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SESSION—I

WELCOME ADDRESS

G. A. Panse*

I am indeed very happy to welcome you all here to-day to this 23rd Conference of the Indian Public Health Association.

Our State of Maharashtra is singularly fortunate in having a medical graduate as our Cabinet Minister for Public Health and Family welfare and another medical graduate as our Minister of State for Public Health & Family Welfare. Both have a vast experience of the medical and health needs and under their stewardship we hope to achieve better results in all our Health Programme.

We are very happy to welcome you Madam, here to-day, especially because you could squeeze some time for this conference from heavy schedule of multifarious programmes you have on hand to-day. We know that to-day morning only you reached Aurangabad from Akola by travelling a distance of 180 miles and then attended two conferences and then after inaugurating this 23rd Conference of the Indian Public Health Association, you are again to leave for Nanded, a city about 165 miles away from here.

So also our Hon. Minister of State for Public Health & Family Welfare, Dr. Gadekar, has also squeezed out some time for our Conference from his busy schedule. Dr. Gadekar is not only our professional colleague but also a person who has actively participated in the health work while previously working as Medical Officer in the Department. He accepted our invitation to preside over the function at a very short time, thus indicating that the cause of Public Health is uppermost in his mind.

I am sure that the presence of both these Ministers who belong to our divine medical profession will give proper direction to our deliberations.

We are also very happy to have midst us over 150 participants coming from different parts of the country. Amongst them we have distinguished scholars, delegates and Public Health Workers. We look forward for their valuable guidance which would go a long way in making the deliberations of the conference meaningful and realistic.

This is the 2nd Indian Public Health Conference that is being held in this State. Way back in 1967 it was held in Poona which

*President, Indian Public Health Association, Maharashtra State Branch.

is considered to be the Cultural and Educational Centre of this State. It is now being held in Aurangabad which has a rich cultural heritage. The city has grown up in all respects in the last about two decades. Its historical heritage has acquired new dimensions in the shape of additional and better educational facilities, industries and what not. This city is known for its hospitability and I am sure that our guests and delegates would feel quite at home while they are here.

We all know that the City of Aurangabad is surrounded by historically and culturally rich places like Ajanta, internationally known for its paintings, Ellora for its ancient beautiful archives, Daulatabad Fort and Khuldabad for the tomb of Aurangzeb, the Moghul Emperor. In Aurangabad city itself, we have the Bibika Makabara designed on the pattern of Taj Mahal. All this rich heritage is indicative of one thing that our ancestors have possessed really a good health without which they would have never been able to leave for us such immortal and precious treasure. It is only the robust and healthy mind in a healthy body that can leave behind such a rich treasure.

Turning to the Topic of our main deliberation, we are going to discuss among other public health problems, the role of Para Medical Personnel in the Medical and Health Programmes. We are going through a peculiar phase of development of the health programme which has an unique importance in the individual as well as national life. The challenges of the past are more or less met but new challenges are appearing on the horizon. We have to consider how best we can withstand these pressures and meet the challenges with vigour and success.

I am sure that the conference would consider the problems we are facing and the right type of remedies it could suggest.

Through out our deliberations we must be wide awake to the problem that public health is both a social and technical job. We have all to do the technical job as perfectly as possible and also we should know how to sell it to bring about behavioural change in the community. The change has to be brought about by visualising programmes that are not too expensive and those that suggest a co-ordinated nationwide attack on the poor hygienic conditions, superstition, ignorance etc.

We are on a threshhold of industrial revolution in our country. The gap between the rural and urban life is widening, posing their own problems and we have to meet them squarely. Our own medical profession is undergoing vast change. A Medical generalist, though still forms a back bone of the medical system, there is a crave for specialized treatment on the other hand. With the rapid industrialization, problems of industrial health also are raising their head. With an unprecedented advance in Medical Science, newer and newer technologies are being employed. All these challenges cannot be undoubtedly solved by the Practitioners of Medicine alone. They need help of the Para Medical personnel in their fight against the disease. The role of Para Medical Personnel has thus assumed wider importance. I may not be wrong if I say that para medical personnel form not only an integral part but forms an indivisible part of the total health care system.

I am sure that the gallaxy of delegates who have assembled here have rich experience and a far reaching foresight and their cumulative wisedom, experience, knowledge and foresight would lead up to the ultimate goal of creating a society free from disease and ignorance. "Sarve Janah Sukhinah Santu, Sarve Santu Niramayah" is our cherished goal and let us all, Medical, Paramedical, Social & Political men march hand in hand to attain it.

With these introductory words I once again welcome you to this city and conference.

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INAUGURAL ADDRESS

Smt. Pramilatai Tople*

I am indeed very happy to be with you this afternoon to inaugurate the 23rd Annual Conference of the Indian Public Health Association.

I understand that the Indian Public Health Association is publishing a quarterly journal to focus attention of those engaged in this field on the important issues of Public Health Importance. Similarly, the Maharashtra Branch of the Association is establishing a Health Museum in Pune and also is running an immunization centre, apart from having discussions on various scientific aspects at regular intervals.

However, when the concepts of delivery of health care are undergoing, a revolutionary change, the activities of the Association may have to be suitably modified, and I am sure that this 23rd conference must be addressing itself to the changing role of the association.

There has been a growing realisation that despite the best efforts by official and non-official agencies, the basic health needs of the vast multitude of our rural population have still remained largely unfulfilled. The gap between the health facilities available to urban population and those available to rural population has continued to remain wide inspite of our five, Five Year Plans. The present Government has therefore, rightly decided to bridge this gap by providing more health facilities to our rural and tribal people and to those who are economically backward. This objective obviously cannot be achieved by medical men alone because of their small number and the large population, which they have to serve. The need to involve para medical in health care is thus obvious if we want to fulfil our cherished goal of improving the health standards of our rural and tribal people and hence I am happy to learn that this 23rd Conference of the Indian Public Health Association has rightly selected the topic, "Paramedicals in Health Care", for their scientific session.

Role of Para-Medical Personnel in the management of Health Care is as old as role of the Medical Personnel. The first Dai who conducted the delivery of her neighbour was the first para-medical person. The person who helped the Physician in dispensing medicine first happens to be the ancestor of the system of Pharmacists. The roles of para-medical personnel got widened with the progress of Medical Science and the discoveries of the causative organisms.

Health is man's precious possession as it

*Hon. Minister for Public Health and Family Welfare, Maharashtra.

influences all his activities and shapes his destiny.

Man has been striving to keep good health but it took centuries before he could know why and how the diseases occur. The primitive man attributed diseases to the causes of deities and drove away the spirits that caused the diseases by noise. It was intermingled with religion, superstition, magic and witch craft.

In the Egyptian Civilization mankind came to know of some scientific reasons that caused diseases.

Similarly, the Greeks, the Romans and the Indians have their own system of medicines.

Medicine which was long in the bondage of superstition and speculation began to emerge as a science, as new discoveries were made and human knowledge advanced.

The delivery of medical care also underwent changes with the passage of time and aspecially after the industrial revolution. A family doctor who happened to be a generalist could not cater to the comlexities of the diseases. Hospitals grew in numbers. Specialities with manyfold instruments and their operators increased in number. To cope with all these needs was beyond the capacity of a doctor or a physician. He needed assistance. The concept of Social and Preventive Medicine also acquired deep roots. The new thinking was how to prevent disease. Civilised communities came to two conclusions. The first was that the health of every individual was a social concern and responsibility and the second was that the medical care in its widest sense for every individual is an essential condition of maximum efficiency and happiness.

When medicine was an empirical art, when the possibilities of surgery were very restricted and when the hospitals were in the main, merely lodging houses for the sick, the medical part of the problem of care of the sick was relatively unimportant. But the picture has undergone a radical change. Surgery has achieved spectacular progress. Specialist medical help is increasingly being demanded and as such the profession has ceased to be possible for a single practitioner.

Health has become a national responsibility. It is closely linked with the production of a nation and it has a vital role in promoting national wealth. Health has been defined as a State of complete physical, mental and social well being and not merely an absence of disease. Now has the time come to add the 4th dimension that is spiritual health which we are trying to attain by going back to Yogasanas.

With the new concept of Public and Social Health giving emphasis on prevention, it has become necessary to divide the Health Care into 4 classes :

1) Know and learn about health hazards.
2) Take Preventive medicines wherever necessary and try to see that the diseases do not occur at all.
3) If at all you become ill get the treatment from your doctor who may be a generalist, or if it is beyond his capacity approach the specialist.
4) Get Hospitalised treatment by being

under constant supervision and make yourself available for pathological and other examinations.

For all these things, doctors alone are not required. Neither they can carry out all the work which para medicals can do.

Patent drugs for cure of diseases like Tuberculosis, Leprosy, etc. which can be administered through specially trained personnel have become available.

The motto of any welfare State is to provide health care from womb to tomb. This care cannot be provided by a handful of doctors especially when it can be provided with little knowledge that can be imparted to nonmedicals. The Nurses, Ionculators, Laboratory Technicians, X-Ray Technicians, B.C.G. Technicians, Ophthalmic Assistants, Physiotherapists, Medico-Social Workers, Compounders and all other such para medical personnel can reduce the burden of work on the doctors and yet help the community to acquire good health.

The recent addition to this category of para-medicals is the multipurpose worker He will replace all unipurpose workers such as vaccinators, B. C. G. Technicians, malaria workers, Cholera Workers, etc. and will provide majority of the promotive and preventive services and to a certain extent primary medical care to the people at their doorsteps or in their villages.

The ALMA-ATA-International Conference on Primary Health Care has fixed a goal of acceptable level of Health for all the people of the World by the year 2000 and has made numerous recommendation to achieve this.

The role of para-medicals in providing Primary Health Care has been given its due importance even in this Conference.

The International Year of the Child has just begun. According to 1971 census, the child population (0-14 years) in India was 230 million, constituting about 42 per cent of the total population. The importance of the first six years of life of a child, for its growth and development is very well known. We have about 115 million children in this valuable age group. The infant mortality rate is as high as 122 per thousand live births suggesting that a lot effort is still needed to promote the cause of child health. The prevailing Indian situation in relation to maternal and child health reflects a woeful inadequacy of achievements and leaves out immense ground yet to be covered. Women in the age group 15-44 constitute nearly 22 per cent of the total population, and children in the age group 0-6 constitute another 21 per cent. The health and nutrition needs of nearly 43 per cent of the total population have to be met. Of these, only a small percentage is being reached at present through existing child and maternity health services. Lot of help from para-medicals and voluntary organisation will be required in providing supplementary nutrition, immunization, health check up, referral services, health and nutrition education, etc.

It is thus clear that :

1. Even though we have made some progress in the field of public health, a lot more has yet remained to be achieved.
2. Medical persons alone will not be able to deliver all the health services, needed for our people.

3. Para-medicals have to be involved in large numbers to provide health care.

After having agreed to utilise the services of the para-medicals, the two major questions, viz. the areas in which they should be involved and their training may have to be seriously considered, as the entire success of our health programmes will depend on these two important aspects. I have every hope that this conference will help the Health Administrators in streamlining the entire issue of use of para-medicals in Health Care.

Government machinery alone will not be able to deliver the goods. It is necessary that voluntary organ sations, private institutions, private medical practitioners, Association like yours, the Indian Medical Association, etc. should actively engage themselves in health promotional drive and in programmes like Family Welfare which have received a set back in the recent past.

With your co-operation and with the co-operation of all such organisations only, it would be possible to achieve our goal.

I wish the conference a success and declare that the conference is inaugurated.

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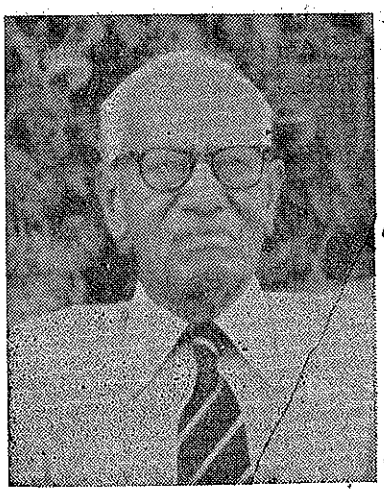
ADDRESS BY THE PRESIDENT OF INDIAN PUBLIC HEALTH ASSOCIATION

Dr. W. Mathur

Friends,

I am exceedingly grateful to you all for having elected me President of the Indian Public Health Association, unanimously for 19/8-79. I must admit that I do not find myself equal to the great honour you have bestowed on me. My only qualification is, perhaps, that I am one of the oldest devotees of the Goddess of Public Health. I, therefore, crave your indulgence and your unstinted and willing support in making this Session an unqualified success. We have very serious problems facing us, which can only be solved by the combined goodwill and wisdom of you all.



Our aim, as you all know, is to introduce and help extending the concept of total and positive health in the country. This would mean a programme not only for the control of epidemics, and treating the sick, but also to introduce measures which will bestow on every individual a state of fullest enjoyment of his or her physical and mental capacities in a harmonious social and ecological environment.

When we look at this, we know we have yet far to go, but it is always proper to keep the aim in view.

The biggest cause of deaths in this country —as shown by hospital statistics—are from communicable diseases and must, therefore, form the biggest chunk of morbidity. It would be worthwhile to assess the impact of a few important diseases on the health conditions of the country, and of the measures taken to combat them.

Malaria

Malaria continues as a major health problem even after the control programme of last 25 years. The incidence of malaria cases had come down to one lakh in 1965, but it again started going up with the peak of the present

trend in 1976 with 65 lakh cases. Since then, it is gradually coming down with 37.6 lakh cases in 1977-78, about 29.5 lakhs till September 1978 during 1978-79.

As you are aware, control measures are being taken according to the modified plan particularly in the districts affected by a severe type of illness due to P. falciparum. Coorperation is also now sought of panchayats and school teachers for establishing drug distribution and treatment centres. Anti-malaria measures, however, are of a socio-medical nature, and need involvement and active participation of the whole communities. This makes intensive and extensive health education among the masses as an essential prerequisite at the grassroot levels to make anti-malaria campaign as a people's programme, intead of working it merely as an official scheme.

It is rather discouraging to know that the "health education" component is only two lakhs in a total outlay of 75 crores for antimalaria work in 1978-79 which comes to 0.027% of the total scheme provision for this will be radically liberalised to win over mass report.

We almost reached the eradication point in the sixties, and we cannot afford to miss the bus again. Our motto must be continued vigilance, efficiency and mass participation.

Filaria

Bancroftian filariasis continues as a major public health problem. No less than 236 million population live in endemic urban and rural areas. The filaria control units are yet confined mostly to the urban areas protecting a population of 23 million through 153 filaria control units. We have yet to go far to make a dent in the endemicity of this infection. It is time that the control units should be extended to cover the whole of the area at risk. It is necessary to keep these as a separate staff as the multiplicity of functions is bound to tell on the efficiency of work especially in areas which are under the attack phase.

Smallpox

It is a matter of greatest satisfaction for the country to attain the target of Smallpox Zero on 5-7-1975 and to maintain the free status since then. It speaks volumes of the organisation and the efficiency of all those who participated in these operations. It is, however, necessary to maintain utmost vigilance. It is recommended that Primary Vaccination should continue till smalipox zero status has been certified everywhere.

Cholera

This disease which was at one point of time one of the biggest killers is now well contained and the cholera combat teams which are 40-45 in number have been found to be quick and serviceable.

Dysentery, Gastro-enteritis and Enteric group of fevers

These diseases are still very highly rampant in the conntry. The number of cases of this group treated in hospitals and dispensaries during 1972 to 1976 come to 49,10,417 or 41% of the total cases from communicable diseases. The W.H.O. in its

recent session of the regional conference for South East Asia held at Ulan Bator has also brought out that almost 80% of children in the rural areas suffer from intestinal parasitic or bacterial infections.

The above diseases are directly related to the problem of rural water supply and sanitation.

Water supply and Drainage

So far as the position of water supply is concerned, it may be relevant to mention that the budget of the Ministry of Health for 1978-79 shows only an allocation of Rs. 6,036.47 lakhs for schemes pertaining to sanitation and Public Health. Out of a total of 5,75,936 villages in the country barely 10% have been reported to be provided with safe drinking water facilities either through piped water supply or by hand operated tube well. Even in urban areas the conditions are not much happier, as in most places the supply is intermittent and far below the daily average requirements to cope with the rising population.

The position of the sewerage is still worse. Even in metropolitan towns, there are large areas with open sewers. Hardly 6% of the country's population is served by sewers.

Water supply and drainage scheme are executed by the public health section of the Ministry of Works. As such schemes have a direct bearing on public health, the priorities and allotments need be fixed in consultation with the Ministry of Health and as such the Department of Sanitary Engineering should function under the Director General of Health Services. This is now all the more necessary, as the Central Cabinet has decided to provide safe drinking water in 10,00,000 villages under the sixth plan.

Sanitation

As regards the rural sanitation, the conditions are too well known to need description. What is still worse, such abominable conditions exist also in Nai Bustees and slums which are springing up without any planning or sanitary facilities in the periphery of large urban areas. The overcrowding makes conditions still worse in such localities. The infant mortality rate, which is a sensitive index of the state of community health, is 131 per 1000 live births for the rural areas for 1970. This is the highest figure when compared even with other developing countries such as Malaysia, Singapore, Sri Lanka, etc.

Improvement of rural sanitation under the Primary Health Care Scheme now falls directly on the shoulders of the Community Health and Multipurpose Workers, under the guidance of the Health Assistants and Medical Officers. Will these cadres of Health workers develop sufficient drive and initiative to deliver the goods? These are the problems you have to consider on the basis of your observations. It is after all the mass health education which can arouse the health conscience of the people. This may be a long process before any change is discernible in the age old habits of the inhabitants. Can we wait so long? Time can be shortened if there is a large scale peoples' movement by the voluntary health workers, dedicated to the task, and fully supported by the political will of the authorities. Merely official agencies are not likely

to take us very far. The basic needs of potable water supply and sanitation are keenly felt by all and any tangible schemes for these would be acceptable to all.

Tuberculosis

It is estimated that there are about 2 million infectious cases of tuberculosis in the country against 42,500 beds for such patients, 308 district Tub. centres and 400 Tub. clinics. The need for providing each district with a Tub. centre need hardly be over-emphasised. These are imperative for organising and directing Tub. control measures to ensure efficient and early case-finding, effective treatment and organising health education in every district. There is hardly any difference in the prevalenee of Tub between the cities and the villages. Extension of Tub. control in the rural areas, therefore, assumes great importance on account of the large populations at risk. Under the Primary Health Care programme, tuberculosis conrol is naturally integrated with general health services specially at the periphery. If the community health workers and multipurpose workers are trained to make slides of the sputum from cough of three or four weeks' duration and send the same to the P.H.C., it would be very helpful in detecting fresh cases even from far flung villages. Patients with slides positive for tubercli bacilli should at once be put under treatment. It would be epidemiologically a sound, practical and cheap procedure and will set in motion necessary domiciliary treatment under the supervision of District Tuberculosis and the Primary Health Centre. I am mentioning this, as the manual of Community Health Worker does not make mention of this in the list of duties. I feel sanguine that if the peripheral health organisations are properly developed, we can effectively meet the challenge (now that the health services are being provided at the very door step of the people) by searching out tuberculosis cases from every village.

In a vast country like ours, it is not only the care of the patient but also the protection of the community, which is very important. In this the public health practitioners have a full role to pay in carrying out health education programme, helping and organising B. C. C. programme and to ensure working of domiciliary treatment.

Sexually Transmissible Diseases

It is estimated that no less than 4 to 10% persons are infected with such diseases at any one time involving 20 to 40 millions. These should, therefore, be deemed to pose a major public health problem. It is estimated that such diseases are spreading at a jet speed and are likely to get out of control. It is, therefore, essential to devise immediate and adequate measures commensurate with the problem. The old time concept that the disease is only confined to large cities and sea-ports and in Sub-Himalayan tract is a thing of the past, as with the present day means of communication and adverse economic conditions no place can be considered free. The increasing permissiveness of the society further facilitates the spreading of infection.

The present policy of confining the control by treating through 237 S. T. D. clinic cannot be considered adequate. It does not provide a clinic, even in each district.

The control measures can not be considered in isolation from the social, economic and family background of the patients. Lack of proper inter-personal family relationship and want of knowledge of these diseases generally drives one to promiscuity and to contracting these diseases. Large majority of victims get infected from prostitutes. The latter also adopt this profession as a result of grinding poverty at home. Any control programme to be effective should include all the three components viz. curative, educative and rehabilitative. Support of voluntary social organisations should also be invoked for this purpose.

About 20% patients in S. T. D. clinics belong to the teen-aged group, which comprises 35% of the population. This emphasises the urgent need of introducing Sex Education programmes in schools and colleges. This should form an essential part of the school curriculum, suitable for different age groups.

The Suppression of Immoral Traffic Act, 1956, enforced to restrain trafficking in women has been found to be ineffective and and needs to be amended so as to bring in its purview both the patrons and the prostitutes.

In view of the inadequacy of the S.T.D. clinics it is suggested that there should be arrangements for treatment of S.T.D. in all Primary Health Centres, where there would now be adequate staff to follow up contacts of the cases, and to effectively carry out mopping up of these infections in the countryside.

Nutrition and small family

Despite the green revolutions, the general state of nutrition does not appear to have made any difference. This is indicated by the net availability per capita of foodgrains per day during the preceding few years, shown in the Health Statistics issued by the D.G.H.S. as indicated below :

Year	Population	Per capita availability of cereals and pulses per day
1971	5,47,137	460.1 grams
1972	5.58,913	467.3 grams
1973	5,70,849	423.7 grams
1974	5,82,717	452.5 grams
1975	5,94,540	409·6 grams
1976	6,06,203	456.8 grams

The above shows that in spite of all efforts in augmenting agricultural production, the annual increase of population does not permit any optimism regarding an increase in availability of food per head. The average daily caloric value in India during 1972-74 came to 1970 per capita against a minimum requirement of 2210 calories. This figure also compares less favourably with some other developing countries of the neighbourhood. In Pakistan, it was 2132, in Singapore 2835, and Malaysia 2534. The caloric value of cereals and pulses in 1976 was only 1632 as per figures of Ministry of Agriculture.

The poor state of nutrition of an average Indian is further corroborated by per capita income which is Rs. 87.4 per month at current prices and Rs. 54.6 per month at constant (1970-71) prices.

