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September 1985

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READERS WRITE

I am a regular reader of **Swasth Hind.** Swasth Hind helps me in different aspects, pertaining to Health and Family Welfare Programmes. **Swasth Hind** also carries various news items, articles, case-studies, concerning National Health Programmes. If any problem arises, I refer to **Swasth Hind** to find solutions in connection with educational approaches on Community Health Education. I owe very much to **Swasth Hind.**

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20/2/86

PRIMARY HEALTH CARE—1985
SEVEN YEARS AFTER ALMA-ATA

AND THE RIGHT TO HEALTH

DR D. TEJADA-DE-RIVERO

The health of an individual, a family, a nation, depends for the most part on factors outside the purview of the medical profession. This reality is accepted by intellectuals and academics but is not generally put into practice, even today.

THE artificial limitations surrounding the notion of what the health field is, are due to a confusion of terms that are now obsolete. Health has been loosely equated with medicine, with hospitals and with doctors; medicine with the care of the sick; hospitals with sophisticated and expensive technology; doctors with highly specialized care that is provided without consulting the patient. The human being has been perceived as a passive object, subordinate to medicine, to the hospital and to the doctor. However, medicine, the hospital and the doctor are factors that have much less real impact than is generally realized on the health situation of a local community or nation.

Let me make it quite clear that I am not opposing medicine, hospitals or doctors, which are all very necessary—indeed indispensable—for health care. The point I want to make is that they are badly distributed and used, and that the health field is much wider than these.

TWO CONCEPTS CRYSTALLIZING THE RIGHT TO HEALTH

There are two very important concepts relating to the human right to health: (1) **the social target of health for all by the year 2000;** and (2) **the primary health care strategy, which is essential for attaining this social target.**

THE SOCIAL TARGET OF HEALTH FOR ALL

"HEALTH FOR ALL" does not refer to a utopian situation in which every person in the world enjoys a permanent state of health—which would be an absurd arrogation of immortality—nor does it mean that disease will disappear from the face of the earth. Among other things, "health for all" embraces the following ideas:

1. **Everyone, without exception, has the right to health care.** In other words to the promotion of his or her physical, mental, emotional, social and spiritual capabilities; and to access to a permanent health care system (prevention of preventable disease, early diagnosis and immediate treatment of diseases that are not yet preventable, rehabilitation, etc.).

2. **Everyone, without exception, has the right of access to the different levels of complexity of the health system** (from the simplest care within the home or the community where there are no trained professionals, right up to the most sophisticated hospital care), depending on the nature of the health problem and on the resources and capacity of the country.

3. **Everyone, without exception, has the right to live in a cultural, social, economic and physical environment inherently conducive to health** and affording protection against hazards that could impair health.

4. **Everyone, without exception, has the right and duty to be an active and decisive partner in looking after his or her own health and that of the community,** and to cease being a passive object in a system that imposes priorities, approaches, actions, operations, etc. Everyone should take part not only as a resource person providing care but in the planning management, supervision and control of health care, both individually and collectively.

5. **There must be a significant reduction in the enormous and disgraceful differences in the health levels of different population groups, both between countries and within countries.** This means giving genuine priority to those areas and groups that are at present disadvantaged, starting with those that now have no access to any kind of permanent health care.

6. **There must be a significant reduction in the enormous and disgraceful differences in the way national societies allocate resources**—physical, technological, human, financial, etc.—**for the health care of their peoples.**

7. **To sum up, "health for all" is a concept that incorporates a way of implementing a human right—the right of health—within principles of universality, equity and social justice.**

THE CONCEPT OF PRIMARY HEALTH CARE[1]

The concept is based on the following essential components:

1. **It is an approach that should embrace the entire health system of a country** (reaching into the home, the workplace, the local community, right up to the most advanced hospital or research institute).

2. It is based on the **active and responsible participation of the people—individually and collectively—at all levels of complexity of the health system and in all the processes that make the system work.** From planning, which decides the priority problems to be tackled, up to the management, supervision and control needed to assess whether these priority problems really are tackled and how efficiently and effectively. Participation of the people is much more than the use of free labour to carry out certain activities. It is the permanent presence of the people as decision-makers, as active subjects responsible for their own individual and collective health.

3. **People's participation, real health needs, and the actual resource of the countries and their local communities should govern the type of technology to be used by the health system at its different levels. That is why within the concept of "primary care" we talk of "appropriate technology"**, which besides being scientifically sound and effective must be adapted to the possibilities of the country concerned and acceptable both to those who will use it and to those who will benefit from it.

4. The above elements indicate the **absolute necessity of multisectoral action,** for many of the factors influencing the presence of diseases are outside the so-called health sector. There are many instances of countries where better education, proper nutrition, the provision of drinking water and sanitation, good housing, suitable working environments, etc. have made a more significant contribution to improving the level of health than any conventional system of curative medical care could have done. Thus, primary health care is unavoidably multisectoral.[2]

5. The above components also govern the absolute **necessity of gradually delegating responsibilities for health activities.**

6. Finally, **"primary health care" must be a component of and never isolated from a national socio-economic development strategy.** Its implementation requires the political will and decision of governments, not just the goodwill of institutions and authorities in the health sector. It also requires constant political pressure from the people, "as active participants" in such implementation, for it is only this constant political pressure that can guarantee the continuity and permanence of the initial political decisions taken by governments.

Thus **"PRIMARY HEALTH CARE"** is clearly **not** a level of medical care that is elementary, rudimentary, primitive even, with no scientific basis, using crude technology, and provided by non-professionals with a little training. **Nor** is it a second or third class vertical programme operating parallel with and independant of the conventional health care system. It is **not** a campaign separate or isolated from the health sector, which by means of a set of simplified activities decided upon by some organization or other, is directed paternalistically at the rural inhabitants or the urban poor as some form of charity to relieve some of their misery. Far from it.

The countries belonging to the World Health Organization (164 of them at present) by acting jointly and collectively through **their** Organization (i.e. W.H.O.), acknowledge in practice what is stated in the Preamble to the Constitution of this "cooperative of countries", drafted 37 years ago: **"The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition."** They explicity reaffirm that:

HEALTH IS A BASIC AND FUNDAMENTAL RIGHT

(Extracts from an address by Dr David A. Tejada-de-Rivero, Assistant Director-General, World Health Organization, during a Seminar on "International Protection of Economic, Social and Cultural Rights", Mexico City, August 1984. Reproduced from the 'Appropriate Technology for health' Newsletter, No. 16,WHO.

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[1]Alma-Ata, 1978: Primary health care, "Health for all" Series No. 1 WHO Geneva, 1978.
[2]Nutrition is perphaps the clearest example of the multisectoral nature of a problem and the multisectoral nature of the possible ways of tackling it.

Primary health care can prove to be an effective strategy to achieve the goal of Health for All by the Year 2000 only when hospitals become community oriented, think of patients as a part of community, feedback their observations for the benefit of community at large and synchronously pulsate with every pulsation of primary health care.

HOSPITALS AND PRIMARY HEALTH CARE

DR C. R. TRIVEDI

PRIMARY Health Care (PHC) has been a talk of the world, ever since its concept was accepted at Alma-Ata in 1978, as an effective strategy to bring home health to all, particularly those who have so far remained unserved and unreached.

In the Declaration of Alma-Ata, PHC has been defined as an essential health care, based on practical, scientifically sound and socially acceptable methods and technology, made universally available to families and individuals 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, in the spirit of self-reliance and self-determination. It forms an integral part both of the country's health system, of which it is the central function and main focus, and of the overall social and economic development of the communiy. It is the first level of contact of individuals, the family, and the community with national health system bringing health care as close as possible to where people live and work, and constitutes the first element of a continuing health care process.

The primary health care includes at least these eight elements: Promotion of food supply and proper nutrition; an adequate supply of safe drinking water and basic sanitation; education concerning prevailing health problems and the methods of preventing and controlling them; maternal and child care including family planning; immunization against major infectious diseases; prevention and control of locally endemic diseases; appropriate treatment of common diseases and injuries and provision of essential drugs.

Thus, the important operational components of Primary Health Care could be formulated as follows:

1. It should be need based.
2. It should be accessible to all.
3. It should conform to cultural and economic set up of the community.
4. It should involve people actively and ultimately make them self-reliant in health.
5. It should have appropriate linkage with other health services.
6. It should be accompanied by necessary socio-economic development of the community.

Role of hospitals

Hospitals today are the apex bodies for provision of medical services. Hospital (from Hospitalisation) means a place where guests—of course the patients, when they come get all hospitality and care. There is no element of hospitals going to doorsteps of people, nor is there any feasibility of rendering first contact care.

In some countries, 80% of total health budget is consumed by hospitals. Hence, Primary health care is less likely to succeed, if hospitals are allowed to keep aloof and work in ivory towers, as they are often described. Hospitals could no more be allowed to enjoy complacency by "curing as far as possible, relieving often, and atleast comforting always" —the time old ideals of hospitals. Hospitals could no more feel contented by saying goodbye to cured patients at the gates of hospital or saying sorry in case of death or disability of patient. Hospitals will have to develop epidemiologic, preventive, community and comprehensive approach.

Hospitals in India today, are not needbased at large. There are more and more services for few atleast in terms of money, and even duplication of services exist. They are not effectively accessible to our rural masses, nor culturally acceptable to them and are not in tune with eonomic limits of community. They have hardly any active liaison with other health and socio-economic services, unless specifically demanded. People have no say in hospitals, and they get lost there.

Patients coming to hospitals form a reasonably reliable index of the situation in the community. With an epidemiological approach hospitals could find out what are the causes operating, at large, behind prevalent mortality and morbidity. These inferences could be passed on to the concerned authorities for corrective action to bring about long term effects. Patients and family members coming to hospitals should be sent back home after fully educating them on the disease, it's prevention, their personal role, etc. Protective rehabilitative services should form an integral part of hospital services.

Keeping in mind the imbalance between scarcity of resources and magnitude of problems at most places, we can think of three categories of hospitals, i.e., *taluka*, district and State/teaching hospitals, which should be roughly located at maximum distance of 25, 50 and 100 kilometres respectively from population served by them. *Taluka* hospitals should be equipped to deal with most common and easily tackled problems of the area served, i.e., it should be absolutely need based in right proportion. District and State hospitals should be equipped for problems which can wait for transport, which are relatively less common, and which require sophisticated care and even superspecialities.

