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## Primary Health Care

### Where Good Medicine Starts

This issue is dedicated to the cause of the underprivileged, the poor, the undernourished, and the unhealthy. Most of these conditions are avoidable and are a result of neglect, bad management, vested interests, ignorance, and political idiosyncrasies. In May this year, over two thousand delegates attended the Second International Congress of the World Federation of Public Health Associations, to discuss plans for policies involved in lowering the differences in health care between industrialized and newly developed countries. Extracts from some of the outstanding papers are presented and it is hoped they will produce an impact that will make the plight of the unfortunate apparent.

We do not always appreciate our good fortune in Canada. The expectation of life is over 70 years of age. The infant mortality is fifteen per thousand. We have almost eliminated tuberculosis, poliomyelitis, and parasitic diseases. Many of our ailments, as Monique Bégin remarks, are brought by our affluence — alcoholism, mental illness, traffic injuries, and disorders from occupational hazards (not to mention obesity).

Not so, however, in our Canadian native population. As Barbara Frum so clearly demonstrated on television recently, the health of 22,000 native Indians is terrible. Life expectancy is around forty, violent deaths are four times the natural average, and alcoholism, child abuse, drug intoxication, and suicide are common. Their problems are typical of many underdeveloped countries. The conference repeatedly reiterated the basic ingredients of Primary Health Care.

The delegates were emphatic that expensive hospitals, complex operating rooms, and numerous specialists were not the first priority. Basic items come first. Food, agriculture, water, adequate hygiene, and fundamental education in nutrition must precede medical treatment. The political system must provide peace and ensure that the right environment allows development of an equitable share for all. One of the most graphic accounts of the development of good Primary Care systems was beautifully illustrated by Doctor Rhee. As a young man he worked with Albert Schweitzer in Lambarene. He was so impressed with the theologian's dedication that he followed his chief example of altruism and set up a one-man practice in Ullingdo, a rocky outcrop of the Pacific that is home for some 20,000 people. There had never been a doctor there before he arrived. Leprosy and tuberculosis were rampant and the infant mortality was enormous. Clean water and sanitation were non-existent. Doctor Rhee's first patient was a young girl who was dying of tuberculosis but fortunately, she responded to treatment. Gradually, the inhabitants thronged to his "Schweitzer house." Malnutrition, humidity, poor hygiene were his main enemies. He organized health clinics and health teams. A water reservoir was built and adequate hygiene arranged. Seventeen years later filth, malnutrition, disease, and despair have changed to hope, good health, adequate clean water, and improved hygiene and a sound education system.

Around the world, things are not that simple; prejudice and vested interests are the worst enemies. The conferences brought representatives from all over the globe and it was amazing how consistent was the pattern of Primary Health Care that was thought to be desirable.

First good organization is required. The main global agencies involved in correcting the basic deficiencies are well known. The World Health Organization, as an agency of the United Nations, was the spearhead of the developing of the International Health Resource Consortium. The monumental task ahead became apparent as a result of a comprehensive study of the world health needs.

In most countries, the ratio of doctors to individuals is less than one in 50,000. In six countries, 40% of children die before the age of four. Doctor Clarence Pearson of the Metropolitan Life Insurance Company, who explained the development of this consortium, stated that more than one billion people are hungry or malnourished.

The consortium brings together corporations, businessmen, volunteer agencies, and representatives of labour and industry in a non-profit organization. It aims to improve community health conditions in developing countries through increased citizen participation, by mobilizing non-Government organizations to complement the work of the Government concerned. Already enthusiastic progress has been made in Costa Rica and Indonesia. The consortium is developing interesting technical assistance in South America. A battery powered radiological unit sponsored by this group allows health workers to take radiographs at one third the cost of previously available systems.

The number of organizations and abbreviations are confusing to the uninitiated. Most of us are familiar with UNICEF and the World Federation of Public Health Associations. The Director General of this organization outlined a five-year program recently. Two major conferences, one in Halifax in May 1978 and the second in the Soviet Union in September 1978, emphasized international impact of this topic.

Canada's contribution was explained to me by Doctor Bill Jeans, Advisor in Department of Health and Welfare. Canada contributes 1% of her Gross National Product in aid to the third world. The money is distributed through the Canadian International Development Agency (CIDA) and about twenty million dollars of this is set aside for health care. Projects are in progress in Gambia, Mali, The Cameroons, Thailand, and Bangladesh. He has personally visited every country involved. The first thing to do is to set up a feasibility study, he explained. In Nepal, for instance, after preliminary study, the training of village health workers was organized. Some three hundred miles from Katmandu, nurses were selected and sent to India for training. It took three years to assemble a team but eventually a good team was established in this remote community which is drastically curtailing illnesses previously rampant.

Health, however, is not the first priority. First comes agriculture, economic infrastructure, and education. Clean water and satisfactory waste systems are the unglamorous requirements. Canada has spent three hundred million dollars in providing clean water supplies to developing countries. It is difficult to find sponsors for sewerage systems. "My city is sitting on a sea of sewage," remarked the Governor of Dar es Salaam some time ago. Although water was plentiful, waste disposal was inadequate. The simple earth closet is the most practical; but, how can you make people use it?

It is vital to design a health project within the capability of each country and that is where Doctor Jeans' expert knowledge is valuable. In Canada we spend \$500 per capita per year on health; in Asia, the figure is less than \$10. Some old diseases are still killers and there are 8 million cases of tuberculosis in India, only 1 1/2 million of which are treated. In many countries, tuberculosis is diagnosed by sputum smears and treated by isoniazid and thioцентamide, which is distributed by the village health workers. Malaria is another world-wide disease. Family planning is a sensitive issue.

Canada usually approaches a country and asks "Do you need a population policy." Programs are in progress in Thailand and Bangladesh but not in India, where the population explosion has produced 680 million people.

Research is conducted by supplying the appropriate technology. Perhaps the most interesting organization is the International Canadian Development Research Centre (ICDRC). This was established in 1970 by the Canadian Parliament. By 1976, 503 projects at the cost of 94 million dollars had been approved. Fascinating films and publications at the conferences showed workers in the Philippines, Nigeria, and Malaysia. From witchweeds and mites, to the production of new wheat, the ICDRC functions like a catalyst, bridging the gap between scientist, administrator, and policy makers. We are grateful to the authors for the fascinating group of papers presented here and regret that all presentations could not be included. The potential of scientific knowledge for the benefit of mankind is enormous. Primary Health Care demands that wisdom, common sense, and political goodwill ensure that the knowledge assembled by the World Federation of Public Health Associations is mobilized for the benefit of mankind. □

B.J.S.G.



Operation Timbang, Philippines.

Cover Photo — Community water point, Kenya.

(All Third World photographs courtesy of International Development Research Centre, Ottawa.)

## Presidential Address

# "World Federation of Public Health Associations"\*

Gerald H. Dafoe,\*\* M.H.A.,

Ottawa, Ontario

The sharing of our ideas and concerns about Primary Health Care at this International Conference is an experience of great benefit to me as I begin my term as President of the World Federation of Public Health Associations and I am sure that you, and the countries you are representing here today, will benefit greatly from it.

The Conference, which the Canadian Public Health Association has supported and hosted, is just the beginning of this Federation's effort to play that essential role in Primary Health Care. We rely on the support of the Federation's membership of 28 national Public Health Associations and the guidance and assistance that we know to be available from the other international bodies with which the WFPHA has established official relations, such as UNICEF, UNESCO, and ECOSOC.

The World Federation of Public Health Associations is an international, non-governmental, voluntary health organization concerned with public health. It is however unique in that its members are national, multidisciplinary public health associations composed of administrators, nurses, health

educators, physicians, planners, pharmacists, sanitarians, and members of the general public. The principal interest of the Federation is in promoting preventive health measures so that the quality of life can be improved for all.

The Basic goals of the Federation are:

- 1) To provide a medium for national, non-governmental health organizations to work more effectively with national and international agencies in improving personal and community health.
- 2) To encourage the formation of national public health associations.
- 3) To exchange information between the constituent associations.
- 4) To improve health services by helping to establish appropriate standards of education and training of public health workers and the public, and by demonstrating and evaluating new technologies and innovative techniques.

I would like to issue a challenge to the delegates attending this conference. That is to collectively produce an NGO position paper on Primary Health Care that will make a really worthwhile contribution to the efforts of the WHO and UNICEF at their conference in Alma Ata, Kazach Soviet Socialist Republic, in September 1978. □

\*69th Annual Conference, Canadian Public Health Association and the 2nd International Congress, World Federation of Public Health Associations, Halifax, N.S. Canada, May 23-26, 1978.

\*\*President, World Federation of Public Health Associations, 1335 Carling Ave, Suite 210, Ottawa, Ontario. K1Z 8N8



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# "Health: An Integral Part of Human Development"\*

## "Four Horsemen of the Apocalypse"

Monique Bégin,\*\* M.A. (Sociology),  
Ottawa, Ontario

Canadians appear to be reasonably healthy compared with other people in Western developed nations. The latest comparative study, in 1971, shows that of 21 such countries we rank eighth on a composite index using such factors as perinatal, infant and maternal mortality rates, and those for people aged between 35 and 54. Life expectancy for Canadian men ranked seventh, at 69.9 years, and for Canadian women ranked second, at 76.9 years. With the exception of England and Wales, all the countries that ranked ahead of Canada on the general scale are small countries with small populations, which make it easier for them to deliver health services.

At a recent meeting between provincial health ministers and my predecessor, four grim problems have been isolated as in urgent need of study and action. They are alcohol abuse and traffic injuries, and problems involving occupational health and mental health. These are the four horsemen of the apocalypse in Canadian public health. They have struck down or crushed the hopes of many thousands of our people and cost astronomical sums of money.

It is just about impossible to estimate the true cost to Canadian society of alcohol abuse. It takes a while just to name the more pressing alcohol-related problems. It is a factor in liver, cardiovascular and respiratory disease, cancer and certain mental illnesses. It is a grim destroyer of society, implicated in crime and violence, family breakdown and industrial accidents. It is a factor in poor performance in schools and in industry.

Automobile accidents are the number one killer if you think in terms of potential years of life lost. Fully 38% of victims are in the 15 to 24-year age group. In 1974, automobile accidents caused injuries to one out of every 100 Canadians, and 28 of every 100,000 Canadians met their deaths on the road in that year alone. These are appalling figures. If you were to multiply that yearly rate by 70, more or less the average life span, you would arrive at a truly horrifying figure. At that rate most Canadians would sooner or later be hurt in an automobile accident. And to this must be added the heavy cost of automobile accidents — estimated at a quarter of a billion dollars in 1973 to the health care system alone, and in 1974, at a billion dollars in lost work efforts and \$1.3 billion in property damage.

Statistics show how important it is to promote occupational health, including job safety. In 1974, 1,415 work-related fatalities were reported, mostly due to accidents. There has been a climb in the number of accidents on the job. In 1974 they accounted for over one million injuries involving loss of

work time. Over 11.5 million man days were lost through this cause in the year, at a cost of over half a billion dollars to employers in compensation assessments. It is estimated that an additional sum of over \$2 billion was lost due to occupational injuries in terms of such things as lost productivity, material damage and retraining. Recognizing that serious problems do exist, the federal government has recently established a Canadian Centre for Occupational Health and Safety.

An immediate activity of the Centre will be the development of a national information system in the whole spectrum of occupational health and safety. The centre will then begin by providing Canada and Canadians with a coordinated and integrated information source that is now lacking. The Centre will attempt, through information, to promote healthy lifestyles for all workers and to prompt the individual's own responsibility in this area.

One in every six Canadians is stricken by the fourth of our grim problems, mental illness. Measured in patient days, about 35% of all hospital care is for mental illness, and it is a factor in the illness of nearly half of all patients seen in general medical practice. Suicide is now the second most frequent cause of death among young Canadians between 15 and 30 years of age. It is clear that this is only part of the problem of mental health in Canada. Much more remains unreported, and signs are that things are getting worse.

What can be done about these four disastrous threats to our health? People must do more to promote and maintain their own good health. What professionals and government can do, is provide them with the information they need to take up better lifestyles. We can also promote safer vehicles and highways, and call for public support of safety measures (such as compulsory seat belt legislation and controls on the advertising of alcohol).

Just look around here in Halifax or any other Canadian city or town. Joggers and cyclists are everywhere. Hardly a week passes without the opening of still another sporting goods store, still more courses in yoga, weight reduction, giving up smoking; in becoming better marriage partners and better parents; in choosing the right foods for good health. To judge from the displays in Canadian bookstores, you would think that the time-honoured categories of "fiction and non-fiction" are about to be replaced by "health promotion and non-health promotion".

It is encouraging to see the growing trend for people with common health problems to band together in mutual help associations. These groups now work alongside the more traditional voluntary agencies which emphasize service to others. We need both kinds of groups to make the most of the great potential of volunteer work.