Family Welfare

These are most revealing figures illustrating

stark poverty of the teeming masses. There is no doubt that a large number of schemes are being implemented to improve the socio-economic conditions of the country. These certainly have their relevance in the long run. But I am sure the key for the immediate solution lies in stabilising the population here and now for improving the quality of life of the people.

We have seen the adverse effects of introducing compulsion in the family planning programme. The percentage of protected couples went down from 23% to 22.5% in six months. What is now required is hard, strenuous, sustained and village oriented work of health education with a missionary zeal throughout the country. If carried out in the right spirit, there is no doubt that it will be taken up as peoples' own programme. Fortunately our Prime Minister and the Government are also very much alive to the problem and are providing large funds to popularise the movement. It is now for us, the Public Health Workers, to deliver the goods. Let the Family Welfare be our creed for several years till the birth rate comes down to 25.

Zoonosis

The Zoonosis constitutes another significant problem in relation to public health. Good deal of light was thrown on the subject at the last year's conference at Hissar. The problem divides itself into :

(1) diseases through infected eggs, milk and other foods. and (2) zoonotic disease due to direct contact or through a vector.

Action in regard to quality, manufacture and sale of articles of food is generally implemented by the local bodies, who have their own limitations. Only the Governments of Maharashtra and Pondichery maintain separate departments for food control. There is a provision of 13 lakhs under Plan and 11.74 lakhs under non-plan allocation in the Central budget for prevention of food adulteration. This can scarcely touch the fringe of the problem. Prevention of food adulteration laws have not been very effective for reasons well known.

Slaughter houses

Most of the slaughter houses are in deplorable conditions and provide excellent media for the propagation of meat-borne infections.

As regarding No (2), no serious effort has so far been organised to contain zoonotic diseases, except rabies. Spasmodic campaigns against rats are launched in special areas theatened with plague. In a country like ours, most of the rural population lives in closest proximity with bovines and other animals. It is estimated that four-fifths of the human infections are zoonosis, i.e. shared by man and animal. It is necessary to provide for further research about communication of Zoonotic diseases between human and animals and educate the public about the same throughout the country.

In our previous conferences also, we resolved that Veterinary Public Health Activities must be integrated with the health services. We should forcefully again endorse the same, as the two are intimately interlinked.

Environmental and Ecological Pollution :

There has been recently a rapid rise in the atmospheric and ecological pollution in the country both at the macro and micro levels. This is largely due to the advance of industry, and increasing urbanisation, which takes shape either in the form of multi-storeyed buildings or in vast expanding overcrowded insanitary slums, on the outskirts of large metropolitan cities. The gaseous effluvia emitted by the chimneys has a deleterious effect on the respiratory apparatus of those working and residing in the vicinity, particularly on the children. It is recognised that althouh there is an increasing danger of air pollution, yet the problem has not yet reached alarming proportions. I think there is no scope for any complacence in this matter, as there is plenty of evidence of the ills caused by such pollutants and also by overcrowding in the slums.

The National Committee on environmental planning which had put up some monitoring stations in the country has not yet fixed any realistic standards of permissible levels of air pollution. Any standards so fixed by the Committee should be incorporated in law so as to make their application imperative.

There are also very favourable malariogenic condition in the slums. The state of health among residents living in the flats on the fourth or higher flats needs to be surveyed on account of their special ecological conditions and health and accident hazards.

There is at present fast growth of urban, suburban and bustees on the outskirts of the towns. In addition, there is also need for rual planning. The past experience has amply shown that even minor deviations from principles of public health would result subsequently in major catastrophies in terms of human health and public exchequer. It is my firm belief that a public health representative must be invariably associated at the time of formulation of all schemes of urban, suburban or rural housing plans. This is necessary to take care from the public health point of view of every detail to avoid serious problems at a later date.

Primary Health Care

Friends, you are well aware of the Health Care launched in the rural areas by the Government of India on the 2nd Oct. 1977.

As the key-note address is to be on this subject, I do not propose to go into the details of the scheme.

The scheme has already started functioning in 726 centres, and it is expected that 90,000 community health workers will be trained till the end of 1979 who will cover 9 crores of population in about 80,000 villages.

The scheme will cover the whole country during the 6th Plan period.

The distinctive features of the scheme is not only its vast magnitude, but also the important and basic role which is assigned to the para-medical staff.

Many of you would have first hand knowledge of the actual working of the plan.

I would request you to express your views on the same, based on your actual experience

and observations regarding its various aspects such as training, administration and technical efficiency of the staff etc. The scheme is till in its formative stage and I feel sure any concrete suggestions from the body of health experts, such as yours, will receive due consideration of the authorities. As the theme of the conference is also "Para-medicals in Health Care", I trust there will be plenty of opportunity in the conference to discuss the scheme from every angle.

We as public health workers fully appreciate the basic philosophy of the scheme, as we feel that if it is properly guided and carefully nourished, it has in it the potential of blossoming out into a fully integrated health cover for the entire population.

Ladies and Gentlemen, I have tried to place before you some of the most urgent problems relating to health in the country. We must always bear in mind that Public Health is purchasable and it is for the votaries of this Goddess to find the means. Our recent experience in the eradication of smallpox amply proves that if the means are provided, there is no dearth of expertise in the country to deliver the goods. Fortunately, the Government of India is very much interested to improve the health conditions and I consider this the most opportune time for presenting our views.

Allocations of funds under different plan periods indicate that there has been a continual decrease in outlay allotted to "health" when considered as percentages of the total, in each successive plan, as shown below :—

Plan Period	Investment in Health Rupees in crores	Total Plan Outlay Rupees in crores
1st Plan (1951-56)	65.20 (3.3)	1960
2nd Plan (1956-61)	140.80 (3.0)	4672
3rd Plan (1961-66)	225.9 (2.6)	8576.5
Annual Plan (1966-67)	140.2 (2.1)	6625.4
4th Plan (1969-74)	335.5 (2.1)	15778.8
5th Plan (1974-79) Outlay	681.66 (1.7)	39303.2

(Figures in bracket indicate the percentage to total plan outlay)

Even though allocation in the 5th plan looks big, its value on the basis of 1960-61 prices is about 249 crores, which shows that it is approximately the same as provided in the 3rd plan. In fact the percentage of allotment to the total outlay has gone down from 2.6 to 1.7.

Considering that the demands on health have been naturally expanding, the above phenomenon cannot be looked upon with complacence, and we must raise our voice against this incongruity specially when the health conditions in the country are far below the standard and the above allocation also includes expenditure on hospitals and medical insititutions.

Multiple Associations

Many of us specialising in different aspects of community medicine have no doubt achieved considerable success in their own respective fields. Our aim is, however, attaining a high standard of total health for the population so as to raise their quality of life as

a whole. This requires a collective functionning of all the services pertaining to community medicine such communicable diseases control, M. C. H., veterinary public health, water supply and drainage, urban and rural town planning, control of atmospheric and ecological pollution, statistical services and other services having a bearing on public health. No organisation relating to any single speciality can aspire to achieve this objective.

My illustrious predecessors, the late lamented Dr. S. S. Verma and Dr. J. B. Srivastava, recognised this and worked for organising a common platform for chalking out a concerted action and joint endeavour for the purpose. Some of the like-minded Associations, during this year, also reacted favourably, and at one time we expected to hold a joint meeting in October, 1978, to discuss a few common problems. A set of modalities were also worked out and it was made abundantly clear that each Association will maintain its individual character and objectives as heretofore. The joint session will, however, provide opportunities for cross-fertilisation of ideas to evolve balanced and well integrated health schemes from all aspects. I hope and pray we shall soon succeed in this project.

Administration

Friends, as we know, our representations and resolutions often are overlooked by the authorities. Our very reasonable and modest request that one of the D. G. H. S. and Additional D. G. H. S. should be with a public health background, has not been seriously considered. At the present time, when gigantic health schemes are being initiated, this suggestion assumes still greater relevance. No less than 84% of the total allocations under the centrally sponsored and Central Plan Schemes of the Ministry of Health for the year 1978-79 relate to prevention of disease and promotion of health. I, therefore, wish to re-iterate the previous resolution on the subject to ensure a sound public health perspective in the entire project. We also place the special expertise of this Association at the disposal of the authorities and would request that we may be associated with all the health schemes during their formative stages, so as to enable us to present our views from public health point of view. I trust with your blessings and active support, we shall succeed in our legitimate representations.

Conclusions :

Ladies and Gentlemen, I must apologise for taking so much of your precious time and am very grateful to you for your kind indulgence.

I trust and hope you will have very useful discussions on the various health problems as scheduled in the programme and will find the sessions stimulating and fruitful.

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ENVIRONMENTAL CHANGE AND HUMAN HEALTH

(Late Dr. B. C. Dasgupta Memorial Oration—1978)

M. C. Mittal*

Chairman Sir, Colleagues—Ladies and Gentlemen :

To start with, I express my sincere thanks to the Generalbody of the Association for the great honour done to me by asking me this year to deliver the Oration which has been instituted to commemorate the memory of late Dr. B.C. Dasgupta, an outstanding personality in the field of Public Health in our country.

When I was informed by our Secretary, Dr. Khanna, of my election to this honour, I started thinking as to on which subject should I speak before a learned audience like this. Acknowledging his communication, I requested him if he could suggest to me a subject, which will be apt for this occasion. As expected he wrote me back, that I had to choose the topic. I could smell at this time of growing interest amongst our people in problem of Environment from some reports in Press, and so started pondering over the feasibility of writing on this topic. Just then a very revered peer of mine also suggested about the same sort of topic and this solved the dilemma, and here I am before you with a brief resume on "Environmental Change and Human Health."

The concept of environment is complex and all embracing. It is not merely the air water and soil that forms our environment but also the social and economic conditions under which we live. The internal and external environments comprise total environment.

Our environments, are influenced both

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by major events (war, famine and pestilence) and by minors. Strikes and related disputes that disrupt communication sanitary services can also affect our environment.

Health workers were long preoccupied with main vulnerability to obviously harmful contaminants. Though Vector Control, Waste disposal and water and food questions are still major concerns in some areas of the world, in affluent countries attention now centres on more sophisticated contaminants and the quality of air and topics like recreational facilities, working conditions etc. The rear of outboard engines scaring the last birds from a formerly tranquil lake, the reek of exhausts during a traffic jam and the disfiguring presence of crude on a favourite beach are important gradients in health related environmental change.

Through such things 'change' has become an emotionally charged word. But change may be for better as well as for the worse. Adverse environmental change may range from violent to imperceptible and have short range to very long range effects.

Environmental change in the world since World War II, has been radical, rapid and comprehensive. The physicians have reached new heights in their endeavours to adapt man to the environment. The Engineers on a scale hitherto undreamed of, are busily adapting environment to the man. But these conscious efforts towards improvement continue to produce unlooked for side effects. Therefore, when plans are made, certain environmental values have to be critically weighed against others. Value judgements do not necessarily mean an all or nothing approach.

As in developing countries, and underdeveloped regions of developed ones, air pollution and noise are overshadowed by locally more urgent environmental problems, I have, therefore, planned to include in my talk all those facets of environment which are of important to us today.

Physical Environment

1. Air Pollution

Truly speaking there has never been pure air, foreign substances have been present in air at all times, and at all places. The term air pollution is applied when there is excessive concentration of foreign matter in atmosphere which is harmful to man in his environment. It is mostly a man made change that adversely affects his natural surroundings and is a menace to health throughout the world. Problem of air pollution was first brought to sharp notice or focus when air pollution epidemic took place in Los Angeles (1948) and London (1952) when many people became ill and 4000 men died in 12 hours. Epidemic of asthma in Tokyo Yokohama region has been also due to air pollution.

Air Pollution in India

With rapid growth of industrialisation and rapid urbanisation India has started experiencing air pollution in big cities. Chakrabarty and Rao (1962) carried out a three years survey of air pollution in Calcutta. The results have been shown in Table I.

In 1968-69 the National Environmental Engineering Research Institute, Nagpur carried out air quality surveys in Bombay, Delhi Calcutta and Kanpur. The survey revealed

TABLE 1 : Atmospheric pollutants in Calcutta.

Atmonspheric pollutants	Range
Soot Fall	39.38-90-98 tons/Sq. mile/month
SO_2	.021—.058 PPM
Oxides of Nitrogen	.043—.122 PPM
NH_3	.160—.205 PPM
Aldehydes	.04 —.12 PPM
Respirable dust	.71 —.600 gs/cu.mi. of air

existence of high pollution level in certain places in these cities even more than some of the big cities of the West. The dust concentration is shown in Table II.

TABLE II : Suspended Particulate matter

City	Suspended matter/ug/m
Bombay	238
Calcutta	527
Delhi*	700
Kanpur	488
London	221
New York	134

*Conservative estimate puts to fly ash deposited by the Thermal Plant in the vicinity of Inderprastha Estate 3 tons a day.

Sources

(i) Industrial process—Chemical Industries metallurgical industries, oil refineries, fertilizer factories, textile industries etc.

(ii) Combustion—Industrial and domestic combustion of coal, oil and fuel is source of smoke, dust and sulphurdioxide.

(iii) Vehicles—In urban areas trucks, trains, aircrafts, cause air pollution by emitting hydrocarbons, carbonmonoxide, lead nitrogen oxide and particulate matters. In strong sunlight they get converted into a 'photochemical' pollutant of oxidising nature. Diesel engines emit black smoke and maladorous fuels.

(iv) Miscellaneous — Burning of refuse, agricultural activities e.g. crop spraying, pest control, and nuclear energy programmes also contribute to air pollution.

(v) Effluents from Brick fields when burnt in open i. e. Klins yield pyroligenous matter which are injurious to health.

(vi) Effluents from offensive trades like paper making, oil mills, rice mills etc. also pollute the environment.

(vii) Various dusty trades—give rise to silicosis, anthracosis, bagasosis, siderosis etc.

(viii) Industrial gases and fumes from chemical and mettallurgical industries cause respiratory hazards.

(ix) The dispersal of radio active contaminants through war time use and subsequent peacetime testing of nuclear bombs introduced the threats of genetic lesions affecting future generations.

Generalised health affects of air pollution

(i) Immediate effects — Sudden increase, though small, in air pollution, is associated

with immediate increase in mortality and morbidity referable to respiratory system.

(Ii) Delayed effects—are chronic bronchitis, and primary lung cancer.

(iii) Other effects—(a) On plants and animals—Plants are sensitive to SO_2, flourine compounds and smog. Spotting and burning of leaves, destruction of crops, retarted growth of plants have been observed. Flourides are toxic to amimals as to men.

(b) Soeial and economic effects are due to impairment of human, plant and animal health, erosion of metals, building material which in turn affects cost of cleaning, repairing removal of unpleasant odours etc.

(iv) Specific effects—or health hazards are found in specific occupation with involvement of toxic chemicals e.g. (i) inhalation of Arsine produces toxic jaundice, haemolysis, haematuria, suppression of urine, (ii) Co-prolonged inhalation leads to carboxy-haemoglobin, weakness of limbs, heaviness in head, giddiness, palpitations etc. (iii) H_2S—Prolonged inhalation leads to convulsions, paralysis, coma and death, (iv) Cl—leads to lacrymation, cough, dyspnoea, anaemia, decay in health and emaciation, (v) NH_2 Irritation of URT and conjunctivitis (vi) CS_2 —leads to headache, nausea, cramps, haemolysis and numbness.

2. Noise Hazards

Todays jets have subjected many people living near busy air ports to severe noise. Tomorrow's Supersonic Aircrafts will aggravate this issue, particularly for the people living along flight paths, in Island or Coastal areas remote from major Air ports. The elatter and hum of office machinery may impair working efficiency. Industrial noises are more serious. The level of 90 db is not too far for the level which has to be regarded as a threat to hearing (Broadhent 1964). This level is not at all unusual in industry and impaired efficiency of hearing may also result from certain types of low level sounds that do not annoy the hearer. The whole question of street noise is one clearly demanding critical monitoring and evaluation by environmental health scientists.

3. Water Pollution

Sources of water pollution are many e.g.

(i) Municipal waste water if not properly chanalised.

(ii) Industrial waste water.

(iii) Agricultural waste water.

(iv) Unguarded sources and reservoirs of water.

(v) Underground water and drainage pipe line if gets broken and there is leakage.

(vi) Insanitary wells.

(vii) Physical pollutants—Pollution of water supplies by radio active material represents an increasing hazard with regard to water quality. In radiological examinations, radio-activity is expressed in piocuries per litre (pci/l.). International standard proposed the following limits of radio-activity as acceptable.

Gross alphactivity 3 pci/litre.

Gross betaactivity 3 pci/litre. Below these limits water is potable.

(viii) Miscellaneous : Petroleum products and refinery wastes are generally listed

among possible mutagenic and carcinogenic substances. There has been recovery of various polycylic aromatic hydrocarbons including the known carcinogens, 3-4 benzpyrene and 1-2 benazathralene from sewage sludge. Effluents from gas work, atmospheric soot, washed from air by rain are suspected of introducing these chemicals into sewage, as azodyes. Similarly, we get dissolved and suspended inpurities in ground water.

The obliging Yamuna according to published reports carries from Delhi everyday 200 millions and odd litres of human wastes and 20 millions and odd litres of industrial effluents.

Solid Wastes

Health issues are linked with men's total environment. The accumulation of solid wastes in man's environment constitutes a positive health hazards because of (a) The organic pollution of solid states ferments and favours fly breeding. (b) The garbage in refuse attracts rats. (c) Pathogens are conveyed to man through flies and dust. (d) Leads to water pollution if rain water passes through deposits of fermenting refuse (e) There is risk of air pollution if there is accidental or spontaneous combustion of refuse. (f) Files of refuse are also a nuisance from an aesthetic point of view. Social development of community is reflected in collection and disposal of its refuse.

Excreta Disposal

Improper excreta disposal is an important cause of environmental pollution. The various health hazards are —

(i) Soil pollution.

(ii) Water pollution.

(iii) Food contamination.

(iv) Propagation of flies.

The resulting diseases are typhoid, paratyphoid fever, dysenteries, diarrhoeas, cholera, hookworm infection and parasitic infestations. These diseases are basically detriment to social and economic progress. Statistics indicate that about 50 million people suffer from intestinal infections, out of that 5 million die every year. In rural India, 45 million are infested with hookworm and about 2114 per 1 lac population suffer from enteric group of fever.

Biological Environment

Insects, animals and plants are constantly working for their survival and in this process some of them may act as disease producing agents, reserviour of infection, intermediary hosts and vectors of diseases for man. Between the members of ecological system which includes man, there is constant adjustment and readjustment. For the most part, the parties managed to effect a harmoneous interrelationship to achieve a state of peaceful co-existence. This has however not been enduring and disturbed environmental change has resulted which is not to the advantage of man in the long run.

Social Environment

It includes a complex interplay of factors and conditions viz. cultural values, customs,

habits, beliefs, attitudes, morals, religion, education, occupation, standard of living, community life, availability of health services social and political organisation. Man is a member of a social group, the member of a family, a caste, a community and a nation. Between groups there can be harmony or disharmony depending on interests and points of view that are shared or that are in conflict. The behaviour of one individual can affect others more or less directly. Conflicts and tensions between the individual and the group as a whole or between the individual and other members can lead to various social problems and increase in crimes of various sorts.

One of the great evils is the irregularity with which huts are built around a coming up industrial complex without any provision of basic sanitation facilities. This way slums are being created in almost all cities and industrial estates, and as is known slums are responsible for 35% of city fine, 45% of major crimes, 55% of Juvenile delinquency, 50% of arrests and 50% of diseases (60% of tuberculosis cases originate here). Food is made unsafe in various ways, which again is a social problem.

Thus man today is rightly viewed as the 'agent' of his own diseases. His state of health is determined more by what he does to him that from what some outside germ agent does to him. By poisoning with toxic chemicals, the air he breathes, the water he drinks, and the food he eats, man has been reducing the chances of his own survival.

In a Seminar recently, the Archbishop of Trivandrum rightly observed that modernisation, urbanisation and industrialisation have created crisis in our values, destroyed our ideal traditions and thrown our lives out of joint. This social disorganisation is mainly responsible for all sorts of corruption and ills.

What is the Remedy ?

The central task of environmental health planning is to formulate a strategy that will assure the maintenance of that combination of environmental qualities that allow all free living organisms to give their potentials the fullest development and most harmonious expression. This strategy cannot focus on environment alone for environment per se is not the real issue—The real issue is organism in environment.

Man emerged into terrestial habitat some two to five million years ago. For most of that long span of time, his impact on his habitat was relatively inconsequential. His capacity to effect change was limited to living in caves, erecting simple huts and establishing rudimentary social organisation. After the stages of gathering, hunting and fishing, the stage of herding started. This stage was signified by domestication of cattles harnessing of fire (50 000 years ago). The next stage was domestication of plants and start of agriculture. To start with there was an active and symbiotic partnership between man, animal and plants. But with the advent of potters wheel, which led to wheel of industry —industrialisation and latter to urbanization, the disturbance in ecosystem started.

At first man adapted his methods of managing wastes to natural processes. As the scale and tempo of waste production increased,

it soon exceeded the capacity of natural feed back and the toxic nature of human detritus began to disturb the orderly functioning of natural systems. So man has to now devise innovating processes to manage the rapidly accumulating detritus in the emerging human eco-system. It is certain that man by some control over physical environment controlled major communicable diseases. This in turn along with staving of major wars had led to increased populations, leading to crowding—over crowding and its deleterious effects—food shortage again, air and water pollution and various types of diseases. So it is a vicious cycle and until and unless broken and at a proper stage, there will be no permanent solution.

Some of the countries that were late to industrialize have largely bridged the technological gap and now also boast of efficient educational social health services—Japan has demonstrated how rapidly and effectively human populations can be scientifically managed. But what about the poverty smitten majority ? These show no more than the small beginning of technological advancement. They are racked by internal dissentions, lack of sound educational infrastructure and have Public Health Services that can do little more than furnish the bare necessities of medical care. Where these conditions prevail, meaningful limitation of population will not be achieved by handing out bead frames, condoms or intra uterine contraceptive devices.

Vast population in many countries exist in the most rudimentary and temporary shelters with less than elementary facilities for healthful living. Problems of sanitation, therefore must be considered against the background of social structure of the community in relation to urban, village, scattered rural specified industrial new colonies of migrants, refugees and labour forces engaged in public work.

