Feature — Health

Let's Make Polio a Thing of the Past

by Dr R N Basu

POLIO is a disease which cripples the child. It leaves a very deep and permanent impact not only on the victim but also on the entire family and society. A survey to estimate the incidence of poliomyelitis conducted in Bangladesh in 1983 confirmed that about 10,000 children get polio paralysis annually. Poliomyelitis was considered as the single major cause of lameness of children (35%). About 71 per cent of the polio cases occurred among children are under three years of age.

Expanded programme on immunization (EPI) was initiated in Bangladesh in 1978 and the programme was intensified in 1986. The immunization services were made accessible to all the 460 thanas and 88 towns by 1990. The immunization schedule provided three doses of oral polio vaccine (OPV), at an interval of minimum four weeks, first dose starting at six weeks of age. From 1993, the fourth dose of polio vaccine is administered along with measles vaccine. The coverage of children under one year of age with three doses of polio vaccine has increased from 2 per cent in 1986 to 74 per cent in 1993. Routine vaccination has led to the decrease in the incidence of poliomyelitis, as revealed from various survey findings.

Poliomyelitis is transmitted from child to child mainly through faeco-oral route. Polio virus can survive and multiply only in the gut of susceptible children. In outer atmosphere (out of intestine) the life span of polio virus is very shot. There is no insect vector (like malaria) or animal carrier (like tetanus) of the disease. OPV prpduces both general and local immunity. Technically, it is thus feasible to eradicate poliomyelitis. Eradication means not only absence of polio cases but also elimination of the polio virus. If Bangladesh could eradicate a dangerous disease like smallpox 20 years back, which used to kill, disfigure

and blind children, what could possibly stop us now? Universal Child Summit of 1988 had resolved to eradicate poliomyelitis from the world by 2000, and Bangladesh is signatory of this declaration.

The following strategies have been recommended by World Health Organization (WHO) to eradicate poliomyelitis:

- Achieving and maintaining high immunization coverage.
- Reporting and investigating all acute paralysis cases among children (suspect polio).
- Conducting supplementary immunization, which includes case response, mopping up and National Immunization Day (NID).

Routine vaccination alone is not adequate to eradicate the disease. Detection of suspect polio cases is important for identifying risk areas for containment action. NID is a supplementary vaccination strategy aiming at interruption of disease transmission.

The story of Brazil's polio eradication is a lesson in public health management. In 1980, Brazil, a country with low socio-economic development and similar population size as of Bangladesh, showed to the world that mass polio vaccination campaign on a single day was operationally possible.

NID means vaccination simultaneously throughout the country with OPV of all children under five years, repeated twice, with four to six weeks interval. This simultaneous mass vaccination helps to establish vaccine virus (which does not cause the disease but is capable of producing immunity) in the community in place of wild polio virus (disease producing virus). In each dose of OPV, millions of vaccine viruses are introduced in the intestine of susceptible child, where it takes foothold and multiplies. This gives rise to extensive dissemination of vaccine virus and when repeated, the wild polio virus is unable to survive. The child's intestine, being loaded with rapidly multiplying vaccine virus, displaces wild polio virus and leading to its elimination.

It is clear that, even in poor socio-environmental condition, like unsafe water supply and poor sewage disposal, NID can work wonders and is the only method to eradicate poliomyelitis. The vaccination has to be done irrespective of the previous immunization status of the child (whether he/she is properly or improperly immunized by routine vaccination) and irrespective of the health status of the child (healthy or sick). This is due to the fact that polio vaccine drop does not harm the child. NID does not replace the routine vaccination programme in any way. Routine programme has to continue as scheduled.

The story of Brazil's polio eradication is a lesson in public health management. In 1980, Brazil, a country with low socio-economic development and similar population size as of Bangladesh, showed to the world that mass polio vaccination campaign on a single day was operationally possible. Nearly 90,000 vaccination booth were set up, and 3,20,000 community volunteers took part in the campaign. About 18 million children, less than five years of age (the susceptible group), received OPV on two days, two months apart. Nearly 100 per cent coverage was achieved.

