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## Our Special Eye-Health Care Numbers

"....The two special issues (*Swasth Hind*—Eye Health Care I and II; Volume XXXIII, Nos. 6 and 7, 1989) are well illustrated, with valuable information from the experts, the special issues should be in the hands of health workers, medical students, to know the community eye health problems and a must for health educators who can get good background material for organising educational programmes. They are good reference material to be placed in libraries".

T. K. Parthasarathy  
Former Editor, *Swasth Hind* in  
*Hamari Aankhen*—a Quarterly Publication of  
NSPB, Vol. 14 No. 1

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Articles on health topics are invited for publication in this Journal.

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

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## FIRM COMMITMENT TO GOAL OF HEALTH FOR ALL

—SHRI RASHEED MASOOD

Addressing the 43rd World Health Assembly Session at Geneva on 10 May, 1990, Shri Rasheed Masood, Minister of State for Health and Family Welfare, expressed a fervent hope that a new world health order would emerge with a realisation that health could not be compartmentalised between the developed and the developing countries as the disease knew no international boundaries. He further said that minimum health standards were essential for all the people, irrespective of caste, creed and nationality for peaceful and prosperous future for mankind. We publish here excerpts from the Minister's speech.

“.....TWELVE years ago in 1978, we gave to ourselves a new task and a new challenge so that humanity may awake to a new era of good health in the twentyfirst century. There is a need to remind ourselves of this pledge. Only ten years remain and every hour and every day counts if we have to reach successfully our ultimate goal.

### Commitment to goal of health for all

The process of democratic elections have brought a new government in my country. As a representative of this new Government which took office only five months ago, I should like to assure you of our firm and unwavering commitment to the goal of Health for All and the Alma Ata Declaration. This commitment will be translated into action with greater allocation of resources to the rural areas, better intersectoral coordination, better monitoring and evaluation and a greater reliance on indigenous systems of medicine. The collaboration programmes of World Health Organisation will continue to receive our

utmost priority and it will be our endeavour to establish a truly cooperative partnership in health between developing countries of the world.

I am happy to report that at the conclusion of our Seventh Five Year Plan, the prime health care infrastructure has now been firmly established. A sub-centre is available now for every 5000 population and primary health care centre for every 30,000 population. Where there was nothing forty years ago, we have today 20,000 primary health care centres and over 1,20,000 sub-centres. Working within the ambit of a national health policy enunciated in 1983, significant achievements in control of communicable and non-communicable diseases have been achieved. Progress in the control of Leprosy, where multi-drug treatment has now brought forth a positive decline in numbers, and immunisation which is now close to its target of universal coverage, deserve special mention. By providing safe drinking water supply, India is well on the way to eradicating guinea-worm disease in another few years. These efforts at reducing

mortality and morbidity have brought forth a significant reduction in the death rate which will come down to nine well before the end of the century.

### Greater investment for rural areas

My Government is committed to greater investment of resources to the rural masses. The urban areas get disproportionately high share of investment in health. The outlays on sophisticated hospital facilities, the outlays on high grade specialised medical manpower and of creating islands of development, has led to a diversion of resources from primary health care. This is a trend which despite declared policies to the contrary has continued unabated in many parts of the developing world. We have laid down a policy in our country now that 50 per cent of all investment must go to rural areas. Supported by a policy of delegation of administrative and financial powers to local village authorities, such a policy will, we hope, lead to an acceleration in the expansion and improvement of primary health care services with a greater emphasis on preventive and promotive aspects.

### Problem of population growth

We, in India, as many other countries in the developing world, have a continuing and pressing problem of rapid population growth. Rapid coverage under the universal immunisation programme, improvement in primary health care services and better supply of drugs and medicines have brought forth a fall in the death rate and increase in life expectancy. Though death rates are falling, the growth rates of population have remained high. Research in fertility control and innovative approach in motivation and sharing of experience to establish connections between different aspects of development in birth rates are areas in which World Health Organisation must play an increasingly more positive role. Population control cannot be regarded only as a matter of better health of mother and the child. It is in fact a question of the total health of nation's population.

### HIV infection

The dangers of HIV infection through blood products has brought forth focus of our attention to this hitherto neglected area. Though the number of AIDS cases has been insignificant in my country, the warning signals have been raised because of a number of seropositive cases detected amongst blood donors. We are, therefore, in the process of reorganising our blood bank facilities so that comprehensive testing and quality control can take place.

### International Order

The last one year has shown a further worsening of economic problems of the developing countries. External debt service, slowing down of foreign assistance in net terms and adverse terms of trade for their products, has meant a sapping

## SHRI SRINIVASAN ELECTED CHAIRMAN OF EXECUTIVE BOARD OF WHO

Shri R. Srinivasan, Health Secretary, Government of India, has been elected Chairman of the Executive Board of the World Health Organization (WHO) for the year 1990-91.

Shri Srinivasan is the third Indian to be elected to this high office since WHO was founded in 1948. The distinguished educationist Dr L. Mudaliar was the first Indian to be elected Chairman in 1949 and Dr K.N. Rao officiated as Chairman in 1967-68.

The election of Shri Srinivasan as Chairman is seen as a recognition of the central role that WHO could play to assist developing countries in attaining the goal of health for all, specially in the context of economic and financial difficulties faced by many of them. A large number of Members referred to this aspect while expressing their support to the proposal to elect Shri Srinivasan.

Shri Srinivasan joined the Board as a Member in 1988 and was elected Vice-Chairman. His contribution has been mainly on interlinkages in public health actions, apart from interest in control of tropical diseases, maternal and child welfare and the Global Health Programme on AIDS.

Shri R. Srinivasan, IAS (1955) has been Chief Secretary of Bihar State before joining the Health Ministry in August 1988. He has also served as Deputy Commissioner, Delhi (1970-1972) and Joint Secretary in the Ministry of Industry, Government of India (1978-1982). He holds Master's Degree from both Madras and Harvard Universities with special focus on economic analysis of development issues.

In his acceptance speech, Shri Srinivasan referred to the need for a cooperative spirit in the working of WHO so that Member States could join together to promote the universal concern for health growingly felt all over the world. In this context he referred to the need for flow of adequate resources from developed to developing countries in aid of health programmes. He confirmed his commitment to assisting the Organization in its efforts to improve health standards in developing countries rapidly.

—P.I.B.

of their economic strength to fight illness and disease. Differences between the wealthy and the poor countries and the developed and the under-developed have widened rather than narrowed. There is urgent need to address ourselves to these problems in the full realisation that the health of this universe is as indivisible as its climate and the healthy cannot remain healthy

unless others are cured of their disease and disability.

It is in this light that the progress that has been made towards East-West detente in the past few years deserves our full support. International tensions will hopefully reduce the arms race which has eaten away resources so vital for

(Contd. on page 140)

Swasth Hind

# RECONCILIATION THROUGH HEALTH

## — A Report on 43rd World Health Assembly

The 43rd World Health Assembly was held from 7–17 May, 1990, in Geneva. Over 1000 delegates representing the 167 Member States of the World Health Organization (WHO) including 124 Ministers of Health participated in the Assembly. Two eminent world leaders—His Excellency Robert G. Mugabe, President of the Republic of Zimbabwe and Mr. Giulio Andreotti, President of the Council of Ministers of Italy—addressed the Assembly on the Relationship between World Economy and Health Development. The Assembly reaffirmed that while lasting peace is the foundation for sustainable health and equity, the key to bringing about lasting peace is reconciliation through health.

THE Forty-third World Health Assembly, which was held in Geneva from 7 May, 1990, elected as its President Dr Plutarco Naranjo, Minister of Health of Ecuador. He succeeds Professor Chen Minzhang, Minister of Public Health, China, who presided over the Forty-second World Health Assembly last year.

Over 1000 delegates representing the 167 Member States of the World Health Organization (WHO), including 124 Ministers of Health attended the Assembly.

Inaugurating the Assembly, Professor Chen Minzhang said that “the repercussions of the global economic situation have continued to threaten the health of large population groups. In many countries, there have been cuts in health budgets, and living standards have deteriorated”. He added that WHO “has taken up these challenges through a number of initiatives, including the strengthening of the programme on health economics, and increased efforts to support the least developed countries”.

He also extended a special welcome to the delegation of Namibia which became the 167th member of WHO on 23 April, 1990.

Speaking on behalf of the Secretary-General of the United Nations, Mr Mohamed Essaafi stressed the need to rationalize the efforts of the international community for the elaboration of the fourth U.N. Development Decade focussing on social and human factors. He said WHO has a particularly important role to play in this area as well as in matters connected with protection of the human environment.

Mr Guy-Oliver Segond, Councillor of State, speaking on behalf of the Swiss authorities, thanked WHO for its efforts in combating AIDS and wished every success to the Assembly in its work devoted to “the only

cause which matters: the progress of health throughout the world”.

### Health and Social Justice

Presenting his report on the work of WHO for 1988-89, Dr Hiroshi Nakajima, Director-General of the World Health Organisation (WHO) said that “in spite of overall technological and economic progress, especially in the developed world, for the majority of the population in many developing countries, the basic conditions for health, socio-economic development and daily living remain unacceptable. They still carry the double burden of having to cope with infectious diseases, while facing many of the degenerative diseases previously associated with development”.

The Director-General of WHO stressed that the health issues of the 1990s cannot be dealt with in isolation. “They are inextricably related to issues of development and social equity. We must strive to close the poverty gap both between and within countries”, added Dr Nakajima, who warned that “only in this way can we realize our current hopes and prospects for peace and quality of life, in our time and for future generations”.

Dr Nakajima, who said that primary health care is undoubtedly the most cost-effective approach to sustainable health care, of an acceptable quality for all, underlined the relationship between health development and economy both at national and at global levels.

He also drew a relationship between the environment and health and its implication for sustainable development. There was widespread support for the theme of World Health Day 1990 “Our Planet—Our Health—Think globally, Act locally”. WHO is the international technical authority on the effect of environmental conditions on human health.

He said that the general area of nutrition needed greater emphasis. "Despite gains in agriculture and health technology, in many countries there is still evidence of widespread malnutrition and improper nutritional practices".

Turning to more specific disease problems Dr Nakajima felt that "particularly for countries that lack resources, it is desirable to combine various disease control activities in order to have a synergistic effect". There was a need to "better confront the increasingly serious problem of malaria control" and "AIDS prevention and control is being integrated with primary health care-oriented activities, raising awareness and taking on related issues such as the control of drug abuse, sexually transmitted diseases and other retrovirus infections".

Overall, the Director-General described increased emphasis on the role of WHO in generating information and using it for instructive and educational purposes. He noted that "appropriate and accurate reprinting by the mass media can be a very useful tool to encourage people to make the right decisions about their health".

#### **Inter-relation between health and economy**

Dr Plutarco Naranjo, President of the Forty-third World Health Assembly and Minister of Health of Ecuador, also stressed the inter-relation between health and economy in the course of his presidential address.

"The stronger our social conscience and the greater our conviction regarding our new responsibilities, the better prepared we shall be to take up the challenge of bringing real health to our peoples, even if it has to be later, much later, than the year 2000", said Dr Naranjo.

"Major economic decisions, unfortunately, are not taken in the health sector, nor are they formulated in the social sector. Nevertheless, these are the sectors which must assume the difficult task of promoting health and redressing social imbalance. Those who hold economic power also hold political power, the powers of decision which safeguard their own interests as a class or, even as an oligarchy.

"The health sector must become involved and even take the lead in a social front in every government", said the President of the Assembly, "not only to tackle major social problems jointly at their root,

including the problems of health, but also to generate new political power and powers of decision within each government".

"How can the health sector hope to solve these problems if it is not actively involved in major economic decisions?"

"How can we promote and guarantee the health of our peoples if situations of flagrant inequality are maintained? An after-dinner tip in a restaurant in Paris or New York may amount to as much as a month's wages in the Third World. Is this equity? How can we think about health if we do not resolve the problem of hunger?", he said.

#### **Eminent World Leaders Address the Assembly on World Economy and Health Development**

A special session of the Forty-third World Health Assembly was held in Geneva on 9 May 1990, at the initiative of the Director-General of the World Health Organisation (WHO), Dr Hiroshi Nakajima to bring health issues to the forefront in the world debate about economic development. An eminent internationalist Dr Saburo Okita acted as Special Coordinator for this session. Dr Okita is the Chairman of the Japan Institute for Domestic and International Policy Studies, Chancellor of the International University of Japan, former Minister of Foreign Affairs and also known as the architect of the post-war Japanese economic development.

In his opening remarks, Dr Okita emphasized the investment character of health expenditure; the inter-relationship between health and the economy; and the role of health in stabilizing population growth.

Quoting from the reports of various high-level commissions to which he belonged, Dr Okita said inter alia that "investing wisely in health will build human capital, enabling people on a more equitable basis to contribute to and gain from economic productivity. Unlike investments in factories or roads, investments in health can generate returns that do not depreciate and that bring significant social benefits for a lifetime and into the next generation".