In many village communities, where the basic elements of sanitation are missing, priority will have to be for water and soil sanitation, while in industrial communities, in addition to these, and taking care of slums, control and monitoring of air pollution will be as important.

Till now the progress obtained in environmental sanitation has been confined to a few advanced countries and only a small part of world population. Causes for slow and unsatisfactory development in environmental sanitation in other regions are lack of public conciousness and knowledge, lack of adequate sanitary organisation, lack of adequate trained staff, lack of finances and inadequate distribution of technical information.

Before any programme is taken in hand, man environment relationship must be thoroughly understood. Growing waste loads have already begun to have an obvious impact upon economic development of even some of the highly developed countries.

Options for improving environmental management are to improve technological process by increasing efficiency, using cleaner inputs and reducing wastes. Another set of options includes the recycling of residual such as municipal trash. Other options include, treating wastes which are currently untreated and to improve pattern of waste

disposal through time and space—Examples are restricting emissions during period of temperature inversion and other adverse meteriological condition and avoiding excessive concentration of waste geographically.

An increased sense of public urgency concerning the pollution problem is essential. It is also imperative that governmental agencies should be well equipped and staffed to take care of the same. Public is generally ignorant of the various acts the government has made to protect air and water from pollution. Then the laws against causing pollution have proved ineffective in some countries so far, possibly because the responsible official machinery is inefficient. The industries large, medium and small have no incentive to develop and operate pollution, control. The defaulting companies causing pollution are able to present a variety of expert witnesses to support their point of view while the poorly financed citizens' organisations generally lack expertise and sometimes are even made to work at cross roads.

Then to quantify the effect of actions on the environment and achieve agreement among many parties involved, is difficult if not impossible. To recognise the potential effects upon the environment and attempt to quantify them is, essential if we are to minimise ecological imbalances and the resulting health problems created.

Some of the general environmental impact questions to be considered before, we take up an industry or projeot could be as under. Similar questions could be designed for community water supply projects and sewerage and sewage treatment projects.

Environmental Impact Questions

1. What new public health problems will likely arise from the construction of the project ?
2. Which construction and plant operations are likely to open up new pathways for carriers of disease, affecting humans, plants or animals ?
3. What chemicals or toxic substances will be used during construction operation which may have a long term effect on the environment ?
4. What actions will be taken to avoid creating a more favourable environment for disease-bearing organisms ?
5. What is the extent and impact of the environmental degradation which could be expected in case of catastrophic failure or accidental spill of toxic material ?
6. What clean-up contingency plans exist for catastrophic failure or an accidental spill of toxic material ?
7. What will be the ecological consequences of change in land patterns and population distribution ?
8. What provisions have been made for resettlement of people and industries displaced by or attracted to the project area ?
9. Which alternate site and forms of action have been considered in an effort, to mitigate environmental degradation ?
10. To what extent is the environmental impact reversible ?. In what time period and at what cost ?
11. How does the design of the project allow for future expansion but still protect the environment ?

So it seems, the most important long run option for improvement of environment management will be changing, the size and composition of economic activity and shifting the nature of growth away from pollution intensive towards those activities which are less waste intensive, as well as optimisation of the world population if ecologic balance has to be maintained.

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PRESIDENTIAL ADDRESS

Namdeorao Gadekar*

Ladies and Gentlemen,

I am indeed thankful to you all, for inviting me to preside over the XXIII Annual Conference of Public Health Association at Aurangabad.

I really appreciate the foresight of organisers of this Conference in selecting a very appropriate theme for the scientific session "Para medicals in Health Care".

80% of population in India lives in villages. For a meaningfull progress, health of the people will have to be uplifted. A retrospective glance at the health facilities provided, will reveal that prior to independance, the infrastructure of health services was so meagre, that it could not make slightest dent on health conditions of people. On recommendation of Bhore Committee (in 1946), Primary Health Centres were establhlised in Rural areas, at the rate of one centre for each community development block. This was a new approach to meet the preventive, promotive and curative needs of the rural community, through a basic health team consisting of Medical Officer and Paramedical Workers and Nursing personnel.

In latter years, various National Programmes were under-taken for the control of important Communicable Diseases. Most of these programmes were vertical. With years of struggle, we are successful in taking some of the diseases, in other instances, we have eradicated some diseases.

It may be the scheme of opening Primary Health Centres, in Rural Areas. Eastablishment of a big Hospitals in Urban area or it may be an execution of National Programmes for control of Communicable Diseases, one thing is common in all and that is the participation by Para-medicals along with the Medical profession. In a poor developing country, like ours, where we don't have enough of medical personnel, many of the functions of Health Services, where much of the professional skill and expertise is not necessary can be undertaken by Para Medicals.

We have seen the eradication of Smallpox from our Country. In bringing this dream to reality, the role played by Vaccinators and other Para-medicals was as important as that of a Medical Officer of the Primary Health Centres. In many other programmes, also we have to attribute our successes to

*Hon. Minister of State, Public Health & Family Welfare, Maharashtra.

the hard working and untiring efforts of Para Medicals. Even in this decade, we experience the reluctance of Medical personnel to work in Leprosy, whatever, small achievements, we are able to make in this field are very much due to the dedicated work of Para Medicals.

It is a fact that Maharashtra has done a commandable work in Family Planning. For years, this State had done pioneering work in this field. I will not hesitate in stating that, role of Para medicals in the success of Family Planning work was not in any way less than the medical profession.

In rural and urban areas, backbone of our hospitals, and Primary Health Centres are nursing staff. In rural areas, specially, nursing staff has been the liasion between the community and medical officer. Achievements in Maternity Child Health Services are mostly due to the active participation of nursing staff. They played a great role in imparting health and nutrition education to mothers. They have performed these tasks againt many odds. Even now, there are no residential facilities to nursing staff, no security of female staff. There is difficulty of communications, even then nursing staff has helped medical profession in improving Maternity Child Health Services. Though there are some spectacular achievements in field of Health Services, if cirtical review is taken, some of the gaps, failures will become obvious. Our Para medicals have failed to penetrate in the community and also to work as re-inforcement to the medical officers. They have remained isolated from the community, resulting in lack of emotional rapport. I think to some extent, blame of this failure will have to be taken by administration. We have failed in training the Para medicals staff to the desired level and for the purpose for which, they are employed. Here I feel Indian Public Health Association, through its learned and scientifically skilled members can train the para-medical staff. Let the community get the benefit of your valued experience in the field. I would request the Indian Public Health Association to give a serious thought in the deliberation of next 2-3 days in finding out viable methods in what way Indian Public Health Association, can help Government in training the Para Medicals. I would also request that each Branch should adopt one primary Health Centre, initially and show the light to others.

I am happy to be with you, on this occassion. Ladies and gentelmen, I am keely interested in the deliberation of this Conference. I am confident, some important and useful resolutious will be passed in this Conference.

I wish you a very happy stay in this ancient and beautiful city of Aurangabad, and wish all the success to the Conference.

Thank you very much.

SESSION—II

PARAMEDICALS IN HEALTH CARE

KEY-NOTE ADDRESS

Role of Multipurpose Health Workers and Medical and Health Assistants in the Delivery of Health Care in Rural areas

B. C. Ghosal*

Mr Chairman Sir, dear Colleagues—Ladies and Gentlemen ;

I am extremely grateful to the General Body of the Association for the great honour done to me by asking me to deliver the key-note address for the Scientific Session "Paramedicals in Health Care". My only qualification is, perhaps that I am handling the Rural Health Scheme from the Government of India side. I see before me, senior health administrators, learned educationists, experienced public health workers and young scientists. I trust and hope that they will pardon me for making any observation which may not be acceptable to them. I will be glad to try to answer any question or accept any suggestion, if they are made after completion of presentation.

As you all know that our aim is to introduce and help in extending the concept of integrated health care in the country with preference to the rural masses, which form 80 p.c. of India's population. We need health organisation to develop a comprehensive health care programme to try and improve the health condition of the people. The present day medicine is not for individual only but for whole community. It is not enough to be free from disease, but be healthy and enjoy life through work, creation as well as recreation. This is why handicapped, is taken care of in rehabilitation and gainful employment is also the responsibility of the society in which he lives. Fortunately the trend of health care in the developing countries like India is towards integration. It is now increasingly appreciated that prevention is not only better than cure but also economical. Remarkable advances are taking place in various fields of medical science and procedures of treatment which can in the early stages bring about early cure and prevents spread of the disease in the community. It is rather difficult to draw a line between curative and preventive medicine.

In India, the problem of providing medical and health care to its vast population has always been a matter of serious consideration of planners and policy makers in the formulation of health and medical development programmes during the five year plans. As a result much has been achieved during the past 30 years. There are now 1,54,000 doctors in the conntry as compared to 60,000 in 1951. The number has risen mainly due to rapid expansion of training facilities during the different plan periods. As against 30 medical colleges with an admission capacity of about 2,600 per year in 1951, we have now 106 medical colleges with an admission capacity of about 13,000. The facilities for training of

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paramedical personnel have also increased substantially. Now we are not far from the norms recommended by the Bhore Committee (1946). A huge infrastructure of hospitals, primary health centres and their subcentres and dispensaries has also been built up. There has also been a remarkable progress in the control of communicable diseases, water supply, sanitation and research activities. Health status of the people has also been considerably improved as indicated by a steady decline in infant mortality and the increase in life expectancy over the last three decades.

Despite impressive progress during the past three decades, the position in rural areas is still far from satisfactory. Vast segments of rural population have little or no access to to Government Health Services. The health centre in the rural areas is a basic health organisation for providing integrated health services both curative and preventive to the people with family as a unit of care. The health centre concept is a positive step towards comprehensive health care. We have today 5400 Primary Health Centres and about 39,000 subcentres. These, however, have not made significant impact on the health status of the rural population. P.H.C. on an average covers 1,00,000 population. Out of this population the P. H. C. can conveniently provide medical care to the 20 p.c. of the population over a radius of 5 kms. In the rest of the areas, there is hardly any coverage by the P.H.C. Thus, a large unmet felt needs for health service exist in the rural areas. It is now being increasingly realised that the health needs of the rural people are unlikely to be met by our present health care system which is hospital based and relies on a large number of doctors, with emphasis on curative rather than preventive care, and depending upon sophisticated facilitics and equipments. The health services on this pattern were developed with the hope of expanding them progressively, as resources increase until the entire population is covered. The outcome has been quite different, unfortunately, the major outputs have been mostly directly towards urban areas to the relative disadvantage of rural population. The magnitude of the task for providing basic minimum health care to the entire rural population is so great and the financial resources so limited that one loses almost all hopes for meeting health needs on the basis of existing pattern. This makes one start thinking as what strategy to be adopted to meet the challenge.

In recent years there has been a considerable thinking in India in search of new approaches. Various experiments have been conducted by various individuls and agencies in different countries including international organisations. It has been realized that an adequate approach to meeting basic health needs must begin with the community itself and then link of these basic services with the infrastructure of dispensaries and hospitals through a sound and well organized referral system.

The Kartar Singh Committee which has examined the problem in detail, and after reviewing the entire health care delivery system, has provided some broad guidelines for the development of a comprehensive nationwide network of health services, to provide a basis for the immediate action programmes. The most important recommendation of the Commitee was that "the multipurpose worker would be entrusted with the

carrying out integrated functions, and would have greater rapport with the people in rural areas." It observed that the integration of Health with family planning and nutrition programmes is highly desirable as it would be more economical and effective. The recommendations for the committee of introducing the multipurpose workers in the rural areas in place of unipurpose workers were accepted by the Government. Under this scheme health workers both male and female are responsible for carrying out basic medical care, M. C. H. and Family Planning, nutrition education, health education besides preventive and promotive health services. Thus the present strategy of providing health services to the rural community is distinct from that of unipurpose workers scheme in which different health workers are responsible for different programmes.

The health assistant, as he is called in India is also a supervisor of the various health workers working in the area. The health assistant can get very little guidance and for practical purposes, he is to make decisions and organise activities, which normally would be taken care of by a doctor. A health assistant in the rural community combines the duties of a health administrator, clinician, nurse and a sanitarian, furthermore he has been trained to undertake the responsibility of supervisor.

In India the health assistant i.e. initially drawn from the existing cadre of malaria inspectors, sanitary inspectors, smallpox supervisors, pub ic health nurses, lady health visitors, etc. The new entrants will be required to have ten years of schooling and will then he made to undergo a programme of training which will extend over two or three years to qualify them for the job.

The health assistant will continue to exist and play a vital role in rural community for several years to come, particularly as the speed of development in rural areas lag behind. Even in those countries where doctors abound e. g. the U. S. S. R., the feldscher cadre is not being abolished but is being reshaped to meet the current needs of health services.

While the health assistants do have supervisory role, they should also function as health workers in their own area, carrying out the same duties and responsibilities, but at higher level of a technical competence. They will be specially responsible for the promotive and preventive health measures and all the national health programmes. The female health assistant should take particular care of children and expectant and lactatiug mothers.

Health assistants really fall in two phases. The first phase is qualitative in the sense that it is not proposed to increase the total number of persons at the supervisory level, but to replace the existing varieties of unifunctionaries by a broad based single cadre of multipurpose, middle level workers, comprising the subdoctorate and sub-professional groups. Persons in the existing categories of health supervisors, after suitable screening should be given intensive training for varying periods so as to fit them for the job expected of them as health assistants. The number of health assistants should also be increased gradually.

The cadre of health assistants is regarded

as an incentive to promotional cadre of health workers. In future the recruitment to the category of health assistants should ordinarily be restricted to health workers who are duly qualified to shoulder the higher responsibilities involved. However, where such qualified workers are not available for promotion, an alternative channel of lateral recruitment from the open market should be provided.

Both health workers and the health assistants will function as important llnks in the referral services. They will deal freely with cases within their sphere of competence; but their training would have to emphasise that they should refer cases beyond their competence to appropriate agency without delay or hesitation.

While attempts to induce doctors to settle down in rural areas should continue, and the services of all available doctors in rural areas should be fully utilized, there is no doubt that the category of health assistants will still be needed for years to come to supplement the available pool of medical manpower in rural areas. It is necessary to emphasise that the health assistant is not a functional substitute for a doctor, but he will be providing useful health services in the subcentres and thus will increase effectively the out-reach of the primary health centres themselves.

Though the multipurpose workers scheme has got a general acceptance by the people and is an important step in the direction of providing basic medical care to the rural population, yet there exists some deficiency and limitations in its implementation which are essentially attributable to lack of adequate preparation and the great speed with which it has been implemented. The deficiences have to be corrected for making the scheme a success.

As a person who has been working as a public health worker for more than 20 years in the field, I am convinced that with the introduction of multipurpose workers and health assistants, the rural community will be able to derive the benefits of total health care. The rural community and the medical profession alike still need the services of health assistants and health workers. I feel it is our duty, as a member of medical profession to help the Government to organise the huge training of health assistants and health workers so that they are able to serve the community not only as an efficient health workers but also as community worker who should contribute fully to the overall development of the people in rural areas.

ABSTRACTS OF PAPERS

Do We Really Need Paramedics in Health Care? A Demand—Function Analysis

Rathindra Nath Roy*

Since independence the government has pursued health policies which have given priority to the training of medical personnel, construction of hospitals, and extension of medical services to the countryside through PHCs. The number of physicians has increased. There has been a similar, though less pronounced, increase in the number of nurses, midwives and other medical personnel.

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The institutional network has expanded to more or less every block of the country. The community health workers scheme, started in 1977, hopes to involve the community through trained workers drawn from the villages to take health care to the very doorsteps of the population.

However, all this cannot counteract one inconvenient fact : *the people are growing more and more disease ridden*. Even if this is difficult to prove statistically, it is the only possible consequence of another trend that has been well documented : *the people are growing poorer*. More people eat less, have fewer clothes and less houses, and live in increasingly polluted environments. As a consequence their proclivity to disease increases.

This paper hopes to develop a rational planning methodology to improve the health of the people. It begins with the analysis of the health problem, studies its etiology, develops interventions to eliminate the causes of disease and finally synthesizes institutions, functions and work profiles to suit the intervention demands. In this it will be different from the solution-in-search-of-a-problem-approach that is popular.

The paper begins by analysing the existing mortality/morbidity profile in rural areas. Having classified the disease profile it looks into its etiology. The next stage is specifying the medical and non-medical interventions and lifestyles necessary to prevent preventable diseases and to cure the non-preventable. The intervention profiles are then used to derive the work profiles, functions and institutions needed in a truely responsive health system. The functional profile thus derived of the community health worker in particular is dramatically different from the so called barefoot doctor that has caused considerable confusion and dissent in health care circles.

The exercise emphasizes a rational planning approach wherein solutions are derived to suit the problem rather than the usual force-fitting of problems to suit existing "supposed" solutions.

Para Medicals in Health Care

K. K. Datta*

According to W. H. O. all those in the professions allied to medicine which together makeup the team of health personnel i.e., nursing and midwifery, dentistry, veterinary health, pharmacy, statistics, microbiology etc. should be called paramedicals. To achieve health for all particularly in the developing countries, we require to evolve a low cost health technology involving suitably the paramedicals. When we talk about health man power shortage we know that the shortage of paramedical man power is more acute than that of medical man power. Realisation of the importance of the paramedicals in health care delivery is of recent origin. In India we are still far short of achieving the recommended target of medical and paramedical ratio of 1 : 20. So it is meanningless to think of having more paramedicals at the moment. But with the increasing utilisation of health care by the people while planning health man power for the country we should keep adequate provision so that we may be able to have medical and para

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medical ratio of 1 : 25 in future. Almost all the committees appointed by the Govt. felt the importance of having increasing number of para medicals in health team to achieve our target. The role of paramedicals are to be clearly defined, their curriculum are to be modified and adequate number of paramedicals are to be deployed to achieve our health target. Functional efficacy of paramedicals in giving proper health care has been well demonstrated in USSR (Feldsher) and in China (Barefoot doctors). In the country like India where the task of health care delivery is gigantic, formidable and challenging, increasing deployment of paramedicals is imperative and a necessity.

Salient Characteristics of Community Health Workers

B. J. Goyaji* and M. P. Dandare**

K. E. M. Hospital, Pune, launched a Community Health Workers Project at Vadu Budruk and its surrounding areas in January, 1977. Its aim in the first phase is to provide comprehensive health care to the rural masses with maximum participation of the beneficiaries themselves, and in the second phase towards the total development of the area. The project covers a population of about 30,000 spread over in 19 villages around the K.E.M. Hospital Health Centre at Vadu Budruk, 30 Kms. from Pune.

Forty five persons, 23 men and 22 women were initially chosen. This was deliberately done as it was felt that if in spite of the careful selection some were found unsuitable or for any reason did not complete the course a minimum of 38 people would be available to start the scheme.

Age is not found an important factor. Nine Community Health Workers, 5 male and 4 female were between 20-24 years, and have shown good work. Their drive and enthusiasm more than compensated for their lack of maturity. Criteria of formal schooling need not be as important as was thought originally. Three women community health workers have done very well in spite of being illiterate. One needs to be cautious when selecting CHWs with higher qualifications. Though maximum constructive suggestions and work come from them with superior documentation they are not satisfied with the payment and facilities. Marital status and number of children did not have much bearing on the work. Absence of economic stress and strain in one's daily life in some cases has helped the individual to work with dedication. It is observed that those Community Health Workers who are not solely dependent upon the honorarium can mobilise the masses more easily than others.

Some of the good community health workers belong to the Malkari Sampradaya a popular spiritual group in Maharashtra. Members of this group are known for their detachment from normal worldly pleasures and interest, for their honesty, simplicity and freedom from addictions. These characteristics are appreciated and respected by all communities. Such workers are found to be working with dedication with encouraging results and have great respect of the villagers.

During the last two years four community health workers resigned from the job. One female Community Health Worker had to resign since her husband started doubting

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her fidelity because of absence from the home due to homevisits.

A young male Community Health Worker left the job for better prospects outside. Remaining two left on their own since they were unable to spare time for the work.

An Experience with Field & Multipur ose Work Distribution among Paramedical Personnel of RHTC Naila, Jaipur

I. U. Dudani* and Shiv Chandra**

The present study is an attempt to evaluate the work done by paramedical workers of the health team of Rural Health Training Centre, Naila when they were discharging duties of unipurpose work during the year 1971 and is compared with the work output in the years 1975 and 1976 after reassigning them area and multipurpose work in 1974.

After redistribution of area and population to be covered by the paramedical workers, changes were noticed in the output/outcome. Registration of antenatal, postnatal cases, infants and toddlers showed improvement during 1975 and 1976. Percentage output of domestic deliveries by ANM and LHV also improved varying from 14.51 (ANM) to 61.11 (LHV) during 1976. Vaccination against smallpox improved by all categories of workers and supervisors.

A ganwadi Workers of ICDS Projects as an Agent of Primary Health Care Delivery

S. Bhatnagar & Dharam Shakhiu*

The integrated child development services scheme has lunched a nutrition and health programme for children under 6 years, pregnant and lactating mothers with emphasis on supplementary nutrition and health education through non-formal education for pre-schools and functional literacy. The All India Institute of Medical Sciences has introduced primary health care to the role of Anganwadi worker, who is a young woman from the village with 1000 population to look after.

Present study is done on 150 Anganwadi workers in the urban ICDS project at Delhi, to assess the knowledge, attitude and practices of the Anganwadi workers in health care delivery by a questionaire method. The outcome of work is indicated by the coverage of the target population, for immunisation, Vit. A supplement and supplementary nutrition and reduction in severe degree of malnutri tion. This data has been collected through bi-monthly monitoring, and independent surveys conducted at yearly intervals.

The results indicate that Anganwadi workers are able to manage the common ailments adequately and are able to create a link between the peripheral health worker and the community. Further those workers prove to be extremely useful in collection of vital statistics.

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Para-Medicals in Health Care (Choice-Trained Dai)

M. L. Chugh*

Para-medicals in the form of Lady Health Visitors, Auxiliary Nurse Midwives, Family Planning Field Workers, Pharmacists, Health Inspectors, Nurses etc. have been always an essential part of the medical teams extending health services to the rural community. These workers had a compartmental approach earlier, but with better achievements in various National Health Programmes, multiplicity of work has been assigned to such workers and are designated as Multi-Purpose Health Workers.

