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CHANGING OUTLOOKS IN PREVENTIVE MEDICINE

Everyone will agree that the outlook in the practice of medicine has undergone a marked change since the coming into operation of the Health Services Act on the 5th July of this year (1948). This date will be recorded in history as an eventful one, for, in it, the story of the evolution of medicine has opened a new chapter.

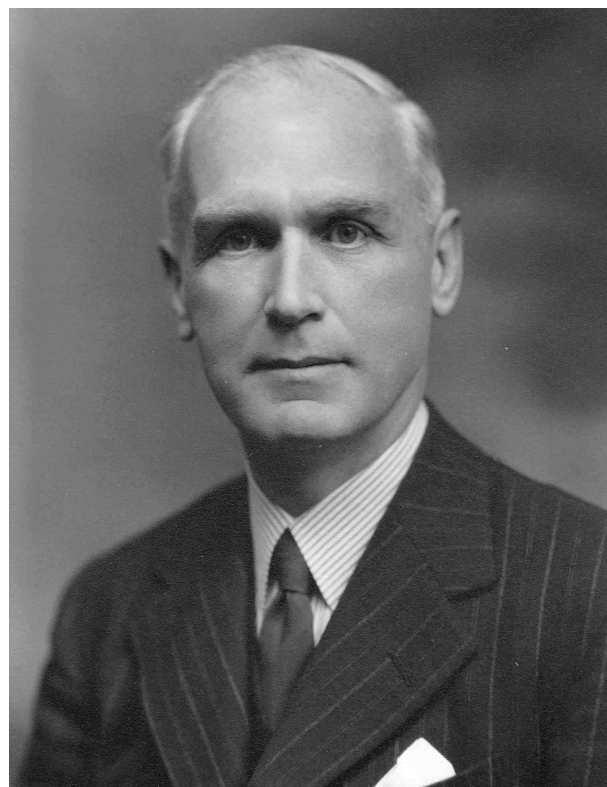
I shall not attempt to express an opinion on the merits or demerits of the new Order, as this might involve trespass into the field of party politics, and this, I understand, would not be properly within the terms of the activities of the Ulster Medical Society! I rather choose to confine my remarks to the changed outlook in public health, and to direct attention to the recent advances in the field of social and preventive medicine.

As a means of visualising the expanding scope of preventive medicine and its application to the new social outlook, I feel that it would serve a useful purpose if we traced its evolution through the historical phases of its development to its present status.

From the dawn of history man has been engaged in an endless struggle against disease; the desire for knowledge of how to live long and how to avoid disease has persisted throughout the ages. The same demand has also been expressed by the age-long quest for magical drugs, herbs, philosophers' stones, and various charms and elixirs having the reputation of being life preservers.

In spite of these irrational quests, most people have observed some more or less rational codes of law for the preservation of their health.

The principles and practice of sanitation were known very early in Man's history. As you are aware, there is a code of sanitary law laid down in the early books of the Bible, wherein Moses commanded the Children of Israel to observe frequent purifications and cleansings; to isolate the sick; to disinfect houses where plague had prevailed; to destroy infected articles; and to avoid contamination of food. Many of



these health regulations of the ancient Hebrews have sound common sense underlying them: indeed, with little or no modification, some of them are quite appropriate in our modern sanitary code.

Some of the Mosaic Law is interspersed with superstitious practices, but we could learn much from the manner in which the legislation was framed. Like our modern legislation, there were penal clauses governing infringements; but there were also incentives for encouraging obedience.

It will be remembered that the moral law summarily comprehended in the Ten Commandments is prefaced by the words "I am the Lord thy God, which have brought thee out of the land of Egypt, out of the house of bondage" – thus reminding the Children of Israel that the Commandments were of Divine origin, and, therefore, anyone disobeying them was committing a sin. There was also the reminder that the Children of Israel had been freed from slavery and that they should show their gratitude by observing the terms of the Commandments. In like manner, many of the sanitary and health laws were prefaced by the words "Thus saith the Lord," with the

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same objectives towards encouraging obedience.