The results of this campaign were extraordinary. Polio disappeared from the map of Brazil, over a period of three years. After the success in Brazil, the OPV mass campaign (NID) were widely introduced in the rest of the South American countries, for successful eradication of polio within a shortest possible time.

The eradication of poliomyelitis is a global programme and its progress in each country is closely monitored by WHO. In 1988, reported polio cases in the world was 34,762, whereas in 1993 it was 7,898, a reduction of 75 per cent of cases. In 1993, 141 countries reported zero case of polio, of which, 106 countries reported zero case for last three years. During last two years, NID has been implemented in several Asian countries like China, the Philippines, Vietnam, Laos, Cambodia, Pakistan, Iran, Thailand and Delhi in India. It is encouraging to note that Ministry of Health and Family Welfare of the Government of Bangladesh has decided to implement first NID in 1995.

Locating and vaccinating about 20 mission susceptible children (under five years) in Bangladesh on a single day, within a short span of six to eight hours is a challenging task. It will require tremendous allout effort, coordinating manpower from allied ministries (health and family planning, education, social welfare, agriculture, home etc) and non-government organizations. Half of the cost for implementation of NID will be on procurement of OPV and the government is mobilizing resources from international organizations like Rotary International, WHO, UNICEF and other bilateral agencies for timely supply of vaccines. If the country can hold general election, and census operation in one day, Bangladesh can also successfully implement NID to achieve a polio-free country. A strong political commitment, necessary financial input, meticulous organizational planning and motivational campaign are essential prerequisites for the success.

Replenishing Bhutan's Salt of the Earth

by Patricia Roberts

RATNA lies in the maternity ward of Thimphu General Hospital, in Bhutan. She is 40 years old, deaf and mute, and makes her living working in a road gang. Her eyes tell the story that her lips cannot express.

The two women in adjacent beds avert their eyes, embarrassed to see her misfortune next to their own good fortune. Instead they cast proud, covert glances at the healthy newborn boys cradled in their arms.

Ratna's arms are empty. A few hours earlier, a midwife used forceps to pull a baby girl from Ratna's body. The infant made a few gasps for air, then died. Nurses hurried away with the tiny, deformed body — head too large, neck and arms too short — and wrote "monstrous baby" on their charts.

For generations, this particular tragedy has repeated itself across the Himalaya. The clue to its cause is Ratna's swollen neck, an indication of a goitre resulting from iodine deficiency.

Lack of iodine can result in any number of problems, from metabolic disorders to cretinism, a form of mental retardation. Worldwife, an estimated 800 million people are at risk of iodine deficiency disorders (IDD), and 3.15 million more suffer from overt cretinism, according to 1987 estimates.

Where iodine is in the soil, even in trace amounts, it is taken up by plants and then by the animals and people who eat them. But in the strip of high landlocked countries that span the Himalaya and in the floodplains of its great rivers, heavy monsoon rains and flood waters leach essential minerals, including iodine, out of the soil. IDD is endemic in a 500-kilometre belt that stretches from the northern Indian state of Jammu and Kashmir in the west to Bhutan and Sikkim in the east and down to the flat river delta of Bangladesh.

Iodine deficiency still a major cause of infant mortality in Bhutan. — UNICEF

In the mid-1980s, efforts to make iodized salt readily available were begun. A concerted effort by the Bhutanese government, the Food Corporation of Bhutan and UNICEF to manufacture, sell and distribute iodized salt has had significant effects: An evaluation of the programme in 1992 showed that goitre prevalence had dropped to 28.5 per cent among women in northern Bhutan and 45.9 per cent of women tested in southern areas. Even better news is that more than 80 per cent of women tested in both regions showed sufficient levels of iodine to prevent IDD.

With UNICEF aid, a salt iodization plant was constructed in 1985 at Phuntsholing, near Bhutan's southern border with India. Legislation decreed that all imported salt be processed there, then distributed and stored by the Food Corporation of Bhutan (a Government organization that has since been privatized).

"Bhutan's IDD control programme is shining example of what should be done in Southeast Asia and the rest of the worlds," says Eva Nisseus, the former UNICEF Bhutan Representative. "It is proven that it's a problem that can be solved. All the ingredients are there."