Since October, 1977, the Central Government has put forward the scheme of employment of a Community Health Worker (CHWs) for each 1,000 rural population. The criteria for selection have been laid down by the Central and State Governments. These criteria in short are that workers should be local residents, middle aged, physically acceptable to the community and moderately literate. Male and female workers have been selected for these services by the Block Health Officers and the concerned Panchayets. These workers are given training for 3 months and employed on an honorarium of Rs. 50/- p.m. with expenses for daily use of medicines. It is well nigh impossible to have a worker from the local community at each place or area of work. This scheme of course has to cover about 6.5 lakhs of villages in India in the coming 5 yrs or so, and the number of workers needed will be about 4-5 lakhs, a very expensive proposition though but has to be undertaken in the best interest of the health of the nation and will prove economical in the long run by bringing down morbidity and mortality. Therefore, selection of such workers has to be carefully undertaken and in phases, learning from our initial mistakes through pilot projects in different parts of the country so that the scheme brings desired results.

The Department of Social and Preventive Medicine-cum-Community Health of Christian Medical College, Ludhiana after a good deal of deliberations has come to the belief that local trained dai is possibly the best suited individual for the said purpose. Her employment as Community Health Worker (CHW) would obviate problem of residence as well as acceptability by the community—being already an established person. The service to be derived of this individual, as is in practice in the area covered, by this department are :—

1. *Medical Services* :

Reporting of antenal cases for clinics attendance and immunization against tetanus; making domiciliary natal arrangements and attending to postnatal services; issue of iron and folic acid tablets under guidance of supervisors and advice on nutrition particularly in the third semester.

2. *Service to children* :

Motivating parents of all healthy children 0-5 yrs of age group for complete immunization against tetanus, diphtheria, whooping cough, polio, tuberculosis, enteric group of fevers, etc. Reporting all mal-nutrition cases

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for proper advice and treatment by the supervisors including medical officers ; health education on personal hygiene and prevention and control of communicable diseases.

3. *Family Planning* :

Motivating all target couples for adoption of small family norm and inducing cases for permanent and semi-permanent methods like sterilization, insertion of IUCD etc. She also helps in distribution of conventional contraceptives.

4. *Reporting morbidities* :

She is best fitted to know about various morbidities in the total community under coverage. Therefore, she can persuade all such cases for medical services through fully qualified hands i.e. our rural health centres, sub-centres and subsidiary health centres, acting as a watch dog for the community for all basic health problems, a liason between the community and the health institution.

She has not been given the concession of carrying any type of medicines or injections with her to avoid development of pseudo-doctor and quackery. Also it will avoid any clash with local registered medical practitioners.

She will also be helpful in extending desired health education in environmental sanitation in the form of installation of sanitary hand pumps, sanitary latrines, disposal of dry refuse, popularization of kitchen gardens etc.

She is employed on a monthly remuneration of Rs. 75/- p.m. which is acceptable by our such workers and is economical too. Being a female worker she can normally enter every house.

As trained dais are available in most of the villages of many States particularly in Punjab State, it is our strong view point and recommendation that this type of worker should be taken as Community Health Worker instead of imposing an unknown worker on a particular section of the community. Under our scheme through this institution, provisions have been made for in-service training as well as for new female entrants.

A high percentage of such workers will be drawn from under-privileged classes, who have taken the profession of trained dai in rural areas and thus it will act as a welfare step also.

Integration of Paramedical and Peripheral Health Care

S. M. Marwah & K. P. Shukla*

An exploratory study of the personal and professional aspects of healers without recognised/institutionalized training in allopathic or indigenous medicine in a ten percent random sample of the Chiraigaon Block (Varanasi) indicated the healer : population ratio of 71 : 1000, with a male : female ratio of 1000 : 250. The healers had higher general literacy i.e. 46.2% literate against block figure of 27.5% and rural U.P. figure of 18.1%. About 63.6% healers were farmers as compared to the block figure of 42.7%. About 82.8% of healers had their respective training

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as part of the family tradition on through fellow healers. About 52.8% healers had an experience of more than 10 years, 84.7% healers had practice only within respective villages. 78.8% healers used magico-religious and/or herbal therapies, 85.5% healers treating one to three diseases. The healers sought rewards in terms of cash even on credit, kind and/or merely social recognition/spiritual satisfaction. 43.4% healers expressed their willingness to undergo further training.

In the Varanasi slum areas we found that the untrained practitioners of a wide variety i.e. in terms of untrained dais (untrained midwives), bone setters, practitioners for piles, epilepsy, leprosy, marasmus, dysentery, mental diseases etc. etc. were nearly 1 per hundred population.

In the Varanasi Corporation studies, we found that the modern practitioners (i. e. university qualified medical graduates) population ratio in the corporation was 0.262 per thousand and indigenous practitioners (qualified in Indian systems) ratio was 0.576 per thousand population. The total population of the Varanasi at the time of study was 600 thousand (round figure).

In this paper an attempt has been made to illustrate through action models, how community health at the periphery can be cultivated beyond multipurpose on community level workers through intercultural interactions by incorporating the available resources in the sociological settings of any community.

Social Workers as Paramedicals for Primary Health care in Rural India

Vijay Kochar*

The paper starts by identifying a number of non-clinical skills that are involved in extending medical services and health care in rural areas. It is being recognized the world over that appropriate social technologies must be developed and applied for transferring medical technology to rural setting. The paper suggest three alternative solutions :

(i) train medical students more intensively in social and community oriented, and programme organization cum management oriented skills.

(ii) train paramedicals in rural health care infrastructure for such simple social techniques, organizational skills, and educational methods that they can use in their field activities.

(iii) include public health social workers in the health team to provide on the spot expertise and services at the various. levels. The paper elaborates the third alternative.

Use of social workers in rural field practice areas of the P.S.M. departments has become a well established practice in a number of leading institutions. The recent experience in three tier programme as well as the community orientation in different departments and specialities points out clearly that such programmes can be greatly facilitated by some one who can do the necessary leg work and initial spade work in the field. Both medicals as well as paramedicals perform much better if the stage has been set for them.

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The role of social workers in the field practice areas is undefined and unstructured. They are used as multi purpose field assistants. The functions and image of non-teaching social workers working in the field practice area is similar to that of paramedicals. In fact, in some departments they are referred by the faculty and post-gtaduates as paramedicals.

The paper lists the great variety of assignments, activities, and functions the social workers perform at the department of P.S.M., B. H. U. The paper emphasizes need for optimum utilization of social wokers in specific situations and for specific tasks for which neither medicals nor paramedicals are trained. It is pointed out that the social workers also need proper orientation before they can be effective.

An Estimate of Work Load for a Multipurpose Worker

N.S.N. Rao and S.M. Marwah*

The planning of primary health care to the rural masses is under continuous revision. Various committees have recommended different approaches. Kartar Singh Committee (1973) recommended that there should be a paid male and a female multipurpose worker for a population of 8,000 which should be gradually brought down to 5,000 for a male worker.

In the light of the above recommendation it is worth assessing what would be the total work load for a worker in terms of different activities suggested by the committee.

A longitudinal survey was conducted in a randomly selected population in a C.D. Block over a period of one year. A continuous surveillance was kept over the morbidities etc. in the community. Based on the data collected a statistical estimation of the total work load for a multipurpose worker is attempted. The results obtained will be presented.

Medical Social Workers As "Para Medicals in Health Care"

Bandana Roy*

Medical Social Work may be defined as the science of dealing with social components of human relation, which directly affects health of individual and community. To achieve health according to defination of W.H.O., world wide Medical Social Work has been established. England and America started to appoint Lady Almoners in the year 1895. Afterwards it became scientific profession. According to Bhore Committee recommendation India also appointed trained Medical Social Worker in the year 1946 though West Bengal appointed untrained 4 Social Workers in the year 1944. West Bengal now has got 610 Medical Social Workers upto P.H.C. level.

Principle of social work is to help to the to help himself. Techniques used are case work, group work, community organisation and research. Medical Social Worker is working on the following—

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i) Help in diagnosis and treatment planning by supplying the Social data to physician.

ii) Treatment supervision which means the arrangement of treatment available to the patient by tapping existing resources.

iii) In case of treatment refusal—Medical Social Worker to convince the patient or relations to accept the advised treatment.

iv) Contact check up should be arranged without harming the sentiment of the involved party.

v) Home visit may be done in case of necessity for demiciliary treatment, isolation and immunisation.

vi) Arrangement for recreational facilities as diversional therapy.

vii) Arrangement of financial help in need.

viii) Acting as liason between the family and patient, administration and community.

xi) After care i.e. case work after completion of treatment.

x) Rehabilitation—Social, Mental, Physical and Economical, the scope of economical rehabilitation being limited.

xi) Prevention of Diseases—Medical Social Worker acting as Health Educator.

xii) Promotion of Health Worker's work through the Clinics of Maternity and Child Welfare, Family Welfare, Nutritional Clinic, School Health Programmes etc.

Comparison of Efficacy in Rash with Fever Surveillance of Multipurpose Worker and Unipurpose Health Workers

Baride J. P. and Sathe P. V.*

In the final phase of National Smallpox Eradication Programme, rash with fever (RF) surveillance was the main activity. The efficiency of detection of RF cases of the multipurpose workers (MPW) and unipurpose workers (non MPW) like vaccinators at two primary health centres was compared. Some other data on chickenpox and measles collected during this activity are also presented in this paper.

Primary Health Centre (PHC) Fulambri with multipurpose worker pattern and an adjacent PHC, Sillod, with the previous unipurpose pattern were studied, for the period from February 1977 through April 1977 as State Surveillance Team Leader. The datewise onset, the day of detection and age distribution of chickenpox and measles have been studied.

Worker Population Ratio and RF Cases in the PHCs

PHC	Workers	Ratio	Chickenpox	Measles	Total Cases
MPW	31	1 : 2755	722	729	1451
Non MPW	29	1 : 9794	623	639	1262

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The MPW PHC had much better worker population ratio and it detected 1451 RF cases as compared to 1262 detected by non MPW PHC. These two PHCs geographically are adjacent to each other without any geographical or communication barriers. Hence, they were expected to have notified comparable incidence rates for RF cases. The cases expected to have occurred by assuming null hypotheses in MPW and non MPW PHC were 627 and 2086 but they had detected 1451 and 1262 RF cases respectively. The difference found was statistically highly significant ($X^2_1=1418$). It can therefore be said that taking the incidence rates as an indicator, MPW PHC had done better work than non MPW PHC.

A similar difference is found in the incidence of chickenpox and measles cases in this period, when analysed sepearately.

Incidence Rate of RF Cases per 1000 Population February—April 1977

PHC	Chickenpox	Measles	Total
MPW	8.45	8.54	16.99
Non MPW	2.19	2.25	4.44

In MPW and non MPW PHC 56% and 52% chickenpox cases respectively occurred in children below five years of age. Similarly 65% and 68% measles cases were in under-fives in MPW and non MPW PHCs. This shows that the epidemiological behaviour of both these diseases was similar in these adjacent PHCs, if age distribution of RF cases is considered. However the incidence rates notified differed a lot. Thus the difference in the incidence rate probably was due to varying efficacy of detection rather than difference in the epidemiological behaviour of the two diseases.

The average period between the onset of RF case and its detection was 6.64 days for chickenpox and 6.15 days for measles in MPW PHC. As compared to this the average period between onset of case and its detection in non MPW PHC was 10.34 days and 10.17 days respectively for chickenpox and measles, indicating better efficiency of MPW PHC.

Thus the better efficacy in the surveillance activity shown by PHC, Fulambri with MPW pattern can be attributed to a number of factors, inter alia, better worker population ratio, the training of MPWs in all aspects of their duties, the well trained supervisory staff, the better supervisor worker ratio of 1 : 4 as compared to supervisor worker ratio of 1 : 6 in non MPW PHC and the overall supervision by Health and Family Welfare Training Centre, Aurangabad.

Paramedical in Health Care

Santi Bose*

Health problem is a primary problem of mankind. In course of growth of the society World has become perplexed with many odd things, health is perhaps the major one.

Unhealthy dwelling house, filthy environment, growth of industry, contribute mainly to health hazards. It is difficult for a doctor to cover all aspects related to recovery of a patient.

An well planned, well organised team work is necessary for betterment of work.

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There is no denying that the role and contributions of Paramedical staff in various streams of total Health Care are indispensable. They are directly concerned with the people and community upto the grass rootlevel in the event of all practicalities and technicalities.

It is obvious that the nature of duties are categorically different in respect of the paramedical staff when they are engaged in the vast field of Health welfare. However if the arena of Health is deemed a triangle each side respectively consisting of a) Preventive aspect b) Curative Rehabilitation aspect c) Training aspect, the role of paramedical staff can be well assessed in each of the above fields.

a) Preventive aspect: Since this is concerned with Health Education, vaccination, sanitation, antenatal care etc. the role of certain category of Paramedical staff is highly important and effective. Actually their strict vigilence stops the disease to enter in a body or in a community. They make the people aware of it. The responsibility is entrusted in a net work comprising Health Educator, Sanitary Inspector, Public Health Nurse, Health Visitor, Health Worker. Vaccinator, field assistant, and such other paramedical staff. Each of them is equally involved in the entire process extended upto the remote corner.

b) Curative Rehabilitation: Curative aspect deals with acceptance and maintenance of treatment, Socio-economic components of illness, emotional factor and Psyco-somatic approach in the field of medicine. The Rehabilitation comes when restoration of a patient to his former social, economic or mental position is needed. Here the role of Medical Social Worker as a paramedical staff is indispensable. Also the role of Physiotherapists and occupational therapists are no less important.

In the process of treatment the contribution of other Paramedical staff like Dietician, Pharmacists and Laboratory Technicians are highly appreciated.

c) Training Aspect: The Paramedical staff are involved to impart training to the Health Staff and to conduct Research. Health Education, Medical Social Work, Physiotherapy, Family Welfare and so on may be the subjects in which qualified Paramedical staff may be the trainer and conduct Research Work.

In view of the above it is perhaps an established factor that the Paramedical staff are the keynote of success of the total Health care in a state. No fruitful achievements would have been possible without their cooperation and they are the Paramedical staff who carry every plans and schemes on Health care upto the Periphery of the society to make those a success.

An evaluation of training programme for community health workers

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When community health worker scheme was started there was doubt in minds of

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many that 3 months period of training of community health worker is inadequate. This study was undertaken to assess the impact of training on the knowledge of community health workers. One hundred and sixty eight community health workers were trained at Primary Health Centre, Sarojini Nagar, Lucknow during the period of one year extending October, 1977 to Septemer, 1979. Of these 153 (91.0%) could be evaluated both prior and after their training was completed through a written questionnaire in Hindi. Each question was assigned a score depending upon its importance for the working of community health workers. The post-training evaluation revealed that the gain in knowledge in a majority of them was satisfactory as far as subjects of communicable diseases, maternal and child health, family planning, immunization, health education, vital statistics, first aid during emergencies and treatment of ailments was concerned. But the scoring was not upto the mark in Nutrition and Environmental Sanitation ; which are important components of community health care. This was probably due to lack of proper orientation of those who were entrusted with the training of community health workers. For proper training of CHWs it is essential that trainers should first be given reorientation in community health work at Rural Health Training Centre of the department of Social and Preventive Medicine.

SESSION—III

Studies on Salmonella Enterotoxins

Y. K. Kaura and V. K. Sharma*

In the past, attempts to isolate enterotoxin from Salmonella cultures in order to understand role in pathogenesis of salmonellosis, have failed. Probably lack of suitable assay model has hampered many workers to demonstrate enterotoxin.

Very recently some investigators have succeeded in isolation of enterotoxin from **Salmonella** cultures. In our laboratory we have attempted to elucidate the mechanism of diarrhoea caused by common sero types of **Salmonella.**

The main findings of our study are as follows :

1. There is wide prevalence of enterotoxin producing Salmonella cultures. About 80% of 50 Salmonella cultures belonging to 10 serotypes gave ligated ileal loop response in rabbits and skin vascular permeability in rabbits.
2. Curde enterotoxin (sonicated preparation) containing 200—400/μg protein/ml gave ileal loop response.
3. The enterotoxin is heat labile.
4. The enterotoxigenic **Salomonella** strain were sereney test positive indicating epithelial penetration. Our preliminary findings tend to conclude that Salmonella produces diarrhoea both by epithelial penetration and elaboration of toxin.

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A Note on an Outbreak of Pseudomonas Gastro-Enteritis in Alwar, Rajasthan

R.S. Sharma*, K.K. Datta*, A. Sankaran*, S. Santhanam** and R.R. Arora**

An outbreak of Gastro-enteritis in Kasba Bansur and three other adjoining villages of Alwar District, was investigated in May-June, 1976. Pseudomonas aeruginosa was isolated from 6 out of 10 cases of Gastro-enteritis. Aeruginocin typing revealed "F" type in three and the other three were found unclassifiable.

The correlation between coagulase production and other biochemical characteristic of Staphylococci of bovine mammary origin

M.P. Kapur, O.P. Gautam and R. K. Kaushik***

Staphylococci are ubiquitous in distribution and makes the normal bacterial flora of the skin and mucous membranes of man and animals. They are frequently encountered as causative agents from suppurative lesions or toxic food poisoning in human beings. Variable percentage of coagulase positive Staphylococci (14.7 to 96.2%) from milk foods associated with food poisoning have been reported to be enterotoxigenic. In the field of dairy farming, the Staphylococci are well recognized as mastitis pathogens. The coagulase production by these organisms is generally accepted as a maker of their pathogenicity. Of late, attention has been paid to some other biochemical reactions closely related to coagulase production, such as DNase production, phosphatase production or tellurite reduction. The present study was designed to study the correlation between coagulase production and other biochemical properties of Staphylococci originating from mastitic/apparently healthy bovine mammary glands.

Organisms employed in this work were 304 strains of Staphylococci (103 coagulase-positive, *S. aureus* and 201 coagulase-negative, *S. epidermidis*), which were isolated from mastitic/apparently healthy bovine mammary glands.

Of the coagulase-positive strains examined, 73.5% (apparently healthy animals) and 56.25% (clinical cases) were found to be chromogenic. Whereas, these figures for coagulase-negative strains were 22.64 and 41.40%, respectively. There was good correlation between coagulase production and haemolytic activity. 86.20 and 73.75% of the coagulase-positive strains from apparently healthy animals and clinical cases of mastitis showed haemolytic activity. On the other hand many strains of coagulase-negative Staphylococci were non-haemolytic with the exception of 6.40 (apparently healthy animals) and 3.50% (clinical cases) of the strains.

It was found that all the coagulase-positive strains (16) from clinical cases were positive to DNase activity, phosphatase production, tellurite reduction and 93.75% were mannitol positive and that 65.50, 62.07, 96.56 and 58.60% of the coagulase-negative strains (29) also showed positive reaction to these tests.

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Amongst coagulase-positive strains (87) from apparently healthy animals 83.91, 91.95, 96,56 66.27 and 5.76% also showed positive reaction to these tests.

Rats and Common Bacterial Aerobic Food Poisoning Organisms

S.N. Saha and P.N. Khanna*

Due to rapid urbanization and industrialization our food habits have changed and a number of concerns are producing processed ready to eat food products. There is a fair amount of centralization of food production, distribution and consumption on mass scale. Foods, if not properly prepared or preserved, are likely to undergo spoilage due to contamination with aerobic (Staphyloccus, Salmonella, Shigella, *B. cereus*, *V. parahaemolyticus*) or anaerobic (Clostridial) organism and consumption of such foods may lead to bacterial food poisoning. Available information indicates that Salmonella and Staphylococcus are the most common organisms involved.

The problem of food hygiene has not received adequate attention in India and experience elsewhere indicates that food poisoning through processed food products forms bulk of the health problem. The food poisoning cases are neither reported nor investigated in our country. A study was undertaken to study the presence of common aerobic becterial infection in domiciliary rats which are so common in and around our food establishments.

Out of 220 specimens from 55 rats, 9 strains of Salmonella, 33 strains of *E. coli*, 25 strains of Staphylococci and 19 strains of Streptococci were isolated. The isolated Salmonella strains were *S. amsterdam* (4) *S. typhimurium* (3) *S paratyphi B.* (1 , *S paratypha B var Odense* (1). *S amsterdam* and *S paratyphi B var Odense* have been isolated for the first time from this continent.

The potential hazards of the above isolates in causing food borne infections will be discussed.

Control of Tuberculosis in Animals

D.S. Kalra**

The status of tuberculosis in cattle and buffaloes in India is discussed The control of tuberculosis in dairy herds on the 'Test and Segregation' policy, as adopted earlier at the Government Livestock Farm, Hissar, with minor modifications, is suggested. The need for vets participation in the programme of tuberculosis in India is emphasized. The problem of proper disposal of tuberculin reactors in animals needs to be resolved urgently.

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Isolation of Toxoplasma from sheep

S.L. Gupta, O.P. Gautam & R.M. Bhardwaj*

The positive role of meat animals as a source of *Toxoplasma* infection to human beings has been well established since Jacobs and Melton (1957) and Jacobs *et al.* (1960) developed a peptic digestion technique to recover the parasite from meat samples. In India, although serological evidence of *Toxoplasma* infection in different species of animals including sheep has been reported but there appears to be no published report of actual isolation of the parasite by mouse inoculation. Therefore, the present study was undertaken to isolate the *Toxoplasma gondii* from meat samples of apparently healthy sheep in order to evaluate its importance in the epidemiology of toxoplasmosis.

A total of 514 serum samples of apparently healthy sheep were screened for the presence of *Toxoplasma* antibodies by employing indirect haemagglutination (I H A) test. The *Toxoplasma* haemagglutinating antibodies were detected in 44 out of 514 sheep, thus giving prevalence of 8.56 per cent. A higher prevalence rate of 9.85 per cent (27 out of 274) was found in females a compared to males in which it was only 7.08 per cent (17 out of 240).

Diaphragm, heart and brain specimens of 44 serological positive sheep from Haryana Veterinary Vaccine Institute, Hissar and 23 apparently healty sheep (selected at random without serological testing) from local slaughter house were collected. The tissues were digested by peptic digestion technique and the digested material was inoculated intraperitoneally into 32 batches of cortisonised mice. The isolation of *Toxoplasma* could only be made from two batches of mice inoculated with tissues of seropositive animals. Thus, *Toxoplasma* was isolated from 4.56 per cent of 44 serological positive sheep but none from 23 apparently healthy sheep.