In passing, it should be observed that the Fourth Commandment – “Remember the Sabbath Day to keep it holy; . . . in it thou shalt not do any work” – provided not only an institution for the observance of religious ordinances and spiritual welfare, but also a valuable adjuvant in preventive medicine, providing, as it does, a day of rest every week for the recuperation of vigour and physical needs of the body.

Sanitation is generally regarded as a new science; as an art which has been entirely developed and even perfected in comparatively recent times! But, sanitation is not new! Indeed, it is an art with a heritage of thousands of years of actual experience and application. It is true that there was a distressing interlude of several centuries – known as “The Dark Ages” – when sanitation was forgotten or its application neglected; but, as previously indicated, its beginnings go back to the days of Moses, as well as the periods of Hippocrates, Galen, and Asodka.

The practical application of sanitation in ancient times is revealed by excavations of ruined cities in several parts of the world, particularly in Irak (Mesopotamia), in the plain between the Rivers Tigris and Euphrates. These cities were occupied by the ancient Sumerians who lived six thousand to eight thousand years ago. The houses were provided with laid-on water supplies, water closets, drains, etc. The elaborate sanitary arrangements of these ancient cities cannot fail to excite our admiration and wonder. The ancient cities of Assyria, Rome and Greece show that the practice of sanitation was applied in the provision of adequate water supplies, elaborate public baths and facilities for personal cleanliness.

It is disappointing to find that the extension of the practice of hygiene and sanitation did not proceed with the progress of time, and in the dark Middle Ages sanitation appears to have been forgotten amid the squalor of ignorance, superstition and witchcraft. The public sanitation of Crete and Rome and the personal hygiene of the Golden Age of Greece gave way to filth and its companion, disease. Pestilence reigned supreme, with leprosy following plague, to be succeeded in turn by syphilis, typhus, smallpox, and such strange scourges as the “dancing mania” and the sweating sickness. The history of the Dark Ages is one continuous story of pestilence, famine, poverty and war.

This unsatisfactory state of affairs reached a climax in the middle of the fourteenth century, when the terrible epidemic, known as the “Black Death” (bubonic plague), occurred. One quarter of the population of Europe succumbed to the disease. Not

until 1666 was England freed of this plague, and then only by another disaster – the great fire of London – which apparently burned the rats which are known to be instrumental in carrying the disease.

After the epidemics of fevers, famine and pestilence had come to an end in England, they continued to scourge Ireland for centuries: an interesting paper on “Famine Fevers in England and Ireland” appears as a reprint from the Journal of the British Archaeological Association in the ULSTER MEDICAL JOURNAL of May, 1948. The article was written by that distinguished Queensman, Lieut.-General Sir Wm. MacArthur.

It is not my intention to recount the evolution of the growth of knowledge of medicine, but it is interesting to note that Hippocrates, the “Father of Medicine,” was a sanitarian as well as a physician. Among his numerous literary endeavours he wrote three books on hygiene and sanitation, designated by him as “constitutions and environments.” Long before the days of Hippocrates (460-377 B.C.) men had sought to stem the tides of disease which threatened to overwhelm them. It was not, however, until the Middle Ages that the ravages of pestilence compelled attention to be given to the conditions which seemed responsible for such epidemics.

Amongst the ancient theories held to be responsible for the occurrence of epidemics was one that epidemics were largely influenced by air, climate and season. In the seventeenth century Sydenham, an English physician, elaborated the theory of epidemic constitutions by attributing diseases to “occult atmospheric influence,” which led to cyclical outbursts of epidemics. Whether or not the atmosphere causes disease, it has, through all time, been a popular theory that the air or atmosphere has some connection with infection. Our present conception of spread of infection by “droplet” nuclei lends support to aerial convection of infection.

We also know that certain infectious diseases show seasonal cycles of epidemicity (e.g. poliomyelitis), but we do not yet know the reason. Long before the advent of the discovery of pathogenic bacteria, observers explained the seasonal prevalence of certain infections by the emanations of ground air or miasma which resulted from the decomposition of organic matter in the earth’s strata – the foul air being expelled by the rise of the ground water. This explanation of epidemiology was interwoven with the then accepted principle that “dirt produces disease.” As Sir John Simon put it in 1874: “filth is the deadliest of our present removable causes of disease.” This view was supported by the observations that epidemics

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prevail where there are sanitary defects; that extension and spread of these epidemics is exactly proportional to the extent of bad sanitary conditions; that epidemics are controllable by controlling these conditions; and that the want of pure air is a factor in the causation of epidemics.