Involvement in primary health care

Thus, the strategy to involve and link hospitals with Primary health care could be formulated as follows:

Provision of promotive and protective services

— Every hospital must have fullfledged facility to regularly educate patients and their relatives regarding their disease and the dieases prevalent in their comunity. People are most receptive when they are in hospitals. This activity could be carried out while patients are waiting in out patient department (O.P.D.) and during the evening hours. The ideal should be to see that the patients do not come back to hospital with the same illness. Health education should also include sex education and population education for relevant groups. Hospital based programmes on television could help people to understand the health situation in the community to become health conscious and to participate in prevention of diseases.

— Counselling services for various health problems and purposes should form a regular feature of hospital services.

— Specific protection in the form of immunoprophylaxis for diseases common in the community should be made available freely.

— Screening facilities for certain common and chronic conditions like heart diseases, hypertension, diabetes, cancer, etc, should also form a regular feature of every hospital. Registries should be established for chronic conditions, so that followup services could be planned.

2. *Epidemiologic Services*

Each hospital must have an up-to-date record system and a statistical unit. District hosptials and beyond should have a full time qualified epidemiologist in charge of this section. Periodic review of records and mortality and morbidity statistics could be utilised to monitor the situation prevailing in the community. This can be strengthened and substantiated by periodic epidemiological investigations in the community. Maternal and infant deaths should be vigilantly audited for corrective purposes.

3. *Liaison with other organisations/authorities*

Inferences drawn from epidemiological reviews should be routinely communicated to concerned authorities and organisations for necessary action to the advantage of the community, e.g., ensuring purified water supply, laying drainage system, vector control, etc.

4. *Mini-hospitals*

Mini-hospitals should periodically move on wheels to community to render simple diagnostic, screening, curative, surgical and health educational services which will save a lot of time and money of community. It will strengthen the rapport between the community and the hospitals. It will also boost primary health care.

Hospitals today are the apex bodies for providing curative services. To become an active partner in primary health care the hospitals should render preventive, promotive and rehabilitative services in an integrated form.

5. *Communication system*

Communication system among hospitals and between hospital and the community in the form of messages, information and transport should be perfected. Round the clock experts services through telephones could help save many lives. Similarly, ambulance services with experts, under the control of hospitals could help avoid preventable loss of many lives.

6. *Involvement in health programmes*

Hosptials should get actively involved in the implementation of National Health Programmes.

7. *Rehabilitation Services*

Rehabilitation services should either be available in hospitals or at least dependable references and details should be made available from the hospitals.

8. *Training, Research and publications*

Every hosptial should participate in training of various health workers, and reasearch to solve community problems. Periodic publications by hospitials might help people understand the problems of the community.

Primary health care can prove to be an effective strategy to achieve the goal of Health for All by the Year 2000, only when hospitals become communitty oriented, think of patients as a part of community, feedback their observations for the benefit of community at large, and synchronously pulsate with every pulsation of primary health care. ○

PRIMARY EYE CARE

PRIMARY eye care comprises a simple but comprehensive set of preventive and curative actions, which can be carried out by primary health workers, by specialized auxiliary personnel or by other interested persons.

The clinical activities involved in primary eye care consist of basic ways of dealing with the three major eye symptoms presented by patients: inflamed ("red") eyes, loss of vision, and pain in the eye. At the primary level, the health worker can manage these problems either by definitive treatment, by referral after immediate treatment or by referral alone. General guidelines for this action have been developed, but they must be adapted to conditions in the communities served.

In addition, the primary health care worker should carry out promotive and preventive activities, focusing on essential education and community participation with regard to the prevention of visual loss.

Only a few medicaments and other materials are necessary for primary eye care. At the very least, an antibiotic eye ointment (usually a tetracycline) is needed, but other drugs that may be useful are vitamin A capsules, a second antibiotic ointment and zinc sulfate drops (for mild irritations). Bandages, sticking plaster (tape) and eye shields are very useful for primary workers, and optional equipment may include a simple chart to measure visual acuity and a hand torch.

The most important factor necessary to initiate primary eye care is the training of primary health workers to recognize eye conditions and to take appropriate action to deal with the problem. Training manuals for primary health workers should therefore include material on primary eye care. Primary eye care must be supported by reinforcing training and by adequate referral services at the secondary level.

From : Strategies for the prevention of Blindness, A primary health care approach, Geneva, World Health Organization, 1984 pp. 11,—15.

As WHO's Member States began to implement their policies and strategies to achieve the goal of Health for All through primary health care, it became more evident that successful implementation would depend strongly on dedicated people, for what is sorely needed to practice primary care is love for one's fellow man. I consider that nurses, by their very vocation, must have just this kind of love.

The fundamental shift towards health systems based on primary health care means that the accent is now on the promotion of health and the care of people wherever they work, live and play. Millions of nurses throughout the world hold the key to an acceptance and expansion of primary health care because they work closely with people, whether they are community health nurses in the Amazon rainforests or intensive care nurses in a heart transplant unit.

During the meeting of WHO's Executive Board in January 1985, there was a lively discussion concerning the report of an expert committee on the education and training of nurse teachers and managers.

In Finland, nurses participated in the "heart health" project, monitoring and offering advice on diet and exercise to susceptible target groups.

Result : **Reduction in heart attacks.**

If the millions of nurses in a thousand different places articulate the same ideas and convictions about primary health care, and come together as one force, then they could act as a powerhouse for change. I believe that such a change is coming, and that nurses around the globe, whose work touches each of us intimately, will greatly help to bring it about. WHO will certainly support nurses in their efforts to become agents of change in the move towards Health for All.

In order to realise the full potential of this powerhouse, nurses will need to be organized and equipped to break down resistance to change, to sustain the initial effort, and then to develop strategies and action plans. What is very clear is that the nursing profession is more than ready to respond to this challenge.

After some years of doubt, WHO has now grasped the significance of this potential. Indeed, the Organization is well aware that nurses have already begun to lead the way, and have many good successes to show. Given the potential of nurses to take their place in the forefront of the Health for All movement, the members of the Executive Board and myself forsee the following things taking place:

— The role of nurses will change: more of them will move from the hospital to the everyday life of the community, where they are badly needed.

NURSES LEAD THE WAY

DR HALFDAN MAHLER

If the millions of nurses in a thousand different places articulate the same ideas and convictions about primary health care, and come together as one force, then they could act as a powerhouse for change. Such a change is coming, and that nurses around the globe, whose work touches each of us intimately, will greatly help to bring it about.

— Nurses will become resources to people rather than resources to physicians; they will become more active in educating people on health matters.

— Nurse leaders will increasingly innovate and participate in programme planning and evaluation.

— Nurses will participate more actively in interprofessional and intersectoral teams for health development.

— More and more nurses will become leaders and managers of primary health care teams; this will include guiding and supervising non-professional community health workers.

— Nurses will thus assume greater responsibility for taking decisions within health care teams.

All this will not be an easy process. The Expert Committee, whose report we discussed, recognized the importance of four factors to support the changing roles and functions of the nurse: new attitudes and values; reorientation of education programmes; better resource allocation; and well-defined policies and plans for the development of nursing personnel. In the light of this, the Executive Board was convinced of the need for urgent action by the Member States to implement the Expert Committee's recommendations, and for WHO to disseminate widely the report and to respond favourably to the requests of countries in their efforts to reorient the post-basic education of nurses to primary health care.

Let me draw together the threads of my argument, and state them as a positive commitment by WHO to support the nursing profession in its move to organize and facilitate the changes needed.

In several countries of Africa and Asia, nurse-midwives trained and supervised traditional birth attendants.

Result : **Decreased incidence of neonatal tetanus.**

In one community in Kenya, nurses gave a series of lectures and workshops on sex education.

Result : **Reduction of the pregnancy rate among adolescents.**

We need to acknowledge the *crucial role of nurses* in arousing interest in the benefits of positive health and in identifying what needs to be done to achieve it.

Since the majority of *training programmes for nurses* are not fully relevant to the main social and health needs of society, we shall have to increase support to schools which reorient their curricula and monitor their experiences for wider dissemination.

As for *educational administrators and teachers* themselves, we would support crash training programmes to make them aware of the goal of Health for All through primary health care, and to encourage them to plan their educational programmes with this goal as the basis.

Nursing students must be made sensitive to primary health care, the importance of involving the community in health care and the need to strengthen the bond between nursing schools and health services. Teachers must always be aware that the students of today will become the instigators of change tomorrow.

It is imperative that an adequate number of nurses be trained to assume a greater *managerial role* and to participate in developing policy with assurance and confidence. We should lend more support to the acquisition by them of managerial skills.

However no change can be effected in real terms without an accompanying reappraisal of the *policies on health manpower*. We have, for so long, been locked away into our separate areas of activity—nurses having been excluded from decision-making; now is the time for manpower planners and administrators to involve them in this process.

Behind every successful movement there are *effective leaders*. Effective leadership should be encouraged amongst nurses since it is a key factor in motivating people, bringing about change, and maintaining morale. Nurses can voice the feelings of the people whom they serve, and can give them credibility and reasoned support.

In Thailand, nurses supported and participated in imaginative community—sponsored campaigns on family planning.

Result : **A wider acceptance of family planning.**

Primary health care is one of the social phenomena of our times. It is a powerful potential for improving the quality of human life. This objective has always been a fundamental driving force for nurses and nursing. The harnessing of nursing experience, energy, capabilities, and commitment would add greatly to the momentum of primary health care development and would accelerate the achievement of the goal Health for All. —>

ROLE OF NURSES

THE Seventy-fifth Session of WHO's Executive Board, which met in Geneva recently, decided on the issue of a special publication emphasizing the important role which the nursing profession can and must play in the Health for All movement.