The *President of the Republic of Zimbabwe, His Excellency Robert G. Mugabe*, who travelled to Geneva especially to address the Health Assembly, said that in accepting primary health care as the basis upon which national health systems should develop, the nations of the world were guided by certain basic postulates:—

- (a) that health is a fundamental human right and that the attainment of the highest possible level of health is an essential worldwide social goal whose realization requires the action of many other social and economic sectors in addition to the health sector;
- (b) that the existing gross inequalities in the health status of people of the world, particularly between developing and developed countries, as well as within countries, is politically destabilizing, socially immoral and economically counter-productive and is therefore of common concern to all countries;
- (c) that economic development based on a new international economic order is of fundamental importance, if the reduction of the gap in the health status of peoples between developing and developed countries is to be accomplished, and Health for All attained; and finally
- (d) that health is an essential pre-requisite for sustained economic and social development that contributes to a better quality of life for all our people, thereby to a considerable measure contributing to world peace.

Mr Mugabe added that "the business of health, including that which we call primary health care, should be understood as the business of various groups, institutions and individuals within our countries, not merely of those in the medical profession or those who have responsibilities in this area within our governments".

"In addition", he stressed that, "health interventions emphasizing the primary health care philosophy will not lead to significant health development if issues like the persistence of mass poverty and hunger, rampant population growth, environmental degradation and agricultural neglect are not simultaneously addressed".

Referring more specifically to the World Health Organization and "the pivotal role" it plays and must continue to play to ensure the attainment of global health development, Mr Mugabe said, "WHO has been at the forefront of our health campaign in advocating policies that promote social justice and equity in health. As we move into this final decade towards the year 2000, the role of WHO assumes even more importance and becomes crucial. The Director General, the Secretariat and all the staff of WHO, therefore, deserve our total support both morally and materially, if our Organization is to continue to play its critical role efficiently and effectively".

### The Darling Foundation Prize

#### Dr S. PATTANAYAK AMONG WINNERS

The first Darling Foundation Award for 1990, went to Professor H. M. Gilles of Great Britain.

This is the oldest award established by the Health Committee of the League of Nations way back in 1925 in memory of Dr Darling, an American malaria expert who died while on a mission for the Malaria Commission of the League. Although the prize is several decades old, there were only 17 nominees so far. The award is given for an original work on the pathology, aetiology or prophylaxis of malaria.

After a distinguished war service, and on the completion of his basic medical and tropical medicine education, he began his professional career in the Gambia as a Member of the Scientific Staff of the Medical Research Council, studying malaria, notably clinical and immunological aspects. He continued this work on malaria in Nigeria making an important contribution to world knowledge of this subject. Since 1970, he was Professor of Tropical Medicine at the University of Liverpool School of Tropical Medicine, England, and became Dean of the School in 1978.

Much of Professor Gilles' work on malaria has been in the clinical area, humoral aspects of malaria immunity, malaria nephritis and malaria in pregnancy. He also has a wide clinical experience in tropical diseases and is noted as co-author of five textbooks on the subject. He has, in addition, contributed chapters to textbooks and has over 150 publications on malaria, schistosomiasis, hookworm infection and genetics in tropical medicine.

The second recipient of the Prize was Dr S. Pattanayak, former Director of the National Malaria Eradication Programme in India.

As the Director of one of the world's largest single public health programmes, he was confronted with a massive resurgence of malaria with over 6 million cases in 1976 as compared with 0.15 million some ten years earlier. Given his previous experience, including the smallpox eradication campaign and sound epidemiological background, Dr Pattanayak was the right man in the right place at the right time. Apart from developing modular training programmes for epidemiologists, malaria experts and entomologists, he decentralized many of the field activities by moving them as well as laboratory services to the "front line". An important feature of his plan of action was community participation backed by fever treatment depots and drug distribution centres across the country. At the same time he developed a programme to combat the problem of increasing *Plasmodium falciparum* malaria.

Within 7 years, the overall malaria incidence was brought down by about 66 per cent.

In his address to the Health Assembly, *Mr Giulio Andreotti, President of the Council of Ministers of Italy*, declared that the health of mankind represented an absolute and inalienable right, that must be defended if we wish peace and development to progress jointly in order to realize social justice across our planet. He stressed that the health of the environment was a major

theme of discussion and attracted international attention. "We need a new civilization based on solidarity, a development process centred on man and his requirements", Mr Andreotti said. For this reason, it is necessary to promote all action designed to improve the quality of life, and in some cases even to ensure the very right to existence.

However, he had been struck by the results of an OECD/World Bank study affirming that the objectives of health in the world could be effectively attained at the current levels of spending if available funds were used in a more rational and efficient way. This is why he advocated that the United Nations, the World Health Organization and the international community as a whole should analyze and prepare the practical policies which would realize forcefully the principle of participation and the responsibility of local communities. They should not only benefit from assistance but also be the agent of their own health development.

"Today a new moral impetus and a universal demand for security are combining to shake the old egoisms and allow for rejection of the habit of reasoning along lines that no longer correspond to the radical transformations of the international scene. We should therefore be ready to revise the old scenarios, confront and surmount the obstacles to interdependence between north and south, dismissing first of all the fear that the return of democracy in Europe could lead to abandonment of the south", he said.

#### Role of Health Research

At the conclusion of Technical Discussions on the role of health research in the strategy for Health for All by the Year 2000, held in conjunction with the 43rd World Health Assembly currently, participants unanimously agreed that biomedical research and research in the physical sciences are "a *sine qua non* for improving health and health care".

During the final plenary session presided over by Professor Natth Bhamarapravati, Rector of Mahidol University in Bangkok, a draft report was presented by the rapporteurs of four working groups devoted to health systems research, nutrition research, research capability strengthening, as well as to recent advances in science and technology, and their implications for health care.

Participants in the Technical Discussions agreed in particular that while primary emphasis should be given to the application of existing scientific

knowledge, "there is nevertheless a desperate need for new knowledge which will lead to new or better adapted treatments, drugs, appliances and vaccines needed for the assessment, prevention and alleviation of disease".

They noted that cancers, for example, account for about 25% of all deaths in developed countries and 5-10% in developing countries. As the age of the population increases, cancers will increase. By the year 2000, cancers in developed countries are projected to increase by some 50% and in developing countries by more than 100%. Even though survival rates for common forms of cancer have increased markedly in recent years, much remains to be done regarding the development of better methods for diagnosis and early detection, and notably for treatment.

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#### Léon Bernard Foundation Prize

The Léon Bernard Foundation Prize for 1990 was awarded on 9 May, 1990, by Professor Plutarco Naranjo, President of the 43rd World Health Assembly, to Professor Cosme Ordonez Carceller of Cuba for the development of social medicine and primary health care on the national and international scene.

Way back in 1962, Professor Carceller was national organizer and coordinator of the first poliomyelitis vaccine campaign. He took an active part in the national literacy movement. Professor Carceller has initiated and carried out a social medicine field project in the Cienaga de Zapata district. The programme included health education elements, mass vaccination of the population against four major killer diseases and chest x-rays for screening purposes. Shortly afterwards, the district was declared free from tuberculosis, diphtheria, poliomyelitis and tetanus.

In 1970, Professor Carceller was appointed organizer and coordinator of the pilot project of Pulmonary Tuberculosis Control in the city of Havana (controlled outpatient treatment and bacteriological diagnosis based on sputum tests). When the new programme was introduced nationwide, its impact was remarkable. The mortality rate for 100 000 inhabitants was 7.3 in 1970 and by 1988 it was brought down to 0.6.

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With respect to developing countries, new scientific developments in physical science and technology may give them a new opportunity to meet specific health needs, or to meet those needs more economically or more effectively. However, to apply these results further work may be needed, and this may well not be done unless the country concerned does it. Such advances, even in high technology, are not necessarily only of interest to industrialized countries.

In this regard, the final report noted in its recommendations: "It should be recognized that technology transfer is not a passive process. It needs active training and competent and devoted scientists both on the transferring and the receiving side. Developing coun-

tries need, at the minimum, informed interpreters of science capable of a critical understanding of the science and technology which they may seek to obtain by transfer from other countries".

"Research is the vehicle by means of which revolutionary advances have occurred in science and technology," noted WHO Director-General Dr Hiroshi Nakajima, in opening the Technical Discussions. "We are now at the point", he added, "where we can reap the technological benefits of scientific advances made some twenty years ago. We are now entitled to expect dividends in several areas, such as in vaccine technology, in diagnostic and surgical technologies, in communications technology, even in remote sensing technology. The time has come for WHO to exploit intensively current and impending technological development".

#### Ten new members for WHO Executive Board

The Assembly elected 10 Member States to designate a person to serve on the Executive Board of the World Health Organization (WHO). These are: China, France, Iraq, Myanmar, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Union of Soviet Socialist Republics, and United States of America.

Their term of office will begin immediately after the closure of the Forty-third World Health Assembly.

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#### Dr A. T. Shousha Foundation Prize

This prize was established to commemorate the late Dr A. T. Shousha, the first Director of the WHO Regional Office for the Eastern Mediterranean. The prize is awarded to a person having made the most significant contribution to resolving a health problem in the region.

Dr Mohammed Azim Karimzad the recipient of the prize is one of the pioneers of the Malaria Control Programme in Afghanistan. Starting his service from the lowest medical position as a malaria unit officer, Dr Karimzad has worked as the Malaria Regional Director in almost all regions of the country. In 1987, he was nominated President of the Malaria and Parasitology Institute in Kabul.

Dr Karimzad is also responsible for the organization of the Leishmaniasis Control Programme in Afghanistan which started in 1978 and was integrated with the Malaria Programme in 1979. Under his management, the Leishmaniasis Department at the Institute has developed new procedures for the diagnosis and treatment of patients with cutaneous Leishmaniasis throughout the country.

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#### Sasakawa Health Prize

##### Dr B. N. TANDON AMONG WINNERS

Established upon the initiative of Mr. Ryoichi Sasakawa of Japan, a great supporter of WHO, President of the Sasakawa Memorial Health Foundation and WHO Goodwill Ambassador. The prize is given for outstanding innovative work in health development.

Monsignor Fiorenzo Angelini, Archbishop of Messene, President of the Pontifical Council for Health, Holy See, has been recognized for his work both inside and outside his native Italy. His latest award—Humanity in Medicine—comes from Georgetown University, Washington D. C., USA.

For thirty four years, Archbishop Angelini has been involved in the health sector, with particular emphasis on the areas of primary health care, care of the elderly, ethical aspects of medical health, and training of medical and paramedical personnel. Since 1969, he has been actively involved in the field of drug abuse, focussing on the social and ethical aspects of drug addiction.

The second recipient of the Prize is Dr B. N. Tandon, Chairman, Scientific Advisory Committee of the National Institute of Nutrition, Hyderabad, India.

Throughout his medical career, Dr Tandon has been concentrating on the development of primary health care programmes for high risk groups: pregnant women and pre-school children from socio-economically deprived areas. He was actively involved in the Special Child Relief Programmes for Flood and Drought-affected areas of India (1975-76) and Health and Nutrition Camp Centres for Bangladesh Refugee Camps in India (1970-71).

Dr Tandon is well-known for his pioneering work at the Integrated Child Development Services—a primary health care programme for pre-school children and mothers-to-be, which was launched in 1975. Initially, it was started with 33 experimental projects. By 1995, it is planned that the programme would cover the whole country.

The Integrated Child Development Services is the world's largest and longest-established Primary Health Care National Programme for mothers and children. It is a truly innovative programme that provides cost-effective primary health care to the most vulnerable group of the population on a priority basis.

The third recipient of the Sasakawa Health Prize for 1990 is the **Biankouri Health Centre, Togo**, represented by its Director, Sister Claire Francois.

Ten years old, the Centre serves populations of Biankouri and adjacent communities in the north of the country, dispensing medical care to approximately 300000 patients per year.

The Centre's success story largely stems from her vision, dedication and enthusiasm. The Biankouri Health Centre has a network of 42 branches providing integrated primary health care/maternal and child health care. In addition to pre- and post-natal care, they also offer immunization, health and nutritional education, including the promotion of breast feeding, regular weaning of infants and the use of growth charts.

The Centre also deals with rehabilitation of the disabled, successfully employing simple but efficient enough locally produced apparatus. Health education, especially for women, has been integrated with such income-generating activities as weaving, cooperatives and manual grain mills. The Integrated Health Centre is built upon an efficient organization based on the principle of active community participation.

## New Director for WHO Global AIDS Programme

The Director-General of the World Health Organization (WHO) Dr Hiroshi Nakajima, has formally appointed Dr Michael H. Merson of the United States as Director of the WHO Global Programme on AIDS (GPA). Dr Merson has been Acting Director of the Global Programme on AIDS since 26 March 1990.

Dr Merson has been an international civil servant with WHO for 12 years, working as a medical officer and programme manager for the WHO Diarrhoeal Diseases Control (CDD) Programme from 1978 to 1980, and as the Programme's Director since January 1984. In August 1987, Dr Merson was also given responsibility for the WHO Acute Respiratory Infections Control (ARI) Programme.