The writer is a freelance journalist based in Kathmandu.

Alzheimer's Disease: The Brain Killer

by Shawkat Haider

THE degenerative brain disorder known as Alzheimer's disease is still a medical conundrum. Researchers have a gallery of suspects, from genetic links to environmental toxins. But only one thing has recently become clear: once it sets in, Alzheimer's offers no reprieve.

It is the single most common cause of dementia and the sufferers find themselves trapped inside their strange world.

The disease proceeds relentlessly, stripping victims off their humanity before it takes their lives. As it destroys the brain cells; first the memory goes, then cognition, then physical functioning. Finally, only a shell of the person is left.

CAUSES

Alzheimer's follows a predictable six to twenty year course, in which a healthy adult slowly surrenders every vestige of his mind and identity. The condition's true signature, however, is etched in the neural tissue. The brain consists of billions of nerve cells which communicate among themselves chemically via branch-like outgrowths.

Normal brain function requires that various neuron groups produce particular chemical transmitters, and that the transmitters pass freely between cells at the "synapses" where their branches meet. One hallmark of Alzheimer's disease is the breakdown of the system that produces the neurotransmitter acetyl choline. Victim's brain contains as little as 10 per cent of the normal amount — and the degree of deficiency corresponds directly to the degree of dementia.

Whether Alzheimer's is triggered by a virus, a toxin or anything else, there is no question that genes can help determine one's susceptibility. People with down syndrome, a genetic disorder involving an 'extra copy' of the 21st chromosome, almost always develop this if they survive into their 40s.

SIGNS AND SYMPTOMS

The features of the disease vary among individuals, but there are three broad stages. At first the patient notices his or her increasing forgetfulness and may try to compensate by writing lists or by soliciting the help of others. Problems with memory often cause the patient to feel anxious and depressed, but these symptoms frequently go unnoticed.

Forgetfulness gradually shades into a second phase of severe memory loss, particularly for recent events. Victims may remember long-past events, such as their school days and young adulthood, but they can't recall yesterday's visitors or what they saw on TV. They become disoriented as to time or place, losing their way even on familiar streets; their concentration and ability to calculate numbers declines and 'dysphasia' or inability in choosing the right word is noticeable. Anxiety increases, mood changes are sudden and unpredictable, and personality changes become apparent.

In the third stage, patients become severely disoriented and confused. They may also suffer from symptoms of psychosis, such as hallucinations and paranoid delusions. Symptoms are worsened by loss of memory usually most severe at night. Diseases of nervous system begin to emerge, such as primitive reflexes and incontinence of urine and feces. Some patients become too demanding, unpleasant, violent, and lose all awareness of social norms. Some become docile and somewhat helpless. Eventually, the burden for the caring relatives becomes impossible, and full time nursing and hospital care are often inevitable. Impact of prolonged emotional and physical stress affects the immune system of care-givers, making them more vulnerable to infectious disease. Families are bearing most of the burden of caring for patients. Eventually they need round-the-clock attention. In a way, the victim ceases to exist but continues to live.

DIAGNOSIS AND TREATMENT

Alzheimer's disease can be definitely diagnosed only by examination of the brain, either by brain biopsy or after death. Not only is the brain shrunken in size, but under the microscope it is possible to observe a loss of nerve cells, specks of brain debris, and tangles of nerves resembling pieces of unwound string. In the absence of any absolute diagnostic test during life, the diagnosis is a clinical one. An EEG will show increasingly slow waves. CT scanning and MRI of the brain show evidence of reduced cerebral size. Mental status tests indicate a decrease in the person's intellectual ability.

There is no specific treatment for the disease itself apart from the provision of suitable nursing and social care for both victim and relatives.

Keeping the victim well nourished, exercised and occupied helps alleviate anxiety and personal distress, especially in the earlier stages when the person is still sufficiently aware of his condition. Tranquilizers can often improve difficult behaviour and help the patient sleep. Counseling of the victims' families can help to prevent problems, such as physical abuse of the afflicted person, and can minimize disruption of family life.

