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State Health Directorates are requested to send reports of their activities for publication.

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Promotion of Home-Based ORT through Planned Health Educational Approach

— An Experience of Christian Medical College, Ludhiana

DR M. L. CHUGH AND DR S. C. GUPTA

Oral Rehydration Therapy is one of the most important components of primary health care, the goal of which is to provide Health For All by the Year 2000. But how many medical colleges and institutions are really undertaking painstaking steps to promote ORT in the rural community to which they are responsible? The authors in this article describe their experience and the steps being taken to promote home-based ORT through planned health education approach at the Christian Medical College, Ludhiana in Punjab.

APPROXIMATELY five million children die around the world each year of dehydration caused by diarrhoeal infection. In some developing nations diarrhoeal infections may occur as frequently as once every month in children. It is an established fact by now that Oral Rehydration Solution (ORT) is a very effective weapon in the fight against diarrhoeal diseases (Barua 1980:4). Recently, this method of therapy has been in operation in various situations and the results obtained from the above approach have been quite significant (AHRTAG, 1985:7). Many studies conducted by different scientists as well as international health organizations like UNICEF (1982-83) and WHO (1977-87) repeatedly emphasise the contribution of ORT in minimising the adverse effects of diarrhoeal diseases throughout the world, especially in developing countries. However, as emphasised by UNICEF (1982:83:4) the real problem and strategy today before a health infrastructure is that how the message of popularisation of ORT should get woven into the fabric of our traditional society.

It is a corroborative fact that the only possible means to make ORT an essential component of primary health care is to make every family member aware of its important role, especially the mother who is the key person. Existing literature shows that ORT is the simplest, easiest, cheapest and the most practical tool for controlling diarrhoeal diseases,

which are major causes of child morbidity and mortality. Yet, the efforts made by different organisations to promote the acceptance of ORT among the people and to make the same a norm, still appear to be much lesser than the expectation. The biggest drawback which we face today, especially in the field of community health research, is that after reaching at certain conclusions, the scholars and the workers never try to put into practice the results and achievements of various studies as most of us happen to be theory oriented. It is true that ORT is one of the most important components of primary health care whose main objective is to provide Health For All by the Year 2000. But, how many medical colleges and institutions are really undertaking painstaking steps to promote ORT in the rural community to which they are responsible? This is a very searching question today before all of us.

It still remains questionable whether the workers are knowledgeable about the composition and preparation of ORT. As per Medical Council of India and Government of India Instructions, every medical college has to have one to three blocks population as a field practice area to provide enough community oriented experiences to the medical undergraduates. Keeping in view the above fact, the Christian Medical College, Ludhiana, Punjab, had various inter-departmental meetings to plan out a detailed health educa-

tion programme for promotion of ORT in the villages attached to the College. Traditional customs in many parts of the world, such as fasting the child when he is suffering from diarrhoea, contribute greatly to mortality from both diarrhoeal diseases and associated malnutrition. Hence, as reiterated by UNICEF (1982-83), proper health education must accompany ORT. In this article efforts have been made to highlight the plan of action adopted by the Department of Social and Preventive Medicine to promote awareness and acceptance of ORT through educational approach in the villages of the community health block attached to Christian Medical College, Ludhiana.

What is ORT: The aim of oral rehydration therapy is to prevent and treat dehydration, which is the main complication in any diarrhoeal illness. Cumulative mortalities of 25-40% among children upto the age of five years are common in developing nations. Forty per cent or more of these deaths, which are caused by dehydration or chronic malnutrition, are associated with acute diarrhoea. Very early replacement of water and electrolyte losses to prevent or treat dehydration is the principal objective in treating acute diarrhoea. The oral rehydration formulation (ORT) recommended by WHO contains 3.5 grams sodium chloride, 2.5 grams sodium bicarbonate, 1.5 grams potassium chloride and 20 grams glucose (or 40 gms. of sucrose when glucose is not available or is too expensive) for one litre of safe drinking water.

Planning of ORT education campaign: Every plan in its broader sense includes three main steps: (i) Plan formulation, (ii) Execution, (ii) Evaluation. Planning is a matter of team work and the planning team consists of not only specialists in this field but also in allied fields. Planning and management are very essential, if higher standards of primary health care are to be achieved. Therefore, while planning the educational programme on ORT on a large scale for the whole community block, efforts were made to implement the said programme initially through a pilot project.

ORT education and Pilot Project: Four villages were selected through stratified random sampling procedure, wherein the socio-economic status of people and their knowledge, attitudes and practices towards ORT were assessed. This project was assigned to one of the postgraduate students of the Department. The exact title of his thesis was, "KAP STUDY ON ORT". About 200 subjects were chosen for the above study through simple random method (50 subjects from each village). Data were collected with the help of a structured schedule. Before administering, the schedule was pretested in the selected population and was modified to remove bias. Data was also collected by the investigator from the family folders, master registers, etc., maintained by the concerned male and female multipurpose health workers. The major findings of the project report were as follows:

Major findings: The lower the socio-economic level of the mother, the lesser is her awareness towards

ORT. The people living in the areas adjoining to subsidiary health centres have more awareness towards use and availability of ORT, than those living in distant areas. Data show that there are great differences in the people's knowledge towards ORT and their actual practices. About one-third of the mothers (respondents) hold the different superstitions like evil eyes, wrath of God, etc., responsible for diarrhoeal episodes among their children.

As evident from the report of the above project, the community awareness about ORT was very poor. Around 20 per cent of the mothers were aware of electrolyte solution packet which were being distributed by the concerned health personnel during their home visits as well as through Subsidiary Health Centre and other health institutions. Before April 1984 ORT packets were commonly used and recommended by the Department and hence were administered in the rural community through different agencies. In 1982-83 UNICEF itself was supplying about 20 million packets of ORT a year to 80 countries throughout the world (UNICEF 1982-83). For making available packets of this simple remedy throughout the world, WHO estimated a global need of 750 million packets a year and this was perhaps not easily attainable target (UNICEF 1982-83). Despite this, as evident from our study about 90% of mothers were not knowing its exact method of preparation. Moreover, since it was not readily available and was to be collected from the health centres, etc., the chances of its real utility were minimized.

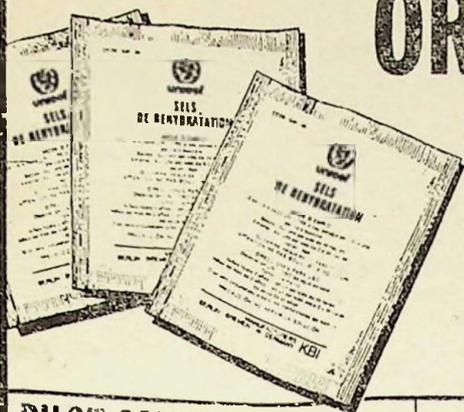
As repeatedly emphasised by WHO and UNICEF, participation and involvement of people as well as their self-reliance in the promotion of their health by their own efforts is a key factor, if we really want to provide Health for All by the Year 2000. As suggested by Barua (1980:16) ORT should be based on home-made formula so that it can be easily available and is more economical, and hence, programme cost can be substantially reduced.

Therefore, after reviewing the report of the pilot project the department changed its approach from the popularisation of ORT packets to the home-made ORT preparations. From April 1984 onwards this Department started discouraging the use of electrolyte powder packet and priority was given to the home-based formula on ORT. The results received from this new approach are quite note-worthy. To work out the exact components as well as proportion of different items, the Department arranged a series of meetings within the Department. Special meetings were also arranged with the Departments of Medicine, Gastroenterology, Paediatrics and the following formula was concluded:

HOME-BASED ORT FORMULA

- (i) 1 glass of clean water ($\frac{1}{3}$ litre).
- (ii) 2 level teaspoonfuls of ordinary sugar (or 1 heaped teaspoon).

ORT - 'MEDICAL MIRACLE OF THE CENTURY'



Dehydration - caused by diarrhoea - is the biggest single killer of children in the modern world. Now it can be prevented by oral rehydration therapy (ORT) using either a 5 cent sachet of salts (left) or an even cheaper home-made version. As a result, parents themselves could prevent the deaths of several million children each year. (UNICEF)

PILOT CAMPAIGNS HALVE DEATHS

Field trials with ORT have reduced diarrhoea deaths by 50% in villages and urban neighbourhoods of:



ORT can rightly be called the medical miracle of this century. For peoples in Asia, Africa and Latin America, ORT holds the promise of healthier childhoods and more productive adult lives.

Shamsul Haq, Minister for Health and Population Control, Government of Bangladesh.



38 NATIONS BEGIN MASS PRODUCTION

The following nations have now begun mass production of oral rehydration salts:

- | | |
|---------------|-------------|
| Afghanistan | Iran |
| Argentina | Kenya |
| Bangladesh | Lesotho |
| Brazil | Malaysia |
| Burkina-Faso | Mexico |
| Burma | Mongolia |
| Burundi | Morocco |
| China | Mozambique |
| Colombia | Nepal |
| Costa Rica | Pakistan |
| Kampuchea | Paraguay |
| Dominican Rep | Peru |
| Egypt | Philippines |
| El Salvador | Rep Korea |
| Ethiopia | Syria |
| Haiti | Thailand |
| Honduras | Tunisia |
| India | Venezuela |
| Indonesia | Zaire |

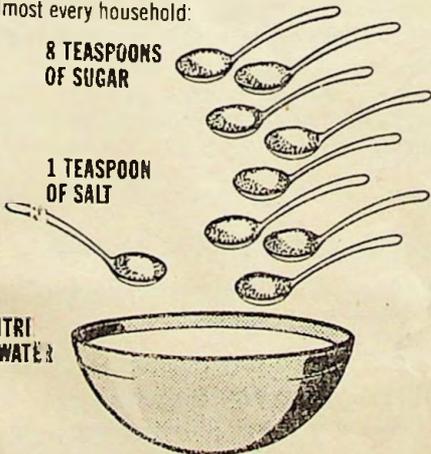
THE DO-IT-YOURSELF VERSION

For preventing dehydration, an equally effective oral rehydration solution can be made using ingredients found in almost every household:

8 TEASPOONS OF SUGAR

1 TEASPOON OF SALT

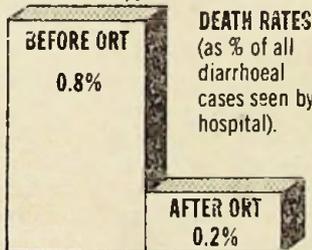
1 LITRE OF WATER



Some traditional remedies - such as rice congee or carrot soup - also make highly effective oral rehydration solutions.

HOSPITALS CHANGING TO ORT

Many hospitals in both poor and rich countries are now changing from intravenous therapy to ORT.



NOTE: Median figure for 8 hospitals in developing countries.

SAVING LIVES — AND GROWTH

Frequent diarrhoea is one of the most important causes of malnutrition. The use of ORT can help to maintain a child's growth.