We must see to it that concerned individuals have the knowledge and confidence they need to make sensible

\*Notes from an address, 2nd International Congress, World Federation of Public Health Associations, Halifax, N.S. Canada. May 23-26, 1978.

\*\*Minister of National Health and Welfare, Ottawa, Ontario. K1A 0A6

choices. These relate not only to their personal lifestyles, but also to the use they make of preventive measures and treatment services, and to their participation in the planning and delivery of health services.

**Health education** must begin in early childhood. Television can be used as a useful tool for the health education. My Department is producing a series of television programs to promote good nutritional habits among Canadian children.

Once children enter school, the public health system becomes a more important direct influence on their lives. Professionals must ensure a healthy school environment, screen school children for health defects, and provide such preventive measures as immunization and topical fluoride applications. They must instruct teachers and students about the importance of these measures, and participate in school health programs. They must prepare people to take on more personal responsibility for their own health.

At the same time, public health professionals must teach young people to look after others as well as themselves. They must teach interdependence as well as independence. For example, teenagers can be prepared to serve as volunteers in hospitals, nursing homes and other places, and perhaps in later life to help plan and operate health services.

**Poverty** — There is good reason to believe that the poor do not benefit as much as other people from Canada's health care services. The results of studies from Ontario, Quebec, and Saskatchewan are a little ambiguous, but they do give us a relatively reliable insight. Poor people visit the doctor more frequently and use more of other health services — except for dental work, for which there is usually no public insurance program.

Health insurance programs have made it much easier for poor people to have access to medical care, but we cannot break the cycle of poverty and illness through the health care system alone. Poor people must have more money. They must be able to live in better housing and eat better food. Their work conditions should be healthier, and they should have better facilities to make the most of their leisure time. They should enjoy the benefits of an education that will allow them to value their health more and take advantage of preventive measures.

A specifically Canadian problem springs from our geography. Most of our population is concentrated within a belt 100 miles wide and 5,000 miles long. People who live outside this corridor may find the cost of transportation of everyday foods so high that they do without things they need for good nutrition. Many of the residents of these outlying areas are native peoples, Indians and Inuit. For them the problems of low income and high cost are compounded by their unique status of being in a stage of cultural change.

We cannot let things stand as they are. It is absolutely intolerable to every Canadian that a child born into a poor family not only is likely to remain poor but is also likely to be less healthy during a shorter lifespan.

**Nutrition** — Poor and rich alike are affected by the problem of poor nutrition in Canada. Canadians tend to be obese and sedentary. They eat too much of the wrong kind of food and do not take enough exercise. Far too many Canadians suffer from poor nutrition in the midst of plenty. The Canadian government is currently working on a coordinated health education program based on sound food and nutrition policy.

We believe that this will eventually have a considerable effect on the health of people at all economic and educational levels. In a campaign of this kind, public health nurses in particular, can do a great deal of good with their access to the mothers of young children and their involvement in school health programs.

**The Old** — Old people have a number of problems all their own. One of Canada's leading public health figures, Dr. Cope Schwenger, has suggested that we are "on the verge of a geriatric crisis". In part this is based on the projections of Statistics Canada that by the year 2031 the percentage of people over 65 in this country will have doubled from today's 8%. The majority of older Canadians are women, many of them widowed. In fact, over 60% of women over 75 are widows. Since relatively few of these women participated in the labour force long enough to acquire pensions, and since many of their husband's pensions were drastically reduced or eliminated on the deaths of their husbands, they are frequently dependent on the Old Age Security Pension — a universal payment to all persons 65 years and over — and the Guaranteed Income Supplement, which is a means-tested benefit program.

Some of the health needs of the elderly can be alleviated as much by economic security as by health care. Nevertheless, we all have a responsibility to demonstrate our commitment to interdependence by our special concern for the well-being of these elderly Canadians.

**Conclusion** — We have an impressive health care system with respect to such things as the supply of acute care beds and the number of health workers. Problems remain in the distribution of health services. The four big problems in health remain alcohol, traffic accidents, occupational health, and mental disease.

I have tried to suggest ways in which we might prepare people to make better use of our health care resources by looking after their own health and to point out that in a general climate of relatively good health there are people who need and deserve assistance from all their fellow Canadians and particularly from those of us who are in the field of health care. □

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# Primary Health Care in the Development Perspective\*

Maaza Bekele,\*\* B.Sc., M.A., Ph.D.,

Ethiopia

## HEALTH STATUS IN THE THIRD WORLD

Now is the time for action in hundreds of millions of men, women and children in the Third World who carry a massive burden of preventable ill-health. The majority (upwards of 80% of the population in some countries) live in the vast rural areas of Africa, South Asia and parts of Latin America as yet untouched by progress. Others flee the countryside in search of a better life in the cities, only to swell the ranks of the impoverished in burgeoning periurban slums.

In the rural areas peasant farmers, both men and women, have limited access to the technology, services and institutions which would sustain higher levels of productivity in agriculture, the mainstay of their existence. The urban poor lack both the skills required in the modern sector and the services and technological innovations that would bolster the informal sector on which they depend, with resultant unemployment and under-employment. Widespread illiteracy, ignorance, insanitary and crowded living conditions and the social ills that afflict urban slums, characterize the lot of the poor, rendering them easy prey to ill-health and apathy.

Women of child-bearing age, infants and young children are the most severely affected. Infant mortality remains as high as 200/1000 in some developing countries, and one-third of the children die before the age of five from diseases such as diarrhoea, pneumonia, malaria, measles and tuberculosis — all preventable. Among those who survive (and there are growing numbers) the debilitating effects of chronic under-nutrition and lack of early social stimulation are clearly visible.

This depressing picture must of necessity be painted. The privileged, both in the industrialized countries and in the upper echelons of society in developing countries have become too insensitive to this appalling situation. It is necessary for all to be reminded that,

- (i) reality for countless numbers of fellow human beings is stark, unrelieved poverty, compounded by ill-health;
- (ii) these conditions did not come about by accident, but have evolved out of the highly skewed pattern of development that has prevailed in "modern times", the benefits of which have accrued to the peoples of the developed countries and a minuscule portion of those in the developing countries, and
- (iii) the situation can and must be corrected, not out of a sense of guilt or charity, but in the enlightened self-interest of all humanity, and with the full participation of both rich and poor in bringing about a more just order.

## SKewed DEVELOPMENT

In the past 25 years both developed and developing

countries have achieved, in global terms, impressive rates of overall growth and development. But it is only recently (not until the end of the 1960's) that it began to be widely realized that much of the development taking place was uneven, both between and within countries. The gap dividing rich and poor countries has been widening progressively, with people in the rich countries having an average *per capita* income eleven to twelve times higher than those in the developing countries, as the table below reveals:

Real product in 1975 prices. Per capita US\$.		
	1950	1975
Developed market economy countries	2350	5140
Developing countries	240	460
Socialist countries of Eastern Europe	540	2660

Source: UNCTAD

The difference in per capita real product (measured in 1975 prices) between developing countries and territories and developed market economy countries, which in 1950 was of the order of \$2110, had in 1975 increased to US\$4680. During the same period the analogous gap dividing the Third World and the Socialist Countries of Eastern Europe had increased from US\$300 to US\$2200. Per *capita* income in developing countries increased from a low US\$240 to only US\$460 by 1975, most of which was realized in oil-rich developing and middle income countries.

In the least developed among developing countries and in some of those most seriously affected by the economic crisis of 1970's, the rate of growth of per capita income has slowed to 1 per cent or less. Equally disturbing is the gap dividing income groups within these and other developing countries which shr *v* the widest disparities between the top 20% and the bottom 40% of the population. The fruits of growth and development accrue to a few, usually urban-based people. It is this highly skewed pattern of development which has left countless millions in under-development and poverty, the primary causes of ill-health. Simultaneously, a weighty disease burden and accompanying apathy result in low performance levels and continuing under-development.

The health sector has tended to be treated outside of these realities, with health viewed largely as an end in itself. The traditional medical care approach and conventional pattern of delivery of health services — relying mainly on gradually extending coverage out from the centre using a disease-centred model — has proved highly irrelevant to the health needs of the majority of people. Organized around high-cost, urban, hospital-based and private practitioner technology, a kind of medical industry has evolved in both developed and developing countries which benefits for the most part the more affluent in society. It is psychologically removed and largely inaccessible to those most in need of health care. In

\*An address, 2nd International Congress of the World Federation of Public Health Associations, Halifax, N.S. May 23 - 26, 1978

\*\*On leave of absence from Government of Ethiopia.



some countries it is estimated that less than 20% of the population have access to centrally financed, government provided health care services. The majority of people remain dependent upon traditional healers who have not been brought within the orbit of the organized health sector. What is more, the under-served in some countries contribute large sums (mainly in the form of taxes) for services they do not enjoy. Even programmes such as malaria control, smallpox eradication and worldwide immunization are open to question. While theoretically of benefit to everyone, they are of greater significance to well-nourished, well-housed and less exposed people.

The new thinking of the 1970's, reinforced in all the important world conferences — the sixth and seventh special sessions of the General Assembly, and the conferences sponsored by the United Nations or agencies of the UN system on environment, population, food, women, employment, habitat and water — asserts that it is not only possible, but becoming increasingly more urgent to change the established order so as to release the energies of the people of the Third World for more productive activities. The International Conference on Primary Health Care at Alma Ata will no doubt engage in a similar discussion and highlight the need for health-promotive development policies at national and international levels.



Village Health Clinic in Iran.

### ALTERNATIVE POLICIES AND STRATEGIES

A development policy directed toward improving the capacity of the least well-off to care for their own most basic needs would have the most profoundly positive effect on health. In some countries this would require a more equitable distribution of land and its fruits, together with an industrial policy which emphasizes the creation of employment for those with few formal skills. In other words, health status in the Third World could be measurably improved through an astute "development policy mix", including rural/agricultural development, increased employment opportunity, rising standards of literacy and development-oriented education, all organized and implemented to the greatest extent possible, through the efforts of the people themselves and in their own best interests. It requires further, that adequate levels of public investment be directed towards the implementation of such a policy.

The intrinsic philosophy of Primary Health Care finds expression within a development policy which places value on increasing individual well-being and meeting the needs of the majority of people, in particular the least well-off. Instead of relying on imported, high-cost technology, thereby limiting the population served to the resources available, the technology and pattern of services can be modified to observe the constraints imposed by potential resources. In an African country the choice was made between investing in one 200 bed hospital and 15 health centres. For the same amount (capital and recurrent costs) the hospital would have covered only 10-30,000 people and afforded 400,000 out-patient visits annually. Fifteen health centres on the otherhand cover 300-500,000 people and service 1 million out-patient visits.

The health services can be reoriented to achieve the goal of universal coverage, through reallocation of existing resources and earmarking of increased allocations to Primary Health Care. Thus, public investments in the sector would provide a direct consumption good and constitute a "redistribution of health income" in pursuit of equity and social justice.

### HEALTH PROMOTIVE DEVELOPMENT STRATEGY

Better health does not, however, automatically follow from development policies and programmes. Health, and in particular nutritional status has been known to decline in the wake of fairly rapid development when small farmers have been displaced by rich entrepreneurs and their machines; when the home garden disappears; when increased cash income is not directed to productive activity or in support of the household and when dietary intakes change with the first increment in income. Therefore, it is necessary to plan specifically (at national, intermediate and local levels) and to implement strategies, particularly in health-related sectors, which will secure potential benefits to health from economic development.

In the *food and agriculture* sector a health promotive development policy would combine security of tenure with a vigorous extension programme for both men and women designed to increase production on small holdings, improve nutritional status, encourage better storage and distribution of food crops, and ensure that the surplus marketed fetches a fair price. It would also ensure that production of food for family consumption is an integral part of large scale projects likely to change the life styles and perceptions of the producers, usually peasant farmers. At the same time, the benefits which accrue from such projects, including food products themselves, should be equitably distributed and actually reach the primary producers. Above all, in planning the use of available land resources it is crucial that there be an adequate food production base.

Experience has shown that plentiful supplies of *water*, especially when combined with water-use education and demonstration in Primary Health Care activities, result in decreasing morbidity and mortality among the population in general, and in particular infants and children. Hence the need to provide water for household use (in rural areas as well as peri-urban slums) at a reasonable distance from dwellings and within a price range affordable by the least well off. But water can become a serious health hazard in industrial and agro-industrial projects, particularly irrigation schemes. Children are often the first victims. Therefore,

protective measures should be included automatically in the design of such projects and paid for out of funds usually allocated from external sources of finance.

