.
8. Use of biological safety cabinet and other primary containment devices for various laboratory instruments.
9. Proper decontamination of working bench.
10. Strict prevention of mouth pipetting.
11. Maintenance of a separate room for specimen collections of AIDS patients.
12. Decontamination of animal cages and proper precautions while handling experimental animals.

### Supporting research studies

This is an important area. ICMR has already constituted a task force on the AIDS. The same task force may suggest a few protocols in key areas of interest.

### Guidelines for health check of foreign student

1. Any foreign student (new & old) being admitted in any educational/research institute will subject themselves for health check to the nearest Civil Surgeon/CMOH/Superintendent of District Hospital within 1 month of arrival.

2. Till the results are communicated the student will be provisionally admitted and on production of fitness certificates, admission is to be confirmed.

3. If the student is found unfit due to any disease other than AIDS, the student shall be declared temporarily unfit and can continue to study subject to university regulations.

4. If the student is found seropositive for AIDS by ELISA he should be declared unfit and he should be put under surveillance.

If found positive by confirmatory western blot test-admission shall be cancelled and the student should be repatriated to his own country. If found negative by western blot he may be given fitness certificate to resume his studies.

5. If the student is found unfit results shall be kept confidential till confirmed results are available.

6. Blood/Serum should be sent to the identified surveillance centres in the states. If the surveillance centre is yet to be established in the state, the sample may be sent to the nearest surveillance centres identified for the purpose.  $\Delta$

### NEW HOPE FOR EARLY BREAST CANCER DETECTION—Contd. from page No. 187

Common teaching aids and teaching methods are presented in tabular form together with information on their advantages, limitations, and specific applications.

Now in its second edition, the book has been revised and expanded in keeping with lessons learned from extensive field testing of the original. The modular approach, which encourages adaptation to local nutrition needs, makes this work an especially useful training and reference manual for primary health care workers and their supervisors or instructors.

—W.H.O.

### SOCIAL DIMENSION OF LEPROSY : A PLEA TO SOLVE SOCIAL PROBLEMS CHAKRAVARTTI, MR. *Indian Journal of Leprosy* 1986 Oct-Dec; 58(4) : 609-14.

India is perhaps unique in having set before herself the ambitious task of controlling and eradicating leprosy by 2000 A.D. The fact that leprosy is a social

and psychological scourge than merely a medical problem has not been focussed properly. Despite the availability of modern therapeutic and its associate technological means to control it, an unfavourable psychosociological environment in which the disease has been associated with generations of ignorance, misinformation and prejudice, has reduced the chances of early diagnosis, the effects of adequate intervention and the prospects of sustained treatment. While considering adequate measures for its control, much more challenging task is to make a concerted effort in creating a general awareness among them and generate strength to motivate them to fight against social evils and stigma. Renewed effort is, therefore, needed to understand the social, cultural and the human factors that interfere with its control. The control is rooted in health education as well as in the attitude of the community. The need of the hour is, therefore, to create awakening so that no more need be cower behind the mental of darkness like a hunted animal, but can return to the welcoming warmth of his family and friends.  $\Delta$

—National Medical Library

## NEW HOPE FOR EARLY BREAST CANCER DETECTION

A SIMPLE blood test has been developed in Australia which could lead to the early diagnosis and treatment of breast cancer. Development of the test follows the discovery that levels of a certain protein are raised in the blood of breast-cancer patients and increase as the cancer spreads.

By measuring the level of the protein, named Mammary Serum Antigen (MSA), the test can distinguish between early and late cancer and between benign and cancerous growths. It can also be used to monitor remission and the progress of treatment.

The new technique has been successfully tested on more than 3000 blood samples by Australian scientists who hope it will eventually identify the presence of cancer long before the tumour is apparent. At this early stage, breast cancer is almost always curable and is unlikely to require mastectomy.

The head of the Australian research group, Professor Ian McKenzie, said the test had picked up several tumours on the borderline of clinical detection but it would take a few years before its sensitivity was finally assessed. "We would like to see the situation where all women are screened annually for the early onset of the cancer," he said. "This technique requires only a blood sample from the patient which can be analysed by any pathology laboratory."

The implications of regular mass screening with a relatively painless and quick test replacing the haphazard reliance of self-examination are staggering. Breast cancer is the biggest killer of the cancers affecting women. Its early discovery is very important.