The view that effluvia from organic filth, especially those in the form of sewer air, are capable of causing infectious fevers is still held, even by some of the more intelligent people in our community. It is still a common occurrence to receive requests for the testing of the drains in houses where infectious disease has occurred – the request is invariably supported by the contention that the illness was contracted by exposure to foul air from the drains or sewerage system of the affected house.

Until the middle of the nineteenth century sanitation was the only weapon we possessed for the suppression of infectious disease, and, however much we may claim for the more modern methods of controlling infection, e.g., immunisation, etc., we must admit that many infectious diseases were brought under control by the cleaning up of environment.

In Britain typhus was well under control before Nicolle and his co-workers in 1909 reported the transmission of typhus to monkeys by body lice which had fed on a human typhus patient; evidence accumulated that the body louse was the vehicle of typhus infection, but it did not follow that the stress laid by Medical Officers of Health, in their efforts to stamp out typhus, on measures of cleansing and disinfection, reduction of overcrowding, slum clearance, and other attentions to hygiene and sanitation, was wasted.

Apart from the application of sanitary and hygienic measures, it was found that the prevention of some diseases was accomplished a long time before the complete knowledge of their causation was discovered. The prevention of scurvy and beriberi was accomplished many years before these diseases were known to be due to avitaminosis or dietetic deficiencies. It will be remembered that the compulsory supply of lemon juice in the Royal Navy as an anti-scorbutic measure became operative in 1795. Then in 1796 came the famous discovery of Dr. Edward Jenner that the inoculation of persons with cow-pox virus gave protection against the infection of smallpox. This discovery had far-reaching effects in the prevention of infectious disease, and really forms the basis of our conception of immunology.

Out of the welter of disease and death of the Middle Ages there gradually developed the “Golden Age” of medicine. This began to make itself manifest

about the end of the eighteenth century. Thoughtful people discovered that it was unprofitable and distressing to undergo the ravages of repeated epidemics. Such pestilences interfered with commerce and industry, as well as with the peace and happiness of the people, and the whole organisation of society.

Then followed a revolt against the shocking living and industrial conditions which were associated with the Industrial Revolution. It was not a particularly enjoyable or healthy occupation to be a factory worker in those days, especially if one were a child, as were many of the persons then employed in English factories. Neither was it a joke to be an inmate of a British prison in the eighteenth century. (I assume it is no joke even to-day!)

As a result of the pioneer work of John Howard and the good Earl of Shaftesbury, there was a rapid succession of preventive public health measures which resulted in a clean-up of prisons and factories which, up till then, had been hotbeds of typhus and insanitary conditions. Just as gaol fever – the louse-borne typhus – spreading occasionally to the general public stimulated the reform of the prisons, so vast epidemics of cholera led to the establishment of sanitary authorities who were charged with the duty of controlling epidemics.

The first Public Health Act of 1848 (just one hundred years ago) was the direct outcome of the revolt against a host of barbarities and degrading industrial conditions. The changed outlook in favour of health reform was stimulated by the remarkable advances in medical knowledge, particularly the germ theory of disease which resulted from the discovery of pathogenic bacteria by Pasteur and other bacteriologists, such as Robert Koch, Kitasato, Yersin and Roux; the introduction of antiseptic surgery by Lister; of vaccination against smallpox by Jenner; and the discovery of chloroform by Simpson acted as stimuli to the progress of the movement towards health and a better-informed public opinion on health matters.

As the result of the application of the new knowledge, the second half of the nineteenth century was the period of the great advances in medical treatment – anaesthesia, antiseptic and then aseptic surgery made it possible for a vast increase in surgical art and daring, but the application of bacteriology and all that followed the discovery of the parasitic nature of infection completely revolutionised the control of infectious diseases, and brought about a disappearance of many diseases formerly regarded as inevitable. I shall only refer to two of these – typhoid

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and diphtheria.