*Education* and information programmes with a strong health component can teach about personal and family health care, hygiene and sanitation, nutrition, child care and responsible parenthood, often in collaboration with parastatal organizations such as associations of parents, teachers and health workers. Special programmes can be designed for women and girls (who are often by-passed by the educational system) in order to enhance their potential contribution to their own and family health. Too early marriage and child-bearing can be discouraged and technology can be developed to reduce women's excessive workload which not only endangers health but also makes it virtually impossible for them to participate in community activities.

The *industrial* sector is of special significance in view of the fact that the Third World has set a target whereby developing countries will account for 25% of the share of world industrial production by the year 2000. This means tremendous acceleration of industrial development, requiring in-built anti-pollution measures and the education of increasing numbers of industrial workers in preventive and protective health care. At the same time industries which promote regional and local development are important to health by reason of the fact that they are employment generating, improve the economic base and local earning power. Health related industries (e.g. foods and pharmaceuticals) can provide essential commodities, while the commerce and trade sectors can regulate the pricing and distribution of these as well as imported foodstuffs.

In some countries more than 50% of the recurrent budget of the Ministry of Health goes to pay for *pharmaceuticals*, the manufacture and sale of which is largely in the hands of some 50-60 transnational companies, concentrated mainly in developed market-economy countries. The time has come for developing countries to formulate and implement pharmaceutical policies which will drastically reduce the cost of drugs to their people. Such policies include, rationalization of the number and nomenclature of drugs; drawing up a short list of drugs corresponding to the basic health needs of the population and establishing priorities for importation of pharmaceuticals on the basis of disease prevalence, severity effectiveness and cost of a particular drug, and purchasing generic drugs in bulk. The finishing stages of production can be undertaken in many developing countries, at the very least packaging locally, finished products imported in bulk, and formulation into final dosage form of active ingredients. The idea that developing countries can establish Cooperative Pharmaceutical Production and Technology Centres (COPPTECs) is also attracting widespread support. It is of great importance to Primary Health Care that village and health centre pharmacies are supplied on an equitable and timely basis with large quantities, but small numbers of mainly non-toxic drugs, bearing generic names or easily recognizable symbols. To achieve this requires co-ordination among several sectors, including health, industry, trade, commerce, transport and communications, and the availability of feeder and farm to market roads.

Co-ordinated, national, health-promotive policies and strategies are largely a function of the planning process already well advanced in a number of developing countries.

At the central, national level it is possible to see important linkages among various programmes which have an impact on health and to build in, and secure funding for, promotive and protective health measures in major development programmes. It is also possible to give preferential treatment to the social periphery in the allocation of resources to the health sector and to health-related programmes, and avoid duplication.

But implementation of such policies requires decentralization to intermediate and local levels, under the aegis of a recognized "development authority". Such an authority can ensure that the "development messages" reaching communities are not in conflict, that development workers operate as a team and that economies of scale are employed in the supply of supporting services. Also that consultative machinery which secures popular participation is instituted and that there is two-way communication between representatives of the people and the various tiers of the administrative system. In this way plans and programmes developed for a region or a locality will reflect the aspirations of the people of various communities and will ensure that they are participating actively in the improvement and protection of their health.

Primary Health Care can be supportive of such a policy and can also provide the leading edge for securing popular participation in designing and implementing health and development programmes. Studies carried out for UNICEF and WHO are instructive illustrations. High levels of community participation have been achieved in situations where national political policy has made it possible to mitigate the effects of a system of privileges and unequal social and economic relationships among people in both rural and urban communities, and commit national resources to meeting the needs of the majority of the people. But even in small projects, where decisions are taken by the people and where the principle of accountability to the people is observed, substantial resources which might have remained un- or under-utilized have been mobilized by communities and a great deal of human energy devoted to health and development activities. This often begins with deployment of primary health workers, chosen by the people of their community, locally trained in appropriate techniques and supported by augmented national services reoriented to this purpose. These health workers provide much of the medical care required, and along with other village workers similarly trained, teach and mobilize their neighbours to carry out health promotive activities. Thus health care spills over into other sectors — agriculture, cooperatives, road building, etc. — all of which directly improve health and raise living standards.

## NATIONAL AND INTERNATIONAL CONSTRAINTS

Primary responsibility for initiating, designing and implementing people (and therefore health) oriented development policies rests upon national governments. Developing countries are fully aware of this and have made public declarations to this effect in various international fora. Change is in process of implementation in many countries sometimes due to the pressure exerted upon governments by disadvantaged and disgruntled people, to whom very little has "trickled down" through the traditional development approach. In consequence, some countries have embarked on the hard road toward fundamental restructuring of their social and economic systems in pursuit of justice and equity,

replying largely on their own resources, both human and material. Other countries are attempting to introduce change gradually, in the face of stiff resistance from interest groups who do not wish to relinquish either privilege or power. Nevertheless the process of change is underway in the Third World — change which will undoubtedly affect health status.

It cannot, however, be assumed that developing countries can on their own, and in the prevailing world economic climate, achieve the levels of development that would ensure "health for all by the year 2000". While a national Primary Health Care policy would be an indispensable pre-requisite, countries with few known natural resources, weighed down by debt, in particular the least developed, can hardly be expected to sustain an income redistribution policy when growth rates are declining. Instead, they are in danger of redistributing poverty. Those developing countries endowed with exploitable resources, relatively high *per capita* incomes and increasing growth rates (Oil-rich developing countries and some in the Latin American region) could, in a favourable world economic climate meet the basic needs, including health needs of their people in a reasonable time span.

But Third World countries are faced with severe constraints. As producers of primary products, their economies are at the mercy of fluctuating world prices. Therefore, a major economic objective of the development strategy of developing countries is a general restructuring of the national economy in order to increase the value added of its production, i.e., by processing the raw materials which until now have been exported as raw material inputs to the manufacturing industries in the developed world. Such a strategy can only succeed within the framework of the New International Economic Order and its Programme of Action, which would facilitate development of a new international division of labour, with the developing countries partners in an inter-locked order of economic activities. Increased earnings could then be channelled into domestic programmes designed to accelerate the development process and alleviate poverty. Little progress has been made so far save for the gestures from the more socially conscious among the industrialized countries, toward the relief of the debt burden of developing countries, and the establishment of a Common Fund in support of primary commodities. The North-South Dialogue more often than not develops into a North-South Confrontation in various international meetings.

The link between income disparities (between developed and developing countries) and the depressed health status of the people of the Third World, is easily established. The economic crisis of the 1970s (brought about largely through mismanagement of world resources), has not significantly affected the lives of the majority of the people in the developed countries. It is the people in the developing countries, and the poorest among them whose very existence is threatened by the smallest ripple in the prevailing world economic system. Shocks which spread out from the economic centre, become tidal waves at the periphery and engulf those who exist on an already marginal income. The consequence — deteriorating living conditions, poverty and disease.

#### A TIME FOR ACTION

It is a matter of urgency that action is taken, at both national and international level, to relieve the people of the Third World of the appalling burden of ill-health. A

commitment is required at national level that development policy be health-oriented and that the philosophy of Primary Health Care guide the practical actions taken to implement such a policy. Most developing countries may not be able to launch a nation-wide programme at the outset. But Primary Health Care can be introduced, sustained and expanded until all people have access to health care. Appropriate cost-effective technology can be developed and applied in particular situations. To succeed in their efforts, developing countries will require the direct support of the international community for Primary Health Care. More important, however, is the removal of constraints to development so as to promote increased self-reliance (national and collective) and facilitate increased earnings which can be invested in productive programmes to sustain a level of development which will assist in the realization of improved health.

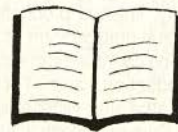
The International Conference on Primary Health Care at Alma Ata will no doubt be called upon to decide, and so declare, that the goal of "health for all by the year 2000" is attainable — within a broad national and international development strategy which is people-oriented and health-promotive and with the philosophy and technology of Primary Health Care a driving force. Also the community of nations and organizations will undoubtedly be requested to move forward urgently toward the realization of this goal. □

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# Primary Health Care

## A model where there is one doctor for 23,000 population Ghana — WHO Project\*

E. N. Mensah,\*\* M.D.,

*Brong Ahafo, Ghana*

### 1. INTRODUCTION

#### 1.1 Background

BARIDEP — (Brong-Ahafo Rural Integrated Development Programme) — is a Ghana Government — WHO supported rural integrated development effort. The programme is for staging and obtaining experience in how activities for improvement of health can be integrated into the general development process based on the community development approach, with the active involvement of the local communities, and for evaluating the efforts of such integration. All government departments and voluntary agencies work together at district level to promote the social and economic well-being of the rural population. The basic philosophy of approach is the involvement of the community in decision making, initiation and execution of community self-help projects. This approach involves the motivation and guiding of the communities to become more aware of their problems, the root causes of these problems and to determine and formulate solutions to the problems through self-help projects. A former name of "Ghana-WHO Research Project — Community Involvement in Solving Local Health Problems" was changed to BARIDEP so as to clearly reflect the all embracing concept inherent in the approach.

#### 1.2 Transportation

Eighty-one per cent (81%) of the villagers rely on passenger and cargo transport vehicles. Farm tractors are also important means of transportation in the more remote areas. Tractors are used in carting foodstuffs and people from their farms to the markets.

#### 1.3 Education

Sixty-one per cent (61%) of the villages in the area have primary schools. Fifty-four per cent (54%) of children aged 5-11 years are enrolled in primary schools. Forty-one per cent of children aged 12-16 years are enrolled in middle schools.

In general, about 70-80% of people over the age of 25 years in Ghana in the rural areas are illiterate.

#### 1.4 Health

There are three mission hospitals and three health post/centres in the initial project area.

Doctor/population ratio 1:23,000

H. Centre Supt/population ratio 1:23,000

Hospital beds/population ratio 1:800

\*An address. 2nd International Congress of the World Federation of Public Health Associations, Halifax, N.S. May 23-26, 1978.

\*\*Minister of Health, Post Office Box 2, Kintampo, Brong Ahafo, Ghana.

About 99% of the population use streams, rivers, natural springs, pools, pond and deep wells (1%) for their daily water supply.

### 2. PLAN OF ACTION

BARIDEP is conducted under the responsibility of the Ghana Government which assumes full administrative, technical and operational directions. This is effected through the District Planning Committee, the Regional Coordination Committee, the National Coordination Committee, the National Project Director, the Project Field Director and the Project Field Co-ordinator. All subvention expenditures and other departmental budget expenditures are borne by the Ghana Government. Government agencies involved at district level are Agriculture, Health, Social Welfare and Community Development (S.W.C.D.), Education, Information, Ghana Water and Sewerage Corporation. Other agencies (non-governmental) are the Ghana Red Cross Society and the Holy Family (Mission) Hospital.

WHO has the responsibility of technical advice, assistance for the evaluation component and resource assistance for starting up activities of a replicable nature, i.e. activities which can be supported by the existing resources. In order to assure that certain questions of interest to both WHO and the Government of Ghana are answered, the project structure includes a separate evaluation component. To support such evaluation activities WHO reimburses the Government for Salaries and appropriate allowances paid to the nationally recruited evaluation staff. WHO also pays the remunerations of people with various expertise who contribute to the project evaluation effort. Funds from WHO sources are largely from SIDA (The Swedish International Development Agency).

### 3. ROLE OF OTHER INTERNATIONAL AGENCIES

UNICEF donates four- and two- wheeled vehicles, kits for community clinic attendants (CCAs) and for traditional birth attendants (TBAs) and educational aids in the form of tools, visual aids and available information materials from similar projects in other parts of the world. Both WHO and UNICEF sponsor informative visits for exposure of district officers to other parts of Africa where projects of a similar nature are taking place.

### 4. EXPANDED PROJECT AREA

#### 4.1 Initial Area

BARIDEP activities started in January 1975 in the Nkoranza/Techniman District (now two separate Districts) of the Brong-Ahafo Region. The former District headquarters is Kintampo which is about 500 kilometers by road from Accra. Brong-Ahafo Region is one of the nine regions of Ghana and has a population of 766,509 census (1970) — (Natural annual growth rate of population is 3.0 per cent).

Nkoranza/Techiman District is predominantly rural with a population of 120,340. Out of the total number of settlements, 211 are considered viable villages (villages with 20 or more houses).

The area is within the transitional zone of high forest and savanna-woodland. The major occupation is farming and the main cash crops are tobacco and cotton. Maize, yam, groundnuts (peanuts), cassava, plantain and cocoyam are the principal foodstuffs.

The major rainy season is May through July. The minor season is October through November.

#### 4.2 New Area

BARIDEP was officially introduced in a new district (Wenchi District) in October 1977. This brings the total area of coverage of the project to 5,668 square miles (6.2% of the total area of Ghana) with a population of 220,510 census (1970). Most people live in villages with a population of 100-2,000. There are only four towns with over 5,000 inhabitants. An Area Profile Survey team is currently collecting data in the Wenchi District. These data will be processed by the evaluation-component to provide a base line information for planning and implementation.