If the cancer spreads to the lymph nodes, a woman's chance of five-year survival drops from 85 per cent to 50 per cent. It is in this vital monitoring stage that Professor McKenzie believes the test will find immediate application. "The level of MSA could be measured monthly and used as an early warning sign of the diseases' spread. Once the level returns to the normal range the patient could safely be regarded as in remission," he said.

The scientists have been using monoclonal antibody technology to develop diagnostic tests for breast and colon tumours. Since the discovery of this cloning technique a decade ago, monoclonal antibodies have formed the basis of biotechnology ventures around the world. As mass-produced versions of the body's antibodies, they offer a new way of detecting minute quantities of substances such as drugs, hormones and markers for diseases like cancer. The breast cancer cell has more than 10,000 molecules on its surface. By a lengthy process of elimination, the group aimed to make a monoclonal antibody that would home in on a molecule associated only with breast cancer. In 1983 a young PhD student, Mr Stephen Stacker, found just a marker. It had the added advantage of also being secreted into the blood, opening the way for a blood test for blood cancer. A busy

year followed, involving 30 researchers and nurses testing blood samples from 2500 normal donors, 500 breast-cancer patients and 500 patients with other diseases.

Results outstripped expectations. Some 90 per cent of the breast-cancer samples contained raised levels of MSA compared with only 2 per cent of the normal group. The remaining 10 per cent of the breast-cancer samples, which failed to show up positive, were in remission or undergoing chemotherapy. The MSA levels were also higher in breast cancer than other cancer patients.

The team has built on its initial success by using a radiolabelled antibody on 20 patients to successfully localise secondary tumours in the lymph nodes. Some of these tumours could not be felt as swellings. The substance, when injected into a patient, homes in on the tumour, which is picked up as a colour image under gamma photography. A major study is under way in Australian hospitals to perfect the technique. Scientists at the Melbourne centre have recently isolated MSA and are working at cracking its structure. "It could have very important ramifications," says Professor McKenzie.

"Why are there high levels of MSA in breast cancer serum? MSA may only be a by-product of the tumour but alternatively the substance may play an important role in inducing the cancer in the first place. So far the molecule appears to be unique. We hope to have the sequence of amino acids in three to four months and then we'll be able to work back to the gene that is apparently altered in breast cancer cells."

—A.I.S.

**Guidelines for Training Community Health Workers in Nutrition. Second edition. World Health Organization, Geneva, 1986 vii + 121 pages, ISBN 92 4 154210 1 Price : Sw. fr. 16-/US\$ 9.60. Available in English, French, Spanish and Arabic versions in preparation.**

In this task-oriented manual for the training of community health workers in nutrition, information and instructions are presented in two main parts.

The first features chapters introducing the purpose and uses of the guidelines, the skills necessary to make the trainer a more effective teacher, and the basic facts about foods and nutrition which the health worker should be taught. The second part reproduces nine training modules. Focused on a single topic, each of these modules includes information on associated tasks, learning objectives, basic training content, and the various training methods appropriate for that module. Each module concludes with a set of practical training exercises that can be used for either the practising of skills or the assessment of how well these skills have been mastered.

(Contd. on page No. 186)

# PROJECT TUBERCULOSIS CONTROL IN CAR NICOBAR

The tuberculosis problem continues in developing countries even though the requisite technology is available to mankind to control it. For tuberculosis control, a substantial proportion of the patients, prevalent in the community, should be readily diagnosed wherever they may be and that they are rendered non-infectious by the regular administration of the anti-tuberculosis drugs over a period of time. This obligation on the part of the organisation to provide an efficient level of service for a long duration, often puts it under considerable strain. A general unacceptability by the patients of a rather long treatment programme, albeit provided free, further compounds the problem, which most developing countries find difficult to cope with. The managerial problems inherent in a tuberculosis control programme, are no doubt even more difficult to tackle in case of the secluded groups of population.

Recently, however, considerable scientific information has become available regarding the efficacy of a tuberculosis control policy applicable to isolated communities. The level of the risk of tuberculosis infection and its decrease in Eskimos of Alaska and Green Land is considered unique in the annals of medical history. The tuberculosis problem had halved itself every three years. This could be compared with the almost static risk of infection observed over a 10-15 years period was possible by intensive case-finding and period in some parts of India. The almost unique result was possible by intensive case-finding and treatment not presently followed anywhere in India.