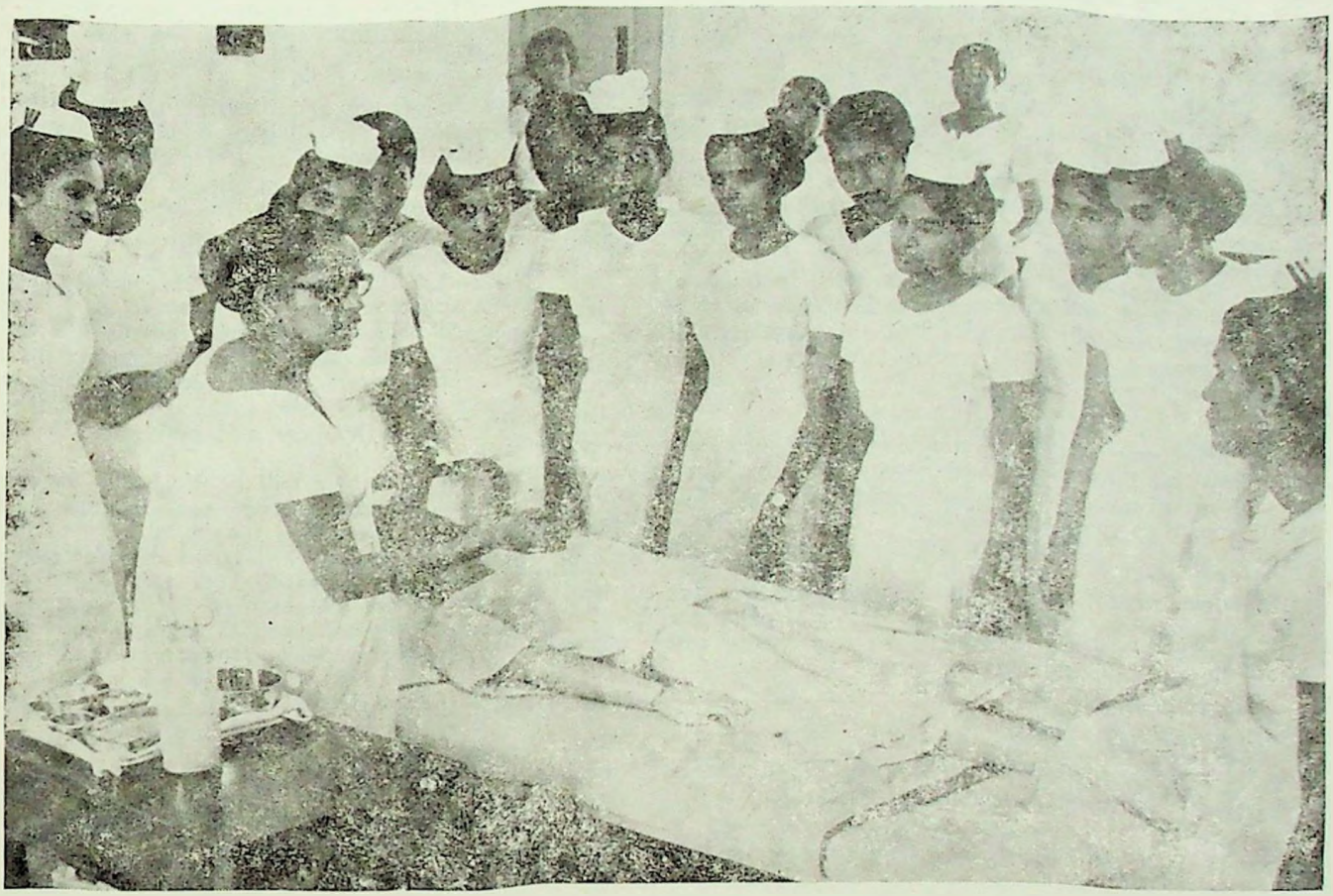
This decision was taken following a lively debate on "Education and Training of nurse teachers and managers with special regard to primary health care", published in the WHO *Technical Report Series*, (No. 708). The report was considered most useful and all its recommendations were supported.

The issue is that of nursing education generally, and the reorientation of nurse teachers and managers or leaders specifically. Harnessing nursing to the Health for All strategy requires a deepened commitment to change on the part of the nursing profession, and this can be hastened through supportive development of nurse leaders who could serve as activists, stimulating change, and pushing for action. Nursing leadership must be able to innovate and participate in both programme planning and evaluation.

The changing role of nurses in the Health for All strategy demands a radical change, not only in a sound grasp of nursing know-how, but in their relationship with other health personnel and the community in need of health care.

It was noted in the Board that a previous WHO Expert Committee dealing with nursing had met in 1974 and had, even then, identified changes required in nursing education. The present report points out, however, that, if the findings of the 1974 Expert Committee had been implemented more widely, nursing personnel could now have been in the forefront of the primary health care movement.

The Board clearly felt that the findings and recommendations of WHO Expert Committees were either not disseminated widely enough or to the right people in the right languages, or were not implemented due to lack of awareness.



Training of nurses need to be made more relevant to the changing social and health needs of the Society. This requires additional emphasis on the delivery of primary health care services.

The Director-General of WHO, Dr Halfdan T. Mahler, said it was now evident that the nursing profession was infinitely more ready for change than other professional groups. He pointed out that to practise primary health care one needed love for one's fellow travellers and he considered that nurses had great potential for that kind of love. The Director-General stated that it was now time that nurses were brought in much more than hitherto "fairly and squarely as leaders and managers of the primary health care Health for All team, together with others."

In Hungary, a nursing team won a prize for their study on the attitudes and needs of the elderly in a local community.

Result : **A better appreciation of the health problems of elderly people and how the health care facilities can solve them.**

CREATION OF A CRITICAL MASS OF HEALTH LEADERS

A GOOD strategy is of no value without good generals to direct it. There can be no exceptions to this rule, even when the strategy is as far removed from the battlefield as that of Health for All by the Year 2000—the over-riding priority of the World Health Organization.

Dr Halfdan Mahler, Director-General of WHO, is well aware of this "rule", and one of the novelties of the programme budget presented before the Seventy-fifth session of the WHO Executive Board is that, on a global scale, it calls for the creation of "a critical mass of active leaders in the struggle for Health for All." In member states, in WHO itself, in bilateral and multilateral institutions or even in the nongovernmental and charitable organizations, these leaders will be the generals who will ensure the success of the common strategy.

At their January 1985 meeting in Geneva, members of the WHO Executive Board gave a warm welcome to this initiative, which they felt would mark a positive step forward to the agreed targets.

In effect, what is envisaged is to ensure that this cadre of leaders disseminate the idea of Health for All through all levels of society, so that theory will be converted into reality.

Such leaders will have to be sufficient in numbers—hence the notion of "a critical mass" which must be reached. As the Board has observed, the training of health professionals according to the needs of the Health for All strategy is making only slow progress in many member states. The Board also noted that, although the existence of a critical mass of people capable of conceiving and carrying out the national strategies of Health for All is of immense importance, in the whole world there is not a single establishment—whether university, school of public health or other teaching centre—which has a training course in this field.

In an effort to fill this gap, Dr Mahler has called for training courses specifically aimed at fostering Health for All activities. This training will be as valid for senior officials of health ministries as for clinicians, nursing staff, hospital administrators, university senior staff, research workers, teachers, specialists in the human sciences and politicians.

Moreover this training will be obligatory for senior officials of WHO, and strongly recommended for officials of other concerned agencies of the United Nations system. It will be carried out at national institutes, preferably those linked with universities, and as early as possible each of WHO's six regions should have at least one establishment offering training possibilities in the requisite languages.

—Philippe Stroot

CAMPAIGN TO PREVENT CANCER

From the National Cancer Institute (USA) comes: (1) the "Good news" that everyone does not get cancer—two out of three Americans will never get it; (2) the "better News" that more and more people with cancer are cured; and (3) the "best news"—that individuals can do a number of things to help protect themselves from cancer.

These are the messages in a new brochure issued by the NCI as part of a national cancer prevention awareness campaign.

Individuals are given the following advice:

(1) Don't smoke or use tobacco in any form.

(2) Eat foods high in fibre and low in fat.

(3) Include fresh fruits, vegetables, and whole grain cereal in your daily diet.

(4) Keep yourself safe on the job by using protective devices, such as respirators and protective clothing.

(5) If you drink alcoholic beverages, do so only in moderation.

(6) Avoid unnecessary X-rays.

(7) Avoid too much sunlight; wear protective clothing and use sunscreens.

(8) Take estrogens only as long as necessary.

Courtesy: Health Messenger
State of Hawai
Summer 1984

BREASTFEEDING

Recommended Practices In Indian Context

DR SANJIV KUMAR & DR V. P. REDDAIAH

Breastfeeding still holds its rightful place in India. This article is based on two studies carried out at the centre for Community Medicine, All India Institute of Medical Sciences, New Delhi, and some other Indian studies. According to the authors the recommendations suggested by them are applicable in the Indian situation.

BREASTFEEDING has been rightly called as the life line of the baby. Luckily for the children in India, breastfeeding still holds its rightful place. Yet there are certain wrong practices prevalent in infant feeding. In view of these following recommendations are made.

1. *Breastfeeding should be initiated as soon as possible after birth (within a half to one hour):*

A normal full term baby at birth has rooting and sucking reflexes which make the baby suck. These are the strongest soon after birth. Hence, baby can suck on the breast more effectively. This will assist in starting milk flow in the breast. Early nursing after birth avoids mammary congestion and breast abscess[1,2,3,4,5]. This also ensures that the baby receives colostrum and also causes release of oxytoxcin which helps the womb to contract and stops bleeding[5].

2. *No prelactral feeds (local preparations given to the newborn before the breastfeeding is started) should be given to the baby:*

Any feed given to the baby interferes and weakens the let down reflex as the baby will suckle less on the breast. There is also the danger of aspirating the fluid into the air passages and lungs. These fluids may introduce infection as most of the times these are prepared in an unhygienic way[2,3,5].

3. *Colostrum (the yellowish fluid which comes during the first few days) should be given to the child:*

Colostrum is essential for the baby as it is extremely nourishing and very rich in anti-infective substances. Its yellow colour is due to the high concentration of Vitamin A. It also has a laxative effect to facilitate early clearing of meconium[2,4,5,6].

4. *The baby should be breastfed on demand throughout the day and night:*

The baby should be fed whenever hungry and not by any fixed time schedule. The baby may get hungry early or late depending upon the activity of the baby. Infants on demand feeding gain weight and grow faster than those who are fed on rigid schedule. Frequent vigorous suckling of the breast maintains a good amount of milk flow by stimulating a higher production of prolactin (a hormone which maintains milk flow in lactating women)[4,6].