A Turkish study on two groups of children - one with and one without ORT -

AVERAGE DURATION OF ILLNESS:
With ORT - 2.57 days
Without ORT - 4.97 days



MONTHLY AVERAGE WEIGHT GAIN:
With ORT - 430 gms
Without ORT - 324 gms

We believe that, ultimately, widespread adoption of ORT in developing countries will break the vicious cycle of diarrhoea, malnutrition and death - especially for the principal victims: very young children.

Dr W B Greenough, Director, International Centre for Diarrhoeal Disease Research, Bangladesh.

(iii) 2 pinches of common salt by using 2 dry fingers, i.e., thumb and forefinger.

(iv) Sodium bicarbonate 1 pinch—if available.

(v) Juice from 1/3 to 1/4 lemon.

This solution was tested by the Biochemistry Department of the Christian Medical College, Ludhiana, and was found to be of practically desired standard.

Implementation of ORT education drive: After searching out the easiest and home-made ORT formula which was scientifically accepted, the real objective before the Department was as how to promote the awareness about ORT among people regarding its importance, especially in the outreach areas. The subject was repeatedly discussed in the Departmental senior staff meetings under the Chairmanship of Dr Betty Cowan, the then Principal of the College and Medical Consultant to the Department. It was decided to involve all categories of field health staff in accelerating the ORT acceptance level.

Comprehensive health care and ORT: As pointed out by Dhillon *et al* (1979) and Chugh (1983), the Department developed a Comprehensive Health Care Services scheme for its block. Under this scheme every name is entered in the family folder which is maintained family-wise. Through this scheme complete health profile of every family is available. As specified by Grewal (1985) there are three main tools of this methodology.

- (i) The family folder
- (ii) The master register
- (iii) The desk diary.

Under this Scheme, there is one medical officer for a population of 5,000 who is incharge of a subsidiary health centre and under him, there are two multipurpose health workers—one male and one female. These workers are the key persons in providing the comprehensive health care to the family.

Multi-purpose Health Workers and ORT: To make the health education process on ORT a successful one, it was felt that the concerned male and female health workers be properly oriented towards the proposed educational approaches, especially pertaining to ORT awareness and its acceptance in the indigenous form. From April 1984 onwards every worker is being told not to emphasise on the ORT packet but to encourage the rural community to prepare ORT at home as suggested above (Home-based formula). In all monthly meetings which are generally presided over by the senior medical officer of the block, the Department of Social and Preventive Medicine and Community Health is repeatedly reiterating for the promotion of awareness and acceptance level of ORT among the different communities.

The workers have been repeatedly instructed that in each family they should actually demonstrate the preparation of ORT-home based solution. To back up these activities, the education of mothers in self-care initiated by the health workers for every mild episode of diarrhoea is the main and important component of the health programme. The main objective of this approach is that every mother must be trained as a health educator and practical health practitioner, because it is realised that the mother plays a very prominent and expanded role in the cultivation and promotion of good health habits and practices within the family. In addition to this we are emphasising on the extension approach in which mother or any other responsible and intelligent person in the family (if mother is not there) is asked by the health worker during his visit to the family to prepare one glass of ORT in his presence and under his guidance. The advice given by the worker on ORT to the family is recorded in the family folder. Ultimately through this approach we help the community to prepare ORT themselves and by their own efforts and actions through indigenous formula. Further, to make the above approach more effective a leaflet in Punjabi language on ORT—Home-based Formula has been prepared and printed by the Department, and has been given to every family through multipurpose health workers. During the implementation of the programme, it was reported by the field workers that around 10 per cent of the total population was migrant population, who migrated of Ludhiana from the neighbouring States and was residing in the areas attached to the Urban Health Centre, field Ganj, Ludhiana. To make the communication more effective in the migrant population, it was planned to prepare a copy of the *guidelines* in English version also.

THE GUIDE LINES

1. Sixty three per cent of body weight is water. Diarrhoea may cause severe illness due to loss of water and if NOT TREATED MAY CAUSE DEATH.
2. First priority is to make up loss of water in the body.
3. Best is water, sugar and salt solution for child.
4. Prepare this mixture as per the procedure:
 - (a) Take one glass of clean water.
 - (b) Put 2 level tea-spoonsful of ordinary sugar in the water in the glass and stir to mix it.
 - (c) Then put two pinches of salt, using two dry fingers, in the water in the glass and again stir it.
 - (d) Mother should taste it. It should taste like tears.

5. Give this mixture to the child suffering from diarrhoea, with tea-spoon or glass. (1 tea-spoon every 2-4 minutes till the child accepts it)
6. Mother or some other person in home must know how to prepare the mixture.
7. Give solution immediately after 1st loose stool, "DON'T WAIT FOR MANY MOTIONS".
8. Keep giving this mixture (rough guide 1 glass for every loose stool) so long as diarrhoea continues.
9. Even when diarrhoea stops, the child will need extra fluid for sometime—perhaps a day or two.
10. If baby vomits, give solution, but more slowly.
11. If diarrhoea still continues and the child vomits or passes no urine in 12 hours take the child to the health centre.
12. Use freshly prepared mixture—do not keep for more than 4-6 hours. DO NOT HEAT SOLUTION.
13. Baby less than 1 month with diarrhoea should be shown immediately to doctor.
14. Mother should continue breastfeeding or give weak tea if breastfeeding already stopped.
15. Start feeding small quantities of normal diet as soon as baby can take it.
16. For next two weeks give more food than usual to make up for loss due do diarrhoea.

Apart from this, written instructions to different health personnel, i.e., doctors, health supervisors, multipurpose health workers, etc., are sent from time to time about the preparation of ORT, its different components and different approaches of health education through which the task is expected to be accomplished.

NEW APPROACH TO PREVENTION OF DEHYDRATION DUE TO DIARRHOEA

(For Health Team, Doctors at all levels, supervisors multipurpose workers)

At Clinic

1. Packets of ORS powder will no longer be used routinely (do not stock packets).

2. Keep 2 glasses, 2 tea-spoons, 1 jar sugar and 1 jar salt.
3. When mother brings child with diarrhoea, get her to make one glass of ORS:
One glass water ($\frac{1}{4}$ litre), containing:

2 teaspoonsful (level) sugar and 2 pinches of salt (use 2 dry fingers). Stir well to dissolve sugar.
4. Start giving to the baby with teaspoon or from glass while you give Health Education on:
 - (a) Continuing breastfeeding (or weak tea if breast feeding already stopped).
 - (b) Starting to feed small quantities of normal, diet as soon as baby can take it and for next 2 weeks giving more food than usual to make up for loss due to diarrhoea.
 - (c) Finally give her educational leaflet to take home.

At home

1. You must teach the mother or mother's substitute in each home to prepare the solution and see that she makes the solution.
2. She should taste it and it should be no saltier than tears. If there is no child with diarrhoea, mother should drink it so that she understands how it tastes and is not wasted. Teach her to give it to any child suffering from diarrhoea immediately after first loose stool.
3. Teach mother that diarrhoea kills, but adequate amounts of the mixture save life and that it must be given immediately, and should keep on giving so long as diarrhoea continues. (rough guide, one glass for every loose stool). Even after diarrhoea stops, the child will need extra fluid (mixture) for a day or two.
 - (a) If baby vomits, continue to give, but more slowly.
 - (b) If child continues to vomit or to have loose stools for more than two days

and or passes no urine for 12 hours, take the *child to Health Centre*.

- (c) Child under 1 month having diarrhoea must be referred immediately to the hospital.
 - (d) *Leave Educational leaflet in the home, have explained it to mother.*
 - (e) At every home visit, ask mother to produce the leaflet.
4. At every home visit, *record exactly on the pink card* what you did regarding above; and action taken by the mother since your last visit.

Village Health Guides and ORT

Under Comprehensive Health Care, there is a provision for one village health guide for 1000 population. In one subsidiary health centre, there are about five village health guides who have studied upto 5-8th class and have undergone three months training on the basic principles of public health, maternal and child health care services and environmental and personal hygiene. These workers are acting as a link between the community and health personnel. Their role in the promotion and acceptance of health care services has been quite significant. Health education re-orientation workshops on promotion of ORT are being organised for these village health guides from time to time. Workshops are arranged with the help of multipurpose health workers and the senior medical officer Incharge of concerned Primary Health Centre.

During workshops every village health guide gets the relevant literature on ORT. Demonstrations are also arranged by senior faculty members regarding home-made ORT solution. Through this non-formal form of education, every village health guide is asked to prepare one glass of ORT with her/his own hands in the presence of senior faculty members of Social and Preventive Medicine Department so that any bias or error may be corrected. To ensure that the message of ORT reaches every home, every health worker and village health guide have been instructed to spend at least 15 minutes during their first visit in the family having children under five years of age, wherein they have to introduce the new concept of ORT (home-made solution) to the families.

The concerned field staff has been instructed that in the absence of worker, someone must be trained in family, especially the mother, who can work as a substitute for him. To ensure the proper implementation of ORT promotion drive, the concerned supervisory staff continues doing the concurrent and consecutive checking of houses on random basis. During field visits and monthly meetings the drawbacks

of health workers, doubts or shortfalls in the implementation of the programme are often discussed as one of the important agenda items.

Health clinics and ORT

Efforts are being made to promote acceptance of ORT through clinic based health education approach. Every medical officer has been instructed to keep one empty glass, one jar of sugar, one jar of salt and one teaspoon in the clinic. He has also been advised to spend at least *10 minutes* on advising the patients on ORT (home-made solution). In the clinic also the patient is asked to prepare a glass of ORT solution in the presence of medical officers so that before the patient leaves the clinic it is ensured that he/she knows the preparation technique. Educational leaflets on ORT have also been given in all subsidiary health centres for distribution to the mothers of under five children.

Role of Medical Officers in the promotion of ORT

Medical Officer as a team leader is expected to play a more expanded and critical role in making ORT popular among the rural folks. The orientation meetings for the medical officers posted in the Community Development Block, Ludhiana, under different subsidiary health centres are also being arranged from time to time to ensure maximum output with minimum input. During monthly meetings also every medical officer is asked to give a detailed report regarding improvements in change of knowledge, attitudes and practices of people towards ORT home-based formula.

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NUTRITIONAL ASPECT OF WOMEN

With Special Reference to Pregnancy and Lactating Period

DR SURESH CHANDRA AND DR (SMT.) K. L. AGRAWAL

When the mother's diet is not nutritionally adequate she cannot transfer the required nutrients to the foetus. Foetus then tries to draw its nourishment from mother's body reserves. This can affect the mother's health, if she is already malnourished then both mother and infant will be affected.

A NUMBER of important points have emerged from a series of consultations held by United Nations and concerned groups, especially some workshops held at the Vienna International Centre and the International Women's Conference, Nairobi. The focal point of the International year of women—1975 (which was latter extended to a Decade—1975-1985) was the World Conference at Mexico city. It was here that world plan of action was announced to achieve the goals of equality, development and peace.