### Reconciliation through health

"This Health Assembly has reaffirmed the validity of the goals it has set; it has reaffirmed that, while lasting peace is the foundation for sustainable health and equity, the key to bringing about lasting peace is reconciliation through health", said Dr Hiroshi Nakajima, Director-General of the World Health Organization (WHO), to conclude the general debate on his report on the work of WHO in 1988-1989 to the Assembly on Thursday 17 May, 1990.

In addressing the Assembly, the Director-General said: "Listening to Ministers of Health and other eminent delegates talk of the health situation in their own countries, I was impressed by how much progress has been made. I congratulate all of you for your initiatives and efforts. Yet it is a paradox, in every sphere of life, that the greater the progress, the greater the realization of what still needs to be done. What has been achieved must surely encourage us to continue in our work and to ensure sustainability".

### Improving technical cooperation among developing countries

The Assembly commended the Director-General for the action taken to intensify international technical cooperation for accelerated implementation of primary health care in the least developed and other developing countries facing serious economic difficulties and debt problems.

It also called upon the developed countries to intensify their support to the developing countries, particularly the least developed among them, for

accelerated implementation of health for all through primary health care, by providing financial resources through bilateral and multilateral channels, including WHO, for effective implementation of health development programmes and expresses the hope that the forthcoming conference on assistance to the least developed countries, to be held in Paris this year, will enable greater priority to be given to the health sector in the context of development aid.

### Protecting, Promoting and Supporting Breast-Feeding

Reiterating its concern over the decreasing prevalence and duration of breast-feeding in many countries, the World Health Assembly urged Member States of WHO to protect and promote breast-feeding, as an essential component of their overall food and nutrition policies and programmes on behalf of women and children, so as to enable all women to breast-feed their infants exclusively during the first four to six months of life.

### Elimination of iodine deficiency disorders by the year 2000

The Forty-third World Health Assembly decided that, in view of the progress already achieved and the promising potential of current and planned national prevention and control programmes, WHO shall aim at eliminating iodine deficiency disorders as a major public health problem in all countries by the year 2000. The International Council for Control of Iodine Deficiency Disorders was particularly commended on its efforts against conditions still affecting one thousand million people on all continents.

### Women, children and AIDS

The Assembly emphasized the importance both of an integrated approach to the health of women and of the determining role of women in development. It urged Member States to ensure that programmes for the control of HIV infection/AIDS are coordinated or integrated with other programmes for women, children and families, particularly maternal and child health, family planning, and sexually transmitted disease control. It also asked them to recognize, generally in the Global AIDS Strategy, and specifically in national programmes, the crucial role of women, womens' and non-governmental organizations on the prevention of HIV transmission, and the care of people with AIDS-related diseases.

(Contd. on page 143)

Swasth Hind

# CANCER : CAUSES AND REMEDIES

DR (SMT.) C. D. IRENE

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**Cancer, says the author, has a long lived history. What is cancer? What causes this dreaded disease? What are the available preventive/curative measures? The author attempts answers to these questions through this article.**

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**C**ANCER as a biological phenomenon has a long lived history. Let us try to unravel the Myths and Mysteries woven around this dreadful disease. The afflictions were known to the ancient Egyptians. The ninth papyrus uncovered in 1862, written apparently in the second millennium BC described medical conditions consonant with cancer. The word cancer is derived from the Greek word 'Kar Kinos' word that was originally applied to corroding ulcerative diseases on the visible surfaces of the body. An early functional pathological definition was given in the Oxford dictionary for cancer as a **condition that tends to spread independently to reproduce itself and to return after removal, and eats away or corrodes the part in which it is situated.** I suppose this is the nearest correct definition that can be given to cancer in the Layman's terminology.

## What is cancer?

All of us are aware that our human body or for that matter any living creature is made up of a number of cells—each of them having their own function to perform. From an infant we grow to our present size by multiplication and increase in size of these cells. Of course in the normal course of events these cells grow and multiply according to certain codes so that the body as a whole grows up in a harmonious manner. Not one

leg longer than the other or one ear larger than the other. In other words our cells multiply according to certain order to fulfill the purpose of growth. But in cancer a few cells play truant—they become rebellious—they just grow haphazardly and to fulfill no particular purpose. They just grow, pushing away the normal meek cells, taking away their place, their nutrition and perhaps hindering their function. Now I suppose we can define cancer better. In cancer there is uncontrolled, disorderly, purposeless growth of cells. Actually at this stage such a condition is known as tumor. Now we further sub-divide tumor into benign—harmless—that is it just grows to a certain size and then stops growing. It does not invade the neighbouring tissues, does not get dislodged and occupy other parts of the body. Many a time you must have seen, many an old revered man having a big hump on his back or nape of the neck, sitting harmlessly and if you ask him about it he will say, "Oh! Son, it has been there from the time I can remember, Why should a toothless old man like me get that harmless thing removed?" So, that is a benign tumor. Usually these are from the fat or skin and are harmless. But things are different in the case of a Malignant tumor—in other words cancer—the other meaning of cancer from the original word 'Kanker' is the crab. Because like a crab it claws its way around. More often than not, by the time the

danger signals are apparent it would have spread to the neighbouring tissues, entered the blood stream and the malignant cells get deposited in vital parts of the body like brain, heart, lungs, liver and kidney. Now you understand why the word cancer spells death. By the time you are aware of it, it has gone beyond your control.

## Causes

Do we know what causes cancer? In other words what puts the switch on, or what triggers off the normal cells to suddenly become rebellious, and grow and multiply as they please and invade forbidden territories and occupy places other than their own. Well—it is like the blind men's description of the elephant. Perhaps a nobel prize is within the reach of that man/woman who can pin-point the cause of cancer and prove it cause of cancer and prove it beyond doubt: Various theories have been proposed as being at least partially responsible for the initiation of cancer. Let us take a peep into them. Heredity Environment, habits, infection have all been made responsible and with evidence too.

### Heredity

There are certain cancers which occur in families for generations. One of them is cancer of Stomach. I think all of you know that the great Napoleon died of stomach cancer in the island of St. Helena. His father Charles Bonaparte, grand father

Joseph Bonaparte, brother Leucive Bonaparte and his sisters Pauline, Caroline and Eliza died of stomach cancer. Then there are certain cancers of the skin, nerves and bones that are seen in families. Similarly there are certain cancers of the large intestine and endocrinine glands that are hereditary.

### Environmental

Now we go on to the environmental factors that may lead to cancer. The list is too long. I will confine myself to the more important of the list. The food we eat, the water we drink, the air we breathe, the community we live in, the warm sunshine we enjoy, the place where we work, the people we love, the genes in our cells can all give us cancer. Surprising it sounds Eh! But unfortunately true, partially, at least.

### Habits

All right, let us take our diet—People from Kerala and perhaps Andhra Pradesh are very fond of chillies. I do not know about Andhra Pradesh. But in Kerala Stomach Cancer is singly rampant. Is it because we carry the genes for stomach cancer I do not know very colourful food is very appetising—but dangerous and so beware. While chillies are our problem, people in the western countries eat too refined food with too much fat. Both are incriminated in cancer of the large intestine.

The air we breathe, especially in the urban areas, with all the soot from factories, is dangerous to our lungs. Sir Percival Pott, the celebrated British surgeon discovered as early as in 1775, that soot does play a part in the birth of cancer. He observed scrotal cancer in chimney-sweeps and mule spinners. People who work in or near asbestos fac-

ories are prone to Lung cancer. I think everyone is aware of the effect of radiation on cancer. Radioactive fallouts as we say is present in the atmosphere and depending on the dosage to which one is exposed, one can get a variety of cancers including Blood cancer, known as Leukemia. We all know that the survivors of Hiroshima and Nagasaki developed some sort of cancer or the other including leukemia years after the bombing. Solar radiation, can act as a cancer producing agent. People like us living in tropical countries are prone to a variety of skin cancers on the exposed parts of the body.

Now let us see how these so called harmless habits of ours can lead us slowly but surely into the jaws of death. Cigarette smoking as you all know is injurious to health. That is the statutory warning given on every pack. In addition to the trouble it gives to stomach or heart, any man or woman who has been smoking over 20 cigarettes per day for the past 20 years, is a sure candidate for lung cancer. May be somebody might tell me how a pious old woman who has not seen or heard of cigarette or even beedi died the other day of lung cancer. Whereas that adamant octogenarian who walks straight as a stick smoking like a chimney day in and out is fit as a fiddle. Yes it is here that we do admit defeat. We know cigarette smoking does predispose lung cancer. Yet so many chain smokers live happily. Thus there is no uniformity in the causes of cancer. That is why I said in the beginning itself that still we are grouping in the dark to know whether cancer is produced by a single agent or is due to a combination of factors including heredity. While cigarette smoking causes lung cancer, cigar or pipe smoking causes cancer of the lips. So smokers beware. Now recent research has proved that while the risk for the smokers is 20% that for

his family who live under the mantle of his smoke is 10%.

All right, give up smoking and take to alcohol you are jumping from the frying pan straight into the fire. In other words, you are really between the devil and deep sea. Alcohol in addition to its ill effects on the stomach, liver, brain and heart can lead on to cancer of the liver.

### Infection

Cancer can be produced by constant irritation or friction to a particular part. The moment we see first signs of cancer in the tongue or mouth we ask the patient to remove the teeth on that side. This is met with vociferous protests. They literally say like this "That doctor is mad, I think. I have one small white thing on my tongue and that silly doctor wants to knock off my teeth. I could have done the same thing for him." So saying he goes to a quack and comes back later with an irreparable cancer. Pan Chewing is a universal phenomenon in India. Pan chewing leads to cancer of tongue and mouth in a variety of ways. First of all the various ingredients of pan have such irritating substance that can damage the delicate mucous membrane of the mouth leading to cancer. Pan chewing further damages the teeth and the damaged teeth goes on irritating the tongue or the innerlining of the mouth leading to cancer. Tobacco is another potential, danger.

Constant irritation by tight fitting clothes can lead to cancer. It seems in Maharashtra the males tie their dhoti very tight over the waist in a knotted fashion and people of Maharashtra are more prone to cancer of skin in the waist area, more than the others. It is explained by the fact that due to cons-

tant irritation and accumulation of dirt, pressure sores develop which over the years turn malignant.

The Kashmiris carry an earthen pot inside a basket called Khangri. Now this Khangri contains live coal and is carried very near the abdomen and they develop cancer of the skin of the abdomen—This is due to constant irritation by the repeated burns inflicted on that area. People of Andhra Pradesh, I am told smoke 'Chuta'—whatever that smoking stuff, they put the lighted part inside the mouth. Why have they to suffer from such self inflicted injuries. The end result is the cancer of the hard palate.

There is a theory that certain infections can lead to cancer. Of course any infection of any part of the body that has been there for a long time can cause cancer. In this connection I have to tell you about Burkitts tumor. Dr Burkitt observed that one type of cancer was observed predominantly in children of Uganda and nowhere else. In Uganda where this tumor occurred, Malaria was rampant, and that area was infested with mosquitoes. So he proposed a theory or rather a speculation. Does Malaria or some other infective agent carried by the mosquitoes have any part to play in the production of this tumor. We are yet to find an answer because even though originally Burkitt observed this tumor in Uganda, it occurs in other parts of world including India. To my knowledge about 30 cases have been reported from India of which the 4th case was reported from Delhi. We had sent the material to Burkitt and he confirmed it. It was in the small intestine of a female child aged 4 years.

#### Types of cancer

I think I have confused you all enough regarding the causes of cancer and still we are where we were;

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## MOST CANCERS ARE POTENTIALLY AVOIDABLE

A new report on cancers in Europe says the majority of cancers are potentially avoidable and could be largely prevented if society adopted a series of measures.

The report by Britain's Open University (OU) summarises the conclusions and recommendations of a multi-professional conference held in Lisbon last year under the European Commission's "Europe against cancer" programme. It reveals that UK cancer epicemiologist Prof. Sir Richard Doll told the conference that at least four-fifths of the age-specific cancer risks common throughout Europe could be reduced, mainly through existing knowledge.

Other experts reported that while cancers will always be with us, the great majority could be prevented if more people adopted a healthy lifestyle, if governments and health authorities implemented positive screening and fiscal policies to discourage smoking, and if businesses were to produce only safe products that do not put workers at risk.

More than a third of all cancer deaths are now attributed to a bad diet while tobacco accounts for another 30 per cent. Next comes infection (10 per cent) followed by reproductive and sexual behaviour (seven per cent), occupational hazards (four per cent), alcohol and geophysical factors (three per cent each) and pollution (two per cent).

The general public throughout Europe is said to have very limited knowledge about the preventability of cancers. Some 11,600 people were surveyed and almost two thirds of them either didn't know or thought cancer could only be prevented in a quarter of cases or less.

The Open University report, which says an "alarming" eight per cent thought there was no cure for cancer, is part of a new OU study pack designed for health workers, health educationalists and health policy-makers throughout Europe. The £80.62 pack includes a video that focuses on tobacco related cancers, and includes a set of teaching notes for group leaders.

—B. I. S.