5. *Breastfeeding should be continued even when the mother is sick*:

During minor sicknesses of the mother, breastfeeding should be continued. The breastmilk contains anti-infective substances which will protect the baby. Even in mothers suffering from leprosy and tuberculosis breastfeeding should be continued and the mother put on regular treatment. If the mother has open pulmonary tuberculosis (i.e. bringing out bacteria in sputum), the baby should be put on isoniazid and ideally should be immunized with isoniazid resistant BCG and breastfeeding should be continued. If mother has lapromatous leprosy[5] (i.e. infectious type which is about 20% of all leprosy cases) close prolonged skin to skin contact should be avoided. Baby should be breastfed by the mother and given dapsone. With breastfeeding and these precautions there is very little chance that baby will get infected[1].

Breast engorgement, nipple trouble, mastitis and breast abscess are not considered a reason for stopping breastfeeding. Breastfeeding the baby will relieve engorgement and mother should be treated with proper antibiotic. Severe illnesses may be a rare contra indication to breastfeeding for example—congestive heart failure. In these conditions doctor should be consulted.

6. *Continue breastfeeding the baby when he is suffering from diarrhoea, cough and cold or fever*:

The breastmilk provides anti-infective substances and adequate nutrition which helps the baby recover faster. During diarrhoea breastfeeding should be continued alongwith the oral rehydration solution. Baby should get fluids—breastmilk provides fluids as well as nutrition. During an attack of cold, baby's nose may be blocked hence baby may not suck on the breast. The nose should be cleared and baby put on breast.[3] The baby may need some nasal decongestant drops. If the baby is not able to suck, a doctor should be consulted.

7. *There is no harm to continue breastfeeding during pregnancy*:

Breastfeeding does not do any harm to the mother, foetus or the suckling baby. The extra dietary requirement of the mother due to pregnancy, and lactation should be provided for in her diet. Extra requirement during second and third trimester of pregnancy is 300 calories and 14 grams of protein per day and during lactation 550 calories and 24 grams of protein per day.[7]

8. *Mother can breastfeed the child lying or sitting whichever is convenient to her* :

The mother may feed the baby sitting or lying. The latter being almost universal at night. If the mother is relaxed and baby comfortable, with easy access to the breast, irrespective of the fact whether mother is lying or sitting—the baby's head should be supported[3].

9. *A lactating mother needs to adopt a suitable contraceptive method to space the next pregnancy* :

The traditional belief that lactation delays onset of menstruation after childbirth and provides some degree of protection against pregnancy has been proved correct by scientific studies. It has been shown that 5 to 10 per cent of women may conceive during lactational amenorrhoea. In communities where lactation is continued for 24 to 30 months no less than 30 per cent of pregnancies occur while lactating and most of these occur after menstruation. Broadly, introduction of contraceptives can be delayed until just prior to the anticipated return of menstruation if information on duration of lactation and lactational amenorrhoea in the community is available. It is a must to introduce appropriate contraception at least after the onset of menstruation.[8]

10. *Mothers from poor socio-economic status have enough breastmilk for their babies* :

Lactation seems to be physiologically well protected. The volume of breastmilk in mothers from poor socio-economic status is slightly less than in well nourished mother but the quality remains more or less unaffected. In such mothers the exclusively breastfed infant may stop gaining weight and supplementation may be needed before six months of age. The best alternative for these mothers would be to eat more of what she is already eating to improve her milk rather than spend on artificial feeding which on an average costs about one third of national minimum wage.[2]

11. *Breastfeeding should be continued for as long as possible* :

It is difficult to establish a precise ideal duration of breastfeeding. Bottle feeding is almost always harmful before six months of age and more so in the poor

environments. Even during second year of lactation the breastmilk output among poorly nourished mothers is about 300 to 500 ml per day[5] which is sufficient to meet about half of the protein and calorie requirement of a child in the second year of life. In view of good quality protein and substantial contribution to calorie intake the mothers especially in poor environment should breastfeed their children as long as possible.

12. *Start supplementary feeding when the baby is 4 to 6 months old* :

At around four to six months of age the baby outgrows the milk supply from the breast. Breastmilk alone is no more sufficient hence supplementary feeding has got to be started to ensure proper nourishment of the baby. If road to health card is being maintained for the baby one can decide exactly when it is needed. When the growth curve slackens or becomes flat (and other causes like infections are ruled out) supplementation should be started. Supplementation before four to six months is harmful[4,5], predisposing the child to various types of infections, allergy and malnutrition.

The traditional practice of 'Annaprashan' around six months, being followed in many communities needs to be encouraged and supplementation should be adequate in quantity as well as in quality. To start with give the baby one or two tea spoons of a new food at a time over the first few days until the baby gets used to it and then start the second food. By the age of one year the child should be accustomed with the family diet.

13. *If the baby cannot be breastfed due to separation from the mother, mother's death, insanity or malignancy, the baby may have to be artificially fed but it should be done with great care*:

The requirements of artificial feeding may be summarized as good knowledge of the mother about various aspects of infant feeding, facility for boiling and sterilizing of bottles and nipples, safe source of water, reliable milk supply, adequate washing facilities, sufficient money and time to prepare feeds. All these may not be available to an average Indian mother hence artificial feeding should be resorted to only if breastfeeding is not possible at all.

Bottles and niples are difficult to keep clean and are an added expenditure hence feeding with cup and spoon is preferable. If, however, bottle is needed, the mother must be taught in detail how to clean it and if possible should have at least 2-3 bottles and nipples so that she does not have to resort to boiling a bottle before every feed. The bottles and nipples should be cleaned with a detergent water and brush then boiled in water for at least ten minutes. The hole in the teat should permit only a thin stream of milk to flow. Animal milk is preferable than powder milks. The milk should not be diluted and if buffalo's milk is being used the thick cream on top should be removed. One tea spoon of sugar may be added to about 50-75 ml. of milk. The baby should not be left alone with the bottle, he may choke with excess of milk or keep sucking air if bottle is not held properly. The milk should be lukewarm which can be checked by touching the bottle with back of the hand. The bottle should be held so that the nipple is full of milk otherwise baby may keep sucking air which distends abdomen and causes baby to vomit or regurgitate milk[5].

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Food hygiene covers all measures necessary to prevent contamination of food with harmful micro-organisms and toxic compounds, and ensures the safety and wholesomeness of food at all stages of its production, storage, handling, transport, etc., till it is consumed. This will prevent food poisoning and other food-borne illnesses.

FOOD HYGIENE

SMT. K. SHEELA

WHOLESOME food is many a time adulterated by unscrupulous persons by adding harmful substances. Also residual effects of pesticides used for destroying insects or pests may be present in food and may make it harmful to use. The food may contain harmful micro-organisms or substances produced by the micro-organisms, and this problem is most common in India. Food hygiene covers all measures necessary to prevent contamination of food with harmful micro-organisms and toxic compounds, and ensure the safety and wholesomeness of food at all stages of its production, storage, handling, transport, etc., till it is consumed. This will prevent food poisoning and other food borne illnesses.

Micro-organisms

The term micro-organism is applied to bacterial yeasts and molds all of which are forms of plant life. So small are they that they cannot be seen without a microscope. The word germ is frequently used to refer to any micro-organisms which cause diseases. The items commonly responsible for food borne diseases are milk and milk products, meat, fish, eggs and raw vegetables and are liable to be contaminated with faecal borne bacterial amoebae and ova of parasites especially when they are grown in sewage farms and where night soil is used as manure. Fresh milk is contaminated with harmful bacteria such as mycobactarium tuberculosis and brucelle if the milch animals are infested with these organisms. Meat, poultry and eggs are more often contaminated with several types of pathogenic micro-organisms such as bacillus anthrax. Fish and shell fish get contaminated with pathogenic bacteria. The warm and humid climate, characteristic of many parts of India, encourages the growth of molds, yeasts and bacteria. Many of these grow on the surface of food and result in spoilage. Many fruits and vegetables which grow in abundance at certain seasons of the year in areas far removed from markets are spoiled in transit. Unfortunately some of the food products lost in this way are especially of high nutritive value, i.e., papaya, mangoes and green leafy vegetables.

The greatest waste from micro-organisms occurs when cereal grains, dry pulses or oilseeds become wet. This may occur because of monsoon rains, floods and unsuitable methods of storage. The presence of certain types of micro-organisms in food can make it harmful and in some cases dangerous. Harmful bacteria act in one of the two ways—causing intoxication or infection. Intoxication results not from bacteria themselves but from poisonous substances called toxins which are produced by the bacteria as they grow. This toxin is quite resistant to heat and survives the temperature of ordinary cooking. When food containing such toxin is eaten the gastro-intestinal tract is irritated and within 4 to 6 hours violent vomiting results. Diarrhoea is sometimes an accompanying symptom. The disease lasts for a relatively short time and does not usually has serious lasting effect on the healthy adults. However, it is extremely dangerous for infants and for elderly and the sick.

Contamination by rodents

Food is likely to be contaminated with filth and micro-organisms during storage by rodents, cockroaches and insects through their excreta. Newspapers

and banana leaves used for wrapping bread and other cooked food are not hygienic. They may be contaminated with dust and filth during handling. Foodstuffs displayed in open trays for sale in the market place or by the roadside are contaminated with road dust and flies. Community or Institution feeding may present major food hygienic problems. Dangers arise from the kitchen premises not being maintained in clean way and from the spoilage of foods of animal origin stored for long periods at room temperature.

Hygienic conditions of a market

Markets have to be kept clean to prevent contamination of food offered for sale. The principal requirement for maintaining hygienic conditions in a market are: adequate space, sectioning, ventilation and lighting, concreted floors with proper drainage, adequate and safe supplies of water for draining and washing, daily cleaning of stalls meant for animal foods and fish, prompt collection and disposal of garbage and proper sanitation and control measures for flies and rats.

Water-borne diseases

The sanitary conditions of rural and urban areas of the developing countries constitute the larget single health problem in the world today. It has been estimated that three fourth of the population of India has unsafe drinking water and that water borne diseases affect about 50 million people each year and kill about two million. When water is in short supply, every source, good, bad or worse is used. Use of untreated river water results in widespread water borne diseases.