In one group of mice, *Toxoplasma* tachyxoites were isolated from peritoneal fluid of the inoculated mice by paracentesis. The virulence of the 'sheep isolate' was compared with standard RH strain of *Toxoplasma gondii*. The equal number of *Toxoplasma* organisms of each strain in graded doses (10, 100, 1000, 10000 per mouse) when inoculated into different groups of mice ; gave a mean survival time of 12.4, 11.0, 9.7 and 8.3 days respectively with 'sheep isolate' and 8.6, 7.9, 6.9 and 5.6 days respectively with RH strain. Thus, the sheep isolate was comparatively less virulent than RH strain although it could kill all the inoculated mice.

In another group of mice, the *Toxoplasma* cysts were demonstrated in the brain of mice only on histopathological examination. *Toxoplasma* antibodies were also detected in the sera of mice six weeks post inoculation.

The studies have confirmed the presence of *Toxoplasma* infection in sheep in our country.

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SESSION—IV

An Approch towards Cost-Benefit Evaluation of Health Education Programme

S. P. Mukhopadhyay*

In view of the present economic climate and far greater demand for medical and nursing treatment, perhaps it is now desirable to devote more time and money to educate people in the principles of healthy living and legitimate utilisation of health services. But to some people the value of health education is still controversial. It is for this reason of doubts and conflicting attitude towards the value of health education the present paper is written to envisage the justification of further and adequate resource allocation to encourage and extend its activities. So the primary objective here is to measure the effects as well as resources of Health Education Programme by a method which will be able to generate an outcome of such exercise in realistic terms e.g. monetory terms. The other objectives will be to assist to compare the value of different types as well as alternative forms of health education programme and also to identify the appropriate factor or factors for optimum result. In estimating such economic evaluation, two methods are applied ; one is to find cost-benefit ratio of a programme and the other is to find out cost-benefit Index of a programme. Method one is applied where the programme is new to the community and it is expected that at least 50% motivation change with result from such a programme. Based on this range of motivation cost-benefit analysis is made. On the other hand, method two is applied to those programmes of which the community is already familar. In such procedure motivation change due to a programme is determined by measuring the difference of level of positive motivation before the programme and after the programme. C B.I. indicates per capita value of the programme

Models of health education programmes are made and then their outcomes are projected through the help of these methods. These models were prepared in U. K. and U.S.A. and accordingly their outcomes were projected in dollars and sterlings. The models like "Anti-hypertensive", "Anti Smoking" "Genetic counselling", "Road accidents," have all projected the benefit against the money spent for such programmes. But "screening programme" indicated a loss in such a community programme.

From the results obtained from such cost-benefit exercise, it is reasonable to think that a case is made now for further and adequate resource allocation to preventive health programme. Nevertheless it must be emphasised that all programmes may not prove cost-beneficial as this not only depends on motivation change of a community but also the cost of the programme (vide screening programme). The issue this brings into consideration as a forerunner to future preventive programme is the need of a pilot trial before

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the Master Programme is launched. The Pilot trial would generate the net outcome of the programme through cost benefit analysis and depending on the nature of the outcome resources to the programme can be allocated accordingly.

Although these models were prepared and projected according to the estimates relevant to U.K. and U.S.A. standard, nevertheless it is principles and techniques of such evaluation which are considered to be important as they will guide the health professional to distribute the resources reasonably and optimally. It may be stressed here that whatever may be he outcome of a programme resulted through such cost-benefit exercises, the value of such approach is that it will generate some outcome in pure economic sense, so that one is justified of allocating or not allocating resources to a particular health education programme.

Role of Para-medicals in Leprosy Control

P. Kapoor and M. V. Yellapurkar*

The Leprosy Control Programme all over the world is mainly carried out by trained paramedicals because of paucity of doctors in this field. However experience gained so far shows that the paramedicals are quite good at suspecting and detecting leprosy cases in general. But they are not good at suspecting early leproma which is very difficult yet very essential for control of the disease.

The paramedicals can diagnose early leprosy patches with fairly good accuracy and can even initiate treatment with Dapsone, since the drug is simple and safe to administer. However the management of complications is very difficult in the hands of the paramedicals. The follow-up of patients is done by the paramedicals in such a mechanical and routine fashion that the leprosy patient who has to take treatment for years together loses faith in the treatment, resulting in a high drop-out rate.

The paramedicals can be utilised for screening old leprosy patients who have been registered for more than 3 to 5 years, with a view to find out whether they have become "inactive" but they cannot be relied upon for declaring patients as "Cured" or disease-arrested.

More often than not, the paramedicals are burdened with maintenance of too many records and that too in such great details, that very few can do any justice to it. Only such records need to be prescribed for maintenance, as would be essential for monitoring the programme.

Proper supervision is absolutely essential whenever paramedical workers are entrusted with responsible jobs. The category of paramedical supervisors is drawn from amongst senior paramedical workers themselves. Oftentimes such promotions are effected routinely on the basis of seniority as it is difficult to apply any yardstick for merit. Naturally such supervisors fail to fulfil expectations in terms of effective supervision which includes guidance.

Thanks to biomedical research, costly potent, yet toxic new drugs are now available

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for field usage. The distributing function for these drugs will perforce fall on the shoulders of the paramedicals who are still our sheet anchor in any programme. But there is every room for apprehension that if the distribution of such drugs is not handled properly with adequacy and regularity, not only will it be harmful to the patient, but it will also result in wastage of money, loss of potent drugs and above all an invitation to the bugbear of drug resistance. The paramedicals must therefore be trained properly regarding the correct way of administration of the drugs to identify the possible side-effects of the drugs and to learn when to refer to the doctor for expert advice.

The modern "Health Team concept envisages division of the responsibilities amongst different kind of paramedicals and training them to work together as a team so that their collective efforts meet the health needs of the community.

The Multipurpose workers scheme can be properly and easily developed if the above principles are followed and the uni-purpose workers become multipurpose workers in due course.

Training of Para-Medical Workers and Integration of Health Services

A. Dyal Chand and M. M. Karkaria*

This paper is based on the experience of implementing the Comprehensive Health & Development Project at Pachod, District Aurangabad. The Project was started with the object of developing a methodology which aimed at providing health care through village based semi-literate women trained as community health workers and maternal care through training of traditional dais, through professional staff re-oriented as multi-purpose workers to provide, support and supervisory services for these resource personnel from the villages.

Dai Programme

The training programme was designed so that only those practices which were harmful and needed change could be emphasised. A few examples of the beliefs and practices that existed prior to their training : 1. The concept of ante-natal care or post-natal care was something quite new, the Dais merely assisted in the actual delivery.

2. Deliveries were conducted in a dark room with the mothers squatting on bricks. The need to witness the actual progress of labour was considered unnecessary.

3. Implements such as sickles, knives, broken glass, stones and blades were used to cut the cord, and ash spplied to the stump.

4. The concept of fever of pueperal sepsis was never related to the entry of germs into the body. Its cause was attributed to the entry of air into the empty uterus. A few Dais had they practice to prevent this eventuality to insert their heel into the mother's vagina soon after delivery.

5. The child was put to the breast only three days after the delivery, for fear that the intestines would get adherent because of colostrum which was sticky, further the child was given castor oil to flush out any liqor or meconium the child might have ingested.

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The Dais are conducting 52% of the deliveries in their village after their formal training, as compared to 6% coverage that existed prior to their training. They are providing ante-natal care to 78% of the pregnant mothers. The average month of detection of pregnancies has come down from the 8th to the 5th month.

Community Health Workers

We very strongly feel that community health workers without exception be middle-aged women, because the larger section of the population consists of women and children who would prefer a female health worker.

The training of these women has to be completely task oriented as completely far removed from formal class-room teaching as possible.

Finally we come to the most important aspect of the programme : The Multi-purpose Workers Programme.

To avoid compartmentalisation of the three major aspects of this programme, i. e. the Dai programme, the Community health workers' programme and the Multi-purpose workers' programme, we have found it necessary to establish integration of these services during the training programme itself. The multi-purpose worker must be re-oriented not merely in performance of their own tasks, but to see their role in relation to the work being done by the Dais and the community health workers, in a supportive and supervisory capacity.

In a sub-centre area, with the population of 7500 the sub-centre is usually situated in a village with an average population of 2500, this is the intensive area of population for the female multi-purpose worker. She is fully responsible for rendering all services to this population and is expected to visit each house once a month. In spite of her limited mobility, this is feasible at the rate of 45 houses a day for 12 days of a month. The remaining 12 days she spends in visiting neighbouring villages around her sub-centre. Each village is visited fort-nightly. In these villages she provides maternal care services only through the trained Dais of that village. Her role is limited to providing support and supervision to the Dais of these villages. This brings us to the concept of a health post for each village. As Dais and community health workers become more and more established as regular parts of the health delivery system, it becomes apparant that regular house to house visiting by the female multi-purpose worker in the earlier pattern of planned and unplanned visits is quite unnecessary. Our experience has been, that if a female multi-purpose worker visits the health posts once every fort-night, the Dai will bring all the ante-natal cases to the health post. All normal deliveries are conducted by the Dais, and the female multi-purpose worker supervises the Dais services where necessary.

The male multi-purpose worker has a population of 5000 under his control with no responsibility in the sub-centre village where the female multi-purpose worker is located. On an average this amounts to 42 house visits per day with 23 working day a month. The male multipurpose worker provides all technical services in this area and provides

supportive and supervisory services to the community health workers of the villages under his area.

These three categories of peripheral staff now form an integrated infra-structure for delivering health, each service well co-ordinated with the other.

Integration of Functional Literacy and Development Services with the Health Services

A. Dyal Chand*

The comprehensive Health and Development Project, Pachod, proposes the use of health services as a vehicle for initiating a mass adult literacy programme and other economic development services.

By introducing the present health policy the government has placed in our hands suitable instructors or change agents and excellent catalysts who can be used for demonstrations, and the financial resources to bring about rapid advances in adult literacy and socio-economic development.

This project proposes to use Dais and Community Health Workers for developing a methodology which envisages integration of functional literacy and socio-economic development services with the existing pattern of health services.

Majority of the Dais are from the most economically backward strata of the rural society. They are all illiterate, apart from a few exceptions. They provide an excellent medium to propagate a desire in their community for these services.

Education with no purpose achieved is not attractive to these women who rejected the idea of learning how to read and write unless it was relevant to their needs. It was suggested to them to open bank accounts so that the nominal cash stipends received by them would accumulate in their account instead of being wasted away. This would permit them to request the bank for a loan for starting a cottage industry or dairy development or for any other immediate need they felt. After the necessary awareness the expected hesitation withdrew gradually and all the Dais who who have been trained by us agreed to open bank accounts. The Dais without exception are now undergoing adult literacy, a service that they are now demanding. What would the impact of this women be in her village when she is finally able to read the daily news to her neighbours and friends in the village.

The next requirement is suitable instructors who can take the responsibility of dissemination of knowledge in their villages. Community Health Workers are village based semi-literate women trained for providing basic health care and minor ailment treatment to her village community.

The aim of this Project is to train Community Health Workers as instructors in adult literacy. It is assumed that since they will be from the village community itself, their impact will be greater than instructors "planted in the village from outside".

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With the help of resource persons from Marathwa University at Aurangabad, the Project also aims to train 24 students of the University selected through the Employment Bureaus, to initiate mass literacy programmes by supervising Community Health Workers in their efforts to start non-formal education programmes.

Experience has indicated that attempts at functional literacy are not acceptable to rural illiterates unless it can be linked to socio-economic change. It is for this reason that the Project proposes to initiate dairy development with the intention of basing adult literacy and non-formal education on the various aspects of dairy farming.

The principal philosophy on which the methodology of this Project is based, is to function as a resource centre with the primary purpose of disseminating knowledge and information to the landless poor and the marginal farmers in the area. The knowledge disseminated will pertain to dairy farming, health and hygiene, and an overall better life style for those who are economically and socially down-trodden.

Having constituted an infra-structure to start the programme its implementation may look simple, but practically is wrought with problems.

The basic and more profound difficulty lies developing the right media for communicating with the rural population.

Planning, Monitoring and Evaluation of Community Health Programmes

M. Ibrahim Soni*

No society is so rich that it can consider its health facilities and services to be free goods. But still, in many developing countries the practice of decision making, with regard to the community health, is largely based upon conjecture and hit-or-miss notions. As a result of which planning of priorities and allocation of resources usually fail to achieve the desired objectives in the field of health and the society does not benefit in proportion to the amount of resources spent.

The experience of the developed and developing countries as well over the last two decades have made it clear that in the area of the community health an appropriate allocation of scarce resources calls for more rational planning. The most important prerequisite for the latter is an accurate, timely and relevant system for the collection, interpretation and maintenance of demographic data, medical statistics and health intelligence.

After efficient planning of the health programmes, continuous monitoring of them is of importance. It can be carried out with the help of specially designed some simple demographic and statistical tools.

Finally, if the two stages of a programme —planning and monitoring—are foolproof, the task of evaluation becomes easy.

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Interns, as Part of Health—Team in Rural Community, Health Work

S.W. Kulkarni, N.N. Shaikh, N. D. Jejurikar and M.R. Jape*

It is in the fitness of things that increasing stress is being given to rural orientation in medical education. A proper motivation on one hand and suitable training on the other will be the right approach to effective delivery of health care to the multitudes of our rural compatriots. Despite tens of thousands of medical graduates, coming out each year, our rural masses continue to be deprived in this aspect also.

In Maharashtra, in Government Medical Colleges interns are compulsorily posted in Primary Health Centres for a period of six months. The interns were interviewed in depth as regards their attitudes and reactions, expectations and realities, scope and effectiveness and complaints and suggestions in order to evaluate the worth of their posting as a part of Health Team. Many interesting varied and extremists' answers about village life, rural medical work, utility of training difficulties, and suggestions in the words of interns prompted us to present them as food for your thought and possibly to evolve a cogent policy for meaningful investment in terms of teaching, training and motivation in a medico for rural medicine.

Rural Health Survey : Report—I

P.G. Deotale, P.V. Sathe and N.E. Nimale**

The Rural Health Survey was undertaken with the aim of involving the Medical Students to learn and apply theoretical knowledge in the field and practice of public health.

The students were given the experience of Survey, collection of data and its analysis. The students themselves realised the need of better environmental sanitation. They did the chlorination of well, gave the health education and conducted the ante natal and post natal clinic. They were also involved in carrying out the school health examination and set upsmall laboratory for carrying out the investigation in required cases.

The students found out the rate of morbidity in the population and run the small dispensary.

The students appreciated this practical curriculum of teaching.

SESSION—V

Treatment Defaulters Among Tuberculosis Patients—A Study in an Urban Area

Vimala Charles***

This study was done to find out whether there was any difference in the number of defaulters among the Tuberculosis patients who came under the intensive care of Community Health Urban Unit and the rest of the urban populace. An attempt was also made to find out whether there was any significant difference in the reasons given. for defaulting among the two groups.

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Though there was no difference in the reasons given by the two groups of defaulters the intensive drive and the health team work seem to have its effect in motivating those who came under them for regular treatment.

A Study of Convalescent and Contact Carrier in the Spread of Cholera Epidemic of 1978 in Twin Cities of Hyderabad and Secunderabad

M. Subba Rao, V. Santa Kumari, K. Ratna, Shamshamuddin and R. Rajyalakshmi*

The role of carriers in the spread of cholera, seems to have been considered long before the discovery of the causitive organism of the disease. Griesinger in 1857 hinted at the possibility of persons recovering from an attack of cholera becoming convalescent carriers. Pacini in 1854 considered it possible that apparently healthy persons coming from an infected zone could transmit the disease to others.

The present study was carried out with a view to understand certain unexplored features of the maintenance of cholera epidemic in the twin cities of Secunderabad and Hyderabad. The following epidemiological observations were studied in detail to establish the nature of infection, carrier status and control measures by energetic antibiotic treatment.

1. To establish the existance of relative frequency of cholera carriers.
2. The relation between convalescent carriers, contact carriers and admissions made in the Fever hospital, Hyderabad with special reference to intrafamilial spread either through the medium of water or lapses in the personal hygenic measures.
3. The value of energetic and active antibiotic treatment by para clinical staff at the very first meeting of a cholera positive case.

The results are tabulated and observations are made for further guidance in the control measures adopted.

Guide Filmstrip for an Integrated Approach to Health and Family Planning

B. Swarajyalaxmi, M.V. Bapi Raju Sarma**

Health industry is essentially labour-intensive and so man power constitutes a critical component. This man power has to be managed in a way that would make it less costly but more fully capable of evolving an accessible and effective health care delivery system. The main failure of the health systems in many countries is their inability to provide the basic types of health services needed by the population as a whole. Thus, while a few segments of the population may be well-served, the majority are served poorly or not at all. While this situation is the result of operation of many factors, the major drawback so far has been in the system itself in many instances. The components of the system often function in isolation from each other resulting in fragmentary approach and activities overlapping each other wastefully. The quality and quantity of care can be much enhanced by an integrated approach wherein

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a single worker is able handle several allied functions in a smaller area. For example instead of a health assistant for immunisation of children, an auxiliary nurse midwife for maternal and child health, and a health inspector for family planning, say, covering a population of ten to fifteen thousand, an auxiliary nurse midwife can function as a Family Welfare Worker carrying out family planning, maternal and child health and immunisation activities for the mothers and children covering a population of five to eight thousand.

An effort was made to put this into practice in Visakhapatnam district long before the present multipurpose workers scheme was envisaged by the Government. In 1967-68, the first author of this filmstrip worked as District Family Planning Officer and was also in charge of the Regional Family Planning Training Centre at Visakhapatnam. The second author worked as Health Education Instructor in the Regional Family Planning Training Centre and later as Mass Education Officer in the District at about the same time. The integrated approach was planned and implemented successfully iu one of the Primary health centres of the district and the work done was the basis of the filmstrip.

A Study of Motivational Barriers in Drug Compliance in Anti Tubercular Therapy

Agarwal R.C., Singh G., Banerji S.C., Jain S.K. and Shukla R.*

A Cohort of 150 patients of Pulmonary tuberculosis was studied prospectively for one year to observe the treatment compliance pattern, specially the role of motivational efforts in ensuring proper compliance. The study revealed lack of knowledge about disease (38.00 percent), treatment (56.67 per cent), sputum as infective (65.33 percent) and the disease as infective to others (64.00 percent). Average compliance rate was 32 percent, which was dominated by them with extramotivational efforts (42.25 percent), as compared to ordinary motivation (23.28 percent). Other demographic and socioeconomic factors (caste System, family system, age, sex, income) showed no difference in compliance, but after considering motivational aspects, the extramotivated group showed significantly better compliance.

The study reveals that effect of personal, social characteristics on drug compliance were variable, but compliance was significantly better with extramotivational efforts, which should be emphasised through out the treatment schedule, to ensure regular compliance.

SESSION—VI

Problem of Cancer Control in India

T.B. Patel**

Inspite of the expenditure of large sum of money spent on many cancer campaigns, cancer research has been found to be disappointing when judged from the success in reducing mortality of cancer at various sites though it has increased our understanding of the nature of cancer and led to improved form of treatment. The overall death rate from cancer continus to remain very high. It has

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been the opinion of many cancer workers (John Pembertone, The Milroy Lecture, 1976) in the field that the results might have been better if more weight was given to cancer research in its epidemiological and environmental studies.

While the death rate from cancer has fallen in certain cancers like cervical cancer, it has not fallen more generally despite improvements in treatments, and the fact remains that cancer is now a major cause of ill health in the western countries. In this country, the highest prevalence of cancer is found in the age group of 46 to 50 years. Until recently and even now stress has been given in teaching people to recognise the first signs of the cancer disease in the people and that earlier treatment would lead to improved results. Too many cancers however are incurable by the time they draw attention to their presence for it to be possible to make any major impact by this means. The weight of the effort is therefore now being shifted to the development of programmes for examining the healthy persons in the hope that cancer can be detected before they have produced symptoms or better still that premalignant states can be detected and treated so that invasive cancer does not have a chance to appear. The examination of vaginal smears by 'pap' test, which costs very little, is one such method in controlling and treating cervical cancer in its earliest stage, i. e. at the premalignant stage. Intensive efforts are continued in this direction so that a similar programme could be taken up for other types of cancer. In addition, our aim should also be to prevent cancer by eliminating the factors that cause it.

In India, while the communicable diseases are still playing a major role in causing heavy morbidity and mortality, in recent iime cancer has been attracting increased attention among the public. It is also a fact that treatmeut of cancer is very costly requiring costly supportive treatment and anti-cancer drugs and sophisticated diagnostic equipment. At the same time it is pertinent to note that the commonest cancers prevailing in men in most parts of our country are those of oropharyngeal region and lung, and in women these are mainly cervical (uteri) cancer and next to that the cancer of the breast. It is also now a well recognised fact that the oropharyngeal cancer and cancer of the lung could be eliminated to a large extent by appropriate preventive measures. A large number of studies have proved that smoking of tobacco in the form of cigarettes is a principal cause of cancer of the lung. **This is true in our country also where country cigarette 'Biddi' is amoked in place of cigarettes by many people in the rural and urban areas. In addition, as our figures suggest smoking is also closely associated with the cancers of mouth, pharynx, oesophagus and larynx. There is also close association of oral cancer with the chewing of tobacco 'pan' quid which habit is common in many parts of our country. Thus, elimination of consumption of tobacco in any form can reduce the cancer incidence in our country to nearly half of the present figure. In women, cervical cancer which is highest among total cancers in women is the one which could be brought under control by early detection through taking cervical 'pap' smear in all women over the age of 30 years and particularly in the risk groups like those women who have started early sex life, or having many partners, have

many children as also those practising poor sex hygiene or having history of irregular intermenstrual bleeding. Similarly, breast cancer is the second highest in women in this country. Here by the habit of training women in regular monthly self-examination of the breast and consulting their physician in case of feeling local firmness of breast or a small nodule or discharge from the nipple, the breast cancer could be detected early and treated successfully with chances of cure in a majority of cases. It is, therefore, obvious that in a country like ours where there are difficulties of matching available resources to Society's needs in the cancer field the constrains of cost have to be seriously considered. Hence, the goal eliminating the cause of cancer in certain types of cancer and the early detection in other matched with effective treatment would result in considerable saving. Costs increase steeply for patients with advanced disease and are especially high when the course of the disease is prolonged and the disease proves fatal. It has been well observed that lung cancer and oropharyngeal cancer are mostly self inflicted disease. Better public education and serious acceptance of what we know about cancer prevention can be a potent factor in reducing overall cancer incidence and death rate.