Alzheimer's disease is known to strike mainly the aging people. No one really knows why it strikes and the dimensions of the problem are more overwhelming than anyone had realized. The percentage of the victims rises with age, and 47 per cent of those over 85 have the disease. This baffling ailment becomes the fourth leading cause of death for adults in the United States and may afflict a huge 14 million by the year 2050. This has now become very much a global problem.

The disease proceeds relentlessly, stripping victims off their humanity before it takes their lives. As it destroys the brain cells; first the memory goes, then cognition, then physical functioning. Finally, only a shell of the person is left. It is not a normal part of the aging process. It is a disease — fatal and, so far, incurable.

Developing Private Sector Health Services — II

by Mahmud Hassan

If people are given an option of paying a small amount a month, for a guaranteed service at the private clinic, perhaps many will be able to pay and will have access to private clinics. This is, of course, nothing but a health insurance method of paying for medical service.

HEALTH services in Bangladesh are delivered through hospitals, physicians, paramedical personnel and numerous indigenous healers. In most countries of the world — both developing and developed — the distribution of resources, among different health care service delivery channels, favours hospitals. In 1987, the share of hospitals' expenditure in Bangladesh was 61 per cent of the total health care budget (World Bank, 1991). Yet, the population-to-hospital bed ratio for the same period was over 3,300, whereas the corresponding number for the low income countries of the world was 756. Moreover, most hospital beds are located in the urban areas and most of the population live in rural areas. Most of the hospitals are in the public sector, but the lower quality of services in those hospitals forces people to look for alternatives.

Low turnover in public hospitals that we see in Bangladesh are often attributable to the poor quality of services caused by insufficient drugs, other supplies and absence of medical staff (Barnum and Kutzin, 1991). People who can afford it go to private clinics. Some people even go to foreign countries for medical or surgical treatment costing large sums of foreign exchange. People who cannot get foreign exchange approval from the Bangladesh Bank might resort to the use of *hoondi* — and illegal form of foreign exchange use — to get the medical care service abroad.

The private clinics are expensive and offer services limited only to routine medical and surgical care. Most private clinics have better service than the public hospitals, but due to high cost of care, the vast majority of the population does not have access to the private healthcare facilities.

Increased Access to Private Clinics

Cost of service is the main reason for poor access to the private clinics; i e, many people do not have access to the private clinics because the entire cost of service is payable at one time cash payment. Very few people have savings of substantial amount to be paid in cash for the services in private clinics. If people are given an option of paying a small amount a month, for a guaranteed service at the private clinic, perhaps many will be able to pay and will have access to private clinics. This is, of course, nothing but a health insurance method of paying for medical service. The principle of insurance works by spreading the risk of high cost of care across a large number of subscribers. If insurance is offered to individuals, people who are sick are likely to enroll first. This is called adverse selection in insurance terminology. An insurance company cannot operate with only sick people as the subscribers. In order to avoid adverse selection, insurance companies usually invite group enrollment. This implies that health insurance may be offered to employees of the government, autonomous bodies, NGOs and large private firms. Such an insurance system will have its supply side-effect on the private sector encouraging growth and competition among private clinics for quality and mix of medical care services, allowing government to intensify its rural healthcare programme.

Several different organizational arrangements may be considered for the implementation of the health insurance plans. The traditional system of insurance is such that a firm sells policies to individuals and the policy-holder may go to any provider to get the required service. The provider bills the insurance company for the service. This type of reimbursement usually encourages cost escalation and may be subject to fraud and abuse of the system. None of the three parties involved in the deal — the insurance company, the provider of the medical care and the insured — has any incentive to be efficient for the production and delivery of the service.

A system of healthcare insurance that combines the insurer and the provider of service as one entity is known as a Health Maintenance Organization (HMO). There are four basic types of HMOs: staff HMOs, medical-group HMOs, independent practice associations (IPAs), and networks. Staff-model HMOs hire physicians as salaried employees. Group-model HMOs function as a medical-group practice, with a number of physicians operating as a partnership or corporation that contracts with HMO management and the insurance plan to provide service, pool income, and redistribute income according to a predetermined formula. There are two basic variations of the group-model HMO. (1). The group contracts with a non-related HMO corporation for physician services. (2). The group considers its own HMO, health plan and insurance entity as separate product lines, with a budget incorporated as part of the medical group. Because they are seldom sufficiently capitalised, the group HMOs in this second sub-category are few in number.