In the recent years several issues relating to women have been brought out of the lumber room of value judgement and into the forum of serious academic enquiry. Poverty, malnutrition, uneven development and other women's problems are some of the topics, now claiming considerable attention. In March 1983 a Workshop was held on women and poverty at Calcutta. Eminent scholars from different parts of India and abroad concluded and explored several broad themes which were of intrafamilial bias against women's well-being, discrimination against women in the labour benefit, opportunities for gainful activities and possibility of less than equal access for women in public services to alleviate poverty. Ultimately they emphasized the basic problems of women, i.e., malnutrition, health and development. The Joint Working Conference of IUNS, UNICEF and ICMR in October 1977 also fixed the priority of nutrition among women.

Malnutrition is like an iceberg as most of the people in the developing countries live under the burden of malnutrition. Pregnant women, nursing mothers and children are particularly vulnerable to the affects of malnutrition directly or indirectly. Most of nutritional problems are related to women. The adverse affects of maternal malnutritions have been well documented, i.e. low birth weight, anaemia, toxæmia of pregnancy, post-partum haemorrhage, all leading to high mortality and morbidity. Now it is realised that intrauterine period of life is very important period from nutritional stand point. To over-come the nutritional problem, best approach is to develop knowledge, awareness and attitudes about nutrition among the women so that they are able to take proper care of themselves and their children which are the main vulnerable group.

Women require various nutrients in their different physiological and physical state. These facts should be considered while devising any nutritional policy.

NUTRITION IN PREGNANCY

Every pregnant women dreams of giving birth to a chubby, healthy infant. The foetus solely depends upon mother for its nourishment. Its nutritional needs gradually increase as pregnancy progresses. Weighing just about 15 gms around the 12th week, the foetus develops into a fully grown baby of about 3,200 gms. by the 40th week. Mother has to supply,

through blood stream, all nutrients needed for this growing foetus.

Several bodily changes take place during pregnancy. A healthy and well fed expectant mother puts on 10-12 Kg. of weight during pregnancy. She is to store enough fat and several other nutrients in her body to meet her own needs and those of the infant.

When the mother's diet is not nutritionally adequate she cannot transfer the required nutrients to the foetus. Foetus then tries to draw its nourishment from mother's body reserves. This can affect the mother's health, if she is already malnourished then both mother and infant will be affected.

ANALYSIS OF THE WEIGHT GAIN IN PREGNANCY

| | UPTO | | | |
|-----------------------------|------------|-------------|-------------|--------------|
| | 10 wks. | 20 wks. | 30 wks. | 40 wks. |
| | gms. | gms. | gms. | gms. |
| FAETUS, PLACENTA AND LIQUOR | 55 | 720 | 2530 | 4750 |
| UTERUS & BREAST BLOOD | 170 | 765 | 1170 | 1300 |
| EXTRACELLULAR WATER | .. | .. | .. | 1200 |
| FAT | 325 | 1915 | 3500 | 4000 |
| TOTAL GAIN | 650 | 4000 | 8500 | 12500 |

Due to malnutrition during pregnancy, outcome of pregnancy may not be fruitful. Abortion can take place. Infant may be born before full term. Infant may be small in size with less than 2,500 gms. of body weight. Infants with such low birth weight will not have enough nutrient stores in their livers. They easily become malnourished. They have poor resistance against diseases. A poorly nourished mother cannot withstand the stress and strain of pregnancy and child birth. If she is well nourished, she has more chances of successfully going through her pregnancy and child birth. If her diet lacks in nutrients, the mother becomes a victim of serious nutritional disorders. She may suffer from iron deficiency anaemia. Her blood will lack the vital elements. She becomes weak and exhausted. Bone disorders caused by calcium deficiency are also seen in malnourished pregnant women.

Balanced diet in pregnancy

Scientists have recommended that a pregnant women needs to have daily 300-400 calories of energy above

the normal requirements. One can obtain this additional energy by adding cereals, oils, sugar or Jaggery. Protein is required for body building. Iron and the B. Vitamin, folic acid (Part of B. Complex Vitamin group) are required for the blood formation and calcium for the bones. An extra 15-20 gms. of Protein daily will be adequate for proper growth of the foetus. It will be well and good if animal foods such as eggs, meat or fish and milk are consumed. The nutrition has direct relation with still birth rate which was realised long before during second world war. During the policy of food rationing in Britain during second world war, the pregnant women were kept in priority class which received extra rations of milk, cod liver oil and fruit juice, which greatly improved the diet of women belonging to that group, causing a fall in still birth rate from 38 to 28/1000.

Nutrition in nursing mothers

Even after birth, the new born continues to depend on the mother for its nourishment. Breast milk provide all the nutrients for the first 4-6 months. Compared to pregnancy, breastfeeding imposes greater stress on the mother because the infant is older and rapidly growing. Therefore, he needs more nourishment than the foetus in the womb. Mother must be able to secrete adequate quantities of breast milk.

The nutrients that go into breast milk are to be provided by the mother. If her diet is adequate then the

RECOMMENDED DIETARY INTAKES OF WOMEN

| | Sedentary Worker | Moderate Worker | Hard Worker |
|------------------------|------------------|-----------------|-------------|
| CALORIES (K CAL) | 1900 | 2200 | 3000 |
| PROTEINS (GMS) | 45 | 45 | 45 |
| CALCIUM (MGS) | 400 | 400 | 400 |
| IRON (MG) | 32 | 32 | 32 |
| VIT. A. (μ G) | 750 | 750 | 750 |
| B. CAROTIEN (μ G) | 3000 | 3000 | 3000 |
| THIAMINE (MG) | 1.0 | 1.2 | 1.5 |
| RIBOFLAVIM (MG) | 1.1 | 1.3 | 1.8 |
| NICOTINIC ACID (MG) | 13.0 | 15.0 | 20.0 |
| VIT. B6 (MG) | 2.0 | 2.0 | 2.0 |
| VIT. C. (MG) | 40.0 | 40.0 | 40.0 |
| FOLIC ACID (μ G) | 100.0 | 100.0 | 100.0 |
| VIT. B12 (μ G) | 1.0 | 1.0 | 1.0 |

additional nutrients consumed can be diverted for formation of milk without affecting her own body resources. Even a mother with unsatisfactory diet

can produce the same quality of milk, but this is being done at the cost of her own health. Such a situation cannot and should not last long.

The mother's diet ought to be more nutritious than what it was when she was not nursing. But in practice it is not so. The nursing mother needs more proteins, since high quality proteins have to be synthesised by her for producing milk. If animal foods such as meat, eggs or fish are consumed that would be much helpful. Scientifically it is proved that if the mother will increase intake of proteins, she can produce more breast milk. Calcium and Vitamin A. are other nutrients which need to be supplemented during lactation. Leafy vegetables like amaranth, drumstick leaves help in supplying the nutrients. It is better that the mother consumes only minimum of condiments and spices otherwise breast milk may carry these odours making it unpalatable to the baby. Drinking of more water helps in compensating for the loss of body water through the milk.

As the mother herself is involved in the child's care her confidence improves. Her changed nutritional outlook helps to prevent relapse of infection in the child. She changes her attitude about the nutrition towards the family diets also. Thus whole community will be benefited indirectly. In the same refer-

RECOMMENDED DIETARY INTAKES OF NUTRIENTS DURING PREGNANCY & LACTATION

| PREGNANCY | LACTATION | | |
|------------------------|-----------|------------|-------------|
| | | 0-6 months | 6-12 months |
| CALORIES (K CAL) | + 300 | + 500 | + 400 |
| PROTEIN (GM) | + 15 | + 25 | + 25 |
| CALCIUM (MG) | 1000 | 1000 | 1000 |
| IRON (MG) | 40 | 32 | 32 |
| VIT. A. (μ G) | 750 | 1150 | 1150 |
| B. CAROTIEN (μ G) | 3000 | 4600 | 4600 |
| THIAMINE (MG) | + 0.2 | + 0.3 | + 0.2 |
| RIBOFLAVIN (MG) | + 0.2 | + 0.3 | + 0.2 |
| NICOTINIC ACID (MG) | + 2.0 | + 3.0 | + 3.0 |
| VIT. B6 (MG) | 2.5 | 2.5 | 2.5 |
| VIT. C (MG) | 40.0 | 80.0 | 80.0 |
| FOLIC ACID (μ G) | 300.0 | 150.0 | 150.0 |
| B12 (μ G) | 1.5 | 1.5 | 1.5 |

ence a study has been carried out in Sucheta Kripalani Hospital, New Delhi. The mothers of poorest community have shown that they can dramatically reduce malnutrition among their children by using the knowledge of nutrition with the help of growth monitoring charts and by learning how to make better use of locally available foods.

The mothers were attending the clinic attached to Sucheta Kripalani Hospital, New Delhi. 120 children were under-nourished. Each mother was given a road to health growth chart to maintain at home and its use was demonstrated. At every visit a child was weighed and its growth curve was plotted on the chart. Progress of all the 120 children was followed over the periods ranging from five months to one year. In all 103 (85%) showed a significant improvement reaching the least 80% of the average weight for their

BALANCED DIETS FOR ADULT WOMEN

(In grms/day)

| | Sedentary | Moderate | Heavy Worker |
|------------------|-----------|----------|--------------|
| CEREALS | 410 | 440 | 575 |
| PULSES | 40 | 45 | 50 |
| LEAFY VEGETABLES | 100 | 100 | 100 |
| OTHER VEGETABLES | 40 | 40 | 100 |
| ROOTS & TUBERS | 50 | 50 | 60 |
| MILK | 100 | 150 | 200 |
| OIL & FAT | 20 | 25 | 40 |
| SUGAR & JAGGERY | 20 | 20 | 20 |

age. This approach is very feasible, cheap, administratively easy to organise and to avoid the risk of hospitalisation. No new set up is required for this purpose. Any out patient clinic such as primary health centre, Employees State Insurance (E.S.I.) dispensary and Nagar Palika Health clinic can be utilized effectively by this approach.

Lack of food is not the only cause of malnutrition. Some times people choose poor diet even when good one is available due to cultural influences, food habits, customs, beliefs, traditions and attitudes. Papaya is avoided during pregnancy because it is believed to cause abortion but it is not scientifically correct. It is a good source of Vitamin A. In few communities of India valuable foods like Dhals, leafy greens, rice and fruit are avoided by nursing mothers which are main ingredients of nutritive food for pregnant women. Some Hindus and Jains do not eat meat, fish, eggs

ADDITIONAL ALLOWANCES DURING PREGNANCY AND LACTATION

| Food Items | During Preg. | Calories (K.Cal.) | During Lactation | Calories (K.Cal.) |
|-------------------|-----------------|----------------------|---------------------|----------------------|
| | gms. | | gms. | |
| CEREALS | 35 | 118 | 60 | 203 |
| PULSES | 15 | 52 | 30 | 105 |
| MILK | 100 | 83 | 100 | 83 |
| FAT | .. | .. | 10 | 90 |
| SUGAR | 10 | 40 | 10 | 40 |
| TOTAL | | 293 | | 521 |

and certain vegetables like onion. Due to these food taboos people avoid the consumption of such nutritious food, even though they are easily available. In most of our communities men eat first and women eat the left over food afterwards, though they require more nutritious food. Consequently the health of women may be adversely affected.