The methods used for the disposal of human waste are some of the greatest causes of contamination of water and the spread of certain diseases. An individual who is sick or who is a carrier of any of the several diseases of the intestinal tract, sometimes called enteric diseases, discharges germs in the feces. If the feces are not disposed of in a proper manner, the germs may enter the body of other human beings in a number of ways. The depositing of human feces by roadside, fields and streams, washing of clothings of sick persons near wells and the use of improperly operated latrines and sewage systems are responsible for large number of infections and deaths in India each year. The construction and use of properly built latrines in both private and public places is the best solution to this problem. It is important that every school is provided with well maintained latrines and children are taught to use them properly.

Insects

Flies and cockroaches are sources of contamination for they also carry disease germs on their bodies and infect not only the food over which they crawl, but also utensils and grinding stones in the kitchen. Many cases of infections resulting in diarrhoea and dysentery have been traced to cockroaches. Also the harm done to the food supply by rat and mice is not limited to the loss of the food they eat. These rodents are susceptible to infection by bacteria harmful to health. They in turn spread these bacteria over food by the droppings and urine.

Personal hygiene

The harmful micro-organisms which contaminate food are often transferred to the food by a person's hands. This gives us good reason for the very important rule that hands should be washed thoroughly and regularly before handling foods. Since diseases can be spread from one person to another by dishes and glass-ware, it is important that they be cleaned by sanitary methods.

To conclude, proper drainage, sanitary latrines, availability of safe water supplies for drinking and washing, facilities for garbage disposal, food storage and preservation free from infestation by insects and flies, proper housing of domestic livestock and maintenance of standard of personal hygiene are a few important factors to be kept always in mind for a healthy and happy living. ○

WORLD ENVIRONMENT DAY CELEBRATED

Respond to Challenge of Development without Degrading Environment

In his message on the occasion of the World Environment Day, 5 June, 1985, the UN Secretary-General, Mr. Javier Perez de Cuellar, said "the observance of the Day should mean a renewal of commitment of all peoples to respond to the challenges of development without degrading the environment.

"The tragic situation in Africa which has been, and continues to be, the cause of great concern for the United Nations, contains lessons which can be ignored only at great peril to the health of human society.

"The calamity has been undoubtedly the result of a number of circumstances, but the deterioration of the environment in that continent is certainly a major cause. This should alert the world. A crisis of this nature and magnitude should not be repeated in Africa or elsewhere on our planet.

"The world will need to increase food production by half of the current level to sustain the population projected for the turn of the century. In developing countries, which contain the majority of the human race, the natural resources we need to boost production—soil, fresh water and forest cover—are being exhausted at a rate faster than ever before. The world is losing a great quantity of irreplaceable soil each year.

"The continuance of this depletion is by no means the ineluctable fate of this earth and its inhabitants. The United Nations Environment Programme has shown feasibility of environmentally sound agricultural development to achieve yields that are sustainable. This calls for a dual approach. First, nations must invest in new farming methods and technologies to increase production of food and of high-yielding crops that are resistant to pests and less reliant on expensive chemical fertilizers.

"Second, they must apply our new understanding of how ecosystems can be managed to support increasing human populations. With proper management and wise investment, more people need not suffer from destruction, nor lower levels of living, nor environmental despoilation.

"The world disposes of sufficient resources, human, natural and technological, to provide for a decent quality of life for a global population much larger than the present. World Environment Day this year should focus our awareness on the need to initiate steps suggested by the UNEP, among others.

"In the sphere of industrialisation also, we have by no enough knowledge to pay greater respect to the environmental dimension. What is needed is to translate that knowledge into sound policies assuring the care and protection of the natural surroundings of human and animal life, which is a condition for continuous economic growth for all the peoples of the world," the Secretary-General said.

—U. N. Weekly Newsletter, June 15, 1985.

Hypertension or high blood pressure is considered to be a primary risk factor in the development of cardiovascular disease. Control of hypertension can lead to improved management of cardiovascular disease. Sodium has long been implicated in the etiology or development of hypertension but in recent years more discerning evidence has clarified the relationship between sodium and blood pressure.

IS SODIUM AND HYPERTENSION RELATED?

SMT. KAMAL G. NATH

SALT was one of the first international food additives. The addition of salt to a food system helps to prevent bacterial growth. Furthermore, salt can act as a functional food ingredient providing specific technical effects during food processing.

More commonly, however, salt serves as a flavour enhancer. These multiple uses of salt—preservative, functional ingredient and flavour enhancer plus the naturally occurring sodium in food stuffs results in a per capita salt consumption in India of approximately 10-12 gms/day.

In spite of the fact that for centuries salt has been used in home and commercial food preparation, salt consumption is not risk free. Under certain circumstances, sodium can be an etiologic factor in the development of hypertension or high blood pressure. In simple terms, the rationale relating sodium to hypertension is that excess salt consumption in sodium sensitive individuals elevates blood pressure.

The general consensus is that the sodium ion, as opposed to the chloride ion, is the component of the salt implicated in hypertension. Although sodium is recognised as a factor in the etiology of hypertension, its role in the pathogenesis of hypertension is not well understood.

General points of consensus relating sodium and hypertension

1. Salt, or sodium chloride is composed of two elements that are required by the human body. Of the two, only the cation sodium has been implicated in the pathogenesis of hypertension.

2. Physiologically, sodium is found in higher concentrations extracellularly than intracellularly. Sodium is the primary extracellular ion in maintaining osmotic balance.

3. The adult human requirement for sodium is less than 1 gm. salt/day (400 mg sodium); on the average, adults consume ten to twelve times this amount daily.

4. Sodium influences fluid or blood volume. To achieve a constant concentration of sodium in the blood, endocrine or hormonal factors influence the resorption of sodium and water from the kidney tubules. Aldosterone, a mineral corticoid hormone of the adrenal cortex, enhances sodium resorption, similarly, the renin angiotensin system enhances uptake of both sodium and water.

5. With few exceptions, cultures that ingest moderate amounts of sodium have a low incidence of hypertension whereas cultures with a generous intake of sodium are prone to hypertension. In general, cultures with modest sodium intake are developing countries, whereas those with high intakes are industrialised countries.

Modes of action

A number of genetic and environmental factors are considered to be predisposing to the development of hypertension including nutritional factors. Factors proposed as having primarily a genetic component include rare or ethnic background, family history, and variations in endocrine and kidney function. Environmental factors implicated in hypertension include

psychogenic stress as well as several nutritional factors, with excess sodium intake being strongly implicated.

Nutritional factors

In addition to the ingestion of excess dietary sodium, nutritional factors that have been implicated in the pathogenesis of hypertension include excess sucrose, excess calories and limited linoleic acid intake. Sodium has been considered the most detrimental of these various nutritional factors.

Carbohydrate intake and hypertension

Several investigators have determined the relative effect of sodium and carbohydrate intake on blood pressure. Sucrose and sodium are inter-related with insulin being the link.

Insulin enhances the renal resorption of sodium as well as the resorption of potassium and phosphate but inhibits calcium resorption. Aparently, a high level of simple carbohydrate intake stimulates insulin release, which increases renal handling of sodium. Quite possibly then, an individual might ingest only a moderate amount of sodium, however a high intake of simple carbohydrates would stimulate insulin production, causing enhanced renal absorbtion of sodium and a subsequent rise in blood pressure.

Linoleic acid and hypertension

Experiments suggest that dietary linoleic acid intake lowers blood pressure. Since the fatty acid composition of adipose tissue tends to reflect dietary fat intake, the data suggest a relationship between linoleic acid intake and blood pressure.

A positive correlation is noted between dietary linoleic acid intake and urine volume and sodium concentration and a negative correlation with serum sodium concentration suggesting that linoleic acid might lower blood pressure by increasing urinary sodium excretion.

Obesity and hypertension

The effect of sodium intake and excess body weight on hypertension has been debated for some time. A higher percentage of obese individuals than normal weight ones are hypertensive, since the obese individuals consume more sodium as a result of increased calorie intake; increased calories —> increased sodium —> increased blood pressure.

Sources of sodium intake

Dietary sodium can be classified as either discretionary or nondiscretionary. Discretionary sodium is that which consumers voluntarily add to food, that is at their own discretion. The remainder of sodium intake is nondiscretionary. The consumer has limited discretion as to whether to consume sodium, as it is either added by the manufacturer during food processing or is naturally occurring sodium. The reviews estimated that only one-third of dietary sodium intake is discretionary, the majority being nondiscretionary. Thus, if an individual consumes approximately 10 gm. salt/day, approximately 3 gms. would be from discretionary sources and the remaining 2 gm. would be non-discretionary sources. There are limited data to indicate that daily sodium intake has significantly changed during this century. Rather, the significant change has been in a shift from discretionary to nondiscretionary intake. As consumers purchase more convenient style foods which have already been seasoned, the discretionary use of sodium decreases.

Since the majority of sodium intake is nondiscretionary, the individual needs some knowledge of food composition to make judicious food choices, and thus reduce nondiscretionary sodium intake.

Nondiscretionary sodium intake

The definition of low, moderate and high sodium containing foods is quite arbitrary. Foods that contain less than 100 mg. sodium per serving are low

DISORDERS CAUSED BY DEFICIENCY OF IODISED SALT

Iodine deficiency disorders in the human body include goitre—an enlargement of the thyroid gland, mental retardation and physical disabilities such as stunted growth, defects of stance and gait, squint, lack of muscular coordination and deaf-mutism. Another serious iodine deficiency disorder is certinism which is a condition of mental retardation combined with some of the other infirmities.

The total requirement of iodised salt for the hyper-endemic zone has been estimated at 10 lakh metric tonnes. At present the public sector is producing 1.92 lakh metric tonnes per annum. In order to bridge the gap between demand and supply the Government have permitted the private sector also to produce iodised salt. It is expected that the country's requirement of iodised salt will be fully met by the end of the Seventh Plan.

The endemic goitre belt in India covers the entire Sub-Himalayan Region and includes the States of Jammu and Kashmir, Himachal Pradesh, Uttar Pradesh, Bihar, West Bengal, Sikkim, Assam, Arunachal Pradesh, Nagaland, Manipur, Meghalaya and Tribura apart from Punjab, Haryana, and the Union Territory of Chandigarh. Endemic goitre is also found prevalent in certain districts of Madhya Pradesh, Gujarat and Maharashtra.

The National Goitre Control Programme is an entirely Centrally Sponsored Scheme and the entire expenditure towards iodisation of salt is met by the Government of India. A sum of Rs. 20.66 lakhs was spent on iodisation of salt in 1983-84 and Rs. 17.00 lakhs till December, 1984.