Two triumphs of preventive medicine in our time are the reductions of typhoid and diphtheria to near the bottom of the list of killing diseases. The two diseases have many epidemiological features in common, but their suppression has been effected through different channels. Typhoid has been largely conquered by the cleaning up of environment through the application of the principles of sanitation, whilst diphtheria has yielded to the science of bacteriology in the application of preventive inoculation. Diphtheria did not yield to sanitation; inoculation succeeded where sanitation failed.

As previously stated, typhus has also yielded to sanitation, even before the sheet anchor of control lay in the knowledge of "no lice – no typhus" – now greatly facilitated by the new insecticides of the D.D.T. class.

As a result of the recent advances in bacteriology and epidemiology, most of the bacterial infectious diseases are now capable of being effectively controlled. With the gradual disappearance of the common bacterial infections, we appear to have an increase in virus infections.

Our knowledge of viruses is still far from complete, and epidemiological data of virus diseases are not understood; consequently, we are not yet in a position to take effective steps to cope with virus epidemics. These impediments apply particularly to virus diseases of the central nervous system, such as poliomyelitis and polioencephalitis, but our knowledge of the factors involved in the spread of virus infections is progressing favourably. With the increase in knowledge, I feel that we will be in a position to take effective measures against virus diseases in the near future.

During the last thirty years the field of preventive medicine has gradually expanded to include preventive clinical work, particularly in the Maternity and Child Welfare and School Health Services. There are now in the Public Health Services many more doctors engaged in clinical work than on administrative duties. There is, therefore, a demand for medical officers having special training in preventive clinical work. The curriculum for the Diploma in Public Health has been altered to make provision for elective and vocational training, with a view to meeting the qualifications required.

(I shall return to the subject of education in social and preventive medicine when dealing with the subject of social medicine.)

Until recently, Public Health was mainly concerned with the prevention of diseases the causes

of which were known. It was not interested in the vast subject of impaired health, and little interest was taken in the social movements to improve the health of the people.

A few years ago I addressed a meeting of the Belfast Civic Society on the subject "Are Belfast People Healthy?" I informed my audience that, whilst I had information on the incidence of notifiable infectious diseases, the number of deaths occurring, and the causes of death, together with figures of vital statistics, I was unable to answer the question as to the state of health of the citizens, because I did not know, nor had I the means of ascertaining the quantity and quality of sickness affecting the population.

More attention is now paid to the prevention of morbidity. Many illnesses, such as the common cold, chronic rheumatic conditions, etc., have a low mortality rate, but are the cause of much sickness and injury to health, besides being responsible for much misery, loss of work and industrial inefficiency. Recent surveys of morbidity in parts of Great Britain have revealed most interesting information on the prevalence of sickness and the consequences in various aspects of preventive medicine, output in industry, etc.

We have gradually come to realise that no sickness is possible without some mental disturbance; and that the mental or psychological attitude of our patients must be taken into account in the treatment of all departures from health.

Preventive medicine has now shifted its outlook from the suppression of specific causes of specific diseases to the management of personal and environmental stresses which interfere with the maintenance of full health and full vitality. This new phase was first applied in industrial medicine. The report of the Industrial Health Research Board had indicated that medical science could rob industry of unnecessary fatigue, and effectively control or prevent most of the industrial diseases. The application of the principles of industrial medicine has brought about a marked advance in the physical and mental health of the industrial worker. This field of preventive medicine is still in its early stages of development.

One of the new problems awaiting solution is that relating to the health of old people, and there is much need for research in the field of geriatrics, particularly more specific knowledge of the causes of crippling disabilities of the elderly, and their prevention. It is possible that we shall not be able to define healthy maturity until we learn more about the

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chronic degenerative diseases.

The Robert Campbell Memorial Oration was delivered in 1947 by Professor J. Henry Biggart, who dealt with "The Contributions of Pathology to our Knowledge of Internal Environment." In introducing his subject, Professor Biggart referred to the importance attached to the influence of external environment on health and disease – housing, nutrition, conditions of work, etc. He suggested that it would be beneficial to examine the mechanism which preserves the integrity of the body and maintains what Claude Bernard once called "the internal environment." It is a requirement for good health that all bodily activities are bound together and co-ordinated. Professor Biggart recited much evidence in support of the theory that that portion of the brain known as the hypothalamus was the nerve centre concerned with the regulation of bodily functions. When this co-ordinating centre is subjected to long, continued strain, or when disease attacks it, the regulating mechanism becomes upset, and signs and symptoms of disease become apparent: over-stimulation of the centre occurs when the external environment varies greatly from its normal range, and it is suggested that this repeated over-stimulation may be a factor in the causation of our chronic degenerative diseases, such as high blood pressure, arterial disease, peptic ulcer, kidney diseases, etc. It is difficult to say how much of this degenerative change is preventable, but we have seen that external environment and internal environment are inter-dependent: an unsatisfactory external environment has a deleterious influence on the internal.