Overall malnutrition has to take note of hunger, poverty, insanitation, illiteracy and superstitions. In the same reference Pt. Jawaher Lal Nehru said, "It is the science or knowledge only that can solve the problem of hunger in poverty, of insanitation and illiteracy, of superstitions, customs and traditions, of vast resources running to waste of a rich country inhabited by starving people".

By considering these facts Government has given much emphasis to mother and child health services and nutrition. It is the main components of health under 20 point programme. National Iron and folic acid distribution programme is running to fulfil the above objectives. Integrated child development services scheme is also providing maternal and child health services.

Problem of malnutrition could be solved only by the active participation and awareness of mothers about the nutritional aspects of food. △

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HOSPITAL IN COMMUNITY HEALTH PRACTICE

COL. S. N. BHATTACHARYYA

Hospital can play an important role in providing the preventive, promotive and rehabilitative services to the local community including training and research, besides the restorative functions. General practitioners must be involved by the hospital for these functions. By establishing peripheral health centres and with the help of medico-social workers all these functions can be done satisfactorily by a well organised hospital.

HOSPITALS play a very vital role to provide comprehensive health care to the community. For long time, hospitals were considered as "Ivory tower of diseases" and common people had an impression that hospitals were no place to get well and once in, there was hardly any chance to come out alive. In fact, before the era of antiseptics and antibiotics, the high mortality rate in hospitals used to justify such impression. With improved scientific knowledge, availability of modern diagnostic facilities and more trained paramedical personnel, the out look for hospitals have completely been changed. With the concept of comprehensive health care, hospitals can play a vital role in community health care, and image of hospital can be completely changed if the management and the staff of the hospital change their out look from merely curative role to comprehensive health care role.

Community participation

It must be realised that the hospital is a medico-social organisation of the community and this should serve them in a manner to satisfy not only the health need but also the other social requirements. To do these functions effectively, active community participation is a must, which can be achieved by:

- (a) Inviting the community leaders to serve in the hospital management committee. In this way hospital comes much closer to the people and it also comes to know the felt need of the community.
- (b) Encouraging the hospital visits by the friends and relatives of the patients and making available the medical and paramedical staff to satisfy their queries.
- (c) Reducing the waiting time in the outdoor and emergency to

a minimum. Appointment of a "lady receptionist" to receive the patients and their relatives and in case of their difficulty guiding them to their respective places, plays a very important role.

Functions of the Hospital

Like earlier days hospital functions are not to be limited to restorative sphere alone. It has to be organised to serve also the promotive, preventive, rehabilitative, educational and research need of the community. For this it is always better to have a medical person trained in "Community Medicine" in all large hospitals to co-ordinate all the above mentioned activities as well as activities of different specialities/departments.

Health Restoration: This is the prime function of the hospital. Early diagnosis and treatment is essential for this. Most of the investigations should be done from outdoor as it reduces the hospital occupancy of bed. Quick turn over of the bed is essential specially in our country as the cost of hospitalisation is rising very fast. Interdepartmental consultation causes great delay which need to be cut down to minimum by better co-ordination and availability of basic diagnostic facilities. As it has been established that all diseases have both psychic and somatic factors—a psychiatric department must be there in all general hospitals to take care of the psychic aspect of all diseases. Besides, this department can practice preventive psychiatry in the community.

Medical rehabilitation which is also a part of health restoration, starts with early diagnosis and treatment. After that part is complete, patients should be transferred to outpatient department as early as possible for rehabilitation

—physical, mental or vocational. Long term cases, chronic illnesses and geriatric patients can be treated in "half way homes", "day hospitals", "night hostels" etc. which could be built up. For all these, collaboration between medical and auxiliary workers with that of vocational, educational and social workers are essential to have a team approach to obtain most gratifying result.

An emergency ambulatory service arrangement to tackle all types of emergency on the spot should always be kept ready.

Prevention and health promotion: All hospitals are already practising promotive and preventive medicine through their MCH services, radiological services and laboratory services. Public health laboratories which are working independently should be integrated with hospitals or their work to be coordinated with hospital laboratories.

Preventive and curative services in a hospital must be fully integrated. These combined services should be decentralised in the community by establishing "Health Centres" at the periphery of the hospital within the community where all preventive, promotive and curative services will be available. Specialists of different disciplines are to visit these centres periodically. Immunisation programme for the local population and domiciliary treatment is to be implemented through these services. Medico-social workers, physiotherapists should work through these centres for rehabilitation and treatment of long term cases. MCH, family planning, preventive psychiatry can all be practised through these centres. Medico-social workers play a very important role in home care, follow up of cases, and health education of the community including environmental sanitation. Nutritional services to

be started first at the hospital itself and then to be extended to the community through these health centres in the form of nutritional supplement and prevention of specific deficiency. Nutritional education to the family on the local available food is also very important. The general practitioners and family physicians must be brought under the fold of health centre scheme where they can have their professional fulfilment. Other aspects of health care which hospitals can take care of are, school health services and occupational health services of the local community.

An epidemiological unit must be established in each hospital to control any outbreak of any communicable disease.

Training and research: All hospitals are potential training and research units. All facilities available in a hospital can be utilised for training of medical, paramedical nursing and health personnel. Each bed of the hospital is a source of research and all members of the staff and trainees should be encouraged to carry out research work however trivial it may be. It is the analytical mind if encouraged to develop, improve the research activities which is ultimately beneficial to the whole community.

Participation of general practitioner

Hospital should give full facilities to the local general practitioners for active participation in hospital activities. They can provide information about the sociomedical and emotional problems of the society which acts as a guide for modifying the health care system. Meetings should be organised by the hospital where all the general practitioners and local administrative medical officers can participate exchange their views and augment their professional knowledge. △

DIET THERAPY FOR CANCER

SMT. RITA BANSAL

In Cancer, apart from all medicines and the surgery of the affected part, only changes in dietary habits can show a miracle. The author says that diet has a great curative effect for cancer patients with no cost.

EXTENSIVE studies have related dietary and nutrient excesses, deficiencies or imbalances to the development of cancer in the oesophagus, stomach, colon, pancreas, liver and breast. Nutrients may affect in either of these three ways:

- 1.—Certain dietary constituents may themselves be carcinogenic in nature,
- 2.—Whereas others may act as nutritional modifier in carcinogenic process, or
- 3.—As a vehicle for transportation of carcinogens.

Once the carcinogens enter the body, the following may be the repercussions:

- 1.—They may either be detoxified or converted to active form depending upon how the body handles them.
- 2.—They may sometimes bind themselves with critical cellular target.
- 3.—They may develop into clinically observable tumours from progenitor cells.

Role of different nutrients in carcinogenesis

Excess of starch and sugar may lead to induction of cancer by providing sufficient energy for tumour growth. Whereas limiting its intake has shown reduced incidence.

Vitamin A deficiency leads to squamous changes in number of epithelial tissues like oesophagus, bladder, respiratory tract. However, its high level has been observed to be protective, against hydrocarbon induced tumours. Still results are contradictory.

The diet rich in Vitamin C contents helps to reduce the incidence of tumours.

Iodine deficiency leads to development of thyroid enlargement and ultimately to tumour, followed by cancer.

The diet low in fibre is associated with colon cancer while high fibre diet initiates against it. This is because:

- (i) It shortens intestinal transit time of food, thereby shortens residence time of potential carcinogens.
- (ii) Intestinal flora interact with fibre to produce volatile fatty acids which exert laxative effect.
- (iii) Fibre converts deoxycholic acid (a carcinogen, product of bile acid metabolism) to methylcholanthrene.

In normal condition, CO₂ released during respiration remains in blood as sodium carbonate to combine with some suitable acid, e.g., lactic acid. On reaction a harmless lactate salt is formed which is washed away through urine. Thus both poisonous substances—CO₂ and lactic acid—are released from body. But in abnormal condition there is increased alkalinity with low calcium content around the body cells. This abnormal quality of fluid irritates the simple cell, forming a lump. Same thing happens in cancer. Due to increased alkalinity, body serum has subtle amount of sodium which acts as irritant (caustic soda). Hence, to counteract the effect of alkalinity low salt or salt restricted diet has been advised with sample amount of potassium. This will help in maintaining acid-base balance of body serum.

Diet Therapy

Chemotherapy and radiotherapy are extensively used as measures to cure the cancer. In spite of this, no one can ignore their serious side-effects like diarr-

hoea, constipation, vomiting, nausea, anorexia, altered taste, hepatic dysfunction, etc. But nutritional manipulations are seen to alter the incidence of spontaneously occurring tumours. Fat being as the sole factor in carcinogenesis it is essential to restrict fat intake to the level of 20% calories. Cholesterol level should also be maintained 100 mg/day. Whole milk should be replaced by skim milk. Egg intake should also be restricted twice a week as it supplies 60 per cent on cholesterol intake. The lists of foods are given below from which a person can freely choose, and also those he should restrict or withhold:

Foods that one can eat freely:

1. Salt free yoghurt/curd.
2. Raw fruit.
3. Skim milk or little milk.
4. Unsalted porridge with no cream or ghee.
5. Salt free bread and butter.
6. Sultana or onions.
7. Soaked and dried fruit, groundnuts or ripe banana.
8. Citrus fruit taken after one hour of ingestion of starchy foods.
9. Greens and onions.
10. Peas and dry beans.

Foods that one should restrict or omit:

1. Meat, Fish, cheese or egg white,
2. Fruit drinks containing preservatives,
3. Nicotine, i.e., smoking,
4. Cane sugar,
5. Tea, coffee, alcohol or coke,
6. Condiments,
7. Table salts or alike,
8. Sodium like baking powder,
9. Aspirin preparation,
10. Borax (Sodium sulphate).
11. Acid fruits (citrus).
12. Fruit preserved in syrups.

Thus, diet has a great curative effect for cancer patients with no cost.

W.H.O. Workshop on Control of Tobacco-Related Diseases

WITH growing evidence of the direct relationship between smoking and lung cancer, many countries are considering measures to curb the habit, particularly among the young.

Similarly, it is recognized that the use of tobacco also has adverse effects on health and that tobacco smoke is carcinogenic to humans. Yet, the manufacture of cigarettes and other tobacco products and their consumption are increasing in the South-East Asia Region.

To review ongoing national activities, policies and strategies in relation to smoking and health in the WHO South-East Asia Region, a five-day regional workshop on control of tobacco-related diseases was held from 22 July, 1985, in New Delhi.