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still in the dark. So let us go to the next intriguing subject namely the age, sex distribution and types of cancer and the organs affected by cancer. To start with, I have to say that here also we have drawn blank. Like Death the leveller, Cancer also is a leveller. Cancer has no respect, sex, caste, colour, creed and nationality. So all are equal to the claws of cancer; of course there are certain cancers which are more prevalent to a par-

ticular age group and to a particular sex. For example, there is one type of malignant tumor of the eye occurring only in children below the age of three. There is one type of leukemia which occurs in the age group five to fifteen. There is one very malignant tumor of the bone occurring predominantly in the age group 10-20. In general, cancer of the lung, gastrointestinal tract, and male and female genital organs occur usually after the age

of 40. But then as I said cancer has no respect for age and sex.

Now how do you realise that one has cancer. Of course if cancer is on visible parts of the body it is too evident, and none will keep quiet. But cancer of the stomach is notoriously silent and as I said earlier it occurs in elderly group and there are hardly any symptoms. Wherever they are, they are so vague that one tends to ignore them. A man who was fond of non-vegetarian slowly begins to dislike non-vegetarian—in other words change in food habits. Slowly the voracious eater becomes a poor eater and too tired. Usually these symptoms we attribute to advancing age. Then he begins vomiting. But by the time the cancer has clawed its way to the liver, lungs and perhaps to the brain. Perhaps he may live for another 6 months with or without treatment. Tumors of the brain whether benign or

malignant are not so silent. Because there is no place for them to expand, pressure symptoms like headache, double vision or paralysis makes the patient seek medical attention fast. But then the organ involved is the brain.

Now comes leukemia, in other words Blood cancer which is dangerous for two reasons. It is very silent with ambiguous symptoms to start with and of course since blood circulates, leukemia spreads literally like wild fire. Once leukemia is diagnosed the life span is anything from one month to 3 years depending upon the type of leukemia. Of course the outlook is better now with treatment. In leukemia the symptoms are very vague. Some people have low grade fever, or they become pale and fatigued. Of course there are some leukemia which present so violently that one is forced to seek medical attention at once

These people present with red spots all over the body, high fever and bleeding from the nose gums. In such people the progress is grave and they just die sometimes before the diagnosis is made.

#### Can cancer be treated and cured

The answer is yes and no. Early detection of cancer followed by curative surgery and cancer chemotherapy and radio therapy can to a certain extent cure cancer. But the outcome is always unpredictable. Anyone who survives for more than 5 years is considered cured. Again for Leukemia there are various types of Drugs which do alleviate the symptoms and prolong life for a considerable length of time. But then like other cancers Leukemia are also most unpredictable. Some survive for 3-5 years without any problem and then just take a turn for the worse and die.

*(Contd. on page 140)*

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## BRA MAY GIVE EARLY WARNING OF BREAST CANCER

Tests on 15 volunteers in Britain suggest that a temperature sensitive bra could identify women who are at high risk of developing breast cancer.

The special bra is in fact a thermometric instrument integrated into an ordinary brassiere, with solid-state temperature sensors and a memory system that can store up to 4,000 temperature measurements. Each of the 16 sensors records temperature every 64 seconds.

The "chronobra"—it gets its name from chronobiology or the study of periodic cycles in living things—is the idea of Prof. Hugh Simpson, a pathologist at the Glasgow Royal Infirmary in Scotland. He and Mr Keith Griffiths, director of the Tenovus Institute for Cancer Research in Cardiff, Wales, have used it to chart changes through the menstrual cycle in the breast temperatures of 15 volunteers.

To make the measurements as accurate as possible, the volunteers wore the chronobra for 90 minutes

each evening under controlled conditions. The researchers predicted that women who were known to be at high risk because they had already had a cancerous lump removed from a breast would show a different pattern of temperature changes from women who were apparently at normal risk. Tests on seven high risk women and eight others matched the prediction, producing significant differences in the temperature cycles of the two groups.

The breasts of women at normal risk reached peak temperature four days after levels of the hormone progesterone reached a maximum in the monthly cycle. But women at high risk showed no such peak in breast temperature in response to progesterone, suggesting that their breasts were resistant to progesterone and therefore at greater risk of developing cancer.

Prof. Simpson and Mr Griffiths believe that the chronobra offers a way of identifying those most at risk years before the cancer itself develops. But it is generally agreed that more research is needed to substantiate the idea.

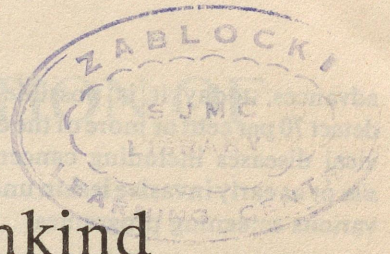
—B. I. S.

# CANCER CERVIX

## —The Scourge of Womankind

COL. A. C. URMIL

COL. P. K. DUTTA



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Cancer cervix, by virtue of its accessibility, is one of the most easily diagnosed cancer if detected in its early stage before metastasis has occurred. At an early stage, it is the most vulnerable to radical treatment also with a high cure rate. The unfortunate delay on the part of the patient to report for investigations and delay on the part of medical attendant in diagnosing, it often culminates in a poor prognosis.

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THE word 'cancer' or 'carcinoma' literally means a crab. Like a crab, the disease cancer will not easily dislodge itself from its firm grip on the tissues involved. Moreover, unlike a crab, the cancer cells are notorious to spread and invade the distant parts of the body, a process known as metastasis which makes it invincible to cure. This disease of great antiquity mentioned in 'Papyrus Ebers', the oldest medical literature (1500 BC), afflicts both sexes. However, due to anatomical variations certain cancers are bound to be sex specific. Cancer uterine cervix (commonly referred to as cancer cervix) occupies a unique place among all female malignancies and has been described as the biggest scourge of the womankind. Let us see why?

According to a report published by WHO in 1987, an estimated 4,60,000 new cases of cancer cervix occur in the world every year. The hospital statistics during the period 1968-77 from Indian sub-continental countries of Burma, Nepal and Sri Lanka show that cancer cervix topped the list among all neoplasms and occupied a

second place in India and Bangladesh with its percentage varying from 24.4 to 45.3 per cent.

### Risk Factors in Cancer Cervix

Studies carried out in India and abroad suggest several risk factors which make a woman more vulnerable to this malady. These risk factors include—poor genital hygiene, early marriage, early coitus, multiple sexual contacts and repeated child births. The other contributory risk factors include low socio-economic status, illiteracy, lack of health education/awareness on this subject, increasing span of life and lack of diagnostic and treatment facilities. A large number of our female population is found vulnerable to cancer cervix due to these risk factors. The disease has, therefore, rightly been regarded as multi factorial in its origin.

### Early detection and treatment

Cancer cervix, by virtue of its accessibility, is one of the most easily diagnosed cancer if detected in its early stage before metastasis (distant spread) has occurred. At an early stage it is most vulnerable

to radical treatment also with a high cure rate. Despite this and the fact that the presenting symptoms are relatively dramatic and risk factors so well known, the unfortunate delay on the part of the patient to report for investigations and delay on the part of medical attendant in diagnosing it often culminates in a poor prognosis. Tremendous progress has been made in the field of early diagnosis of cancer cervix since the invention of vaginal speculum by Marion Sims in 1908. For example, Papanicolaou and Traut's classic discovery of 'Diagnosis of uterine cancer by vaginal smear' in 1943 made it feasible to detect cancer cervix even in its presymptomatic phase. The other discoveries prior to it include: (i) the screening technique of examining the intact cervix under binocular magnification by Hans Hinselman in Germany in 1924 which led to the invention of colposcope in 1925—an essential diagnostic tool, complimentary to cytology in early diagnosis of cancer cervix, and (ii) methods for detecting cervical cancer by exfoliative cytology independently by Babes in Vienna and Papanicolaou in United States in 1928. With these

advances, today it is possible to detect 70 per cent or more of the cervical diseases including cancer *in situ* or as early invasive lesion under various screening programmes.

On the treatment side also, tremendous progress has been made. According to Greenwood, a British Epidemiologist and Statistician, the survival rate in untreated cases of cancer cervix was five years. However, on prompt detection before metastasis has occurred, a woman can now expect to live her normal life span following the radical cure. Besides radical hysterectomy, first performed by Clark in 1885 and popularized by Wertheim in 1905, radium therapy has also been used since 1903 for its treatment with reports of long term cure.

#### Prevention and Control

In the light of aforesaid, the future strategy to be adopted for the prevention and control of Cervical Cancer must pay particular attention to the following aspects:—

1. Health education to promote awareness among women, particularly those 'at risk' so that they remain under regular periodic surveillance and report promptly on suspicion of a symptom suggestive of cancer cervix such as bleeding per vaginum which is irregular or abnormal (intermenstrual, postcoital, post menopausal or excessive), vaginal discharge (blood stained or otherwise), pain or urinary symptoms such as burning during micturition or incontinence of urine. More effective and greater utilisation of various mass media such as newspapers, magazines, radio and TV, etc., should be made to achieve this aim. Health education must lay emphasis on personal hygiene of the genitalia.

2. Reorientation of medical professionals by inculcating high degree of suspicion of cervical cancer in a woman reporting with symptoms suggestive of it and necessity for thorough clinical

examination and investigations to rule out/confirm its possibility.

3. Provision of adequate facilities for early diagnosis through health care delivery system upto the most peripheral level and adequate treatment facilities in referral hospitals.

4. Improvement in cervical cancer registration system which may help as a useful tool for future epidemiological studies and in knowing the trend of the disease.

Lastly, it is needless to stress that the ultimate goal of controlling this scourge of womankind by early detection and prompt radical treatment can only be achieved through a multipronged attack on this disease of multi factorial etiology by controlling/eliminating the well known 'risk factors', adoption of family planning practices and overall improvement in the socio-economic status of the woman.Δ

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# SCREENING FOR PREVENTION OF CANCER CERVIX

DR VIDYA SURWADE,  
ANIL KUMAR

**T**HE original curative approach in medicine is now being replaced by preventive approach. In the same context cervical cancer screening is becoming a stepping stone for prevention and control of the cancer cervix. Twenty two per cent of our population consists of females belonging to reproductive age group (between 15 to 44 years). It is a well recognised fact that Uterine Cervix is the most common malignancy seen in Indian women accounting for 20-50 per cent of all female cancers. In different countries the rates for cervical cancer vary from 5 to 60 per lakh women.

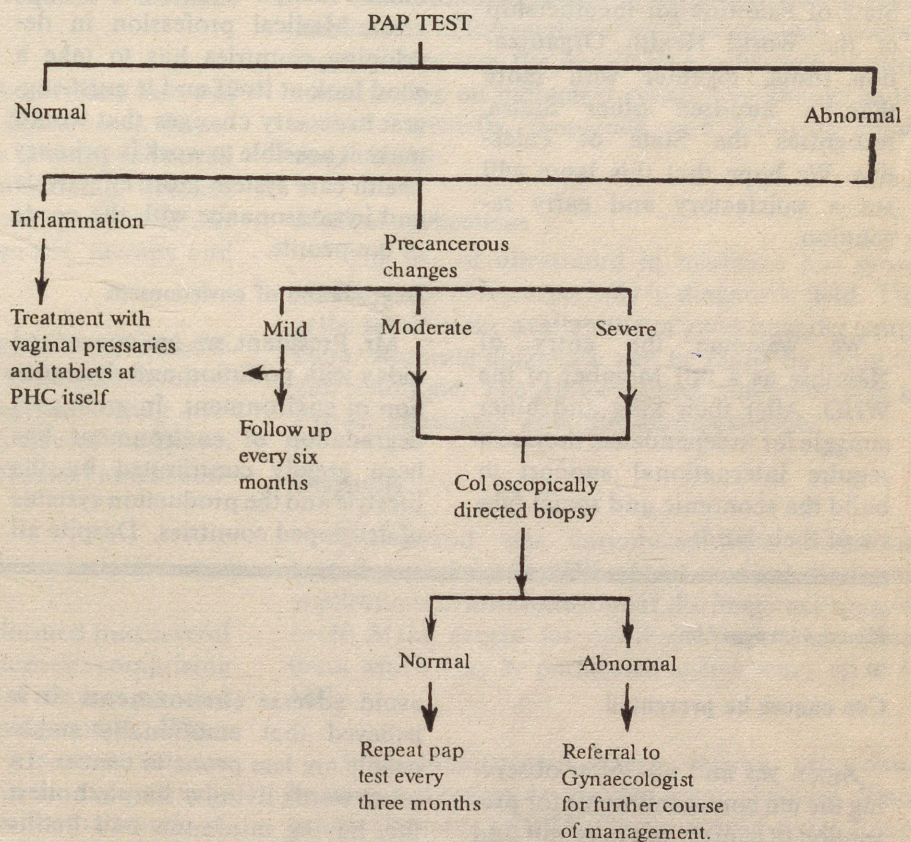
Various aetiological factors have been postulated by Jefecoate, which may lead to the occurrence of cancer of Uterine Cervix. Some of these are :

1. *Age*: In One-third of the cases, age is found to be > 30 years.
2. *Sexual Activity*: Sexually active women are four times more likely to develop cancer cervix than sexually inactive women.
3. *Parity*: 90 per cent of the invasive cancer cervix occur in multiparous women.
4. *Socio-economic factors*: Cancer cervix is more prevalent among women belonging to poor socio-economic conditions.