Rural Health Through Mobile Hospitals

M.B. Fulare* and B.M. Basole**

India is a nation of villages, the 80% of Indian population is staying in the villages which are scattered through out, with all inadequate facilities in the form of health, transports, roads, drinking water. Ignorance about dieting articles and Healthy habits, sickness and its treatment. There are inadequate curative, Promotive and Preventive services.

The Government has started district Hospitals, Civil dispensaries and Primary Health Centres which provides curative promotive and preventive services which are static, but most of the population remain at enterior unattended and any sorts of specialists services are not at all provided to them.

The people of villages can not got to the Hospital due to various reasons. The Hospital should go to them on this basis the idea of mobile Hospitals originated and Govt. of India started 23 such Hospitals.

The Mobile Hospital provides medical facilities as well as a training institution to medical students Internees and Nursing students.

All facilities are provided in tents like X-ray Pathological laboratory room, Operation theatre, labour room etc, each camp remain for 3 months and cover 20,000 to 25,000 population follow up is done by Medical Officer of Primary Health Centre, nereby.

It is concluded that the scheme is extremely useful to the rural population.

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**Superintendent, Mobile Hospital, Aurangabad.

Growth & Nutrition Patterns in a Slum —An Anthropometric Survey

A. B. Chaudhuri[1], M. M. Kekre[2] and T. T. Patil[3]

An anthropometric survey of 60 children between the years 1-5 was carried out in Bombay. The study was cross—sectional. The children showed significantly affected physical growth due to environmental factors and a high degree of undernutrition affecting them at the most sensitive period of maximum brain— growth. The cross-over of chest to skull circumference, was at 30-36 months as compared to 24 months for poor Indian children. The weight and height of the children showed a high degree of correlation The skeletal parameters of growth i.e. skull circumference head circumference and height showed correlation However the growth curves when plotted against the Harvard and All India Standards ran parallel to them upto 2½ years after which they flattened out. Weight correlation to midarm was found but height showed no correlation to midarm. It is significant to note that a majority of the children were still being breast-fed upto 2½ years of age.

The slum chosen was Matunga Labour Camp—a part of the biggest urban slum in Asia—DHARAVI. The low values of all parameters of growth suggest that protein—calorie malnutrition was rampant in the community. Further the causative factors were active for sometime.

The purpose of the present study is to assess the extent of variations from the Harvard and All India Standards, and also to find out the age group where irreversible changes in growth parameters have not yet occurred and would therefore be receptive to nutritional additives.

A semilongitudinal study is also being carried out to find out if the introduction of a comprehensive low priced diet would bring about a rectification of protein—calorie status in the community.

It is a fact that unless urban slum infants are covered by better MCH services, the physical and physiological growth of these children are likely to be permanently retarded. The magnitude of the problem needs no stressing. The solution is not mere medical aid. The priority is to start nutritional services and free balanced meals on an emergency footing if a dent is to be made at all in combating rampant undernutrition, depressed immune response and subnormal mental growth.

Toxaemia and Seasonal Variation

S. X. Charles[4]

A study was done for a period of six years to find out whether there was any significant difference in the incidence of Texaemia in different seasons.

This was done because there is a lot of difference in opinion regarding the association between texamia and season all over the world.

This study reveals no significant variation in the incidence of Toxaemia in different seasons.

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4. Professor & Head, Department of Obst & Gynaecology, Christian Medical College & Hospital, Vellore.

SESSION—VII

Prevalence of Worm Infestation Among School Children in a Rural Field area

P.V. Chablani, S.D. Halde and C.G. Mali*

Undergraduate medical students of Swami Ramanand Teerth Rural Medical College, Ambajogai are posted at Chanai, a rural field practice area. Prevalence of worm infestation in school children of this village of 2000 population was studied. The school children belonged to Primary and Middle school in the age group of 7-16 years. Of 196 school children, 159 stools could be obtained for examination. Only 27 stools showed presence of worms giving prevalence of 17%. Prevalence of worm infestations at Chanai is much lower when compared with other studies. As this Community has been visited regularly by the students and symptomatic worm infestations treated, prevalence of worm infestation is lower. Asymptomatic worm infestation is not associated with subjective or objective morbidity in this group.

Health Needs of School Children

Kulkarni A.P., Sathe P.V. and Kamble S.A.**

To achieve better Co-ordinated and organized health services for school going children in Aurangabad city a pilot study was carried out at Urban Health Centre attached to Medical College, Aurangabad. Three hundred and seventy three primary school children of a municipal primary school were examined. Vaccination status against small pox prior to examination was found to be satisfactory (97% showed scar of primary smallpox immunization). However, poor immunization status against diphtheria, tetanus and tuberculosis was revealed.

Ophthalmic problems with a prevalance of 12.89% were among the most prevalent disorders followed by E.N.T., gastrointestinal (worm infestations), dental and skin disorder in that sequence. Frank signs of vitamin A defieiency were noted in 31 (8.57%) cases showing the need for prevention by administration of concentrated vitamin A solution, High myopia requiring correction by glasses was seen in 9 (2.68%) students. Contrary to expectations prevalence of trachoma was very low i. e. 6% only. Chronic suppurative otitis media and enlarged tonsils were the main ENT disorders. Prevalence of dental disorders was 4.52%, caries being the most prevalent. No case of leprosy was detected. Prevalence of worm infestations (round worm & thread worm) was 8.31% showing the need for periodic mass deworming.

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Prevalence of Parasitism in Children—Study at Raoli Hospital, A Static Health Centre

Suraja A. Prabhu*

We have selected this topic because parasitism is very common cause of morbidity in children.

This study was carried out to find out the prevalence of parasitic infestation in Raoli Child Welfare Centre, so that, the magnitude of problem is assessed. Since the study is still not complete we have not got enough of positive cases. It is still continued.

The community comprises of about 300 children, all below 5 years of age, with low socio-economic back-ground, staying in chawls or zopdas, using common community taps for their water supply. There is no sanitary latrine facility and most of them squat in open. Hygiene of these children was poor. We study these children coming to our child welfare centre, irrespective of any symptom.

Only 140 children were undergone these investigations, so dropout rate was 36/100 patients.

Haemoglobin determinations were carried out with Sahli equipment which had been calibrated against a photometric method.

For stool examination, fresh specimens were obtained and examined wiihin one-two hours of collection. Stools were examined in normal saline and by floatation method in supersaturated saline.

Upto 3 years most of the children were found anaemic, there was no marked difference between male & female children. Ascaris Lumbricoides was the most common infestation amongst positive cases more so in male children. In our static Health Centre there was practically no case down with parasitic infectation in 3-5 yrs. age group. All the possitive cases were in 0-3 yrs. To find out the correlation between positive parasite cases and underweight we found most of them not really underweight.

Results (1) Total parasitism was found to be 16% with the sex ratio of 1 : 1

(2) Rate of differentail parasitism was noted to be :—

Ascaris lumbricoids=45% Trichuris trichura=18%, E. hystolytica=27%
E. coli=10%

(3) Positive parasitic infestation in relation to haemoglobin shows the following rate :— Children with haemoglobin less than 8 gm% =5.25%, Children with haemoglobin between 8-10gm% =13.80%, Children with haemoglobin more than 10gm% =16.00%

Study of Helminthic Infestations Among Defence Personnel and Their Families

P.K. Mukherjee[1], S.C. Banerji[2], R. Shukla[3] and G. Singh[4]

An epidemiological study of helminthic infestations in a randomly selected cohort from army garrison of Allahabad cantonment was carried out. In the initial examination 201 (18.27 percent) individuals were found to be infested, by Ankylostoma Duodenale(42%), Ascaris Lumbricoides (35%), Enterobius

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Vermicularis (16%), H. Nana (13%) and others (3%) with single or multiple infestations. Maximum persons (67.71%) infested belonged to eastern region of the country. Nearly 88.0 per cent population exposed belonged to rural background and 95 percent of infestations were among them. Maximum infested persons (75%) gave history of having moved out of station to their homes in the last 3-6 months. The rate of infestation for various helminths ranged between 150-300 ova per gram. of stool. Average haemoglobin percentage was 14 gm percent with very few (7%) below 10 gm percent. In the second examination there were 57 fresh infestations detected and 14 among those dewormed on initial infestation, this giving an incidence rate of 55.45 per thousand population and overall prevalence rate for the year 147.20/10.0 of the freshly infested persons. 92.86 per cent had given the history of having moved out to their native places within six months of investigation. Most of such freshly infested individuals (62%) were from eastern regions of the country. The regression equations calculated for the duration of movement outside and quantum of infestation was found to be very highly significant ($P<.05$). This highlights the effect of movement outside on the infestation.

Filariasis and High Total Eosinophil Count

S. Russel and C. K. Rao*

There are various speculations regarding the etiology of tropical eosinophilia. Several workers have attributed it to filaria infection, some to human and others to animal. The National Institute of Communicable Diseases while undertaking human filaria surveys in the filarial endemic state of Kerala and in the non-endemic states of Jammu and Kashmir, Himachal Pradesh, Rajasthan, Punjab, Haryana and Manipur carried out total eosinophil counts by the standard Randolphs method on some of the people examined for filaria parasite. The results of the same are given :

Altogether 195 persons in Kerala and 600 persons in the non-endemic states were examined. Persons with high total eosinophil count were observed both in endemic and non-endemic areas. But the incidence was more in the endemic areas. The percentage of persons with eosinophil count of 2000 and above per cmm was 3.6 in endemic state whereas it was only 1.2 in non-endemic states. The next group of 1001 to 2000 and 450 to 1000 were also higher in the endemic state than in the nonendemic states.

In the endemic state two persons with a total eosinophil count of 5106 and 3907 per cmm harboured microfilariae whereas in the non-endemic states none of the persons showed microfilaraemia.

The higher rate of persons with high eosinophil count in the filarial endemic area in comparison with non-endemic states indicate association of the two conditions. However presence of high eosinophil count persons in non-endemic areas suggests that human filariasis is not the only causative factor. All persons with eosinophil count of over 2000 cmm could not be confirmed to have had tropical eosinophilia.

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GENERAL SECRETARY'S ANNUAL REPORT FOR—1978.

Mr. President and the members of the Association,

I have the honour to present before you the Annual Report on the activities of the Indian Public Health Association and its branches for the period January to December 1978.

The 22nd Annual Conference—Hissar (Haryana):

The 22nd annual conference of the Indian Public Health Association and Symposium on Veterinary Public Health and Zoonoses (under the auspices of ICAR) was held from February 24 to 26, 1978 in the College of Veterinary Science, Haryana Agricultural University, Hissar. A large number of members and delegates from all parts of India attended the conference. Dr. O.P. Gautam, President of the IPHA, Hissar Branch and Dean, College of Veterinary Science, Haryana Agricultural University, Hissar delivered Welcome Address. Welcoming the members and delegates, Dr. Gautam emphasised the important role of animals in Indian culture and society and the need of creating a nucleus of Veterinary Public Health Services in the Ministry of Health. He hoped that the conference would help in the exchange of scientific views between the two sister profession of Medical and Veterinary Services.

After the Address of welcome the Conference was inaugurated by Dr. M. Abdussalam, Director, International and Scientific Cooperation, FAO/WHO and was presided by Dr. Z. Matyas, Chief Veterinary Public Health, W H O, Geneva. Inaugurating the conference, Prof. Abdussalam said that more than 80 percent human beings particularly in developing countries lived in close contact with animals and they were more at risk to major diseases transmitted from animal to man. Every year more than a million people took Anti-rabies treatment in India, which caused heavy economic losses. He called upon the medical and veterinary Scientists for eradication of rabies which had been done by some countries of this region.

Dr. Z. Matyas in his presiding address discussed the new socio-economic changes coming in the society and to the appearance of new or earlier uncommon problems, most of which are animal related. He urged the Veterinarians along with other experts to be fully involved in the surveillance, prevention and control of Zoonoses including food borne infection.

Scientific Session :

The subject for the Scientific Session was—"Veterinary Public Health Zoonoses". The Session comprised of 8 (eight) Sub-Scientific

Sessions and a total of 52 papers were presented and discussed. The 8th Session was a Panel Discussion on Integration of Veterinary Public Health activities in Public Health Services. The Chairman and Moderator of the Panel were Dr. O. P. Gautam and Dr. C. Schwabe respectively. The Initiators were Prof. S C. Seal (Calcutta), Prof. P. N. Khanna (Calcutta) and Dr. G P. Sen (Calcutta). The scientists who took part in the discussion were Dr. S. S. Verma (New Delhi), Dr. C. W. Schwabe (California University, Davis USA), Col. Barkat Narain (New Delhi), Brig. S. L. Chadha (Simla), Dr. S.C. Adlakha (Delhi). A book-let on the Panel Discussion was published by the IPHA Hissar branch for circulation to members and delegates. The proceedings of the Scientific Sessions have been published in the IPHA Journal (Conference Number Issue), Volume 22, No. 4, October-December, 1978 issue, which had already been sent to all the members of the Association.

Recommendations of the 22nd Annual Conference

A Sub-Committee was formed consisting of Dr. O. P. Gautam (Hissar), Dr K. G. Narayan (Hissar), Prof. P. N. Khanna and Dr. G. P. Sen (Calcutta) for draft Recommendations of the 22nd annual conference. The draft Resolutions were prepared and were sent to the D.G.H.S., D.G.A.F.M.S., D.G. Indian Railways, all the Directors of Health and Veterinary Services—States & Union Teritorries, Agricultural and Medical Universities, Governmental and semi-Governmental Institutions etc. for their implementation.

Presidental Address

Dr. G. J. Ambwani, President of the Association could not attend the conference as he was indisposed. He also could not send his Presidential Address. Under the circumstances, Prof. S.C. Seal, the Past-President of the Association, was requested to deliver the Presidential Address on behalf of Dr. Ambwani. Dr. Seal dealt with the changed concept of medical practice laying more emphasis on preventive and social medicine. He urged that training of practitioners should therefore include different aspects particularly sociology, psychology and behavioural science with stress on preventive aspects. He also discussed the different aspects of medical and public health education and pleaded for democratic decentralization of rural health services.

Late Dr. B.C. Dasgupta Memorial Oration Address

The nominee for the Oration of 'late Dr. B.C. Dasgupta Memorial Oration Address' was Dr. P.R. Dutt, Consultant to the Gandhigram Institute of Rural Health and Family Planning, Madurai (Tamilnadu). The topic dealt was Rural Health Care in India at Cross Road. He discussed about the structure and function of Health Services in India, since independence.

Award of Fellowship of the Association for 1977

Nominations were invited from the existing Fellows, Life members and the Presidents of all the State and Local Branches of the Association for the Award of Fellowship of the Indian Public Health Association. A total of 13 (thirteen) nominations were received. The Credential Committee under Chairmanship of Lt. General D. N.Chakraborty, the

Past-President of the Association, held its meeting on 15 th November, 1978 and recommended 6(six) names for the Award of Fellowship. As per Rule 7-D, of the Rules & Regulations & Memorandum of the Association, the ballot was issued for approved 6 nominees by the Credential Committee, along with their brief Biodata, to all the existing Fellows of the Association for obtaining their votes for the final selection. The votes will be counted at the next (23rd) annual meeting of the Central Council. Those scoring more than fifty percent of the votes polled would be approved and then ratified by the General Body at its 23rd annual meeting scheduled to be held at the time of the 23rd annual conference during January last week of 1979 at Aurangabad. The names of the 6 (six) recommended members, according to the alphabetical order, are as follows :—

1. Dr. S. C. Banerjee, Prof. & Head. Dept. of Prev- & Social Medicine M.L.N. Medical College, Allahabad (UP).
2. Dr. R.N. Basu, Asstt. Director General of Health Services, Ministry of Health & Family Welfare, Govt. of India, New Delhi.
3. Dr. A. Contractor, Asstt. Director of Public Health, Govt. of Gujrat, New Civil Hospital, Ahmedabad.
4. Dr. B.C. Ghoshal, Asstt. Director General of Health Services, Ministry of Health & Family Welfare, Govt. of India, New Delhi.
5. Dr. V.L. Pandit, Asstt. Director of Health Services (Retd.), Govt. of Karnataka, Bangalore.
6. Dr. N. K. Sinha, Deputy Director of Health and Family Welfare, Ministry of Railways, Govt. of India, Rail Bhavan, New Delhi.

Association Award for the years 1976 and 1977

The Central Council at its 21st annual meeting held during February, 1978 at Hissar, constituted a Sub-committee consisting of the following judges for the scrutiny of the best Scientific paper for the Association Award for volume 20, 1976 and volume 21, 1977 issues of the Journal, to be given at the time of the next (23rd) annual conference scheduled to be held at Aurangabad. The Judges of the Panel were as follows :

1. Dr. S. S. Verma, Director General, (Health)—Railway Board, Ministry of Rlys. Govt. of India, New Delhi.
2. Dr. W. Mathur, President of the Indian Public Health Association New Delhi.
3. Prof. S. C. Seal, Editor of the IPHA Journal, Calcutta.

The sealed recommendations for the best Scientific papers have been received from the above Judges. These will be opened and finalised at the 23rd annual meeting of the Central Council schduled to be held during January, 1979 at Aurangabad.

World Federation of Public Health Associations, Geneva.

(a) In the light of the recommendations of the previous meetings of the Central Council, the Association approached the World Federation of Publich Health Associations, Geneva with a suggestion that the Indian Public Health Association would like

to host the 3rd International Congress of the World Federation in Calcutta to be held during 1981. No reply has been received, but from the proceedings of the World Federation—'Record of 1978, Annual Report' it appears that among the two requests received to host the next International Congress were Indian and Israeli Public Health Associations. The final decision will be made at the 1979 Annual meeting of the World Federation of Public Health Associations scheduled provisionally in Geneva, during the week beginning 7 May.

I may, however, inform the House that the formal invitation to host the 3rd International Congress to the World Federation was sent subject to the approval of the Govt. of India. The Central Council at its 22nd annual meeting constituated a Sub-Committee consisting of the following personnel with the power of coopting additional members for taking further action, if required :—

1. Director, School of Tropical Medicine, Calcutta
2. Director, All India Institute of Hygiene & Public Health, Calcutta
3. Director of Health Services, Govt. of West Bengal, Calcutta
4. Dr. J. M. Ghosh, Chief Medical Officer, Eastern Railway, Calcutta
5. Dr. S. S. Verma, Director General (Health), Indian Railways, Govt. of India New Delhi,
6. Col. Barkat Narain, Past-President of the IPHA, New Delhi.

(b) Dr. B. Sankaran, Director General of Health Services, Ministry of Health and Family Welfare, Govt. of India, New Delhi represented the Indian Public Health Association as an official delegate in the World Federation of Public Health Associations,' Annual meeting held at Geneva on May 11, 1978.

(c) A sum of Rs. 2270/- (approximate) is outstanding to the World Federation towards membership fee due for the years 1970, 1971 and 1975, 1976, The subscription for the year 1977 has already been paid, while the subscription for the years 1978 and 1979 are being processed for paymenat.

Editorial Board of the IPHA Journal & publication.

The office bearers of the Editorial Board were selected and ratified by the General Body at its 22nd annual meeting for a term of 3 (three) years i.e. 1978-80. During the years, three meetings of the Board were held on 4th February, 3rd June and 6th December, 1978 respectively, and discussed about the administration and procedure for finalisation of the manuscripts for publication in the Journal. All the four issues for the year 1978 (Volume 22) were brought out and sent to members and subscribers in India and Abroad as well. The 1st issue viz. Jauuary—March, 1978 was dedicated to the 'Eradication of Smallpox' as a Special issue, and the WHO, South-East Asia Region, New Delhi, had purchased 1000 (one thousand) copies of this special issue.

The Board at its meeting discussed the poor position of the advertisements in the Journal. Some advts. were procured through the efforts of Dr. N. K. Sinha and Dr. S. S. Verma of New Delhi, and Dr. K. K. Modak

of Calcutta. A strong drive is required to be made in procuring advts. for the Journal. The help from the members, in this regard, will be greatly appreciated.

Central Council Meetings

During the year, three ordinary meetings, i.e. 55th, 56th and 57th, were held on February 4, May 6 and December 30, 1978 respectively. The 56th Ordinary meeting was held at the residence of the President of the Assocn. Dr. W. Mathur at New Delhi. The 22nd annual meeting of the Council was held on 24th February, 1978 at the College of Veterinary Science, Haryana Agricultural University, Hissar, at the time of the 23rd annual conference of the Association. At the annual meeting, new Office bearers for the H/Q office were recomended and selected along with other office bearers for the Editorial Board, Credential Committee, Sub-Committee for the Association Award etc. The other official transactions were also carried out. The Annual Council meeting was presided over by Col. Barkat Narain, the Past President of the Association, in the absence of the President of the Association, Dr. G. J. Ambwani, since he was indisposed.

The Council at its meeting accepted the invitation offered by the Maharastra State Branch to play host for the 23rd annual conference to be held at Aurangabad during January, 1979. At the annual meeting, the Council also nominated Prof. M. C. Mittal Prof. & Dean, Medical College, Jabalpur (MP), for the 'late Dr. B. C. Dasgupta Memorial Oration Address'. The proceedings, after approval and ratification by the General Body, had been published in the Conference No. of the Journal, Vol. 22, No. 4 (October—December 1978) issue. The Central Council at its 56th and 57th Ordinary meetings, also discussed about formation of 'Building Fund' of the Association which was strongly desired by the members.

Financial position and Accounts

The audited Statement of Accounts of the Association for the year ending 31st December, 1978 is being placed along with the report, and also the Statements of (i) Liabilities and Assets and ii) Budget estimate for the period of January—December, 1979. The anticipated SURPLUS of Rs. 20,254.46 in the budget estimate takes into account the realisation of outstanding advts. bills for a sum of Rs. 2185/.

On the recommendation of the Central Council, the General Body approved and ratified to write off a sum of Rs. 541.50, which were outstanding with the State Bank of India, Park street Branch, Calcutta, since 1971-72. The amount includes a susbcription of Fellowship fee of Rs. 300/-.