Addressing the participants, which included senior health administrators and officials from related Ministries, the WHO Regional Director for South-East Asia, Dr U Ko Ko, cautioned that there was evidence of an increase in the number of cases of cancer of the lung, chronic pulmonary diseases including emphysema and ischaemic heart diseases. "The global figures for the mortality from lung cancer alone have already risen to one million annually. It has been estimated that this figure will increase to 2 million by the year 2000 and continue to rise unless effective action is taken now to halt the smoking epidemic" he added.

Besides lung cancer, smoking and chewing of tobacco are responsible for the vast majority of cases of oropharyngeal and laryngeal cancers. Other cancers related to smoking are those of the pancreas, urinary bladder and oesophagus. The cure rates of lung cancer are extremely low, even when treatment is started early. The only effective method presently available for the control of lung cancer is prevention of smoking.

The risk of lung cancer is particularly dependent on the duration of smoking; the earlier the age of onset of the habit, the greater is the risk to the individual. Furthermore, the longer the duration which a major proportion of the adult population has been smoking, the higher the incidence and mortality from lung cancer in that population.

The habit of chewing tobacco which is associated with an increased risk of oral and oropharyngeal cancers is also an area of concern in the South East Asia Region.

U. N. Weekly Newsletter 3 August, 1985

SHRI S. KRISHNAKUMAR TAKES OVER AS DEPUTY MINISTER, FAMILY WELFARE

SHRIS S. KRISHNAKUMAR, who was appointed as Deputy Minister for Health and Family Welfare on 25, September 1985, brings rich experience, youthful energy and dynamism to his office. He had resigned from the prestigious Indian Administrative Service in 1980 and joined the Congress (I) Party. Within a short period of five years, he has carved out a place for himself in the Congress Party by the sheer dint of his hard work, perseverance, organising capabilities and understanding of men and matters. Shri S. Krishnakumar was elected to the Lok Sabha in December 1984 general elections from Quilon constituency in Kerala which was considered a stronghold of the CPM, CPI and the Revolutionary Socialist Party (RSP). Shri Krishnakumar has been an outstanding engineer, administrator, manager, grass-root level worker and political leader. He had a consistently excellent record of formulating and implementing numerous projects and development programmes in a wide spectrum of national endeavour.

Shri S. Krishnakumar was born on 6 September, 1939. He had a brilliant academic record. He passed B.Sc (Engineering Hons.) in First Division with distinction and topped the University of Kerala in Mechanical Engineering. He had a stint as lecturer in Mechanical Engineering in the University of Kerala before his selection to the Indian Railway Service of Engineers in 1961. He worked as a Mechanical Engineer in the Indian Railways till May 1963 when he was selected to the Indian Administrative Service. As an IAS Officer he held several senior positions. These include District Collector, Ernakulam (1969-73); Director, Civil Supplies and Managing Director of Kerala State Civil Supplies Corporation, Kerala (1973-74); Industrial Development Commissioner of Kerala and Executive Chairman, Kerala State Small Industries Development and Employment Corporation Ltd. (1975-1978); Chairman, Greater Cochin Development Authority (1971-80) (concurrent post), Secretary to Government of Kerala, Local Administration (including Urban Development), Social Welfare and Fisheries (1979-80). He was also Chairman/Chief Executive of a number of Public Sector Corporations under the Government of Kerala.

Shri Krishnakumar has won several awards for outstanding service. He was given FICCI National Award, 1973 in recognition of individual initiative in economic and social development, especially for his work in the national family planning programme. He was also honoured with the Award by the National Alliance of Young Entrepreneurs for his contributions to the development of small scale industries in the country.

Shri Krishnakumar has a number of publications to his credit, published both in India and abroad.

Although Shri Krishnakumar's experience ranges from urban development to fisheries and fishermen's welfare, Family Welfare remains his first love. In fact, it was his initiative and drive in the family planning that won him national and international acclaim. His pioneering work in 1970-73 as District Collector of Ernakulam succeeded in breaking the resistance to family planning all over Kerala and was responsible for achieving an irreversible decline in population growth rate in Kerala poising the State towards achieving a potential zero growth rate in the next two decades.

The Ernakulam Family Planning experiment set a world record in sterilizations performed for a given population group in a given length of time. The approach was later replicated in other parts of the country with remarkable success. His efforts in the field of family planning are one of the most outstanding contributions of a single person to the family planning programme not only in India but probably anywhere in the world. His contribution to a massive communication strategy based on propaganda and motivation supported by incentives and fully backed by requisite services, have demon-



strated the way for early realization of targets and ultimate educational goals of a successful family planning programme. Several national and international studies have testified to and commended Shri Krishnakumar's leadership qualities in organising voluntary and governmental agencies in generating a massive programme of social engineering and change.

Whether it was family welfare, urban development, small industries, community development, land reforms, management of public enterprises or service to the weaker sections of society, Shri Krishnakumar made his mark as an administrator, manager and a social worker. As honorary Chairman, from 1981 to 1984, of Hidustan Latex Limited, Trivandrum, the premier public sector manufacturer of Nirodh for family planning programme, he transformed the perpetually losing concern into a profit making company setting a new record in capacity utilization, production, quality and profits.

Shri Krishnakumar resigned from the IAS after 17 years of distinguished service in 1980 with the blessings of Smt. Indira Gandhi when Congress (I) was in opposition in Kerala State. He worked from 1980 to 1984 at the grass-root level of the Congress in Kerala organising the Cashew Workers, Fishermen, Government and public sector employees. He had worked as an executive member of the KPCC, the Convenor (Publicity) in 1982 State election and as Chairman of the relevant front organisations of the Congress in the State. Shri Krishnakumar was selected for the Quilon seat in Kerala in recognition of his popularity among the workers of the traditional industries in that worker dominated constituency and he had won handsomely this seat which was considered a traditional leftist stronghold.

Shri Krishnakumar has been a keen sportsman and a student leader. He was the University and State Tennis Champion, President of the Trivandrum Engineering College Students Union and Student President at the National Academy of Administration, Mussoorie.

Trained in various aspects of management, Shri Krishnakumar has also been abroad for advanced training in Planning and Management of Population under the U.N.D.P. in Washington in 1971. He obtained special training in Metropolitan Planning, Development, Administration and in control of Environment at the International Union of Local Authorities, the Hague, in Netherlands in 1974. At the Indian Institute of Public Administration, New Delhi, he completed the training in 1978 organised on "Finance For Non-Finance Executives", and World Bank Course in 1979 on Urban Management". Besides, he has to his credit professional training in Railway Engineering and Management and Public Administration. He is a fellow of the Economic Development Institute of the World Bank on Urban Development.

Shri Krishnakumar has travelled extensively around the world and shared his experiences at various international forums on a variety of developmental issues. He had also served as a resource person for two international Conferences on Family Planning held at Geneva and New Delhi.

Shri Krishnakumar is married to Usha and has a son and a daughter. His hobbies include, reading, tennis, golf and travel.

PEOPLES PARTICIPATION IN LEPROSY ERADICATION

DR V. V. DONGRE

Health education is the weapon to enlist peoples participation. It helps in case detection, case holding, regularity in treatment, prevention of deformities, prevention of debilitation, rehabilitation, doing away with unnecessary unscientific legal codes, and research.

ANY programme which is meant for the people at large will not be successful unless there is active participation by the people themselves. It is very true in health programmes of all kinds.

In a disease like leprosy, having medical and social aspects, peoples active participation is a must. Leprosy patients come from all walks of life and are found in all strata of the society. Leprosy is everyone's concern. The master key of the problem lies in the health educational aspect of the problem.

The roots of the social stigma are in the progressive deformities which arise as a result of the disease process. It is one of the reasons of debilitation of leprosy patients and may lead to genesis of leprosy beggars. These deformities can be prevented if regular treatment is availed of in the early stages of the disease.

The source of infection of the disease is an open case of leprosy who is not taking treatment. If such an open case is converted into a closed case by adequate regular treatment, then the chain of transmission can be curtailed. This can be acquired by early detection and regular treatment.

Community participation

The concept of community participation is as ancient as community life. The community identifies its common problem and through cooperative efforts uses local resources to solve the problem. This is

in short what is peoples participation. The essential part of the process is proper understanding of the scientific concepts and procedures to solve the problem.

Health education is the weapon to enlist peoples participation. It helps in case detection, case holding, regularity in treatment, prevention of deformities, prevention of debilitation, rehabilitation, doing away with unnecessary unscientific legal codes, and research.

As a result of impact of imparting scientific knowledge to community, its attitude and practice can be guided on proper lines.

The involvement of leprosy patients and non-leprosy patients including medical practitioners is necessary to solve the problem in toto.

Almost all the anti-leprosy projects and organisations are running on SET pattern (Survey, education and treatment) and few try for the rehabilitation part of the problem.

Surveys are done to detect leprosy patients in slums, schools, industrial settlements, etc. Health education is done for the various purposes already mentioned. Treatment is provided free of charge as far as possible and anti-Leprosy Centres are established in different parts of localities for the convenience of the patients. Colonization of leprosy patients is a thing of past and should not be practised for the

fear of adding to the social stigma which is already existing. Instead, leprosy patients should be encouraged to stay in their respective families and take regular treatment while undertaking their normal trades or professions.

GUIDE LINES

1. Teachers and parents should give cooperation for the screening of students for leprosy. Children with leprosy should not be debarred from the schools. Regularity in treatment by such children should be checked by the teachers and parents.
2. Social workers can arrange for sponsorship (fees, uniforms and books) for leprosy afflicted children or for children of leprosy patients.
3. (a) Panel discussions, lectures in vernacular languages with coloured slides can be arranged with an arrangement of check-up Centres in the vicinity of schools, colleges, slums, etc. Such programmes can be arranged in the social meetings and annual get-togethers.

(b) *Proper quickies, strips, slides* on leprosy can be projected on Television and in Cinema Houses. Interviews of leprosy patients/workers can be telecast. People concerned with these media can help in this direction.

(c) Entertainment programmes during festivals can be sandwiched with a film on leprosy for the benefit of the people.

(d) *Kirtankars* can narrate stories of Renukamata, Raja Rukmangad to the audience. Puppet-shows can project a story on leprosy patients.

(e) Writers, poets can select leprosy as a subject for their work and project optimistic views of the whole problem. People good at pen, can write articles on leprosy in press.

(f) Artists and painters can help in creating new health education materials in the form of posters, pictures, etc.