(Information given by Smt. Mohsina Kidwai, Minister of Health and Family Welfare, in Lok Sabha on25 March, 1985.)

sodium foods. foods with moderate sodium content are those containing 100-250 mg. per serving. and those with more than 250 mg. per serving are high sodium foods. As calories of foodgrain products, meats and dairy products have moderate to high sodium content whereas vegetables and fruits contain moderate to low amounts.

Although most grain products individually contain only moderate amounts of sodium, as a category they are the largets contributor of non-discretionary sodium, primarily because of the quantity of grain products being consumed and not because they are particularly concentrated sources of sodium.

Meat, poultry, fish, eggs, milk, etc., contain moderate amounts of sodium. Sodium content tends to increase with processing. Cheese and condensed milk are also examples of proceesing which result in elevated sodium content. These are essentially concentrated milk products and, consequently, the sodium content is also concentrated, furthermore, salt is added during cheese production.

Incidentally, human breast milk contains 15 mg. sodium/100 ml. The sodium content of breast milk is only one-third that of cow's milk. A breast fed infant consumes a low sodium food compared to one who consumes cow's milk.

Many of the foods in fat category, however, contain moderate to high amounts of sodium. Butter for example is traditionally salted to retard spoilage.

. Fruits generally contain insignificant amounts of sodium and thus the sodium conscious individual can consume fruits liberally. Most of the fruits contain less than 25 mg. per serving. Processing, including canning, glazing or candying and drying all tend to increase the sodium content. Sodium content of the dried fruit is elevated because the naturally occurring sodium is concentrated as a result of the fruit being dehydrated and because the compound sodium sulphite is used in the drying process.

Fresh vegetables like fresh fruit contain insignificant amounts of sodium. Exceptions to this, however, include several leafy vegetables, which edge into the moderate sodium range. Freezing, canning and brining progressively increase the amounts of sodium.

Discretionary sodium intake

As previously said, discretionary sodium is that which an individual voluntarily adds to foods during home food preparation or in seasoning food. Since the salting of food is largely a habit, the first step in reducing discretionary sodium intake might be to stop voluntarily additions of salt.

Another approach to curbing discretionary sodium intake is to substitute other seasonings for salt, that is herbs, spices and garnishes can be an alternative to salt. Substitutions cannot, however, be made indiscriminately, as several flavouring aids are high in sodium content and would not be effctive substitutes.

Hypertension is the most prevalent and most dangerous precipitating factor in the genesis of cardiovascular disease, and the cardiovascular disease, in spite of a recent decline in mortality incidence, is the leading cause of death in developed countries. Sodium intake is thought to play a strong role in the pathogenesis of essential hypertension. A synthesis of current literature on the pathogenesis of hypertension indicates that dietary sodium may be involved in the pathogenesis, both from a genetic and an environmental perspective. Thus, some individuals may, infact, have a genetic basis for sodium sensitivity, and a generous dietary sodium intake would exacerbate this defect. △

NATIONAL NUTRITION WEEK CELEBRATED

THE fourth National Nutrition week was celebrated throughout the country by the Food and Nutrition Board of the Union Food Department with cooperation of State Governments and national and international organisations from 1-7 May, 1985. The purpose of the celebration was to highlight the activities of the Government in combating malnutrition and creating nutrition awareness among the masses.

The Union Minister for Food and Civil Supplies, Rao Birendra Singh, in a message on the occasion said that the misconception that nutritious food was costly food should be removed from the minds of the people through practical demonstrations by the mobile extension units of the Food and Nutrition Board. He said that since 1973, nutrition surveys were carried out in different parts of the country to collect information on dietary attitudes and beliefs about various foods, and balanced low-cost diets were evolved for different age-groups and areas.

The theme of the National Nutrition Week this year was "dietary iron in human nutrition". Iron deficiency is common problem among pregnant women. Care of pregnant women is not only important for women but also for growing foetus and the new born baby. In the programme, balanced diets and nutrition recipes from locally available low cost foods, scientific methods of cooking, food and water hygiene, deficiency diseases and their prevention, home scale preservation of fruits and vegetables, weaning foods, food source of nutrients and their requirements were demonstrated. The emphasis was laid on informing and educating the vulnerable groups, i.e., young children, expectant women and lactating mothers.

—P. I. B.

The time is not far away when the methods like genetic engineering, or some chemical substance which are now underway, would become practicable measures in slowing down the process of ageing.

BIOLOGY OF AGEING

DR HEMANT KUMAR

AGEING is a unique, inevitable, universal, natural and biological phenomenon. It used to be considered a disease entity in the past, or a sequela of toxic reactions within the body due to infections, but now it has been established that ageing is essentially a biological condition or "process" and that it is associated with certain specific and well-defined changes which involve both soma as well as psyche.

To explain how and why ageing occurs, several theories have been advocated.

Goyal's (1966) view is that the process of ageing starts just after conception; from here evolution (growth) and involution (atrophy) run concurrently in earlier life, but in the later part of life, the latter gets upper hand as different organs may have different biological age, involution may not progress with the same pace in all the organs. Sir James Paget said, "It is an error in the chronometry of life".

Vakil (1966) also advocates a similar theory. He says, "Throughout life two main types of phenomenon, sowewhat contradictory in nature are demonstrable side by side in every single individual. They are the changes of growth or evolution on the one hand and that of atrophy or ageing on the other. While the former changes are far more obvious or prepondant in infancy and childhood, that of ageing or involution become dominant in middle aged and elderly".

Specific protein changes

Rao (1969) suggests a different theory. He points out that certain specific protein changes occur at different stages of life. He says, "Various kinds of protein biosynthesis differing in their turn over rate during different phases of ontogenesis have been discovered with the help of tracer methods. These are (i) growth synthesis, (ii) functional synthesis, (ii) regeneration synthesis, (iv) stabilization synthesis, and (v) stimulated synthesis.

He further explains that the rate of growth synthesis is 42 times lower in old (540 days) than in young (60 days) rats, while the rate of stimulated synthesis is only decreased ten fold. Regeneration synthesis also decreases but not so much in olds. The rate of stabilization synthesis is not much affected. The functional synthesis is fairly high in second half, but low in late ontogenesis. Ageing process is also associated with physio-chemical changes in the body proteins. Their iso-electric point changes, their inhibition capacity is decreased. With age, the concentration of albumin decreases and concentration of globulin, gamma globulin especially, increases. In man and animals, the protein content of serum goes up in the first half of ontogenesis and with advancing age decreases. Protein fraction in skeletal muscles also changes with advancing age. Amount of actinomycin increases while sacroplasmic protein decreases. Stroma protein also decreases, leading to shortening of muscle fibre in aged.

It is suggested even dopamine has a role to play in the process of ageing. At Sloan-Kettering Cancer Centre, New York, it has been confirmed that animals on heavy doses of L-dopa experience a gain of 19% in their life span beyond their normal life. But scientists do not wish to conduct such experiments on human beings for fear of serious side-effects such as mental imbalance. Nevertheless, the efficay of L-dopa in prolonging life in mice is significant.

Immune system

Another focus of new researches on ageing centres on immune system. Many new studies now implicate the thymus as a key to the ageing of the immune system. There appears to be a link between the hypothalamus, the pitutory and the thymus. The slow atrophy of the thymus during ageing seems to be paralleled by a decrease in the number of T-cells. As a result older people become more disease prone. Today immunologists are exploring avenues to maintain the body's immune responses in old age. In 1975, Takashi *et al.* succeeded in transplanting thymus and bone marrow from young mice to older ones. As a result immune system of 19 months old mice were successfully rejuvenated to the level of 4-month olds. Some of the these mice are still alive. Dr. W. Donner Denckla of the Harvard Medical School thinks, "If we can reproduce the immune competence of a ten year old, when man is at his healthiest—your expected life span will go up to 200, 300 or even 400 years".

Neurohumoral changes

Chebotarev (1982), Director, Institute of Gerontology, Soviet Academy of Medical Sciences, believes that leading mechanism of ageing depends on neurohumoral changes, which determine mental changes, changes in behaviour and human working capacity and deviations in the control of many organs. Experiments also have proved that changes due to age in the mechanism regulating the nervous regulation can weaken the nervous control of tissues, change

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GROWTH THROUGH PLAY

One of the major values of play, be it make-believe or structured competitive games, is that it allows for a reversal of daily contingencies. In play, the child is able to impose himself or herself on external conditions, rather than being subject to them. There is a reversal of social control: during playtime the children, not their parents, are in charge, and the roles can be reversed. Creating the opportunity for reversals has important implications as a motor of the psychological development of the child, affective social and cognitive. On the emotional plane, play allows the child release from the tensions that arise from restrictions imposed by the environment; play provides the opportunity to work out frustrations, and is therefore highly therapeutic. Through playing with others, the child learns to share, to give, to take, to cooperate through the reversibility of social relations.

According to Swiss developmental psychologist Jean Piaget, reversibility is the essential cognitive conquest of middle childhood, the main tenet of the concrete logical thinking typical of that stage of development. Play certainly contributes in many ways to help the child gain mastery of the environment, to construct the structures of knowledge that mark the successful adaptation to this environment. There is recent evidence from psychological studies that children are developmentally further ahead, at least in terms of cognitive complexity, in play than in other situations.

If health is not only the absence of disease, but the fulfilment of each individual's developmental potential in the physical, social, emotional, moral and cognitive spheres, in other words the attainment of a happy mental life, then the fostering of play is clearly part of preventive medicine. Play is fun, but not only fun, it is not nonsense, it is not a waste of time. It is truly a basic right for each child.

From: DASEN, PIERRE R. The value of play. *World health*, January/February 1984, p. 13.

their sensibility to hormones and in the end cause secondary disorders of tissue metabolism and function. He further points out that the key role in the process of ageing is played by changes in the hypothalamus, particularly during the male and female climacteric periods. Disorders of neurohumoral control system and a pathological climacteric period as a consequence, seem to be a prologue to the rapid development of atherosclerosis and hypertension.

Heredity

It has been observed that heredity also influences longevity. From a study of 5000 family trees, which revealed that in the group of people aged between 80-84 years, the frequency of family longevity was 52%, while in the age group 105-plus, it increased to 71%. It was further observed that those who enjoy long lives, their relatives show a certain bioelectric activity of the brain which distinguishes them from rest of the population. They have a higher frequency of spectrum of E.E.G. rhythm, while the rate of change due to age in term of activity of brain is slower.