The Association made with the Indian Bank, Central Avenue Branch, Calcutta, three Fixed Deposit Accounts—2 for Rs. 5000/-, each for one year and one Rs. 3000/- for a period of 6 (six) months. The F. D. R. for Rs. 3000/- matured in December, 1978 and fetched to the Assciation a sum of Rs .67.50 as interest. The Association also received a sum of Rs. 134.25 as interest on Savings Account with the above Bank. The other two F.D.R. each of Rs. 5000/- would mature in June, 1979.

Membership Position and Membership Drive

There are 788 members on roll, which includes 103 fellows (six honorary), 188 life members, 476 ordinary members and 21 Associate members. During the year 97 members have not renewed their membership. The individual reminders were sent to them with a request to renew their membership. After the 2nd reminder sent, the name of members not paying subscription for 1978, have been dropped from the membership list. A total of 197 new members (including life and ordinary) were enrolled during the year 1978. A membership drive was again launched with the help of Dr. S.S. Verma and Dr. N.K. Sinha of Indian Railways to enrol more members and to revitalize some State and Local Branches of the Association, which had ceased to function. Although the response was not very encourageous, Bihar, West Bengal and Madhya Pradesh State Branches intimated the H/Q office of the Association about revitalization of their Branches. I have great pleasure to inform you that with the efforts of Prof. S. C. Seal, Dr. J. Nath, Dr. G. C. Roy and Dr. B. C. Basak, the West Bengal State Br. organised its annual meeting during October, 1978 and new office bearers were selected. The Ex-secretary of M.P. State Branch, Prof. M. C. Mittal has also informed that he would look into the matter to re-organise the Madhya Pradesh State Branch. Attempts are also being made to start a Andhra Pradesh State Branch at Hyderabad.

Activities of State/Local Branches of the Association

There are 10 State and 5 Local Branches of the Association mentioned below :

State Branches : (1) Delhi, (2) Maharastra, (3) Tamilnadu, (4) Gujrat, (5) West Bengal, (6) Bihar, (7) Goa, Daman & Diu, (8) Karnataka, (9) Madhya Pradesh and (10) General Branch (members not residing within the jurisdiction of existing Branches).

Local Branches : (1) Allahabad, (2) Varanasi, (3) Hissar, (4) Jamshedpur and (5) Poona.

Out of 15 State/Local Branches, only 5 (five) Branches namely, (1) Delhi, (2) Hissar, (3) Gujrat, (4) Tamilnadu and (5) Allahabad have sent the information about their main activities during 1978 along with the list of Office bearers. No intimation has been received from other Branches till the time of preparation of this roport, although reminders have been sent to those branches.

During the year 1978, the West Bengal State Branch resumed its function and held its annual meeting in October, 1978. The report and the list of office bearers are still awaited. Four branches viz. (1) Bihar, (2) Madhya Pradesh, (3) Goa, Daman & Diu and (4) Karnataka appear to have ceased function. The Joint Secretary Dr. N.K. Sinha tried to contact and met in person with the Secretaries of Goa, Daman & Diu and Bihar State branches to revitalize and start functioning of the branches.

Activities of the Branches of the IPHA

(A) *Delhi State Branch* : This branch organised the World Health Day and the function was organised in collaboration with the Central Health Education Bureau and Delhi Municipal Corporation. The function was inaugurated by the Mayor of Delhi.

An exhibition was set up on the W H O theme of the year 'Down with High Blood Pressure'. Arrangement was made to check the blood pressure of the visitors coming to the exhibition.

A Scientific symposium was held on High Blood Pressure at the Lady Hardinge Medical College and a Seminar for Senior medical students and internees at the Maulana Azad Medical College along with a question hour by the Public at Lajpat Bhavan. Members of the Delhi branch of the Association participated in the programmes for rendering medical aid and carrying out mass immunization of flood victims and wholeome drinking water supply.

(B) *Hissar Local Branch :* The Hissar branch of the Association hosted the 22nd annual conference of the Indian Public Health Association and Symposium on 'Veterinary Public Health Zoonoses' from February 24 to 26, 1978. A new department of Veterinary Public Health and Epi. in the College of Veterinary Science, Hissar has started functioning including the study of food borne infections and intoxications. The attempts are being made by the Hissar branch to arrange a symposium/seminar on Public Health disease/diseases.

This branch held its annual general body meeting during November, 1978. The office bearers were elected at the meeting and other agenda were transacted.

(C) *Gujrat State Branch :* The Gujrat branch took an intensive enrolment drive and could make 194 members during the year. With active involvement of the members of the Association for the first time in the immunisation programme the state has achieved highest percentage of immunisation during 1979. With the active involvement of all members of the Association the State was able to secure first rank in the family planning programme in the whole country.

(D) *Allahabad Local Branch :* During the year, a General Body meeting, two special meetings and seven Scientific meetings were held by the Branch in the M.L.N. Medical College. During the meeting, Dr. S. C. Banerjee delivered a lively talk on the scope of community health workers scheme, its implementation for the benefit of rural community. The Branch also organised a weekloug activities to mark the WHO Day —the theme being 'Down with Blood Pressure'. Dr. G. Singh, the Secretary of this Branch have a series of Lecture at various organisations and institutions on Epidemiology of hypertension, including Rotary Club, Regional Health and Family Welfare Institute, Allahabad Medical Association and Rural areas. Other eminent speakers were Dr. S.P.S. Chauhan, Dr. S.B. Dixit, Dr. J.N. Harkauli, the Joint Health Services, summed up the meeting with an enlightening speech. In the Scientific meetings various current topics were covered such as, Medical Termination of Pregnancy, latest strategy in Malaria Control, return of Kalazar and viral encephalities. Besides this, the branch arranged for Seminars on Malaria and Kalazar at the U.P. State IMA Conference held at Allahabad. The membership position remained more or less stationary with a few new arrivals and some transfers. It was decided in the meeting to step up the membership drive and adopt village for model Community Health Work.

(E) *Tamilnadu Branch :* This branch has sent only the list of office bearers for the year 1979 and intimated that the report would be sent in due course.

Miscellaneous

(A) *Federation of Public Health Associations in India* : As per the recommendations of the Sub-committee of the Federation of Public Health, the different Associations viz. Indian Association for Communicable Diseases, Bombay Indian Society for Malaria and other Communicable Diseases, Delhi Association of Preventive and Social Medicine etc. were approached for merger under the Federation. A meeting of the Central Council was, therefore, called by the Presidentof the I P H A, Dr. W. Mathur on 6th May, 1978 at New Delhi. The Council, at meeting, felt that preliminary arrangements for holding such a conference in Delhi be made by December, 1978. Dr. S. K. Sengupta, Asstt. Director Gen. of Health Services had been requested to function as a Convenor. The proposed meeting for the formation of Federation to be held in Delhi during December 1978 did not materialise as some of the Associations had announced earlier about their annual conferences with date and venue. Since the venue was other than Delhi and due to the lack of timely communications, the offer of Maharastra State Branch of the IPHA for holding the 23rd annual conference at Aurangabad during January 1979 was agreed upon. It may be mentioned here that during the th National Annual Conference of the Communicable Diseases of Bombay held at Calcutta during December, 1978, the General Secretary, Prof. Khanna of the IPHA had a detailed discussions with the General Secretary, Dr. Kamath and the President, Dr. (Mrs.) Sushila Nair of Communicable Diseases Association regarding the formation of Federation of Public Health Associations. Prof. Khanna was informed by Dr. Sushila Nair that she is interested in the 1st instance to merge the two Communicable Diseases Associations of Delhi and Bombay. She further told that after effective merger of the above 2 Associations, we would think of formation of Federation. On the advice of Dr. Nair, the President Dr. W. Mathur was informed to be in touch with NICD officials and to attend the proposed merger meeting so that further action in formation of Federation is effected.

(B) *Organising Projects by the members of the IPHA :* As a follow up to the Central Council meeting for organising definite projects by the members of the IPHA to activate the Association, Dr. W. Mathur, President of the Association prepared a brief note in the form of a letter which was cyclostyled and sent to all the members was not encouraging as no comments were received.

C) *Association's Building Fund* : The Central Council at its 56th and 57th ordinary meeting discussed about raising a Building Fund of the Association's H/Q office at Calcutta. The ways and means for the fund should be worked out at the annual meetings of the Central Council and General Body scheduled to be held during January last week of 1979 at Aurangabad.

(D) *Award of special leave to the staff :* The Central Council at its 56th and 57th ordinary meeting considered the application of Sri K. K. Banerjee, the staff of the IPHA H/Q office regarding the special leave for 30 (thirty) days during the month of September and October, 1978, since he could not come and attend for duty as all the links from his residence (Kolaghat, Dist. Midnapur) to Calcutta were disrupted due to flood. The Council considered sympathetically his application and granted 30 days leave as a special case.

(E) *Next scale to Sri K. K. Banerjee* :

A petition was submitted by Sri K. K. Banerjee that he may be granted a scale since he was satisfactorily doing his duties as a peon or the last 15 years. The application was carefully considered but the Council regretted to meet the request.

(F) *Medical grant to Sri R. N. Thakur* :

A petition was received from Sri R. N. Thakur, Accounts-cum-Clerk, the staff of H/Q office, for a grant of Rs. 1000/- to meet a part of his expenses incurred by him in the treatment of his mother. The medical certificate and bills were put up to the Council members. After giving a careful thought, the Council regretted that there was no scope for such a grant.

The General Secretary informed she members of the Council that the staff of the Association were not being provided with medical allowance/medical reimbursment or free medical service facilities. Keeping in view of the low pay and limited allowances, the Central Council recommended Rs. 8/- per month each to both the staff members. This facility will come in force from January 1, 1979, subject to the ratification of the General Body.

Administration

The administration at the Headquarters Office met all the needs of the members of the Association satisfactorily. The office of the Association continues to function at the premises of the All India Institute of Hygiene and Public Health, Calcutta.

Concluding Remarks :

I shall be failing in my duties if I do not acknowledge my sincere and deep sense of gratitude to the President Dr. W. Mathur, all my colleagues of the Central Council for their constant cooperation, guidance and encouragement throughout the year in various matters concerning the welfare of the Association. My thanks are also due to Vice-Presidents, Joint Secretaries, Treasurer and members of the Editorial Board for their advice and valuable help in the management of the affairs of the Association.

Thanks are also due to all the Presidents, Secretaries of the State/Local Branches of the Association for their active cooperation. I also thank Dr. D. C. Badade, Secretary and Dr. G. A. Panse, President of the IPHA Maharastra State Branch and Prof. P. V. Sathe, the Organising Secretary of the 23rd Annual Conference of the Association for playing host for the conference.

My thanks are also due to Prof. S.C. Seal

Past-President, Col. Barkat Narain, Past President and President of the IPHA Delhi State Branch, Dr. S.S. Verma, Past-President, Dr. J. Nath, Vice-President of the Association for their active and untiring interest in the Association's affairs.

Sd/- P. N. Khanna
General Secretary
Indian Public Health Association
H/Q Office, Calcutta

COPY OF THE AUDITOR'S REPORT FOR 1978

We have audited the attached Statement of Receipts and Payments of INDIAN PUBLIC HEALTH ASSOCIATION for the year ended 31st December, 1978.

1. *Account*: An Income and Expenditure Account and a Balance Sheet should have been drawn up by the Association as provided under the Rules & Regulations of the Association.

2. A cheque for Rs. 300/- deposited with State Bank of India, 1972 and the same not being credited by the Bank till the date of Audit has been written off by the Association.

3. (a) *Postage*	Budgeted	Rs.	4,000.00
Expences	Spent	,,	5,270.05
(b) *Printing &*	Budgeted	,,	10,000.00
Stationary	Spent	,,	15,165.84

Subject to the foregoing observation, we report that we have found the attached Statement of Receipts and Payments to be correct and be in accordance with the books of account maintained by the Indian Public Health Association.

Calcutta,
22 January, 1978
Basu House
3 Chowranghee Approach
Calcutta-700 072

Sd/- G. Basu & Co.,
Chartered Accounts

INDIAN PUBLIC HEALTH ASSOCIATION, CALCUTTA-73

Receipts & Payments Account for the period ending 31st December 1977.

RECEIPTS	Rs. P.	Rs. P.
To, Opening Balances :		
(i) Cash in hand (including postage stamps for Rs. 14.32)	623.60	
ii) Bank balance with State Bank of India on Current A/c with		
a) Park Street branch	7434.61	
b) Netaji Subhas Road branch	2019.44	10,077.65
Fixed Deposit with State Bank of India Park Street branch, on account of :		
a) 'late Dr B.C Dasgupta Memorial Oration Award Fund	10000.00	
b) Association's Fund	4000 00	14,000.00
Suspense		241.50
Membership and Journal Subscription (including previous year and subsequent year)		17,184.09
Fellowship Award Subscription (1976)		303.50
Advertisements		510.00
Recoveries against puja advance from staff		160.00
Interest on Fixed Deposit on account of :—		
(i) 'late Dr. B.C. Dasgupta Memorial Oration Fund	900.00	
(ii) Association's Fund	346.45	1,246.45
Reprints of articles and sale of old issues of the IPHA Journal		279.10
	Total Rs.	44,002.29

PAYMENTS	Rs. P.	Rs. P.
By, Salaries		9,609.45
Advance to office staff (puja advance)		200.00
Printing of IPHA Journal (including paper, press printing, block etc. for the last two remaining issues for 1976, 3 issues for the current year, being paid in full settlement and 1st issue (special issue) of 1978 being paid in part		23,442.68
Printing of 'Rules and Regulations and Memorandum of the Association (2nd revised edition)		418.00
Audit Fee (1976)		200.00
Office printing and Stationery		907.94
Bank charges		208.95
Postage		2,914.70
Conveyance and Travelling		211.54
Late Dr. B C. Dasgupta Memorial Oration Award for 1976 (Prof. S.M. Marwah, Varanasi)		900.00
Association Award (Joint for 1975)		100.00
Annual subscription to the World Federation of Public Health Associations, Geneva, 1977		563.95
Miscellaneous		411.82
Advertisement Commission		90.00
Suspense		241.50
Closing Balances :—		
(i) Cash in hand (including postage stamps for Rs. 4.85)	95.60	
(ii) Bank balance with State Bank of India on Current A/c		
a) Park Street branch	1297.03	
b) Netaji Subhas Road branch	691.77	
(iii) Indian Bank on Saving Account at Central Avenue Branch	1497.36	3,581.76
	Total Rs.	44,002.29

Sd/- G. Basu & Co , Chartered Accountants
Basu House, Chowranghee Approach, Calcutta 700 072
Dated, 21st February, 1978

Sd/- P.N. Khanna
General Secretary

Sd/- A. Kiran Kumar
Treasurer

INDIAN PUBLIC HEALTH ASSOCIATION, CALCUTTA-73

Receipts and Payments Account for the year ending 31st December 1978.

RECEIPTS	Rs. P.	Rs. P.
To, Opening Balances :		
(i) Cash in hand (including postage stamps Rs. 4.85)	95.60	
Bank balance with State Bank of India on current A/c		
a) Park Street Branch	1297.03	
b) Netaji Subhas Road Branch	691.77	
With Indian Bank on Savings A/c at Central Ave. Branch	1497.36	3,581.76
Membership & Journal Subscription (including previous year and subsequent year)		54,382.18
Fellowship Award Subscription (1977)		400.00
Advertisements in the IPHA Journal		587.50
Recoveries against puja advance from staff		200.00
Interest on Savings Account with Indian Bank, Central Avenue Branch		134.25
Interest on Fixed Deposit Receipts on account of Association's Fund		67.50
Reprints of articles in the IPHA Journal and sale of old issue of the Journal		164.75
	Total Rs.	59,517.94

PAYMENTS	Rs. P.	Rs. P.
By, Salaries		9,799.25
Printing of the IPHA Journal (including paper, printing, block making charges etc. for all the last 3 issues of 1978 and printing charges for October, 1977 only ; and payment made in full settlement for 1st issue, 1978 printing)		14,045.74
Advance to office staff (puja advance)		200.00
Office printing and Stationery		1,220.10
Audit Fee (1977)		200.00
Bank Charges		373.95
Postage (Office and Journal)		5,270.05
Conveyance and Travelling (including paid in advance for 1979)		308.65
Contribution towards organising 22nd annual conference of the Association at Hissar		1,000.00
Service charges (monthly) for Typewriter Machine (including subsequent year)		72.00
Miscellaneous		814.48
Cheque deposited in 1972 but not yet realised, written off		300.00
Closing Balances :—		
(i) Cash in hand (including postage stamp Rs. 6.42)	2344.65	
(ii) Bank balance with		
a) State Bank of India, Netaji Subhas Rd Br. on Current A/c	505.97	
b) Indian Bank, Central Avenue Br. on Saving Account	3139.60	
(iii) Fixed Deposit with Indian Bk.		
a) On account of late Dr. B.C. Dasgupta Memorial Oration Fund	10000,00	
b) On account of Association's Fund	10000.00	25,990.22
Outstanding cheque with S.B.I., Park St. Br. pending clearance from February, 1977		23.50
	Total Rs.	59,517.94

Sd/- G. Basu & Co., Chartered Accountant, Chowranghee Approach, Calcutta 700 072, Basu House, Dt. January 22, 1979

Sd/- P. N. Khanna *General Secretary*

Sd/- A. Kiran Kumar *Treasurer*

INDIAN PUBLIC HEALTH ASSOCIATION, CALCUTTA-73

Statement of Assets & Liabilities of the Association for the year ending 31st December, 1978

LIABILITIES	Rs. P.	Rs. P.
Membership Fee due to the World Federation of Public Health Associations, Geneva :		
a) 1970, 1971 and 1975, 1976	2270.00	
b) for 1978	700.00	2970.00
State share in respect of membership fee		1500.00
Publication of the IPHA Journal :		
(i) M/s Eka Press, Calcutta (for April, 1973 issue)	1115.10	
(ii) M/s Asian Printers, Calcutta (for reprints in Jan '76 issue)	64.00	
(iii) M/s Tower Process, Calcutta (block making charges)	107.66	1286.76
Association Award for the best Scientific paper published in the IPHA Journal for 1976 and 1977		400.00
Contribution towards organising the 23rd annual conference to Maharastra State Branch of IPHA		1000.00
Excess of Assets over Liabilities		20504.46
	Total Rs.	27661.22

ASSETS	Rs. P.	Rs. P.
Advertisement in the IPHA Journal (including Rs. 657.50 for the year 1978)		2842.50
Advance to Staff (Puja Advance)		120.00
Subscription to Journal :		
a) D.H.S., Govt. of West Bengal	7750.00	
b) Inland and Overseas subscribers	435 00	8185.00
Membership fee (Life member paying in instalments)		350.00
Holding the Annual Meeting of the IPHA, West Bengal State Branch		150.00
Closing Balances :		
(i) Cash in hand	2344.65	
(ii) Bank Balance on current A/c with State Bank of India, Netaji Subhas Road Branch	505.97	
(iii) Bank Balance at S/account with Indian Bank, Central Avenue Br. (as per pass book Rs. 2294.84.35 plus outstanding cheques for Rs. 1163.00 plus being cheques dishonoured, returned to party Rs. 126/- minus cheques issued but not presented for Rs. 443.75)	3139.60	
(iv) Fixed Deposit on account of Association's Fund with Indian Bank, Central Avenue Branch	10000.00	15990.22
Outstanding cheque with S.B.I., Park Street Branch—being the A/c transferred to S.B.I., N.S Road Branch		23.50
	Total Rs.	27661.22

N.B. : Out of a sum of Rs. 900/- on account of late Dr. B. C. Dasgupta Memorial Oration Award to Dr. P. R. Dutt, New Delhi, he has been included as a Life member to the Association and Rs. 125/- was paid for printing his 'Dasgupta Oration' through IPHA Hissar Branch and the balance of Rs. 575/- he has donated to the Association.