(g) Housewives can spread the facts of leprosy by word of mouth. A simple instruction like, cover the mouth and nose while sneezing,

FACTS AND FIGURES ABOUT LEPROSY

1. Leprosy is caused by a specific germ. It is *mildly* infectious disease.
2. Approximately 20% leprosy patients are open cases (infectious).
3. Leprosy is not hereditary.
4. 80% of the people have natural resistance against leprosy infection.
5. Leprosy patients are found in all the strata of society. They come from all walks of life.
6. A light coloured or redish patch with numbness, shiny, glossy, oily skin could be early signs of leprosy.
7. Consult the doctor if there is frequent ants-crawling sensation in the limbs.
8. Deformities can be prevented if early and regular treatment is acquired. Only 20% leprosy patients get deformities because of negligence in taking regular and adequate treatment.
9. Leprosy is curable.
10. Free treatment is available in Government, Municipal Dispensaries and Hospitals as well as in Voluntary Organizations all over the country.

coughing, etc., will help in the prevention of dissemination of the germs in the atmosphere.

(h) The professionals in the field of communications can promote the ideas like "Leprosy is curable" better than ordinary leprosy worker. So, there is a scope for such experts in the health educational aspect of leprosy.

4. Medical faculty members can modify syllabus for leprosy training in the Medical Colleges and Nursing colleges. General medical practitioners can treat leprosy patients in their own clinics instead of referring them to special Leprosy Hospitals. This will lessen the stigma. The Para-Medical and Nursing staff of General Hospitals should not object to nursing a

leprosy patient in a General Ward. Admissions to leprosy patients in General Hospitals should not pose a problem.

5. (a) The employers should not deject the employee with leprosy. In exceptional cases, relative of the said employee should be given employment. Special allowance may be given for modern treatment and for sustenance. Alternate jobs may be provided to such patients so that rent, ration, education and medical care is made possible.

(b) Products of rehabilitation centres and Leprosy Homes should be purchased on priority basis.

(c) Whatever we preach must be followed in practice. Therefore, employment to a leprosy patient in well-known organizations will help in doing away with the social stigma.

6. (a) Service Clubs like Lions, Rotarians, Giants, etc., can arrange detection camps with follow-up of patients, give appliances and instruments to leprosy rehabilitation centres, arrange for modern treatment, crutches, M.C.R. Shoes.

(b) Railways and transport corporations should religiously follow the concessions given by them to leprosy patients.

(c) Leather Industrialists can make the M.C.R. Shoes available at a cheaper rate to the leprosy patients.

7. (a) Philanthropic people should not give sweetmeats only to leprosy asylum but should see the actual needs in terms of drugs, instruments, of the institutions concerned. Alms to beggars should be organised.

(b) A definite amount while celebrating weddings, birth anniversaries, death anniversaries may be ear-marked for anti-leprosy work.

(c) Donations can be specific, e.g., for exhibits, leaflets, booklets, banners, stickers, goodwill advertisements in the Press, display of posters and hoardings on leprosy.

(d) Individuals can purchase Leprosy Seals to boost up funds raising.

8. Public enterprises like Life Insurance Corporation (L.I.C.) should not charge double premia rate from leprosy patients.

9. (a) Pleaders can study different legal procedures and help to rescind or repeal unnecessary, unethical, unscientific legal codes, obstructing social justice to the leprosy patients, e.g., matrimonial acts.

(b) Legislators can help in modifying leprosy acts.

10. Administrators can help in giving accommodation to Offices to Leprosy Organizations, place for treatment centres and housing for leprosy workers.

11. Research Workers can take up leprosy for their research and find out new techniques to treat or to detect leprosy patients.

In all the above mentioned areas there is scope to expand work. But the principle should be well remembered that prevention is better than cure.

Mere progress in the technology will not help but the people at large will have to be alerted to feel the need to identify the priority of the problem and to take initiative to use local resources to the extent that is possible to control the problem and thereafter to eradicate it. △

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ADD LIFE TO YEARS

S. P. PATHAK

Older people are at greater risk in confronting hostile elements in the environment and the ticking of the biological clock. Therefore, they require a wide range of preventive, curative and rehabilitative care, in addition to having a feeling of belonging.

AFTER a number of experts belonging to a variety of disciplines made their presentations at an international conference on the problems of aged people, in London during 1970s, a grey haired delegate from Japan who was a medical doctor took the floor. His suggested definition for the old age was fascinating. This is what he said: "Old age is that in which the person recalls and remembers clearly and vividly everything that had happened in his youth but does not remember what he had for the breakfast that morning".

May be there is an element of exaggeration in this statement but it provides a solid facet of the multi-faceted old age—that is, living in the past, the nostalgia. Indeed, the most significant aspect of suffering of the old in any society, is its daily withdrawal into a life lived decades earlier. The several points that are thrown up in this nostalgic world include not only the gay and happy days of early married life but also the moments of discontent and despair caused by domestic disharmony added to various other factors. That is why social scientists indicate that basically the problems of the old age are problems of psychological readjustment.

Let us first see at what age a person really becomes old? The Indian tradition has it that life is lived in four stages—*balya*, *kishora*, *yauvan* and *vridāha*. These significant stages are known as *avasthas*. Each stage or *avastha* gives rise to the next stage—in other words when we analyse the phenomenon behind these stages we see that the childhood stage ends or withers

up giving way to youth, youth stage giving way to middle age, the middle age dries up and the old age creeps in. Finally that stage also dies when body disintegrates in death.

We consider here a stage prior to the death; that is the old age. It can be termed as the culmination of the three earlier stages of life, that is the childhood, adolescence and the youth. Social scientists of the West say that in a normal life-span human beings go through a series of three stages from birth until death. The first, the time of progress, development and evolution, is youth; the second, the time of stabilization and equilibrium, is adulthood and maturity; and the last is the time of retrospection, or old age.

Gerontology

Lately, the study of the problems of the old has assumed important dimensions and a distinct academic discipline known as "gerontology" has come into being. A French gerontologist designated the last stage of life as the "Third Age". Now while the advanced countries have taken considerable strides in concretising ideas and policies in the form of projects and programmes for the total well-being of the aged, developing countries like India have not given much thought to the problem. This stance has to be considered in the background of the rigid traditional rules of orthodoxy that give respect to the old in society, and also the family structure where the patriarch has paramountcy. But unfortunately, urban growth which is upsetting all calculations are throwing to the

four winds time-honoured traditions and values. The ageing have been considerably affected by this phenomenon.

It is generally agreed that old age creeps in at the 60th year of a person. Now, the population of India being about 700 million, an estimated 5.5 per cent of the people constitute the old in the country. The various developmental projects and welfare programmes undertaken by the government have led to a drastic fall in child mortality and increased the life-span of the average Indian. Thus it may be expected that the percentage of the old in the population will rise steeply by the turn of the century. Increasing numbers of old people will add to the problems of the nation. In some western countries population strategists point out that, the young (below 14) and the old (above 65) will constitute about 60 per cent of the total population and that the remaining 40 per cent will have to look after them by the turn of the century. It is, therefore, imperative that the nation invests a sense of urgency into this important social problem and take necessary steps before the problem of the old assumes an enormous stature.

Problem and its aspects

The problem has two aspects: one, the legitimate right of the old who have given decades of service to society to expect to being cared for in the twilight years of their life, and two, tapping of a great national resource of "memory and experience". the two unique qualities the old could bring to bear on the present generation with their store-house of wisdom and standards of ethical conduct. It has been a part of our tradition to accord a privileged place to the elderly and seek their valuable guidance and advice on matters covering the entire gamut of human activity. Whether it is a point on when to start the sowing activity for the next crop, or marriage of the young in the family or settling a dispute in society or prescribing a home remedy for stomach ache, the advice of the old is invariably sought. At least, this was the practice in the ideal joint family set up. With the increasing endeavours of industrialising the country with the advent of concomitant problems like urbanisation, the traditional joint family system is slowly on the way out. What has been the exclusive

responsibility of the family is now becoming an imperative state responsibility.

Communicators of culture

Now, what is the state doing for the old? Can we continue to depend on the conventional sources of succour for the old? Can state medical aid programmes meet the typical requirements of old people? Can we provide for their social, emotional and psychological needs? The answers to these questions lie, in attempting a multi-disciplinary approach towards providing a comprehensive policy frame work and implementation mechanism if only we are keen on ameliorating the suffering of the old as also harnessing the untapped resource of their experienced and wisdom.

In 1982, the WHO focussed the attention of the people everywhere on the health of the elderly people. The slogan selected for the 'Year of the Aged' was "Add life to years".

The accent of WHO was naturally on health care of the old. And rightly. During that year the world was told about the several dimensions of the problem. For instance, the image of the aged person is that of one who is tottering towards the grave, battered by illness and shattered by disease, beyond all feelings and incapable of taking care of himself, much less rendering service to others. It is false. Another factor of great importance that the United Nations took note was the significance of the old as communicators of culture. It is more from the grandma and the grandpa rather than from the pa and ma that a child learns about the myths, legends and symbols of a society, of dos and donts.

However, older people are at greater risk in confronting hostile elements in the environment and the ticking of the biological clock. Therefore, they require a wide range of preventive, curative and rehabilitative care, in addition to having a feeling of belonging.

The aged can contribute to national progress in many ways. It is necessary that all should be careful not to establish situations that cut off the aged from the work they want to do and are able to perform. The main contribution of the aged is that they can add something to those around them by their presence and experience. ●

THE PATH OF PEACE AND BROTHERHOOD

The Leon Bernard Foundation Prize and Medal for 1985 have been awarded to Professor Raoul Senault (France) for his outstanding services in the field of social medicine.

The laureate, in his acceptance speech, expressed the hope that at the dawning of the third millenium, international cooperation for health would finally lead men along the path of peace and brotherhood.

THERE have been striking variations on the theme of the history and philosophy of organizations devoted to the health sciences. If there is little room left for originality, that is because of the very truth of the fact that WHO, as heir to the Hygiene Committee of the League of Nations—whose activities it has amplified and diversified—has established the link between what was done yesterday, what is being done today, and what remains to be done between now and the year 2000 to demonstrate “the importance of the continuity of effort in the perpetuation of activity” for health.

Important developments

National and international trends regarding health affairs have undoubtedly been influenced throughout the world during this second half of the twentieth century by two important developments, one of which is political, the other scientific.

In political terms, the accession of many states to independence has led them, in taking responsibility for the health of their peoples, to assess requirements in an attempt to define priorities through objective analysis of needs and available resources. The choices involved are often difficult because of the magnitude of the problems to be solved in other, equally essential sectors of the national economy. These situations have led young states to seek technical and financial assistance in order to build up programmes of bilateral and multilateral cooperation which supplement the support

requested from the United Nations family, among which it is undoubtedly WHO that gives the greatest support. Fifteen years of a policy whose watchword has been assistance, has been followed by the institution of a policy of technical cooperation. Thus, what might have seemed to be intellectual and material dependence, becomes a responsibility shared between partners in a collaboration freely agreed upon.

Another factor of a geopolitical nature was the setting up of a real decentralized organization at the regional level better able to satisfy the needs of the peoples while respecting the culture, economy and social potential of each people. Although this regionalization was not always able to mitigate the mistakes arising from transposition of structural or technological outlines from the developed countries in which most of the doctors and the new decision makers had received their training, it did nevertheless act as a useful curb on the tendency towards such transfers, which have almost invariably proved to be unsuitable and often to be fraught with consequences for the delicate economies of the developing countries.