5. *Coitus*: Cancer cervix is rare in all virgins. Earlier the age of first intercourse, more the number of sexual partners, more promiscuous the partner, the more is the risk of cancer cervix.

7. *Cervical infection*: Infections of cervix with Human Papilloma Virus (HPV), Herpes Simplex Virus (HSV) have been shown to be the risk factors for development of cancer cervix.

## FLOW CHART



## Symptoms

1. White vaginal discharge,
2. Blood stained vaginal discharge,

(Contd. on page 154)

(Contd. from page 126)

economic development. This process of normalisation must continue. To that end my country has always advocated and stood for an international order based on mutual respect between countries and non-interference in each other's internal affairs. Mr. President, my country firmly believes that this policy alone can ensure peace and normalcy essential for development and contribute to our efforts towards improvement of man's health.

Last year considerable debate took place on the application of the State of Palestine for membership of the World Health Organization. India, together with more than a hundred other States, recognises the State of Palestine. We hope that this issue will see a satisfactory and early resolution.

We welcome the entry of Namibia as a full Member of the WHO. After their long and bitter struggle for independence they now require international support to build the economic and social fabric of their land.

(Contd. from page 136)

#### Can cancer be prevented

Again yes and no. After observing the ten commandments for prevention of cancer, you may still find the crab slowly advancing towards you. Then all that one can do is throw up one's hands and say "I have done my best and left the rest to God". No man can choose his parentage but he can certainly

#### Proper perspective to medical education

Mr. President, I must also draw attention of this August Assembly to the need for a proper perspective of medical education which despite our efforts to the contrary is growing more elitist, devouring unusually large and disproportionate share of scarce resources. There has been reluctance to look to cost effective alternatives in the field of medical education. There are imbalances in manpower development in doctors, nurses and paramedics. There is growth of a culture which inhibits highly trained manpower to serve in rural areas. Medical profession in developing countries has to take a good look at itself and it must suggest necessary changes that would make it possible to work in primary health care system more effectively and in consonance with the needs of the people.

#### Degradation of environment

Mr. President, we are concerned today with pollution and despoilation of environment. In great part degradation of environment has been greatly contributed by the lifestyle and the production systems of developed countries. Despite all

avoid adverse environments. It is believed that emotionally stable people are less prone to cancer. In other words living a simple honest life, having minimum bad habits can go a long way in keeping the crabs and wolves at bay. But then once I was asked by a very good friend of ours—why starve yourself and live 2 years longer—why not enjoy yourself and die 2 years

the recent publicity, I doubt whether developed countries are ready to undertake those harsh decisions which are necessary to stop further ecological damage. World Health Organization must clearly and forthrightly establish the connections between good health and good environment and must, as part of its important programmes, highlight those practices, lifestyles and industrial processes in developed as well as developing countries that damage the environment, damage the health of the people and literally darken the future of the mankind.

I mentioned the emergence of a new political order that may be the harbinger of a lasting world peace; I would like to conclude, Mr. President, by expressing a fervent hope that a new world health order will emerge in which there will be an appreciation that health cannot be compartmentalised between the developed and the developing and a recognition that disease knows no international boundaries. Mr. President, minimum health standards are essential for all the people, irrespective of caste, creed and nationality, if the world would seek a peaceful and prosperous future for mankind."

earlier. This man was around fifty, short, stout and stocky. He eats like a pig, drinks like a fish and smokes like a chimney and this was 18 years back. I am sure still he must be following the habits and still fighting fit. I am afraid all are not born lucky. So it is upto you to choose your way. □□□

—YOJANA, July 1—15, 1989

Swasth Hind

# ULTRASOUND IN MEDICINE

DR BHAKT PRAKASH  
DR DEOKI NANDAN

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Many applications of ultrasound involve the control of complicated equipment. In diagnostic imaging procedures, the skill of the operator has a great influence on the diagnostic efficiency on the time required to make the examination. Therefore, education programme on use of ultrasound is one of the most important aspects of protection. Such a programme should include the education of the general population and training of users of ultrasound devices, feels the author.

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ULTRASOUND is a sound (a mechanical vibration phenomenon) having a frequency above the range of human hearing (typically above 16 kHz) which unlike electromagnetic radiation requires a medium through which to propagate.

Exposure to ultrasound can be divided into two distinct categories—*air-borne* and *liquid-borne*. Exposure to air-borne ultrasound occurs in many industrial applications such as cleaning, emulsifying, welding, etc. Liquid-borne exposure occurs predominantly through medical exposure in diagnosis, therapy and surgery.

At present, there is no evidence of adverse health effects in human beings exposed to diagnostic ultrasound. But, its rapidly increasing use during pregnancy is still of special concern in view of the known susceptibility of the fetus to other physical and chemical agents.

## Mechanism of action

Acoustic energy may be transformed into several other forms of energy and major categories comprising a thermal mechanism, a cavitation mechanism, and other mechanisms including streaming motion. When ultrasound is absorbed by matter, it is converted into heat producing a temperature rise in the exposed subject. An ultrasound wave produces alternate areas of compression and faction in the medium and the pressure changes produced, can result in cavitation.

Streaming motion and shearing stresses can occur within the exposed system through stable cavitation; twisting motions (radiation torque) have also been

observed in biological systems exposed to ultrasound.

Unlike ionizing radiation, where the basic physical mechanism of interaction stays the same with increasing exposure rate, the dominant mechanism of ultrasound action on biological system can change as the acoustic intensity, frequency, and exposure conditions change.

## Medical applications

The use of ultrasound in medicine has grown rapidly since 1970s, especially in diagnostic field. This is the result of the availability of good imaging equipment. Accurate diagnosis can be made by using the new technique. There is a common contention that no risk are associated with ultrasound exposure.

## Diagnosis

Ultrasound was introduced into diagnostic medicine in the mid 1950s. Most medical diagnostic applications of ultrasound are in the frequency range of 1–10 MHz, except for ophthalmological examinations, which may be performed at frequency up to 30 MHz.

With sophisticated image devices, ultrasound imaging technology is making great advances. Since the development of CAT (Computerized Axial Tomography—Hounsfield, 1973), using X-rays, analogous images have been obtained using ultrasound. Some areas of the body are efficiently examined using ultrasound (Table I). Areas better examined with other imaging modalities are those containing large amount of air (e.g. lungs).

## Therapy

Ultrasound therapy usually involves the application of a hand held ultrasound transducer to the injured area of a patient with either a cw or pulse beam. Intensities employed in physiotherapy normally range from about 100 mW/cm<sup>2</sup> to 3 W/cm<sup>2</sup>.

The main therapeutic value of ultrasound is related to its selectivity of absorption, may be directly selected to the protein content of the tissue. The benefit of ultrasound as a therapeutic agent is that it can heat selectively, *i.e.*, only those areas that require heating, *e.g.*, superficial bone, scar tissue, tendons and tendon sheaths, etc. Ultrasound might accelerate the diffusion process across biological membrane and thus, it can be useful in increasing rate of healing. The stimulators effect of ultrasound in healing ulcers in human subject is also reported.

### Applications in medicine

Ultrasound has been used in vestibular (cavity serving as an entrance to another, especially that of the inner ear) surgery for the treatment of Meniere's disease for the removal of cataracts and in other surgical procedures such as cleaning of obstructed blood vessels and ureters, and breaking of kidney stones, and in neurosurgery. Non-surgical destruction of kidney stones can be performed by repeated application of acoustic shock-waves. Ultrasound has been used to produce aerosols (that can maintain a humid atmosphere in ventilating assistor) and in acupuncture.

### Education and Training

An education programme on safe use of ultrasound is one of the most important aspects of protection. Such a programme includes the education of the general population and training of users of ultrasound devices.

Many applications of ultrasound involve control of complicated equipment. In diagnostic imaging procedures, for example, the skill of the operator has a great influence on the diagnostic efficiency on the time required to make the examination. The operation has to select scanning *planes* and instrument parameters in our interactive process dependent on the actual findings. Incorrect control of the ultrasound scanner can result in two different forms of risk:

- (a) excessive exposure of the patient to ultrasound radiation because of long exposure time,
- (b) incorrect diagnosis, which in term might lead to repeated exposures.

The obvious solution is well planned and supervised education and training of all personnel working with ultrasound radiation.

TABLE I: Applications of ultrasound in diagnosis of diseases

S. No.	Part of interest	Measurement made
1.	Head	echoencephalography (head scan and brain scan) for midline position determination and ventricular size.
	Brain	neonatal brain tomographic scan, hydrocephalus evaluation.
2.	Eye and orbit	ophthalmic echography for ultrasonic biometry, foreign body localization, retinal detachment.
3.	Neck thyroid	arterial flow studies, carolid artery, thyroid echography (thyroid scan) for mass evaluation.
4.	Chest heart	echocardiography (heart scan) for pericardial effusion, valve evaluation, wall and chamber size and function, tumour detection, intracardiac blood flow.
	Pleural space	Effusion detection.
	Breast	breast echography (breast scan) for mass evaluation.
	Abdomen	
5.	Liver, kidney, spleen pancreas	evaluation of size, parenchyma and associated mass.
	gallbladder	Stone detection.
	bile duct	evaluation of size.
	aorta	aneurysmal dilatation.
	peritoneal space	ascitis and abscess detection.
6.	Pelvis	
	Uterus (pregnant)	evaluation of foetus, gestational sac, estimation of fetal age, diagnosis of multiple pregnancy, placental localization, amniotic cavity, foetal heart monitoring, ectopic pregnancy, congenital anomalies.
	uterus (non-pregnant)	evaluation of mature and mass.
	ovaries	ovulation timing.
	bladder	tumour detection.
	prostate	tumour detection.
7.	Extremities	
	veins and arteries	vascular studies.
8.	Ultrasound guidance procedure.	amniocentesis, needle biopsy, thoracocentesis, placement of ionizing therapy field.

(Contd. from page 132)

### *Reduction in demand for illicit drugs*

The World Ministerial Summit to Reduce Demand for Drugs and to Combat the Cocaine Threat, held in London in April 1990, gave emphasis to health issues and the Forty-third World Health Assembly welcomed the London declaration. It urged WHO Member States to work towards the implementation of the measures in the U. N. Global Programme of Action and the London Declaration.

In this spirit, the Director-General of WHO was asked to intensify WHO's action to prevent the spread of drug abuse in individuals, families, communities and countries, and to develop effective approaches to the treatment of drug dependence and associated diseases.

### *Hazardous wastes management*

The Director-General was commended by the World Health Assembly for establishing the WHO Commission on Health and Environment, which will examine, *inter alia*, the subject of hazardous wastes and their potential effects on human health.

Member States of WHO were urged to establish or to strengthen programmes for environmentally sound management of hazardous wastes in accordance with health-based standards and to extend health surveillance systems, including epidemiological studies, to identify adverse effects on populations of exposure (actual or potential) to hazardous substances and to encourage the international exchange of experts in this area.

### *Action programme on essential drugs*

The Assembly recognized with "satisfaction" that essential drug lists for the different levels of health services exist in more than 100 countries, and about 50 countries have formulated or are formulating national drug policies, taking into account the WHO essential drug concept. It reaffirmed the need for the WHO Action Programme on Essential Drugs to strengthen its activities, in conformity with the Revised Drug Strategy.

### *Tobacco or Health*

The Assembly felt encouraged by the continuing decline in tobacco consumption wherever comprehen-

sive smoking control policies have been adopted. It was "deeply concerned" however by increasing evidence of the dangers to health posed by "passive smoking" or smoke inhaled by non-smokers. A new WHO estimate showed that, unless current smoking rates decrease, there will be three million tobacco-related deaths per year in the 1990s, and that this figure will rise quickly to 10 million deaths per year by the 2020s. The Director-General was asked to intensify his support for the 1988-1995 plan of action for the WHO programme on tobacco or health.

### *Tropical Disease Research*

Notwithstanding the efforts that have been made, tropical diseases—and especially malaria—have continued to escalate in some countries to the extent that malaria is once again one of the leading causes of morbidity. The Assembly appealed to the pharmaceutical industry to increase research and development in tropical diseases and to intensify its collaboration with the WHO Special Programme, cosponsored by UNDP and the World Bank, and dealing with malaria, schistosomiasis, filariasis (including onchocerciasis), African trypanosomiasis, Chagas disease, leishmaniasis and leprosy.

### *The Role of Health Research*

The Assembly welcomed a report by Professor Nath Bhamarapavati, General Chairman of the Technical Discussions, held in the framework of the WHA with the participation of over 400 specialists, making recommendations on the role of Health Research in the strategy for Health for All by the Year 2000.

"Cooperation and collaboration inside the countries and between countries of the same region on health research are being facilitated considerably by the WHO mechanisms through the regional and country offices. I speak out of my own experience with the South-East Asia regional office", said Professor Bhamarapavati. "I am sure that countries in other regions may have the same experience".