Experiments have succeeded in increasing the life span of animals by 25-50 per cent by means of certain physical, chemical and biological factors which prolong the active period of life span when the animals produce off-spring.

Optimistically, it may be said that time is not far away when the methods like genetic engineering, or some chemical substances which are now underway, would become practicable measures, and may be then we succeed in slowing down the process of ageing.

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MORE TREATMENT FACILITIES FOR CANCER, MALARIA AND LEPROSY IN SEVENTH PLAN

FACILITIES FOR TREATMENT of cancer are being extended to 20 more medical colleges during the current financial year. The allocation for cancer treatment facilities has been doubled for this year. Sophisticated equipment such as whole body cat scanners, linear accelerators, remote control treatment and planning systems would be purchased for the various regional cancer centres.

The limited figures available from the six Cancer Registries operating under Indian Council for Medical Research indicate an increase of about 1.2 million cases of cancer. About five lakh new cases are added every year. The trend will continue for decades to come with the increasing modernisation and industrialisation which will create the presence of innumerable envionmental carcinogens. The changes in life style and habits like smoking, tobacco chewing and drinking have aggravated the situation.

Another situation peculiar to India is that cancer occurs in India at a considerably younger age than it does in developed western countries. It occurs 10 to 15 years earlier in India. The most common cancers in our country are cancer of uterine cervix in women and the oral cancer in men. These types of cancer represent about forty per cent of all cancer cases in the country. They are predominantly environment-related and have a strong socio-cultural relationship. But these are preventable. By disseminating information about symptoms of the disease through health education and mass media, prevention of the disease and early treatment of cases would be ensured.

For early detection and treatment of malaria cases and to prevent deaths due to malaria, 1,28,376 fever treatment depots and 2,52,523 drug distribution centres have been established. Further, 80 districts are under P. falciparum containment programme covering six million people.

The anti-leprosy vaccine developed by the Indian Cancer Research Centre, Bombay, will be put on human trials during 1985-86 under the auspices of ICMR. A few more Regional Leprosy Training and Research Institutes of Teetalmari (Bihar), Pagiri (Andhra), Magadi (Karnataka) and Baroda (Gujarat) will be set up during the year. Three centres are already functioning. Leprosy patients have been cured with the application of multidrug regimen therapy within two to three years. Twelve districts have been taken up for this treatment. Three more districts will be taken up shortly.

All the 98 highly endemic leprosy districts will be brought under the multi-drug regimen treatment during the Seventh Plan period. This will help in arresting the disease in 60 per cent of the known leprosy cases.

Courtesy : **YOJANA**
1—15 July 1985

A Historic First for Antibiotic Development Team

JOHN NEWELL

THE world's first hybird antibiotic has been developed by British scientists using complex gene manipulating techniques, and it could prove as important in treating infections as the original discovery of penicillin.

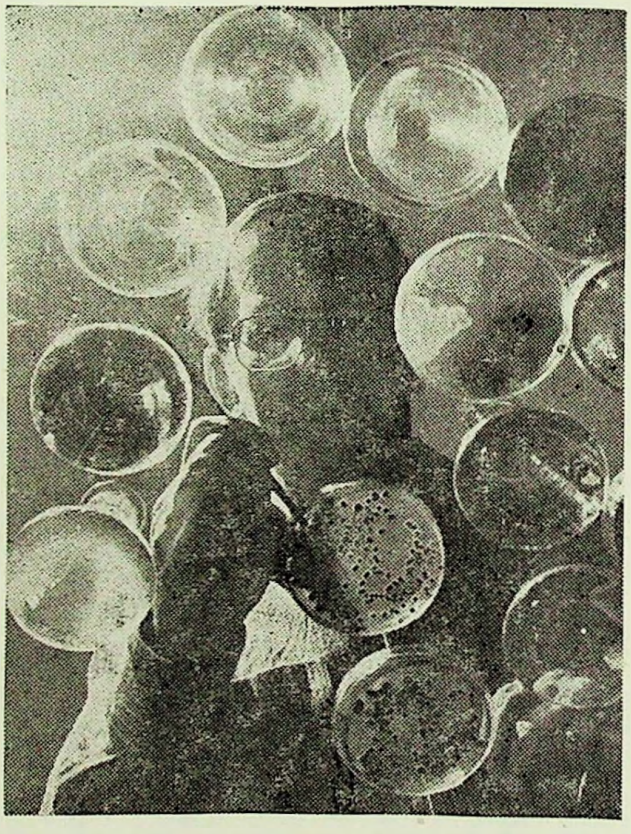
Although the hybrid developed by a team under Professor David. A Hopwood, FRS, of the John Innes Institute in Norwich, eastern England, is of no medical value, it opens the way to the production of others that should prove far more potent than existing simple types.

The hybrid results from a mixture of two antibiotics, and its creation should enable pharmaceutical companies to manufacture a new generation of organisms for countering bacterial and fungal infections not only in people but in agricultural crops and animals. One of the increasing problems in dealing with these infections has been the evolution of disease causing organisms that are resistant to existing antibiotics.

It is reasonable to expect that existing bacteria will have no resistance against some of the hybrid antibiotics that can now be made using Professor Hopwood's genetic engineering techniques. An additional advantage is that these methods, once perfected, will be employed quickly to produce new antibiotic mixes when bacteria do build up resistance to an existing hybrid.

Cloning the answer

Scientists hope to produce more selective anticancer agents, with fewer side effects on normal tissues in a patient's body. Another possibility is the large scale production of anti-leprosy and anti-tuberculosis vaccines using a combination of genetic engineering and cloning techniques.



Professor David A. Hopwood views test tubes of micro-organisms at the John Innes Institute in Norwich, England.

This method is expected to result initially in organisms producing a greater amount of the antibiotic rifamycin than occurs naturally. Once this has been achieved, the resultant organism could be reproduced simply by cloning.

The work of the Norwich team involved transferring genes from one strain of streptomycete, an antibiotic producing organism, into another type. Streptomycete varieties are responsible for some 70 important antibiotics, including rifamycin, used against tuberculosis

and leprosy; adriamycin, for treating some forms of cancer; and various widely employed antibacterial drugs such has erythromycin and the tetracyclines.

In its previous work the team had shown that the amount of antibiotic made by a streptomycete could be greatly increased by implanting into it additional genes, ordering the organism to further produce its antibiotic. This was done by using a plasmid—best described as a little circlet of DNA coding material that is separate from the main DNA of a chromosome—as the gene carrier.

Bright colours

However, although this early work was a useful starter, the method of inducing a streptomycete to make a new hybrid antibiotic was far more complex. Instead of transferring the complete set of antibiotic-making instructions into a streptomycete, the team transferred only those for making part of one antibiotic, actinorhodin, into a streptomycete that itself makes another, medermycin.

The team, comprising Professor Hopwood, Dr Paco Malpartida and Mrs Helen Kieser, selected actinorhodin and medermycin for the hybrid because of their bright colours. Actinorhodin is blue and medermycin brown, which could prove useful in distinguishing between streptomycetes producing either of the strains. To the team's delight, some of the "doctored" organisms started to produced a purple antibiotic.

Professor Hopwood sent samples to his colleague Professor Satoshi Omura at the Kitasato Institute in Tokyo, Japan, for analysis. This indicated that the purple antibiotic was a hybrid. It was intermediate in its chemical structure as well as its colour between actinorhodin and medermycin. Because of this, it was named meder-rhodin.

The gene splicing/adding experiment at the John Innes Institute has proved that portions from two sets of genes representing two different streptomycetes can be used to produce a complete antibiotic with some of the features of each of its parents. Using this method, it is now up to the pharmaceutical companies to come up with a new and effective series of "hybrid treatments" to combat infections in humans as well as fight crop pests and fungal diseases.

RESEARCH INTO DUST-MITE ALLERGIES

Researchers are looking to the tannic acid in tea to help them solve the problems of allergies carried by the common household dust-mite. They have found in laboratory tests that tannic acid is the only substance discovered so far to completely neutralise the allergic effect of the mite.

In an interview with the University of Sydney News, Mr, Wes Green, a professional officer in the University's Department of Medicine, said the allergens in the mite had long been associated with either triggering or exacerbating such diseases as asthma, hay fever, eczema and urticaria. "The problem is that simply killing the mite was not enough as the dead mite remains allergenic," he said. "The allergen itself has to be neutralised."

He had decided to experiment with tannic acid because of its effect on changing proteins as used in the leather tannic industry. "Essentially, the tannic acid makes the allergen insoluble by replacing its water groups with phenol groups," he said.

Researchers were still unsure of the exact pro... but the effects were known. Because the allergen was now insoluble, people who breathed in the allergen "cannot absorb it into their system".

He said two species of mite from the genus Dermatophagoides were the target for the research. These were Dermatophagoides farinae, commonly called the American dust mite, and D pteronyssinus, or European dust mite, both of them prevalent in house dust and prime carriers of allergens.

The two species are also often found in large numbers in clothing, blankets, mattresses, curtains and carpets, feeding mostly on human skin scales which humans shed continuously. —AIS

TDR--the Special Programme for Research and Training in Tropical Diseases—is a coordinated attack by the world's scientific community upon diseases of the tropics, and is jointly sponsored by the UN Development Programme, the World Bank and WHO. TDR stimulates and supports research on new and improved methods to control six major diseases (malaria, schistosomiasis, filariasis, trypanosomiasis, leishmaniasis and leprosy) by funding research projects world-wide, and by giving special assistance to research institutions in tropical countries.

TROPICAL DISEASES RESEARCH
—A Very "Special Programme"

DR ADETOKUNBO O. LUCAS

THE long struggle against malaria and other tropical disease is taking a new turn. It has been a see-saw battle, with periods of high hopes and great expectations yielding to moments of despair and despondency. Time was when malaria retreated under the pressure of chloroquine and DDT; when dazzling successes in some parts of the world generated the hope that this infection could be totally eradicated from the globe. But malaria fought back: drug-resistant strains of the parasite emerged, in collusion with insecticide-resistant vectors. Much ground was lost, but some of the gains were consolidated.