Existing health facilities in the Wenchi District are one Presbyterian Mission Hospital and three Health Post/Centres for the Ministry of Health.

#### 5. INTRODUCTION OF ACTIVITIES TO THE AREA

In order to improve on the communicative skills of the field officers a basic course in communication and audio-visual techniques was organized in collaboration with the Department of Education of the University of Cape Coast and the Communication Unit (Accra) of the Department of S.W.C.D.

To make the BARIDEP area aware of the expanded interest through community involvement, an intensive adult education programme was organized by the Department of S.W.C.D. with staff contribution and support from other ministries. Besides teams of field workers, a Cinema Van visited the accessible villages in the area to inform the communities about the BARIDEP approach.

A mapping and reconnaissance team of the Ministry of Health administered an Area Profile Survey to collect the necessary information for the planning and implementation of activities anticipated as priority needs in the BARIDEP area.

#### 6. SPECIFIC ACTION PROGRAMMES

Community Organization  
School Health  
Community Clinics  
Traditional Birth Attendants  
Shallow Well Digging  
Community Farms  
Vocational Training Depot.  
Rural News Letter ("DAWURO")  
Communication Unit  
Community Nutrition Programme  
BARIDEP Film

Of the above-mentioned programmes, activities involved in the planning, implementation and evaluation of community organization efforts, community clinics and community farms adequately illustrate the concept and practice of the BARIDEP approach.

#### 7. COMMUNITY ORGANIZATION

The Department of Social Welfare and Community Development (DSWCD) plays a major role in contacting the various village and town Development Committees. Where there are no functioning Village Development Committees, the communities are encouraged to form them. This may involve a number of visits. Organization of community-centred activities is performed through the development committees, community elders, chiefs and other community organizations. After contacting the communities, the SWCD officers then discuss the community problems with relevant technical agencies. Decisions from the communities are brought before the District Planning Committee for necessary action.

An evaluation survey after the adult education campaign that was organized as part of the BARIDEP implementation activities showed that the villagers do not consider that the Government alone should be responsible for solving all their problems but that either they themselves or they and the Government, in joint efforts, should be responsible for solving their problems.

#### 8. COMMUNITY MEANS OF GENERATING FUNDS

Various means are employed by the rural people to generate income to finance local developmental projects. The following are some of the ways in which the rural communities in the Project area generate funds into community coffers.

##### 8.1 Selling of Labour

Here, the whole community will take a weeding contract on someone else's farm for a fee. Usually, it is the men who perform this task whilst the women will be employed to convey someone else's farm produce to his/her house. The monies so generated go into the community chest.

##### 8.2 Annual Harvest

It is usually around Easter or Christmas time when most of the local citizens living in far away towns and cities have come home for the occasion. It is a non-religious affair, occasioned by making speeches and launching appeals for funds. Usually, the chief or any prominent figure (in most cases, the rich) is asked to chair the gathering.

##### 8.3 Special Rates

These are paid annually. Ordinary citizens staying in the village pay 2-6 cedis, male and 1.00 - 3.00, female. Non-residents pay the double of that which is paid by the resident citizens.

##### 8.4 Special Levies

8.4.1 *Houses (Property Tax)*: Some communities collect levies on houses annually. It is a flat rate for all, and it ranges from 5-12 cedis.

8.4.2 *Farm Produce*: Cash crops e.g. cocoa and maize attract levies also. Maize attracts on the average 0.50 cedis (50 pesewas) per bag load.

8.4.3 *Burial Insurance*: This operates when someone dies. All citizens are expected to contribute (e.g. male 50p, female 20p) into a common fund. Part of this fund is given to the bereaved family. The rest goes into the community chest. Such arrangement is as much to help the bereaved family as to help the community generate funds.

8.4.4 *Voluntary Contributions*: Are made to meet immediate demands. For example, a project may be half-way completed when the community chest is found to be exhausted. The V.D.C. is then compelled to appeal to citizens to freely donate money for the completion of the project.

8.4.5 *Donations*: These are funds collected at the opening ceremonies of CCA and TBA clinics. The amount collected may reach as high as ₵800.00 - ₵1,500.00.

## 9. COMMUNITY CLINICS

The aim is to bring to as many villages (especially the more remote ones) as possible, the needed initial primary health care, if the community itself recognises this as a priority need.

Minimal guidelines as to the role a clinic attendant is expected to play in the community are given. So far all except two of the candidates submitted by the communities are male. All have finished elementary school.

To date, 31 community clinics have been inaugurated and 39 community clinics attendants (CCA) have been trained, with eleven new applications on file. The names of candidates chosen by the communities are submitted through the village development committees to the BARIDEP office.

### 9.1 Training

The training of the CCAs is performed by the Ministry of Health with inputs by the Ghana Red Cross Society, and lasts for 4-6 months. The training schedule for the CCAs (both new and old) is a continuing feature of BARIDEP. Currently, efforts are underway to improve coordination of the training experiences in the area. The Ghana Red Cross Society, the Techiman Holy Family Mission Hospital and the Department of Curriculum Development of the Faculty of Education (University of Cape Coast) are actively involved in the exercise.

### 9.2 Sharing of Responsibilities

The Ministry of Health has the responsibility for training, retraining, supervision and supply of drugs and equipment. SWCD plays a continuous role of community/agencies contacting.

Other responsibilities such as upkeep during training, working hours (full or part-time), fees for service, salary of CCA, provision of clinic facilities and any disciplinary measures belong to the communities.

### 9.3 Clinic Financing

The salaries of the CCAs varies between ₵30.00 (1.15 cedis = 1.00 US dollar) and ₵108.00 per month with mode of ₵60.00. Two out of six CCAs earning ₵50.00 and below have a farm to supplement their income. The only one who earns ₵30.00, operates on a part-time basis. The costs of putting up clinic facilities by three different communities are: ₵670.00 with a monthly rent of ₵6.00; ₵250.00 with a monthly rent of ₵5.00 and ₵332.00 with a monthly rent of ₵6.00 respectively.

During the period of September 1976 to April 1977 it has been found (for 4 clinics) that the cost to the Ministry of Health of drugs and materials collected free of charge is ₵1.03 per patient. The range of patient load per month is 42 to 702 with an average of 166.

## 10. COMMUNITY FARMS

There are 17 community farms of different acreages and at various stages of growth. All, except one, have at least once successfully grown crops in the previous seasons. The communities are encouraged to start the farms in order to generate needed funds to support other community activities e.g. community clinics.

To augment community effort and to assist in the clearing and land development three Massey Ferguson 135 tractors with trailers and accessories have arrived at Kintampo. They were purchased through WHO and have gone into operation from 1 April 1978. A total of 114 acres have since been ploughed.

The Ministry of Agriculture has now seconded one (with more to come as need be) agricultural extension officer to coordinate community farm activities. Each community produce crops of their own choice. These farms have the potential of being used for agricultural demonstrations for new crops and fertilizer use.

## 11. PROBLEMS

The major problems confronting BARIDEP so far are: (i) Lack of adequate coordination among the various departments and agencies, in planning and implementation of programmes. (ii) Lack of coordination of vehicle use. (iii) Inability of some of the communities to raise adequate funds for regular expenditure. (iv) Failure of some communities to honour all their commitments to the various programmes. (v) Accommodation at Kintampo and maintenance funds for vocational trainees. (vi) Insufficient involvement in shallow well digging efforts. (vii) Insufficient supply of drugs and supplies to cope with community clinic and school health needs.

## SUMMARY REMARKS

A lot of interest is so far being shown in the BARIDEP approach by the senior personnel of all agencies involved. All problems are actively discussed at District, Regional and National levels. Problems involved in implementation efforts are also discussed with the communities concerned. Solutions in line with the BARIDEP approach are welcome from either the communities themselves or from the participating agencies. Community participation in the provision of health care has been incorporated into a new Primary Health Care Strategy for Ghana. □

References available on request.

## HRDoane and Company

Chartered Accountants

Halifax	Amherst	Digby	Newcastle
Hamilton	Antigonish	Fredericton	Summerside
Toronto	Bathurst	Grand Falls	Sydney
Montreal	Bridgewater	Kentville	Truro
Saint John	Campbellton	Marystown	Windsor
Charlottetown	Corner Brook	Moncton	Woodstock
St. John's	Dartmouth	New Glasgow	Yarmouth

# Overcoming Resistance to Health Care Delivery in Developing Areas\*

Betty Cowan,\*\* M.B., Ch.B., F.R.C.P.E.,  
Punjab, India

## INTRODUCTION

The community diagnosis made possible through the first Five Year Community Health Project revealed that the information that within the control area, two distinct groups exist: (a) the socio-economically privileged, educated, and high caste people; (b) the underprivileged, poor, illiterate, depressed class Harijans, who constitute 30 to 40% of the community.

Pooled data for the entire community tended to hide the disparity and subsequent separation of data shows that group (b) remained relatively unchanged at the end of the five years.

## I New Strategy

Devise a method of ensuring that group (a) can move towards greater involvement in their own health care by use of printed material, audio-visuals, and other health education devices under competent supervision, thus requiring less frequent home visitation. We wish to ascertain what level of responsibility can be assumed by this segment of society for family and community health care.

By selective redistribution of work, to focus on group (b) which cannot be expected to comply with advice; develop a new strategy in an attempt to overcome their suspicion and resistance; train people of group (a) to realize their social responsibility for people in group (b); recruit women from their own sections to monitor the programs in the homes.

## II Areas of Concentration

1. *Malnutrition:* 60% of the children aged two or three years from the Harijan community have 2nd or 3rd degree malnutrition. Applied nutrition programs fail, not because target population has not been identified, but because of failure to secure full cooperation of those affected. Our new methodology seeks to resolve the problems of unconcerned parents; prevention of malnutrition during "in utero" and "extragestate fetal" periods; supervision during the critical age periods of 13 to 36 months; and the "no priority" babies.

2. *Tuberculosis:* Greater emphasis on detection, treatment, and follow-up of tuberculosis patients with a national defaulting rate as high as 50% with subsequent incalculable damage to the community as a whole. The Community Health Control Program has succeeded in reducing the drop-out rate to 7.8%; now it is planned to enlarge this supervisory activity and strengthen the methodology for

greater outreach. With approximately one million deaths each year in India due to tuberculosis-related causes, this is a campaign of top priority.

3. *Tetanus:* 22% of infant deaths in India are due to tetanus. This is a major challenge for village workers. Our control area has seen the incidence reduced to zero by utilization of proper methodology. This can be effectively carried over from our "intensive" to our "extensive" areas.

4. *Other Services:* In addition to special areas of concentration, full services provided by the infrastructure will continue to be: Maternal care, child health, family planning, school health, control of communicable disease, nutrition, environmental sanitation, and maintenance of vital statistics. In every program, health education is given an important place on the list of functions.



Water Pump in India.

## III Conclusions

Contrary to commonly accepted theories, the development of community-oriented outreach health programs cannot eliminate the more highly-trained clinician in favour of unskilled workers. In the past Five-Year Program, only highly-skilled and research-oriented personnel could have discovered the tremendous difference in compliance between group (a) and group (b). The whole attitude of the latter group towards toddler malnutrition calls for considerable research into methods of nutrition education. The organizing of this will have to be undertaken by highly-skilled research-oriented personnel. However, a lay person in the program will also be the village health worker selected from the group in the community being served. Doctors and paramedical staff will be guided to train this village worker,

Continued on page 144.

\*Notes from an address, 2nd International Congress of the World Federation of Public Health Associations, Halifax, N.S. May 23 - 26, 1978.

\*\*Professor, and Associate Director of Community Health, Christian Medical College, Ludhiana, Punjab, India.

# Community Health Education in Finland

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In late May of this year, Eastern Canada was honoured by a visitor from Finland. Dr. Pekka Puska, M.D., Ph.D., Professor at the University of Kuopio, Director of the Central Public Health Laboratory Epidemiological Research Unit, and Chief Investigator of the Finnish Community Health project, travelled to Halifax, at the joint invitation of the Nova Scotia Heart Foundation and the Canadian Public Health Association, to report on the preliminary findings from the fifth year progress report on the effects of the Community Health strategies presented in the North Karelia project. While in Halifax, Dr. Puska spent a great deal of time discussing the Project with members of the Nova Scotia Heart Foundation Public Education Committee, in both formal and informal settings; presented his findings to the Board of Directors of the Nova Scotia Heart Foundation at a luncheon meeting; addressed a Nova Scotia workshop for the Canadian Council of Cardiovascular Nurses; and was a keynote speaker at the combined 69th Annual Canadian Public Health Association/2nd Annual World Federation of Public Health Association's Congress Meetings.