"In the context of the pluralistic society, let us have as much diversity of country approach as you wish. The universality of the concepts and practice, however, remain global, and I hope WHO will take up the challenge to facilitate the activities of Member States towards the strengthening of research capacity", he added. Δ

# ENVIRONMENTAL PROBLEMS OF DEVELOPING COUNTRIES

G. SUDHAKAR NAIR

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**The nations of the world ought to move towards an agreement on the control of carbon dioxide emission. An international law of the air, like the international law of the sea, is clearly the need of the hour. After all, like the oceans, the atmosphere is also a common heritage of humanity, says the author.**

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**C**ONCERNED at the increasing degradation of environment by air pollution, India has taken the initiative in chalking out strategies to counter its ill-effects. A three-day meeting of select 20 developing countries from Asia, Africa and Latin America was organised by the Government in New Delhi recently. It was specifically convened to forge a united stand among the third world countries on major environmental issues like ozone depletion and global warming caused by increasing industrial pollution.

While depletion of ozone in the atmosphere can cause ailments like cancer, warming of the globe due to increased presence of carbon dioxide can lead to catastrophic climatic changes affecting human beings and agriculture. Ozone which is an allotropic form of oxygen, is present between 15 to 30 kilometres above the earth. It prevents ultra violet cosmic radiations from reaching the earth. These radiations have a harmful effect on the flora and fauna and human beings of this world.

## Environment fund

The meeting focussed on the need to have clean technologies and adequate energy conservation measu-

res to prevent future degradation of the environment. A significant recommendation made at the meeting was the proposal to set up an environment fund. This would be in addition to the existing funds created for achieving the aims of specific protocols on particular environmental problems. The fund should be administered on democratic principles through balanced representation of both developing and developed countries.

The proposal is in line with the suggestion made by the Minister of State for Environment, Smt. Maneka Gandhi for such a fund at a meeting in Washington recently. Smt. Gandhi had suggested that each polluting country would contribute to the fund based on their per capita contribution to pollution in the world.

## Clean technologies

Delegates at the meeting were of the view that environmental problems were essentially the creation of the developed countries. A bulk of the gaseous emissions or the release of pollutants like chlorofluorocarbons that damaged the Ozone layer occurred in the highly industrialised developed countries. In this context, they made out

a case for the developed countries to bear the responsibility and pay for the rehabilitation of environment by funding environmentally clean technologies. The developed countries must provide additional funds and alternate clean technologies on a non-commercial basis to the developing countries.

The issue of whether market forces controlled by the multi-nationals would ensure transfer of required technology to the third world countries figured at the meeting. The delegates did not agree with the view that the governments in the developed countries cannot compel the holders of clean technologies to part with them. It may be noted that there were several precedents of developed countries intervening in free markets to achieve the objective of technology transfer.

The anxiety of the developing countries on the funding aspect could be understood because any kind of protocol or convention would be meaningless without adequate funds or access to technology. The issues raised at the New Delhi meeting including the funding aspect are likely to figure in the second World Climate Conference in Geneva in November this year and at the 1992 Conference on

Environment and Development in Brazil.

For example, a detailed examination of the Montreal protocol showed that there were discriminatory provisions relating to access to substitute technologies which were environmentally safe. The protocol had a laudable objective in restricting the use of those substances by countries that released pollutants like chloro-fluro carbons that ruptured the Ozone layer.

#### Trans-boundary hazardous wastes

Another important issue which came up for detailed discussions was the trans-boundary movement of hazardous wastes. The developing countries were urged to insist on a mechanism to monitor and control their movement so that they do not become vulnerable to their ill-effects. According to an UN report, the carbon-dioxide question was undoubtedly the largest outstanding environmental problem confronting the world in the last one decade. At the local level, the harmful effects of air pollution include noxious fumes and odour, diminished visibility, injury to human health, crops and other vegetation. It also damages property by dusts and corrosive gases. Rich countries should not be allowed to argue in the future that the fuel consumption of developing countries ought to be kept in check to control the increase in carbon dioxide, regardless of their own contribution in the past.

All efforts should be made by developed countries to transfer renewable energy technologies on easy terms to developing countries as greater use of these systems could mitigate the carbon dioxide problem. In the long run, however, the nations of the world ought to move

### CHILDREN'S FUTURE IN DANGER : SEC-GENERAL

*FOLLOWING is the text of the message of the Secretary-General of the United Nations, Javier Perez de Cuellar, on the occasion of the World Environment Day, 5 June :*

"Our generation of men and women is in danger of forfeiting the future of our children. The wasting of natural resources and the contamination of air and water are reducing the options for the physically most vulnerable and politically most powerless segment of humanity—the children. The devastation of the environment is a truly global phenomenon. The United Nations has therefore chosen 'Children and the Environment' as the theme for this year's World Environment Day.

"In this decade, more children will be born than in any previous one. They will come into a world that is increasingly endangered as a result of environmental degradation, with growing risks of exposure to environment-related hazards to their health. At the same time, unless we act now, they are likely to face more and more competition for a diminishing pool of resources needed for human sustenance.

"The United Nations Convention on the Rights of the Child recognizes a child's right to a safe and healthy environment. It is still not too late to ensure the protection of this fundamental right.

"To safeguard the future of our children, we will need international action on an unprecedented scale. It is encouraging that the international community is increasingly aware of the unmistakable threat posed by environmental degradation. Under the auspices of the United Nations Environment Programme and other United Nations bodies, agreements are being evolved and plans put to work to arrest the rapid depletion of the earth's vital resources and protect its atmosphere and climate. Further, active preparations are being made for the United Nations Conference on Environment and Development in 1992 which will address these complex issues in a comprehensive way.

"There are no quick and easy solutions to the myriad problems the crisis has thrown into sharp relief. The dangers of acid rain, global warming, soil erosion will not vanish soon; reclaiming the earth will have to be undertaken over decades.

"On this World Environment Day, I urge the peoples and governments of the world to intensify their campaign to counter the threat to the global environment and to save the earth for future generations."

towards an agreement on the control of carbon dioxide emission. An international law of the air, like the international law of the sea, is clearly the need of the hour. After

all, like the oceans, the atmosphere is also a common heritage of humanity.

(Courtesy: AIR)

# VECTOR BORNE DISEASES AND COMMUNITY CONCERN

MAJOR A. G. MAHENDRAKAR  
COL. A. C. URMIL

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Environmental management for Vector Control is an important sphere where community can play a vital role by participating in methods such as filling, land levelling, drainage, shading and village siting; community can also contribute towards construction of drainage structures such as soakaways, seepage pits, soakage trenches, drying of marshy lands by afforestation, removal of aquatic weed, intermittent irrigation, proper maintenance of drainage canals and planting of trees along side a water course (which effectively reduces breeding of certain anopheles species by shading). Community can also practise siting of domestic animals (cowsheds, stables, etc) between human dwellings and mosquito breeding sites to prevent human exposure to bites by mosquitoes which happen to be basically zoophilic in nature.

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THE term 'Vector' used in a broader sense means primary and intermediate vertebrate and invertebrate hosts and animal reservoirs of human and animal diseases.

## Global Magnitude of the problem

While data on incidence, prevalence and geographical distribution of vector borne diseases are not always available, the total number of cases of these diseases is certainly in hundreds of millions. In developing countries, a large proportion of people, both in urban and rural areas are likely to suffer from one or more of these diseases during their life time. Arboviruses, transmitted through mosquitoes and causing dengue fever, dengue haemorrhagic fever, dengue shock syndrome are already endemic in areas where hundreds of millions of people live. Moreover, these infections appear to be spreading to all regions where their mosquito vectors, i.e., *Aedes aegypti* and *Aedes albopictus* are found, often resulting into major epidemics.

Almost 2200 million people residing in endemic areas are exposed to malaria—another mosquito borne infection caused by mosquitoes belonging to genus *Anopheles*. It is estimated that the number of new clinical cases each year may be as high as 90—100 million. Nearly 90 million people have lymphatic filariasis another mosquito borne disease. Between 15—18 million people are thought to be affected by Chagas' disease which is transmitted by triatomid bugs. Nearly 200 million people have schistosomiasis (river blindness)—a disease where snails act as intermediate hosts. Sleeping sickness (transmitted by tsetse flies), leishmaniasis (transmitted by sand flies) and onchocerciasis (transmitted by simulium or dimdam flies) also cause severe public health problems in local areas in various parts of the world.

## Situation in different WHO Regions

In the *Eastern Mediterranean Region*, the most important vector

borne diseases happen to be leishmaniasis, filariasis, onchocerciasis, trypanosomiasis (sleeping sickness), Rift valley fever (transmitted by mosquitoes) and Crimean Congo haemorrhagic fever (transmitted by ticks).

In the *South East Asian Region*, the major vector borne diseases are malaria, filariasis, dengue haemorrhagic fever—all transmitted through mosquitoes besides leishmaniasis (through sand fly) and dracunculiasis (guinea worm infestation) in which cyclops act as intermediate host.

In the *Western Pacific Region*, the main vector borne diseases include malaria, dengue, dengue haemorrhagic fever, filariasis and Japanese encephalitis—all transmitted through mosquitoes.

In the *African Region*, vector borne diseases remain a severe public health problem for all countries due to malaria, trypanosomiasis, schistosomiasis and dracunculiasis.

In the *Region of the Americas*, the main vector borne diseases include malaria, yellow fever, dengue and Chagas' disease.

#### Suitable Vector targets for community action

There are a number of vector species which are, generally speaking, suitable targets for community based control efforts, e.g., several species of malaria vectors (e.g., *A. stephensi*) which breed in peridomestic environment and are thus easy targets for community action.

Another mosquito *Aedes aegypti* (vector of dengue, dengue haemorrhagic fever and yellow fever) is an ideal target for community based control measures because its breeding places are limited, population density is generally moderate and flight range is short. All its preferential breeding sites are virtually man-made, e.g., containers for storage of water, flower vases, discarded tins, tyres, bottles and other receptacles, etc. Community cooperation can play a very significant role in control of this mosquito vector.

Tsetse flies (causing sleeping sickness) can be drastically reduced by active community cooperation in using highly effective and low cost traps.

Triatomid bugs (responsible for Chagas' disease in Latin America) are peridomestic bugs which find suitable conditions for their de-

velopment in the thatched roofs and cracks in the mud walls of rural houses. Community response for replacement of these roofs by tiles or corrugated iron sheets, proper smoothing of the wall surfaces and repair or reconstruction of the houses, will greatly eliminate the breeding sites. Similarly use of insecticide impregnated points by the community will also provide lasting relief against this vector.

Community participation at family level can help in reducing the louse infestation by accepting anti-lice treatment. In case of head louse (responsible for epidemic typhus), it is imperative that all members of the family are treated at the same time to prevent reinfestation.

Although bed bugs and cockroaches have not been incriminated as specific disease vectors and are mainly regarded as annoying pests, community cooperation can play a very significant role in eliminating/controlling them by accepting insecticidal spraying and other measures whenever deemed necessary either for control of other disease vectors (resulting in collateral benefit in controlling these pests also) or specifically for control of these pests.

Community can make a very significant contribution in rodent control by ensuring rodent proofing of buildings and by use of rodenticide baits, rat traps, etc.

Eradication of cyclops (intermediate host in guinea worm infestation) is feasible through community action by converting all step wells into draw wells and by using monofilament nylon cloth filters to exclude cyclops from temephos to exclude cyclops from drinking water. Community can also take up the responsibility of application of temephos to cyclops infested water sources.

#### Environmental Management for vector control

This is another important sphere where community can play a vital role by participating in methods such as filling, land levelling, drainage, shading and village siting; community can also contribute towards construction of drainage structures such as soakaways, seepage pits, soakage trenches, drying of marshy lands by afforestation, removal of aquatic weed, intermittent irrigation, proper maintenance of drainage canals and planting of trees along side a water course (which effectively reduces breeding of certain anophelid species by shading). Community can also practise siting of domestic animals (cowsheds, stables, etc) between human dwellings and mosquito breeding sites to prevent human exposure to bites by mosquitoes which happen to be basically zoophilic in nature. Δ

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## HUMAN DEVELOPMENT FOR MANAGEMENT OF I.E.C. IN HEALTH AND FAMILY WELFARE

U. S. MISHRA

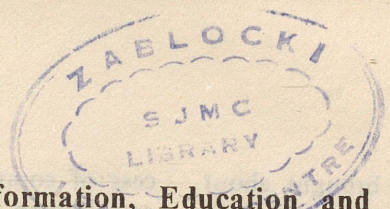
**E**XPERIENCE has shown that mere information to the people and providing them with knowledge about the existence of some diseases does not create a long lasting impact on them. To some extent we may make them conscious of certain facts, arouse interest in them regarding some health or family welfare problems and their solution and may even goad them to change their be-

haviour for some time under the pressure of our propaganda and publicity drive. But, in fact, it is only the correct education and communication approach which will inculcate in them the desirable imprint for healthful living by adopting health practices and small family norm.

### **A Two-way process indeed**

An effective Information, educa-

tion and communication (IEC) programme for health and family welfare activities has to be a two-way process between the learner and the communicator. The educational process is based on a series of experience through which an individual informs himself, develops skill and attitude and thereafter adopts intelligent action and on his part shows the desirable behaviour. Apart from other benefits of educa-



tion the person approached, inculcates in himself a feeling of self confidence and becomes self-reliant. Thus, it is the approach and the tool that differentiates education from publicity and propaganda.