Deteriorations of structure and function are characteristic of the later years of life. But the age of onset and the extent of these changes vary strikingly in different individuals, the determining factor being the interplay of constitution and environment. Those who break down prematurely may have an inborn relative weakness of some organ or internal environmental regulatory system, but that potential weakness betrays them when the long-continued play of environmental stresses has exposed it.

What are the damaging stresses?

Unfortunately the seeds of degenerative disorders are usually sown so many years before the onset of signs or symptoms that it is, as yet, impossible to say. There is growing evidence, however, that many complex factors of constitution and environment are involved. Such general factors as nutrition, sleep, mental health and recreation are undoubtedly important. So the diseases of

degeneration may conceivably begin to take shape even in childhood.

Chronic degenerative diseases are taking an ever-increasing toll of life, as is revealed by a study of vital statistics, showing their high place in the relative frequency of killing diseases. This is partly accounted for by increasing longevity and the ageing population: in 1951 it is estimated that 11½ per cent. of the population of Great Britain will be persons over sixty-five years of age. But it is significant that degenerative diseases are now relatively frequent as a cause of death in the middle-aged.

The problem awaiting solution, from the point of view of prevention of degenerative changes, would appear to be the removing or counteracting the damaging stresses which play a role in their causation. I fear that the hurry and bustle of our modern civilisation demand the continuation of some extrinsic stresses, and that many "stress" factors in our social and economic systems lie outside the control of preventive medicine.

Gradually, however, more and more diseases are coming within the range of preventive methods, chiefly those dependent upon some known essential extraneous factor, such as those found to operate in industrial diseases, deficiency diseases, etc. It is hoped that even the "degenerative" or "stress" diseases may yield to preventive measures.

We have learned to look beyond the individual; first and foremost to the family in which he lives; then to his work and play; and to the home and social background. Social factors play a large part in the etiology of many diseases; the economic and emotional effects of illness are transmitted to the patient's family and his dependants. The proper ascertainment, prevention and treatment of such diseases must be studied from the standpoint of the family as the unit.

We are living in a world of rapid social change. We have arrived at the stage of the evolution of preventive medicine when we must expand our conception of preventive measures to embrace those social and psychological factors which are so important in both curative and preventive work. The advent of social medicine has, therefore, widened our outlook: indeed, it would almost appear to have brought about a reformation, if not a revolution, in the old conception of preventive medicine.

Social medicine is a comprehensive term; it takes into account certain cardinal factors other than the actual morbid processes contributing to the etiology of disease. It recognises that, whilst satisfactory environmental conditions are of importance in the

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preservation of community health, these do not go far enough. The benefits derived from a study of the biological needs, the intrinsic potentialities and constitutions of human beings can be applied in both the prevention and cure of disease. The problems of sociology are largely the problems of preventive medicine. Most authorities agree as to the aims and objects of social medicine, but there is some conflict of opinion regarding the administrative machinery through which these objects are to be attained. It is agreed that social medicine has many links with clinical medicine, as well as with the whole of the public and industrial health services.

It has been pointed out that the problems of communal health are indivisible, but their solution can only be elucidated by team work in which Medical Officers of Health, medical practitioners, including specialist and hospital medical staff, nurses, and social welfare workers take part.

Difficulties arise in connection with the application of social medicine as a curative measure, owing to the fact that few medical practitioners can afford the time to carry out medico-sociological investigations – even assuming they have had the necessary training and experience in such investigations.

This work can be undertaken by specially-trained social workers, but it is a distinct advantage to have a medical qualification or trained nursing as a background in order to fully appreciate the significance of adverse sociological influences in the causation of illness and the steps necessary for their correction.