This paper is intended as a resumé of the North Karelia Project strategies and evaluation as discussed by Dr. Puska during his visit to Canada. I have quoted liberally from a "summary of findings" presented by him but I take full responsibility for the material, as I have included both informal material from our discussions and formal material from many of his presentations.

Official statistics and several studies have indicated that Finland as a whole, and especially the eastern portion, has extremely high mortality and morbidity directly related to cardiovascular diseases (CVD). This especially concerns coronary heart disease for which the incidence rates in eastern Finland are the highest in the world.

The North Karelia project was planned and launched after a petition for assistance was received from the local population of the State of North Karelia in eastern Finland. The petition asked for an urgent national action to reduce the extremely high prevalence of CVD in North Karelia. Based on this request, a comprehensive community programme for control of CVD in North Karelia was developed in 1971 as a national pilot programme, under the National Health authorities.

North Karelia has a population of 180,000 persons engaged primarily in agriculture and forestry vocations. The prevalence of CVD is especially serious amongst the North Karelian males who generally, lead very physically active lives, are not overweight and do not appear to have "Type A" stress. The problem for the investigators, therefore, was to determine what factors in the environment could be considered causal in the high incidence of CVD and what factors might be reduced through changing patterns of lifestyle.

The decision as to what lifestyle factors would be considered or included as possible causal factors was based on the literature available at the time. Few strategy models based on a community approach were available, forcing the researchers to formulate an innovative plan based on the Finnish culture and the existing social structure. The three lifestyle factors selected by the researchers as the most probable risk factors associated with the incidence of CVD in North Karelia were smoking, high serum cholesterol and blood pressure.

The intermediate objectives of the programme are to reduce the level of the known CVD risk factors (smoking, serum cholesterol and blood pressure) among the whole population, and to promote secondary prevention among the CVD patients. As a method, the programme uses community intervention strategies which are integrated in the service structure and social organization of the community.

A comprehensive community analysis was made concerning the CVD situation in the community, at the beginning of the programme. In a random sample "baseline" survey in 1972, it was found that the level of the three CVD risk factors was extremely high among the whole population and especially serious amongst the males. Among 25-59 year old males, 51% were current smokers, the mean serum cholesterol was 269 mg% and the mean casual blood pressure was 147/90 mm Hg. The myocardial infarction and stroke registers confirmed the extremely high CVD incidence rates, especially among the middle-aged population.

The investigators then decided that they must plan strategies which included the total population and the lifestyle of the total population, and that these strategies must be integrated into all of the activities of the Community. These activities must be integrated beyond the health related structure and into the social structure of the Community.

Practical subprogrammes were developed within the programme and they were naturally implemented in the community. These concerned the various steps in the natural history of coronary heart disease, and outlined the practical services and the inbuilt evaluation. The elements of the intervention have included intensified health information, organizing of individual services (integration of the needed measures into the existing services and creation of necessary new services), training of the personnel, and introduction of environmental changes. The aim has been to organize an intensive community action with a systematic service structure as the backbone.

In detail, these subprogrammes required: 1) that disease and strategy information be disseminated to the public — accomplished through media (newspaper, radio, television) presentations, meetings, pamphlets, letters, etc.; 2) the training of assistive personnel in the Community — personnel from the areas of health, social services, schools and from amongst leaders in the Community; 3) the reorganization of existing services to integrate the needed

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services into existing services, especially at the grass roots level; 4) to create environmental changes — promote anti-smoking legislation, create smoking restrictions, convince dairies to produce low fat products (without loss of revenue), convince people to grow vegetables, and to convince local meat companies to reduce fat contents in meat products; and 5) to evaluate the value of the strategies.

The aim of the evaluation of the programme is to assess the feasibility, effect, costs and the process that has taken place in the community during the 5-year period. The evaluation uses random sample surveys (at the outset and at the end of the period), disease registers, other studies and existing national data sources (deaths, hospital admissions, cancer registers, etc.). For the evaluation of the effect a matched reference area is used.

The purpose of the evaluation measures was four fold: 1) was it possible and to what extent was it possible to carry out such planned strategies — and what really happened; 2) what was the effect of the planned strategies on the intermediate objectives and on the primary objective of reducing the cardiovascular disease rate and mortality; 3) what was the cost of the programme to the community and what were the financial implications to the community; and 4) what actually happened in the community — what were the desirable and undesirable effects of the programming on the community.

At the end of the five-year period a very good feasibility has been noticed. The support of the population and local decision-makers has been encouraging and the cooperation of the health personnel good. The programme has been implemented within the existing service structure, without practically any new resources in the area for this purpose only. At the end of the 5-year period a much greater satisfaction with the CVD control activities was observed among the North Karelian local decision-makers and health personnel, in comparison with the comparative populations in the reference area.

The follow-up data in North Karelia (NK) have indicated continuous changes in health behaviour of the population towards the wanted direction. The preliminary data from the five-year-terminal survey have confirmed these findings, but indicate also some favourable changes also in the reference area (ref.). The proportion of current male smokers decreased 17% in NK and that of female smokers 22% (in ref. area resp. 13% and 13%). The proportion of persons using butter on bread decreased 16% in NK (ref. 10%), and the proportion of males using at least 10 gr. of fat on a slice of bread decreased 37% (ref. 1%). The average serum cholesterol level among males decreased in NK by 10 mg% (+1 mg% in ref.). The proportion of males under antihypertensive drug treatment increased 3.9-fold in NK (2.3 in ref.). The average diastolic blood pressure of males decreased 2.2% in NK (increased 0.4% in ref.), and the proportion of elevated diastolic values (95 mmHg) decreased 25% in NK (increased 3% in ref.). Thus the favourable changes, especially concerning reduction of high blood pressures, serum cholesterol level and some dietary changes, are clearly greater in North Karelia than in the reference area.

An observed reduction in the CVD risk factors in North Karelia is in accordance with the first observations about a reduction in the incidence rates of cerebrovascular strokes. The reduction has now been observed also for the incidence of acute myocardial infarctions and for total mortality.

According to the register, the incidence rates of acute myocardial infarctions in NK decreased from 13.8 in 1972 to 10.9 in 1977 (30-64 year old males, per 1000). The respective total mortality rates changed from 11.9 to 10.6. However, a careful analysis is still to be carried out for the mortality and morbidity in North Karelia compared with the available data from the reference area.

The programme in North Karelia will continue after the initial five-year period, and a follow-up of CVD and CVD risk-indicators is organized to assess the longer term changes. In the meantime, many of the experiences are already being planned for application nation wide.

The total evaluation is not yet complete; the facts presented in this paper represents preliminary data. Later and more complete data is expected to more fully test the value of the North Karelia Project. Notwithstanding that the data presented here are preliminary — the final conclusions are predictable and the Finns are to be congratulated. □



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# "Tip Top Medical Care"

## Primary Health Care in the Northwest Territories

B.J.S. Grogono,\* M.D., B.S., F.R.C.S.(C), F.A.C.S.,  
Halifax, N.S.

The Northwest Territories are a vital part of Canada, and although they are placed on top of the world in one of the most inhospitable climates, they support two of the world's most hardy and ingenious races — the Indians and the Eskimos, who have survived without medical help from the civilized world for thousands of years. It was a mixed blessing that brought them in contact with the white races. In 1756 Martin Frobisher's first visit to Baffin Island resulted in some misunderstanding and an Eskimo was subsequently abducted to England where his outstanding skill as a canoeist was demonstrated to Queen Elizabeth. He died of a cold unable to adjust to Britain's humid spells. Later contact with whalers and traders brought epidemics of infectious fevers, tuberculosis, smallpox which was catastrophic to these hardy people. Eskimos no longer live in igloos, drive dog teams — at least not for necessity. The white man has found treasure in the North and is busy exploiting its riches. Although gold is not plentiful as Martin Frobisher believed, large deposits of mineral and oil are now being surveyed and the North is a technician's paradise. Bell Telephones set up satellite systems for communication, the C.B.C. organizes programs for entertainment, color television is available in hospitals, and oil riggers dig busily almost into the Arctic Circle. Centres like Frobisher Bay have become central distribution depots, centres for education, and technical and medical headquarters.



Frobisher Bay beautiful but remote.

The Eskimo and Indian life has been transformed from one in which he had been evolved by constant adaptation over some 4,000 years, to an entirely different way of life within the past ten years. It says a lot for native ingenuity and tolerance that he has retained his identity, his humour and his wisdom. Medically, we have a debt to repay. Before white

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men arrived there were no tuberculosis, infectious diseases, or venereal disease. Starvation, neonatal death, and childbirth were not uncommon but the very survival of two Canadian races was proof of their successful adaptation to nomadic existence.

Two decades ago tuberculosis was over twenty times more common amongst the Indians and Eskimos than the general Canadian population. The medical ship, C.B. Howe, made an annual trip carrying out medical treatment and taking away tuberculous victims to sanatoria. Many perished and many ran away rather than submit to this miserable migration. During the past ten years, however, remarkable strides have been made. Dr. Colville gives some very interesting statistics; there have been no deaths from tuberculosis since 1976 in the Northwest Territories. Infant and neonatal death rate and crude death rate have been drastically reduced. On the other hand, the birth rate has also been reduced (it is still two and one half times that of the white population), death from violence and suicide have increased. Tooth decay, venereal disease, appendicitis, gastroenteritis, and ear disease are conditions which are not listed in this analysis. Nonetheless they are common.



David Martin, Zone Director Eastern N.W.T. (1978)

Thanks to breast feeding which was reintroduced by Miss Vera Roberts, Nursing Director and Frank Timmermans, Zone Director, gastroenteritis and ear disease has greatly decreased since 1976.

A health plan for the north, like those of developing countries, is based on three levels of management. First, the nursing stations, and there are some forty of these in the Northwest Territories. They serve communities of several hundred to a thousand. In the eastern Arctic, some sixteen centres are organized from Frobisher Bay. Thanks to dedicated staff and good planning they are doing an

excellent job. Miss Roberts, Director of Nursing for these settlements has been devoting all her energies to the program since 1955. When she arrived in Penanirtang, there were only tents and huts and a small hospital. Now each nursing station is well equipped and has constant radio communication by satellite with a base hospital and has expert transport by Twin Otter throughout the year.



Miss Vera Roberts, Director of Nursing and pioneer in the Eastern Arctic.

I visited a nursing station in Pangnirtung and was impressed by the excellent facilities. In addition to two beds in reserve for emergency patients, a good labour ward and medical treatment room are provided. A mobile x-ray machine and pharmacy of essential drugs are available. The nurses have comfortable quarters, a separate area is arranged for public health work, lectures, films, inoculations and family planning seminars in an attractive setting. Normally two nurses "man" the station, but occasionally three. A nurse from Dalhousie Family Practice Unit was there when I visited. Occasionally a nurse is left on her own in the settlement. It is great life but self-assurance and adaptability are necessary and these girls are virtually rural general practitioners. Recently an attempt has been initiated to train an Inuit woman as a lay pharmacist. She is an intelligent woman who carries her small child neatly tucked in the back of her garment as most Eskimos do. A happy sight as she moved around the hospital.

A Primary Health Centre such as this is in trouble without the backing of two other levels of care. Secondary care in the Eastern Arctic is based on Frobisher Bay General Hospital. Here, there are four to five physicians including a surgeon and anaesthetist, and residents from McGill University, twenty nurses, and a fully equipped modern hospital. Emergency cases include pre- and post-partum hemorrhage, complications of labour, premature birth, gunshot wounds, anaphylactic shock, hemorrhage, pneumonia, cardiac conditions, eye injuries, abdominal emergencies, and a host of other problems, especially paediatric conditions. All such cases are evacuated by medicare team which is sent out from Frobisher Bay to collect the victim. The Twin Otter aircraft can land almost on a shoestring and a group of extremely experienced pilots of Bradley's airways are always available to set out, provided the weather gives them a chance. There is an unpredictable array of emergencies which acts as a spur to the general hospital. The morale is high, nurses are competent to set up drips and have

considerable responsibility. Physicians are fully conversant with endotracheal tubes, blood transfusions and emergency surgery. No doubt the care at Frobisher Bay saves many lives and thousands of dollars each year. After all, it costs \$15,000. to commandeer a jet to Montreal and some \$3,000. to send a patient by regular aircraft. Nonetheless the good connection exists between Frobisher Bay and the more specialized third level centres of Montreal. Paediatric, neurosurgical, and other specialized help are freely sought when circumstances demand.

I can only give an outline of this health care system now being dispensed in the Northwest Territories but, in reflecting on the Primary Health Care around the world, it seems that Canada is responding to her responsibilities in the North. Someone did write in the local newspaper that they were kept waiting twenty minutes before their sprained ankle was seen. This can happen even in our most highly-developed centres. Nurses working in the remote areas are enjoying their roles because they have chosen them; they work long hours and deserve to be rewarded appropriately. There is a touch of drama and danger in the "medivac" in the North that enlivens what can be a very long winter. Survival kits include, fishing rods, snares, signals, clothing, sleeping bags which keep out 40° of frost.