Though health education has been claimed as of a very recent origin, it is not altogether a new method or approach in our country. We may trace back its origin in the process of educating the people regarding health practices engrained in our culture in the form of religious practices, customs, etc. from times immemorial. Practices like segregating the smallpox patients and confinement of the women in a separate room at the time of delivery, have been the cultural practices prevalent in the community. Similarly there have been practices of giving supplementary diet to the child during the weaning period at the age of six months and some of the family planning practices.

**Success depends upon human development**

The success of IEC depends primarily on the quality of training programmes for the personnel in the Health and Family Welfare and other Departments having linkages with such a programme, besides those for the volunteers and opinion leaders working in the community. Co-operation between the communicator and clinical worker must also be achieved on the basis of clear and close agreement on their respective roles in consultation with each other. Obviously, human development efforts have a vital role to play in making people health conscious and their responsibility towards their family and the nation for adopting a small family norm by practising family planning methods. There could be no denying the fact that while IEC activities can help bringing home to the people that diseases like T.B.,

**Success of Information, Education and Communication (I.E.C.) depends primarily on the quality of training programmes for the personnel in Health and Family Welfare and other Departments having linkages with such a programme, besides those for the volunteers and opinion leaders working in the community. Cooperation between the communicator and clinical worker must also be achieved on the basis of clear and close agreement on their respective roles in consultation with each other. Thus, human development efforts have a vital role to play in making people health conscious and in making them realise their responsibility towards their family and the nation by adopting a small family norm.**

Trachoma, Malaria and Leprosy existing in the community are preventable and curable by taking advantage of health services and facilities and that small family norm can be easily adopted.

**The steps in communication**

Wilbur Schramm suggested at least four steps are required to clear the hurdles in the way of effective communication: (1) to attract attention to it; (2) to have it accepted; (3) to have it interpreted; and (4) to have stored away by the audience for later use. All these things of course depend on the fraction of selection determined by the selective exposure, (i.e. the likelihood of selection of any information by the audience). It is a well-known fact that different types of information are being transmitted through various media and person-to-person contact in the universe, but of all these only a few are selected as they catch attention of the audience. This is called selective exposure. In fact, selective exposure is due to a complex set of causes—some of which may be operative at one time, some at another and many of which in any particular case may be more powerful than the tendency to try to reinforce one's own opinion. Selective exposure is affected by (i) the availability of the stimulus; (ii) the contrast with its background; (iii) the set of receivers; (iv) estimated usefulness of the stimulus, and (v)

the education and social status of the receiver. All these determinants for effective communication have to be borne in mind by all professional communicators, which include health educators, extension educators, mass education and information personnel, para-medical and medical staff while coming in contact with the people and the village health guides.

**Types of communication and its impact**

Communication may be divided into four types: (i) Informational; (ii) Instructional; (iii) Persuasive; and (iv) Entertaining. The effects of each of these types can be observed in the form of reactions of and changes in the audience. The reaction and changes of informational type are of various interests or disinterests, gratitudes or doubts in the audience observed in the form of storage of new and relevant information to be observed in the cognitive basis of behaviour. In the instructional type of communication, the reaction of the audience is that of sometimes related to learning activity. While the change is observable in the storage of information perceived as relevant, emphasis is seen on storage for long term use in problem solving. On the other hand in persuasive communication, the reaction in the audience is observable from their concern or rejection. The change by such

communication is brought about on cognitive or behavioural process to alleviate concern. The communication of entertaining type just serves the purpose of creating interests, and the reaction in the audience is that of 'arouser', while the changes are a few. Sometimes new spheres for social interactions are created or new understanding of environment developed. The feature films are a typical example of this type of entertainment oriented communication.

The health and family welfare educators and personnel engaged in communication work thereof have to take into consideration (a) the learner's goal; (b) other goals; (c) learner's specific goals; (d) interaction or relationship between the educator and the learner, and the goals—informational attitudinal and behavioural. It need not be over-emphasised that he has to take into consideration the barriers to learning in his audience, which are present in the form of ethnic, social, intellectual and other impediments. Other positive and negative motivational forces directed to the learner cannot be ignored. Thus, the health educator has to put forth his efforts in (i) Identifying the barriers in communication between him and his audience; and (2) finding out the goals of the learner as to how near they are to the goals set by the educator. If these goals are conflicting or far apart, the communication is affected adversely.

#### **Human development of communication personnel**

There is a felt need for taking into cognizance the necessity for raising the professional expertise and status of the communication staff. It is desirable that these persons at various levels should be given orientation in the communication discipline. Obviously, there is an urgent need to decentralise communication planning to make it more realistic. A systematic pro-

cess of communication planning and human development in this field has to be taken up with all seriousness. For this an all-out effort has to be made by involving district and block level functionaries as also the representatives of the community. In order to make communication programmes area specific based on local needs, separate communication plans should be developed at each block and district in consultation with the government and non-governmental agencies for inter-sectoral planning. Certainly, we cannot make an ad-hoc approach for mass media support in communication or for human development to reorient our workers for effective communication support to health and family welfare programmes. Extension education activities, which are being carried out in a very perfunctory manner are adversely affecting the credibility of workers and the media besides causing impediments in the performance of block extension educators (BEEs) at the peripheral level. Thus, a uniform communication training programme needs to be designed for BEEs and other health education staff.

Proper coordination between programme personnel and communication training in each State is the need of the hour. A core communication training group should be formed to look into the long-term and short-term professional courses, development of chain of communication training institutions and standardisation. For this purpose strengthening of communication training departments in the central training institutes and in the regional training centres of health and family welfare is desirable. This, of course, has to cover the medical colleges with similar facilities and inputs.

#### **Medical Colleges may take the lead**

The post-partum programme

and the Social and Preventive Medicine Departments have infrastructure in medical colleges for Health and Family Welfare communication. We have Lecturers (Health Education and FW) with supporting staff and material. These teaching staff have rich experience in health education and family welfare communication, besides specialised training in health education, extension education and communication. The post-partum programme has been expanding since 1966 in a phased manner and has demonstrated motivational impact. These units under the Lecturers in Health Education and Family Welfare in all the medical colleges have good potentials for contributing their mite in the communication training strategy. They may also take up communication training of block extension educators in collaboration with the Social and Preventive Medicine Departments besides training other para-medical personnel, which they are already doing. The only input that may be required will be to provide upward professional mobility to the present staff in their discipline. They may function on the pattern of Central Training Institutes for training in communication. Incidentally, it may be noted that most of the medical colleges have audio-visual equipments and materials in these Units which are carrying out health education and family welfare mass education activities.

#### **Co-ordinated efforts for training**

It is only with a systematic approach and well-concerted efforts to coordinate the training programmes in IEC for Health and Family Welfare programme that we can make an impact on these programmes. While on one side we should try to strengthen communication faculty in all central training institutes, we have to make

*(Contd. on page 154.)*

Swasth Hind

## FATS AND YOUR HEALTH

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Fats are highly concentrated sources of energy. These have more than double the energy provided by equivalent amount of other foods. Each group of fats provides 9 kilo calories. Hence, foods rich in fat also become rich in energy. If the diet is very low in fat content, the person feels hungry all the time. Excess fat reduces appetite and is also difficult to digest. If more food is taken than is needed for fuel, body-building and repair, then the body stores it as fat.

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**F**OOD is a prime necessity of life. Our health depends on the quality of food we eat. Also, adequate quantities of food is needed for the growth of the body, and to maintain good health and prevent disease.

The food materials we need for growth and development and normal functioning of the body are derived from several substances, (called nutrients), which are present in the food we eat. These nutrients are the proteins, fats, carbohydrates, vitamins and minerals.

Proteins present in our food are the body-building materials. Vitamins are essential for maintaining normal health of the body. Carbohydrates and fats supply the energy for the proper functioning of the body.

Now let us learn something about the fats and oils. We hear a lot on this subject—people often talk about them, doctors discuss them with their patients and teachers tell the students about fats and oils.

### What are fats?

Fats are highly concentrated sources of energy. They have more than double the energy provided by equivalent amounts of other foods. Each group of fats provides 9 Kilo Calories. Hence foods, rich in fat also become rich in energy. The

brain and the red blood cells require a small but continuous supply of carbohydrate in the form of various sugars and starches for normal function. But when the energy comes chiefly from fat, the blood becomes acidic and results in a disturbed brain and body function. Women, especially pregnant women, are more prone to this condition.

Fats in our body serve other vital functions too. They provide support to our body organs like heart, kidney and intestines. The fat present under our skin protects us from cold by forming an insulation.

Fats help make the food we eat more palatable. They are essential for the absorption of certain Vitamins (Vitamins A, D, E and K).

It is easy for us to have an idea about the amount of fat we consume as ghee, butter, vegetable oils etc. These are called 'visible fats'. Fats present in cereals, pulses, vegetables, milk, nuts etc. are called 'invisible fats'. In our diet these furnish 9% of the energy.

Fats have essential fatty acids which have certain specific functions in the body and they contain tocopherol or vitamin E which prevents oxidation of unsaturated fatty acids. There are two types of fatty acids known as saturated and

unsaturated fatty acids. Some of these unsaturated fatty acids are essential for the synthesis of cell membranes, hormones and several other functions. These essential fatty acids are linoleic, linolenic and arachidonic acid. Linoleic acid is really needed as the other two can be synthesised by the body from linoleic acid itself. General deficiency is not found in human-beings as two to three grams of dietary linoleic acid is supplied by most foodstuffs and ordinary diets.

### Sources

The chief sources of fat are oil-seeds such as safflower, gingelly (sesame), mustard, rapeseed, groundnut, soyabean, maize, sunflower seed and cotton seed.

The other sources of fat are milk, animal fat, some nuts, fish oil, palm oil, coconut and red palm oil.

The amount of fat required in diet is not certain, and even with low intakes visible symptoms of fat deficiency is extremely rare. The fat content of foods varies from negligible amounts in fruits to more than 40 per cent in nuts.

Dietary sources of unsaturated fatty acids are all vegetable oils (except coconut oil), codliver oil, sardine oil, walnuts, and groundnuts. Also, cereals such as wheat,

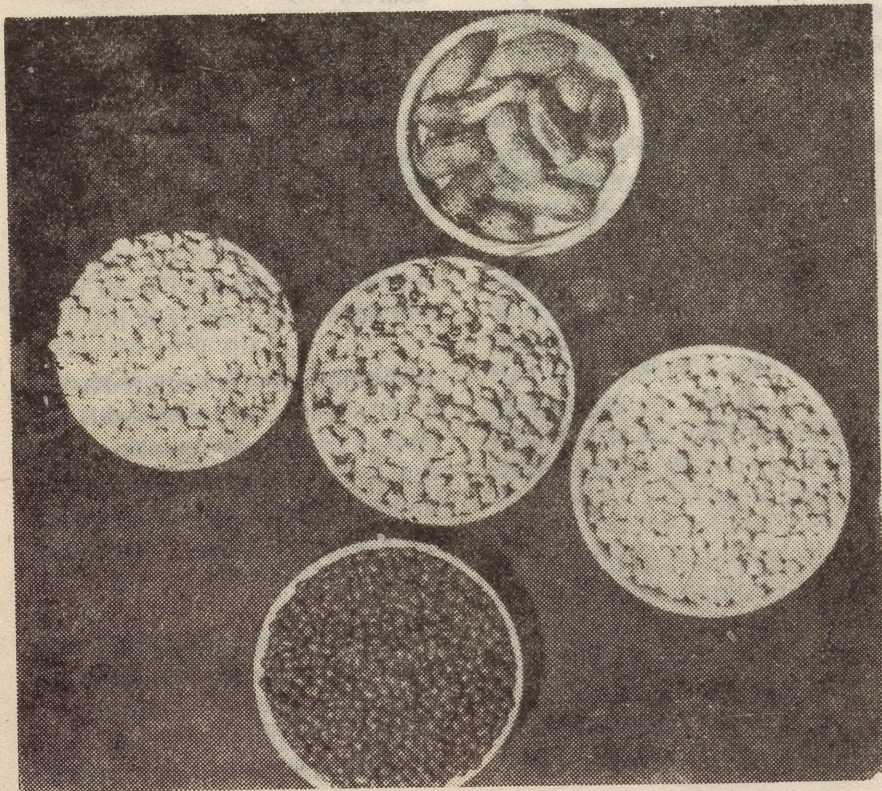
*bajra* and maize, and pulses like Bengalgram and some leafy vegetables.

Butter, cream, ghee, coconut oil and animal fat contain more saturated fatty acids. Vanaspatis of all kinds are composed of saturated fatty acids. In the process of hydrogenation of vegetable oils some of the unsaturated fatty acids are converted to saturated fatty acids.

In refined oils, the process of refining improves the taste and quality of the oil and removes the rancid material present.

The upper classes of India are more likely to use vanaspati, butter and *ghee* whereas, the poorer classes consume only vegetable oil. All persons may use *ghee* on special occasions. Apart from religious use, *ghee* is associated with strength-giving properties and believed to be easily digestible. However, apart from taste preference, it is a saturated fat and does not justify the money spent on it.