Scientific progress

In scientific terms, considerable progress has been realized over the same period in biology and in physical and chemical sciences, making possible real advances in all areas of curative medicine (often at the expense of a preventive policy). The parallel development, thanks to the media, of means of infor-

mation and scientific popularization has brought to many people a knowledge and understanding of problems which were for a long time the exclusive province of culturally privileged social groups.

This situation has often led to a feverish upsurge in medical consumption and to an increasingly intrusive technology, the cost of which is tending to become too great a burden on the economy of most countries.

Health systems organized on the basis of provision of care and compensation are leading to situations in which countries no longer have the means to meet the increases in expenditure. There is a need, therefore, for a more rational use of health and social security systems and a fairer distribution of available resources must be encouraged. This is far from being the case generally.

Lastly, faced with the legitimate wish of individuals to see better management of their "health capital", we are obliged to consider ways and means of reconciling reasonable demands of the people with technical and financial resources in the existing socio-economic context, since neither material well-being, nor the refinement of techniques suffice to reduce the increasing chronic deterioration, even in the most economically developed countries. We would be well advised to admit that the remedies are to be found elsewhere.

Consequently, medicine should become a "cultural matter" in health policy without abandoning its scientific basis. It was not by chance that the Alma Ata Conference in 1978, in advocating a primary health care approach after careful consideration of observations, studies, and hard experience, defined such care as "essential health care based on practical scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development".

New approach

This new shift in policy advocated by WHO is too well known to everyone for there to be any need to linger over it, but it is obvious that it is well justified when we analyze the extent of the health problems still to be resolved in the world, problems that technology alone is incapable of resolving.

In some places we have the vicious circle of poverty and disease, and in others, opulence, each with its concomitant somatic disorders and psycho-social illnesses. Everything points clearly to the fact that the gap between rich countries and poor countries becomes daily wider, to the extent where poor countries run the risk of becoming increasingly trapped in a state of despair and distress caused by disease, poverty and famine together with illiteracy, whilst in the rich countries, groups at risk, known as the "new poor", are appearing as a result of difficulties brought about by the world economic crisis. Important health problems which are difficult to detect for psychological reasons are emerging among these groups.

We really do need to come to grips with the troublesome question of how to overcome forces hostile to life that are upsetting health. Despite the spectacular advances already made in the control of communicable diseases, not least amongst which we have the worldwide eradication of smallpox, the continuation of research in this field remains an essential requirement justified by the continued existence of epidemic scourges and strengthened by the emergence of new diseases. The appearance of AIDS on the medical scene is a clear example. It is no less important to continue research on the basic problem of protection of human health in the human physical and social environment, since it is noted that socio-economic and socio-cultural factors govern the realities of health in such a way that the effectiveness of programmes aimed at reducing inequalities in health founders on the rock of social inequalities. Many other areas in which WHO is interested could be mentioned, but it is important to recognize that WHO's commitment to the coordination of biomedical research has been beneficial to Member States as a whole. It is not immaterial that the research carried out in industrialized countries enables developing countries, who are building up their industrial infrastructure, to benefit from the experience acquired by others thus avoiding the growing pains of development being added to the problems that they are already combatting.

It is to be hoped that the well-known saying "prevention is better than cure" will soon be replaced by the formula "foresight for prevention". This aim, which was still unrealistic yesterday, may perhaps become a reality tomorrow thanks to advances in molecular biology and research on HLA (Human

Leucocyte Antigen) systems. However, although such progress embodies hope, it also includes risks that cannot be overlooked both for the individual and for the community.

That the international scientific community is concerned with this matter has been shown by the recent bioethical conference held in Paris.

WHO should be an important contributor to this exercise in which doctors and others must pool their abilities so as to take into consideration all the moral and legal aspects that are already being raised today, and will be raised even more so tomorrow on the relationship between science and ethics, especially in the field of human biology.

Medical schools tend to be inward looking

René Dubos has written : "In tomorrow's world, as in yesterday's, health will be dependent on the creative activity of men and on their ability to face up to the unforeseeable situations to which they are exposed in a world that is continually changing."

This remark, which is widely applicable, should lead those responsible for the training of doctors to examine their responsibility towards the medical generation of the year 2000.

Although interesting projects in the improvement of teaching are being undertaken on the instigation of WHO in industrialized and developing countries, all too often they remain pilot projects that unfortunately fail to break through the conservatism of the majority of medical schools.

It is to be regretted that, as a general rule, these schools still tend to be inward looking, with the result that teachers and students are deprived of organized contact with external realities, whilst it is in the mutual interest of teachers and pupils, as well as health professionals and members of the community, to benefit from experience in the field. Team work would subsequently be more fruitful since experience gained early on in the course of study would remove many obstacles, especially that of excessive professionalism, which always makes it difficult to share or hand over responsibility.

The gap between discussion and reality is far from being bridged. The willingness to give priority in education to primary health care, to prevention, and to individual and community participation is not sufficiently apparent in curricula. The doctor must forsake his position of technical magician in favour of the more difficult role of technical educator and health adviser so as to establish a new relationship with people based on dialogue and the sharing of knowledge. Development of medical training in the spirit of the Alma Ata Declaration would have more chance of making this effective.

Having been involved for many years in educational projects for health, I cannot fail to applaud the approach taken by WHO in this area. However, as we have been reminded during recent technical discussions, this determination will not be effective unless national bodies affirm their will at the highest level and there is a profound cultural transformation in the behaviour of individuals and in their mode of life in existing societies, which caused René Sand to say "you cannot give people health, they have to participate".

Society is faced with delicate problems due to the encounter between modern health requirements and the new mentality of individuals increasingly enamoured of freedom. How can we reconcile the inescapable requirements of promoting the health of peoples with the specific demand of individuals to be informed and to decide for themselves?

It is this awareness of participating to the full in their own fate and in that of the community that gives individuals a feeling of their worth and leads them gradually to a sense of individual responsibility towards the common good constituted by health. Health education can assist them.

Convinced that we must exemplify the precise thinking of Aristotle who said that "if health is the supreme good, the most sublime joy is the fulfilment of an idea", let us hope that humanity will have the wisdom not to compromise or destroy the successes so laboriously achieved, and that at the dawning of the third millenium, international cooperation for health will finally lead men along the path of peace and brotherhood. △

NEWS

HEALTH EDUCATION AND INFORMATION CRUCIAL IN THE FIGHT AGAINST AIDS

THE key to slowing the spread of AIDS (Acquired Immune Deficiency Syndrome) virus is education and information of health workers, individuals at high risk of infection, and the general public, according to an article published by the World Health Organization (WHO) in the *WHO Chronicle*, Vol. 39, No. 3 (1985).

Physicians and other health workers need a basic understanding of the clinical features of AIDS and of the mode of transmission of the virus to be able to counsel patients and those at risk. They must be aware of the precautions to take in caring for AIDS patients and in handling their specimens, and the *Chronicle* article summarizes the guidelines that have been developed and endorsed by the World Health Organization. The article also stresses the importance of changing the attitudes of health workers, who are often hostile to patients with sexually transmitted diseases. In Australia, Europe and the USA, where AIDS is most common in homosexual men, the problem may be compounded by intolerance of homosexuality.

Both health professionals and the public need to know that:

— Like the virus of hepatitis B, AIDS is also transmitted via blood and other body fluids.

— Among the various types of sexual contact, anal intercourse is by far the most dangerous because of the possible exchange of blood. Oral-anal and oral-genital contact and open-mouth kissing have not been proved to be especially harmful by the risk of infection cannot be ruled out.

— The use of condoms decreases the risk of transmission but does not give full protection.

— Any other activity involving the possible exchange of blood—such as the sharing of razors and toothbrushes—should be avoided. Especially dangerous is the sharing of hypodermic needles and the use of needles and syringes of suspect sterility. Intravenous drug abusers, in Europe and the USA, are the group at next highest risk after homosexual men, and the medical use of improperly sterilized or unsterilized syringes and needles is thought to play a role in AIDS transmission in some parts of the world.

— Women suffering from AIDS or at high risk of infection should avoid becoming pregnant, since the infection can be transmitted to the unborn or newborn baby.

With, by the end of August, some 14,000 people reported as having the disease, and several million more carriers of the virus who are symptom-free but capable of infecting others, the immediate task is to provide moral support and whatever treatment is available to those already suffering from the disease, and to ensure that they and the millions of "silent" carriers avoid spreading the virus still further.

There is no known specific cure for AIDS but a number of antivirals are at present under test. Scientists are not optimistic about the chances of developing a vaccine in the immediate future.

Early in the AIDS epidemic, the World Health Organization recognized the need for coordinating the research and surveillance that was going on independently in many centres, and for disseminating the information being gathered. Following the WHO-sponsored international conference on AIDS held last April in Atlanta, Georgia, USA, the Organiza-

tion convened a group of experts to review the data presented at the conference and propose further action to be taken by WHO and its Member States. WHO's role in the health education of the public and of health care workers was deemed crucial.

The Organization is also acting, as recommended by the experts, to coordinate global surveillance of AIDS, assess the risk of the disease country by country, assist in the development of a vaccine, and set up a network of collaborating centres to be responsible for staff training and specialist advice as well as for epidemiological research. A number of collaborating centres have already been designated.

International cooperation on Aids

The World Health Organization (WHO) convened the first meeting of the directors of WHO Collaborating Centres on AIDS, and of experts and public health workers, in Geneva, on 25-26 September, 1985 in order to strengthen international cooperation in the fight against Acquired Immune Deficiency Syndrome (AIDS). The importance of the meeting was underlined by Dr Halfdan Mahler, Director-General of WHO, who asked the participants for their support to WHO in this area. Returning from several WHO Regional Committee meetings, Dr Mahler voiced the concern of almost all 166 Member States of WHO over the syndrome and the public fear it generates. He pledged full support to international cooperation, so as to assist Member States in containing the spread of the disease.

Thanking Dr Mahler for WHO's commitment on this issue, the Chairman of the meeting, Professor Friederich Deinhardt (Max von Pettenkofer Institute, Munich) said that the dissemination of accurate information was essential on (a) the ways in which the virus is transmitted, and (b) prevention methods. He noted that the public had mistakenly been comparing AIDS to the great plagues of the Middle Ages and stressed that in no way should the AIDS virus be compared to any of these infectious diseases, since there is no evidence that it is spread through casual contact with an infected person. AIDS is primarily a sexually-transmitted disease. In the USA and Western Europe, the majority of cases have occurred among homosexual males, but in other areas of the world, heterosexual transmission is more common. Because the infection is blood-borne, transmission of the virus also occurs in drug addicts and to a lesser extent

blood transfusion recipients and hemophiliacs. The latter group is disappearing as screening tests for evidence of infection are introduced in blood banks.