The Independent Practice Association (IPA) is a separate legal entity from the HMO that contracts with individual physicians practicing in a traditional office setting. There are two basic subcategories of IPAs. The oldest variation of an IPA contracts with a separate entity or other HMOs to provide physician services on a fee-for-service basis. The second variation of an IPA actually develops and contracts its own separate HMO plan. The network version of the HMO is an alliance of several HMOs, IPAs and hospitals. Networks are especially attractive to multi-regional employers.

A version of the health insurance system called a Preferred Provider Organization (PPO) negotiates a price schedule for different services with hospitals, physicians and laboratories, and requires its insured to go to these providers for the necessary service.

A Health insurance system of payment for medical care establishes a credible demand for service. It eliminates the burden of a one-time big expense for prospective patients by a systematic periodic payment of a small premium. The basic pre-requisite for the success of any insurance plan is to have a large pool of subscribers so that risk can be spread over a large number of policy-holders. In order to save the system from overuse and ultimate bankruptcy, a sufficient co-payment and deductible are usually required. The co-payment is the amount an insured is supposed to pay every time a service is received. The deductible is the amount that an insured has to pay before insurance kicks in. As an example, suppose there is a Tk 500 deductible for the coverage of prescribed medicine. An insured has to pay up to Tk 500 out of his/her pocket during the insurance period and the cost of medication above Tk 500 would be reimbursed by the insurance company. The presence of a deductible retards unnecessary small claims. Premiums can be community-rated, group-rated, or experience-rated.

Development of the Private Healthcare System

Improvement and modernization of the private healthcare sector must be a part of any comprehensive strategy of the government of Bangladesh for overall health service in the country. It will need a three-pronged approach to encourage this expansion: credit, management improvement, and development of new healthcare system. The major tasks involve facilitating the availability of credit to medical practitioners, investors of clinics and diagnostic services; augmenting the institutional capacity and motivation of financial institutions to provide loans to private health care providers, while improving the technical capability of commercial banks for financial analysis and services; and improving the capacity of private healthcare providers to develop caused effective repaid healthcare services.

Private healthcare practitioners comprise a small portion of the total economy in Bangladesh and are highly concentrated in metropolitan areas. Inadequate access to commercial credit for start up and expansion of private practice is a critical constraint to the expansion of the private sector healthcare outside the major metropolitan centres. In particular, many physicians who work in the public sector and moonlight after hours will prefer to leave government service and set up full time private practice if they could have secured credit for the required considerable investment. This credit availability would not only stimulate expansion of the private sector in the underserved areas and thereby diminish the burden of the public sector health facilities, but would also increase the access of health service to a larger population.

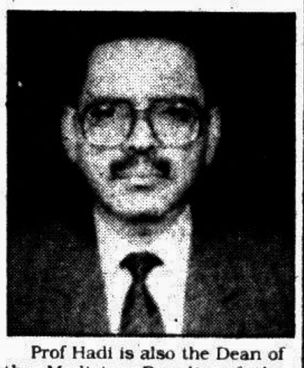
Another basic constraint to development of the private medical market is the relative lack of modern management capabilities. Individual, group and prepaid health care services use specific systems for monitoring and controlling personnel and physical resources and for managing costs and billing system. They will need technical assistance and training to enhance the managerial capabilities of these private practices to improve the quality of healthcare services and to facilitate greater efficiency and profitability. This should also encourage expansion of private healthcare service and diminish the burden of government facilities.

The writer is an Associate Professor, Department of Health Service Administration, University of Alabama at Birmingham, USA.

Doctor Honoured

by DMCH Correspondent

PROFESSOR Mohammad Abdul Hadi, Principal of the Dhaka Medical College (DMC), recently was elected Fellow of the Royal College of Physicians (FRCP), Edinburgh at the quarterly meeting of the college. The meeting was held on February 2,1995.