Other tropical parasitic and infectious diseases have similarly resisted efforts to bring them under control. In some cases, as urban areas became free of schistosomiasis, for example, there was an increase in the prevalence and intensity of the disease in rural areas, where irrigation schemes and new intensive farming methods expanded the breeding sites of the water snails that transmit the infection.

The toll on human life and the debilitating effects of these diseases strengthened the resolve of governments to improve control efforts. A two-pronged strategy was evolved, entailing vigorous application of existing technology and the search for new powerful remedies for prevention and control.

At the 27th World Health Assembly in May 1974 the Member States passed a resolution calling on the Director-General to intensify WHO's activities of research into tropical diseases, with the stipulation that such research was to be carried out as far as possible in the endemic countries.

Thus was born the Special Programme for Research and Training in Tropical Diseases (TDR), initiated by WHO and co-sponsored by WHO, the UN Development Programme (UNDP) and the World Bank. The diseases—malaria, schistosomiasis, filariasis, the trypanosomiases, the leishmaniases and leprosy—were the prime targets, firstly, because of the suffering and death they cause but also because of their adverse effects on development. Furthermore, paradoxically, the projects designed to promote development—the creation of man-made lakes, irrigation schemes and similar agro-engineering projects—tended to increase the distribution and the intensity of some of these infections. Putting a dam on a river in Africa may increase snail breeding and schistosomiasis around the shores of the lake behind the dam, while in the fast-flowing spillways below the dam the blackflies that spread river blindness find ideal breeding grounds. A no-win case!

Exploiting a revolution

The past forty years have witnessed a major revolution in the biological sciences. New methods of studying living creatures and their products now make it possible to find out a lot more about the parasites—how they live, grow, multiply, enter and leave the human body, and their specific vectors—and thus to identify and exploit their weaknesses. Now that some of the parasites can be grown in test-tubes, we can study them more closely, test directly the effects on them of potential drugs and discover their responses to a variety of changes and challenges in the environment.

The information from this research is being used to design and fashion new, powerful weapons against these diseases. Many of the existing control tools are not highly effective: in some cases their effectiveness has been blunted by use and abuse; and diagnostic methods are often antiquated and not suitable for use outside specialised laboratories. Some drugs and insecticides have too narrow a margin of safety for the individual and the environment, and hence require high levels of technical experience and supervision to use them safely. Some require complex, long-drawn out schedules which cannot be conveniently administered on a mass scale for the control of community-wide diseases. We need new, highly effective tools which can be safely administered with minimal skilled supervision, which can be applied in simple schedules (single-dose regimes for drugs, single applications of biological agents to control vectors), and which the communities and the governments can afford to acquire and maintain.

As the executing agency of the Programme, WHO has mobilised resources and expertise from academia, industry, public health departments and other institutions from all over the world. The strategy of the Programme has been to use the scientific resources of existing research institutions rather than to create new ones. Scientists from all over the world have helped to identify needs and opportunities for research, to establish realistic goals and to plan as precisely as possible the specific steps that should lead to attaining these goals. They are then funded to do the work, mainly in their own institutions. So the very best scientific minds in the world are addressing the complex technical problems posed by these diseases. By having the tasks performed in existing institutions, results have been achieved more rapidly and more cheaply than if new institutions had been established and fresh scientists recruited. So far, more than 4.000 scientists from 125 countries have participated in the planning, execution and evaluation of the Programme's activities.

The Programme's scientific net-works are operating efficiently and its results have been reported in some 4 000 scientific publications. More significantly, there is now a steady stream of new products ready for use in the control of these diseases, and many more are in the pipeline. Some of these products originated from work supported by the Programme. Others stemmed from research conducted outside the Programme and where then "adopted" by TDR-supported investigators and further developed into usable or potentially usable products.

Some examples of the new products which have resulted from TDR support:

—Mefloquine—a new potent antimalarial drug discovered in 1971 by the Walter Reed Army Institute of Research in Washington, DC in the United States, and effective against chloroquine-resistant malaria parasites—has been developed by the Programme in collaboration with industry and registered for human use in several countries.

—*Bacillus thuringiensis H*-14, a bacterium discovered outside the Programme in 1976, has been developed with the collaboration of industry into an effective biological larvicide for the control of blackflies, and is now used as an alternative larvicide in the Onchocerciasis Control Programme in West Africa.

—Multidrug regimens for the treatment of leprosy, based on a combination of existing drugs, have been carefully evaluated within the TDR network and shown to be more consistently and more rapidly effective in healing patients than the standard regimen using dapson alone.

—Test kits have been devised to measure the sensitivity of malaria parasites to chloroquine and other drugs in common use. They are helping malaria control programmes to use drugs more rationally, based, that is, on precise knowledge of the areas affected by the new epidemic of drug-resistant malaria.

—A simple card test for African try-panosomiasis, ideally suited for use at dispensaries and health centres, and in the field, gives reliable results within a few minutes: a drop of blood is placed on the card and the reaction examined with the naked eye.

New and exciting scientific discoveries already in the pipeline are being processed into usable tools for disease control. *Vaccines* are under development against malaria and leprosy. *New drugs* are being developed. Some were identified through the traditional screening of large numbers of compounds but, increasingly, new agents are being "hand-picked" or "tailor-made", using clues from studies on the chemical processes within parasites. *Innovative vector control methods* are being tested—from mechanical traps to the use of the vectors' natural enemies and diseases.

Even with new tools, however powerful, the Programme could fail to achieve the desired objectives unless the tools are used in ways appropriate to the local situation. It is therefore important to study the distribution of infection and disease in the population, to determine the most important factors which influence occurrence of the disease and to design a strategy geared to the circumstances of the local community.

The role of human behaviour, of the social and cultural factors which influence the patterns of disease, must not be forgotten. Control measures must be socially acceptable and should involve to the fullest extent the people they most affect, who can participate, not as objects of outside measures, but as subjects sharing in the efforts to deal with their own disease problems. This is the rationale of the Special Programme's epidemiological and social science research activities.

If TDR has achieved nothing else, it has demonstrated the value of international collaboration in tackling a common threat to humanity. Scientists have collaborated in this venture across barriers of race, language, politics and geography. Many of TDR's activities have, in addition, been conducted with the collaboration of other agencies, including the Edna Mc Connell Clark Foundation, the International Laboratory for Research on Animal Diseases (ILRAD), the Onchocerciasis Control Programme (OCP), the United States Agency for International Development (USAID), the Walter Reed Army Institute of Research (WRAIR), the Wellcome Trust, the Swedish Agency for Research Cooperation with Developing Countries (SAREC), the Office de la Recherche Scientifique et Technique d'Outre-Mer (ORSTOM), the South-East Asian Ministers of Education Organization—Tropical Medicine and Public Health Project (SEAMEO-TROPMED), and the Rockefeller Foundation.

WHO offers a neutral platform where exchanges of ideas and resources can take place. A chemical compound, synthesised in Europe, tested in laboratories in the United States, the United Kingdom, the Federal Republic of Germany and Australia, is subsequently tried in man in West Africa and Mexico, and may turn out to be a powerful drug for the treatment of onchocerciasis. Nine-banded armadillos are caught in Central America and infected with leprosy bacilli; the bacilli are harvested two years later and the products banked in deep-freeze storage in London; specimens are then distributed to scientists all over the world and some are used to make a vaccine, evaluated first in Norway and now being tested in Venezuela and in Africa.

As Rudyard Kipling *might* just have written:

"East is East and West is West.
And never the twain shall meet:
But there is neither East nor

West, Border, nor Breed, nor Birth
When two TDR scientists stand face to face,
though they come from the ends of the earth."

Courtesy: World Health, May 1985.

BOOKS

PRIMARY HEALTH CARE

Evaluating Primary Health Care, WHO Regional Publications, South-East Asia Series, Technical Publication Series No. 4, 220 pages, price Sw. fr. 7.—

Primary Health Care (PHC) has been recognized by the Member countries of the South-East Asia Region as being the key approach to achieving the goal of "Health for All by the year 2000". Many countries have implemented this approach, and some have even monitored and evaluated its success, as a part of their national managerial process. The stage has thus been set to consider the evaluation techniques adopted by these countries and discuss simultaneously other possibilities in order to arrive at an integrated methodology that could be adopted by the countries of the Region for evaluation. This publication reports on a regional seminar that met to discuss the possibilities of developing such a methodology.

It reflects the findings and observations of the various experts who attended the meeting. Some of the topics discussed are: the purpose of evaluation of PHC and advantages of the survey methodology; indicators of PHC; basic considerations in survey design; data collection methods and related considerations; organization of evaluations using sample survey methodology; selection, training and support of field interviewers; and data analysis, promotion and support of PHC assessment using survey methods.

Written in a simple, readable style, the book presents the objectives of each topic and the merits, constraints and other observations made by the experts. It should be useful to public health administrators, statisticians, health planners, managerial personnel from the primary health centre onwards, and those connected with evaluation research. △

Financial Planning for Health for All by the year 2000 —Report of an inter-country seminar, New Delhi, 7-11 March 1983, 236 pages, WHO Regional Publications, South-East Asia Series (Technical Paper Series, No.5), price Sw. fr. 7—

Having accepted the goal of Health for All by the year 2000, the Member countries of the South-East Asia Region are now seriously engaged in realigning their health planning in the context of total socio-economic development, and particularly in health infrastructure development. Howsoever carefully the health planning might be drawn, it will be rendered ineffective if it is unaccompanied by an appropriate financial backing. Thus, financial planning assumes equal importance in such an endeavour, and only the absolute synthesis of health and financial plannings can germinate a programme that can be implemented in its totality.

This book records verbatim the discussions and findings of a professional consultation that was convened in WHO-SEARO, New Delhi, at which health planners, administrators, health professionals, economists and financial experts at the decision-making levels took part to deal with the methodology to analyse health care expenditure; to formulate new financial policies and mechanisms; and to identify, acquire and mobilize resources to finance them.

Apart from country presentations and discussions on them, the book also contains an overview of health care and financing studies, and analyses of overall health costs and planning, resource distribution, development of health insurance schemes.

The Member countries have recommended to themselves that each country should produce a "Financial Master Plan", and have drawn guidelines for its preparation. They have also identified topics for further studies.

This book will be useful for health administrators, health professionals, health planners, financial experts, economists, statisticians and social scientists at the decision-making levels. ●

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