The Collaborating Centres pledged their full support to the WHO programme. Major recommendations call for the development of therapeutic substances for AIDS patients and research to find a common antigen that would enable the development of a vaccine. In view of the multiple strains of the virus, this is a long term proposition. Furthermore, the participants recommended:— That more data be collected on the incidence of AIDS and communicated to WHO on a regular basis; that WHO assist Member States in providing authoritative information for the public, the health professions and the media; and that a simple and inexpensive test for detecting the infection be urgently developed for use in the field. △

NEW APPROACHES IN THE CONTROL OF MALARIA

A significant and long-lasting improvement in the global malaria situation is urgently needed as we approach the final decade of this century, Dr S. K. Litvinov, Assistant Director-General of the World Health Organization (WHO), told the Expert Committee on Malaria, which concluded its work 17 September, 1985, in Geneva.

The 18th Expert Committee on Malaria has been convened at an important stage in the work of WHO as well as in the history of malaria. A resolution adopted by the World Health Assembly in May 1985 urged Member States to undertake an immediate review and appraisal of the malaria situation and recommended that malaria control be developed as an integral part of national primary health care systems. Unfortunately, the implementation of malaria control strategies as part of primary health care has been slow, and it is becoming increasingly difficult to cope with the disease. As a result, the malaria situation worldwide continues to deteriorate steadily.

During the meeting, experts stressed the need for an epidemiological approach to the problem, taking into account the local variability not only in the intensity of malaria but in its response to control measures. But the Committee recognized the limitations that might be imposed on such an approach by the lack of resources and the potential of the infrastructure to maintain control activities.

Two substantially different approaches were identified at extreme ends of the spectrum. The first would require as an absolute minimum the provision of diagnosis and treatment, prophylaxis throughout pregnancy, and improved education of the public. The second approach, calling for planned interference in malaria transmission on a large scale, should only be considered if it will produce a significant improvement in the malaria problem that could be maintained. This will involve designing appropriate strategies, identifying suitable control measures, monitoring and evaluating results, managing problems such as parasite resistance to drugs, or vector resistance to insecticides, and developing malaria control activities within the framework of primary health care in consideration with other disease problems.

Since operational responsibilities will be transferred to the general health services, the district medical officer must be in a position to decide on the approach and the appropriate technology to be used in malaria control in his area, bearing in mind socio-economic and behavioural factors.

The experts also recommended that training of health workers should provide them with precise lines of action, not only in performing control activities but also in educating people and stimulating community involvement, including some contribution by the community towards the resources needed for malaria control operations.

All this will require research and development studies to ascertain how best to apply the principles of malaria control as part of primary health care to the wide variety of ecological and social situations where malaria is a serious problem. This will include questions such as how best to mobilize community resources, how far village workers can be trained, and what are the limits of their capabilities and responsibilities to cope with these extra tasks in addition to their regular everyday work. They will need to have guidance and supervision from the first referral level in the health infrastructure, which, in turn, will need to be advised by experts in malaria.

Malaria can be cured completely through prompt diagnosis and adequate treatment with appropriate antimalarial drugs. Reducing the toll and death caused by this disease will require the development of appropriate diagnostic, therapeutic and preventive action against malaria as an integral part of a community-based health programme.



SHRI. SURAIN SINGH DHANOA

OUR NEW SECRETARY

SHRI SURAIN SINGH DHANOA has taken over as Secretary to the Ministry of Health and Family Welfare on 29 September, 1985.

Shri Dhanoa, who was born on 12 August, 1930, obtained B.Sc (Botany & Chemistry) Degree from Punjab University in 1950. He did M.A. (Political Science) and L.L.B. from Aligarh Muslim University, Aligarh, in 1953. In 1968 Shri Dhanoa studied at the Graduate School of Public and International Affairs (GSPIA), and the Institute of Development Administration, University of Pittsburg, U.S.A.

Shri Dhanoa joined the Indian Administrative Service on 21 June, 1954, and has held a number of important offices. Shri Dhanoa was Collector and District Magistrate, Shahbad during 1960-61; Deputy Commissioner, Dhanbad from 1961-64; Deputy Commissioner, Ranchi from 1964-67; Registrar, Co-operative Societies, Bihar from 1967-68; Deputy Director, Shri Lal Bahadur Shastri National Academy of Administration, Mussoorie from 1968-71; General Manager, Super Bazar, Delhi from 1972-75; Commissioner, Food and Civil Supplies, Govt. of Bihar Patna from 1975-76; Commissioner, Health, Govt. of Bihar from 1976-77; and Joint Secretary, Department of Agricultural Research and Education and Ex-officio Secretary, Indian Council of Agricultural Research from 1978-80. Shri Dhanoa was on deputation with International Crops Research Institute for Semi-Arid Tropics, Hyderabad from 1981-82. He was Development Commissioner, 20-Point Programme, Bihar in 1983; Additional Chief Secretary, Govt. of Bihar during 1983-84; Chief Secretary, Govt. of Punjab in 1984-85; and Adviser to Governor of Punjab, in 1985.

Shri Dhanoa is at home in many languages.

STORY

THE PUZZLE

KAVITA COULD NOT SOLVE

DR. R. L. BIJLANI

KAVITA was a popular girl. She had several friends but one of them was very special. The special friend was Sarita. Kavita and Sarita were quite different from each other in so many ways. They were neighbours but they went to different schools. Kavita was conscientious whereas Sarita was careless. Kavita was strong while Sarita looked sick. But there was one thing which fascinated them both and made them feel specially close to each other. They shared the same birthday. "How is it that Sarita was born on the same day of the same month in the same year", wondered Kavita. Kavita had been told that at every birthday we grew a year older, and a little taller. She had also been told that food made us grow up. "If Sarita has had the same number of birthdays, she should be just as big as me", thought Kavita. As for food, Sarita ate quite a lot. But still Sarita was full ten centimetres shorter than Kavita. Although Kavita was very good at solving puzzles, this was one which she could not solve. Kavita nicknamed this puzzle 'The puzzle of slow Sarita'.

Kavita's mother had a friend, Kusum, who was a doctor. She was a specialist in children's diseases. One evening she came to Kavita's place. Kavita thought 'The puzzle of slow Sarita' was just the right thing for Kusum aunty. She found a suitable moment when she could get close to the aunty without dis-

turbing anyone, and then she asked, "Aunty, may I ask you to solve a puzzle?" Kusum aunty was a bit startled, but she smiled and said, "What sort of puzzle, Kavita?" Kavita spoke, "I have a friend Sarita who was born on the same day of the same month in the same year. She also eats a lot. But she is full ten centimetres shorter than I am. Can you tell me why it is so?" Aunty wanted a few clues.

"Are her parents shorter than yours?", she asked.

"No", said Kavita.

"Is she sick very often?", asked aunty.

"No", said Kavita.

"Has she passed worms?", the doctor wanted to know.

"No, I don't think", replied Kavita.

With negative answers to all clues, the puzzle became really difficult even for aunty. She finally told Kavita, "Why don't you send your friend to my clinic? And, one thing more. Tell her that when she comes, she should bring a sample of her stool—I would like to have it tested."

The very next day, Kavita told Sarita to go to Kusum aunty's clinic with a sample of her stool. Sarita felt it was all an unnecessary botheration. But

Kavita kept goading her, and finally one day when it was a school holiday, they both went to the clinic. Aunty asked Sarita a few questions, checked her up, took her height and weight, kept her sample of stool, and told her to come back a few days later with another sample of stool. When Sarita went with the second sample, aunty had not found anything wrong with the first one. However, aunty again told her to come back a few days later with yet another sample of stool. When Sarita went with the third sample, aunty had not found anything wrong with the second one either. However, aunty told her to check up on the report of the third sample a few days later. When Sarita went to collect the report of the third sample, she was quite sure that nothing wrong would have been found with that too. She prepared herself for having a good laugh at the doctor as well as Kavita. She repeated in her mind over and over again the most biting words with which she would come and tell Kavita how useless the whole exercise had been, and how much time she had wasted for nothing. On the other hand, she was also a bit sad that she was going to stay short for ever. With these thoughts, she reached the clinic. But how it all changed when aunty told her that in the third sample, she had found the eggs of roundworms. "O God! Now, what shall I do!" said Sarita. The doctor aunty told her a course of tablets which would paralyse the worms in her tummy and throw them out with the stool. And she further said, "Now we know why you have been growing slowly. Although you eat quite a lot, the worms in your tummy share your food."

"If I have the tablets you told me, the worms will pass out. Will I, then, grow faster?" asked Sarita.

The doctor said, "Perhaps you would. But you may not make up for all the slowing that you have suffered over the last few years. And moreover, having the tablets is not enough. If your life style does not change, you will keep getting fresh worms inside. To prevent new worms from growing up inside you, two things are most important. *First*, eat only clean food. Dirty food may have eggs of worms in it, which would hatch inside you and grow up into full-fledged worms. Dirty food means 'gol-gappas' and cut-fruit which have been kept exposed to flies, fruit that has not been washed, or washed with dirty water, or food that has been handled with dirty hands or in dirty utensils. *Secondly*, wash your hands before you touch food. If your hands have been soiled with stool,

directly or indirectly, your fingers may have eggs of worms, which would get into the food that you eat or handle. If you are not careful, you could keep getting the eggs of your own worms into your mouth again and again, and also give them to others who take food handled by you."

"Aunty, I didn't follow that bit about dirtying my hands directly or indirectly. Please, can you explain that", asked Sarita.

"Of course, I am glad you asked that", replied aunty, and continued, "When you go to the toilet, you wash yourself, and dirty your hands with your stool. That is dirtying them *directly*. If you do not wash your hands immediately and thoroughly, you might get the eggs into food. But suppose, you or anybody else who has worms inside goes to the toilet, and then touches the door handle, the surface of a table, and a few other things before washing hands, you leave the eggs of worms on these articles. Later, anyone who touches that door handle or table, will get the eggs on the fingers *indirectly*. To get rid of worm eggs that have come to us indirectly, it is important to wash hands *every time* we eat, *just before* eating. That reminds me of two more important things. First, your nails should always be short. Long nails collect dirty stuff, including worm eggs, which may get into food. Secondly, develop the habit of washing your hands as soon as possible after leaving the toilet, and make it a point not to touch anything with the dirty hand till you have done so. Perhaps you wash yourself with the left hand in the toilet. After that, touch the flush chain, the door handle, the tap, and anything else that you use, only with the right hand. The first thing that should touch the left hand is the soap. In this way you will prevent the indirect spread of worms and several other pests that live in our tummies".

"Thank you ever so much, Aunty. I will definitely remember all the nice things you told me", said Sarita.

"That's a good girl. Remember them, act on them, and tell them to your friends", said aunty.

Sarita took the tablets, and did everything else that she learnt from aunty. And, she is growing up faster. She is about to match Kavita, and now anybody would believe that they were born on the same day. Δ

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