Fats present in cereals, pulses, vegetables, milk, nuts, etc., are called invisible fats



### Fat and Coronary Heart Disease

Intake of excess fat is harmful for health. It is an important contributory factor in many diseases like hypertension and coronary heart disease. With age, the arteries thicken and become hard. When this occurs in the arteries feeding the heart, the blood supply and nourishment of the heart is reduced, which results in coronary heart disease.

Cholesterol is a substance in the blood which is often responsible for thickening and hardening of arteries. It is available to the body directly from different foods and is also synthesised in the body.

Brains, egg, butter, fatty pork, fatty fish and chicken contain substantial amount of cholesterol. Whole milk and cottage cheese (paneer) also contain some amount of cholesterol. There is no cholesterol in vegetable oils and

nuts. However, relationship between dietary cholesterol and blood cholesterol is not very clear.

If blood cholesterol is high, it may result in coronary heart disease and other heart disorders. It is an established fact that unsaturated fats tend to decrease the blood cholesterol level whereas saturated fats are found to increase it. Consumption of vegetable oil can reduce the possibility of the occurrence of heart disorders.

Adults leading a sedentary life, especially middle-aged and overweight persons should avoid fattening foods containing saturated fats such as butter, ghee, cream, vanaspati, all foods fried in deep fat, fatty meat and rich curries, nuts, chocolate, cocoa and sweet-meats. Such persons should also avoid stress and strain and excessive consumption of sugar, coffee, tobacco and alcohol.

### Obesity

Being markedly overweight or underweight is a kind of illness. If the diet is very low in fat content, the person feels hungry all the time. Excess fat reduces appetite and is also difficult to digest. If more food is taken than is needed for fuel, body-building and repair, then the body stores it as fat. Obesity is the excessive accumulation of fat in the body.

An obese person weighs 30% over what he should. He may suffer from one or more of the following symptoms:

1. Shortness of breath;
2. Poor adjustment to temperature changes and during hot weather;
3. Reduced capacity for mental work;
4. Increased susceptibility to infections and disease;

Swasth Hind



Food materials we need for growth and development are derived from several substances, called nutrients, which are present in the food we eat. These nutrients are the proteins, fats, carbohydrates, vitamins and minerals. Photo shows demonstration on nutrition.

5. A tendency to high blood pressure;
6. A tendency to diabetes;
7. Over-worked heart and blood circulation;
8. Increased strain on joints and ligaments often leading to back and joint pains;
9. Personality problems.

One should be careful about one's body-weight. Overweight can shorten the span of life.

#### SOME POINTS TO PONDER:

1. Eat less fat, especially the saturated fats. Fat intake of 10

to 20 grams per day has been recommended.

2. Cook with minimum fat. Wherever possible, substitute with vegetable oils.
3. Cut down on foods rich in cholesterol.
4. Use other cooking methods for deep frying. If you have to fry, heat the oil just right so that the food will soak up less fat.
5. Prolonged heating and reheating of fats result in some form of toxicity.

6. *Khamiri* (Leavened) foods, eggs, sugar and wheat need more fat for frying.

7. Addition of fat to the dough increases the amount of fat absorbed during frying.
8. Addition of rice or maize flour or steaming a part of the wheat flour will reduce the fat required in the dough.

“TAKE CARE OF YOUR PRECIOUS BODY”

—CHEB

(Contd. from page 150)

an endeavour to organise a national communication training and resource centre for health and family welfare. In order to have maximum return by way of multiplier effect from training of the key personnel to the training of the functionaries at the peripheral level it is necessary that the training programme should be decentralised as far as possible. Some models may be developed at the district and block levels for human development to

elicit co-operation of the functionaries and people's participation in these programmes. The training of opinion leaders in the community is no less important, so as to enable them to be effective communicators for authentic information on scientific lines about health and family welfare related subjects. These are the people who are change agents and have credibility in the community to which they belong. Health guides form a link between the health services and the com-

munity. Though they are trained, refresher courses for them in IEC need to be organised. Multi-purpose workers—Male & Female, *Dais* and other para-medical staff have also to be provided with communication skill, if we aim at achieving "Health for All by 2000 A.D.", and reducing the birth rate so as to achieve net reproduction rate of 1.0 in order to stabilize our population, as envisaged in our 'National Health Policy'. Δ

(Contd. from page 139)

3. Bleeding pervagina other than menstruation.
4. Bleeding after intercourse.

Cramer (1974) reported significant positive correlation between the Cytological screening and the extent of the decrease in the morbidity and mortality of the cancer cervix in various parts of the U.S.A.

#### Pap Test

This is the test which is used for screening of cancer cervix. It gives an idea about cellular pattern of the cervix. It has a very simple techni-

que. It is not painful. Hence, patients compliance is very good.

#### Module for Community Control of Cancer Cervix

By utilising the available health infrastructure, and with the involvement of the research institutions and voluntary organisations, community based cervical cancer control programme can be organised. Instead of running a programme in the vertical way, it need to be implemented horizontally and should form an integral part of the health services. All the women of and above 35 years of age

and those who are at risk should be screened periodically. For the screening purposes and creating an awareness regarding the prevention of the diseases, female multi-purpose workers/ANMs/LHVs can be trained at the PHC level. Adequate field and cytological laboratory facilities and proper channel of referral system, are other important requisites.

Thus a well organised community based mass screening programme for prevention of cancer cervix must be planned for early detection and control of cervical cancer. Δ

# DRUG DEPENDENCE AND ABUSE

## —The Global Situation

Drug abuse is worsening rapidly around the globe, in both developed and developing countries. In many countries, drug abuse has today become one of the major causes of health and social problems. Counting all those who abuse drugs, or are dependent on them, the world total could be in the hundreds of millions. Although it is difficult to quantify the number of persons abusing drugs, the United Nations has estimated that there are over five million injecting drug users in the world.

There has been a continued escalation of cocaine, heroin and methaqualone abuse, although the abuse of cannabis, amphetamine-type substances, benzodiazepines and sedative-hypnotics has also reached high levels in many countries. Heroin abuse continues to pose serious problems in North America and Western Europe, in a number of countries in Asia and the Far East and Oceania, as well as in certain countries in the Near and Middle East. The abuse of cocaine has risen sharply in North America and Europe, while use of the cocaine derivative "crack" is escalating sharply. Designer drugs have also appeared in the United States and have spread to many other countries, posing another threat. The abuse of psychoactive drugs such as tranquilizers, depressants and stimulants of the central nervous system is also a problem, affecting the health of the peoples in both developed and developing countries.

Drug abuse knows no boundaries of social class, sex or age. Drug abuse is increasingly affecting young people in both industrialized and developing countries. Children and adolescents are becoming involved in drug abuse at an earlier age than before. Although the majority of persons using or abusing drugs are males, the proportion of women abusing drugs continues to increase in both developed and developing countries. An increasing number of infants are being born in the developed world already addicted to drugs such as heroin, or cocaine.

In the Americas, and recently in Asia, injecting drug users have become increasingly vulnerable to injection with HIV, the human immunodeficiency virus which causes AIDS. Intravenous drug users represent a large proportion of reported AIDS cases on the East Coast of the United States and in southern Europe, especially in Spain and Italy. In Asia, exten-

sive spread of HIV infection among drug users has been documented in Thailand, and HIV infection has also been found among intravenous drug users in Rangoon, Myanmar. Thus, the global epidemic of drug use threatens to expose new populations to explosive HIV spread.

Abuse of drugs is a growing problem in all regions of WHO. In Africa, government reports indicate a deterioration in the drug abuse situation. Problems with cannabis have escalated in recent years due to the abuse of narcotic drugs, such as heroin and cocaine. In the Americas, the abuse of cocaine, cannabis and multiple drugs, often involving alcohol and psychotropic substances, continued to increase. In Asia and the Far East, heroin abuse has continued to increase, reaching epidemic proportions in some countries. In Europe, the main problem is the abuse by injection of heroin, with cocaine and amphetamine use rising rapidly. In the Near and Middle East, cannabis abuse is now accompanied by use of heroin in several countries.

### The Role of WHO

Reduction in the health and social problems caused by drug abuse is an essential part of the WHO mandate for achieving the objective of Health for all by the year 2000. Within the total response to drug abuse, the health element deserves greater prominence because it is precisely the health sector which can play a key role in mobilizing, supporting and sustaining effective action to reduce demand at international, national and community levels.

WHO advises the Secretary General of the United Nations on psychoactive substances, which create public health and social problems. For example, designer drugs, *captagon* and *pemoline*, are recent examples.

WHO is uniquely placed to lead the global efforts of health, science, medicine and social services against drug abuse and dependence. The three main objectives of WHO's global action to reduce drug abuse are:

\* preventing the spread of drug abuse in individuals, families, communities and countries;

\* developing effective approaches to the treatment of drug dependence and associated diseases;

\* collaborating in controlling the supply of licit psychoactive substances.

Within the context of its current programme for preventing and controlling drug abuse, WHO has promoted or carried out activities, including:

\* Monitoring the world situation with respect to the use and abuse of psychoactive substances.

\* Reviewing the health consequences of different drug control policies.

\* Assessing the effectiveness of health promotion to reduce drug abuse.

\* Developing special programmes for adolescents, and for use in the workplace and at community level.

\* Assessing the quality of care in drug dependence treatment.

\* Preparing training materials for use in primary health care.

\* Analysing the use of methadone in the treatment of opiate dependence;

\* Improving the handling of drug-related problems in emergency rooms.

\* Testing interventions designed to prevent HIV-related risk-taking behaviour among drug users.

\* Assessing the abuse potential and medical usefulness of psychoactive drugs and recommending a proper level of international control to be applied under existing conventions.

Building upon policy development at country and regional levels, WHO will seek to establish and maintain more effective linkages with other United Nations bodies, such as the U. N. Division of Narcotic Drugs, the International Narcotics Control Board and the U. N. Fund for Drug Abuse Control, on activities related to the prevention and control of drug abuse.

WHO plans to intensify its activities at all levels in the fight against drug abuse. This process will be begun by an intensification of current programmes, utilizing the existing resources of the Organization. Given the vast scale of the problem and the urgent need to mobilize a whole range of different activities, there is a longer-term need for substantially increased resources globally for the fight against drugs.

—W. H. O.

### WORLD CHILDREN'S DAY CELEBRATED

On 6 May, the fifth annual World Children's Day was celebrated at the United Nations Headquarters with 1200 children from over 120 countries participating in what was called the "Children's General Assembly".

The delegates, aged six to 12 years, offered their solutions to world problems and signed a petition for the speedy ratification of the Convention on the Rights of the Child.

Many of the children involved have been working on projects encompassing the theme of this year—"We will shape the future by making a difference now". Projects include work on such issues as environmental pollution, racial prejudice, hunger, homelessness and drug abuse.

Actress and social activist, Marlo Thomas, hosted the ceremony. One of the highlights was an award given to Mother Teresa for her work with children in the slums of Calcutta.

—United Nations Newsletter  
19 May 1990

# BOOK REVIEW

**Health Surveillance and Management Procedures for Food-Handling Personnel: Report of a WHO Consultation Technical Report Series, No. 785, 1989, 47 pages (available in English; French and Spanish in preparation) ISBN 92 4 120785 X; Sw. fr. 6.—/US \$ 4.80 Order no. 1100785**

This book records the conclusions and recommendations of an international group of experts commissioned to evaluate the effectiveness of current procedures for protecting the public from disease outbreaks caused by food handlers. The report focuses on the question of whether routine medical examinations of food handlers are sufficient to prevent, or at least minimize, food contamination.

To answer this question, the report first examines all infections and intoxications potentially transmissible by food handlers and then considers the extent to which physical examinations, medical histories, throat swabs, blood tests, x-rays, skin tests, and examination of faeces are capable of detecting symptomatic or asymptomatic carriers. Readers are reminded that the information obtained from a health examination is valid only for the time at which it was carried out, that some infections are detectable for periods as short as 48 hours, and that others, such as infectious hepatitis, are contagious before the onset of any clinical symptoms. On the basis of this review, the report concludes that pre-employment and subsequent routine medical examinations of food handlers are ineffective and thus unnecessary.

The remaining sections concentrate on the identification of effective alternative preventive measures. These include the surveillance of outbreaks of foodborne disease, use of the Hazard Analysis Critical Control Point (HACCP) system as a rational and up-to-date method of preventing foodborne diseases, and several measures within the food industry.

While noting that these methods are more cost-effective as well as more reliable than routine medical examinations, the report stresses the need to train large numbers of scientific and technical professionals as well as supervisors, managers, and employees within the food industry. Examples of health cards, material

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Centre Calling

for use in training courses and in health interviews, and a model form for securing the agreement of food handlers to report designated illnesses are presented in separate annexes.

# SWASTH HIND

SPECIAL NUMBERS 1989

January	Anti-Leprosy Day
March-April	World Health Day (Theme : Let's Talk Health)
June	Eye Health Care—I
July	Eye Health Care—II
August	Nehru Centenary Special
September	Drug Addiction
December	World Day on AIDS

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