Twin Otter used for all "Medivacs".

I only had a small glimpse of an impressive organization. Let's hope these standards will always be maintained.

Like the Eskimo, we must be adaptable, resourceful, courageous and will continue to have a medical service that the rest of the world and the rest of Canada can copy. □



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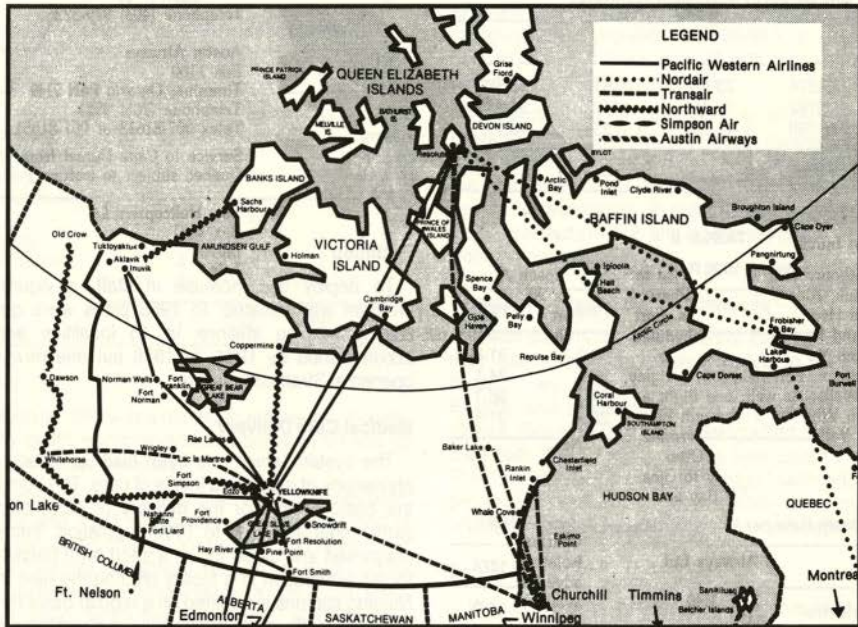
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# Health Care Delivery System in the Northwest Territories

From 1966 to 1976\*

F. J. Covill,\*\* M.B., B.S., M.F.C.M., D.P.H.

Ottawa, Ontario



Scheduled Air Service into the Northwest Territories.

## INTRODUCTION

Northern Canada is frequently claimed to be a last frontier. Whatever validity this may have on a geographical basis, it is true as far as the health of the native population is concerned, and also in the development of the health care delivery system.

With the end of the Second World War, the attention of government could be turned to home issues, and while development of Canada's north was an ultimate goal, the destiny of the native people received some thought, and in concert with the creation of lines of communication and the organization of government, social development, education, and health received renewed attention. Within a generation the lifestyle of northern peoples changed, and the change, for better or for worse, is reflected in the health statistics of the time, and the development and operation of health care systems. It is this change which the paper treats, and consideration is given to the relationship between the means adopted and the results achieved.

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\*\*A/Director General, Program Management, Medical Services Branch, Health & Welfare, Canada.

The period to be discussed starts with the establishment of northern region in 1966 and runs until December 1976. Prior to this, health services to the north were provided from three operational centres in the south: Ottawa, Winnipeg and Edmonton. The creation of northern region established one centre of management for health programs north of the 60th parallel. This included Northwest Territories and Yukon Territory.

The operations were managed from zone offices situated at Whitehorse, Inuvik, Yellowknife, Churchill, and Frobisher Bay. The original staffing envisaged a medically qualified zone director who in some zones was expected personally to provide some medical services.

From April 1974, Yukon Zone separated from Northern Region, becoming Yukon Region, the remaining area was named Northwest Territories Region. The substance of this presentation deals essentially with the Northwest Territories.

The estimated population of Northwest Territories in 1966 was 26,865 of which Indians represented 6,274; Eskimos 9,792; and others 10,799. The difference noted over the period in percentage terms accounts for an increase of 3% in representation of "others" and 3/4% of Eskimos, for a reduction in Indian representation of 3 3/4%.

Representative figures from vital statistics are drawn to illustrate changes in the birth rate, neonatal death rate, infant death rate and crude death rate. Points of interest are the fall in the Eskimo birth rate which still remains some 2½ times that for Canada. The reduction in the neonatal and infant death rates shows a general decline of some 50% during the period. The decline in the natural increase is more modest, as the fall in the death rate also influences this statistic.

**TABLE I**  
Population of Northwest Territories

	1966		1976	
Indians	6274	23.4%	7812	19.5%
Eskimos	9792	36.4%	14723	35.9%
Others	10799	40.2%	17334	43.4%
Total	26865		39869	

**TABLE II**  
Birthrate per 1000 Population NWT

	1966	1976
Northwest Territories	40.0	31.8
Indians	37.9	24.1
Eskimos	54.4	36.1
Others	28.2	31.5

**TABLE III**  
Neonatal Death Rate per 1000 Population (1-28 days) NWT

	1966	1976
Northwest Territories	31.6	16.0
Indians	16.8	13.3
Eskimos	35.6	16.6
Others	36.1	15.1

#### Selected Cause of Death

In 1966 deaths from accident and violence were at the rate of 145 per 100,000 population while in 1976 this had risen to 193 per 100,000 population. Deaths from tuberculosis were not uncommon. The rate in 1966 being 11.16 per 100,000. No death from tuberculosis has occurred since 1972.

#### Staffing

Two hundred and ninety-three persons were employed in the health service to Northwest Territories in 1966, while in 1976 this had risen to 541.

**TABLE IV**  
Infant Death Rate per 1000 Population (under 1 year) NWT

	1966	1976
Northwest Territories	79.9	34.4
Indians	46.2	58.8
Eskimos	108.8	40.1
Others	52.4	20.3

**TABLE V**  
Crude Death Rate per 1000 Population NWT

	1966	1976
Northwest Territories	7.7	5.8
Indians	6.4	6.8
Eskimos	12.6	7.1
Others	3.98	4.2

**TABLE VI**  
Natural Increase (Rate per 1000 Population) NWT

	1966	1976
Northwest Territories	38.4	25.9
Indians	31.6	17.3
Eskimos	41.9	29.0
Others	24.3	27.3

#### Facilities

To deploy this increase in staff, a vigorous building program was initiated. In 1966 plans were developed for placing nursing stations in 16 localities and this was accomplished by 1971. In 1976 but one new station was opened at Strathcona Sound.

#### Medical Care Delivery

The system which has been built up reflects the current philosophy of graduated levels of care. The nursing station is the basic facility for the delivery of care, being found in settlements from 200 to 1000 population. Patients may be diagnosed and cared for on a short term basis, or prepared for air evacuation to a facility offering the next level of care. Nursing stations are visited on a regular basis by departmental medical officers and usually have direct telephonic contact (some by satellite communication), while a few still use radio telephones.

Smaller communities may be served by a health station which is not manned permanently, but has beds in which a seriously ill patient may be accommodated and cared for by a lay dispenser until evacuation can be arranged.

The next level of care is the district hospital of which there are seven. Two general hospitals and two cottage hospitals are operated by medical services branch, the remainder are under the control of voluntary organizations.

University hospital care is provided by evacuation to hospitals in southern Canada.

#### Prevention

With this framework as background it may be appropriate to deal with the preventive programs which have been developed during the same period and relate their overall effect on the statistics noted.

#### Family Planning

Before 1969, conception control was not legal in Canada. Consequently the native people, following their customary habits, tended to large families. As the causes of infant mortality fell, the families grew and poverty and overcrowding became more burdensome.

All nursing stations and hospitals are now capable of providing counselling and the necessary technical facilities for conception control. As well, a citizen based informational service is active. The reduction in the birthrate over the period has been noted.

**TABLE VII**  
**Deaths from Accidents, Injuries & Violence NWT 1976**

	Indian	Eskimo	Other	Total
Exposure	2	4		6
Drowning	3	3	5	11
Inhalation of Gastric Contents	2	2		4
Asphyxia		2	2	4
Suicide	2	4	2	8
Burns		10		10
Aircraft Crashes			5	5
Motor Vehicle Accidents		1	2	3
Poisons Excluding Alcohol			1	1
Gunshot Wounds Accidental	1		1	2
Homicide	5	1		6
Alcohol Poisoning	1	1	1	3
Other Falls — Crushing	2	1	2	5
Crib Deaths	3	5	1	9
<b>Total</b>	<b>21</b>	<b>34</b>	<b>22</b>	<b>77</b>

### Tuberculosis

This condition in 1966 was a not infrequent cause of death. More recently death is uncommon, but between 50 and 60 new cases are identified annually.

B.C.G. vaccination is routinely offered to the newborn. Between 1972 and 1974 a program was implemented of supervised prophylactic drug administration, and entry to the program was carefully controlled. Results showed conclusively that prophylactic administration of anti-tuberculous drugs was of value. From this experience, prophylaxis is offered to recent converters and child contacts of cases.

X-raysurveys have been discontinued as a routine. Sputum samples have largely replaced radiology and the tuberculin test is widely used as an epidemiological tool. A program to determine whether reaction dimensions was related to disease or B.C.G. was inconclusive.

### Maternity and Child Health

Clinics for the care of pregnant females are held throughout the territories, in clinics or nursing stations. Counselling and preparation for childbirth and child rearing are taught.

Well baby clinics are held throughout the territories. Anticipatory guidance handled and a schedule of protective immunization is offered against diphtheria, pertussis, polio, tetanus, measles, mumps, and rubella. Routine smallpox vaccination is no longer offered.

In smaller communities the acceptance rate is usually in the 90% range: Less success is recorded in the larger towns.

An "at risk" register has been developed for disadvantaged infants.

### School Health

The school population is the most healthy segment of the population. Nurses screen new entrants and children in the

system who are referred by teachers for apparent problems. Those confirmed by the nurse are referred for appropriate investigation. Immunizations are brought or kept up to date throughout school life.

Dental hygiene is taught in many schools by dental therapists. This subject will be expanded a little later in considering the dental preventive programs.

### Mental Health

An index of mental health is provided by statistics relating to death by violence. In 1966, there were 39 deaths in this category for a population of 28,865, a rate of 145 per 100,000. In 1976 there were 77 with a population of 39,869 giving a rate of 193 per 100,000.

An alcohol abuse consultant is employed to organize preventive programs. Mental health nurses act as program leaders at the zones coordinating consultant visits. Care at the community level is through the nurse and community health representative. A regional mental health consultant was appointed in 1972, and a zone psychiatrist to MacKenzie Zone in January 1976.

### Community Health Representatives

These staff members are part of the health care team and their role is almost entirely devoted to preventive public health. They are native persons who are able to speak English and relate public health practices to the native culture. Since 1972, an increasing effort has been made to train both them and the nurses with whom they will work. Their activities are largely devoted to health education in the preventive fields which have already been mentioned. In addition they are active in environmental health education.

### Dental Health

With the widespread availability of store food, a deterioration in the state of dental health amongst the native population became evident. The recruitment of sufficient dentists to provide dental care was difficult and the concept of training native persons to do some 80% of the technical work which a dentist accomplishes was considered. In 1972, a dental therapy school opened at Fort Smith and each year since 1974, a number of graduates has been recruited into the public service. While these technicians provide restorative and dental surgery, some 20% of their time is devoted to public health teaching in the schools.

In addition, a number of sources of potable water is fluoridated and fluoride supplements either separately or combined with other micronutrients and vitamins may be obtained under the Public Health Program.

### Nutrition

In 1970-72, a survey of the nutritional status of Canadians was carried out on behalf of the Department of National Health and Welfare and, in 1975, the Eskimo and Indian surveys were published. Although the northern health research unit had certain criticisms of the methods and findings, it appeared that the native population might be undersupplied with certain micronutrients and vitamins. Accordingly, a nutrition supplement program was initiated in February 1975.

Nutrition knowledge is part of health education. A full-time nutritionist is employed to coordinate the information

available to nurses in nursing stations and community health representatives and also to organize with other government departments nutrition projects.

### Communicable Disease Control

The prophylactic program against infectious disease has been mentioned. A registry of notifiable disease collects statistics and is able readily to identify outbreaks of diseases of public health concern such as infectious hepatitis, typhoid fever, salmonellosis, bacillary dysentery, and a consultant parasitologist is available to diagnose and manage parasite infestations.

Post-exposure rabies vaccine as well as botulism and diphtheria antitoxin, are kept in nursing stations.

Venereal disease is almost confined to gonorrhoea. The number of syphilis occurrences in a year is usually expressed in single digits.