Prof Hadi is also the Dean of the Medicine Faculty of the Dhaka University (DU) and the Professor and Head of the Department of the Urology of the Dhaka Medical College Hospital (DMCH).

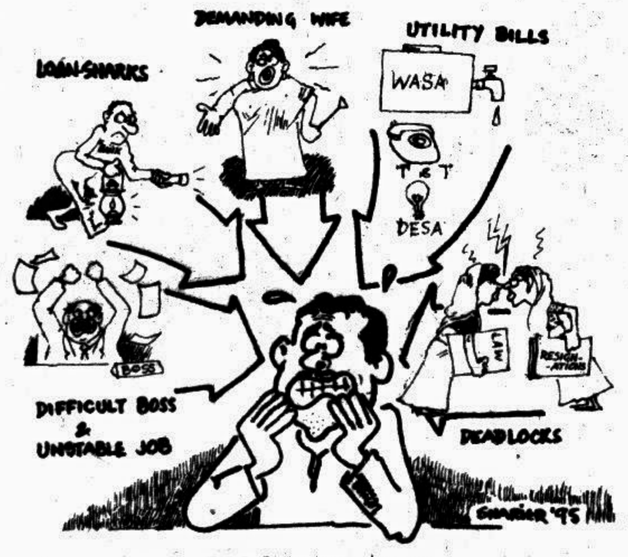
Prof Hadi is a distinguished academician and surgeon of repute. He was awarded of Jafery Gold Medal for the FCPS Examination.

Prof. Hadi was the Chairman of the Editorial Board of the Bangladesh Medical Journal from 1992 to 1994 which is the official organ of the Bangladesh Medical Association (BMA).

Currently, he is elected the Chairman of the standing recognition committee of the Bangladesh Medical and Dental Council (BMDC).

Stress and Heart Ailment

by Dr Mahboob Ali



STRESSFUL LIFE

OFTEN these questions are asked: What do you mean by "stress" exactly? How is stress related to heart attacks? How serious or true is the relationship between the two?

It is difficult to define "stress" precisely. The best description is that is a state of mind manifested by anxiety, worries, high tension, abnormal preoccupation with some unpleasant environmental stimulus or cause. Thus, a person under stress can complain of generally being unwell, with headaches, palpitations or chest pain, or gastric pain, or insomnia, or unhappiness, or even depression. Not all of these symptoms may be present together.

Usually, in a highly pressurised and urban society, there is more "go-getting" and competition, and the stress level is therefore often high, though it can be beneficial in a person who is hard driving and ambitious. This is best exemplified by the situation in a school examination or in an important business deal.

However, when the stress level is very high, constant and worrisome, then this degree of stress tends to be non-beneficial to health and can even be harmful. Such chronic degrees of stress often occur in adverse and negative situations in the job area, in the family or in financial circles.

Several epidemiological studies of personality and traits revealed that the *Type-A* personalities who are ambitious, hard driving, 'super goal' achievers and those generally difficult to be satisfied or contented are more prone (about 2 times more) to coronary heart disease than the *Type-B* personalities, who are exemplified by more easy-go lucky, non-ambitious and easily contented people.

Notwithstanding the above circumstances, it is difficult to correlate stress factor and the likelihood of a heart attack. It is probably correct that a constant and obvious high level of stress can predispose to a heart attack, especially if other coronary risk factors are also present. Thus, "stress" with higher levels of adrenal in and catecholamines may precipitate coronary artery spasm or 'dynamic' coronary artery occlusion, precipitating or hastening a heart attack, or a dangerous cardiac rhythm.

Remedies

General remedies would be to remove or avoid the causative external factors in the first instance.

A regular exercise programme would also help to 'relax' the whole cardiovascular system.

A relaxing and interesting hobby or some form of suitable meditation are other avenues to relieve or minimise chronic stress.

Coffee/Tea

Coffee and tea are probably not a coronary risk factor by itself. However, because of the caffeine content, it is best to avoid such strong beverages if one has coronary heart disease especially those with palpitations. An alternative is decaffeinated coffee but if this also causes palpitation, then it is best to avoid it altogether.