An even fuller appreciation of the social stresses is required in the prevention of illness in which social factors may be involved, particularly those connected with personal anxieties, family difficulties, etc. After all, the remedying of social ills is as much prevention as the promotion and safeguarding of the people's health by improvement of their housing, their nutrition, or increasing their resistance to infection by preventive inoculation.

Whilst on the subject of training in medical sociology, I might be permitted to return to the subject of undergraduate and post-graduate training in the preventive aspects of medicine.

The General Medical Council, commenting upon the recommendations of the Goodenough Report, agrees that adequate social medicine requires the promotion of measures other than those usually employed in the practice of remedial medicine; they advise that "A new orientation of medical instruction is required. The idea of social medicine must permeate the whole course of undergraduate

teaching, instruction in certain aspects of social medicine should be given during the period of pre-clinical studies, and also during the clinical period. The student should see his teachers enlisting the help of almoners, psychiatric social workers, health visitors, and other welfare experts, and also considering clinical problems in the light of the patient's domestic circumstances and environment. He should also learn something of the communal and administrative aspects of preventive medicine, and should acquire an elementary knowledge of the duties and responsibilities of a Medical Officer of Health. By this means, he is led to appreciate that prevention is a communal as well as an individual problem, and to realise the ways in which a general practitioner can help the Medical Officer of Health, and, in turn, can be helped by him in his own practice. His understanding of these matters and of social medicine generally is likely to be aided if he is given an elementary account of the development of the medical and social services; of their relation to the social structure; and of how progress in the promotion of health has been hindered by such evils as bad housing, ignorance and unemployment,"

In all these matters, the attention of the medical student should be directed to the preventive aspects when dealing with the aetiology of particular diseases. I am afraid that too little attention has been paid to aetiology in clinical teaching in the past, and I am pleased to know that Professor A. C. Stevenson, who was recently appointed to the Chair in Social and Preventive Medicine, has already taken steps to implement the recommendations of the General Medical Council in the teaching of preventive and social medicine at the bedside, in the homes of the people, as well as in the lecture theatre. This approach cannot fail to impress upon the medical student the importance of the preventive aspects of medicine.

I have already referred to the change in the syllabus of training for the Diploma in Public Health. The new curriculum makes provision for a preliminary "Certificate" Course which seeks to lay a good foundation of basic training for any branch of the Public Health Services; whilst the "Diploma" Course offers a substantial choice of elective subjects for those who wish to take up special branches in these services.

The curriculum has two basic divisions:—

- (a) Basic subjects, such as Sanitary Law and Administration, Epidemiology, Medical Statistics, Applied Physiology, including Nutrition, and
- (b) Elective subjects, which include Industrial

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Health, Tropical Medicine, Parasitology, Medical Entomology, as well as senior courses in Administration, Nutrition, Statistics, etc.

The new curriculum is thus more appropriate for meeting the qualifications now required of medical officers for appointments in the various branches of the Health and Welfare Services.

The amended D.P.H. training scheme gives some indication of the trend of policy in social and preventive medicine, and the changing functions of the Medical Officer of Health. Those of you who have taken the D.P.H. qualification will recognise the departure from the practical courses in analytical chemistry and bacteriology which were so necessary in the days when the Medical Officer of Health was required to act as Bacteriologist and Public Analyst.

Time does not permit me giving details of anticipated activities of a Health Department under the provisions of the Health Services Act. The role of the Medical Officer of Health within the new legislation is only part of his many duties. He has substantial responsibilities under many other statutes. The new Act modifies and considerably extends the personal health services, particularly those of domiciliary midwifery, health visiting, home nursing, care of sick persons in their homes, after-care of patients discharged from hospital, and rehabilitation of "misfit" patients.

One of the commendable objects of the new Health Services Act is the provision for the establishment of a closer integration of the preventive and curative agencies. Each of the three Statutory Authorities: the Hospitals Authority, the General Health Services Board, and the Health Authorities, as well as many voluntary organisations, have responsibilities for, or undertake, services of a similar or closely allied nature. It is of great importance that the activities of each of these bodies should be interwoven by mutual co-operation in their common interests; otherwise there will be overlapping of functions and disorganisation of administration. Already much has been accomplished in linking up these "common" interests, but further amalgamation will be necessary as new services are developed or existing ones extended.