Sd/- P. N. Khanna
General Secretary

Sd/- A. Kiran Kumar
Treasurer

INDIAN PUBLIC HEALTH ASSOCIATION, CALCUTTA-73

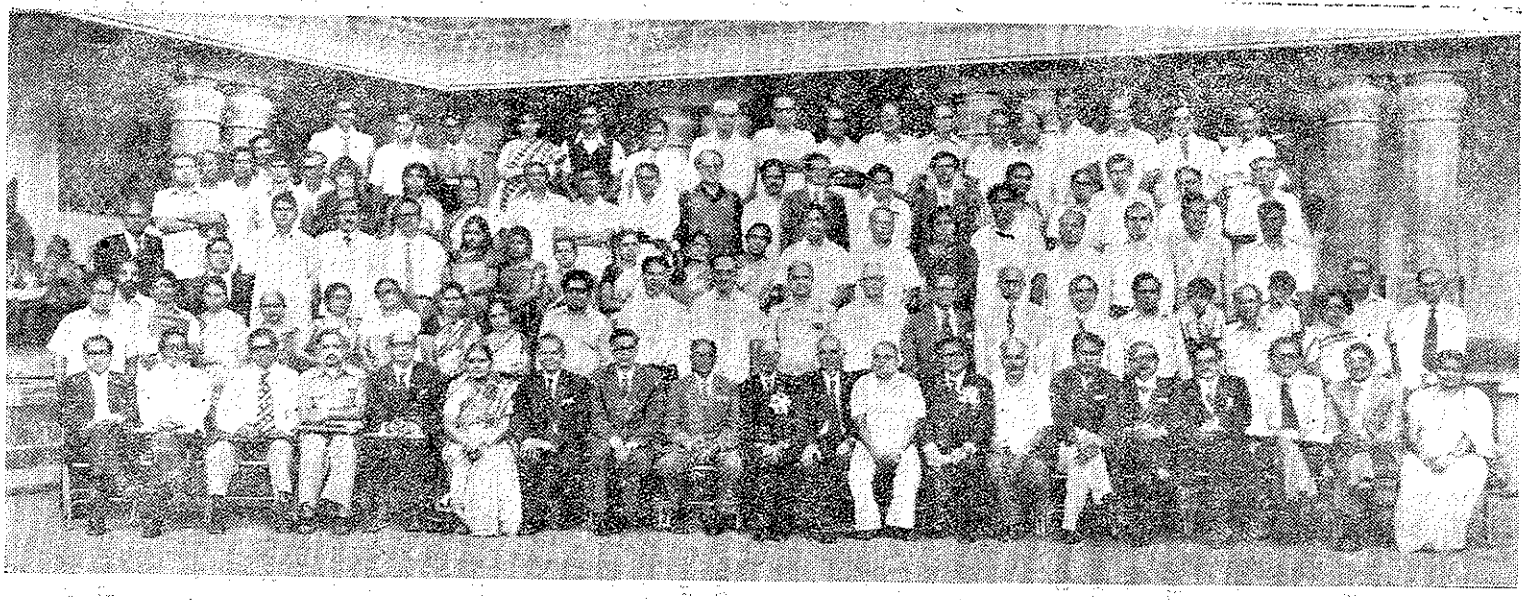
Budget Estimate for the period from January—December, 1979

INCOME		Rs. P.	Rs. P.
Membership Subscription (in form of Central Share) Existing Members			
(i) Ordinary members	414×14	5796.00	
(ii) Life (in instalment)	23×50	1150.00	
(iii) Ordinary Members (paying in full)	62×20	1240.00	
New Members			
(i) Ordinary Members	100×14	1400.00	
(ii) Life (in full)	10×200	2000.00	
(iii) Life (in full Central)	15×140	2100.00	
(iv) Life (in instalments)	30×50	1500.00	15,186.00
Subscription to the Journal :			
(i) D.H.S., Govt. of West Bengal		7750.00	
(ii) Subscribers in India		3000.00	
(iii) Subscribers from abroad		2500.00	13,250.00
Interest on Fixed Deposit Receipts			
(i) On account of Late Dr. B.C. Dasgupta Memorial Oration Fund		900.00	
(ii) Association's Fund		700.00	1,600.00
Interest on Savings A/c with Indian Bank			150.00
Advertisement in the IPHA Journal			2,000.00
Fellowship Award subscription			500.00
Sale of old issues and reprints in the Journal			500.00
Recoveries against puja advance from staff			200.00
Excess of Assets over Liabilities			20,504.46
		Total Rs	53,890.46

EXPENDITURE	Rs. P.	Rs. P.
Salaries to the staff		10000.00
Advance to staff (only puja advance)		200.00
Postage (office despatch and Journal		4500.00
Honorarium for Auditors (for 1971)		200.00
Printing of the Journal (including paper, press printing, block making charges etc.)		12,000.00
Office printing and Stationery		1,000.00
Advertisement Commission		500.00
Contribution towards organizing the 24th annual conference of the Association		1,000.00
Association's Award (for best Scientific paper published in the Journal for 1978)		200.00
Late Dr. B.C. Dasgupta Memorial Oration Award		900.00
Membership fee to the World Federation of Public Health Associations, Geneva (approximate)		800.00
Bank charges		400.00
State share in respect of membership fee		500.00
Conveyance and Travelling		400.00
Monthly service charges for Typewriter Machine		36.00
Miscellaneous		1000.00
Excess of INCOME over EXPENDITURE (Surplus)		20254.46
	Total Rs.	53890.46

Sd/- P.N. Khanna
General Secretary

Sd/- A. Kiran Kumar
Treasurer



Delegates in the 23rd Annual Conference of the Indian Public Health Association,
Medical Collage, Aurangabad Maharastra.

Proceedings of the 23rd Annual General Body Meeting of
INDIAN PUBLIC HEALTH ASSOCIATION

Proceedings of the 23rd annual General Body Meeting of the Indian Public Health Association held on Sunday, the 28th January, 1979 at the premises of Medical College, Aurangabad, Maharastra State.

In all 44 members attended the meeting.

Dr. W. Mathur, President of the Association, thanked all the members present and took the chair to conduct the business of the meeting.

At the outset, the members stood up and observed a two minutes silence to pay homage to late Dr. S. S. Verma, the Past-president of the Association and Director General, Health, Railway Board, Ministry of Railways, Govt. of India, New Delhi.

Agenda No. 1. Confirmation of the proceedings of the 22nd annual General Body meeting of the Association held on February 25, 1978 at the premises of the College of Veterinary Sciences, Haryana Agricultural University, Hissar.

The proceedings of the 22nd Annual General Body meeting were read by Prof. P. N. Khanna, General Secretary of the Association and were confirmed. These proceedings were printed in the Conference Number (October-December, 1978), Volume 22, No. 4 issue of the Association Journal — Indian Journal of Public Health, which had already been circulated to the members of the Association.

Agenda No. 2. To discuss matters arising out of Agenda No. 1. of the above.

No point was raised for discussion out of agenda No. 1 of the above.

Agenda No. 3. To approve and adopt the Annual Report of the General Secretary for 1978.

Prof. Khanna, General Secretary of the Association, read out the annual report on the activities of the Association and its branches during the year 1978-79. Since the report was placed to the members only at the time of the meeting, members had not got the opportunity to go through the report thoroughly. It was further decided that the annual report of the General Secretary along with the Statements of the Liabilities & Assets and Budget estimate and the Statement of Accounts, duly audited by the Chartered Accounts, should be circulated to them at least one day in advance at the venue of the conference. It was, therefore, decided that in future, the report should be given to all the members at the time of the registration.

The General Body recorded its appreciation of the services of the General Secretary and approved the annunal report.

Agenda No. 4. To approve and adopt the audited Statement of Accounts for the year ending 31st December 1978.

The audited Statement of Accounts for the year ending 31st December, 1978 was taken up for consideration. It was observed by the members that the postage expenditure as well as expenditure towards printing of the journal were in excess as provided in the budget

for the period January to December, 1978. The General Secretary explained to the members that the excess of expenditure for the above two heads of expenditure were due to increase in postal rate with effect from June, 1978 and use of higher postage for mailing the Special Issue on 'Smallpox Eradication' (January-March, 1978 issue) which was about three times more voluminous than the usual issues. The increased expenditure towards printing was also due to increased requirement of copies of the journal for the Special issue as 1,000 (one thousand) copies were to be supplied to the Regional Office of the World Health Organization, South-East Asia Region, New Delhi. The General Body approved and ratified the Statement of Accounts.

Agenda No. 5. To approve and adopt the (i) Assets & Liabilities as on 31st December, 1978 and (ii) budget estimate for January to December, 1979.

The Assets & Liabilities for the year ending 31st December, 1978 and budget estimate for the period January to December, 1979 were considered and approved by the General Body. The members noted with appreciation a donation of a part amount on account of late Dr. B. C. Dasgupta Memorial Oration Award' for a sum of Rs. 575/- to the Indian Public Health Association, by Dr. P. R. Dutt, New Delhi. The budget estimate reflected a surplus of Rs. 20,254.46, which takes into account the realisation of outstanding advertisement bills of Rs. 2185/- also.

Agenda No.6 To approve and ratify the results of electiou of (a) President-elect, and two Vice-Presidents and other office bearers of the H/Q office viz. (1) General Secretary (2) Two Joint Secretaries, (3) Treasurer for the year 1979-80.

As per Rule 19C (a) of the Rules & Regulations and Memorandum of the Association, the nominations were invited from the members of the Association for election of President Elect and two Vice-Presidents. One valid nomination each for the office of the President-elect and two for the offices of the Vice-Presidents, were received. Hence, no ballot contest was made.

The nomination for the President-elect was in favour of :

Dr. N. S. Deodhar, Director
All India Instt. of Hyg. & Pub. Hlth. Cal.

and two vice-presidents were in favour of :

(i) Dr. B. C. Ghosal, Asstt. Director General of Health Services, Ministry of Health & Family Welfare, Govt. of India, New Delhi.

(ii) Dr. P.C. Samantaray, Medical Manager, Indian Drugs and Pharma. Ltd., New Delhi.

The General Body on the recommendation of the Central Council, approved and ratified the above names for the offices of the President-elect and two vice-presidents.

The General Body also approved the nomination of election of the office bearers for the Headquarters Office at Calcutta for the year 1979-80, as follows :

General Secretary : Dr. P. N. Khanna (re-elected) Prof. of Veterinary Public Health, All India Instt. of Hyg. & Pub. Hlth., Calcutta.

Joint Secretaries : (I) Dr. I.C. Tiwari, Prof. & Head, Dept. of Prev. and Social Medicine, Institute of Medical Sciences, Banaras Hindu University, Varanasi.

(II) Dr. G. C. Roy (re-elected), Senior Epidemic Control Officer, Govt. of West Bengal, Calcutta.

Treasurer : Dr. A. Kiran Kumar (re-elected), Lecturer, Dept. of Epidemiology, All India Institute of Hygiene & Public Health, Calcutta.

Agenda No. 7 To approve and ratify the election of 10 (ten) members (vide Rule 15A, c) to represent in the Central Council of the Association for 1979-80.

On the recommendation of the Central Council, the General Body approved and ratified the election of the following members to represent in the Central Council as follows :

1. Prof. G. Anjaneyulu, Hyderabad.
2. Prof. M.M. Ganguly, Calcutta.
3. Prof. S.P. Mehta, New Delhi.
4. Prof. M.C. Mittal, Jabalpur.
5. Prof. (Mrs.) L. Philip, Calcutta.
6. Dr. C. K. Rao, New Delhi.
7. Prof. P.V. Sethi, Aurangabad.
8. Air Vice Marshal J.K. Sehgal, New Delhi.
9. Prof. Rameswar Sharma, Jodhpur.
10. Dr. N.K. Sinha, New Delhi.

Agenda No. 8. To approve and ratify the Award of Fellowship of the Association for 1978.

Nominations were invited from the Presidents of all State and Local Branches, existing Fellows and life members of the Association for the Award of Fellowship of the Indian Public Health Association. A total of 13 (thirteen) nominations were received. The Credential Committee under the chairmanship of Lt. General D. N. Chakraborty, Calcutta, considered the nominations and recommended 6 (six) candidates for election of the Award of Fellowship. The ballot for the six candidates along with their brief bio-data were sent to all the existing Fellows for obtaining their opinion and selection (vide Rule 7, D of the Constitution). In order of the votes polled, the following were declared for the Award of Fellowship of the Indian Public Health Association. The General Body approved and ratified the Awards of Fellowship for the following members :

1. Dr. R. N. Basu, Asstt. Director General of Health Services (small pox) Ministry of Health and Family Welfare, Govt. of India, New Delhi
2. Dr. S. C. Banerjee, Prof. and Head, Dept. of Prev. & Social Medicine M. L. N. Medical College, Allahabad, Up.
3. Dr. B.C. Ghoshal, Asstt. Director General of Health Services Ministry of Health & Family Welfare, Govt. of India, New Delhi.
4. Dr. N. K. Sinha, Dy. Director (Health) Railway Board Ministry of Railways, Board Ministry of Railways, Govt. of India, Rail Bhavan, New Delhi
5. Dr. A. A. Contractor, Asstt. Director of Health Services Govt. of Gujrat, New Civil Hospital, Ahmedabad.

Agenda No 9. Consideration and rati-

fication of the resolution put forward by the individual member.

A resolution was received from the President, IPHA West Bengal State Branch regarding the backlog payment of membership subscription from the defaulter members who could not pay their membership subscription as the Branch had virtually ceased to function. This point was discussed and it was desired that defaulter members may start paying their membership subscription from the current year i.e. from 1979, since there is no admission fee, so no extra charges are required to be paid by them. It was also made clear that such members would not get the IPHA Journal of the previous years for which they have not paid membership fee.

Agenda No. 10 To consider the progress about the formation of Federation of Public Health Associations in India.

The General Secretary informed the house that as per the recommendations of the Sub-committee of the Federation of Public Health Associations, the different Associations viz. Indian Society for Malaria and other Communicable Diseases, New Delhi ; Indian Association for Communicable Diseases, Bombay ; Indian Association of Preventive and Social Medicine, Varanasi ; Indian Association of Occupational Health etc were approached for merger under the Federation The following two Associations had expressed their willingness to join the Federation.

1. Indian Association for Communicable Diseases, Bombay.
2. Indian Soceity for Malaria and other Communicable Diseases, New Delhi.

The premises of the National Institute of Comm. Diseases, Delhi was offered for holding the conference. A meeting of the Central Council was, therefore, called by the President Dr. W. Mathur of the Indian Public Health Association on 6th May, 1978 at New Delhi. The Council at its meeting felt that preliminary arrangements for holding such a conference in Delhi be made in December, 1978. Dr. S. K. Sen Gupta, Asstt. Director General of Health Services, New Delhi was requested to function as a Convenor. The proposed meeting for the formation of a Federation to be held in Delhi during December, 1978 could not be materialised as some of the Associations had already announced the date and venue of their conferences. As the venue was other than Delhi and due to the lack of timely communications, the offer of the Maharastra State Branch of the IPHA for holding the 23rd annual conference at Aurangabad, during January, 1979 was agreed upon.

The General Secretary also informed that during the Conference Indian Association for Communicable Diseases (Bombay) held at Calcutta in the month of December, 1978, he had a detailed discussion with the General Secretary, Dr. S.A. Kamat and the President, Dr. Sushila Nayar of the above Association regarding the formation of the Federation. He was informed by Dr. Nayar that she was interested in the first instanceto merge the two Communicable Diseases Associations of Bombay and New Delhi. She further told that after effective merger of the above two Associations they would think of formation of Federation. On the advice of Dr. Nayar, the President of the IPHA, Dr. W. Mathur was informed to be in touch with the NICD officials and to

attend the proposed merger meeting so that further action in formation of the Federation is taken.

Agenda No. 11. To announce the office bearers and 2 members representing in the Central Council from various state/local Branches of the Association for 1979-80.

The General Secretary informed the house that out of 15 state/local branches, only five branches had forwarded the list of the office bearers and names of 2 members representing in the Central Council of the Headquarters office. They are as follows :—

1. DELHI STATE BRANCH

President—Col. Barkat Narain
Secretary—Dr. (Mrs.) Prabha Malhotra
Jt. Secretary—Dr. M. Dutta
Treasurer—Dr. R.N. Basu

Members representing in the Central Council

1. Dr. R. N. Basu
2. Dr. A. C. Basu

2. TAMILNADU STATE BRANCH

President—Dr. V. Kapali
Vice-president—Dr. (Mrs.) R. Visalakshi
Secretary—Dr. B. Padmanabhan
Jt. Secretary—Dr. K. Veera Raghvan
Treasurer—Dr. W.D. Chelladurai

Members representing in the Central Council

Dr. K.R. Jagganathan
Dr. B. R. Deshikachari

3. HISSAR LOCAL BRANCH

President—Dr. O. P. Gautam
Vice-president—Dr. D. S Kalra
Secretary—Dr. R. C. Kulshrestha
Treasurer—Dr. D. N. Bhargava

Members representing in the Central Council

1. Dr. D. S. Kalra
2. Dr. N. K. Chandiramani

4. ALLAHABAD LOCAL BRANCH

President—Dr. (Mrs) G. Thapa
Vice-president—Dr. S.K. Jain
Secretary—Dr. G. Singh
Treasurer—Dr. R.C. Pandey
Jt. Secretary—Dr. D.B. Ghosh

Members representing in the Central Council

1. Dr. D.B. Ghosh
2. Major A.K. Saxena

5. GUJRAT STATE BRANCH

President(Acting)—Dr. (Mrs) P. Varma
Vice-president—Dr. G.K. Trivedi
Secretary—Dr. R.D. Kachhia
Treasurer—Dr. P.C. Shah

Members representing in the Central Council

1. Dr. A.A. Contractor
2. Dr. P.C. Shah

Agenda No. 12. To approve and ratify the nomination for the Oration of 'late Dr. B. C. Dasgupta Memorial Oration Address' for 1979.

The General Body approved and ratified the recommendation of the Central Council for the following two names for the 'late Dr. B. C. Dasgupta Memorial Oration Address' for the year 1979. In case, the first nominee expresses her inability to give the Oration Address, the second nominee may be requested for the same. They are as follows :

1. Dr. (Mrs) Sushila Nayar, M.P.
   President, Kasturba Health Society, Sevagram, Wardha, Maharastra State.
2. Dr. S.C. Bagchi, Prof. of Preventive and Social Medicine, Magadh Medical College, Gaya, Bihar State.

Agenda No. 13. To approve and ratify the formation of Panel of Judges for scrutiny of the best paper (scientific) published in the IPHA Journal, Volume 22, 1978.

The General Body approved and ratified the recommendation of the Central Council for the panel consisting of the following judges for the scrutiny of the best Scientific paper for the Association Award, to be given at the time of the next i.e. 24th annual conference of the Association.

1. Dr. N. S. Deodhar, Director, All India Insti. of Hyg. & Public Health Calcutta.
2. Dr. S. M. Marwah, Prof. & Head, Dept. of Prov. & Social Medicine, Institute of Medical Sciences, Banaras Hindu University, Varanasi
3. Prof. S. C. Seal, 2 Fern Place, Calcutta.

Agenda No. 14. To approve and ratify the recommendations of the 23rd annual conference.

The General Body approved and ratified the recommendation of the Central Council for the formation of Sub-committee, consisting of the following two members, for preparation of draft recommendations of the 23rd annual conference of the Association. These recommendations after finalization, has to be circulated to all the Directors of Health Services State and Union Territories, Director General of i) Health Services, (ii) Armed Forces Medical Services, (iii) Health Railway Board, Govt. of India, New Delhi ; etc. for implementation. The members of the committee are as follows :—

1. Dr. G. A. Panse, Dy. Director of Health Services (Tuberculosis) Govt. of Maharastra, Bombay,
2. Dr. P. V. Sathe, Prof. & Head, Dept. of Prev. & Social Medicine Medical College, Aurangabad, Maharastra.

Agenda No. 15. To approve and ratify the appointment of Auditors for the year 1979.

The General Body approved and ratified the recommendations of the Central Council for the appointment of auditors, M/s. G. Basu & Co., Chartered Accountants, Calcutta, for auditing the Association's accounts for the year ending 31st December, 1979.

Agenda No. 16. To approve and ratify the date and venue, and subject for the scientific Session for the next (24th) annual conference of the Association.

The General Body approved and ratified the recommendation of the Central Council for the next annual conference (24th) to be hosted either one of the following three branches by of the Association :-

1. Allahabad Local Branch
2. Gujrat State Branch
3. Andhra Pradesh State Branch (this branch is under formation having its office at Hyderabad).

The General Body also approved and ratified the recommendation for the theme of the Scientific Session entitled — "Child Health Care—Through Sub-Centres".

Agenda No. 17. To consider any other item brought forth by the members with the permission of the chairman.

The General Secretary, with the permission of the chairman, put the following matters for approval and ratification, already recommended by the Central Council, regarding the membership fee in overseas countries and enhancement of annual subscription rate of IPHA journal. The General Secretary, Prof, Khanna informed the house that the member ship fee for overseas members is at par with the membership in India. Since the postage incurred in mailing the journal and other communication to them is more expensive and the cost of paper and printing charges have gone up considerably and with the increassed postal charges effective from June 1978, the General Body approved the following revised membership fee in overseas countries and rate of annual subcription of journal with effect from 1st January, 1980 respectively.

Membership fee in overseas countries—Ordinary from Rs. 20/- to 50/- per year Life membership fee from Rs. 200/- to 500/-. (effective from January, 1979)

Subscription to Journal (effective from January, 1980, Volume 24)

INDIA : from Rs. 25/- to Rs. 30/- per copy per year (single copy Rs. 7.50)

OVERSEAS : from Rs. 50/- to Rs. 60/- per copy per year (From US $ 7.00 to $ 10.00)

It was also decided that the enhanced rate would not be applicable to those subscribers who purchases a minimum of 100 copies and they would continue to be supplied at the existing rate i.e. at the rate of Rs. 25/- per copy per year.

The General Secretary also informed that the Central Council at its 57th ordinary meeting held on 30th December, 1978 at the Headquarters Office, Calcutta, had sanctioned a medical allowance of Rs. 8/- per month for Headquarters Office staff, Mr. R. N. Thakur, Accountant-cum-Clerk and Sri K.K. Banerjee, Peon to be given from the month of January, 1979 subject to he approval of the General Body. The General Body considered the recommendation of the Central Council regarding the medical allowance to the IPHA staff and approved the same.

The meeting, then, terminated with a vote of thanks to the chair.

Sd/- W. Mathur
Chairman
(President)

Sd/- P.N. Khanna
General Secretary

Indian Public Health Association
Headquarters Office, Calcutta.

INDIAN PUBLIC HEALTH ASSOCIATION

RESOLUTIONS PASSED

Recommendations of the 23rd Annual Conference of the Indian Public Health Association, held at Medical College, Aurangabad (Maharastra State) from January 27 to 29, 1979. The subject for the Scientific Sessions was — 'Para Medicals in Health Care'.

1. It has come to the notice of the Indian Public Health Association that a few State Governments have recently modified their rules regulating promotions of doctors already in service. Hitherto, a medical graduate or one with a Diploma in Public Health, after graduation, was considered eligible for higher posts, such as Joint Director, Director, with reference to his length of service and the cumulative experience gained by such Officer in the field. The modified proceedure adopted by a few State Governments demand that the Officer aspiring promotions as Deputy Director, Joint Director and Director should possess a Post-graduate degree. Post-graduate diploma is not considered as an adequate qualification. This entails a practical handicap in respect of those doctors possessing a Medical degree and a Diploma in Public Health. The Indian Public Health Association resolved that a uniform policy be adopted both by the Central and the State Governments and rules made flexible for regulating such promotions to higher Cadres in the hierarchy giving due weightage individual cases with reference to the total number of years in service without dogmatically insisting upon the acquisition of a Post-graduate degree.

2. The Indian Public Health Association endorses the efforts made during the year for setting up a common platform with other like minded Associations in the field of Community Health and recommends that the same be pursued in the interest attaining a high standard of health and quality of life for the entire population of the country.

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NOTES & NEWS

IMA College of General Practitioners is publishing a Journal under the title 'Continuing Education' which is nearing the completion of its second year of existence. This journal caters for the need of general practitioners in general and tries to cover as wide a field as possible and includes among its contents. Summaries, Comments, Quiz, Extracts, Problem solving, Views, News as well as specific problems.

The annual subscription of the continuing education bulletin is Rs. 15/- payable in advance and it includes the supply plus postage of 8 issues in every year. Six regular bi-monthly issues and two special issues, one in August as a mid year academic seminar number and one in December as the annual number.

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