### Environmental Control

The control of communicable disease is closely related to the maintenance of a healthy environment. At community level environmental health officers, assisted by community health representatives and community health nurses monitor water supplies, food distribution outlets, garbage disposal and sewage disposal. The Health Department is not responsible for water, sewage or garbage disposal services since 1966, but only for the regulation of these services by virtue of the powers of the public health ordinance.

In conclusion, it should be mentioned that since 1970, increasing university involvement has been encouraged in the health field. Services range from direct clinical care, patient consultation, special investigations, to surveys, and closely working with these independent academically related persons has been the Northern Health Research Unit. The latter has more recently been oriented to solving problems related to environmental contaminants.

With the greater industrial activity in the Northwest Territories, planning is directed to more involvement in industrial medicine. We who are charged with the development of the health services of a developing community may draw inspiration from the thought that the challenge to further efforts will never fail. □



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# What Primary Health Care Means to the Family Doctor in Canada\*

Cyril W. Bugden,\*\* M.A., M.D., C.C.F.P.,  
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Primary health care involves the personal interaction between doctor and patient.

Nineteen years ago, when one ventured into the field of primary care, it was called general practice. One assumed that everyone wanted good medicine and that meant the medicine that one personally had to offer. It was a surprise to discover that many people wanted medicine they thought to be good — the "shot" of penicillin or the "shot" to pick them up and give them energy. The single shot of penicillin or vitamin B<sub>12</sub> was then in vogue.

This may have been what the young man had in mind when he phoned, late one winter evening, to complain that he felt queer and thought he must have a liver ailment. He wanted a house call. On arrival at his apartment, there was a rather voluptuous lady reclining languidly on the chesterfield and the remnants of a candle-light dinner and wine nearby. The scene hardly suggested liver dysfunction. The man looked slightly harassed but not hepatic. There was nothing wrong with his liver! The situation was a letdown not only for the man in question but for the brand new doctor. The man today would have known what his problem was and not ask for a house call. People are more sophisticated nowadays and so is the family doctor.

The person doing primary health care is becoming increasingly broad in scope and knowledge. He is not doing general surgery but he is more aware of the so called psychobiological and social aspects of patient care.

What is "primary care"? The literature says it is "contact, ongoing, integrative care."

This is the care which the patient receives when he approaches the health care system for help. Obviously, this would work ideally if one were able to teach the patient what to bring and when to bring it. If one could teach him or her about the sensible ounce of prevention now and in the long run, or about the illness that only the doctor can treat well, or the real emergency. In short, the education of the patient is an "ideal" and achieved only in some cases. Patients come with what they fear is wrong and one has to deal with that fear. The physician's fatigue sometimes generates cynicism and disillusionment. For instance, the lady with hives was very worried. Now people with hives don't worry, they itch! This woman's face betrayed her fear. It took only a moment or two to establish the hives' real meaning for her. She had recently had a hysterectomy for cancer of the cervix *in situ* and believed the hives meant that the cancer was all through her — whereas in fact, she had a complete cure. The reassurance one was able to give her changed the worried look into a relieved smile.

In a sense, though, this lady does not qualify as a "proper" primary care patient. She was seen in the Emergency Room and medicine in that setting does not always have the ongoing aspect that the end definition of primary care suggests. Those included in this category covers almost the whole gamut of medicine. They make up one's practice. They present at the office, in the home, or in the hospital. They also may be encountered in an industrial plant, nursing home, a regional rehabilitational centre for mental patients or a home for mentally retarded children. Here is an example: A 63-year-old man was found to have a suspected abdominal aneurysm on routine annual examination. What he needed was a referral to a cardiovascular surgeon before the aneurysm ruptured. It did not matter to him whether the doctor regarded himself as a family practitioner or a primary health care physician.

The third part of the definition of primary health care is the "Steering Component". Primary care physicians should know why, when, how, to steer the patient through the health care system to obtain maximum benefit. This means appropriate consultation. To what specialist does one send the woman with headaches, double vision, and significant rectal bleeding? Or to what specialist, if any, the 10-year-old boy with chronic abdominal pain? To what specialist, the person who whines through nearly all the bodily systems? If one makes an inappropriate referral, the patient is puzzled and made more anxious. The job of the first contact physician is to relieve anxiety and not to create it.

Nowadays, besides the psychiatrist, other important help can be obtained from psychologists, physiotherapists and technicians, and lets not forget the clergymen or the nurse.

The nurse plays a special role in the community. One thinks of the elderly diabetic, with failing eyesight and memory, who depends upon the nurse's supervision to keep his insulin and drugs straight, and to take his blood for tests when necessary. In a city practice, one frequently encounters the Victorian Order of Nurses in such a setting.

Fifteen years ago, in a rural practice in Prince Edward Island, it was often crisis medicine. The potato farmer with acute tonsillitis, trying to get his crop out while the weather lasted, got his shot of penicillin. One felt close to the people so when apparent tragedy struck it was difficult to remain objective. One was deeply concerned by the death of a young woman with acute pancreatitis whose husband and close relatives felt that prayer was better than nasogastric suction and I.V. therapy and refused her admission to hospital.

Some crises were humorous in retrospect, such as the time one left the home of an elderly lady with pneumonia during a snowstorm and became lost in the blizzard. By telephone, the word went out from the patient's relatives that the doctor had disappeared from view. When, after an anxious half hour, one made it to the main road and the

\*An address, 2nd International Congress, World Federation of Public Health Associations, Halifax, N.S. Canada, May 23, 26, 1978.

\*\*Address: Woodlawn Medical Clinic, Dartmouth, N.S.

B2W 2S8



hopelessly stranded car — there standing majestically against the storm was the area's most notorious alcoholic. His "come on up to the house Doc and get warm" was akin to a benediction. Without benefit of previous preventive work on my part, he was having one of his dry spells and hot straight tea was the order of the day for a half frozen man. Unwittingly and apogetically, he was really practising good first aid.

Times have changed! That province, like this and others in Canada, now has Medicare (the Governments prepaid medical insurance plan) available to all. Doctors' offices are much busier. People tend to seek medical help before the problem reaches the crisis stage.

The job of patient education is a slow process, anywhere, anytime. It's easy to reassure the patient that the pimple he has is not malignant. It's a struggle to convince him to change his lifestyle in an effort to ward off the effects of eating too much, and smoking and drinking too much. These are pleasures and man does not give them up readily. What can we do about rising costs of medical care? Stay healthy is the answer.

Finally, what makes a good primary care physician? It is a privilege to be a physician but with this privilege goes responsibility: the responsibility to educate and to keep on educating oneself. There is no substitute for a knowledge of good medicine. It must be adapted to primary care situations. To help people with this, here at Dalhousie Medical School, each third-year student is assigned a family with social and economic problems. For all intents and purposes, the student serves as their physician under the supervision of a medical advisor, who is a family doctor. In addition, fourth-year students spend a month in family medicine. After completion of a rotating internship, the medical graduate now has the opportunity to undertake a

two-year residency in family medicine, leading to certification. For the person who goes into practice after completion of the internship year, there is a continuing medical education programme, conducted by the university in cooperation with the College of Family Practice.

Besides being knowledgeable, the physician must have compassion for his fellow, a sense of humour, and a capacity to deal with truth without destroying hope. These things are not easily taught in medical school. One needs all the help one can get! □


## OVERCOMING RESISTANCE TO HEALTH CARE DELIVERY IN DEVELOPING AREAS

*Continued from page 134.*

say one for every 2,000 population, so that the community will have, through this worker, an active role to play in improving the health of their area. Only through such a pattern can local religious and cultural prejudices be overcome.

The key to success in any such program lies in the motivation of the worker. Experience has taught us that anyone involved in the health of a community whether it be the specialist in hospital, the medical officer at the health center; the auxiliary nurse-midwife at a remote sub-center; or the local village health worker, must be at all times a convinced and committed health educator. □

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# The Humus Toilet

## Its Advantages and Disadvantages\*

Douglas A. Strong,\*\* C.P.H.I.(C),

St. John's, Nfld.

The various methods of sewage disposal existed almost from the beginning of civilization. History tells us that the Romans had a sophisticated system of disposing of their waste. The first sewer system was constructed in London in 1855 and a little later in 1870, an eminent Victorian plumber, Thomas Crapper (later Sir Thomas) perfected a device known as "Valveless Waste Preventer". Thus this famous English inventor became the father of the modern flush toilet and provided millions of his posterity's posteriors with a comfortable, contented perch. The impact of this remarkable invention has left an indelible mark around the world and the flush toilet now occupies a position of indispensable necessity in our modern society.

Some unknown Victorian poet immortalized the significant advances in relation to sewage disposal of that day as follows:

Oh, they're moving Father's grave to build a sewer,  
They're moving it regardless of expense,  
They dug up his remains,  
To put in five-inch drains,  
To irrigate some posh bloke's residence.

When, in 1880, the British Patent Paper Company began producing rolls of pre-cut paper and a little later two American brothers named Scott developed perforated toilet rolls, the bathroom was practically complete and the flush toilet finally came into its own. It must be stated, however, due to its cost and potential environmental damage, that the finger of doubt and criticism is being pointed at this rather remarkable invention of Sir Thomas Crapper and therefore, it is becoming increasingly apparent that flush toilets in particular and conventional sewage disposal methods in general are creating increasing disenchantment in our present day society, mainly as a consequence of escalating costs and environmental damage.

For example, in the Province of Newfoundland there are 311 incorporated communities with a population of 460,000, and more than half of them have complete or partially completed sewerage systems. This leaves approximately 100,000 of the population residing in non-incorporated communities. Depending on a number of variable factors, the cost of providing household water and sewer services is astronomical, ranging from \$2,000.00 to \$22,000 per household and, apparently, the end is not yet. In the fiscal year 1978-79, the Government of Newfoundland has budgeted twenty-seven and one-half million dollars for water and sewerage systems, and this is only the proverbial "drop in the bucket".

\*Notes from an address, 2nd International Congress, World Federation of Public Health Associations, Halifax, N.S. Canada. May 23-26, 1978.

\*\*Public Health Inspector, Department of Health, Government of Newfoundland, St. John's, Newfoundland.

Many communities have low housing densities thus increasing the cost per household, and what about the extremely heavy demands on water resources as a consequence of the conventional flush toilet and the sewerage disposal systems? With every flick of a wrist and the flush of a flush toilet, approximately five to seven gallons of water are used. The average family in North America uses approximately 88,000 gallons of water each year of which approximately 40,000 gallons are used for toilet flushing. This means that in Newfoundland alone, over five billion gallons of water are flushed down the toilet annually. Furthermore, the intrusion of water-carried sewage into fresh and salt water bodies is causing increasing concern, indeed alarm, throughout the world and the cost of treating or disinfecting water for human consumption presents a problem of considerable magnitude. Clearly, some alternative method of sewage disposal must be found! Many people feel that the humus toilet appears to be an acceptable alternative.

The following brief facts relating to the humus toilet may bring this method of sewage disposal into clearer perspective. In general terms, the humus toilet is a biologically decomposing toilet which transforms human waste into environmentally safe humus. The process needs *no water, no chemicals, no septic tank*, and it is claimed to be *completely odourless*.



Sanitation in Tanzania.  
Compare this to the Humus Toilet in Newfoundland.

The unit requires a standard electrical outlet to operate. A leveller ensures that waste is evenly distributed. It is then dehumidified by a thermostatically controlled air recirculation system that maintains a temperature of 90 degrees. The air, saturated with moisture, is discharged through a ventilation pipe. A built in hygrometer and an air outlet control help to maintain the necessary humidity.

After a years daily use by four or five people, all that remains is approximately 55 pounds of dried humus which collects in a tray beneath the bowl, and which can be used as garden fertilizer.

The humus toilet was developed in Sweden, is now manufactured in Canada, and is distributed in the western hemisphere including Canada by Future Eco-Systems Ltd., Markham, Ontario. The cost of the unit depending on the model varies from approximately \$808 to \$958.

The humus toilet has a number of advantages and some disadvantages. Its advantages include: —

- (1) It requires no water, no chemicals, no septic tank, and is claimed to be odourless.
- (2) It is adaptable for homes, cottages, mobile homes, farms, basements, mines, construction camps, lumber camps, and in remote locations.
- (3) Because it is self-contained, it will prevent contamination of water bodies and, as a consequence, enhances environmental quality generally.
- (4) Its operation is economical, consuming about as much electricity as that required by a domestic refrigerator.
- (5) It will conserve many thousands of gallons of water — a very important consideration indeed in periods of drought or in locations where water is not as abundant as it is in North America.
- (6) It produces approximately 55 pounds of humus or compost annually, which may be used as fertilizer.
- (7) It is durable and self-contained, with easy replaceable parts. Several models are available for recreational, industrial, and domestic use.
- (8) It can meet the needs of a family of four for up to one year, without being emptied.
- (9) It is easy to install in most existing structures.
- (10) With proper instruction for use and with supervised installation, it can provide a safe sanitary means of sewage disposal where soil is impervious, where the watertable is high, where there is little or no topsoil, or where other conditions exist which prelude the installation of a conventional flush toilet system.