This proven technology of tuberculosis control within a foreseeable future in isolated and small communities has recently been adopted by the Andaman and Nicobar Administration for control of tuberculosis among the Nicobarie tribals residing in the distant and isolated island of Car Nicobar, dotting the Bay of Bengal. The Project was launched in September, 1986. Under the project all the patients suffering from active tuberculosis of lungs, hidden in the community, are being found out through intensive and systematic efforts in the 16 villages of the island with a total population of nearly 16,000. Persons with suspicious chest symptoms are at first identified by conducting house to house questioning of all adult persons. Sputum tests are carried out at village centres to investigate the symptomatic persons. X-Ray of chest and other investigations are also arranged. The sputum positive patients are put on intensive treatment at home with a battery of newer drugs for only 6-9 months, instead of the conventional course of treatment for 18 months, as done elsewhere in the country. Thus, majority of patients are likely to be sought out and rendered non-infectious in a short time. This, in turn, is likely to leave behind a much smaller problem, which could be manageable through the routine services in later years. Moreover, tuberculin testing of all children from village to village has

been designed to yield the tuberculosis infection rate. Such information from one of the most secluded tribal population, is going to be made available to the scientific community for the first time ever. BCG Vaccination to newborns has been introduced as a routine measure for prevention. In addition, preventive treatment with INH is being given to all the healthy children by house to house administration.

## The strategy

For the success of the project, complete involvement of the community at large on voluntary basis is adopted as a strategy. Every village is divided into 4-5 sectors. Houses in each sector are numbered. These houses are placed under surveillance by the tribal volunteers selected by the village captains. They educate the population, administer INH tablets daily to children in the houses covered under the preventive programme and supervise the treatment taken by the positive patients. Tribal volunteers in the community are thus continuously interacting with the residents, playing the role of the engineers of change. Departmental Health visitors make weekly visits, for technical supervision and motivation of the volunteers themselves. Thus, through a strong community network, a high level of compliance with both treatment and prophylactic intervention is being maintained. A small tuberculosis hospital and a mini District Tuberculosis Programme Component, strengthened in the wake of the Research Project, are designed to be left behind, manned by the trained tribal staff to take charge of the continuing activity, once the intensive phase of the project is withdrawn in due course.

During the year immediately prior to the implementation of the project, only 2-3 cases were being diagnosed every month in Car Nicobar, through the routine programme offered so far by the existing services and none was continuing treatment beyond the second month. Compared to this, during only a three month period after implementation of the project and in about nine of the 16 villages covered so far, 75 new tuberculosis patients have already been identified. All these patients are continuing regular treatment; something very unique for tuberculosis. Nearly complete acceptance has been reported in respect of BCG Vaccination and prophylactic treatment also. It is hoped to cut down transmission among the isolated tribals of the island in a manner unprecedented in the developing world. The problem which would otherwise have lingered on, could be substantially reduced now possibly within a decade. If successful, the method could be implemented in cut off areas else where in other islands as well. The World Health Organization under the auspices of the Government of India, are rendering financial assistance to the project and the National Tuberculosis Institute, Bangalore has rendered valuable technical advice and assistance to the Union Territory Administration.  $\Delta$

## AUTHORS OF THE MONTH

**A. Kumaresan**

Jr. Executive  
Health Education Model Centre for  
Occupational Health Services,  
BHEL, Tiruchi-620014.

**Dr Bhakt Prakash Mathur**

Lecturer,  
and

**Dr P. Salil**

Department of Social and Preventive Medicine  
S.N. Medical College,  
Agra-282002.

**Dr A.C. Moudgil**

**Dr S.K. Verma**

**Parnijit Kaur**

**Anita Ummat,**

and

**Raman Mehta**

College of Nursing  
Post-Graduate Instt. of Medical  
Education and Research,  
Chandigarh

**P. Manohar Reddy**

Health Educator  
Subsidiary Health Centre  
Pathikonda-517432  
Distt. Chittoor

**M.L. Mehta**

Sr. Sub-Editor  
Central Health Education Bureau  
Kotla Road, New Delhi-110002

**Dr K.K. Datta**

Asstt. Director General (AIDS)  
Dte. General of Health Services  
Nirman Bhavan, New Delhi-110011

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