It is suggested that an effective method of securing close integration of services and active co-operation, as between the different agencies, would be the making of joint appointments or co-opting of members on the various Management or Advisory Committees of each of the Authorities.

Another commendable feature of the Health Services Act is the stress laid on education of the

public in matters of health. Here, again, several bodies have interests in the matter, and their activities require co-ordination. "Although adequate medical, surgical and dental treatment will bring great benefits to the people, prevention of disease and the concept of positive health must be kept in the foreground."

There is a growing demand for health education. As stated in my opening remarks, this demand has existed from the earliest times, but the request for information on the methods for the promotion of health, rather than the prevention of disease, should be adequately met.

The public usually attach more importance to the cure of illness than to measures for the promotion of health. Many still clamour for the bottle of medicine, and will not be satisfied with the advice that the practical application of a code of health rules and a healthy way of life is of more importance than the bottle of medicine. There is a need for improvement in health by nutritional, educational and recreational methods, and these must be kept in mind in dealing with the subject matter involved in health education.

The more rapid advances in preventive work have been made in the wake of new scientific discoveries. In the past there has been a considerable lag in the application of new discoveries to the prevention of disabilities, disease and death.

The search for new knowledge in the medical sciences is being expanded throughout the world, and many baffling problems in epidemiology, cancer, mental disease, etc. will be overcome. We must be in a position to take advantage of new discoveries which provide a preventive weapon for the conquest of disease. Our work in the preventive field must develop more into research channels by the ascertainment of defect; not only in the individual and his environment, his family, and his home, but also in the community.

The importance of the social aspects of research work has already been referred to. Many pressing problems awaiting solution in preventive medicine could be mentioned: a large number of these, however, require further investigation and research.

Before appropriate preventive measures can be taken, it is necessary to have accurate information on what the problems are; discovery of their essential causation; means of remedy; and such points as the size and nature of the problem; the domestic, social, and psychological factors which may be involved, as well as other relevant data.

The information can only be obtained by the application of scientific methods of recording and assessment, and it is in this branch of research work

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that the university can be of practical assistance to the Medical Officer of Health. For this reason alone it is highly desirable that there should be close co-operation between Health and Welfare Authorities and the university.

I have already drawn attention to the need for research into the causation of degenerative diseases and crippling disabilities of old people.

Many problems connected with maternity and child welfare merit further investigation, although much progress has already been made in this field. The same remarks apply to maternal mortality and morbidity, and to the prevention of dental caries.

We have barely started to investigate cardio-vascular diseases, arthritis, rheumatism, cancer, and better means with which to detect and treat malignant diseases.

Mental health is known to be one of the most important requirements for a healthful, happy life at all stages, but our efforts in research in this field appear to be restricted, owing to the shortage of trained personnel and facilities for investigation.

For many years I have held the opinion that preventive aspects have not been given a sufficiently prominent place in the practice of medicine. Public health has not been popular as a career in the medical profession. It is looked upon as an occupation which does not require any special scientific knowledge or qualification in medicine. Indeed, the Medical Officer of Health has been regarded more as a genteel plumber whose interests were more concerned with drains and sewers than with measures for the promotion of health and the prevention of illness! It is hoped that this "drain-pipe" concept of preventive medicine will disappear.

I have, therefore, taken advantage of this opportunity of calling attention to the changing outlooks in preventive medicine as the subject of my address, with the hope that it may stimulate your interest in the advantages of the prevention of ill-health, rather than the importance of the cure of disease.

I have, perhaps, been too idealistic – not always with my feet on the ground! I realise that I have said nothing very new, but it will give me at least a sense of satisfaction if I have succeeded in awakening your interest in the measures to promote the priceless blessing of health!

There is an essay on "Health and Long Life" by Sir William Temple, published in Dublin in 1701 and written in the old English style: I possess a copy of the book, from which I have copied the following phrase:

"If health be such a blessing and the very source

of all pleasure, it may be worth the pains to discover the regions where it grows, the springs that feed it, the customs and methods by which 'tis cultivated and preserved."

It seems to me we are still engaged in this quest for the regions of health!