Some disadvantages of the humus toilet include: —

- (1) Waste water, other than sewage wastes, including water from kitchen sinks, baths, showers, etc. must be disposed of independently. From the public health point of view, it is just as important to make adequate provision for the sanitary disposal of this "grey water" as it is for sewage.
- (2) As a consequence, a lot size similar to that required for conventional sub-surface, sewage disposal systems must be provided, with adequate separations between the "grey water" disposal system and sources of drinking water on existing or adjacent lots being maintained.

- (3) A grease trap must be provided in the process of disposal of "grey water."
- (4) It is crucial for the ventilation system to be properly installed under supervision. It has been our experience in Newfoundland that self-installation has resulted in some odour problems, because 90% of the units are self installed. Two complaints concerning odour problems have been documented.
- (5) Careful instruction, respecting installation and operation, to existing and potential users is an essential pre-requisite.

In summary, 185 humus toilet units have been installed in Newfoundland within the past year or two. Units have been placed in urban centres, in a number of rural areas such as in summer cottages, in some of the small post offices throughout our province, in remote CBC relay stations, in remote power utility maintenance depots, in lighthouses, and in other locations where installation of the conventional flush type system has not been possible.

A proposal is currently under consideration to install four humus toilet units in certain areas of the Capital of Newfoundland, St. John's, where municipal services cannot be provided for various reasons. It is hoped that a committee comprised of representatives of the Department of Health, the Municipal Council and the distributor, will be established to monitor the performance of these units.

With very few exceptions, the humus toilet units that have been installed in Newfoundland appear to be functioning satisfactorily. □



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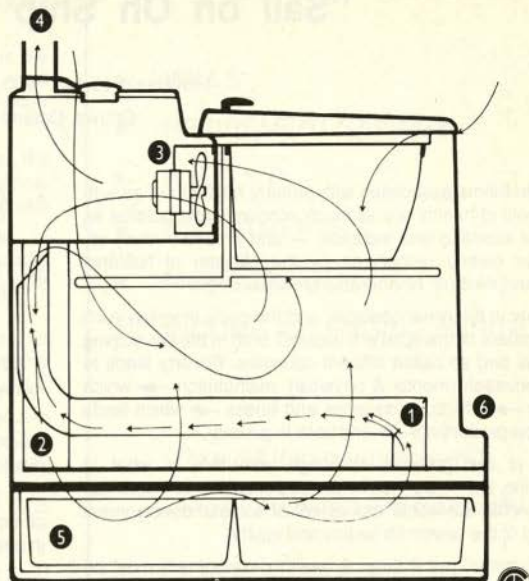
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# "Sail on Oh Ship of Health"\*

Franklyn H. Hicks,\*\* M.D., M.P.H.,

Ottawa, Ontario

The problems associated with primary health care as with any aspect of health, are as much economic and political as they are scientific and technical — and probably more so. This was clearly recognized by the Minister of National Health and Welfare, Honourable Monique Bégin.

Poverty is the great obstacle, and the cycle in which such vast numbers of mankind are trapped, both in the developing countries and so called affluent countries. Poverty leads to → deprivation (mental & physical), malnutrition → which leads to → infectious diseases and illness → which leads to → low productivity → and back to poverty.

That is our greatest challenge and that is what is compelling us — we health professionals — to make our moves within the whole movement of societal development as a part of the search for justice and equity.

Dr. Hammad put it thus: A health development must be within the framework of total human development.

Rosenau said many years ago: "Preventive medicine dreams of a time when there shall be enough for all, and every man shall bear his share of labour in accordance with his ability, and every man shall possess sufficient for the needs of his body and the demands of health. These things he shall have as a matter of justice and not of charity.

Preventive medicine dreams of a time when there shall be no unnecessary suffering and no premature deaths; when the welfare of the people shall be our highest concern; when humanity and mercy shall replace greed and selfishness; and it dreams that all these things will be accomplished through the wisdom of man.

Preventive medicine dreams of these things, not with the hope that we, individually, may participate in them, but with the joy that we may aid in their coming to those who shall live after us."

Are we starting to translate any of Rosenau's dream into reality? The focus of this conference suggests we are beginning to move in that direction. I hope so because there may not be much time left.

There are five "C"s of the conference upon which the ship of primary health care must sail.

The first C stands for **Community**. Health is a community affair. Success has been achieved in some programs reported here — success in ending the 'crazy quilt' pattern of the myriad specialty groups that carve up people and communities into organ systems.

The second C is for **Cultural integrity**. Three propositions are involved here:

1. Preconceived concepts cannot be imposed upon the community.

2. Any community program will be experienced as an agent of the external power unless it is run by the community itself. Community strengths and talents must be used.
3. The community aids must be true partners — afforded fully dignified and responsible work.

As well, the second C for Cultural Integrity holds the following points to ponder.

— It is now clear that the "Western" traditional approach to medical care is not the only model available. There must be a role for the indigenous healer in the system.

— Given the diversity of cultures and the uniqueness of communities, a successful pilot project in primary health care in one corner of the world may not apply to another corner.

— There is really a clarion call for us to be non-conformist in this conformist world, and papers presented here have shown that we are capable of being just that.

The third C is for **Citizen responsibility**. In the affluent society, Miss Bégin reminded us that lifestyle had a greater impact on the health of the people than the whole health care delivery system.

Let me turn to the words of the late Dr. James Vibert, a surgeon of Truro, Nova Scotia, and a beloved classmate of mine. Jim Vibert summarized this whole question of citizen responsibility in the affluent society in these words.

Improvement in health and happiness is not going to come from more doctors and more drugs, or even more research and more knowledge. It's going to come from being better, tougher people who will be physically fit and not abuse food and drugs and alcohol and tobacco.

Truly, one of the greatest tasks of the health professional is to create enlightened self interest in the community.

Many of the papers emphasized health promotion is predicated on the fact that informed individuals, aware of the consequences of their actions, may initiate social change. Dr. Pekka Puska presented the pragmatic side of lifestyle change resulting in a measureable improvement in the health of the people.

The role of citizen responsibility in developing countries embraces the same principle but at a different level. The concept was presented to us by Dr. Siwalle who stressed the term self reliance rather than self help.

The fourth C is for **Comprehensive**. The conference has stressed the fact that modern medicine must minister to society. The health professional must alter, if necessary, social patterns. We are focusing beyond the physical needs of the patient and viewing him as a social being. This involves the removal of social, organizational, economic, and geographic barriers.

I was impressed by the stress placed on comprehensive care in a sort of reverse order, i.e. not to consider everything

\*Closing remarks, 2nd International Congress, World Federation of Public Health Associations, Halifax, N.S. Canada, May 23 - 26, 1978.

\*\*Planning Secretariat Centre for Occupational Health and Safety, 300 Slater Street, Ottawa, Ontario. K1P 6A6

that must go in to the health system, but in the terms of the real world, to consider what can be safely left out.

The final C is the C of **Collaboration**. It embraces the well-oiled word "teamwork". It means collaboration with other societal sectors — especially the coordination of welfare services, social services, and health services.

In general, the delegates have been optimistic for the future of primary health care. Not in any Pollyanna sense. You have reflected what Dr. Fendall reminded us of — that is that there is no instant public health.

A few papers were pessimistic about the future of health care and highly critical of the direction current health care policy is moving.

I do not share this pessimism but let us be thankful for their warnings and let us be knowledgeable about their views and concerns, and let us feed them carefully.

Those who are perceived as iconoclasts today often are proved to be the saviours of tomorrow. So much for the five "C's. Sail on oh ship of health.

---

## Correspondence

### To the Editor:

I read with interest the August 1978 issue of the *Bulletin*, particularly the article by Barry R. Wheeler *et al.*, "Life Style Risks of Nova Scotia Physicians." It prompts the following reflections.

Suppose that a patient, man or woman, paid his first visit to the person that he had chosen as his family physician, and that the physician had the time and interest to take a complete history, including details of work, leisure, and family life. Suppose that the patient stated that he was working well over 65 hours per week, including one or two nights each week during which he was likely to get little or no sleep, and after which he usually worked a full ten-hour day. As well, on most evenings he was accustomed to bring home work occupying a few hours. Rather naively perhaps, the patient might wonder why there was unusual friction between him and his spouse and children, and why the latter felt neglected. He might also be puzzled by his own fatigue and irritability. What advice would a wise physician, concerned about the physical and mental health of the patient, offer to such a person?

Many in the medical profession will realize that I have described the working conditions of most clinical clerks, interns, residents, and even of far too many family physicians and specialists. Can the Committee on Physical Fitness of The Medical Society of Nova Scotia explain why such a life style is allowed, encouraged, and even demanded of members of our profession?

Thank you for the opportunity to express these thoughts.

Yours very truly,

Heather Saunderson, M.D.  
6031 Fraser Street  
Halifax, N.S.

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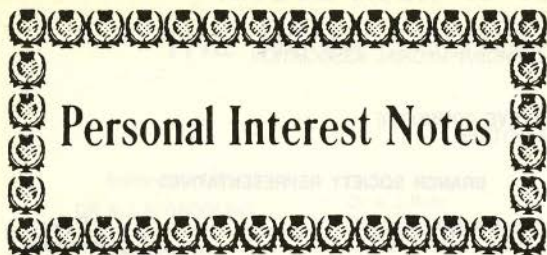
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# Personal Interest Notes

Among the many tributes to **Dr. John C. Wickwire** of Liverpool, Nova Scotia, the Bowater Mersey Paper Company Limited presented him with a portrait by Sherman Hines. In paying tribute, his service to the community as a doctor, worker in community affairs and a representative in the legislature were recognized. The Company had also recognized him for his "love and understanding for the forest industry" ever since he had supported himself through medical school by working in the lumber mill.

**Dr. Bill Mason**, past President of The Nova Scotia Medical Society, is chairman of a group of interested people setting up the first school in Canada to deal with special learning disabilities. Modelled after the Landmark School in Boston, Mass., it will specialize in intensive remedial education for bright children with learning difficulties. Objectives will be analysis of defects in learning skills, intensive remediation in a psychological milieu where rapid increase in study skills can occur. The Landmark method returns children to the regular school system in one to three years.

**Dr. Meng Tan** was happy to receive a cheque for \$18,500 from the Canadian Diabetic Association. This is the first installment of a two-year grant, by which Dr. A. Bonen of the Department of Physical Education and he will study the effects of ten weeks of physical training on the carbohydrate and lipid metabolism in diabetic subjects.

On June 22, **Dr. Kenneth V. Gass** was recognized for his 25 years of service to the Sunset Adult Residential Centre and the North Cumberland Memorial Hospital.

The Bulletin congratulates **Dr. Malcolm Macaulay** who has recently been appointed Medical Director of the Victoria General Hospital. Malcolm, a native of Yarmouth, Nova Scotia, graduated from Dalhousie Medical School in 1958, and undertook postgraduate training in Dalhousie, Glasgow, Scotland and Kansas University Medical Centre. After a successful career in pathology at Pittsburg and Moncton, N.B., he returned to Halifax in 1970 and has been a Professor in the Department of Pathology. He also served as consultant to the provincial department of health.

**Dr. John Mackeigan**, Dalhousie '69, has received an award for an outstanding paper delivered to the American Society of Colon and Rectal Surgeons, at San Diego, California. John, son of Chief Justice Dan and Mrs. Mackeigan, and married to the former Susanne LeBrun of Bedford, is a Fellow of the Royal College of Surgeons and of the American College of Colon and Rectal Surgeons.

## Information About Admissions to Dalhousie Medical School

The new class entering medicine in September 1978 is 96 strong. There are 67 males (average age 22) and 29 females (average age 23). Of these students, 58 are from Nova Scotia, 24 from New Brunswick, 6 from Prince Edward Island, and 8 from other provinces of Canada. It is interesting to note that 71 have a B.Sc., 3 a B.A.; 1 a M.S.; 2 a M.Sc. and 1 a B.Ed. Of the 18 without a degree, only seven were accepted with the minimum two-year requirement. □

### — NOTICE —

Dr. M. A. Smith, Chairman of the Executive Committee, will present at the 1978 Annual Meeting of The Medical Society of Nova Scotia, on behalf of the Executive Committee the following proposed amendment to the Society By-Laws. The purpose of the amendment is to provide for membership on the Executive Committee from the Internes and Residents Association.

Section 12.3.2.1. a) add "iv) Internes and Residents Association Representatives, to a maximum of two in number, nominated by the Internes and Residents Association."

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